FINAL
ENVIRONMENTAL IMPACT STATEMENT
MARCH 1995

DTIC
SELECTE
APR 1 3 1994
F

VOLUME I - TEXT

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
PHILADELPHIA, PENNSYLVANIA

This document has been approved for public release and sale; its distribution is unlimited.

DTIC QUALITY INSPECTED 5

95P-0706

19950410 055

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED

4. TITLE AND SUBTITLE
Final Environmental Impact Statement, March 1995 Volume I [redacted], Institute for Advanced Science and Technology Philadelphia, PA

5. FUNDING NUMBERS

6. AUTHOR(S)
Air Force Center for Environmental Excellence
Environmental Conservation and Planning
Resource Conservation/ECR

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
AFOSR

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT

This document has been approved for public release and sale; its distribution is unlimited.

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

Pursuant to the DOD Appropriations Act for Fiscal Year 1991 (Public Law 101-511), the Air Force selected the Univ of PA, Phila PA, as the recipiant of a grant to support the initial construction of an Institute of Advanced Science and Technology (IAST). This FEIS has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 to analyze the potential environmental consequences of the siting, construction, and operation of the IAST. Although grant distribution would have few, if any, direct effects, future actions would create direct effects. This document, therefore, includes anaylses of the potential impacts that a range of reasonable may have on the local community, including land use and aesthetics, transportation, utilities, hazardous materials/wastes, geology and soils, water resources, air quality, noise, biological resources, and cultural and archaeological resources. The alternatives include two configurations of the IAST at the Smith Hall site, one of which is the Proposed Action, and two siting alternatives at other campus locations. The impact of the No-action alternatives were also considered. The potential impacts associated with the alternatives would be similar to those for the proposed action.

14. SUBJECT TERMS
EIS, University of Pa, Smith Hall, Historic Buildings

15. NUMBER OF PAGES
467

16. PRICE CODE

DTIC QUALITY INSPECTED 5

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
	unclas	unclas	none

GENERAL INSTRUCTIONS FOR COMPLETING SF 298

The Report Documentation Page (RDP) is used in announcing and cataloging reports. It is important that this information be consistent with the rest of the report, particularly the cover and title page. Instructions for filling in each block of the form follow. It is important to ***stay within the lines*** to meet ***optical scanning requirements***.

Block 1. Agency Use Only *(Leave blank)*.

Block 2. Report Date. Full publication date including day, month, and year, if available (e.g. 1 Jan 88). Must cite at least the year.

Block 3. Type of Report and Dates Covered. State whether report is interim, final, etc. If applicable, enter inclusive report dates (e.g. 10 Jun 87 - 30 Jun 88).

Block 4. Title and Subtitle. A title is taken from the part of the report that provides the most meaningful and complete information. When a report is prepared in more than one volume, repeat the primary title, add volume number, and include subtitle for the specific volume. On classified documents enter the title classification in parentheses.

Block 5. Funding Numbers. To include contract and grant numbers; may include program element number(s), project number(s), task number(s), and work unit number(s). Use the following labels:

C	- Contract	**PR**	- Project
G	- Grant	**TA**	- Task
PE	- Program Element	**WU**	- Work Unit Accession No.

Block 6. Author(s). Name(s) of person(s) responsible for writing the report, performing the research, or credited with the content of the report. If editor or compiler, this should follow the name(s).

Block 7. Performing Organization Name(s) and Address(es). Self-explanatory.

Block 8. Performing Organization Report Number. Enter the unique alphanumeric report number(s) assigned by the organization performing the report.

Block 9. Sponsoring/Monitoring Agency Name(s) and Address(es). Self-explanatory.

Block 10. Sponsoring/Monitoring Agency Report Number. *(If known)*

Block 11. Supplementary Notes. Enter information not included elsewhere such as: Prepared in cooperation with...; Trans. of...; To be published in.... When a report is revised, include a statement whether the new report supersedes or supplements the older report.

Block 12a. Distribution/Availability Statement. Denotes public availability or limitations. Cite any availability to the public. Enter additional limitations or special markings in all capitals (e.g. NOFORN, REL, ITAR).

- **DOD** - See DoDD 5230.24, "Distribution Statements on Technical Documents."
- **DOE** - See authorities.
- **NASA** - See Handbook NHB 2200.2.
- **NTIS** - Leave blank.

Block 12b. Distribution Code.

- **DOD** - Leave blank.
- **DOE** - Enter DOE distribution categories from the Standard Distribution for Unclassified Scientific and Technical Reports.
- **NASA** - Leave blank.
- **NTIS** - Leave blank.

Block 13. Abstract. Include a brief *(Maximum 200 words)* factual summary of the most significant information contained in the report.

Block 14. Subject Terms. Keywords or phrases identifying major subjects in the report.

Block 15. Number of Pages. Enter the total number of pages.

Block 16. Price Code. Enter appropriate price code *(NTIS only)*.

Blocks 17. - 19. Security Classifications. Self-explanatory. Enter U.S. Security Classification in accordance with U.S. Security Regulations (i.e., UNCLASSIFIED). If form contains classified information, stamp classification on the top and bottom of the page.

Block 20. Limitation of Abstract. This block must be completed to assign a limitation to the abstract. Enter either UL (unlimited) or SAR (same as report). An entry in this block is necessary if the abstract is to be limited. If blank, the abstract is assumed to be unlimited.

FINAL ENVIRONMENTAL IMPACT STATEMENT

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY

PHILADELPHIA, PENNSYLVANIA

March 1995

Accesion For	
NTIS CRA&I	☒
DTIC TAB	☐
Unannounced	☐
Justification	
By	
Distribution /	
Availability Codes	
Dist	Avail and / or Special
A-1	

THIS PAGE INTENTIONALLY LEFT BLANK

COVER SHEET

FINAL ENVIRONMENTAL IMPACT STATEMENT
INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA, PA

a. Responsible Agency: U.S. Air Force

b. Proposed Action: Expenditure of Federal Funds for a Portion of Development Costs of the Institute for Advanced Science and Technology, University of Pennsylvania, PA.

c. Written comments and inquiries on this document should be directed to Lt. Col. Terry Armstrong, Director, Environmental Conservation and Planning, HQ AFCEE/EC, 8106 Chennault Rd., Brooks Air Force Base, TX, 78235-5318, (210) 536-3869.

d. Designation: Final Environmental Impact Statement (FEIS).

e. Abstract: Pursuant to the DOD Appropriations Act for Fiscal Year 1991 (Public Law 101-511), the Air Force selected the University of Pennsylvania, Philadelphia, PA, as the recipient of a grant to support the initial construction of an Institute for Advanced Science and Technology (IAST). This FEIS has been prepared in accordance with the National Environmental Policy Act of 1969 to analyze the potential environmental consequences of the siting, construction, and operation of the IAST. Although grant disbursement would have few, if any, direct effects, future actions would create direct effects. This document, therefore, includes analyses of the potential impacts that a range of reasonable alternatives may have on the local community, including land use and aesthetics, transportation, utilities, hazardous materials/wastes, geology and soils, water resources, air quality, noise, biological resources, and cultural and archaeological resources. The alternatives include two configurations of the IAST at the Smith Hall site, one of which is the Proposed Action, and two siting alternatives at other campus locations. The impacts of the No Action Alternative are also considered. Potential environmental impacts associated with the Proposed Action would include adverse effects to cultural resources associated with the demolition of Smith Hall and renovations and additions to the Morgan and Music Buildings, all three of which are historic properties. Mitigations proposed include the use of best management practices during construction; agreement to preserve and maintain Morgan, Music, Hayden, Cret, and Towne; architectural salvage of components of Smith Hall; HABS/HAER documentation of Smith Hall, Smith Walk, Morgan Building, and Music Building; coordination of Phase II, III, and IV design for historic and architectural compatibility; preparation of interpretive plan on the history and buildings of the Central Science Precinct; and preparation of a Cultural Resources Management Plan for the University. The potential impacts associated with the alternatives would be similar to those for the Proposed Action, with the exception of two alternatives that would not result in direct adverse effects to Smith Hall and the Morgan and Music Buildings.

THIS PAGE INTENTIONALLY LEFT BLANK

SUMMARY

SUMMARY

PURPOSE AND NEED

Under the Department of Defense (DOD) Appropriations Act for Fiscal Year 1991, Congress directed that at least $10 million be made available as a competitive grant to construct an Institute for Advanced Science and Technology (IAST) to an institution of higher learning that is conducting research in areas that support the DOD Critical Technologies Plan. Congress delegated the authority to administer the grant to DOD, which in turn delegated the responsibility to the Air Force. The Congressional mandate outlined criteria for the recipient institution. After a competitive award process, the Air Force selected the University of Pennsylvania (hereinafter referred to as "University" or "Penn"), in Philadelphia, Pennsylvania, to receive the grant to build the IAST.

Disbursement of the Air Force grant to Penn requires the preparation of an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969. This Final EIS (FEIS) has been prepared to provide information on the environmental impacts that would result from the disbursement, siting, construction, and operation of the IAST on Penn's campus. Several alternative locations, both on and off campus, were considered.

After consideration of this FEIS, the Air Force will issue a Record of Decision (ROD) to document its decision on the disbursement of the grant monies. If expenditure is permitted, the Air Force will also decide which siting and construction alternative and mitigation measures will be implemented by Penn. This decision may affect the environment by influencing the future use of the Penn campus.

ALTERNATIVES INCLUDING THE PROPOSED ACTION

The Air Force has based its evaluation of the potential environmental impacts that would result from the construction and operation of the IAST on the University's Proposed Action, as well as on alternative construction schemes, as follows:

- Proposed Action. Demolition of Smith Hall and the rear wing of the Music Building and Annex; new construction at the Smith Hall site connected to the existing Chemistry Complex; new construction connected to the rear areas of the Morgan and Music Buildings; renovation and restoration of Hayden Hall, the Towne Building, and the Cret Wing; realignment and upgrade of Smith Walk.

- Demolition of a portion of Smith Hall and the rear wing of the Music Building and Annex; new construction at Smith Hall site connected to the existing Chemistry Complex; new construction connected to the rear areas of the Morgan and Music Buildings; renovation and restoration of the remaining portion of Smith Hall, Hayden Hall, the Towne Building, and the Cret Wing.

- Demolition of Edison Building; new construction at the parking lot of the Laboratory for Research on the Structure of Matter (LRSM); renovation and restoration of Hayden Hall, the Towne Building, and the Cret Wing, if funded, would be as described for the Proposed Action.

- Demolition of Lott Tennis Courts; new construction at the tennis courts site; renovation and restoration of Hayden Hall, the Towne Building, and the Cret Wing, if funded, would be as described for the Proposed Action.

SCOPE OF STUDY

The Notice of Intent (NOI) to prepare an EIS for the construction of the IAST was published in the *Federal Register*, July 31, 1992. A public scoping meeting was held on August 19, 1992, at the Wistar Institute in Philadelphia, to identify issues related to the construction of the IAST. The comments and concerns expressed at this meeting and in written correspondence received by the Air Force, as well as information from other sources, were used to determine the scope and direction of studies and analyses required to complete the EIS.

To establish the context in which environmental impacts may occur, potential changes in population and employment, land use and aesthetics, transportation, and community and public utility services are discussed in this FEIS as factors that would be influenced by the construction and operation of the IAST. Hazardous materials and waste management issues are also discussed. Potential impacts to the physical and natural environment are evaluated for soils and geology, water resources, air quality, noise, biological resources, and cultural and archaeological resources. These impacts may occur as a direct result of construction and operation of the IAST or as an indirect result of changes in the surrounding region. The baseline against which the Proposed Action and Alternatives are analyzed is the present conditions at the Penn campus.

SUMMARY OF ENVIRONMENTAL IMPACTS

This FEIS considers the potential environmental impacts of the construction and operation of the IAST at the University of Pennsylvania under the various alternative siting and construction schemes for the IAST. Table S-1 summarizes the impacts, which are discussed in the following text.

The principal area of controversy surrounding the selection of alternatives pertains to the demolition of Smith Hall, a contributing component to the University of Pennsylvania Campus Historic District. The Proposed Action

would demolish that structure and replace it with a much larger, modern building. The potential impacts of that action are being addressed in consultation with the State Historic Preservation Office and the National Advisory Council for Historic Preservation in accordance with Section 106 of the National Historic Preservation Act. The potentially impacted historic resources are detailed in Chapter 3.0, and the impacts and mitigation are detailed in Chapter 4.0.

PROPOSED ACTION

Local Community

The Proposed Action would result in a slight increase in employment and population in the West Philadelphia area. Approximately 50 to 75 construction jobs and 300 long-term faculty and staff jobs would be created.

Land use on campus would not change significantly because of the IAST project; the campus would still be used for academic purposes. Specific changes include constructing a laboratory building on the site of an administrative building. Construction goals would not conflict with local land use policies. Average daily traffic would increase insignificantly with operation of the IAST, but the level of service provided during construction or operation would not change. Pedestrian circulation and vehicle traffic patterns would remain the same. Utility consumption would increase but not impact local suppliers. Aesthetics would be impacted by the replacement of Smith Hall by a modern building, the construction of a rear wing to the Morgan and Music Buildings, and a narrowing of the space bordering Smith Walk at its western terminus.

Hazardous Materials and Hazardous Waste Management

The types of hazardous materials and wastes used and generated as a result of the Proposed Action would be similar to those currently used in the

Table S-1. Summary of Impacts Under Siting Alternatives

Resource Category	Proposed Action	Reuse of a Portion of Smith Hall Alternative	LRSM Parking Lot Alternative	Lott Tennis Courts Alternative	No Action Alternative
Local Community					
• Community Setting					
Direct Employment (construction, short-term)	New construction employment.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	No construction employment.
Direct Employment (operation)	Additional laboratory employment.	Same as Proposed Action.	Additional laboratory employment somewhat greater than Proposed Action.	Additional laboratory employment somewhat greater than Proposed Action.	No new staff.
Campus Population Change	Minor increase in total population - faculty, students, staff.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	No increases.
• Land Use and Aesthetics	Replacement of Smith Hall and additions to Morgan and Music Bldgs. Substantial change in appearances. Changes to Smith Walk character. Creation of new plaza consistent with land use in precinct.	Replacement of Smith Hall 1899 Duhring addition with a new addition. Smith Hall partially demolished. Changes to Smith Walk consistent with land use in precinct. Additions to Morgan and Music Bldgs.	Substantial change in land use. Demolition of LRSM Parking Lot and Edison Building and construction of new building.	Substantial change in land use. Potential detraction from aesthetics of area adjacent to sports facilities. Demolition of tennis courts and construction of new building.	No change in land use. No change in appearance.
• Transportation	Rerouting of traffic during construction. No operational impediments.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	No impacts on transportation systems.
• Utilities	Minimal increase in utilities demand. Minimal impact on local suppliers.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	No change in utilities demand from current level.
Hazardous Materials and Hazardous Waste Management					
• Hazardous Materials Management	Increase in quantities of materials. Use existing emergency response capability.	Same as Proposed Action.	Similar to Proposed Action. Increased handling capability, traffic, deliveries, pickups, and storage required.	Similar to LRSM.	No increase in quantities of materials used.
• Hazardous Waste Management	Increase in quantities of wastes. Use existing collection and disposal system.	Same as Proposed Action.	Similar to Proposed Action. Additional response capability, traffic, deliveries, and pickups required.	Similar to LRSM.	No increase in quantities of waste generated.
• Asbestos	Demolition would require removal and disposal as hazardous waste.	Similar to Proposed Action.	Similar to Proposed Action.	Same as No Action.	Continued management of facilities with asbestos, including eventual removal.
• Lead (Paint)	Demolition may require removal and disposal as hazardous waste.	Similar to Proposed Action.	Same as No Action.	Same as No Action.	Continued management of facilities with lead, including eventual removal.
• Medical/Bio-hazardous Waste	Increase in quantity generated. Use existing collection and disposal system.	Same as Proposed Action.	Increase in quantity generated. Additional collection and disposal required.	Increase in quantity generated. Additional collection and disposal required.	No increase in waste quantity.
Natural Environment					
• Soils and Geology	Minor change of existing topography and soils disturbance.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	No impact.
• Water Resources	Minor increase in water demand requiring additional supply. No impact on local supplies.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	No impact.
• Ground Disturbance (sq ft)	Limited to Smith Hall demolition and new additions.	Variation of Proposed Action.	Approximately same area as Proposed Action.	Approximately same area as Proposed Action.	No change.
• Air Quality	Temporary increase in particulate emissions and exhaust fumes during construction. No operational impacts identified. Air emissions associated with fume hoods currently unregulated by Philadelphia Air Management District, state, or U.S. EPA.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	No increase in air pollutant emissions from present levels.
• Noise	Temporary localized noise increase during construction. No operational impact.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	No impact.
• Biological Resources	No loss of native vegetation. No impact on local biota.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	No impact.
• Cultural Resources	Adverse effect to University of Pennsylvania Campus Historic District associated with razing of Smith Hall and additions to Morgan and Music Bldgs. Restoration, renovation, and reuse of Morgan, Music, and Towne Bldgs., Hayden Hall, and Cret Wing. Change in Smith Walk orientation and ambience.	Adverse effect to University of Pennsylvania Campus Historic District associated with partial razing of Smith Hall and additions to Morgan and Music Bldgs. Restoration, renovation, and reuse of Smith Hall, Morgan, Music, and Towne Bldgs., Hayden Hall, and Cret Wing. Change in Smith Walk ambience.	No University of Pennsylvania Campus Historic District involvement. No cultural or archaeological issues. No planned restoration, renovation, and reuse of Smith Hall, Morgan, and Music Bldgs.	Significant intrusion upon major recreational space. No University of Pennsylvania Campus Historic District buildings directly affected but views of several would be blocked. Potential archaeological impact from excavations in Potter's Field associated with 1870s Philadelphia Almshouse Site. No planned restoration, renovation, and reuse of Smith Hall, Morgan, and Music Bldgs.	No impacts.

department laboratories that would be part of the IAST. However, the amount of materials and wastes is expected to increase. The new facility would follow current Penn policies on the handling, storing, and disposal of hazardous materials.

Hazardous materials and wastes found in the buildings scheduled for demolition would be removed prior to demolition or construction activities. Asbestos-containing material (ACM) and lead paint would be removed in compliance with applicable regulations prior to demolition, renovation, or construction activities. Pesticides, polychlorinated biphenyls (PCBs), and radon are not known to be an issue for any of the alternatives.

Natural Environment

Impacts to geology, soils, native biota, water resources, air quality, and noise would be negligible. Construction activity would change surface drainage flows and may temporarily increase pervious surface areas. Air pollutant emissions would temporarily increase during construction of the IAST. Laboratory emissions would be inconsequential; currently none are regulated by the local, state, or federal governments.

Noise generated at the site during construction and when the IAST is in operation would not exceed City of Philadelphia standards. No short-term or long-term noise impacts would be anticipated.

The Proposed Action would result in the demolition of Smith Hall, a contributing component to the University of Pennsylvania Campus Historic District, and the renovation and restoration of the Morgan and Music Buildings, Hayden Hall, the Towne Building, and the Cret Wing. No effect on archaeological resources is expected.

REUSE OF A PORTION OF SMITH HALL ALTERNATIVE

Local Community

This alternative would have the same impact on the local community as the Proposed Action. Land use, traffic, and utility impacts would also be the same. Aesthetics would be affected because the 1899 Duhring Wing of Smith Hall would be razed and replaced by a new addition. Only a portion of the original Smith Hall would be preserved.

Hazardous Materials and Hazardous Waste Management

There is little difference anticipated between the Proposed Action and this alternative with regard to hazardous materials and wastes.

Natural Environment

There would be no difference between this alternative and the Proposed Action with regard to the natural environment, with the exception of impacts to cultural resources. The partial demolition of Smith Hall would destroy the balance and character of the building. The remainder of Smith Hall would be renovated for office use. Renovation and restoration of the Morgan and Music Buildings, Hayden Hall, Towne Building, and the Cret Wing would continue as described for the Proposed Action.

THE LRSM PARKING LOT ALTERNATIVE

Local Community

This alternative would have an impact upon employment and utilities similar to the Proposed Action. The placement of a laboratory structure on the parking lot is consistent with the land use of the general area. However, construction of the IAST here is inconsistent with the long-term plans of the University, which call for this space to be used for the expansion of the

LRSM facility and the David Rittenhouse Laboratory (DRL).

Transportation impacts during construction could be greater here than at any other alternative site. The closing of one lane of traffic on Walnut Street, a major westbound arterial street in Philadelphia, could result in some traffic impacts for the duration of construction. No operational traffic impacts have been identified.

Hazardous Materials and Hazardous Waste Management

This alternative would require additional personnel and resources for hazardous materials storage, handling, and disposal and response capability. No other differences between this alternative and the Proposed Action have been identified.

Natural Environment

This alternative would have no significant impact on the natural environment, including cultural resources.

THE LOTT TENNIS COURTS ALTERNATIVE

Local Community

This alternative would have an impact upon the local community, transportation, and utilities similar to the Proposed Action. However, placement of a laboratory structure on a tennis court in the midst of the Sports Complex is inconsistent with the University's long-range plans for that area. Such construction would detract from the aesthetics of the University Sports Complex with its open space and historic buildings.

Hazardous Materials and Hazardous Waste Management

This alternative is similar to the LRSM Parking Lot Alternative.

Natural Environment

This alternative would have no significant impact upon natural resources, with the exception of potential impacts upon cultural and historic resources. The Sports Complex is a historically significant ensemble, heavily used by the University and others in the Philadelphia Region. Construction of a seven-story modern laboratory structure adjacent to the older sports structures on open space currently occupied by tennis courts would significantly detract from the historical value of those structures. Additionally, there is a likelihood that the site overlays a potter's field cemetery associated with the Blockley Almshouse, a 19th century Philadelphia charitable institution.

NO ACTION ALTERNATIVE

Local Community

The loss of the IAST would negatively impact Penn's science and engineering programs and could cause the loss of faculty, students, and grant funding. No other impacts would occur to the local community under this alternative.

Hazardous Materials and Hazardous Waste Management

This alternative would not affect the University's management of hazardous materials and waste.

Natural Environment

This alternative would not affect the natural environment. However, the No Action Alternative would result in the loss of an opportunity to restore, rehabilitate, and reuse several contributing components to the University's National Register Historic District.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

		Page
1.0	PURPOSE AND NEED FOR ACTION	1-1
1.1	BACKGROUND	1-1
1.2	PURPOSE AND NEED	1-4
1.3	DECISIONS TO BE MADE	1-6
1.4	ENVIRONMENTAL IMPACT ANALYSIS PROCESS	1-7
1.4.1	Elements and Sequence of the Process	1-7
1.4.2	Scoping of the IAST DEIS	1-8
1.4.3	Public Comment Process	1-10
1.5	CHANGES FROM THE DEIS TO THE FEIS	1-11
1.6	ORGANIZATION OF THIS FEIS	1-11
1.7	RELEVANT FEDERAL PERMITS, LICENSES, AND ENTITLEMENTS	1-12
2.0	ALTERNATIVES INCLUDING THE PROPOSED ACTION	2-1
2.1	INTRODUCTION	2-1
2.1.1	IAST Research	2-1
2.1.2	IAST Operations	2-6
2.1.3	IAST Location	2-7
2.2	DESCRIPTION OF THE PROPOSED ACTION	2-13
2.2.1	Construction Activities and Duration	2-21
2.3	DESCRIPTION OF ALTERNATIVES	2-22
2.3.1	Reuse of a Portion of Smith Hall Alternative	2-22
2.3.2	LRSM Parking Lot Alternative	2-23
2.3.3	Lott Tennis Courts Alternative	2-29
2.3.4	No Action Alternative	2-33
2.4	ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION	2-34
2.5	OTHER FUTURE ACTIONS IN THE REGION	2-35
2.6	COMPARISON OF ENVIRONMENTAL IMPACTS	2-37
3.0	AFFECTED ENVIRONMENT	3-1
3.1	INTRODUCTION	3-1
3.2	LOCAL COMMUNITY	3-3
3.2.1	Community Setting	3-5
3.2.2	Land Use and Aesthetics	3-5
3.2.3	Transportation	3-14
3.2.4	Utilities	3-20
3.2.5	Solid Waste	3-20
3.3	HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT	3-21
3.3.1	Hazardous Materials Management	3-22
3.3.2	Hazardous Waste Management	3-24
3.3.3	Asbestos, Lead, and Mercury	3-27

TABLE OF CONTENTS
(Continued)

Page

3.3.4 Radon 3-28
3.3.5 Medical/Biohazardous Wastes (Infectious Wastes) 3-29
3.4 NATURAL ENVIRONMENT 3-29
3.4.1 Geology and Soils 3-29
3.4.2 Physiography 3-30
3.4.3 Water Resources 3-31
3.4.4 Air Quality 3-31
3.4.5 Noise 3-36
3.4.6 Biological Resources 3-39
3.4.7 Cultural and Archaeological Resources 3-40

4.0 ENVIRONMENTAL CONSEQUENCES 4-1
4.1 INTRODUCTION 4-1
4.2 LOCAL COMMUNITY 4-2
4.2.1 Proposed Action 4-2
4.2.2 Reuse of a Portion of Smith Hall Alternative 4-8
4.2.3 LRSM Parking Lot Alternative 4-10
4.2.4 Lott Tennis Courts Alternative 4-12
4.2.5 No Action Alternative 4-14
4.3 HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT 4-15
4.3.1 Proposed Action 4-15
4.3.2 Reuse of a Portion of Smith Hall Alternative 4-17
4.3.3 LRSM Parking Lot Alternative 4-18
4.3.4 Lott Tennis Courts Alternative 4-19
4.3.5 No Action Alternative 4-20
4.4 NATURAL ENVIRONMENT 4-21
4.4.1 Proposed Action 4-21
4.4.2 Reuse of a Portion of Smith Hall Alternative 4-34
4.4.3 LRSM Parking Lot Alternative 4-36
4.4.4 Lott Tennis Courts Alternative 4-37
4.4.5 No Action Alternative 4-39
4.5 SUMMARY OF ENVIRONMENTAL CONSEQUENCES 4-40
4.6 CUMULATIVE ENVIRONMENTAL EFFECTS 4-42

5.0 CONSULTATION AND COORDINATION 5-1

6.0 LIST OF PREPARERS 6-1

7.0 LIST OF REFERENCES 7-1

8.0 INDEX 8-1

TABLE OF CONTENTS
(Continued)

9.0 PUBLIC COMMENTS AND RESPONSES 9-1
9.1 INTRODUCTION 9-1
9.2 ORGANIZATION 9-2
9.3 COMMENTORS 9-3
9.4 TRANSCRIPT OF PUBLIC HEARING AND WRITTEN STATEMENTS RECEIVED AT THE PUBLIC HEARING OR THROUGH THE MAIL AND RESPONSES TO COMMENTS 9-9
9.4.1 Public Hearing Transcript and the Air Force Responses 9-9
9.4.2 Public Hearing Materials and the Air Force Responses 9-11
9.4.3 Comment Letters and the Air Force Responses 9-13
9.5 GENERALIZED RESPONSE TO CONSOLIDATED COMMENTS 9-15
9.5.1 Introduction 9-15
9.5.2 Generalized Response to Consolidated Comments 9-15

APPENDICES

A — GLOSSARY OF TERMS, ACRONYMS, AND ABBREVIATIONS

B — NOTICE OF INTENT; NOTICE EXTENDING THE SCOPING PERIOD

C — IAST-EIS MAILING LIST

D — TRAFFIC STUDY

E — EXPOSURE ASSESSMENT

F — NOISE STUDY

G — MEMORANDUM OF AGREEMENT

H — SMITH HALL NATIONAL REGISTER OF HISTORIC PLACES NOMINATION

LIST OF TABLES

Table		Page
1.4-1	Summary of Disposition of Public Scoping Comments	1-10
2.1-1	Potential Expansion Locations	2-9
2.5-1	Projected Construction Work on the Penn Campus and Immediately Adjacent Areas Exclusive of the IAST (1993-1995)	2-36
2.6-1	Summary of Impacts Under Siting Alternatives	2-39
3.2-1	Ambulance Count at Interaction of 34th Street and Spruce Street	3-17
3.2-2	Pedestrian Crosswalk Count on 34th Street	3-18
3.2-3	Pedestrian Crosswalk Count on 33rd Street	3-19
3.3-1	Percent Composition of University of Pennsylvania Hazardous Waste Generated in 1992 vs. University of California, Los Angeles, Hazardous Waste in 1989	3-26
3.4-1	Air Quality Measurements and Standards	3-33
9.3-1	Index of Statements Received by Individual	9-4
9.3-2	Index of Statements by Type and Code	9-6

LIST OF FIGURES

Figure		Page
2.1-1	Project Site Map with Alternative Sites	2-11
2.1-2	Project Site Existing Conditions Model Looking East	2-14
2.2-1	Proposed Action Site Plan	2-15
2.2-2	Proposed Action: Elevation Along 34th Street	2-16
2.2-3	Existing Conditions View at Smith Walk Looking West	2-19
2.2-4	Proposed Action View at Smith Walk Looking West	2-20
2.3-1	Reuse of a Portion of Smith Hall Alternative Site Plan	2-24
2.3-2	Reuse of a Portion of Smith Hall Alternative—Elevation Along 34th Street	2-25
2.3-3	LRSM Parking Lot Alternative Site Plan	2-27
2.3-4	LRSM Parking Lot Alternative Site Model Looking East	2-28
2.3-5	Lott Tennis Courts Alternative Site Plan	2-31
2.3-6	Lott Tennis Courts Alternative Site Model Looking East	2-32
3.1-1	IAST Project Site, Historic District and Institutional Development District Boundaries	3-2
3.2-1	Location Map of the IAST Project and General Region of Influence	3-4
3.2-2	Current Land Uses	3-7
3.2-3	Principal Traffic Components	3-15
3.4-1	Noise Measurement Locations	3-38

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 1.0
PURPOSE AND NEED FOR ACTION

1.0 PURPOSE AND NEED FOR ACTION

This Final Environmental Impact Statement (FEIS) examines the potential environmental impacts that may result from funding the construction of the Institute for Advanced Science and Technology (IAST) at the University of Pennsylvania, Philadelphia, Pennsylvania (hereinafter referred to as "University" or "Penn"). This document has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR 1500-1508), and the U.S. Air Force (Air Force) Environmental Impact Analysis Process Regulations [32 CFR 989; Air Force Regulation (AFR) 19-2].

1.1 BACKGROUND

The University of Pennsylvania has long been considered one of our country's premier scientific research institutions. Since 1970, Penn scholars and scientists have been awarded 7 Nobel Prizes, 147 Guggenheim Fellowships, and 31 Presidential Young Investigatorships. Yet, by the mid-1980s, it had become clear to the University that its standing as a research institution was in jeopardy of being compromised by overcrowded and outdated facilities. Consequently, in 1987, Penn created an Ad Hoc Planning Committee to survey and evaluate needs and to develop plans for new and renovated research facilities for the natural sciences and engineering.

In the course of its study, the Ad Hoc Planning Committee identified three principal goals that it believed would have to be met by any proposal for new construction and renovation:

1. The Committee determined that to enhance the University's standing as a research institution, it should focus its attention on developing its strength in science and engineering research by developing a modern center for such research;

2. The Committee believed that future breakthroughs in scientific and engineering research would be significantly promoted if synergism between the chemistry and engineering disciplines were encouraged through the collocation of these disciplines in a single integrated facility; and

3. The Committee concluded that the already crowded campus dictated that any proposal for new construction or renovation make maximum use of available campus space and existing facilities.

With these goals in mind and because no major new dedicated research laboratory space had been added since 1973, the Ad Hoc Planning Committee concluded that remedying this need was critical. In particular it found that the Chemistry Department and several of the departments in the School of Engineering and Applied Science (SEAS) required major new administrative and laboratory space totaling between 130,000 and 150,000 net square feet (NSF). Of this total, 30,000 NSF could be met by renovating space within the current SEAS and Chemistry Buildings, leaving approximately 100,000 to 120,000 NSF to be provided by new construction.

To meet its goals, in 1988 the Committee recommended a major campus development program within the existing Chemistry and Engineering Complexes. An Ad Hoc Planning Committee report identified all available sites in the vicinity of the existing School of Arts and Sciences (SAS) and SEAS facilities for possible expansion. These sites formed the basis for a 1988 site capacity feasibility study conducted for Penn's Department of Facilities Planning (VSBA, November 1988). The study evaluated the appropriateness of four sites in terms of building mass and configurations deriving from generic laboratory building plans. Defined research programs, historical site assessments, and construction cost analyses were not considered in this study. The 1988 feasibility study concluded that SAS/SEAS needs for additional dedicated research space were best met by

the expansion of existing facilities on 34th Street adjacent to the Chemistry Building.

The IAST concept evolved from the above considerations. In 1990 and 1991, questions of expansion and modernization of engineering and chemistry-related science facilities in the context of Penn's campus and historic buildings were readdressed as a followup to the 1988 study for SAS/SEAS expansion.

Extensive analyses were conducted to compare and contrast eight different construction locations and configurations for the IAST. These studies were completed to assist the University in its planning activities and for presentations to the Philadelphia Historic Commission. Pursuant to the City of Philadelphia's Historic Preservation Ordinance, the Commission had jurisdiction with respect to the issuance of demolition permits for buildings that the City had certified as historic. Several buildings in the Chemistry and Engineering Complexes were so certified. The Historic Commission approved the issuance of a demolition permit for Smith Hall in 1991; the approval was affirmed by the City's License and Inspection Review Board later that year and this decision was affirmed by the Court of Common Pleas of Philadelphia County on February 26, 1993.

The development of a multidisciplinary complex of research facilities envisioned by Penn as the IAST was similar to a 1991 Department of Defense (DOD) Request for Proposals (RFP) directed toward institutions of higher learning. This RFP provided for construction grants as outlined in Public Law 101-510, Section 243. The institution selected for the grant had to:

1. Be a nationally recognized center conducting artificial intelligence research and education in the areas of natural language and speech processing and task-oriented computer animation;

2. Be carrying out research on electronically and ionically conducted

organic polymers; and

3. Have demonstrated competence in research and education in nonlinear optics and visual analysis.

Penn responded to the Air Force Office of Scientific Research (AFOSR) Special Announcement No. 91-4 and applied for a grant to obtain partial funding for construction of Phase I of an IAST. The program of Penn's proposed IAST was derived from the recommendations of the Ad Hoc Planning Committee. After a competitive award process, AFOSR selected Penn to receive a grant of $10 million appropriated by Congress in FY 1991 to support initial construction of the IAST. The grant provided that Penn may not expend grant funds until all requirements of NEPA are met. The Air Force has determined that preparation of an EIS is necessary to meet this requirement.

Subsequent to this initial award, a second appropriation in the amount of $10 million was made for the IAST project. In addition, the possibility exists that Congressional appropriations may become available to Penn for the IAST project in subsequent fiscal years. Congress also required that the initial grant to Penn and any additional funds awarded through later AFOSR grants be used to support the DOD Critical Technologies Plan. The Critical Technologies Plan identifies 11 key technology areas grouped in seven major thrusts. Future DOD science and technology investments would be focused in these areas.

1.2 PURPOSE AND NEED

To achieve some of the Ad Hoc Planning Committee's recommendations for new and renovated facilities consistent with the DOD Critical Technologies Plan, the University proposed construction of a centralized research complex, the IAST, within the University campus. To meet the goals and objectives of Congress and Penn for the IAST, additional floor space, beyond what already exists at Penn, would be needed. Penn already

conducts a substantial amount of research under previously awarded federal and other grants; however, the availability of existing floor space for new research is extremely limited. In a recent survey of engineering programs at 15 peer institutions, Penn ranked second in faculty research funding per square foot of laboratory space, but ranked last in research space per faculty member. Researchers in chemistry are similarly cramped. Overcrowded laboratory space has limited Penn's existing research capability.

To ensure the proposed IAST would promote and support additional chemistry and engineering research programs, approximately 105,000 NSF of new research laboratory space would be required. The balance would be provided by the renovation of existing facilities. Approximately 60,000 NSF of the new space would be allocated for wet laboratory research facilities, with the remaining 45,000 NSF allocated for dry laboratory engineering and computer-related research facilities.

To best meet the goals of Penn's proposal to the AFOSR, the IAST should:

- Promote interaction among the University's faculty within the various relevant specialty fields of study. As a consequence, the IAST site should be in close proximity to Penn's existing Engineering and Chemistry Complex. The IAST would serve as a centralized complex, allowing faculty from different scientific disciplines to research problems in evolving and diverse areas. These areas would range from biomolecular studies to studies designed to minimize human injury in the workplace. The disciplines would include Chemistry and Chemical Engineering; Bioengineering; and Computer, Information, and Cognitive Science. Therefore, the location of the IAST must be such as to maximize the use of its facilities by faculty from the SEAS and the SAS. Such a location would ensure that current centralized research facilities in the Chemistry Department that house

computers; nuclear magnetic resonance (NMR) imaging, mass spectroscopy, X-ray, DNA, and peptide facilities; the regional laser laboratory; and electronics and glass shops remain easily accessible to researchers in the IAST.

- Promote interaction between IAST and non-IAST students/ faculty in facilities already located at Penn. The site chosen for the IAST must provide an academic environment encouraging strong interaction among students and faculty having diverse scientific and technical backgrounds and experience.

- Promote, through the Center for Technology Transfer (CTT), the exploitation of scientific and technological advances made at Penn for the public benefit. Increasing interaction among Penn faculty and students and private corporations should lead to the development of societally useful products.

- Ensure that the siting of the IAST on Penn's campus is consistent with the University's land use and landscape plans and the historic resources studies, plans, and goals.

1.3 DECISIONS TO BE MADE

The Air Force must decide whether or not to grant federal funds for construction of the IAST as proposed by Penn. Prior to making this decision, the Air Force will consider the environmental impacts identified in the FEIS that are associated with Penn's proposal. In addition to Penn's siting proposal, the FEIS addresses the environmental impacts of three reasonable IAST siting alternatives and the No Action Alternative. The impacts associated with the alternatives provide a comparative basis upon which the Air Force decisionmaker can evaluate the environmental impacts of Penn's proposal.

After consideration of this FEIS, the Air Force will issue a Record of Decision (ROD). The ROD will document the Air Force's decision on the expenditure of federal funds for construction of the IAST as proposed by Penn. The ROD will also document what mitigation measures Penn must implement in constructing and operating the IAST if Penn's proposal is approved for federal funding. If the Air Force decides not to issue the grant for Penn's siting proposal, the Air Force will specify in the ROD which siting alternative, if any, and what mitigation measures would be acceptable for federal funding.

1.4 ENVIRONMENTAL IMPACT ANALYSIS PROCESS

1.4.1 Elements and Sequence of the Process

NEPA established a national policy to protect the environment and to ensure that federal agencies consider the environmental effects of actions in their decisionmaking. NEPA also established the CEQ to oversee and recommend national policies to improve the quality of the environment. Subsequently, CEQ published regulations that describe how NEPA should be implemented (40 CFR Parts 1500-1508). The CEQ regulations encourage federal agencies to develop and implement procedures that facilitate the NEPA process in order to avoid or minimize adverse effects on the environment (40 CFR 1500.2). Air Force Regulation 19-2 (32 CFR Part 989) addresses the implementation of NEPA as part of the Air Force planning and decisionmaking process.

NEPA and AFR 19-2 provide guidance on the types of actions for which an EIS must be prepared. Once it has been determined that an EIS is necessary, the proponent must publish a Notice of Intent (NOI) to prepare an EIS. This formal announcement signifies the beginning of the scoping period during which the major environmental issues to be addressed in the EIS are identified.

A Draft Environmental Impact Statement (DEIS) is first prepared, which includes the following:

- A statement of the purpose of and need for the action (Chapter 1.0).
- A description of the Proposed Action and Alternatives, including the No Action Alternative (Chapter 2.0).
- A description of the environment that would be affected by the Proposed Action and Alternatives (Chapter 3.0).
- A description of the potential environmental consequences of the Proposed Action and Alternatives (Chapter 4.0).

The DEIS is filed with the U.S. Environmental Protection Agency (EPA) and is circulated to the interested public and government agencies for a period of at least 45 days for review and comments. During the review period, a public hearing may be held so that the proponent can summarize the findings of the analysis and receive comments from the affected public. At the end of the review period, all substantive comments received must be addressed. An FEIS is then produced that contains responses to comments as well as changes to the document, if necessary. The FEIS is filed with the EPA and distributed in the same manner as the DEIS. Once the FEIS has been available for at least 30 days, the Air Force may publish an ROD.

1.4.2 Scoping of the IAST DEIS

Regulations promulgated by the CEQ include a requirement for "an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action" (40 CFR 1501.7). The process, known as "scoping," has been conducted by the Air Force for the proposed IAST as follows:

- An NOI to prepare an EIS for the proposed expenditure of federal funding for construction of the IAST was published in the *Federal Register*, July 31, 1992, and invited the participation of affected or interested federal, state, and local agencies and the public in the EIS process. This announcement initiated the federal scoping process. (A copy of the *Federal Register* notice is provided in Appendix B of this document.)

  The August 19, 1992, scoping meeting was held at the Wistar Institute Auditorium on the Penn campus in Philadelphia with Lt. Col. Gary Baumgartel of the Air Force Center for Environmental Excellence, Environmental Planning Division, presiding; approximately 75 people attended and 13 made presentations. The Proposed Action and Alternatives were described, issues were identified, and questions were raised by attendees.

- The public comment period was extended approximately 15 days in response to comments raised at the scoping meeting, resulting in a substantial enlargement of the public notification process, including time for public participation in the scoping process. During the comment period, the Air Force and Penn issued multiple information notices and distributed an information brochure.

Preparation of the EIS began following the scoping meeting. The public's concerns were considered in defining the scope and the significance of issues to be included in the EIS. The general nature of these concerns and their disposition are identified in Table 1.4-1. The resulting scope of study is outlined in the Table of Contents of this FEIS. The conclusions of the environmental analysis are reported in the various chapters of this document.

Table 1.4-1. Summary of Disposition of Public Scoping Comments

Concern	Disposition
Historical and aesthetic effects of demolishing Smith Hall, replacing it with a modern building, and the effect on Smith Walk.	Topics are evaluated in Chapter 4.0 under Local Community and Natural Environment.
Feasibility of evaluating alternative construction sites.	Alternatives are described in Chapter 2.0 and evaluated in Chapter 4.0.
Environmental hazards of research conducted within the proposed IAST.	Environmental hazards are evaluated in Chapter 4.0 under Hazardous Materials and Hazardous Waste Management and under Natural Environment.
The need for public involvement in the EIS process.	Public involvement is prescribed by NEPA and is implemented through the scoping and public comment process.
The consequences of conducting secret weapons research at the IAST.	The types of research that are anticipated at the IAST are described in Chapter 2.0. The University requires that all research agreements permit the unrestricted dissemination of all findings and conclusions.

Publication of the DEIS initiated a comment period of at least 45 days. A public hearing on the DEIS was held at the University of Pennsylvania on March 30, 1993. Copies of the DEIS were mailed to all interested parties. (A list is provided in Appendix C of this document.)

1.4.3 Public Comment Process

The DEIS was made available for public review and comment in February 1993. A Notice of Availability was published by the EPA on March 5, 1993 (58 *Federal Register* 12584). Copies of the DEIS were mailed to local libraries and provided to those individuals who requested copies. At a public hearing held on March 30, 1993, the Air Force presented the findings of the DEIS and invited public comments. Chapter 9.0, Public Comments and Responses, more thoroughly describes the comment and response process. All comments were reviewed and addressed, where applicable, and are included in their entirety in Chapter 9.0.

1.5 CHANGES FROM THE DEIS TO THE FEIS

The text of the DEIS was revised, where appropriate, to make typographical corrections and minor editorial changes or to incorporate clarifying information generated both prior to and after the DEIS publication, particularly in regard to aesthetics and cultural resources. The comments on the DEIS have been fully addressed in Chapter 9.0, and responses to comments indicate the relevant sections of the DEIS that were revised.

1.6 ORGANIZATION OF THIS FEIS

This FEIS is organized into several chapters and appendices. Chapter 2.0 provides a description of the Proposed Action and Alternatives to the Proposed Action. Alternatives eliminated from further consideration are also discussed. Chapter 3.0 describes the current conditions of the environment that may be affected by the Proposed Action and Alternatives. The current environment will serve as a baseline for analyzing and comparing the environmental effects of the Proposed Action and Alternatives. Chapter 4.0 examines the potential environmental effects of the Proposed Action and compares them to the effects of the alternatives with respect to the local community and the natural environment. Chapter 5.0 includes a list of the individuals and organizations consulted during the preparation of this FEIS. Chapter 6.0 provides a list of document preparers. Chapter 7.0 contains a list of references, and Chapter 8.0 contains an index to this document. Chapter 9.0 provides a complete list of public comments and the Air Force's response to those comments.

The following appendices are included:

- Appendix A — Glossary of Terms, Acronyms, and Abbreviations
- Appendix B — Notice of Intent and Notice Extending the Scoping Period

- Appendix C — List of Individuals and Organizations that Were Sent a Copy of the FEIS
- Appendix D — Traffic Study
- Appendix E — Exposure Assessment
- Appendix F — Noise Study
- Appendix G — Memorandum of Agreement
- Appendix H — Smith Hall National Register of Historic Places Nomination

1.7 RELEVANT FEDERAL PERMITS, LICENSES, AND ENTITLEMENTS

Although air emissions from the IAST structure, either during construction or operation, are not currently regulated, it is conceivable that future regulations promulgated by the EPA, delegated through the Pennsylvania Department of Environmental Resources (PADER) to the Philadelphia Air Management Service, may require an air emissions permit for laboratory emissions.

Project activities that may affect properties with archaeological or historical significance require consultation under Section 106 of the National Historic Preservation Act. The demolition, renovation, and reuse activities proposed under either the Proposed Action or the Reuse of a Portion of Smith Hall Alternative would adversely affect Smith Hall and the Morgan and Music Buildings. Those impacts are being addressed in consultation with the Pennsylvania Historical and Museum Commission (the State Historic Preservation Office, or SHPO), the Philadelphia Historical Commission, and the National Advisory Council for Historic Preservation.

The handling of radioactive materials, even in the small quantities used by Penn's research laboratories, is regulated by the U.S. Nuclear Regulatory Commission (NRC) through a license and permit for the handling and storage of nuclear waste. Current permits and licenses held by the University would be amended to accommodate the potential additions from IAST research.

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 2.0
ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 INTRODUCTION

NEPA requires the analysis of all reasonable alternatives. The Air Force has examined previous University studies; generic considerations such as research foci, operational needs, and basic siting criteria, including a campus location proximal to existing facilities; and scoping input. Four alternatives are identified in this FEIS: the Proposed Action, Reuse of a Portion of Smith Hall, the Laboratory for Research on the Structure of Matter (LRSM) Parking Lot, and the Lott Tennis Courts. The No Action Alternative is also considered.

Other alternatives that were identified but eliminated from further consideration are briefly described. The potential environmental impacts of the Proposed Action and Alternatives are summarized in Table 2.6-1.

All of the alternative plans are conceptual in nature. In order to analyze the potential environmental impacts, a set of general assumptions was made. These assumptions include the nature of the research to be performed, specific operational characteristics of the facility, employment changes, and details of building construction activities. Specific assumptions for each alternative are discussed in Sections 2.2 and 2.3.

2.1.1 IAST Research

The three proposed Centers of Excellence in the IAST are: the Center for Excellence in Chemistry and Chemical Engineering (CECCE); the Center for Excellence in Bioengineering (CEB); and the Center for Excellence in Computer, Information, and Cognitive Science (CECICS). The research foci of these three centers form the basis for the physical requirements of the IAST. In addition, the two proposed resource centers of the IAST, the Center for Scientific and Technological Information Resources (CSTIR) and the Center for Technology Transfer (CTT), would be

designed to allow the IAST research programs to use efficiently the vast stores of scientific and technological information that are available and to introduce the results of the academic research into the commercial sector.

The CECCE would allow the departments of those disciplines to strengthen their research in the areas of new material and catalyst development, chemistry of life processes, biomolecular and cellular engineering, and theoretical and experimental physical chemistry. The goal of this research would be to understand structure and process at microscopic and submicroscopic levels. New space would allow the CECCE to lead research in biotechnology, parallel computing, propulsion, and semiconductors. In addition, the CECCE would contribute in the areas of energy resources, catalysis, advanced materials design and fabrication, and real-time laser spectroscopy. The CECCE would determine molecular structure, using X-ray crystallography, X-ray and laser light scattering, nuclear magnetic resonance (NMR) spectroscopy, and computer modeling. These facilities would build upon the large investments the Chemistry Department already has made in each of these areas.

Specific objectives for research and training within the CECCE include:

- Developing lightweight conducting polymers and high-power rechargeable batteries that will permit significant weight reduction in the manufacture of motor vehicles, aircraft, and space vehicles and lead to the production of inexpensive solar cells.

- Developing new therapeutic agents, including the possible exploration of approaches that could lead to gene therapy, based on a detailed understanding of the structure, function, and mutual interaction of cellular components, in particular enzymes and their substrates and inhibitors, other proteins, nucleic acids, carbohydrates, and membranes.

- Optimizing receptor-mediated processes for the separation of biological cells, a key step for the practical exploitation of biotechnology.

- Studying catalysts of chemical reactions and how they can be controlled, with strong applications to the optimization of chemical manufacturing procedures, e.g., by reducing energy requirements.

- Developing rapid-burn materials with value as propellants.

- Developing and gaining a theoretical understanding of new materials that improve performance characteristics of semiconductor devices, lubricants, adhesives, coatings, and electronic displays.

- Using lasers to study ultrafast life processes, some taking less than one millionth of a second, with potential application in the development of ultrafast switches.

The CEB would enable members of the Bioengineering Department to pursue research and training in three principal areas: visual and sensory systems, human injury, and molecular and cellular bioengineering. Work in these areas would be linked by a common theme: to incorporate the human factor into considerations of modern technology. This linkage would enable research in these areas to look at the effects of high mechanical stress environments and also allow multidisciplinary approaches to problem selection and resolution.

The research and training objectives of the CEB include:

- Exploiting analytical, computational, and neuroengineering techniques to elucidate the fundamental mechanisms of visual perception, as well as the overall integration of the

visual system. An important extension of this work is the examination of the visual system under conditions of stress, for example, when subjected to high gravity forces.

- Determining the amplitude and frequency of mechanical, electrical, and electromagnetic stimuli to the body that give rise to adaptive responses that are either beneficial or detrimental to human health. This work has potential application in the treatment of sickle-cell anemia; osteoporosis; tendon, ligament, and central nervous system repair; and wound healing. It is also important for the development of rational safety standards regarding exposure to such stimuli.

- Developing new materials that promote implant integration into the affected tissue, thus increasing the effectiveness and longevity of prosthetic devices.

- Articulating strategies for minimizing injuries to human beings in the workplace and the general environment at all levels of structural organizations: whole body, organs, tissue, and individual cells.

- Developing devices for improved diagnosis, particularly in the areas of muscular and skeletal diseases and injuries.

The goal of the CECICS would be to create an environment in which researchers would work on emerging problems that cut across their individual disciplines. University faculty in the disciplines of computer science, logic, linguistics, philosophy, and psychology have developed significant interdisciplinary research strengths in perception and action, language acquisition, and language processing. Three areas would dominate the research program of the CECICS: language and speech, machine perception and robotics, and task-oriented computer animation.

Research and training in the CECICS will focus on:

- Providing a foundation in theory and practice for computer systems that will be able to use natural language in interactions with human users and in extracting information from standard texts. One consequence of this work will be the more productive use of work stations by a larger number of modestly trained workers.

- Developing and enlarging the scope of machine perception, with particular emphasis on determining the information needs of a robotic system that will enable it to function in an unknown or unstructured environment.

- Exploiting the modeling and animation of human and robotic agents for such purposes as design assessment, human factors, task stimulation, and understanding of human movement.

The CSTIR would serve as an engineering and physical science library. The CSTIR would support scientific and engineering research through the use of state-of-the-art electronic databases and files, reference services, access technologies, and electronic scanning and delivery techniques, as well as traditional print materials. The CSTIR would replace the current overcrowded and outdated libraries that serve the Engineering and Physical Science departments.

The CTT was founded in 1986. Its major goals are to introduce the results of academic research into the commercial sector. Operating within the IAST, the CTT would provide technology brokerage services, developing strategic partnerships with companies, and serve as the locus for stimulating stronger interactions between the University and the corporate community.

2.1.2 IAST Operations

As research interests evolve, the use of the IAST would, in turn, also evolve. Therefore, uses and operations over the long term cannot be described with precision with regard to such issues as space and laboratory assignments, use of chemicals, and potential waste streams. However, research areas and protocols in the short term (5 to 10 years) are expected to be similar to those underway elsewhere on campus, with the following exceptions:

- Live animals would not be kept or raised in either the Phase I or Phase II structures.
- Cell cultures would be used in some laboratories, but would be free of either human or animal pathogens.
- No gene therapy or transgenic work on human or animal subjects is expected to be performed in the IAST.

Research involving the synthesis and characterization of biologically active molecules, which includes investigations requiring the replication of DNA, would be carried out in the IAST. However, no infectious systems would be used, and all such work would be carried out in conformance with University biosafety controls.

Radiation sources would be located within the IAST. These sources would be identical to those now used on campus. Radiation sources include radioisotopes used as "tags" in the synthesis or characterization of biologically active molecules. The volume of radioisotopes used is very small, and all users must be certified for such use. Substantial controls and protocols are already in place for the safe use and handling of these materials and equipment.

Sources of electromagnetic radiation within the IAST would include small magnetic sources used in cell culture analysis, X-rays used in molecular structure analysis, and other analytical instrumentation, such as spectrophotometric equipment, NMR spectrometry, and lasers. For comparative purposes, all of these sources are low-power analytic equipment, significantly smaller than the diagnostic and therapeutic equipment found in most modern hospitals. No research would involve the impact of directed energy or radiation upon thought processes.

Chemicals that would be used in the IAST would be similar to those already used in chemistry laboratories on campus. The volumes of the materials would be in small laboratory scale units. As defined by the Occupational Safety and Health Act (OSHA), "Laboratory scale means work with substances in which the containers used for reactions, transfers, and other handling of substances are designed to be easily and safely manipulated by one person." Laboratory protocols for safety, hygiene, and disposal are already in use throughout the campus. The materials handled within the IAST would be handled in the same manner. Chemicals that could potentially be used include flammable liquids, flammable solids, flammable gases, corrosives, oxidizers, halogenated and nonhalogenated solvents, and ammonia.

2.1.3 IAST Location

In reviewing the space needs of the natural science and engineering programs at the University and in preparing its proposal to the AFOSR, Penn considered some 20 options for accommodating IAST needs. These potential expansion locations are listed in Table 2.1-1. The possibilities range from sites located off-campus to those involving the renovation and infill of existing spaces within the Central Science Precinct, defined as the block bounded by 33rd, 34th, Walnut, and Spruce Streets (Figure 2.1-1).

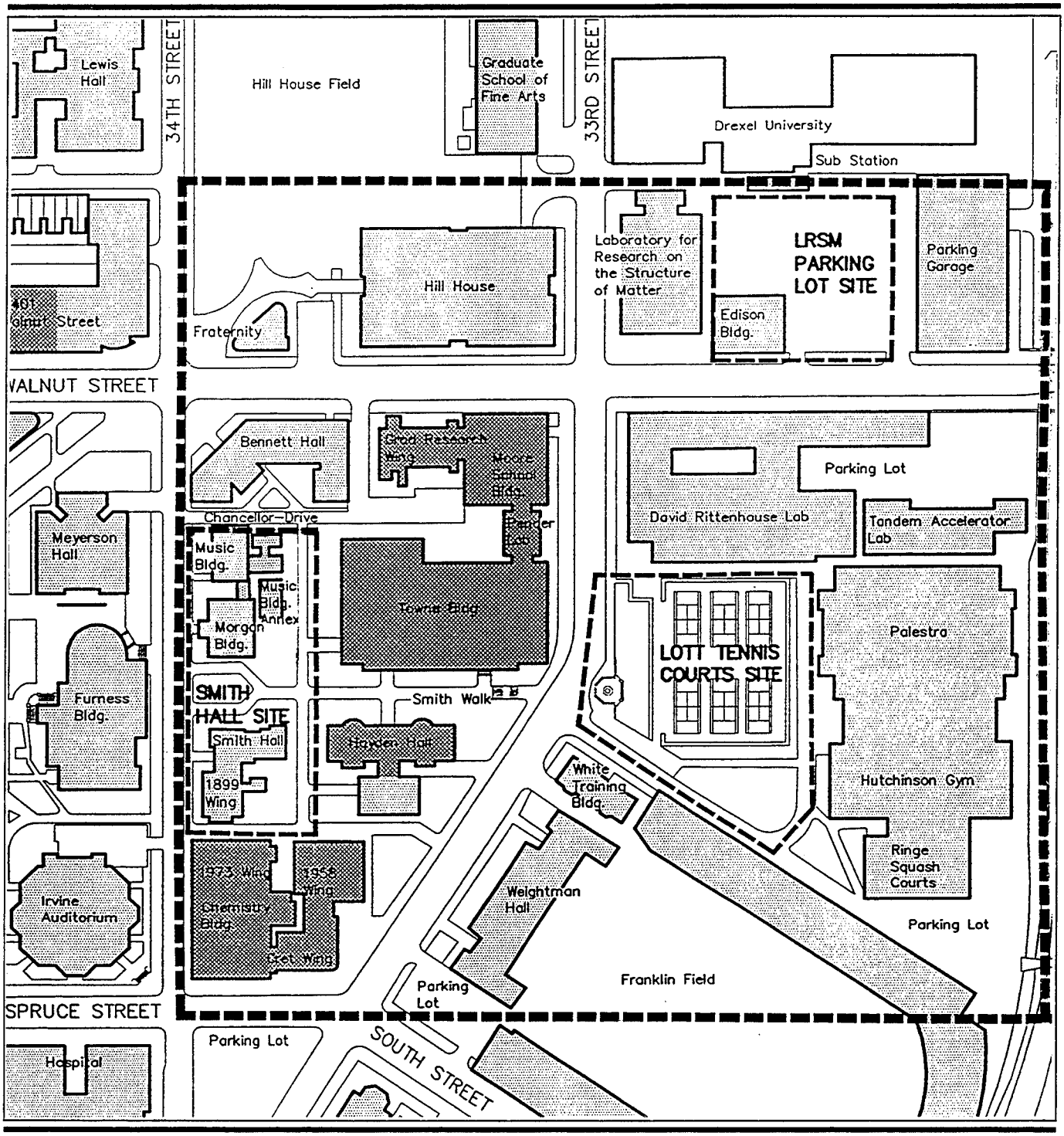
Off-campus locations were eliminated from further consideration because they did not meet the basic requirement that the IAST be located in close

THIS PAGE INTENTIONALLY LEFT BLANK

Table 2.1-1. Potential Expansion Locations

Alternatives Considered	Criteria					
	Proximity to Central Science Precinct and/or Existing IAST Programs	Net Lab Space	Cost	Aesthetics	Land Use Consistency	Preservation of Historical Building
Wet Lab Construction						
• Vertical expansion; 1973 Wing	Adjacent	Existing structure limits; insufficient space for IAST.	Not estimated.	Added height overwhelms adjacent buildings.	Consistent with use.	N/A
• 34th St. Chemistry infill	Adjacent	Insufficient space available.	Not estimated.	Blocks views of adjacent buildings.	Consistent with use.	Adverse effect on Cret Wing and Hayden Hall.
• Replace Cret Wing	Adjacent	Insufficient lab space; offices only.	Not estimated.	Affects major corner site.	Consistent with use.	Destroys Cret Wing.
• Reuse Smith Hall	Adjacent	Does not meet wet lab space requirement.	Excessive cost for required renovation.	No impact.	Consistent with use	Preserves exterior of Smith Hall.
• Reuse Smith Hall with infill addition	Adjacent	Provides only 75% of lab space.	Excessive cost for required renovation.	Loss of Hayden Hall courtyard.	Consistent with use.	Preserves exterior of Smith Hall.
• Reuse Smith Hall and replace 1899 wing of Smith Hall	Adjacent	Provides sufficient space.	Excessive cost for required renovation.	Addition exceptionally large to meet wet lab needs.	Consistent with use.	Preserves a portion of Smith Hall.
Dry Lab Construction						
• Vertical expansion of Moore Bldg	Adjacent	Insufficient dry lab space.	Excessive construction cost.	Building size overwhelms existing structure.	Consistent with use.	Preserves historic buildings.
• Towne Building infill	Adjacent	Insufficient dry lab space.	Excessive construction cost.	Building size overwhelms existing structure.	Consistent with use.	Affects historic buildings.
• Engineering Court infill	Adjacent	Meets dry lab space needs.	Excessive construction cost.	Building size overwhelms existing structures.	Consistent with use.	Preserves adjacent historic buildings.
Combined (Wet and Dry Lab Construction)						
• Off Campus Locations	Not proximate	Adequate	Excessive acquisition cost and added cost to replicate staff and support systems.	N/A	N/A	N/A
• Lott Tennis Courts[a]	Near Precinct and programs but not adjacent	Meets space needs.	Added costs for replication of staff and service systems.	Infringes on existing open space.	Not consistent with campus land use plan.	Preserves historic buildings, but blocks views.
• Hill Hall Parking Lot	Near Precinct and programs but not adjacent	Meets space needs.	Added costs for replication of staff and service systems.	Infringes on existing green space.	Not consistent with campus planning goals.	N/A
• LRSM Parking Lot[b]	Near Precinct and programs but not adjacent	Meets space needs.	Added costs for replication of staff and service systems.	No impact.	Not consistent with LRSM expansion plan.	N/A
• David Rittenhouse Laboratory infill	Near Precinct and programs but not adjacent	Does not meet space needs.	Added costs for replication of staff and systems; excessive construction costs due to site constraints.	No impact.	Not consistent with DRLB expansion plan.	N/A
• Replace Smith Hall and Morgan and Music Bldgs	Adjacent	Meets space needs.	Cost effective.	Alters ambience along 34th St. and Smith Walk.	Consistent with use.	Razes Smith Hall, Morgan and Music Bldgs.
• Replace Smith Hall; renovate Morgan and Music Bldgs	Adjacent	Meets space needs.	Cost effective.	Lab building overwhelms adjacent buildings. Alters ambience along 34th St. and Smith Walk.	Consistent with use.	Razes Smith Hall, renovation of Morgan and Music Bldgs.
• Replace Smith Hall; renovation and additions to Morgan and Music Bldgs; narrow setback[c]	Adjacent	Meets space needs.	Premium paid for renovation.	Consistent with plan. Alters ambience along 34th St. and Smith Walk.	Consistent with use.	Razes Smith Hall; preserves Morgan Music and Towne Bldgs., Cret Wing, and Hayden Hall.
• Reuse a portion of Smith Hall; replace 1899 addition; renovations and additions to Morgan and Music Bldgs[d]	Adjacent	Exceeds space needs for offices.	Premium paid for renovation.	Consistent with plan. Alters ambience along 34th St. and Smith Walk.	Consistent with use.	Preserves portion of Smith Hall, Morgan Music, and Towne Bldgs., Cret Wing, and Hayden Hall.
• Replace Smith Hall; renovations and additions to Morgan and Music Bldgs; deep setback	Adjacent	Meets space needs.	Premium paid for renovation.	Loss of Hayden Hall court yard; overwhelms site; overemphasizes 1973 Wing. Alters ambience along 34th St. and Smith Walk.	Consistent with use.	Razes Smith Hall, preserves Morgan Music and Towne Bldgs., Cret Wing, and Hayden Hall.

[a]Lott Tennis Courts Alternative.
[b]LRSM Parking Lot Alternative.
[c]Proposed Action.
[d]Reuse of a Portion of Smith Hall Alternative.



EXPLANATION

- Project Site
- Alternative Sites
- IAST Related Programs
- Other University Buildings

Project Site Map with Alternative Sites

0 100 200 300 400 feet

Source: VSBA, 1993

Figure 2.1-1

proximity to existing programs. This requirement derives from the strongly held goals of facilitating intellectual interaction among Penn's scientists and engineers and fostering the sharing of facilities and equipment in a cost-effective manner. Additionally, off-campus locations were eliminated because they carried substantial costs for acquiring the property.

On-campus locations that were not in close proximity to the existing programs were also eliminated from further consideration. The remaining on-campus options were evaluated by Penn using the following considerations:

- Accommodation of the IAST program, including close proximity or adjacency to existing facilities (Proximity).
- Sufficient area to provide required lab space (Net Lab Space).
- Economic implications of various alternatives (Cost).
- Effects of the size and massing of new buildings within specific sites (Aesthetics).
- Appropriateness of existing buildings to proposed uses and the appropriateness of these uses within the overall campus plan (Land Use Consistency).
- Preservation and sympathetic reuse of the most significant buildings in the Central Science Precinct (Preservation of Historic Buildings).

As shown in Table 2.1-1, the analysis of the options under these considerations resulted in the elimination of all the alternatives except the Proposed Action, described below. The Reuse of a Portion of Smith Hall Alternative was selected for study as the alternative that accommodates the need for adjacency without the complete destruction of Smith Hall.

The LRSM Parking Lot Site Alternative was selected for study because it was the largest available site close to the Central Science Precinct that did not raise issues regarding historic impacts. The Lott Tennis Courts Site Alternative was reintroduced for consideration as a reasonable alternative to the Smith Hall site as a result of comments received during the scoping process. The alternative site locations are illustrated in Figures 2.1-1 and 2.1-2.

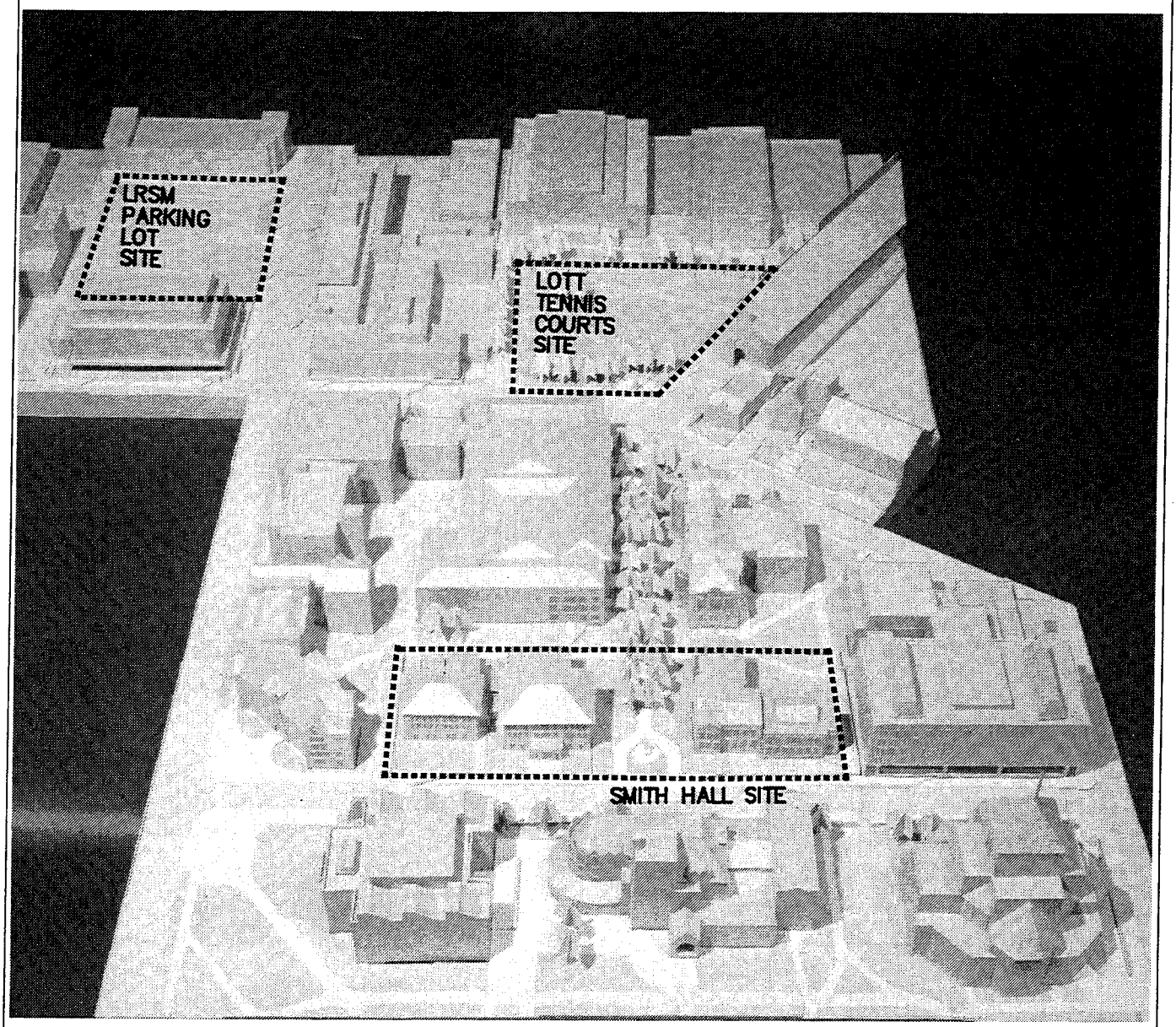
2.2 DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action, which is the Air Force's preferred alternative, is to locate the IAST within the Central Science Precinct in a site connected or immediately adjacent to the four departments that would contribute the greatest majority of faculty to the IAST programs: Bioengineering (located in Hayden Hall), Chemical Engineering (located in Towne), Chemistry (located in the Chemistry Building Complex), and Computer and Information Science (located in the Graduate Research Wing of Moore). The Proposed Action would include new construction at the present site of Smith Hall and a new addition to the Morgan and Music Buildings. The Morgan and Music Buildings would be renovated, as would the Towne Building, Hayden Hall, and the Chemistry Building. Figures 2.2-1 and 2.2-2 illustrate the general site plan and west elevation for the Proposed Action.

Four phases are anticipated for development of the Proposed Action.

Phase I — New construction for state-of-the-art wet laboratory space on the Smith Hall Site. These laboratories would improve and expand facilities in support of the CECCE and the CEB. Demolition of Smith Hall would be required.

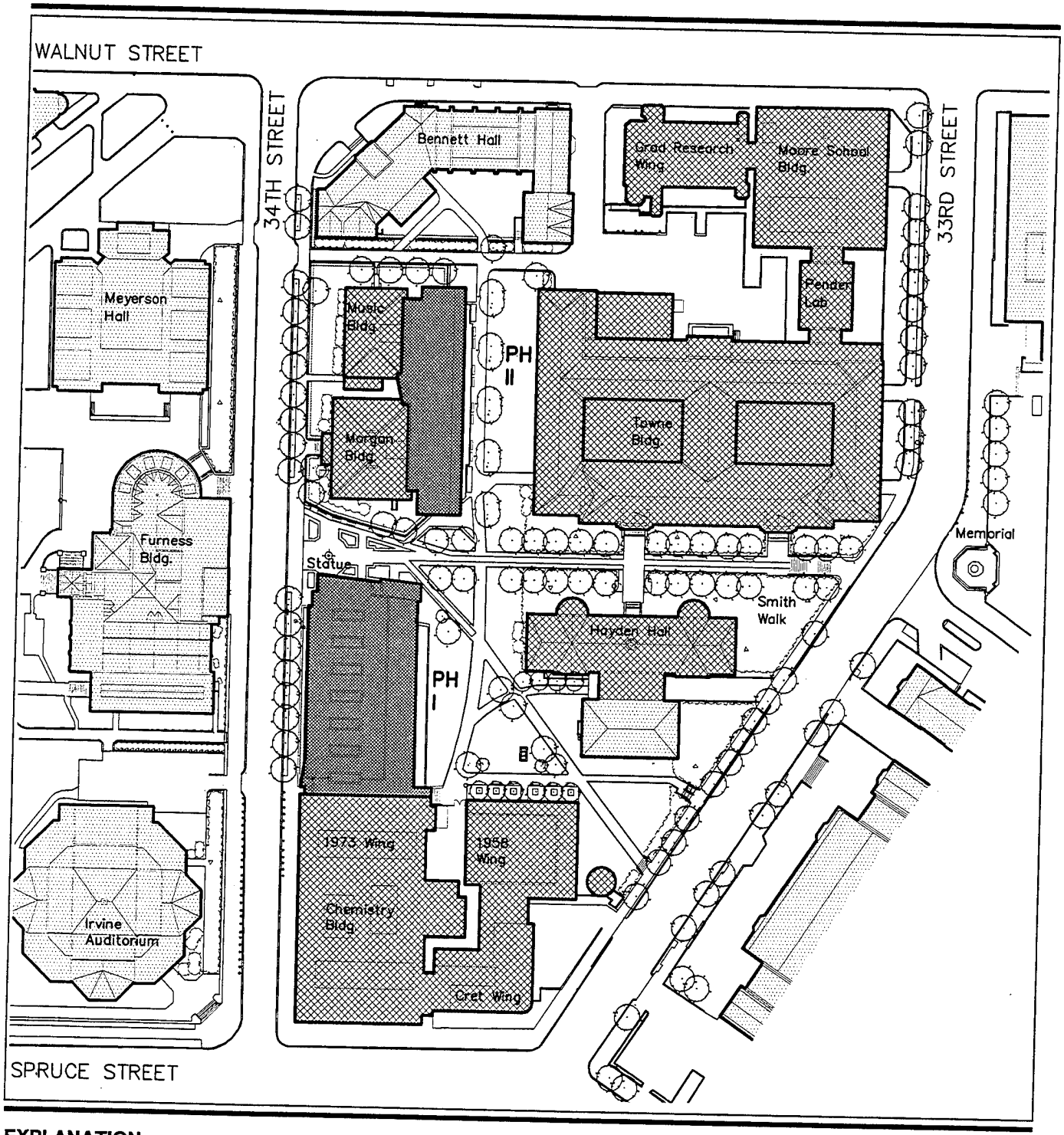
Phase II — New addition to and renovation of the Morgan and Music Buildings for state-of-the-art dry laboratory space. These labs would improve and expand



Project Site
Existing Conditions
Model Looking East

Source: VSBA, 1993

Figure 2.1-2



EXPLANATION

- IAST Related Programs
- Other University Buildings
- New Construction

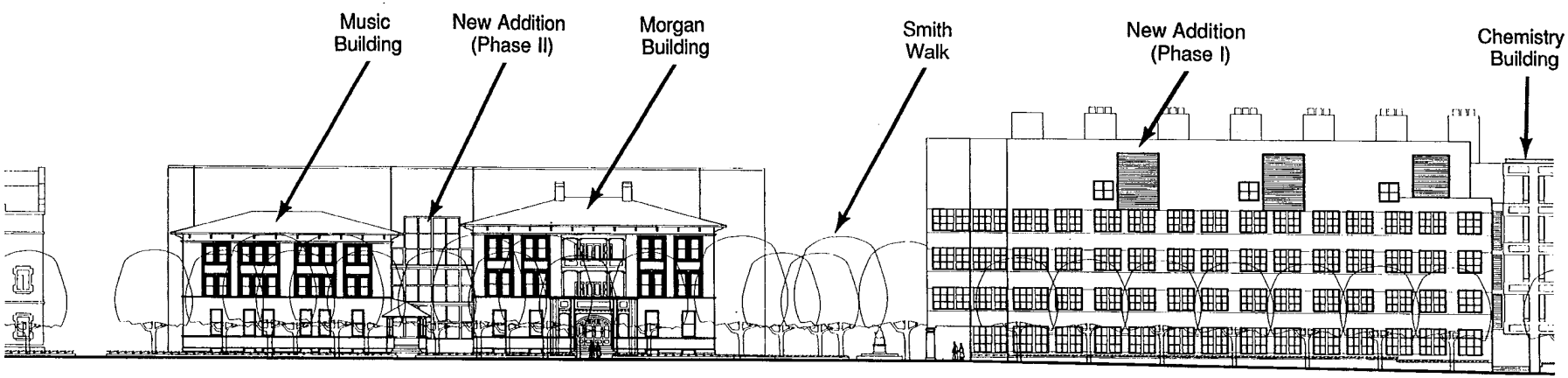
Proposed Action Site Plan

0 100 200 300 feet

Source: VSBA, 1993

807-9550 1/27/93

Figure 2.2-1



Proposed Action:
Elevation Along 34th Street

0 16 32 Feet

Source: VSBA, 1993

657-9126 11/23/92

Figure 2.2-2

facilities in support of the CECICS and the CTT. Demolition of the rear wing of the Music Building and the modern Annex would be required.

Phase III — Renovation of Hayden Hall interior in support of the CSTIR.

Phase IV — Redevelopment of other interior spaces affected by departmental relocations, principally the Towne Building and the Chemistry Complex.

In the remainder of this section and throughout this FEIS, several terms are used to describe area measurement, as follows:

Gross Square Feet (GSF) — The gross square feet of a building is the sum of the areas of the several floors of the building, including basements, mezzanine and intermediate floored tiers, and penthouses of headroom height, measured from the exterior faces of exterior walls or from the centerline of walls separating buildings.

Net Square Feet (NSF) — Net square feet is the sum of all building spaces that are assignable for departmental use measured from the predominant interior finish of exterior walls, exclusive of partitions, structural/mechanical/electrical utility spaces and shafts, circulation space, and toilets.

Net Assignable Square Feet — As used in this FEIS, same as net square feet.

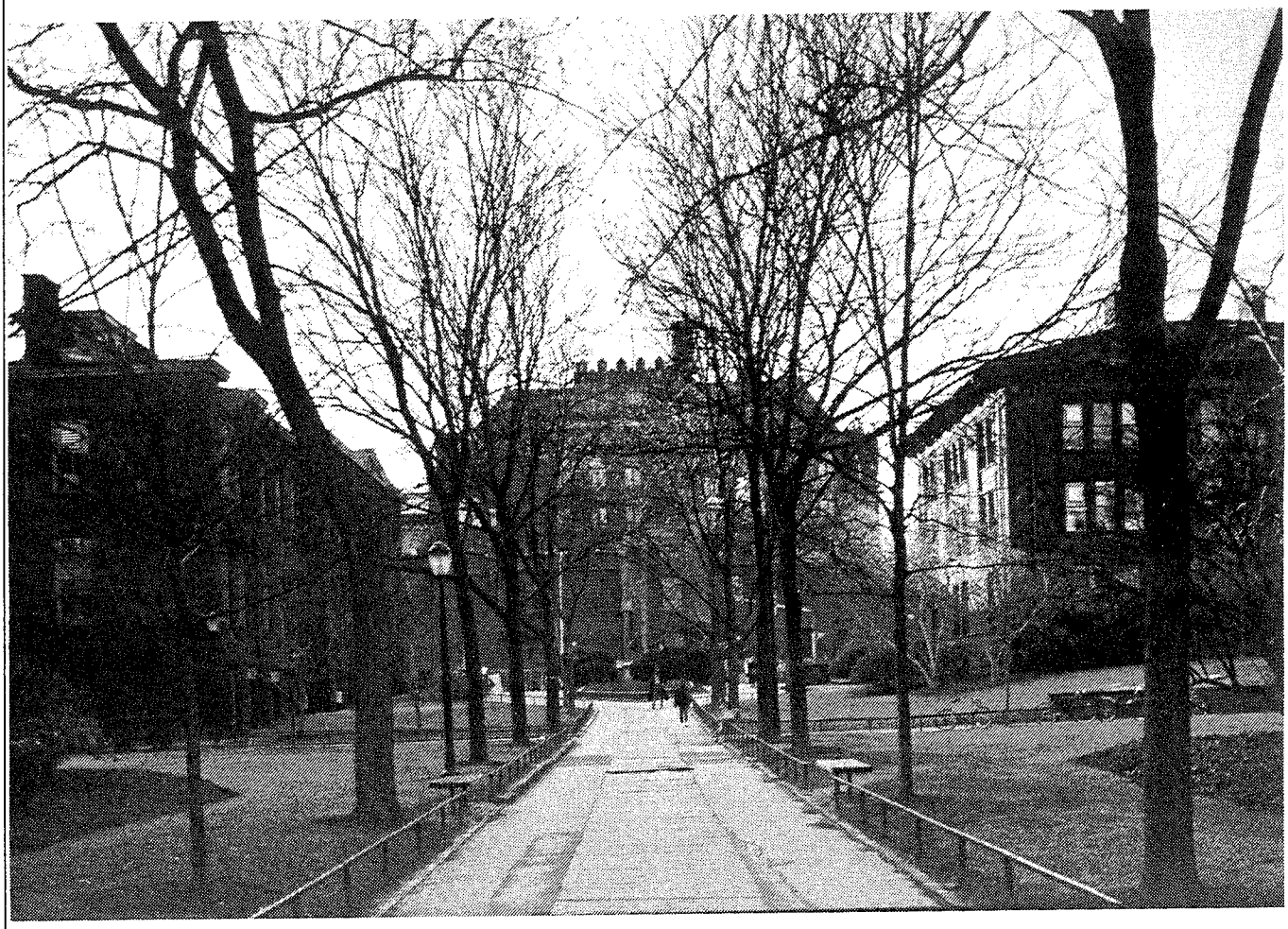
Net Assignable Laboratory Square Feet — Net assignable laboratory square feet is that portion of net square feet that is occupied by laboratories and laboratory support use, exclusive of offices, conference rooms, and lounges.

Phase I Construction. The Phase I building would be designed as an independent structure that adjoins the 1973 Wing at 34th Street and Smith

Walk on a site presently occupied by Smith Hall. It would provide wet laboratory facilities to be shared by the CECCE and the CEB. The proposed building would provide approximately 60,000 NSF of net assignable space. Of this, approximately 85 percent would be net assignable laboratory space. The Phase I building would consist of five floors above grade and one below grade. Mechanical equipment space would occupy half of the fifth floor and most of the basement. A laboratory of approximately 5,000 NSF would extend under the courtyard to the east at the basement level. Smith Hall would be demolished to accommodate the new laboratory. The exceptionally high percentage of net assignable laboratory space as compared with net assignable space (85 percent) is achievable because the new building and the Chemistry Complex would share several existing services, such as core research, support shops (e.g., electronic, machine and carpentry), glass blowing, loading docks, and bulk storage. The new building would be serviced principally from the Chemistry Complex loading dock at 33rd Street. A proposed tunnel connection beneath Smith Plaza, linking the new structure and Hayden Hall, would further facilitate the sharing of services and resources among IAST facilities.

The Phase I IAST development would include minor modifications to Smith Walk. In its current configuration, Smith Walk does not align with a continuing walk across 34th Street (Figure 2.2-3). In Phase I, the Smith Walk terminus at 34th Street would be realigned to direct pedestrian traffic diagonally northward to the walk between the Furness Library and the Graduate School of Fine Arts (see Figure 2.1-1).

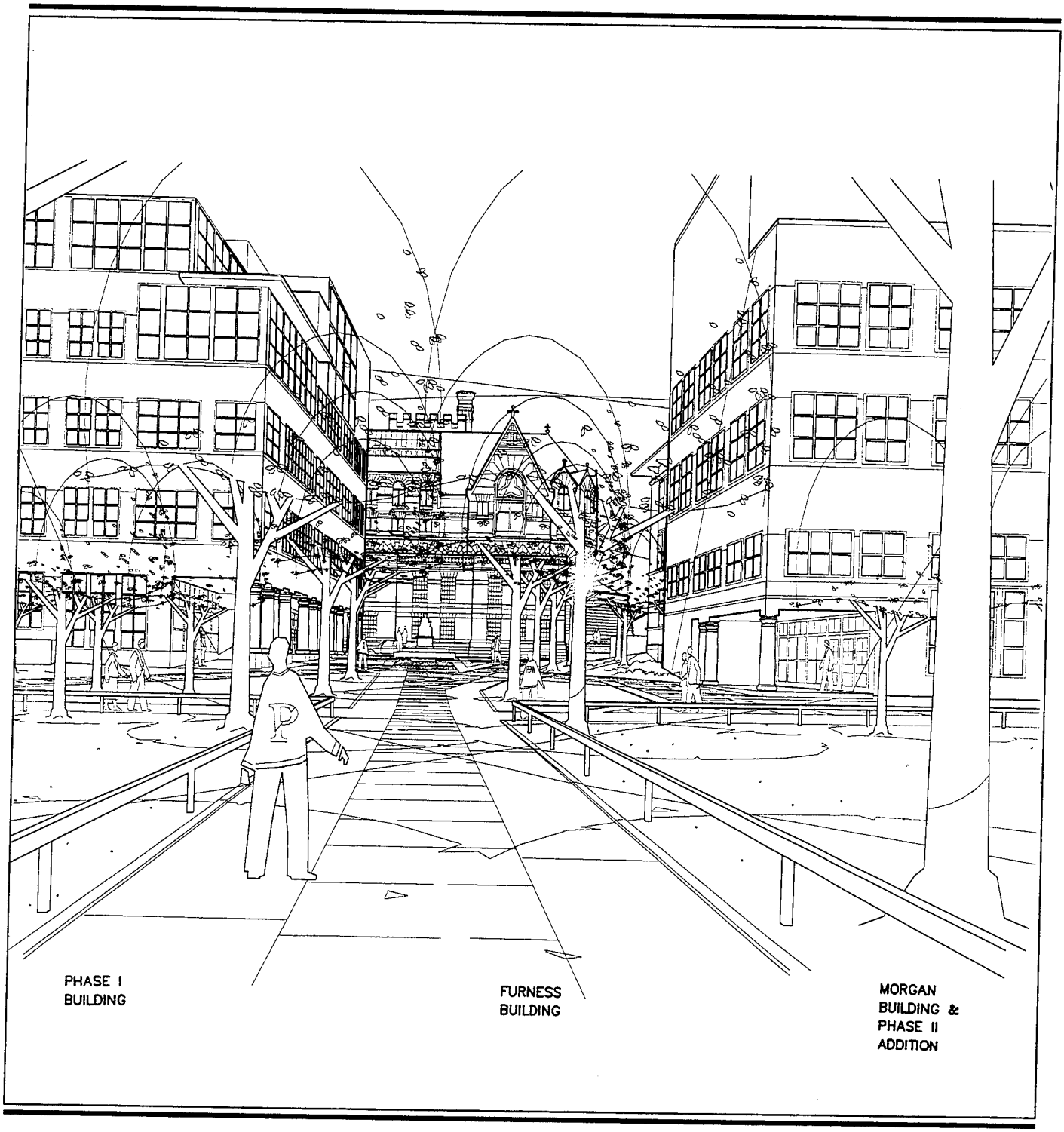
At the completion of construction, Smith Walk would be upgraded and rebuilt (Figure 2.2-4). The statue of Edgar Smith would remain in its present location. Existing macadam surfaces would be replaced with paving and brick. New canopy trees would be planted where appropriate. In addition, an expanded and upgraded plaza would be created, bounded by the Chemistry Complex, the Phase I building, and Hayden Hall, and connecting with Smith Walk. All such work would be completed consistent with Penn's *Landscape Development Plan* (1977).



Existing Conditions View at Smith Walk Looking West

Source: VSBA, 1993

Figure 2.2-3



Proposed Action View at Smith Walk Looking West

Source: VSBA, 1993

Figure 2.2-4

Phase II Construction. Phase II would provide for construction of dry laboratory space. The Proposed Action calls for adaptive reuse, renovation, and additions to the Morgan and Music Buildings to provide approximately 45,000 NSF of new dry laboratory research space. The 1950s and 1960s additions and the rear wall of the Morgan and Music Buildings would be replaced with a five-story rectangular addition. The street and side facades would be restored and preserved.

The interiors of the Morgan and Music Buildings were significantly altered in the past. These large loft-like, light-filled rooms with their sound structure would allow adaptation to accommodate the office, seminar room, and support spaces envisioned by the Phase II program.

Phase III Construction. This phase would include interior renovations and adaptive reuse of Hayden Hall as the CSTIR. The exterior of Hayden Hall was restored within the past 5 years and would not be altered. The great hall on the second floor of Hayden Hall is largely intact and would function as a reading room while other spaces would be adapted to program needs. Work in all public spaces would take into account the historic character of the building.

Phase IV Construction. Phase IV would include proposed interior renovations to the remaining adjacent engineering and chemistry facilities in the Central Science Precinct, principally the Towne and Chemistry Buildings, including the Cret Wing.

2.2.1 Construction Activities and Duration

Planning for construction and demolition by SAE American Mid-Atlantic Inc., Penn's preconstruction manager for the project, is still in the preplanning stage.

A peak level of 75 employees would be anticipated in the early phases of construction; employee strength is expected to average 50 to 55 persons

during the whole construction period. Normal working hours at the construction site typically would be between 7:30 a.m. and 3:30 p.m. on work days. To the extent possible, truck deliveries would be scheduled for off-peak hour traffic periods of the day.

Demolition and construction vehicle access to the Smith Hall site would be provided at both the front and rear of the site. In the front of Smith Hall, the sidewalk along 34th Street would be either closed in its entirety or rerouted behind a barrier for the duration of the construction. The single easternmost lane of 34th Street would be closed and separated from traffic by barriers to provide construction staging for safe laydown of materials, truck deliveries, and construction crane movement. Additional site access would be provided at the rear of Smith Hall via a temporary access road to be cut between Cret and Hayden Halls from 33rd Street to the rear of Smith Hall. This would enable construction trailers to be brought into the rear of the site for long-term storage and access.

The duration of the construction for Phase I is estimated to be 20 months, and for Phase II, 16 months.

2.3 DESCRIPTION OF ALTERNATIVES

2.3.1 Reuse of a Portion of Smith Hall Alternative

This alternative is a spatial variation of the Proposed Action for the Phase I IAST wet laboratory at the Smith Hall site. This alternative would demolish the 1899 During addition to Smith Hall and build at that site a large wet laboratory complex. The structure described as Phase I of the Proposed Action would be turned on its axis to fit between the Chemistry Building and Smith Hall. The remaining original wing of Smith Hall, approximately two-thirds of the existing structure, would be renovated and reused. This alternative would provide approximately 60,000 NSF for the Phase I building. Phases II through IV would be accomplished in the same manner

as described in the Proposed Action. Figures 2.3-1 and 2.3-2 illustrate the general site plan of this alternative and the west elevation.

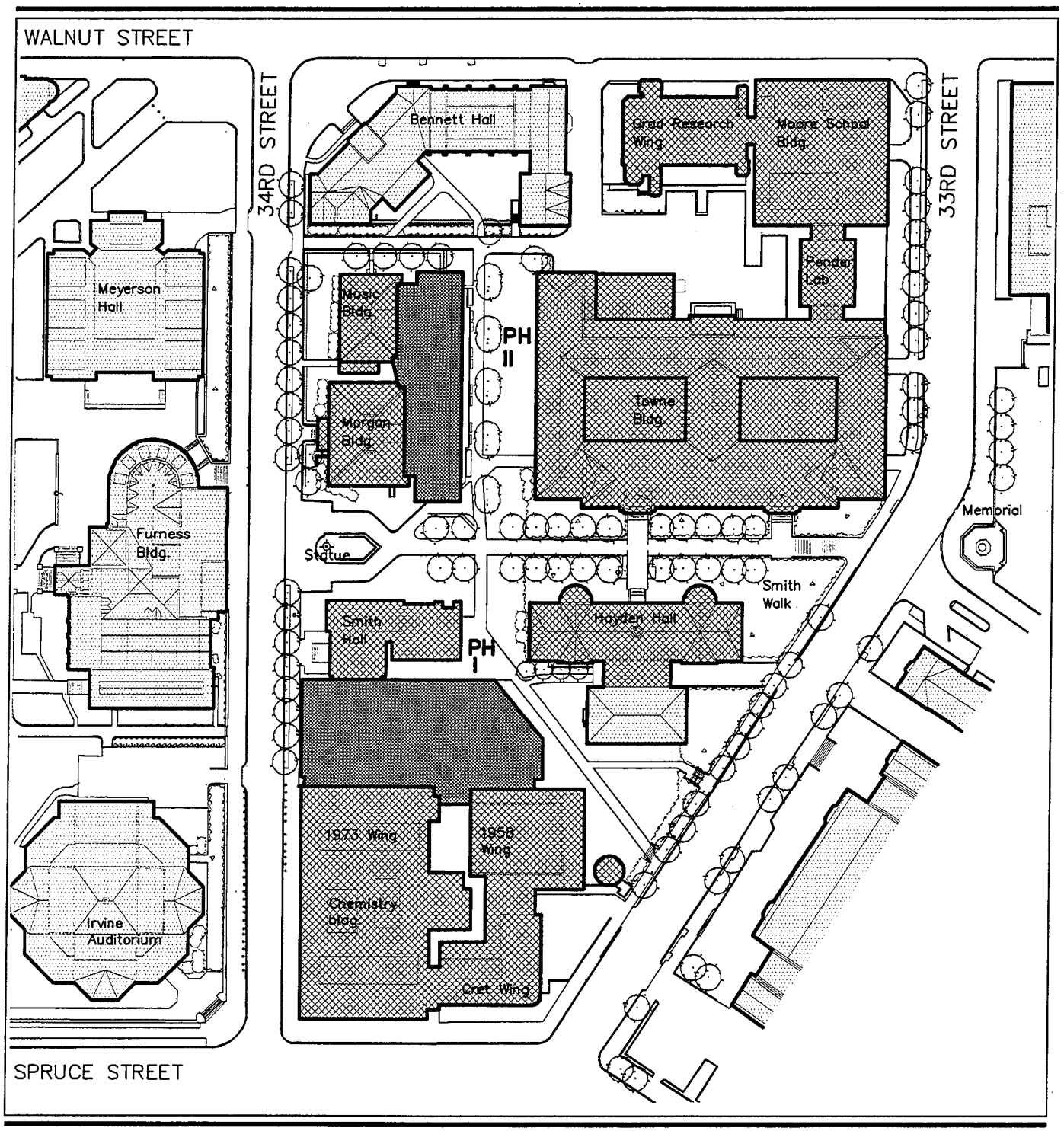
The space available between Smith Hall and the 1973 Wing would accommodate virtually all the wet laboratory space that is essential to the mission of the IAST. Smith Hall is unsuited to laboratory space; thus, renovations and the reuse of the remaining portion of Smith Hall would provide office and administrative areas, possibly for projects other than the IAST, consistent with University priorities and capabilities.

Demolition and construction activities would be equivalent functionally to those described for the Proposed Action. The most significant exception is that extra care would be taken to ensure that the remainder of Smith Hall is not destroyed or damaged beyond repair during demolition and construction activities.

Because the floor levels of Smith Hall, the new building, and the Chemistry Building would not be aligned, they would require special construction to align the floors for circulation between the buildings. Under this alternative, the floors of the new building would be aligned with the 1973 Wing of the Chemistry Complex and would accommodate the lower elevations of Smith Hall. A new air intake for the existing 1973 Wing would also be necessary. A significant portion of the exterior windows in the current Chemistry Complex would be lost by the construction in this configuration.

2.3.2 LRSM Parking Lot Alternative

The LRSM Parking Lot is located on the north side of Walnut Street between 32nd and 33rd Streets (see Figure 2.1-1). This site is in the middle of the East Science Precinct and is bounded on the west by the LRSM, on the north by a Drexel University facility, and on the east by a parking garage. Across from the site on Walnut Street is the David Rittenhouse Laboratory (DRL). All of the structures immediately adjacent to this site are modern.



EXPLANATION

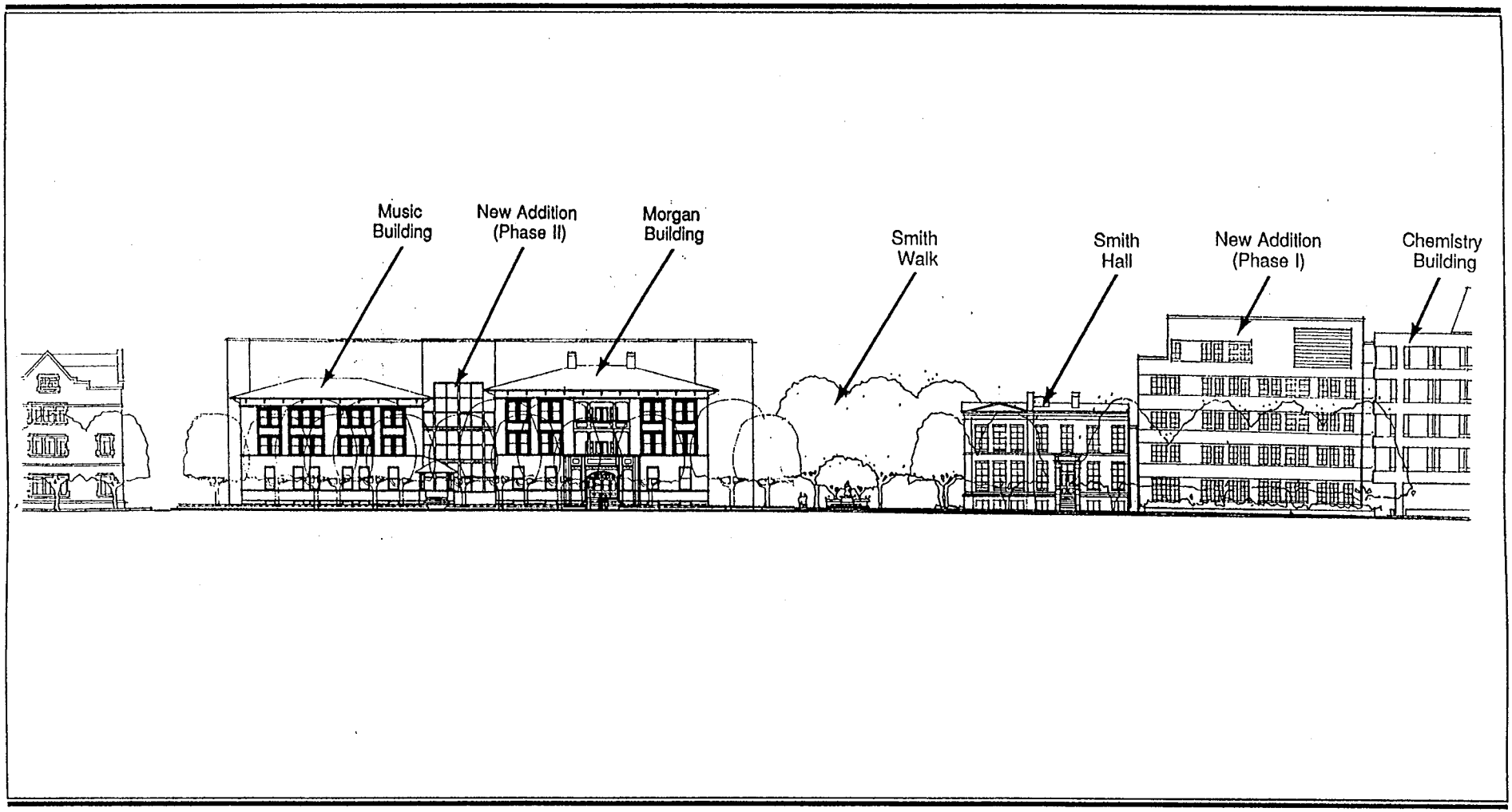
- IAST Related Programs
- Other University Buildings
- New Construction

Reuse of a Portion of Smith Hall Alternative Site Plan

0 100 200 300 feet

Source: VSBA, 1993

Figure 2.3-1



Reuse of a Portion of Smith Hall Alternative Elevation Along 34th Street

0 16 32 Feet

Source: VSBA, 1993

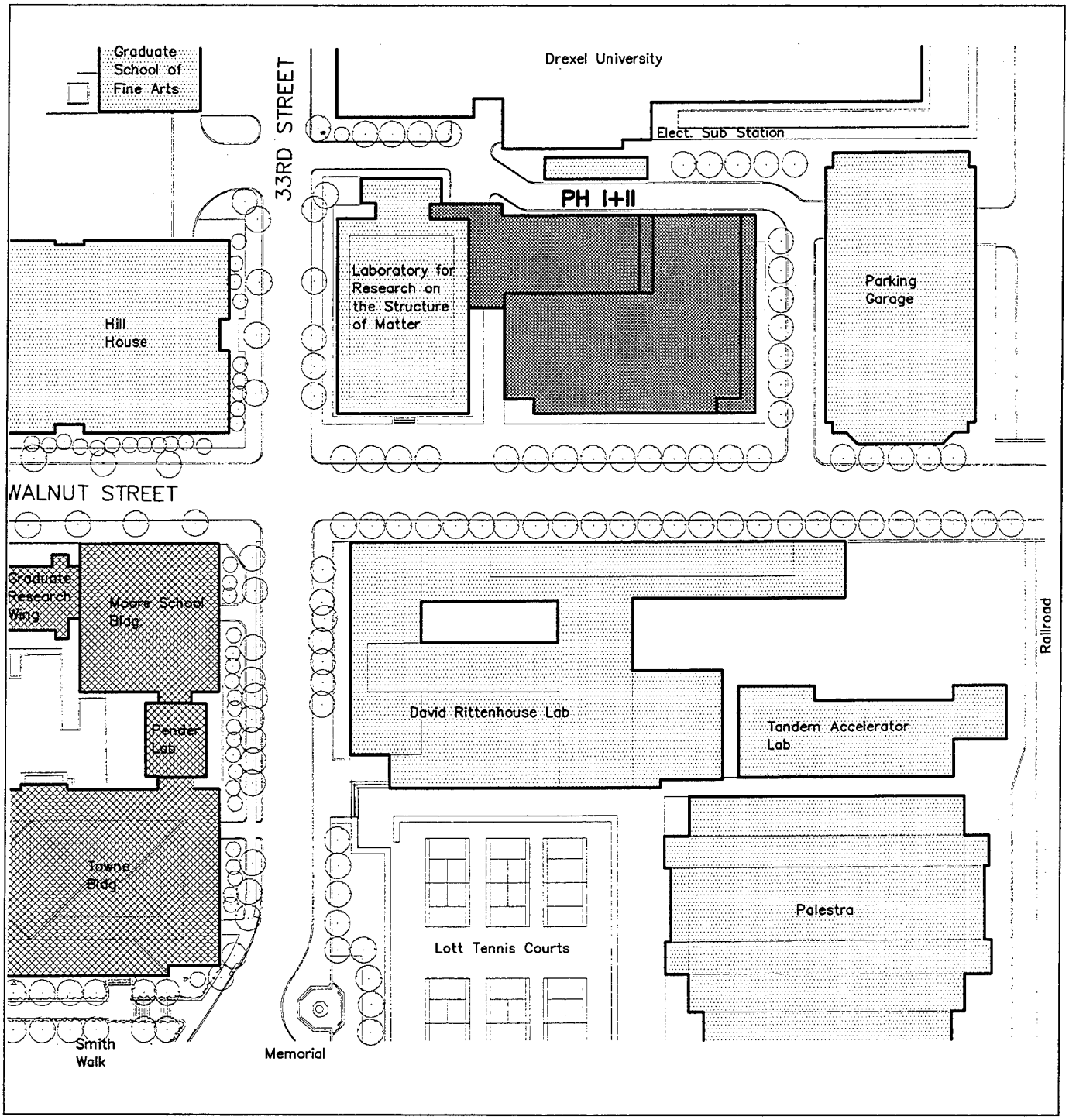
Figure 2.3-2

This location is a large site, currently housing a temporary scientific building as well as a parking lot. Construction on the site is unconstrained by either height restrictions or aesthetic considerations of adjacent historic structures. Located at the easternmost end of campus on Walnut Street, a major thoroughfare into and through campus, this location is also considered a gateway to the University campus. Accordingly, the facade overlooking Walnut Street would be developed to present an appropriate scale and texture to set the stage for the remainder of the campus.

The Edison Building currently occupies a portion of this site. This building is a small temporary structure that houses an electron microscope laboratory. Construction of the IAST at this site would demolish the parking lot, with a loss of 60 parking spaces, and the Edison Building, necessitating relocation of the electron microscope laboratory.

As this site is outside of the University of Pennsylvania Campus Historic District, a building at this location could be designed with more freedom in terms of height, bulk, scale, and materials. Sufficient space at this site exists to accommodate IAST Phases I and II at one location. A 211,000-GSF building, sufficient to provide the 116,000 NSF needed for Phases I and II of the IAST program, would require a six-floor facility with a full basement and penthouse. This would place the construction in a high rise classification, necessitating additional technologies associated with stair pressurization and more sophisticated control and fire systems. Such technologies would increase the cost per square foot of this construction as compared with the Proposed Action, although a slightly offsetting economy might be achieved by combining Phases I and II in one building. While a substantially taller building could be accommodated by this site, it would not be necessary for the needs of the IAST. The general site plan for this alternative, showing its relation to the surrounding structures, is presented in Figures 2.3-3 and 2.3-4.

The 116,000 NSF required is 11,000 NSF greater than that provided by the Proposed Action because of the need to duplicate facilities currently in the



EXPLANATION

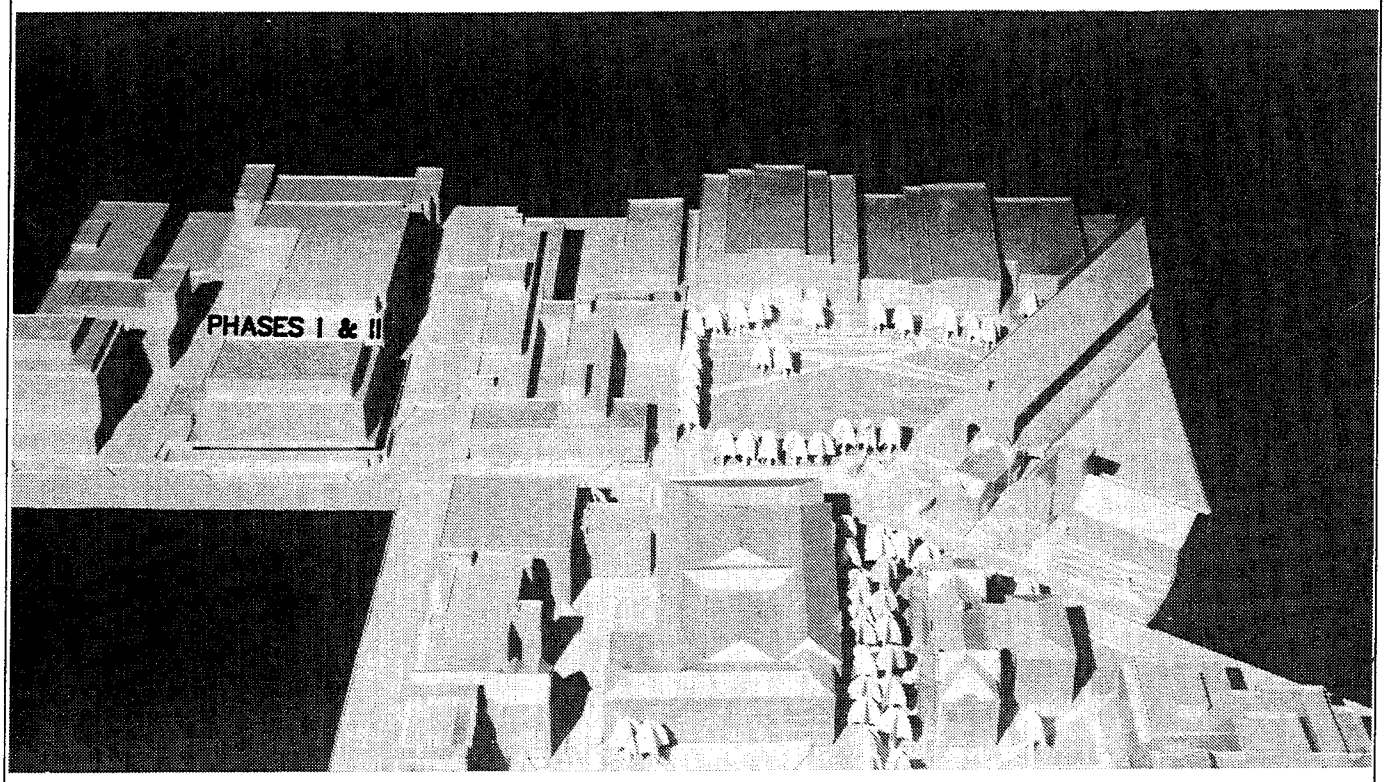
- IAST Related Programs
- Other University Buildings
- New Construction

LRSM Parking Lot Alternative Site Plan

0 100 200 300 feet

Source: VSBA, 1993

Figure 2.3-3



LRSM Parking Lot Alternative Site Model Looking East

Source: VSBA, 1993

Figure 2.3-4

Chemistry Complex. Such duplication would not be required in the Proposed Action because of the direct connection to the Chemistry Complex. Specifically, these areas of duplication include core facilities such as NMR spectrometers, support shops such as chemical storage and glassblowing, and administration offices. Some of the waste stream and materials handling capabilities in the adjacent and connected LRSM building, as well as its loading dock, can be used in support of IAST programs. However, a much broader range of chemicals is used in the Chemistry program than in the LRSM program, necessitating the provision of additional materials handling capabilities in the IAST building. Duplication of facilities would be matched by an increase in personnel required to staff such facilities.

The proposed construction at this site would be set back from Walnut Street to align the facade with the existing LRSM. The setback from the facade of the LRSM building is 30 ft, negating any requirements to add additional sprinkler protection to LRSM. The building would be connected to the LRSM by a one-story construction linking docks and materials-handling space. Setbacks of 60 ft from the Drexel University building and the parking garage would eliminate problems with openings and maintain continued access to the garage driveway. This footprint organization is illustrated in Figure 2.3-3. The net to gross ratio for the LRSM Parking Lot site is 55 percent. This net to gross ratio is consistent with other laboratory buildings of similar construction, with similar volume and similar footprint requirements.

The proposed LRSM Parking Lot building would be sufficient to house programs in Phases I and II of the IAST. Phases III and IV are planned to be carried out in the same manner as described in the Proposed Action.

2.3.3 Lott Tennis Courts Alternative

The Lott Tennis Courts site is located on the east side of 33rd Street, between Walnut Street and Spruce Street. The Lott Tennis Courts are

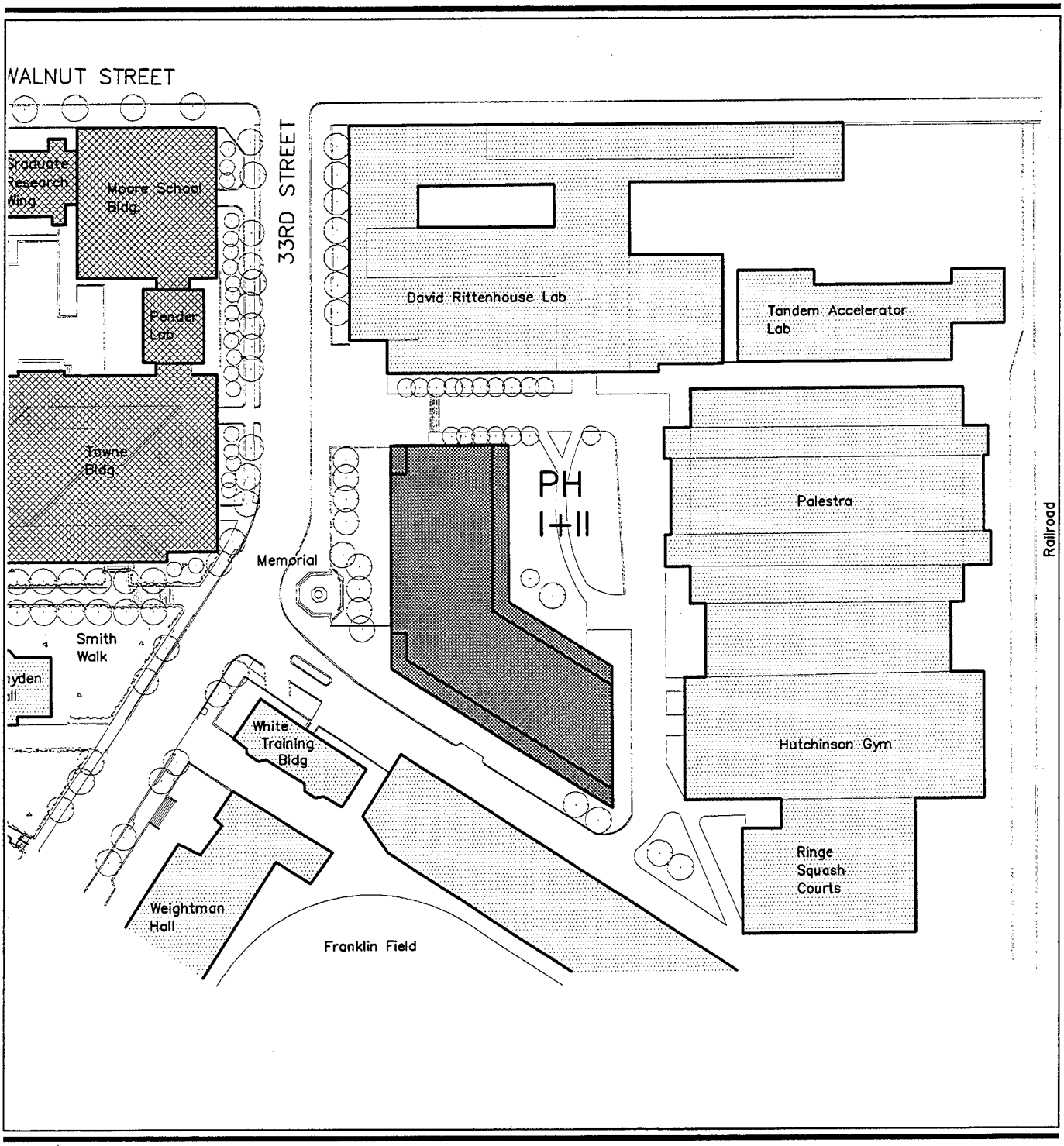
located outside the Central Science Precinct (see Figure 2.1-1). Construction at this site would require the demolition of the tennis courts.

The site is bordered on three sides by historic or distinguished structures. Across 33rd Street are the historic Towne, Hayden, and Moore Buildings of the Central Science Precinct. To the east and south are the athletic facilities of the Palestra, Hutchinson Gym, and Franklin Field. To the north is the modern DRL. This site is not immediately adjacent to any of the existing departments that would comprise the IAST program. Furthermore, the support needs of the programs housed in the DRL, Physics, Mathematics, and Astronomy, are quite different from those needed to support Phases I and II of the IAST. Access to the loading and receiving areas in the DRL would be very difficult. Accordingly, a standalone structure would be constructed here.

A service road runs behind the site, parallel to the Palestra. That same service road also provides access to a parking lot behind Franklin Field. During major athletic events, the service road is heavily used by both vehicles and pedestrians.

A general site plan of the building and its relation to the surrounding structures are shown in Figures 2.3-5 and 2.3-6. This site plan would provide a setback from the DRL as well as the lower buildings associated with Franklin Field. Additionally, the "L" shape would provide an open space in front of the Palestra for public use.

The L-shaped building shown in Figure 2.3-5 would have six floors with a full basement and penthouse containing a total of 216,000 GSF to provide the 119,000 NSF needed for the IAST program. This would place the construction in a high rise classification, necessitating additional technologies associated with stair pressurization and more sophisticated control and fire systems. Such technologies would increase the cost per square foot of this construction as compared with the Proposed Action,



EXPLANATION

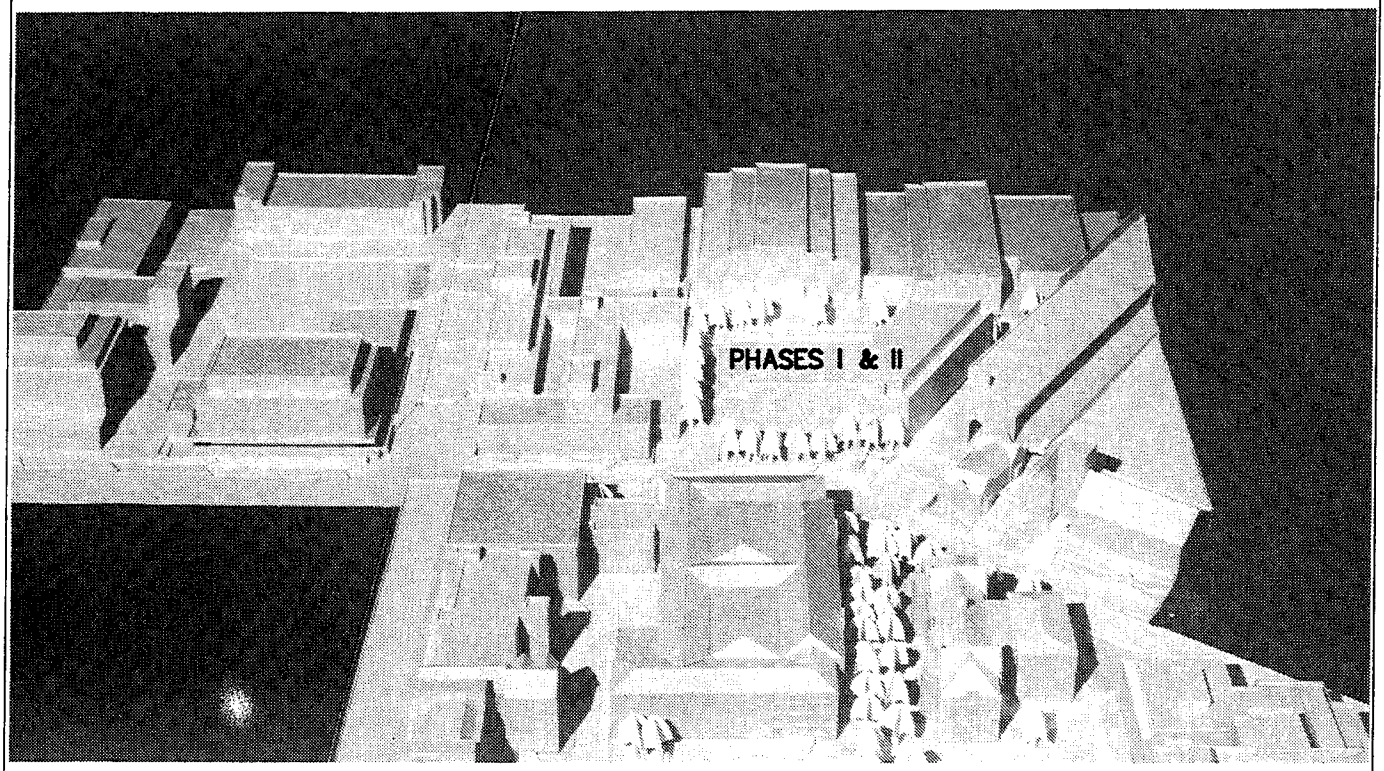
- IAST Related Programs
- Other University Buildings
- New Construction

Lott Tennis Courts Alternative Site Plan

0 100 200 300 feet

Source: VSBA, 1993

Figure 2.3-5



Lott Tennis Courts
Alternative Site Model
Looking East

Source: VSBA, 1993

Figure 2.3-6

although a slightly offsetting economy might be achieved by combining Phases I and II in one building. The net to gross ratio of 55 percent is consistent with the value for other laboratory buildings, as discussed in Subsection 2.3.2.

The 119,000 NSF required is 14,000 NSF greater than that provided by Phases I and II in the Proposed Action because of the need to duplicate facilities currently in the Chemistry Complex. Such duplication would not be required in the Proposed Action because of the direct connection to the Chemistry Complex. Specifically, these areas of duplication include core facilities such as NMR spectrometers, support shops such as chemical storage and glassblowing, administration offices, and all aspects of materials handling, including freight elevators, storage areas, a loading dock, and a receiving area. Duplication in facilities would be matched by an increase in personnel required to staff such facilities.

A unique feature of the Lott Tennis Courts site is that the loading dock would be contained within the footprint of the building. A truck would back into an enclosed loading area in order to avoid having adjacent properties overlook a large open loading dock. This feature would accommodate public access requirements for the DRL and traffic surges associated with major events at the Palestra and Franklin Field.

The proposed Lott Tennis Courts building would be sufficient to house the programs in Phases I and II of the IAST. Phases III and IV are planned to be carried out in the same manner described in the Proposed Action.

2.3.4 No Action Alternative

The No Action Alternative would result in the AFOSR not approving the expenditure of grant funds for constructing the IAST at any of the specified sites at the University. The University would not be able to proceed with the IAST in its currently planned form or timeframe. A delay in the construction of new facilities for science and engineering and/or a reduction

in the scale of the IAST would have negative consequences on the ability of the University to maintain its status as a center of research excellence in these areas. This could lead to a loss of faculty to competing institutions, a decrease in the number of graduate students and postdoctoral fellows, and a diminished ability to compete for grant funding.

2.4 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

Three off-campus alternative sites were suggested during the public scoping meeting: the Philadelphia Navy Yard; the University City Science Center at 36th and Market Streets; and the GE Building at 32nd and Chestnut Streets. As none of these locations meets the basic requirement of proximity, these locations are not considered reasonable alternatives and are thus eliminated from further consideration.

Additional sites, such as other universities and military installations, were suggested during the scoping period as alternative locations for the IAST. These sites were even more remote from the existing University science and engineering departments, which would comprise the IAST program. They were eliminated from consideration because they failed to satisfy the purpose, needs, and objectives of Penn.

Other on-campus alternatives were suggested during the scoping period:

- Locate the IAST in another building on campus and/or relocate existing departments. This alternative was suggested in several forms, ranging from entirely relocating the existing chemistry program to locating the IAST in other buildings on campus. Alternative building sites were generally unspecified, although several commentors suggested the Veterinary School on campus. These alternatives were eliminated from further analysis for several reasons. First, there are no suitable buildings within the Central Science Precinct available for such relocation and

reuse other than those already identified. Second, sites not located adjacent to the Central Science Precinct would not meet the basic requirement that the IAST be located within close proximity to the departments that would comprise the IAST. Third, these alternatives all carried an excessive cost premium associated with the major relocation of existing departments or schools.

- Construct an underground laboratory structure at the Smith Walk area to preserve the existing buildings. This alternative was not considered for further analysis for several reasons. First, campus utility lines, including electric, gas, steam, and chilled water, would have to be rerouted for such construction. Such extensive relocation would dramatically increase the construction costs. Second, an elevated water table exists within the Central Science Precinct. Although this water table is not a significant impediment for standard aboveground construction at this location, the water table would result in excessive construction costs for groundwater management if an underground structure is built. Finally, subterranean construction of the magnitude required to meet the IAST space requirements would require almost twice the capital funding that is available.

2.5 OTHER FUTURE ACTIONS IN THE REGION

The University's construction program (new construction and renovation) has averaged approximately $50 million and 30 projects per year for the preceding 6 years. Table 2.5-1 lists funded University projects that could potentially contribute to cumulative impacts within the project site.

Only three of the funded projects, the LRSM Electrical Substation Rehabilitation, Franklin Field Rehabilitation, and White Training Rehabilitation, are reasonably foreseeable and in the immediate area. These

Table 2.5-1. Projected Construction Work on the Penn Campus and Immediately Adjacent Areas Exclusive of the IAST (1995-1997)

University-Funded

Miscellaneous HUP Renovation/Alteration (36th and Spruce Streets), 1993-97

College Hall Renovation (3400 block Spruce Street), 1993-97

Franklin Field Rehabilitation (33rd Street and Smith Walk), 1993-97

White Training Rehabilitation (33rd Street and Smith Walk), 1993-95

Miscellaneous School of Medicine Renovation (Guardian Drive), 1993-96

Evans Exterior Rehabilitation (40th and Spruce Streets), 1994-97

are minor endeavors in terms of the potential environmental disruptions associated with each. Although these projects would include several truck deliveries, none of them involves extensive excavations, exterior demolition, or renovation. Accordingly, there are no synergistic or additive impacts anticipated from these projects if conducted contemporaneously with the IAST project. The LRSM Electrical Substation Rehabilitation, Franklin Field Rehabilitation, and White Training Rehabilitation would not contribute to cumulative impacts within the project area. None of the other funded projects is in the immediate area, and none would contribute to synergistic or additive impacts.

No other major actions have been identified in or near the project site that could contribute to cumulative impacts.

2.6 COMPARISON OF ENVIRONMENTAL IMPACTS

A summary comparison of environmental impacts on each biophysical resource affected by the Proposed Action and Alternatives is presented in Table 2.6-1. Impacts to the environment are discussed in detail in Chapter 4.0.

THIS PAGE INTENTIONALLY LEFT BLANK

Table 2.6-1. Summary of Impacts Under Siting Alternatives

Resource Category	Proposed Action	Reuse of a Portion of Smith Hall Alternative	LRSM Parking Lot Alternative	Lott Tennis Courts Alternative	No Action Alternative
Local Community					
• Community Setting					
Direct Employment (construction, short-term)	New construction employment.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	No construction employment.
Direct Employment (operation)	Additional laboratory employment.	Same as Proposed Action.	Additional laboratory employment somewhat greater than Proposed Action.	Additional laboratory employment somewhat greater than Proposed Action.	No new staff.
Campus Population Change	Minor increase in total population - faculty, students, staff.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	No increases.
• Land Use and Aesthetics	Replacement of Smith Hall and additions to Morgan and Music Bldgs. Substantial change in appearances. Changes to Smith Walk character. Creation of new plaza consistent with land use in precinct.	Replacement of Smith Hall 1899 Duhring addition with a new addition. Smith Hall partially demolished. Changes to Smith Walk consistent with land use in precinct. Additions to Morgan and Music Building.	Substantial change in land use. Demolition of LRSM Parking Lot and Edison Building and construction of new building.	Substantial change in land use. Potential detraction from aesthetics of area adjacent to sports facilities. Demolition of tennis courts and construction of new building.	No change in land use. No change in appearance.
• Transportation	Rerouting of traffic during construction. No operational impediments.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	No impacts on transportation systems.
• Utilities	Minimal increase in utilities demand. Minimal impact on local suppliers.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	No change in utilities demand from current level.
Hazardous Materials and Hazardous Waste Management					
• Hazardous Materials Management	Increase in quantities of materials. Use existing emergency response capability.	Same as Proposed Action.	Similar to Proposed Action. Increased handling capability, traffic, deliveries, pickups, and storage required.	Similar to LRSM.	No increase in quantities of materials used.
• Hazardous Waste Management	Increase in quantities of wastes. Use existing collection and disposal system.	Same as Proposed Action.	Similar to Proposed Action. Additional response capability, traffic, deliveries, and pickups required.	Similar to LRSM.	No increase in quantities of waste generated.
• Asbestos	Demolition would require removal and disposal as hazardous waste.	Similar to Proposed Action.	Similar to Proposed Action.	Same as No Action.	Continued management of facilities with asbestos, including eventual removal.
• Lead (Paint)	Demolition may require removal and disposal as hazardous waste.	Similar to Proposed Action.	Same as No Action.	Same as No Action.	Continued management of facilities with lead, including eventual removal.
• Medical/Bio-hazardous Waste	Increase in quantity generated. Use existing collection and disposal system.	Same as Proposed Action.	Increase in quantity generated. Additional collection and disposal required.	Increase in quantity generated. Additional collection and disposal required.	No increase in waste quantity.
Natural Environment					
• Soils and Geology	Minor change of existing topography and soils disturbance.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	No impact.
• Water Resources	Minor increase in water demand requiring additional supply. No impact on local supplies.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	No impact.
• Ground Disturbance (sq ft)	Limited to Smith Hall demolition and new additions.	Variation of Proposed Action.	Approximately same area as Proposed Action.	Approximately same area as Proposed Action.	No change.
• Air Quality	Temporary increase in particulate emissions and exhaust fumes during construction. No operational impacts identified. Air emissions associated with fume hoods currently unregulated by Philadelphia Air Management District, state, or U.S. EPA.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	No increase in air pollutant emissions from present levels.
• Noise	Temporary localized noise increase during construction. No operational impact.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	No impact.
• Biological Resources	No loss of native vegetation. No impact on local biota.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	No impact.
• Cultural Resources	Adverse effect to University of Pennsylvania Campus Historic District associated with razing of Smith Hall and additions to Morgan and Music Bldgs. Restoration, renovation, and reuse of Morgan, Music, and Towne Bldgs., Hayden Hall, and Cret Wing. Change in Smith Walk orientation and ambience.	Adverse effect to University of Pennsylvania Campus Historic District associated with partial razing of Smith Hall and additions to Morgan and Music Bldgs. Restoration, renovation, and reuse of Smith Hall, Morgan, Music, and Towne Bldgs., Hayden Hall, and Cret Wing. Change in Smith Walk ambience.	No University of Pennsylvania Campus Historic District involvement. No cultural or archaeological issues. No planned restoration, renovation, and reuse of Smith Hall, Morgan, and Music Bldgs.	Significant intrusion upon major recreational space. No University of Pennsylvania Campus Historic District buildings directly affected but views of several would be blocked. Potential archaeological impact from excavations in Potter's Field associated with 1870s Philadelphia Almshouse Site. No planned restoration, renovation, and reuse of Smith Hall, Morgan, and Music Bldgs.	No impacts.

CHAPTER 3.0
AFFECTED ENVIRONMENT

3.0 AFFECTED ENVIRONMENT

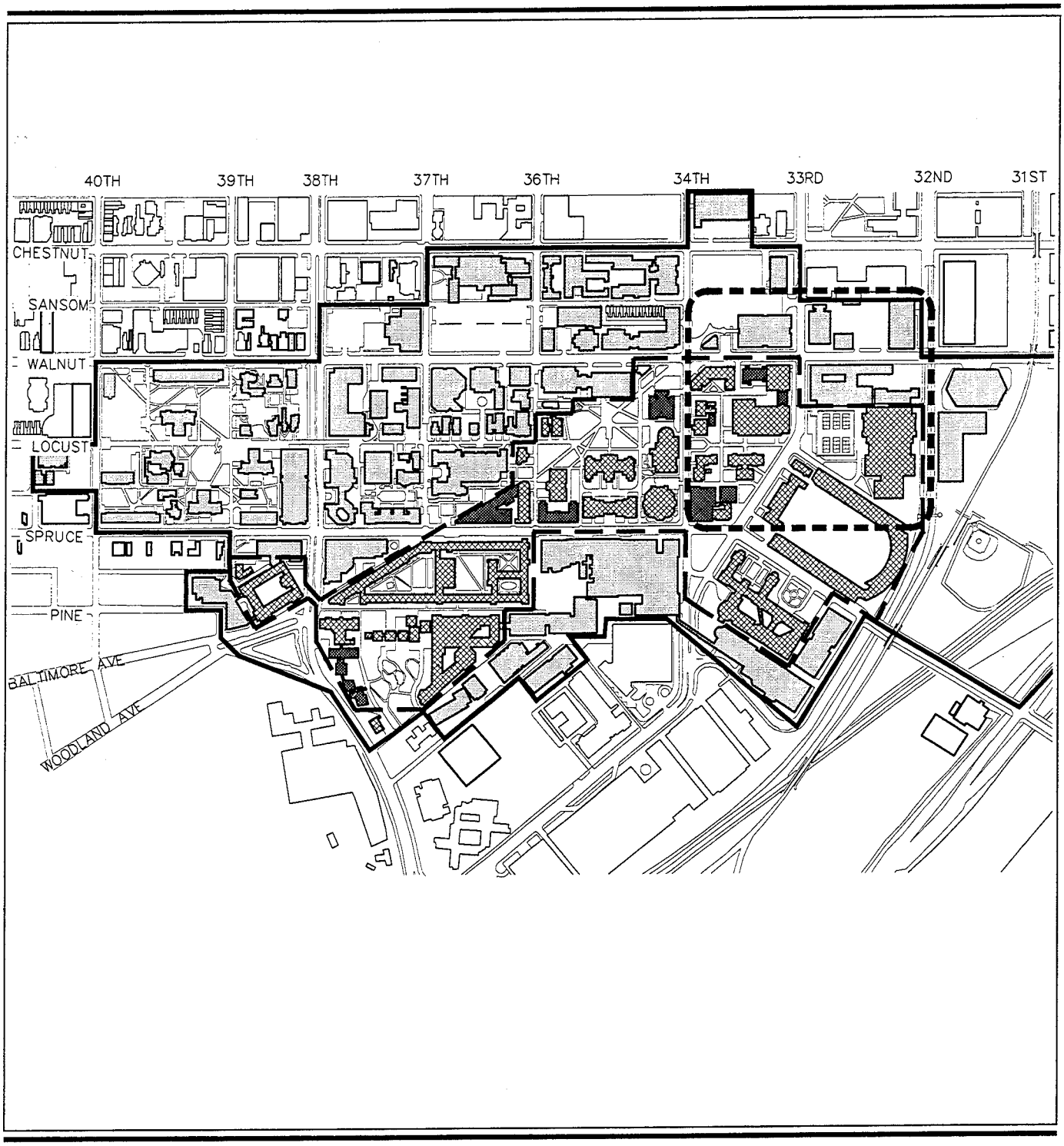
3.1 INTRODUCTION

This chapter contains a description of the existing environmental conditions at the University and the Region of Influence (ROI) and, for cultural resources, Area of Potential Effect (APE) of the proposed IAST sites.

The description of the baseline environment provides the most detail about the Project Site (Figure 3.1-1) because for most of the resources the ROI and APE will be the Smith Hall site (Proposed Action and Reuse of a Portion of Smith Hall Alternative), the LRSM Parking Lot Alternative, and the Lott Tennis Courts Alternative. Potential impacts associated with certain natural resources (e.g., air quality) may occur outside of the ROI.

Resource baseline information focuses on biophysical elements, such as soils and geology, water and biological resources, air quality, and noise. Although this FEIS focuses on the biophysical environment, nonbiophysical elements such as population, employment, land use and aesthetics, public utility systems, transportation networks, and cultural and archaeological resources are addressed to the extent they directly affect the environment. The storage, use, and management of hazardous materials and wastes at the University are also described. The level of detail and the extent of the analysis for each of the elements depend on the element's significance in light of the Proposed Action and Alternatives as described in Chapter 2.0.

The baseline conditions assumed for the purpose of analysis are the conditions at the time of the preparation of the DEIS. Therefore, the most descriptive year for the baseline is 1992.



EXPLANATION

- Other University Buildings
- Contributing Resource
- Non-Contributing/Modern
- Institutional Development District
- University of Pennsylvania Campus National Register Historic District
- IAST Project Site

0 400 800 1200 feet

Source: An Advisory Report On Historic Resources for the University of Pennsylvania, CLIO Group, Inc., May 22, 1989

IAST Project Site, Historic District and Institutional Development District Boundaries

Figure 3.1-1

807-9541 1/27/93

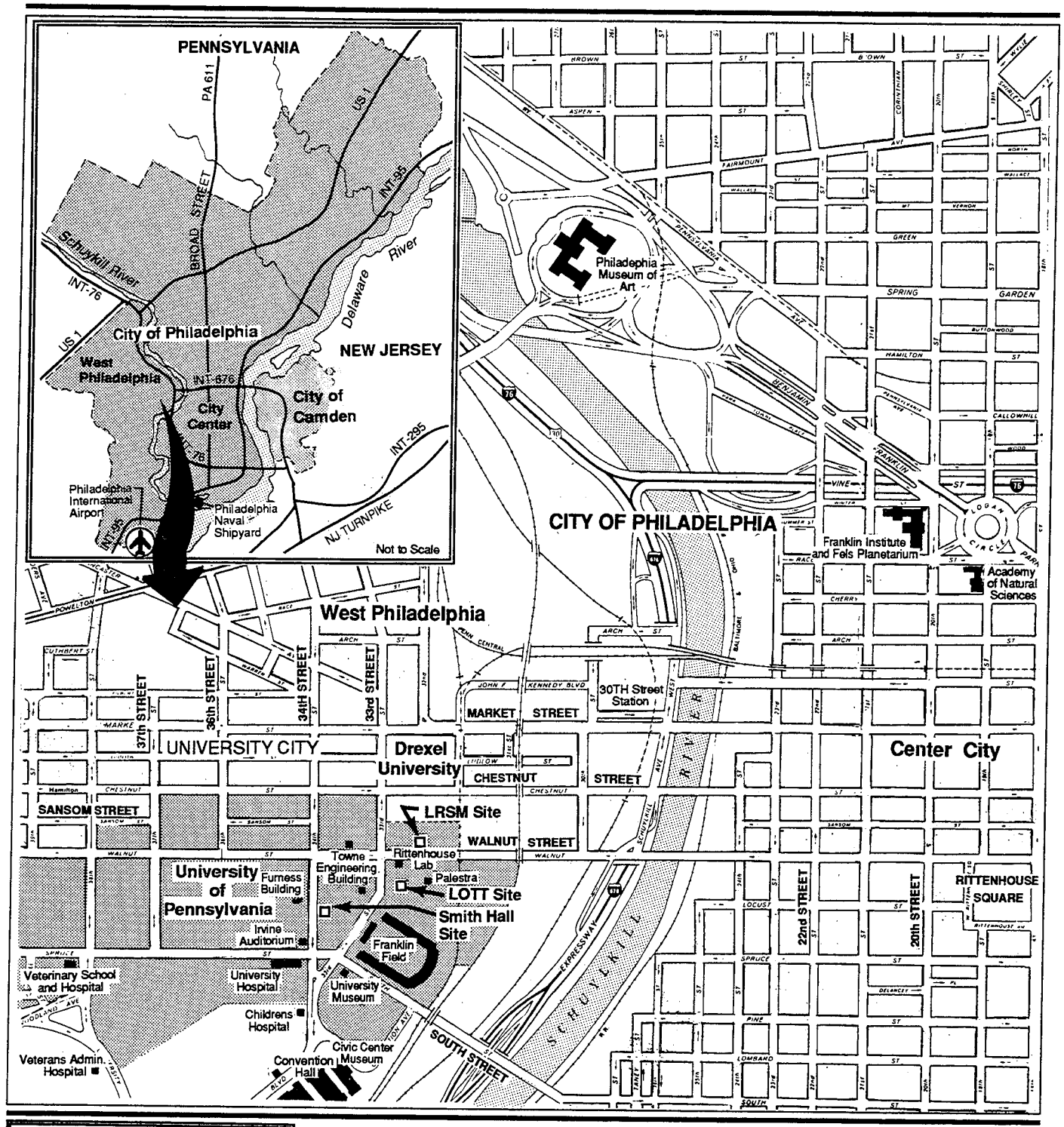
3.2 LOCAL COMMUNITY

Information in this section was obtained from various sources, including the U.S. Bureau of Labor Statistics, the Pennsylvania Department of Labor, and the Philadelphia City Planning Commission.

The potential IAST sites are located on the University's campus in University City, West Philadelphia. The City of Philadelphia is situated in the center of the Delaware Valley Region, which is formed by nine counties: Bucks, Chester, Delaware, Montgomery, and Philadelphia Counties in Pennsylvania and Burlington, Camden, Gloucester, and Mercer Counties in New Jersey. Except for Mercer County, these counties form the Philadelphia Primary Metropolitan Statistical Area (PMSA). The area is 120 miles northeast of Washington, DC and 85 miles southwest of New York City. University City is in the western section of the City of Philadelphia, situated just west of the Schuylkill River (Figure 3.2-1).

University City occupies approximately 2 square miles of land. In addition to Penn, major components of the area include: Drexel University, University City Science Center, Children's Hospital of Philadelphia (CHOP), the Civic Center and Convention Hall, the 30th Street Railway Station, and the Main Post Office. Numerous churches, theaters, recreational areas, residences, and businesses are spread throughout the area.

The Penn campus and West Philadelphia have a special relationship as a result of the changes that have occurred on the campus during the past four decades; this period transformed the Penn campus from its original suburban character to a dense urban center immediately adjoining a rapidly growing downtown. For City of Philadelphia planning purposes, University City and its immediate neighborhoods are grouped within West Philadelphia. This area is an employment center for West Philadelphia and draws workers from around the region. The neighborhoods in this area are principally occupied by residents seeking proximity to the University and Center City.



Location Map of the IAST Project and the General Region of Influence

Source: Base map-General Drafting Company, Inc., 1973

Figure 3.2-1

3.2.1 Community Setting

3.2.1.1 Population

The ROI for population issues is the City of Philadelphia, which is also Philadelphia County. In 1990, the population for the City of Philadelphia was approximately 1,585,000.

The University campus has a daytime population of approximately 30,000. Of this 7,000 are students residing on campus. An additional 7,000 persons associated with Penn, mostly students, faculty, and staff, reside in the adjacent neighborhoods within University City. The large majority of the remaining 16,000 persons live within the Greater Philadelphia Area.

3.2.1.2 Employment

Employment in the City of Philadelphia for 1992 was 707,800 persons. The University is the largest private employer in the City with approximately 20,000 employees in 1992.

3.2.2 Land Use and Aesthetics

3.2.2.1 Land Use

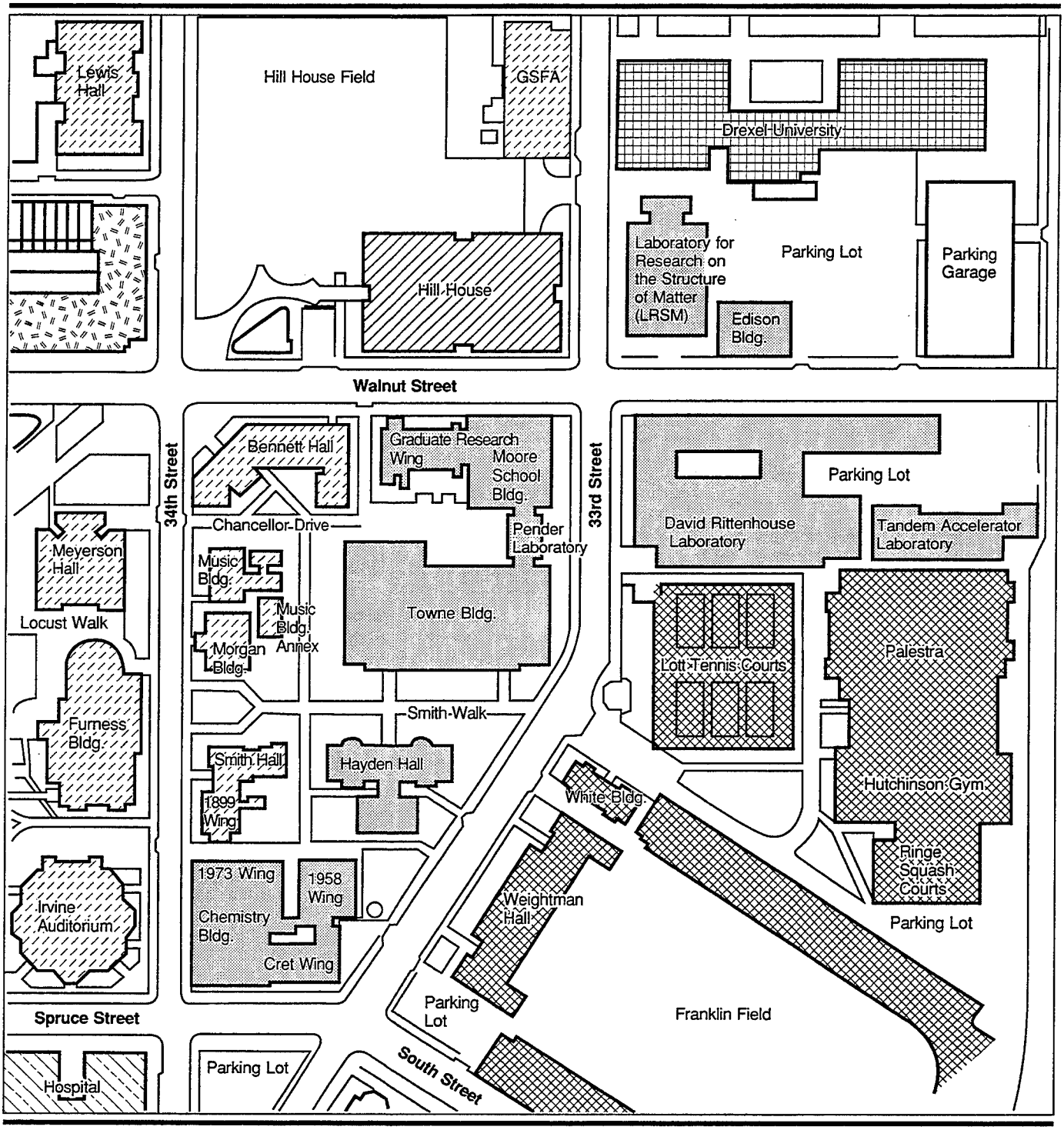
University City Land Use. The ROI for land use issues is University City, including the Penn campus. University City is a geographic description developed by the City Planning Commission in the 1950s to designate the region of West Philadelphia in the vicinity of Penn and Drexel University. University City is now generally considered to be bounded by the Schuylkill River on the east, Hamilton Street on the north, 52nd Street on the west, and the commuter rail line below Baltimore Avenue on the south. The general categories of land uses in University City are residential, institutional, recreational or park, commercial, and industrial. The core commercial and institutional sector is in the eastern part bounded by Powelton Avenue on the north, 40th Street on the west, and the Schuylkill River on the east and south. Most of this area is comprised of the

University of Pennsylvania campus; however, the campuses for Drexel University, the University City Science Center, and several hospitals are also located within this area. Other institutions in University City include public schools and hospitals located farther west.

Residential areas are located primarily south of Spruce Street and west of 40th Street. Residences range from high density apartment complexes to single family homes. Much of the housing caters to the student population. The University maintains housing for students and staff within the area east of 40th Street. The area west of 40th Street and north of Spruce Street is a mixture of commercial and residential uses such as retail stores and apartment buildings.

Public parks, recreational space, and open landscaped areas are relatively scarce in University City. Large open space bordering University City includes the Woodland Cemetery south of Woodland Avenue between 38th Street and the Schuylkill River and Clark Park at 43rd Street between Baltimore and Springfield Avenues.

University of Pennsylvania Land Use. The University's campus encompasses approximately 60 square blocks in West Philadelphia bounded by 31st and 41st Streets on the east and west and Chestnut Street and Baltimore Avenue on the north and south. The primary land use at the campus is academic buildings for classrooms, libraries, administration, research, and residences (Figure 3.2-2). Land use is broken into large precincts with scientific and laboratory groups east of 34th Street; athletic facilities concentrated east of 33rd Street; the central administration and liberal arts precinct west of 34th Street; the hospital and medical school to the south of Spruce Street; the business school and social sciences west of 36th Street; and most residential housing west of 36th Street. Other land uses within the limits of the campus include dormitories, public walkways, courtyards, and parks, as well as recreational facilities and retail stores. (Retail stores are concentrated along Chestnut and Walnut Streets between 34th and 40th Streets.)



EXPLANATION

- Science and Engineering Labs, Offices Classroom
- Recreational Facility
- Dormitory
- Other Academic Program
- Hospital of University of Pennsylvania
- Commercial Use
- Drexel University Facility

0 50 100 200 Feet

Source: University of Pennsylvania, Realty Office, June 1991

Current Land Uses

Figure 3.2-2

657-9175 12/9/92

The University is guided in its land use planning by a series of studies that have focused on various aspects of design, functional, and physical relationships and long-range planning for the campus. These studies were initiated in the early 20th century by the distinguished architect and planner Paul P. Cret, who enunciated principles that have generally guided campus planning ever since. These principles were: proximity of related programs; the assemblage of large blocks of space to separate pedestrian from vehicular traffic, the placement of large buildings along the perimeter of blocks to frame interior space, and the unified expression of the University through the use of brick and stone as its principal construction materials.

In recent years, these and other principles have been reinforced by the University's *Landscape Development Plan* (1977), which calls for the forming of significant green spaces and linking them along the east-west pedestrian corridor of Locust and Smith Walks and the continuing development of campus subregions. Penn's land use plan is currently being revised, but continues to reinforce the objectives of the *Landscape Development Plan* and the underlying principles of planning districts as areas of shared activity and architectural character. Historic preservation issues were incorporated into the *University of Pennsylvania's A Master Plan for the Campus (1988)*. This plan was presented to the Trustees of the University of Pennsylvania. Although never formally adopted, it nevertheless serves as a valuable point of reference for ongoing campus planning. Development in the Central Science Precinct was studied in the *University of Pennsylvania Campus Development Plan (1983-4)* and in other 1980s studies that identified needs, constraints, and options for adjacent expansion in the existing chemistry and engineering facilities.

Proposed Action and Reuse of a Portion of Smith Hall Alternative. This site faces 34th Street, the division between the Central Science Precinct and the central campus. On the west side of the street are two significant works of architecture: Frank Furness's national landmark Furness Building and Horace Trumbauer's Irvine Auditorium. Buildings within the block where the Proposed Action and Reuse of a Portion of Smith Hall Alternative sites are

located (the Central Science Precinct) contain classrooms, laboratories, and offices for many of Penn's science and engineering disciplines, including the Chemistry Building (1973, 1958, and Cret Wings), the Engineering Complex (Towne, Pender, and Moore Buildings), and the Geology Building (Hayden Hall).

The block also contains buildings that formerly housed laboratories and other science-related uses but now serve other purposes. Smith Hall, a former laboratory, was used as a classroom and office building for the History and Sociology of Science Department until 1993. It is now vacant. The Morgan Building was formerly a physics laboratory and now houses the Fine Arts studios. The Music Building was formerly a nursing school and currently houses the Music Department. On the northwest corner, Bennett Hall houses the English Department. The earlier buildings are typically framed by lawns and set back from streets and sidewalks; the later buildings (Moore, Bennett, and Chemistry (1973 and Cret)) abut the street. Many of these buildings are architecturally significant and most contribute to the University of Pennsylvania Campus Historic District. Passing through the center of the Central Science Precinct is Smith Walk, a part of the main pedestrian system of the campus. No residences are located within the block; the nearest residence is Hill Hall on the north side of Walnut Street.

LRSM Parking Lot Alternative. The LRSM Parking Lot faces the 3200 block of Walnut Street and is surrounded on the east by a modern multilevel parking garage, on the west side by the LRSM, on the south side by the DRL, which houses the Physics, Mathematics, and Astronomy Departments, and on the north side by a student center and theater complex owned by Drexel University. All of Penn's buildings at this site are modern in design, construction, and scale and directly abut Walnut Street.

Lott Tennis Courts Alternative. The Lott Tennis Courts form a large open space in front of monumental athletic facilities: Franklin Field, the Palestra, Hutchinson Gymnasium, and White Training House. These buildings are architecturally significant and are important public sites within the

University, housing the Penn Relays and University graduation, as well as sporting events. The Lott Tennis Courts contain six tennis courts with permanent seating along the side, which provides a popular lunchtime area for watching tennis.

Zoning. Zoning for University City and the University campus is governed by the Zoning Code of the City of Philadelphia. The Project Site, as well as many other blocks within the University campus, are zoned as an Institutional Development District under Chapter 14-1100 of the Philadelphia Zoning Code (see Figure 3.1-1). Specifically permitted uses in an Institutional Development District include "schools, colleges, universities, and other institutions of learning; adjunct residential dwellings, including dormitories; and adjunct play and recreational grounds or facilities."

3.2.2.2 Aesthetics

The ROI and APE are the project site and the adjacent areas of the Penn and Drexel campuses. They also overlap the University of Pennsylvania Campus Historic District described in Subsection 3.4.7.1.

Subsequent to the publication of the DEIS, a number of commentors expressed concern about the adequacy of the information presented on Aesthetics and Cultural Resources. In response, the Air Force requested that John Cullinane Associates, Architects and Preservation Planners, based in Washington, DC, conduct an independent review of the materials available on the University of Pennsylvania Campus Historic District and the proposed IAST construction and operations. The results of this independent review have been incorporated into Chapters 3.0 and 4.0 of the FEIS where appropriate.

Aesthetics are resources, including natural and manmade features, that give a particular environment its visual character and qualities. Manmade environments are characterized by the interrelationship of natural and

designed landscapes with buildings, structures, connecting roads, streets and paths, and other features.

Urban universities are planned to be sympathetic with functional, aesthetic, architectural, and cultural values. Each institution develops its own character. Penn has a largely brick campus with most of its buildings of four to six stories in height, frequently framing open quadrangles of lawns surrounded by linked buildings. Until the 1960s, Penn was a typical urban campus with most of its blocks surrounded by streets and traffic; only a few multiblock areas existed. Several walkways, including Smith Walk, have special significance because they were the only locations where the Penn campus transcended its urban setting. In the last three decades, modern campus planning has assembled other large blocks that set the campus apart from the surrounding neighborhood. These blocks are crossed by landscaped, highly-travelled pedestrian walkways, such as Locust Walk.

In part as a consequence of the need to modernize and expand University facilities in a limited area, the campus exhibits buildings of different eras and styles. Instead of being limited by notions of aesthetic unity, new works are interspersed with old, resulting in juxtaposition, contrast, and variety, which is characteristic of each campus setting. Two examples of such juxtaposition are Frank Furness's red Victorian Gothic library against the green Gothic of the original college buildings and Louis Kahn's modern Richard's Building against the picturesque, turn-of-the-century dormitory quadrangle of Cope and Stewardson.

Smith Hall is a two-story brick building with a brownstone base and dressed lintels and is accented by pressed brick ornament. Smith Hall has a slightly asymmetrical facade because of the placement of the entrance with two flanking wings framing a central wing. On the main facade and the front block of the north elevation, windows are regularly spaced, and stories diminish in accordance with classical proportional systems. The rear wing has fenestration that is less regular and features a large angled window for

exposing blueprints. The roof is of shallow pitch with a line of large ventilating chimneys along the ridge.

Smith Hall was originally constructed as the Institute of Hygiene in 1891/1892. In 1899 the original south wing was replaced by a cubic wing composed of materials similar to the original building. Smith Hall matches the pattern of red buildings in the area and frames the south side of Smith Walk, forming part of the group of buildings that frame 34th Street.

Other historic buildings in the Central Science Precinct include the Morgan Building, the Music Building, Hayden Hall, the Towne Building, the Moore School, Bennett Hall, and the Cret Wing of the Chemistry Building.

The Morgan Building is characterized by a cubic shape, overhanging roofs, and decorative brickwork. Its red brick, brownstone detail, and red painted wood trim links this building to other red buildings in the area. The Music Building is architecturally similar to the Morgan Building and with it contributes to the grouping along 34th Street. Hayden Hall is built of the same red brick as the nearby buildings. The Towne Building is a large scale, brick structure with limestone trim that forms one of the important elements of the 33rd Street streetscape. The Moore Hall School Building has the brick and light trim of the area, but its flat surfaces and simple repetitive pattern make it background architecture.

Bennett Hall, an academic Gothic structure, is unlike the other buildings in the Central Science Precinct in that it has greater height and is built right up to the sidewalk. It is significant in shaping the northwest corner of the Central Science Precinct and is one of the major entrance features of Penn at what the public generally perceives as the front door of the institution. The Cret Wing of the Chemistry Building combines modern architecture in its horizontal strip windows with the materials of the historic campus. Its recessed and curved corner defines the streetscape at the corner of 33rd and Spruce Streets.

Across 34th Street from Smith Hall and the Central Science Precinct are the Furness Building and Irvine Auditorium. The red stone Furness Building is a sculptural landmark that plays an important role in defining the visual character of 34th Street and terminates the view from Smith Walk. Irvine Auditorium, an academic Gothic structure with high spired bulk, is a landmark on the corner of 34th and Spruce Streets. Northwest of the Central Science Precinct is a block of modern offices and shops dating from the 1980s, and to the south is the University Hospital, a modern structure.

Several handsome landscapes contribute to the character of the district, including the central campus, which has been designated Blanche Levy Park; the tree-shaded and decoratively paved Locust Walk; and the tree-shaded Smith Walk, which stretches between 34th Street and 33rd Street in the Central Science Precinct, providing a background setting for the historic science buildings and a pedestrian scale within the Central Science Precinct.

LRSM Parking Lot Alternative. The LRSM Parking Lot site is framed by large modern yellow or orange buildings that directly front Walnut Street, which is a major east-west traffic corridor. The rear of the site is bordered by Drexel University. These buildings are not part of the University of Pennsylvania Campus Historic District. Unlike the Central Science Precinct and the Lott Tennis Courts site, there is little landscaping. The Edison Building is a small modern, temporary building. Most of the site is composed of blacktop parking.

Lott Tennis Courts Alternative. The Lott Tennis Courts site contains six tennis courts and adjacent permanent spectator seating. It also contains a war memorial with sculpted flagpole base on a circular-stepped plaza that is backed by a limestone wall. The overall site is framed by the large brick and concrete buildings of the Sports Complex that are adjacent to the tennis courts. The Palestra and Hutchinson Gymnasium on the east and Franklin Field and the White Training Building on the south relate in material and character to Towne, Moore, and Hayden across 33rd Street. The DRL on the north side is a modern building in orange brick and marble trim. Trees

border both sides of 33rd Street and form a screen between the tennis courts and the DRL.

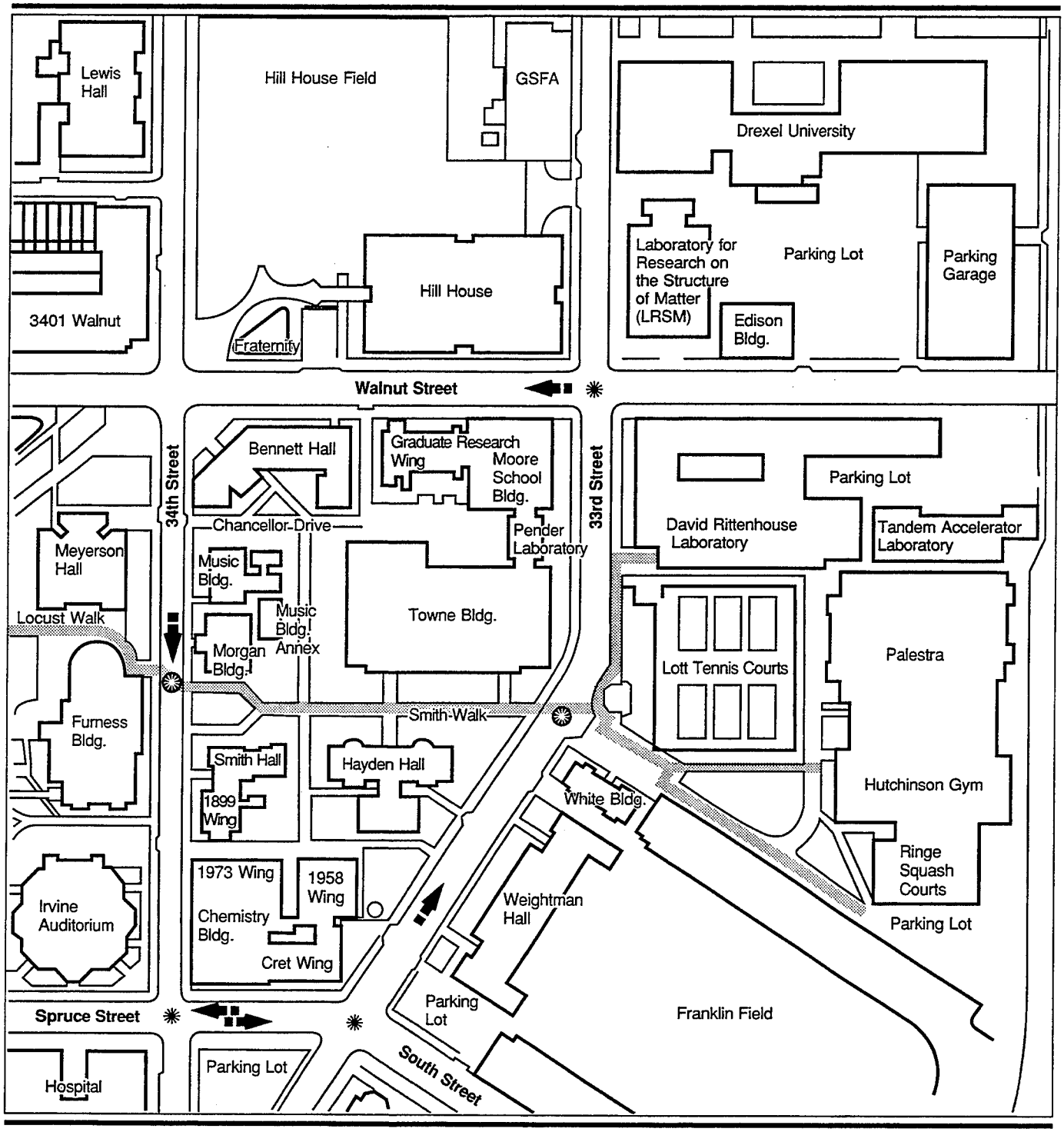
The Palestra forms the backdrop to the Lott Tennis Courts and terminates the view of campus to the east. The Hutchinson Gymnasium reflects in simplified detail the same materials as the rest of the Sports Complex. Franklin Field is a large brick and reinforced concrete structure. Its great arcades along the north and south stands are important to the streetscape along 33rd and Spruce Streets, as well as the south side of the extension of Smith Walk into the athletic complex. Weightman Hall is an academic Gothic building that forms an important part of the 33rd Street streetscape. The White Training Building is similar to Weightman Hall but uses terra cotta instead of limestone to accent its brick walls.

3.2.3 Transportation

The ROI for transportation includes the principal road network in University City. This analysis focuses on the segments of the transportation network that serve as direct or necessary indirect linkages to the University and are commonly used by University employees. Existing and future transportation system components that may be affected by the Proposed Action and Alternatives are also discussed. The traffic information and analysis presented are extracted from a study by Traffic Planning and Design, Inc., which is included as Appendix D.

3.2.3.1 Roadways

The study area boundaries, which encompass the sites of the Proposed Action and Alternatives, include Walnut Street to the north (extending from the LRSM lot parking garage to 34th Street), Spruce Street to the south, 33rd Street to the east, and 34th Street to the west (Figure 3.2-3). In the study area, Walnut Street is a one-way westbound roadway with three travel lanes and metered parking on both sides of the street. Spruce Street is a four-lane, two-way roadway in the study area, running parallel to



EXPLANATION

Principal Traffic Components

- Direction of Traffic Flow
- Principal Pedestrian Paths Through ROI
- Location of Vehicle Counts
- Location of Pedestrian Counts

0 50 100 200 Feet

Source: University of Pennsylvania, Realty Office, June 1991

Figure 3.2-3

670-9208 12/9/92

Walnut Street. The two north-south streets in the study area, 33rd and 34th Streets, run parallel to each other for part of this stretch. Both are three lanes wide and serve as a one-way pair, with 33rd Street carrying northbound traffic and 34th Street carrying southbound traffic.

Two heavily used pedestrian walks are situated in the study area. Smith Walk extends between 33rd and 34th Streets approximately halfway between Walnut Street and Spruce Street; on the west, a crosswalk links it with stairs leading to Locust Walk. On the east, a crosswalk links it with the DRL and various athletic facilities.

Existing Traffic Volumes

Intersections in urban areas are the most critical part of the roadway network in determining the capacity and levels of service in the area. Therefore, counts were conducted at the following intersections since they will be most impacted by the proposed building for the Proposed Action or the three Alternatives:

- Spruce Street and 34th Street — September 14, 1992
- Spruce Street and 33rd Street — September 15 and 16, 1992
- Walnut Street and 33rd Street — September 15, 1992

The traffic counts were conducted at the above-mentioned intersections between 6:00 a.m. and 6:00 p.m. The morning, noon, and afternoon peak hours were determined for each intersection.

Seasonal and daily adjustment factors for the days the traffic counts were conducted were obtained from the Delaware Valley Regional Planning Commission. For Monday, September 14, the adjustment factor was 0.96; for Tuesday, September 15, and Wednesday, September 16, the adjustment factors were 0.95 and 0.93, respectively. According to these factors

volumes in the area on the days the counts were conducted are 4 percent to 7 percent higher than under average traffic conditions.

Due to the proximity of the intersection of 34th Street and Spruce Street to the Hospital of the University of Pennsylvania, a detailed count was taken at this intersection, including the number of ambulances for each approach. Table 3.2-1 summarizes the results of this ambulance count.

Table 3.2-1. Ambulance Count at Intersection of 34th Street and Spruce Street

Time Period	Southbound 34th Ambulances	Westbound Spruce Ambulances	Eastbound Spruce Ambulances
6-7 am	0	0	1
7-8 am	0	2	1
8-9 am	0	3	4
9-10 am	0	1	2
10-11 am	0	0	1
11-12 noon	0	5	4
12-1 pm	4	8	0
1-2 pm	2	3	2
2-3 pm	0	2	4
3-4 pm	1	4	2
4-5 pm	1	3	3
5-6 pm	0	1	2

Counts were also conducted for the 12-hour time periods at the two pedestrian crosswalks on 34th and 33rd Streets. The count on 34th Street was conducted on September 15, 1992, while the count on 33rd Street was conducted on September 16, 1992. The actual pedestrian traffic peak hour may differ. After observation of the results, it was noticed that the pedestrian traffic volumes varied widely with the peaks occurring during the 15-minute periods during which classes would change at the nearby buildings. Tables 3.2-2 and 3.2-3 summarize the results of these counts at the crosswalks on 34th and 33rd Streets.

Capacity Analyses for Existing Conditions

Capacity analyses were conducted for all intersections examined according to the procedures in the *Highway Capacity Manual*, Special Report 209, 1985, as described in Appendix D. The analyses were run using all correct factors for truck volumes, pedestrians, bus stops, etc.

All three signalized intersections examined presently operate at very good levels of service (level B or better). At a level of service B, the average delay for each approach is between 5 and 15 seconds. Therefore, based on three analyses, the average current delay for each approach at all three intersections examined is less than 15 seconds.

Table 3.2-2. Pedestrian Crosswalk Count on 34th Street

	Southbound 34th Street			Crosswalk
Time Period	Cars	Trucks and Buses	Bicycles	Pedestrians and Bicycles
6-7 am	313	8	0	25
7-8 am	571	20	4	53
8-9 am	683	22	9	363
9-10 am	432	39	9	275
10-11 am	401	47	9	389
11-12 noon	393	37	9	821
12-1 pm	342	31	9	421
1-2 pm	441	21	8	324
2-3 pm	439	29	10	437
3-4 pm	503	17	7	478
4-5 pm	507	24	8	670
5-6 pm	535	18	11	396

SOURCE: Traffic Planning and Design, 1992 (see Appendix D)

Table 3.2-3. Pedestrian Crosswalk Count on 33rd Street

Time Period	Northbound 33rd Street			Crosswalk
	Cars	Trucks and Buses	Bicycles	Pedestrians and Bicycles
6-7 am	291	17	0	11
7-8 am	610	26	2	103
8-9 am	861	32	6	375
9-10 am	546	47	5	247
10-11 am	276	21	6	314
11-12 noon	487	33	7	431
12-1 pm	402	34	8	285
1-2 pm	454	43	10	583
2-3 pm	497	38	5	649
3-4 pm	645	24	6	458
4-5 pm	859	23	8	397
5-6 pm	791	14	9	441

SOURCE: Traffic Planning and Design, 1992 (see Appendix D)

3.2.3.2 Existing Parking Conditions

Projected parking conditions were based on the parking study conducted by Barton Aschman Associates, Inc., in November 1989 for the University of Pennsylvania and its Medical Center. Its projections, based on 1988 counts, determined that the 1994 parking supply will be 6,388 spaces in the University campus and adjoining facilities. While the study took into account the loss of 426 spaces after construction of a new student center, which has since been postponed to beyond 1994, it did not account for a new parking garage at 38th and Walnut Streets adding 600 new spaces. The new garage will result in a 1994 parking supply of 6,988 spaces. Furthermore, the 1994 parking demand according to the parking study is 6,161 spaces. Therefore, a surplus of 827 spaces will exist prior to construction of the IAST facility.

3.2.4 Utilities

Utility service at the Project Site is provided underground. The Project Site is crossed with subgrade chilled water lines for air conditioning, steam lines for heating, signal/data lines, electric service, potable water lines, and sewers. Excess utility capacity is available throughout the campus to meet development demands. Utility capacity is not a constraint on development.

Potable water is treated and provided by the City of Philadelphia. Sewer lines are also maintained by the City of Philadelphia and currently collect the waste from the University. City sewer lines run underneath 33rd and 34th Streets as well as Walnut and Spruce Streets and would be readily available for additional tie-ins. In this area, sanitary and storm sewers are combined.

3.2.5 Solid Waste

The University solid waste stream is composed of municipal waste, hazardous chemical waste, radioactive waste, and infectious/biomedical waste. The chemical, radioactive, and medical/biohazardous wastes of the University are discussed in Section 3.3.

The University generated 9,298 tons of municipal waste (trash) in fiscal year 1992 (July 1, 1991, to June 30, 1992). Of that, approximately 2,100 tons were recycled. Trash is collected from trash cans and dumpsters throughout the campus by University employees. This waste is transported to a City of Philadelphia transfer station in a University vehicle and from there is disposed of as landfill by the City. Approximately 2,900 tons of trash were handled in this manner. Another 4,298 tons of trash were disposed of through the use of sealed compactor trash containers. The compactor trash containers are removed from the University by contractors to private transfer stations and thence to landfills. Groves Landfill, operated by Browning Ferris Industries (BFI) in Bucks County, Pennsylvania, is the principal landfill used. Groves has adequate capacity for solid waste for the next 10 years.

3.3 HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT

Hazardous materials and hazardous waste management activities at the University are governed by specific environmental regulations. For the purpose of this analysis, the term hazardous means those substances defined as hazardous by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S. Code (USC) 9601-9675, as amended, and the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA), 42 USC 6901-6992, as amended. In general, substances are classified as hazardous if their quantity, concentration, or physical, chemical, or infectious characteristics may present substantial danger to public health or welfare or the environment when released into the environment. Many substances frequently encountered in daily life are considered hazardous when released into the environment in sufficient quantity, such as house paint, automobile batteries, and laundry bleach. However, when used and disposed of properly, these materials are not considered hazardous.

The ROI for hazardous waste and material management pertaining to the Proposed Action and Alternatives is the Penn campus. EPA has granted the Commonwealth of Pennsylvania the authority to promulgate and enforce environmental regulations under RCRA. The state regulations, which must be at least as stringent as the federal regulations, are administered by PADER. The transportation of hazardous materials is regulated by the U.S. Department of Transportation in accordance with Title 49 of the Code of Federal Regulations. The state regulations are administered by PADER. The University's EPA identification number is PAD042250712.

Hazardous materials and hazardous waste management data sources included existing compiled reports, such as University annual hazardous waste reports, various hazardous waste and material management plans, recent inventories, and survey results (e.g., hazardous waste, asbestos, radon, and mercury).

3.3.1 Hazardous Materials Management

The use of hazardous materials in University research buildings is consistent with the laboratory use of hazardous chemicals as defined by the Occupational Safety and Health Administration. As defined in 29 CFR Part 1910.1450(b) (*Federal Register* Vol. 55, No. 21, 1990, p. 3328), "Laboratory use of hazardous chemicals means handling or use of such chemicals in which all the following conditions are met:

- Chemical manipulations are carried out on a 'laboratory scale.'
- Multiple chemical procedures or chemicals are used.
- The procedures involved are not part of a production process, nor in any way simulate a production process.
- Protection, laboratory practices, and equipment are available and in common use to minimize the potential for employee exposure to hazardous chemicals."

Further, according to OSHA, "Laboratories generally have many hazards present to which exposures are intermittent rather than a few substances to which there are regular exposures. Therefore, the appropriate consideration is whether a significant risk would be present in laboratories without good laboratory practices rather than development and consideration of risk assessments for hundreds of chemicals present, an exercise likely to be impossible to perform." (*Federal Register*, Vol. 55, No. 21, January 31, 1990, pg. 3304.)

Beginning in January 1991, pursuant to OSHA regulations, the University established a comprehensive environmental safety and health education and training program, as an adjunct to the existing Hazard Communications Program, to promote good laboratory practices. The following guidelines

were published by Penn's Office of Environmental Health and Safety (OEHS): *University Chemical Hygiene Plan, and University Biological Safety Manual.* In addition, the University's Radiation Safety Office published the *University Radiation Safety User's Guide*, the Office of Research Administration published *The Researcher's Guide*, and the Division of Public Safety published the *University Safer Living Guide*. Copies of these manuals are available from the University. These guidelines are imposed upon all research conducted at the University. Designed to protect students, researchers, and the environment, these manuals provide for the safe storage, use, and disposal of chemicals, biohazards, and radioactive materials in the laboratory. In brief, they require all researchers to know and follow safety rules, to use protective equipment, and to have appropriate training. Pursuant to the Chemical Hygiene Plan (CHP), for example, chemical handling education and training is provided to all incoming teaching assistants, graduate research fellows, and principal investigators (PIs) by the Office of Environmental Health and Safety (OEHS). The PI is specifically responsible for proper use of all chemicals in the laboratory. The OEHS regularly inspects University laboratories to ensure compliance with the CHP. The OEHS also participates in laboratory audits with the Philadelphia Fire Marshall.

The University laboratories are subject to inspection by the City of Philadelphia Office of Licenses and Inspections, the Pennsylvania Department of Environmental Resources, and the U.S. Occupational Health and Safety Administration. The University is in current compliance with all regulatory requirements. Additionally, the University provides for laboratory "walk throughs" with all three shifts of the City of Philadelphia's Fire Department Hazardous Material Response Unit.

Over the past 5 years, 10 incidents have been reported in the Chemistry and Engineering Buildings. Of these, four incidents were not laboratory related. Of the remaining six, two incidents were the result of disregarding safety procedures and four were accidents. Two of the accidents involved spilled mercury from either a broken thermometer or manometer. In both cases,

the mercury was vacuumed, and no injuries were reported. The other two accidents involved laboratory fires. Both fires were contained within the immediate laboratories, and no long-term building damage was sustained.

The Chemistry and Engineering Departments use several hundred chemicals in the research laboratories. These chemicals can be grouped into flammable liquids, solids, and gases; corrosives; oxidizers; halogenated and nonhalogenated solvents; and ammonia. Chemicals in use within the Chemistry Department, both at present and expected in the future, are fundamentally the same as those used at other research laboratories.

Within the Project Site, laboratory research materials are delivered to the loading dock at the rear of the Chemistry Complex from 33rd Street. These materials are purchased from private vendors and delivered to that loading dock in vendor vehicles. From the loading dock, the chemicals are placed in the Chemistry Department's stockroom by University employees who are specially trained in materials handling. Chemicals are stored according to their hazard class either in the labs, the chemistry stockroom, or the flammable storage building at the Chemistry Complex. Chemicals are distributed on an as-needed basis by stockroom personnel using the freight elevator for access to other floors. A more limited array of chemicals are also received at the LRSM Building under similar management practices.

3.3.2 Hazardous Waste Management

3.3.2.1 Chemical Waste

The University's *Guidelines for the Disposal of Chemical Wastes* (GDCW) were implemented to comply with federal and state regulations, including RCRA, Pennsylvania's Right-to-Know Law, and the Pennsylvania Solid Waste Management Act.

The University has in place a Preparedness, Prevention and Contingency (PPC) Plan in accordance with RCRA and the Pennsylvania Solid Waste Management Act, 25 PA Code Ch. 262, 264, 265. The PPC Plan provides

University procedures and methods to prevent the escape of hazardous materials from the site during a spill. Included is a facility description, a listing of emergency coordinators and staff and their duties and responsibilities, and procedures for spill and leak prevention. The PPC Plan is maintained by the OEHS and is updated and amended as required.

Both the Commonwealth of Pennsylvania and the EPA require documentation of an effective waste minimization program. The University's waste minimization program, as outlined in the GDCW, limits chemicals purchased only to those volumes needed for research and calls for utilizing efficient research methods, restrictions on waste handling, and the replacement of hazardous substances with nonhazardous substitutes whenever possible.

The GDCW imposes a "no down the drain" policy, which prohibits hazardous research wastes from entering the sewer systems. Wastes are segregated in each laboratory and collected on a periodic basis by the University, consolidated as required, and disposed of through a licensed waste disposal contractor in accordance with RCRA regulations. Nonhazardous wastes are either disposed of in normal trash or recycled, as appropriate.

Hazardous waste collected from the University is stored at the consolidated waste facility (a 90-day accumulation point) on the Penn campus. Licensed hazardous waste contractors remove this waste from the facility approximately 14 times a year and transport it to a permitted treatment, storage, and disposal facility for final disposal. From July 1991 to June 1992, the University disposed of 67,000 lbs of hazardous waste through its contractors. The waste was composed of 33,180 lbs of flammable liquid; 2,930 lbs of combustible liquid, mostly as waste vacuum pump oil; and 30,900 lbs of lab pack. The University's lab packs include corrosives, flammable soils, oxidizers, and poisons. The University's hazardous waste composition is very similar to that generated by other research universities.

Table 3.3-1 shows a comparison of the University's waste stream with that of UCLA.

Table 3.3-1. Percent Composition of University of Pennsylvania Hazardous Waste Generated in 1992 vs. University of California, Los Angeles Hazardous Waste in 1989

	Penn[a]	UCLA[b]
Flammable Liquid	68%	49%
Combustible Liquid	11%	6%
Corrosives	10%	12%
Flammable Solids	1%	3%
Oxidizers	3%	3%
Poisons	3%	17%
Others	4%	10%

[a]OEHS, 1992.
[b]T. Brink et al., 1989.

3.3.2.2 Radioactive Waste

The disposal of radioactive materials is regulated by the NRC. The *University Radiation Safety User's Guide* describes the procedures for the disposal of radioactive materials.

The University categorizes its low-level radioactive waste as dry waste, liquid scintillation fluid, and animal carcasses. In 1991, the University generated 1,325 cubic feet (ft^3) of dry waste, 413 ft^3 of liquid scintillation fluid, and 75 ft^3 of animal carcasses. In 1992, the University generated 1,140 ft^3 of dry waste, 210 ft^3 of liquid scintillation fluid, and 143 ft^3 of animal carcasses. Until December 1992, these wastes were disposed of

under the oversight of the University's Radiation Safety Office using certified licensed contractors. As of January 1, 1993, radioactive wastes are stored on-site under the Radiation Safety Office's oversight. These wastes are stored on-site because the Commonwealth of Pennsylvania has yet to designate a low-level radioactive waste repository within the state. There is sufficient capacity in the University's storage facility to accommodate at least 2 years' accumulation of radioactive waste.

The Morgan Building was used by the Physics Department from the early 1890s until 1955. A vertical Van de Graaff accelerator was originally located behind and to the east of the Morgan Building, where the Music Building Annex now stands. This accelerator was removed when the Physics Department moved from Morgan. All that remains of the accelerator is a basement room that is underneath the current Music Building Annex. That room is only accessible from the basement level of the Music Building. It is currently used as a mechanical room.

In response to a commentor's concern, the University's Office of Radiation Safety, in conjunction with EPA, conducted a radiation survey of the basement room and the areas outside the Music and Morgan Buildings. EPA surveyed using a Ludlum Instruments Meter with a Scintillation Probe. The Office of Radiation Safety used a Victorine Autoranging Digital Ionization Chamber. Neither EPA nor the University Radiation Safety Office detected radiation levels above normal background for this area of the campus, i.e., 10 to 20 micro roentgen per hour.

3.3.3 Asbestos, Lead, and Mercury

Asbestos-containing material (ACM) remediation is regulated by EPA, OSHA, and the City of Philadelphia Department of Health, Air Management Services. The University's Asbestos Management Plan is administered by the OEHS.

Two primary categories describe ACM. Friable ACM is defined as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Nonfriable ACM are those materials that contain more than 1 percent asbestos but do not meet the rest of the criteria for friable ACM.

Within the proposed IAST sites, Smith Hall, the Morgan and Music Buildings, and the Edison Building contain ACM. The ACM consists primarily of floor tile and pipe insulation. All the flooring materials in the Music Building and its annex were found to contain ACM. The University removes ACM pursuant to City of Philadelphia regulations when asbestos fiber release could occur, such as when poor general conditions exist or during renovation or demolition activities.

Smith Hall and the Morgan and Music Buildings are known to contain lead paint, which is harmful to humans when inhaled or eaten. Prior to any renovation, exposed lead paint would be removed pursuant to University protocol in accordance with applicable health laws, regulations, and standards.

Potential mercury contamination, resulting from breakage of thermometers and manometers, has been investigated. In the fall of 1992, OEHS surveyed Smith Hall and the Morgan and Music Buildings, including spaces beneath floors using a Bacharach Model MVL-2 Mercury Vapor Sniffer®. No mercury contamination was found.

3.3.4 Radon

Radon is a naturally occurring, colorless and odorless, radioactive gas that is produced by the radioactive decay of naturally occurring uranium. Radon is found in high concentrations in rocks containing uranium, such as granite, shale, phosphate, and pitchblende. Atmospheric radon is diluted to insignificant concentrations. Radon that is present in soil, however, can enter a building through small spaces and openings, accumulating in

enclosed areas, such as basements. The cancer risk caused by exposure through the inhalation of radon is currently a topic of concern.

The University conducted radon tests in 1987 and 1989. In 1987, the basements of the Towne and Furness Buildings each registered at 0.9 pCi/l. Room 110 in the Towne Building registered 0.1 pCi/l, and the second floor of the Furness Building registered 0.5 pCi/l. In 1989, the Morgan Building was monitored; Room 303C measured 0.4 pCi/l, Room 303B measured 0.5 pCi/l, and the basement measured 0.6 pCi/l. These levels are well below those requiring remediation.

3.3.5 Medical/Biohazardous Wastes (Infectious Wastes)

The generation, storage, and disposal of infectious wastes in Pennsylvania are regulated by 25 PA. Code, Chs. 271, 273, 283, and 285. The University has procedures to meet the regulatory requirements for the management and disposal of these wastes (University Biological Safety Manual). Infectious wastes are collected in labs, clinics, and patient areas throughout the University. The wastes are properly packaged in boxes. Contractor employees remove the boxes and transport the boxes to off-campus incinerators. In fiscal year 1992 (July 1, 1991 to June 30, 1992), the University disposed of approximately 1,370 tons of infectious waste. There is sufficient capacity to dispose of any increase in the University's infectious waste that would be generated by the IAST, estimated to be 20 lbs per month.

3.4 NATURAL ENVIRONMENT

3.4.1 Geology and Soils

The Project Site is located on urban land as mapped in the Soil Survey of Bucks and Philadelphia Counties, Pennsylvania (U.S. Department of Agriculture, Soil Conservation Service, July 1975). Urban lands, as described by the Soil Conservation Service, are highly developed or

disturbed areas on uplands, terraces, and floodplains. Most such urban land areas have been graded, with the original soil disturbed and filled over prior to construction. The general Project Site area has undergone several generations of construction with each new activity covering over the fill of the previous activity. Thus, little or no original soil profile remains, and the fill materials cannot be associated with a local soil group. The residual, weathered rock material is generally a micaceous, silty sand according to the geotechnical engineering report (Schnabel Engineering Associates, September 30, 1991).

The Proposed Action site has been covered by Smith Hall since 1891. Some small amount of exposed soil exists on the site. Because the Reuse of a Portion of Smith Hall Alternative utilizes the same site as the Proposed Action, the soil characteristics are the same. The LRSM and Lott sites are almost entirely paved; little exposed soil exists at either of these locations, although some soils are exposed surrounding the Lott Tennis Courts.

3.4.2 Physiography

The Project Site is generally flat with elevations of approximately 40 ft above sea level. Elevations in the surrounding area range from near sea level to approximately 80 ft above sea level.

The top of bedrock was encountered from 30 to 38.5 ft below grade at the site of the Proposed Action according to the geotechnical engineering report prepared by Schnabel Engineering Associates for Phases I and II. Test borings made by Sprague and Henwood at both the LRSM and Lott sites showed a very similar geologic formation, with bedrock encountered from 30 to 38 ft below grade. At several locations on the Lott site over 20 ft of fill was encountered. The geology does not appear to pose any undue constraints on development at any of these sites based on the existing borings.

Local and regional seismicity appears to be diffuse and cannot be associated with specific faults or other regional structures. Seismic risk at any of these sites is minimal.

3.4.3 Water Resources

3.4.3.1 Surface Drainage

With the exception of small lawn areas, each of the proposed alternative sites is paved or developed. Field investigations indicate that all surfaces drain into the neighboring streets and the City's existing combined stormwater-sewer drainage system.

3.4.3.2 Groundwater

Groundwater is not used as a source of water supply in the vicinity of the Project Site, and construction would not impact groundwater resources. Test borings show that groundwater levels vary from approximately 8.4 ft below grade (Mean Sea Level (MSL) 30.9) to approximately 24 ft below grade (MSL 16.0). The higher elevation may be indicative of a local perched water table. Levels may be expected to fluctuate seasonally over a range of approximately 5 to 6 ft. Groundwater is not perceived as a constraint on development.

3.4.4 Air Quality

Section 118 of the federal Clean Air Act (CAA), as amended in August 1977 and November 1990 [42 USC 7418(a)], dictates that project emissions sources must comply with the air quality standards and regulations that have been established by federal, state, and county regulatory agencies. These standards and regulations focus on 1) the maximum allowable ambient pollutant concentrations resulting from project emissions, both separately and combined with other surrounding sources, and 2) the maximum allowable emissions from the project.

Air quality in a given location is described as the concentration of various pollutants in the atmosphere, generally expressed in units of ppm or micrograms per cubic meter ($\mu g/m^3$). Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. The significance of a pollutant concentration is determined by comparing it to federal and/or state ambient air quality standards. These standards represent the maximum allowable atmospheric concentrations that may occur and still protect public health and welfare, with a reasonable margin of safety.

The federal standards are established by EPA and are called the National Ambient Air Quality Standards (NAAQS). The NAAQS are divided into primary and secondary standards. The National Primary Standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health. The National Secondary Standards are the levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. Each state must attain the standards within a "reasonable time" after EPA approves the State Implementation Plan (SIP). The pollutants with NAAQS include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and PM_{10}. Pennsylvania has adopted the NAAQS, as well as several of its own standards, including settleable particulates, beryllium (Be), sulfates, fluorides, and hydrogen sulfide. The City of Philadelphia has adopted the NAAQS. Table 3.4-1 presents the NAAQS and the Pennsylvania AAQS.

The City of Philadelphia has regulated air quality through its Department of Health since the 1950s, well before any regulation at the state level. The City has maintained that autonomy and has a recognized local air pollution control program sanctioned under the Pennsylvania Air Pollution Control Act, as amended. That act provides that the City may manage local air quality issues through locally applicable provisions for the SIP, otherwise the PADER SIP provisions prevail.

Table 3.4-1. Air Quality Measurements and Standards

Pollutant	Averaging Time	Philadelphia Ambient Air[b]	National Standards[a]		Pennsylvania Standards[e]
			Primary[c]	Secondary[d]	
Beryllium	30 days	NA	– –	– –	0.01 $\mu g/m^3$
Carbon monoxide	1 hour	8.8 ppm	35 ppm[f]	– –	– –
	8 hours	4.88 ppm	9 ppm	– –	– –
Fluorides	24 hours	NA	– –	– –	5 $\mu g/m^3$
Hydrogen sulfide	1 hour	NA	– –	– –	0.1 ppm
	24 hours		– –	– –	0.005 ppm
Lead	Quarterly	0.12 $\mu g/m^3$	1.5 $\mu g/m^3$	Same	– –
Nitrogen dioxide	Annual	0.032 ppm	0.053 ppm	Same	– –
Ozone	1 hour	0.13 ppm	0.12 ppm	Same	– –
PM_{10}	Annual	39 $\mu g/m^3$[g]	50 $\mu g/m^3$	Same	– –
Settled particulates	30 days	NA	– –	– –	1.5 mg/cm^2
	Annual		– –	– –	0.8 mg/cm^2/mo
Sulfates	24 hours	21.5 $\mu g/m^3$	– –	– –	30 $\mu g/m^3$
	30 days		– –	– –	10 $\mu g/m^3$
Sulfur dioxide	3 hours	0.076 ppm	– –	0.5 ppm	– –
	24 hours	0.041 ppm	0.14 ppm	– –	– –
	Annual	0.011 ppm	0.03 ppm	– –	– –

[a]National standards, other than ozone and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year, with maximum hourly average concentrations above the standard, is equal to or less than 1.
[b]1992 average values collected from various monitoring stations in Philadelphia.
[c]National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
[d]National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
[e]The Commonwealth of Pennsylvania has adopted the National Ambient Air Quality Standards for the pollutants mentioned except where noted.
[f]In this table, ppm refers to ppm by volume, or micromoles of pollutant per mole of gas.
[g]1991 value.
Same = Secondary standard is the same as the primary standard.

SOURCE: Pennsylvania Code, Title 25, Section 131; Philadelphia Department of Health, Air Pollution Control Board, 1992.

The existing air quality of the affected environment is defined by air quality monitoring data and emissions information. Air quality data were obtained by examining records from air quality monitoring stations maintained by the City of Philadelphia Department of Health and PADER. Information on pollutant concentrations measured for short-term (24 hours or less) and long-term (annual) averaging periods is extracted from the monitoring station data in order to characterize the existing air quality background of the area.

Identifying the ROI for an air quality assessment requires knowledge of the pollutant types, source emission rates and release parameters, the proximity relationships of project emission sources to other emission sources, and local and regional meteorological conditions. For inert pollutants (all pollutants other than ozone and its precursors), the ROI is generally limited to an area extending a few miles downwind from the source.

The ROI for ozone may extend much farther downwind than the ROI for inert pollutants. Ozone is a secondary pollutant formed in the atmosphere by photochemical reactions of previously emitted pollutants or precursors. Ozone precursors are mainly reactive organic gases (ROG) in the form of hydrocarbons and nitrogen oxides (NO_x). In the presence of solar radiation, the maximum effect of precursor emissions on ozone levels usually occurs several hours after they are emitted and, therefore, many miles from the source. Ozone and its precursors transported from other regions can also combine with local emissions to produce high local ozone concentrations. Ozone concentrations are generally the highest during the summer months and coincide with periods of maximum solar radiation. Maximum ozone concentrations tend to be regionally distributed, because precursor emissions are homogeneously dispersed in the atmosphere.

For major air pollutant emission sources of inert pollutants, the ROI for air emissions is generally a zone with a radius of several miles. Accordingly, the ROI is the University City area and portions of Center City Philadelphia.

3.4.4.1 Regional Air Quality

According to the EPA guidelines, an area with air quality better than the NAAQS is designated as being in attainment; areas with worse air quality are classified as nonattainment areas. A nonattainment designation is given to a region if the primary NAAQS for any criteria pollutant is exceeded at any point in the region for more than 3 days during a 3-year period. Pollutants in an area may be designated as unclassified when there is a lack of data for EPA to form a basis of attainment status.

Certain traffic density areas of the City of Philadelphia are classified as moderate nonattainment for CO. The entire City of Philadelphia is classified as a severe nonattainment area for ozone. The Philadelphia area is in attainment for NO_2, SO_2, and lead.

The federal standard for PM_{10} was promulgated in July 1987. Sufficient PM_{10} monitoring data are not yet available to classify many areas of the country. EPA, therefore, designates areas according to the likelihood of violating the standard. Group 1 status is assigned to those areas having a 95 percent or better probability of exceeding the standard, Group 2 to those areas having a 20 to 95 percent probability, and Group 3 to areas with less than a 20 percent probability. These group classifications are changed to attainment/nonattainment designations as sufficient monitoring data become available. At present, the Philadelphia area is categorized as Group 3.

3.4.4.2 Air Pollutant Emission Sources

Emissions from research laboratory fume hoods are expressly exempt from regulation within the City of Philadelphia. The Commonwealth of Pennsylvania exempts "laboratory equipment used exclusively for chemical or physical analyses" from permitting approval (Section 127.14 exemptions). EPA maintains a list of categories of sources of air pollutants as required by Section 112(c)(1) of the CAA as amended in 1990. Under this Section, EPA is required to revise the list where appropriate "no less

often than every eight years" (*Federal Register,* 1992). As of June 1994 research facilities were not added to the list. The list is subject to public comment and may change in the future; therefore, the IAST could be regulated in the future as an emissions source. Title III of the CAA requires specific source categories to apply maximum achievable control technology (MACT) to reduce the emissions of 189 listed chemicals. These regulations apply to specific source categories with the potential to emit 10 tons per year of any one listed pollutant or 25 tons per year of two or more pollutants.

3.4.5 Noise

In general, there are three primary sources of noise that exist in the study area: motor vehicle noise (automobiles, trucks, and buses), industrial noise (HVAC), and community ambient noise (pedestrians). Other sources at the site that cannot be readily grouped into these categories are sirens from emergency vehicles, trains, helicopters, airplanes, and construction noises at other locations.

Sound is measured in many ways but the most common measure is a calculation of the sound pressure level. Sound has different frequency characteristics, and these must be accounted for in measuring the sound pressure level. Modern noise dosimeters measure sound pressure levels with different frequencies and mathematically combine these readings to create a composite noise level. The total overall noise level is determined by the logarithmic addition of all individual noise levels over the time period studied. This calculation determines the equivalent noise level, L_{eq}.

A noise survey and analysis was conducted. This study is presented in Appendix F. Noise measurements were taken at different locations of the Project Site using a QUEST M-28 and six QUEST M-15 Noise Logging Dosimeters. These models meet the requirements of the American National Standards Institute (ANSI) Standard Specifications S1.4-1983. The

measurement locations were determined on the basis of the buildings and areas that could be affected by the alternative sites.

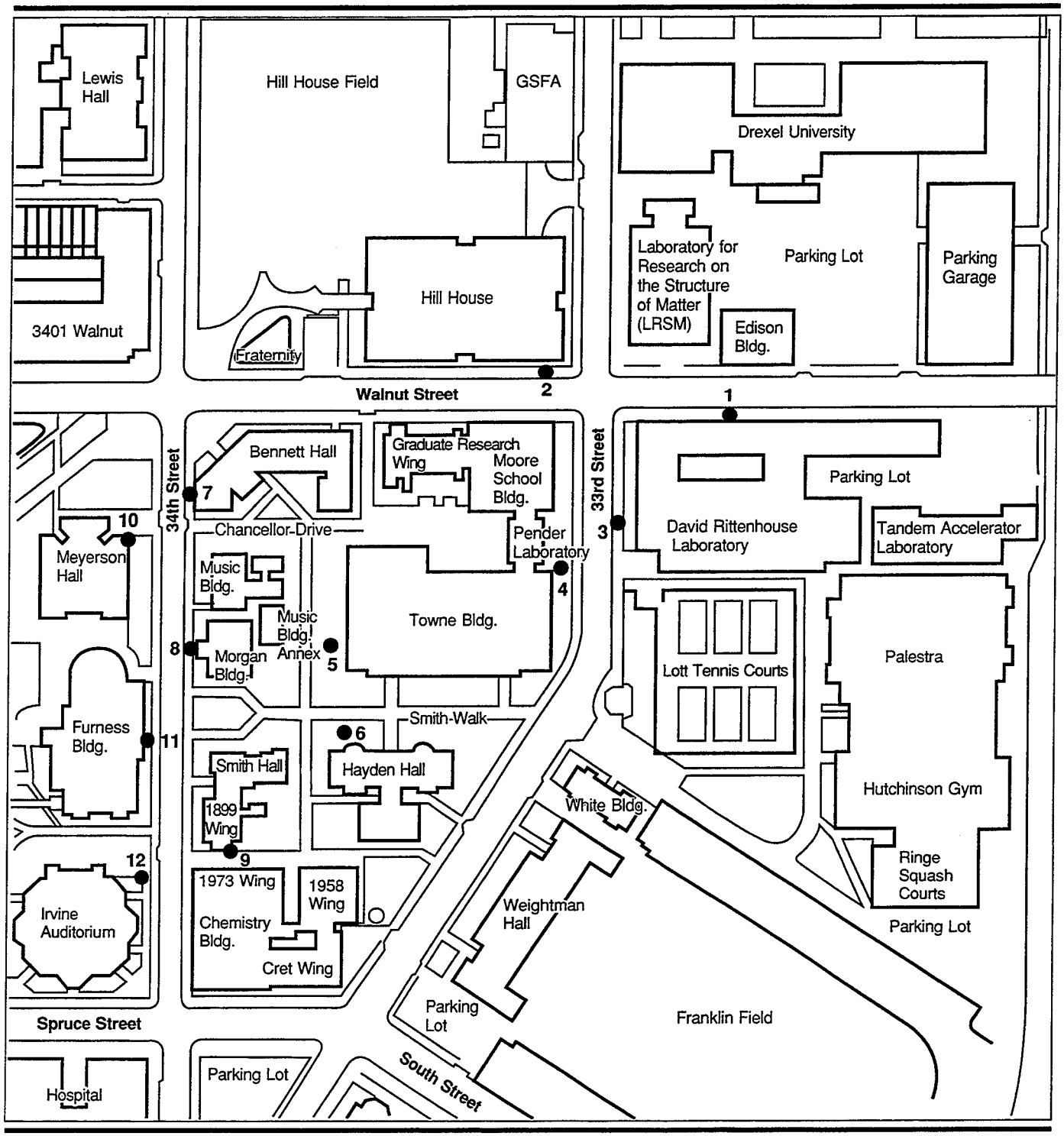
Of the three alternative sites, the Proposed Action site could potentially have the most impact. This site is located in the central part of the University campus and would require the renovation of two buildings and the demolition/construction of a third building; this site is surrounded by many other buildings, most of which would become receptor locations. Therefore, eight readings were conducted in the vicinity of this site and two readings each were conducted for the other two sites.

3.4.5.1 Noise Sensitive Areas

The noise measurement locations were strategically selected within the Project Site area to represent sensitive receptor locations that may be affected by the proposed construction and operation of the IAST facility (Figure 3.4-1). The buildings at these sensitive receptors are used for classrooms, libraries, laboratories, and student residences. These four types of land use are assigned to Activity Category B for Noise Abatement Criteria. Activity Category B includes many other land uses, such as hospitals, and all land uses within this category adhere to the same abatement criteria. No receptor locations were selected at the Hospital of the University of Pennsylvania (HUP). Since projected conditions at those points closer to the noise source are shown to be in compliance, conditions at the hospital would also be in compliance.

3.4.5.2 Existing Noise Levels

Noise measurements were conducted during the week of September 21-24, 1992, during the street peak hours, namely 7:00 to 9:00 a.m.; 11:00 a.m. to 1:00 p.m.; and 4:00 p.m. to 6:00 p.m. Existing ambient L_{eq} readings at the 12 receptor locations in the study area range from 62.4 to 76.5 dBA (Figure 3.4-1). An L_{eq} reading of 65 dBA is comparable to the noise level of a normal conversation at 3 ft; an L_{eq} reading of 76 dBA is comparable to the



EXPLANATION

● Noise Measurement Location

Noise Measurement Locations

0 50 100 200 Feet

Source: Traffic Planning and Design, Inc., 1992

Figure 3.4-1

noise of a gas lawnmower at 100 ft. The L_{eq} reading of 76.5 dBA at receptor location 7 is a result of the proximity of the receptor site to the intersection of Walnut and 34th Streets and its heavy volume of truck and SEPTA bus traffic.

3.4.6 Biological Resources

3.4.6.1 Vegetation

Because of the highly urbanized nature of the City of Philadelphia, virtually no original natural vegetation is present at any of the sites considered. The University has many parklike areas with many tree-lined walkways crossing the campus. The principal tree species on campus include ash, sycamore, and maple trees. According to the University *Landscape Development Plan*, suggested canopy species are disease-resistant American elm and white ash highlighted by fontesia, witch hazel, arrowwood, and maple leaf viburnum. The LRSM and Lott sites are bordered by relatively new street trees. With the exception of small bordering lawn areas and some street trees, each of the alternative sites is almost totally developed.

The University City area contains no unique, rare, threatened, or endangered plant species or sensitive habitat as verified by correspondence from PADER and the U.S. Fish and Wildlife Service (USFWS).

3.4.6.2 Wildlife

Within the general area, the campus supports a variety of songbirds and small mammals. Common urban-dwelling birds (pigeons, starlings, grackles, and house sparrows) and rodents predominate.

3.4.6.3 Threatened and Endangered Species

A visual inspection of the area indicates no evidence of burrows or nestings that might be a sign of rare, threatened, or endangered wildlife. Correspondence with USFWS and PADER indicates that no threatened or

endangered animal species or sensitive habitats are known to exist in the project area and no habitat suitable for such species is located in the project area.

3.4.7 Cultural and Archaeological Resources

The APE for cultural and archaeological resources is the area bounded by the buildings on 34th Street, 32nd Street, Spruce Street, and the alley north of Walnut Street.

3.4.7.1 Cultural Resources

The dominant cultural resources in the APE are historical architectural resources. These are defined to include districts, buildings, structures, objects, landscapes, and sites that possess historic integrity and are significant in history for their design qualities or associations with outstanding people or events.

University of Pennsylvania Campus Historic District. The core of the University campus was placed on the National Register of Historic Places as a Historic District in a 1978 memorandum that listed 30 buildings (28 entries, two of which list more than one building) and three landscape features. This district encompasses buildings on the east side of 33rd Street, along the south side of Walnut Street, then along the diagonal of what was Woodland Avenue to 38th Street, the south side of Hamilton Walk, 36th Street, the south side of Spruce Street to 32nd Street and returning along the far side of Franklin Field (see Figure 3.1-1), plus Hamilton Walk, Locust Walk, and Smith Walk. The University of Pennsylvania Campus Historic District was designated principally on the basis of the architectural importance of the buildings and their setting, and secondarily for their association with the University and persons associated with the University. A modern nomination would undoubtedly be more inclusive about modest but contextual buildings, statues, and historic landscape features.

Several of the 30 buildings listed, and one landscape feature mentioned in the 1978 nomination fall within the Project Site, as do other buildings found in a 1990 study (Clio Group) as contributing to the Campus Historic District. These components are described below.

Smith Hall. Designed by Collins and Autenreith in 1891, as the Lea Laboratory of Hygiene, Smith Hall was renamed for Provost and chemist Edgar Fahs Smith in the 20th century when the Hygiene program returned to the medical school. Architecturally, Smith Hall is a modest example of Collins and Autenreith's work at the end of their careers. Collins and Autenreith, who were H.C. Lea's family architects, were part of a group of German-born architects whose influence on mid-19th century American architecture has been recognized only recently. Its principal facade faces 34th Street and is the result of two building phases. The first phase, dating from 1891 to 1892, resulted in the central portion of the facade containing the brownstone entrance and the north wing. In the second phase, Smith Hall was altered and enlarged in 1899 by H.L. Duhring, who replaced a short south wing with a large rectangular loft-like classroom of the same exterior materials and detail as the original.

Ventilation chimneys reflect the concern for germ-spread contagion appropriate to a hygiene institute and were derived from Civil War-era hospital design. Small openings in the decorative belt course below the windows served to admit fresh air when the windows were closed because of inclement weather.

The interior is entered up a flight of steps, through a pedimented classical entrance, into a wood wainscotted foyer which in turn opens into a cross corridor that leads to the two wings. An open wood stair is located in the interior corner and rises to a central belvedere that forms part of the ventilation system. Exterior walls and interior corridor walls are of load bearing masonry carrying wood joists. Interior finishes are pressed tin ceilings and plaster walls with tongue and groove wainscotting in public zones.

With the exception of two larger rooms that served as teaching laboratories, most of the spaces were for individual researchers. These spaces have been altered as the uses of the building changed, although without significantly altering its character. In the 20th century, the passive ventilation system was modified into a conventional modern mechanical system. One unusual feature, a set of four different radiators in the first floor laboratory, was noted in the dedicatory address. They were intended to permit students to run tests on ventilation and heating systems, using the building itself as part of the learning experience.

Smith Hall was the fifth building devoted to laboratory purposes at Penn, following Logan (1874), Hare (1878), and others. It demonstrates the continuing use of laboratory practice as a major teaching tool. Although it is common for older laboratory buildings to be demolished as they become technologically obsolete, Logan and Smith Halls are two of many late 19th century laboratories that survive to this day on university campuses. Another example on the Penn campus is the original building of the Wistar Institute designed by the Hewitt brothers (1892).

Smith Hall History. The history of Smith Hall has been treated in several histories of the medical school (Cooper and Ledger, pps. 123-127). It was constructed with a donation by Henry Charles Lea (the donor of the Lea Reading Room in the Furness Building) on the condition that a prestigious director be hired to head the Hygiene Institute it housed. This caused the University to seek out John Shaw Billings, M.D., the author of *The Index Catalog of the Library of the Surgeon-General's Office* and an advocate of hygiene or what would now be termed Public Health. The first director of the Lea Institute, John Shaw Billings, was important both as a cataloger of medical literature and for his role in helping to design the modern hygienic environment, particularly in his role as advisor to The Johns Hopkins Hospital. He is represented by more significant sites other than Smith Hall, including The Johns Hopkins Hospital (where his portrait hangs in the lobby), the U.S. Army College of Surgeons (where his portrait hangs), and the New York Public Library (where his portrait hangs). Despite his short

stay at the Hygiene Institute, Dr. Billings helped to organize a curriculum and developed the faculty, leaving after 2 years (6 months as director) to head the New York Public Library. The Institute of Hygiene was then directed by Dr. Alexander Abbott, who led the shift in the program toward bacteriology. By the 1920s, the program was absorbed back into the Medical School and Hygiene no longer had an independent existence. For the next half century, Smith Hall housed portions of the Chemistry Department, including teaching laboratories. From the 1970s it housed Fine Arts Studios and the History of Science Departments. It is currently vacant.

A nomination form for the individual listing of Smith Hall on the National Register of Historic Places was submitted to the Pennsylvania SHPO on March 5, 1993. It was determined by the SHPO that individual listing of the structure was not appropriate, since it was already listed on the National Register as a contributing structure within the University of Pennsylvania Campus Historic District. Additionally, the SHPO concluded that Smith Hall should not be considered individually as a National Historic Landmark, but rather, that if National Historic Landmark status were to be pursued, the application should be broadened to include the entire historical Medical Science Complex at the University, and perhaps for the entire University of Pennsylvania Campus Historic District with additional National Historic Landmark themes.

The Furness Building. Considered a National Historic Landmark since 1986, the Furness Building was designed by Furness, Evans and Co. in 1888-1890 with later additions by the same firm. This building served as the University's library until 1965 when it became the Fine Arts Library. The building was restored under the supervision of Venturi, Scott Brown and Associates, Architects, in 1990, and won a Presidential Award from the Advisory Council on Historic Preservation in 1992.

Morgan Building. The Morgan Building was designed by Cope and Stewardson in 1890 for the Foulke-Long Institute, a Civil War-era orphanage. The interior of the building was completely redesigned and

remodeled in the 1970s after the physics laboratories were removed to the DRL.

Music Building. Designed by Cope and Stewardson in 1890, this building served as the dining room and dormitory of the Foulke-Long Institute. It shares with Morgan the architectural and massing features and contributes to the ensemble along 34th Street. A rear annex was added in 1938, and a larger addition was added in the 1970s. The interiors were totally renovated in the 1970s when the School of Nursing moved to its new quarters.

Hayden Hall. Designed by Edgar V. Seeler in 1893 and originally constructed as the University's School of Dentistry, the building gained its greatest fame as the home of the School of Architecture during its Beaux-Arts era under Paul Cret. In the 1960s the central stair was removed and a large exhibit hall was created for the School of Fine Arts. Its great second story hall that runs across the front of the building is largely intact.

Towne Building. Designed by Cope and Stewardson in 1903, Towne marks Cope and Stewardson's shift toward the large scale, brick with limestone trim that would characterize their collegiate work at Penn.

Weightman Hall. Designed by Frank Miles Day in 1903, Weightman Hall is the oldest surviving portion of the athletic complex and brought it into line with the academic Gothic styling of the turn-of-the-century campus.

Franklin Field. Designed by Frank Miles Day in 1904 and drastically enlarged and reconstructed in 1925, Franklin Field is one of the great athletic facilities in the nation. It merges the brickwork of the University Museum with details of Italian medieval architecture. It is one of the largest reinforced concrete structures of its day and houses the Penn athletic fields as well as serving as the site of the Penn Relays and of the University's graduation exercises.

White Training Building. Designed by Horace Trumbauer in 1905, it contributes to the District and to the character of 33rd Street.

Moore School. Designed by Morris and Erskine as a two-story piano factory in 1908, the building was acquired by Penn in the 1920s and modified and enlarged with an additional story by Paul Cret's firm. In the 1940s the modern computer was invented in this building, making it one of the principal landmarks of modern history.

Bennett Hall. Designed in 1923-4 by Stewardson and Page, successors to Cope and Stewardson, Bennett marks the awareness of the need for more efficient use of campus space, denoted by its greater height and by being built right up to the sidewalk. It replaced the townhouses donated by Joseph Bennett to house the first facilities for women at Penn and was designed to serve the Women's Division of the University (Bennett College). It now houses the English Department.

Hutchinson Gymnasium. Designed by Day and Klauder in 1925, Hutchinson Gymnasium houses a swimming pool and other indoor athletic facilities in a building that reflects in simplified detail and in the same palette of materials the rest of the sports facility.

Palestra. Designed by Day and Klauder in 1928, the Palestra forms the backdrop to the Lott Tennis Courts and terminates the view of the campus to the east of Smith Walk. It was here that Philadelphia's intracity series "the Big Five" played most of their celebrated games.

Irvine Auditorium. Designed by Horace Trumbauer in 1926, the great high-spired bulk of Irvine Auditorium is an imposing landmark at the corner of 34th and Spruce Streets. It is one of the chief landmarks of the campus and marks the continuing use of academic Gothic style on campus. It replaced two earlier 1880s landmarks, the Wilson Brothers-designed power plant and the engineering laboratories designed by the same architects.

Cret Wing of the Chemistry Labs. Designed by Paul P. Cret's firm in 1940, this structure acknowledges the evolving forces of modern architecture in its horizontal strip windows while using the materials of the historic campus.

3.4.7.2 Archaeological Resources

An examination of historic maps, written accounts, and photographs indicated that prior to construction of the existing buildings, the Smith Hall site was unoccupied by buildings or structures. As recently as 1874, a small stream, following an east-west course north of Chancellor Drive, flowed near that site. However, this stream was filled in during the late 19th century. The LRSM Parking Lot site was previously occupied by modest mid-19th century rowhouses. The Lott Tennis Courts site was formerly occupied by small working-class rowhouses, dating from the 1870s. A portion of this site may also have served as a cemetery for the Blockley Almshouse, a 19th century charitable institution situated approximately where Children's Seashore House now sits (Rosenthal, 1963). The sites of Smith Hall and the LRSM Parking Lot are unlikely to contain significant archaeological resources. However, the Lott Tennis Courts site may contain potentially significant archaeological resources related to the cemetery.

3.4.7.3 Landscape Features

The individual buildings comprising the Central Science Precinct between 33rd and 34th Streets are linked together by Smith Walk. Named after Edgar Fahs Smith, the walk acquired a name and status in the late 1930s with the installation of the statue of Provost Smith. Elm trees planted in the early 20th century died in the 1960s. As recently as the 1960s, it was a typical macadam campus walk between two monuments, Provost Smith at the west and the War Memorial at the east. Recent work has included the planting of locust trees in the 1970s and the enhancement of the Smith Plaza in the 1980s. The walk continues to serve as a primary element in

defining the pedestrian character of the Science Precinct of the Penn campus.

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 4.0
ENVIRONMENTAL CONSEQUENCES

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This chapter discusses the potential environmental consequences associated with the Proposed Action and Alternatives. To provide the context in which environmental impacts may occur, this FEIS discusses potential changes to the defined ROIs and APE for various resources including population, land use and aesthetics, transportation, and community and public utility services. In addition, issues related to the current and future management of hazardous materials and wastes are discussed. Impacts to the physical and natural environment are evaluated for soils and geology, water resources, air quality, noise, biological resources, and cultural resources. These impacts may occur as a direct result of the IAST project activities or as an indirect result of changes within the ROIs and APE.

Cumulative impacts and possible measures to mitigate or avoid adverse environmental impacts have also been considered. Cumulative impacts result from "the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions." Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7). The ROI for cumulative impacts has been defined as the Project Site. For cultural resources the APE is the area bounded by the buildings on 34th Street, 32nd Street, Spruce Street, and the alley north of Walnut Street. None of the planned and funded development discussed in Section 2.5 would cumulatively affect the ROI. The impacts of these actions would be negligible for all environmental resources.

4.2 LOCAL COMMUNITY

4.2.1 Proposed Action

4.2.1.1 Community Setting

The ROI for community setting is University City. Construction and operation at the Proposed Action site would have no significant impact on either employment or population growth in the area. The construction phase would result in the direct employment of approximately 50 to 75 workers on a daily basis for the 20-month duration of the construction period. Between 250 and 300 new faculty and graduate students, post-doctoral fellows, and staff may be added to the campus population for IAST operations, less than 1 percent of the total campus daytime population.

4.2.1.2 Land Use and Aesthetics

Land Use. The Proposed Action would maintain the general land use plans for University City and in particular the University campus. It would continue existing land use patterns of laboratory and classroom facilities within a campus precinct that is devoted to similar use. Sixty percent of the user group of the Phase I building would be from the Chemistry Department, with the remainder from the Bioengineering and Chemical Engineering Departments.

The Phase II complex would contain Computer and Cognitive Science research, programs that are also located within the Central Science Precinct. Phase II would centralize these programs in the Morgan and Music Buildings.

Zoning. As a University building, the Proposed Action complies with the permitted uses within the Institutional Development District Zone. Therefore, the Proposed Action would not significantly impact land use as established by the City of Philadelphia, and the University would comply with all requirements of current zoning regulations.

Aesthetics. The Proposed Action would significantly alter the campus in the immediate vicinity of 34th Street and the intersection of Smith Walk by demolishing Smith Hall, a part of the visual ambience of that streetscape, realigning the 34th Street entrance of Smith Walk, and erecting a five-story modern laboratory building.

Phase I construction would also affect portions of Smith Walk, a landscape component of the campus, and some of the views of other historic resources. Smith Walk and the plaza at its 34th Street entrance are presently flanked by balanced, but not identical, late 19th-century buildings, and frame a view corridor west toward the Furness Building, and east toward 33rd Street. The construction of Phases I and II at the preferred site would change the scale of the Smith Walk space and constrict the view corridors. The statue of Provost Smith would remain in its original location, and the walk materials would be changed to the standards of the central campus. A new plaza would be designed around the Smith statue, and a defined green area would be developed between Hayden Hall and the Phase I building.

Aesthetic changes would occur in the Central Science Precinct and along 34th Street, with the introduction of new buildings on the site. The scale and massing of the streetscape would change from the existing scale established by Smith Hall, Morgan Building, and Music Building to the taller, more massive scale of the 1973 Chemistry Building, Furness, and Irvine. While the scale of the Phase I structure is larger than that of Smith Hall, significant effort was expended to create a sympathetic design. The intent of the design for the Phase I building of the Proposed Action would be to create a building to serve as a background to the richly sculptural, ornamental, and historical Furness and Irvine Buildings across the street. The current conceptual design for the Phase II addition to the Morgan and Music Buildings is intended to provide a unified architectural setting to the rear that balances the mass of the Towne Building. The paving of Smith Walk would be upgraded to the level of other campus walks as part of this alternative.

4.2.1.3 Transportation

Impacts to transportation from construction and operational activities were assessed based on standard traffic models, present conditions, and construction estimates. Traffic Planning and Design, Inc. conducted the analysis that is presented in its entirety in Appendix D.

Under the Proposed Action and Reuse of Smith Hall Alternative, a staging area will exist on the east side of 34th Street next to the construction site. For worst-case conditions, it was assumed that the staging area would extend to the Spruce Street intersection, thus limiting traffic to two southbound lanes at the intersection.

SAE Americon, the general contractors for the project, prepared estimates for construction costs, duration of construction, number of construction employees, and number of deliveries to help the University assess construction impacts. The number of construction workers will vary during the construction period with the maximum number of employees reaching 75 in the beginning stages of the project and decreasing to less than 25 by the end of the project. Construction will typically occur between 7:30 a.m. and 3:30 p.m. Furthermore, the maximum number of deliveries to the project site is expected to be no more than 20 daily. Deliveries will be limited during peak hours.

Projected Traffic Volumes During Construction. Traffic volumes were developed for 1994 conditions during construction of the proposed project. Because the three possible sites are located within one block of each other, traffic patterns on the roadway network should be the same regardless of which building site is selected. A 0.5 percent annual background growth factor was used for the next 2 years. This rate represents a worst-case estimate because Philadelphia's population has been declining in the 1980-1990 decade according to the U.S. Census.

Capacity Analysis During Construction. In a road network, intersections are the critical component in the system. If the intersections have adequate capacity, so will the street segments linking the intersections. Therefore, capacity analyses were conducted for all intersections examined according to the procedures in the *Highway Capacity Manual*, Transportation Research Board, Special Report 209, 1985, as described in Appendix D. Different roadway conditions will exist for each alternative site due to placement of the staging area at each. The traffic generated because of construction will cause less than a 2.5 percent increase in traffic on the roadways examined, where the increase is the percent projected traffic volume of the total traffic volume (existing plus projected volumes).

Projected volumes are estimated using guidance given by the Institute of Traffic Engineers Trip Generation Manual and contributing factors such as the type of construction planned, the existing site conditions, the number of deliveries to the site, and the number of construction personnel.

All approaches at the intersections examined will continue to operate at good levels of service (level B or better, a measure of delay at a signalized intersection) during the a.m., noon, and p.m. peak hours, even in the unlikely event that the staging areas extend into adjacent intersections.

A peak hour is the single hour in a day during which maximum traffic volumes occur on a given highway, usually the highest four consecutive 15-minute time periods. Furthermore, there will be no degradation of level of service in the road segments next to the staging areas.

If any site had an impact on emergency response times to the Hospital of the University of Pennsylvania and the Children's Hospital of Philadelphia, both of which are located south of the site on 34th Street, it would be the staging area for the Smith Hall site (Proposed Action and Alternative A), which is located on 34th Street, a direct route to the hospitals. Based on the intersection delay and level of service analyses, emergency response times should not be adversely impacted by construction at any of the sites.

Emergency response times will increase by a maximum of 2.2 seconds along 34th Street while the staging area is in place.

Parking Conditions During Construction. The parking surplus of 827 spaces described in Subsection 3.2.3.2 will be more than adequate to handle the traffic generated during the construction period. It is estimated that parking demand will increase by a maximum of 75 spaces if all construction employees drive to the site individually. This is highly unlikely as it is common practice to carpool or have a company van drop off employees at the project site.

Impact During Special Civic Center Events. Many special events are held at the Civic Center and Convention Center located just south of the study area near 34th Street and Civic Center Boulevard. These events include LaSalle University basketball games, professional wrestling events, and concerts at the Civic Center, and the Flower Show, the Car Show, and the Home Show at the Convention Center. The Civic Center is used primarily at night and on weekends for a total of 200 events per year but is also heavily used during the day for major events such as the Flower Show. The March Flower Show is the most heavily attended event held at the Civic Center with 1/4 million visitors over the course of 9 days.

Several parking garages are provided on or adjacent to the Convention Center site. Therefore, most attendees drive straight to the Convention Center area before looking for parking. None of the sites would adversely impact traffic to and from the Civic Center facilities.

Project Conditions After Completion of the Project. The proposed building would be used as an extension of the existing Chemistry Building at the corner of 34th Street and Spruce Street. Based on information provided by the University of Pennsylvania, it is expected that 250 to 300 additional graduate students and staff members would be added as a result of the new building.

In developing the trip generation for the proposed building it was assumed that 10 percent of the graduate students and the staff members would drive to the University during the a.m. and p.m. peak hours. This is a worst-case scenario (highest volume), considering that most students and some faculty members live in the area and walk rather than drive.

Traffic volumes were projected for conditions after construction of the proposed facility. As discussed in the previous section, traffic patterns on the roadway network should be the same regardless of which building site is selected. Existing traffic volumes were increased by the same worst-case 0.5 percent annual background growth factor for the next 2 years until completion of the project.

Capacity Analysis After Construction. Capacity analyses were conducted for all intersections examined according to the procedures in the *Highway Capacity Manual*, Special Report 209, 1985. Based upon these analyses, all three intersections examined are projected to operate at good levels of service (level B or better) after construction of the proposed building regardless of the location selected.

Projected Parking Conditions. The 1994 parking supply of 6,988 spaces on the University campus and adjoining facilities may exceed the parking demand of 6,161 spaces by 827 spaces. This surplus would be more than adequate to handle the demand projected for the proposed facility.

Impact of the Proposed Action. Regardless of which site is selected, operation of the proposed facility would not adversely impact traffic. The available parking supply would not be adversely impacted. The building may cause less than a 0.2 percent increase in traffic volumes in the area. Intersection delays and levels of service would not be impacted by the building. Therefore, there would be no change in emergency response time to the two hospitals. Special events on-campus and at the nearby Convention Center complex would not be adversely impacted.

4.2.1.4 Utilities

Although the IAST development would result in some increased local demand for water, electric, steam, and gas utilities, no significant increase in utility demand is anticipated. The expected demands are well within the capacity of available service in the area. Additionally, the demands would not affect other users.

4.2.1.5 Solid Waste

As a result of IAST operations, campus generation of municipal waste is expected to increase by approximately 200 tons per year, less than 2.5 percent of the University's total. Because approximately 25 percent of the trash generated in University buildings is recycled, it is anticipated that 150 tons of waste generated by IAST operations would be landfilled. This quantity of waste would not have a significant impact on solid waste management resources.

Although the demands incurred and the waste produced by the IAST would be greater than at present, recycling, reduction, and the use of energy-efficient equipment are strongly encouraged by Penn. Penn has a recycling program for aluminum, some plastics, paper, and glass. The EPA and the University's *Chemical Hygiene Plan* (CHP) encourage reduction in the use and recycling of lab chemicals where possible.

4.2.2 Reuse of a Portion of Smith Hall Alternative

4.2.2.1 Community Setting

Impacts would be the same as the Proposed Action.

4.2.2.2 Land Use and Aesthetics

Land Use. Impacts would be the same as the Proposed Action.

Zoning. Impacts would be the same as the Proposed Action.

Aesthetics. This alternative would include construction of the new Phase I building between the 1958 and 1973 Wings of the Chemistry Building to the southeast and south, and the original portion of Smith Hall. The 1899 addition to Smith Hall would be removed as part of this alternative. The remaining portion of Smith Hall would be retained and restored to its original 1892 appearance without the original balancing south wing. Due to the placement of the new construction between the existing Chemistry Complex and the original portion of Smith Hall, no new open space between Hayden Hall and Smith would result.

Although the effect of Phase I construction under this alternative would be less severe in terms of demolition than in the preferred alternative, the 34th Street frontage and the setting of the Furness Library would be affected by the Phase I structure, which would have the appearance of a large, more massive building than the surrounding historic structures. Also, some observers, including the University's Design Review Committee, believe strongly that wedging the modern Phase I structure between the remaining portion of Smith Hall and the Chemistry Complex would produce a less desirable aesthetic result than the preferred alternative.

Phase II construction would also affect portions of Smith Walk, a landscape component of the campus, and an element of the University of Pennsylvania Campus Historic District. Smith Walk is presently flanked by balanced but not identical late 19th-century buildings, and frames a view corridor west toward the Furness Building and east toward 33rd Street. The construction of Phases I and II in this configuration would produce a less balanced view corridor due to different building styles and scale. The statue of Provost Smith would remain in its original location.

4.2.2.3 Transportation

Impacts would be the same as the Proposed Action.

4.2.2.4 Utilities

Impacts would be the same as the Proposed Action.

4.2.2.5 Solid Waste

Impacts would be the same as the Proposed Action.

4.2.3 LRSM Parking Lot Alternative

4.2.3.1 Community Setting

Impacts would be the same as the Proposed Action.

4.2.3.2 Land Use and Aesthetics

Land Use. The LRSM Parking Lot Alternative would impact land use at the site. The parking lot and the temporary Edison Building would be demolished and replaced with the IAST structure.

Because University planning principles call for placing related programs within the same precinct, this location for Phases I and II would not be as effective as the Proposed Action or the Reuse of a Portion of Smith Hall Alternative. The location of major portions of the project at this site would produce a much less effective institute because it would not be adjacent to the principal programs that will use it, necessitating the duplication of equipment and staffing and resulting in greater costs and lower efficiency. Further, the location of Phases I and II of the IAST at this site would not represent the best use of Penn's limited land use resources: the site's capacity is substantially greater than that needed for the IAST and thus presents an opportunity for future expansion of programs in the adjacent LRSM building as well as in the DRL across the street. Locating Phases I and II on this site would also result in higher pedestrian traffic across busy Walnut Street.

Zoning. Impacts would be the same as the Proposed Action.

Aesthetics. This alternative would not impact the aesthetic character of the site area except that some open space would be lost. However, this site is one of the important entrance zones of the University, necessitating that considerable care be taken with the design.

4.2.3.3 Transportation

The overall impacts on traffic and transportation are the same as for the Proposed Action. The major difference under this alternative is the proposed location of the staging area on the north side of Walnut Street along the LRSM site, extending to the 33rd Street intersection, limiting traffic to two westbound lanes at the intersection.

Although levels of service along Walnut Street would be good, the closing of a lane at any location would obviously have some impact resulting in a relatively minor increase in vehicle delay. The Philadelphia Department of Streets and Penn DOT may not want to have a staging area located along Walnut Street, which is a major westbound arterial for traffic exiting the city. Therefore, it may be preferable to locate the staging area on the east side of 33rd Street north of the LRSM building to avoid this potential impact.

4.2.3.4 Utilities

Impacts would be the same as the Proposed Action.

4.2.3.5 Solid Waste

Impacts would be the same as the Proposed Action.

4.2.4 Lott Tennis Courts Alternative

4.2.4.1 Community Setting

Impacts would be the same as the Proposed Action.

4.2.4.2 Land Use and Aesthetics

Land Use. The Lott Tennis Courts Alternative would demolish the tennis courts and replace them with the IAST structure. This alternative would further reduce open space in a dense urban setting. Because of the amount of space required for tennis courts, there are few remaining available sites that could be used for such a purpose. Also, because of adjacent land uses, including railyards and Route 76, additional open space cannot be incorporated into this side of the campus.

Zoning. Impacts would be the same as the Proposed Action.

Aesthetics. The Lott Tennis Courts Alternative would impact the aesthetics associated with the Sports Complex and the University of Pennsylvania Campus Historic District. Construction would fill in open space, partially blocking views of the University's sports facilities on the east and south of the site.

Phase I and II construction at this location would adversely affect portions of 33rd Street as well as the termination of Smith Walk, a landscape component of the campus. The construction of Phases I and II at this site would act as a solid, eastern terminus of Smith Walk, which at this point proceeds from the open space of the tennis courts toward the solid space of the Furness Building.

4.2.4.3 Transportation

Under this alternative, a staging area will exist on the east side of 33rd Street next to the construction site, limiting northbound traffic to two lanes.

Unlike the Proposed Action and other Alternatives this staging area is located closer to the middle of the block. Therefore, it will have little effect at the intersections north or south of the project. With the correct tapers and traffic control, three northbound lanes can be maintained at the intersections with Spruce Street and Walnut Street. Based on a review of the intersection capacity analyses, two northbound lanes past the staging area will be sufficient to accommodate traffic through the area and not degrade the level of service (see Appendix D).

Impact During Special On-Campus Events. The lane closure due to the construction of the proposed building may have more of an impact in the area during special events depending upon the amount of automobile traffic generated by each. While the lane closures are in effect, five football games would be hosted by Penn on Saturdays at Franklin Field located at the southeast corner of 33rd and Spruce Streets. Based on past attendance records, a maximum of 30,000 people, including students, would attend. Graduation ceremonies for the University would also be held at Franklin Field on a Monday in May. During this same time period, a total of approximately 12 basketball games would be hosted by Penn in the Palestra located midblock on 33rd Street between Spruce and Walnut Streets. The Palestra has a capacity of 9,000 people but attendance levels, including students, may approach capacity only once or twice per year.

Since there is little parking immediately adjacent to any of these facilities and many of the attendees are students, most of the traffic during these events would be pedestrian traffic. In fact, a relatively small proportion of the attendees would drive through any of the intersections analyzed in this report. The Lott Tennis Courts site would have the most impact during these events as the staging area on 33rd Street would eliminate the sidewalk on the east side of 33rd Street, and thus impact pedestrian traffic flow to/from the Palestra and Franklin Field. However, the sidewalk on the west side of 33rd Street has sufficient capacity to handle the increase in pedestrian traffic flows so this does not represent a significant impact.

4.2.4.4 Utilities

Impacts would be the same as the Proposed Action.

4.2.4.5 Solid Waste

Impacts would be the same as the Proposed Action.

4.2.5 No Action Alternative

4.2.5.1 Community Setting

The No Action Alternative would have no direct impact on the population in the project area or the immediate region. However, if no new construction for the IAST occurred, there would be no increase in employment opportunities from construction or operation of the IAST. The loss of the IAST would negatively impact Penn's science programs and could cause the loss of faculty and students. Housing and community services and facilities would be unaffected.

4.2.5.2 Land Use and Aesthetics

Land Use. The No Action Alternative would not impact the University's current land uses. Smith Hall would not be demolished.

Zoning. There would be no impacts associated with the No Action Alternative.

Aesthetics. There would be no impact on the existing aesthetic setting of the area.

4.2.5.3 Transportation

The No Action Alternative would not impact transportation services in the area.

4.2.5.4 Utilities

The No Action Alternative would not impact the utilities in the area.

4.2.5.5 Solid Waste

There would be no impact on solid waste production.

4.3 HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT

4.3.1 Proposed Action

4.3.1.1 Hazardous Materials Management

As a result of IAST operations, campus use and disposal of hazardous chemicals would increase approximately 10 to 15 percent. This increase is premised on current rates of hazardous chemical waste generation by the departments that would occupy the IAST increased in proportion to their gain in net laboratory square feet as a result of the IAST. The chemicals to be used within the IAST are the same fundamental type and volume as are currently found on campus in existing laboratories. Although the specific chemical compounds and use rates are not known with precision at this time, it is clear that their use would be "laboratory scale" and as such would not have a substantial impact on the campus.

In the Phase I building of the IAST, hazardous materials would be delivered, stored, handled, and used pursuant to the CHP. Existing Chemistry Complex facilities would be used for storage. However, additional stockroom personnel may be required to accommodate the anticipated increased amount of hazardous material.

Phase II, the dry laboratories, and Phases III and IV, the renovation and restoration work, would have no impact on hazardous material management.

4.3.1.2 Hazardous Waste Management

All wastes would be handled, collected, and stored according to applicable regulations and current University protocol. Although the amount of waste generated would increase and the specific types of waste are unknown, the management of hazardous waste would not be impacted.

Licensed waste contractors remove wastes from the University approximately 14 times a year. Wastes removed are appropriately monitored and documented as to material, point of origin, and destination.

The operation of the Phase I IAST, the chemistry-related wet laboratories, would result in a 10 to 15 percent annual increase in the quantity of wastes shipped from the University, or up to 10,000 lbs of hazardous wastes generated annually by the IAST. As stated in Chapter 3.0, approximately 67,000 lbs of hazardous waste were shipped from the University between July 1, 1991 and June 30, 1992. The siting, construction and operation of the Phase II structure, and the Phase II and IV activities would not impact hazardous waste management on campus. The existing PPC Plan described in Chapter 3.0 would be updated and revised as required to accommodate changes resulting from the operation of the IAST.

The increase in Penn's low-level radioactive waste from IAST operations of less than 1 percent is not expected to have a significant impact on radioactive waste management or storage.

Neither the demolition or construction activities nor the operation of the IAST would affect the use of pesticides on campus. There are no items containing PCBs that would be affected by the demolition, construction, and operation of the IAST.

4.3.1.3 Asbestos, Lead, and Mercury

Smith Hall and the Morgan and Music Buildings each contain ACM. Renovation and demolition activities would be subject to applicable federal, state, and local regulations. The University removes ACM when the possibility of release could occur; therefore, ACM would be removed from Smith Hall and the Morgan and Music Buildings prior to any renovation or demolition. Lead abatement would be in compliance with applicable federal, state, and local regulations. There would be no significant impacts associated with mercury.

4.3.1.4 Radon

All radon-screening survey results within the area of the Proposed Action were below the EPA recommended mitigation levels; therefore, radon is not a concern for siting, construction, or operation of the IAST.

4.3.1.5 Medical/Biohazardous Wastes (Infectious Wastes)

As a result of IAST operations, campus generation of infectious wastes is expected to increase less than 1 percent. Any infectious waste generated would fall into the category of used sharps since no research involving animal or human pathogens is planned for the IAST. The increase would not significantly impact the management of infectious wastes.

4.3.2 Reuse of a Portion of Smith Hall Alternative

4.3.2.1 Hazardous Materials Management

Impacts would be the same as the Proposed Action.

4.3.2.2 Hazardous Waste Management

Impacts would be the same as the Proposed Action.

4.3.2.3 Asbestos, Lead, and Mercury

Asbestos abatement actions would be the same as for the Proposed Action. Lead abatement activities would be greater as lead-containing materials in the reused portion of Smith Hall would be remediated, as required, prior to reoccupation of the building. There would be no significant impacts associated with mercury.

4.3.2.4 Radon

Impacts would be the same as the Proposed Action.

4.3.2.5 Medical/Biohazardous Waste

Impacts would be the same as the Proposed Action.

4.3.3 LRSM Parking Lot Alternative

4.3.3.1 Hazardous Materials Management

Impacts would be similar to the Proposed Action. Linkage to the existing LRSM Building would permit some hazardous materials management using current LRSM facilities. However, the requirements of Phases I and II of the IAST program differ from those of the LRSM, and it is anticipated that additional areas and stockroom personnel would be needed.

4.3.3.2 Hazardous Waste Management

This alternative would impact hazardous waste management to the extent that more frequent collections would be required at the combined LRSM-IAST site than is currently the case for the LRSM alone. However, other management methods would not be impacted as all waste would be handled, collected, and stored according to applicable regulations and current University protocol. The volume of wastes generated by the IAST at

this site would be similar to that quantity generated in total by operations under the Proposed Action.

4.3.3.3 Asbestos, Lead, and Mercury

This alternative does not require the renovation of any buildings; however, it does require demolition of the Edison Building, which is known to contain asbestos. Prior to demolition, asbestos within the Edison Building would be removed according to applicable regulations.

4.3.3.4 Radon

Radon would not be of concern at this site.

4.3.3.5 Medical/Biohazardous Waste

Impacts would be similar to the Proposed Action.

4.3.4 Lott Tennis Courts Alternative

4.3.4.1 Hazardous Materials Management

The Lott Tennis Courts site would have consequences for hazardous materials management. As an independent structure, a new loading dock and storage and dispensing facilities would be necessary and additional stockroom personnel would be required. No benefit would be derived from proximity to the DRL. The program in the DRL is not similar to that of Phases I and II of the IAST. Moreover, the DRL loading dock and other storage and dispensing facilities could not be linked efficiently to a building on the Lott Tennis Courts. The actual management of the materials would be similar to those presently used on campus.

4.3.4.2 Hazardous Waste Management

This alternative would impact hazardous waste management to the extent that a new structure would require an extra stop for waste collection personnel. However, other management procedures would not be impacted as all waste would be handled, collected, and stored according to applicable regulations and current University protocol. Volume and waste generated would be similar to the Proposed Action.

4.3.4.3 Asbestos, Lead, and Mercury

This alternative does not require the renovation or demolition of any buildings. Therefore, impacts would not be expected.

4.3.4.4 Radon

No impacts would be expected.

4.3.4.5 Medical/Biohazardous Waste

Impacts would be the same as the Proposed Action.

4.3.5 No Action Alternative

Under the No Action Alternative, there would be no siting, demolition, construction, or operation of an IAST facility. Accordingly, there would be no impact on hazardous materials and hazardous waste management at the University.

4.4 NATURAL ENVIRONMENT

4.4.1 Proposed Action

4.4.1.1 Geology and Soils

Construction would have no significant impact on the geology or soils. As indicated in Subsection 3.4.1, no mineral resources exist that can be developed in the project area, and the underlying strata contain nothing of paleontological value. Soils are comprised mostly of fill material put in place during previous construction activities.

4.4.1.2 Water Resources

Surface and groundwater resources would not be permanently impacted by construction. The local groundwater table may be temporarily lowered if dewatering of the foundation excavation is required during construction. However, there are no nearby groundwater supply wells, and the Wissahickon Formation does not usually provide high groundwater yields.

Development of the Proposed Action would not result in any significant increase in stormwater runoff. The Proposed Action site is currently occupied either by structures or impervious surfaces that drain to the Philadelphia stormsewer system. Stormwater runoff during construction would be controlled with accepted construction techniques, including hay-bale barriers and plastic screening of runoff. Post-construction drainage would not significantly change the volume of runoff carried by the City's stormsewer system. No significant impacts to surface hydrology would result from the Proposed Action, and flood levels downgradient of the facility would not be affected.

No groundwater wells are planned; therefore, no purposeful drawdown of any local aquifers would occur. To the extent that foundation excavation and preparation may result in local aquifer drawdown, that drawdown is expected to be local with no significant long-term impacts.

4.4.1.3 Air Quality

The Proposed Action would result in temporary air quality impacts due to the Smith Hall demolition. Construction activities would also cause a temporary impact on air quality. Diesel particulates and dust would increase while construction vehicles and equipment are used. Soil dust would increase during the excavation phases of construction. The fugitive dust generated from construction activities related to the IAST are temporary, localized, and would be controlled by good construction practices. Therefore, the ambient air quality and attainment status for PM_{10} and TSP for the City of Philadelphia are not expected to be significantly impacted by construction of the IAST.

Emissions from the laboratory facility operations would be insignificant. The EPA does regulate the emissions of radionuclides to the ambient air from the University. Compliance with Standards for Hazardous Air Pollutants (NESHAPS) is required per 40 CFR Part 61 Subpart 1. For the calendar year 1993, the first year that reporting was required, the University's radionuclide emissions were below the level that requires reporting to the EPA. Radionuclide emissions from the IAST are not expected to change the University's EPA reporting status. The City of Philadelphia and state agencies do not regulate or monitor research laboratory emissions. Emissions from research laboratory fume hoods are expressly exempt from regulation within the City of Philadelphia. The Commonwealth of Pennsylvania exempts "laboratory equipment used exclusively for chemical or physical analyses" from permitting approval (Section 127.14 exemptions). The EPA maintains a list of categories of sources of air pollutants. As of June 1994, research facilities were not added to the list; however, the list is subject to public comment and may change in the future.

To determine the potential impacts to the local public associated with potential air emissions from the IAST, an exposure assessment was conducted on 10 chemicals representative of the potential materials to be

stored and used in the laboratories. This analysis is presented in Appendix E. This assessment evaluated the carcinogenic and acute risks associated with potential exposure to gases exhausted from the IAST during an accidental spill.

The exposure scenario used a potential passerby at street level and a hypothetical resident at above-street level. The exposure assessment indicated that for the accidental release of any one compound at the IAST the nearby population would not be at risk of exposure to acute toxic or lethal exposure concentrations. Also, it was demonstrated that one accidental release of a carcinogen would not present a cancer risk above accepted levels of one in a million.

The exposure assessment is premised upon some extremely conservative assumptions. For example, the dilution factor used in the fume hood study was 1000:1. This same factor was used in the exposure assessment. However, the 1000:1 dilution factor represents the emissions from a single fume hood operating in a singular fashion. In fact, the IAST fume hoods are designed to be ganged in a single stack, with six hoods contributing to the combined exhaust. This results in an actual 6000:1 dilution. Thus the exposure concentrations modeled in the exposure assessment are conservatively stated by a factor of six. These conservative assumptions must be acknowledged when interpreting the potential risks associated with the fume hood emissions.

A diesel-fired emergency generator would be installed in the IAST, the size and generation capacity of which are not yet determined. This generator would be a source of SO_2, CO, VOC, and NO_x. However, the generator would only operate approximately 20 hours per year for testing and maintenance, therefore, it would not be a significant source of SO_2, CO, VOC, and NO_x.

The IAST would be connected to the University Central Steam Plant for heat; thus, the IAST would not add air emissions associated with an on-site

boiler. The central steam system already has sufficient capacity to service the IAST space heating requirements, and its output of steam and air emissions would not significantly increase.

Although the Proposed Action would not violate the NAAQS or the Local Ambient Air Quality Standards (LAAQS), good construction and operating procedures would be followed to minimize pollutant emissions. These procedures would include the following:

- Application of water, as required, during ground-disturbing activities to control fugitive dust.

- A regular preventative maintenance program for operating equipment to prevent emission increases due to mechanical problems.

The additional CO, VOC, and NO_x emissions from any increased vehicle traffic would be extremely small and virtually undetectable when compared to the ROI baseline emissions.

Criteria air pollutant emissions from the IAST would not result in levels of emissions significant enough to warrant a detailed analysis under Section 175(c) of the CAAA of 1990 to determine whether the proposed project will conform to the SIP. However, it is not expected that operation of the IAST would result in new NAAQS violations or degrade the SIP's purpose of attaining the NAAQS for CO and O_3.

The proposed laboratory does not have emissions exceeding the threshold emission level and is not one of the source categories affected by controls in the SIP. Therefore, the construction and operation of the proposed facility will conform with the regulations in the SIP designed to achieve the NAAQS.

4.4.1.4 Noise

To model noise conditions that would exist during the construction phase of the project, the computer model *Highway Construction Noise Computer Program (HICNOM)*, FHWA, March 1990, was used. Using information supplied by SAE Americon with regard to the type and use of equipment and number of truck deliveries, projected noise conditions during the construction phase of the project were determined for each alternative site.

Based on analyses of the different time periods given on the construction schedule, it was found that the noise levels would be highest during the 1-month period when a pile driver would be used. For analysis purposes, it was assumed that the pile driver would be used for 6 hours out of each 8-hour workday.

The projected L_{eq} readings modeled for the eight receptor locations (Points 5-12) that could be most impacted during the construction of the Proposed Action site range from 76.5 to 83.8 dBA. Sound levels at six of the eight receptors, as projected, would increase by at least 10 dBA over ambient noise levels. If unmitigated, L_{eq} readings during this time period would increase by 0.5 to 19.5 dBA, depending upon the proximity of the receptor to the construction site. There are no restrictions on construction noise in Philadelphia except that a special permit is required to operate at night, Sundays, and certain holidays. There are no PADER or EPA standards for noise levels.

Although they are not required by Philadelphia noise standards, it is recommended that mitigation measures be implemented to abate any noise impacts due to construction that may interfere with day-to-day operations on the University campus. A typical mitigation measure would be a 6-foot-high (minimum) plywood fence instead of a chain-link fence to secure the site. Thus, the required fence around the site could serve the dual purpose of both screening construction noise and securing the Project Site. The difference in cost between a plywood noise wall and a chain-link fence

would be negligible. Accordingly, the noise levels at the receptor locations were modeled assuming the installation of a wooden fence. If mitigated with a 6-foot-high wooden fence, L_{eq} readings when the pile driver is being used would increase by only 0.5 to 8.0 dBA with projected L_{eq} readings ranging from 65.9 to 76.5 dBA. This range is comparable to the ambient noise readings presented in Subsection 3.4.5.2. Since noise at the receptor points would not exceed existing noise levels at certain points on campus today, the increase in noise at any one site during the 1-month time period when the pile driver is operating is not significant.

The existing ambient noise measurements, along with the existing traffic volume, were used to calibrate the *Stamina 2.0/Optima Noise Prediction Model (FHWA-DP-58-1)*, March 1983, to permit a noise modeling simulation of the Project Site after occupancy (full build-out). Once the calibration phase was completed, the projected traffic volume that would be generated by the Proposed Action site was added to the existing traffic volume to model noise conditions after occupancy of the proposed building.

The projected L_{eq} readings modeled for the eight receptor locations (Points 5-12) that could be most impacted during the occupancy of the Proposed Action site range from 62.4 to 76.5 dBA. Noise from additional traffic and HVAC equipment generated by the site represents less than a 1 dBA increase at any receptor location. Thus, operation of the project would be in compliance with Philadelphia standards, which require no more than a 2 dBA increase at surrounding hospital uses, a 5 dBA increase at surrounding residential uses, and a 10 dBA increase at surrounding commercial and industrial uses. Accordingly, noise impact from IAST operations is not significant.

4.4.1.5 Biological Resources

The Project Site is urban and contains minimal habitat for wildlife or vegetation. No threatened, endangered, candidate, or sensitive species occur near any of the alternative sites. No significant biological resources

occur at any of the sites; therefore, no impacts to biological resources would be expected.

4.4.1.6 Cultural Resources

The evaluation of impacts on archaeological and historic architectural resources is being conducted in consultation with the Philadelphia Historical Commission, the Pennsylvania Historical and Museum Commission (the State Historic Preservation Office, or SHPO), and the Advisory Council on Historic Preservation, pursuant to Section 106 of the National Historic Preservation Act. The purpose of consultation is to determine the effect of the Proposed Action on archaeological and historic architectural resources and to discuss the implementation of measures that would avoid or mitigate adverse effects. This section summarizes the potential effects and mitigative measures being evaluated in the consultation process.

The evaluation of historical/architectural resource significance considers the character, innovation, and aesthetic achievement of the architecture; the importance of those persons associated with the building; and the context in which the building is located.

The historic context that is related to Smith Hall includes: the development of research facilities and the central science precinct at the University of Pennsylvania; the development of research paradigm for public health; and the development of the University of Pennsylvania as a research center.

Phase I of the Proposed Action is expected to have no effect on archaeological resources. Phase I construction would involve demolition of Smith Hall, a contributing component of the University of Pennsylvania Campus Historic District, the introduction of a new building on the site of Smith Hall, and a change to the orientation of the western end of Smith Walk.

The Phase II construction in the current conceptual design would result in changes to the rear areas of the Morgan and Music Buildings. The rear wing of Music, which was built as a kitchen, would be demolished; exterior views of the rear walls would be concealed by new construction that would incorporate the rear walls into new corridors. The rear facade of the Morgan Building would be partially restored as part of the Phase II addition. The main facades of the Morgan and Music Buildings would be restored and the interiors would be rehabilitated to allow reuse. The 1970s Music Annex would be demolished as well.

Phase III of the Proposed Action would involve the adaptive use of Hayden Hall with the restoration of its great second floor space as a reading room. The exterior of Hayden Hall has already been restored by the University. Phase IV of the Proposed Action would involve rehabilitation and reuse of the vacated portions of the Towne and Cret buildings.

The proposed demolition of Smith Hall would have an "adverse effect," as defined in the regulations of the Advisory Council on Historic Preservation, 36 CFR Part 800, on the University of Pennsylvania Campus Historic District. The adverse effect on Smith Hall, the Morgan Building, and the Music Building would be the result of physical destruction, damage, or alteration of all or part of the property and would occur as a result of Phase I and Phase II of the Proposed Action. In the case of Smith Hall, the building would be demolished; portions of the Morgan Building and the Music Building would also be demolished. These effects would be significant.

There would also be other changes to the Historic District, Smith Walk, and the associated vistas, landscaping, and monuments resulting in aesthetic effects that are less tangible and more subjective than the demolition of an entire building or a rear wall. These effects involve such qualities as design, setting, and character. The demolition of Smith Hall and its replacement by a large, modern building would result in a change in the setting and vistas of the Historic District. There are differences of professional opinion about the

effect that the new Phase I building would have on the Historic District. Mr. John Cullinane, of John Cullinane Associates, the Air Force's independently selected consultant, concluded that the overall impact of the Proposed Action would be substantial, having an "adverse effect" on the Furness Library, Bennett Hall, the Towne Building, and the Hayden Building as well as on the historical resources noted above. In Mr. Cullinane's professional judgment, the Proposed Action would alter the historic setting with the introduction of new visual elements that are "out of character" with existing resources. Mr. Cullinane noted that the Historic District is characterized by an ensemble of buildings and open spaces conducive to pedestrian use and that the pedestrian scale of the Historic District is created by the size of the buildings, the vertical and horizontal variation in building surfaces, and the use of brick and stone. Mr. Cullinane's professional assessment is that the demolition of Smith Hall, the realignment of the 34th Street entrance to Smith Walk, and the introduction of new construction would alter and damage the historic character, scale, texture, setting, and context of the Historic District.

The University and its architects (Venturi, Scott Brown and Associates) recognize that the Proposed Action would introduce change to the Historic District but have reached a different conclusion as to the nature and impact of that change. The University and its architects acknowledge that the demolition of Smith Hall would result in irrevocable damage to a contributing resource in the Historic District. With this impact in mind, the University and its architects consciously attempted to design a building that they felt could make a positive contribution. Venturi, Scott Brown and Associates designed the Phase I building and the preliminary design of the Phase II additions to fit within the context of the existing historic resources, responding to the demands of the setting in a way that would complement the University's physical assets. The architects purposefully designed the floor plans for Phase I to have the simple rectangular shape and rhythmically repetitive laboratory bays needed to suit changing research requirements. Context was addressed by placing the non-laboratory functions at the northern end of the building to vary the rhythms and plan at Smith Walk.

The new facades were designed to exhibit a harmony with the character of adjacent historic buildings by the choices of proportions, similar materials, textures, and colors. The intent of the IAST design was to preserve the linear character of Smith Walk and reinforce its participation within the east/west campus spine by placing an arcaded entry to the Phase I building on Smith Walk. The initial conceptual design for the Phase II building contains a similar arcaded entry.

There are differences in professional opinion about design aesthetics and impact on historic resources as well as with respect to many of the specific elements of the Proposed Action. In Mr. Cullinane's judgment, the Phase I structure would be significantly taller than the existing Smith Hall and the building would have exterior wall surfaces that are flat with only minimal relief provided by windows. Therefore, the walls would present a uniform material texture and the penthouse level ventilation louvers and the flat roofs would create a building that is very different from existing architecture in the remainder of the historic ensemble. Mr. Cullinane finds that the existing buildings along Smith Walk were designed to reduce their scale through the use of horizontal elements, such as belt courses and cornices, and sloped roofs designed to simulate a residential scale and character in institutional buildings. Thus, Mr. Cullinane ultimately concluded that the IAST structure proposed to replace Smith Hall would be inconsistent with the existing buildings in the Historic District in scale, texture, and pattern and disrupts these characteristics.

In designing the proposed new building, the University and its architects intended that the building would display many of the architectural treatments to reduce scale found in the existing buildings in the Historic District. The architects used step-backs both in section and plans for non-laboratory areas behind the east and Smith Walk facades of the Phase I building and behind the east, north, and south elevations of the current conceptual design of the Phase II structure. The east facades were designed to step back at the top to align with cornice heights of the facing Hayden and Towne Buildings. In plan, the end elevations step back to make

the new buildings appear narrower, to reduce their scale, to complement the smaller scale Morgan and Music Buildings, and to recognize the importance of Smith Walk. At Smith Walk, the Phase I end facade is stepped back at the northeast corner to further reduce the apparent mass of the building, to accommodate social functions collected at this end of the structure, and to respond to the sculptural aspects of adjacent historic buildings. To minimize the expressive importance of mechanical equipment on the 34th Street facade, the Phase I building would not include an exposed penthouse like the adjacent 1973 Chemistry Building, and louvers would not be a dominant part of the upper facade design. The reddish color would match the adjacent masonry, and the louvers would be grouped at the Chemistry end of the building in balance with windows serving social spaces at the Smith Walk end. The University's architects believe that their use of surface treatments in a contemporary way would provide a rich surface for the new buildings with horizontal divisions reminiscent of the historical buildings. The relatively flat facades of the Phase I building and the current conceptual design of the Phase II building are intentionally designed to create a harmony by analogy and contrast with the adjacent Elizabethan-inspired facades of Cope and Stewardson and with the vibrant red sculptural surface of the Furness Library and the Hayden Building.

The experts have different assessments as to the characterization and degree of aesthetic impact. As designed, the construction of the Phase I building and the current conceptual design of the Phase II building would reduce the view of Furness Library from Smith Walk by approximately 30 percent. Mr. Cullinane has concluded that this would constitute an adverse impact significantly affecting the Historic District. The University and its architects acknowledge that the view of Furness Library would be refocused by the angled facades of the Phase I building, but believe that this shift in view to the apse end of Furness may enhance the visual experience and also provide additional clarity and safety to pedestrian movement across 34th Street. With respect to 34th Street, Mr. Cullinane has concluded that the scale of the thoroughfare would change the pedestrian character of the area by imposing a sheer, tall wall adjacent to the east side of the street. The

University has noted that views from the street have changed throughout the 20th century with the hospital expansion at the Spruce Street end and the recent 3401 Walnut construction at the Walnut Street end. The 1973 Chemistry and Meyerson as well as the much older Furness, Bennett, and Irvine Buildings have already created a street with significant large buildings, a context in which the Phase I building would fit well.

Phases III and IV of the Proposed Action may have adverse effects on the Cret Wing of the Chemistry Building, the Towne Building, and Hayden Hall depending upon the final design of the renovation and use of those buildings. Mr. Cullinane has stated, that in his judgment, if Phase III and IV actions are undertaken in accordance with the Secretary of Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings, the actions would result in no adverse effect on those contributing components of the Historic District. The University has committed to implement renovation and restoration activities in these buildings in accordance with these Standards and Guidelines.

The professional opinions expressed by these two experts, John Cullinane Associates and the University's architects (Venturi, Scott Brown and Associates) reflect the broader range of opinion elicited from the public through meetings and solicitation of comments. As contemplated under Section 106 of the National Historic Preservation Act, the Air Force, the University, the Philadelphia Historical Commission, the Pennsylvania SHPO, and the Advisory Council on Historic Preservation have engaged in ongoing consultations with regard to these matters. The parties have agreed to a Memorandum of Agreement (MOA), which, while not eliminating all adverse effects, would provide for certain mitigating actions to reduce or ameliorate certain of these effects that would result from the implementation of the Proposed Action. The MOA, included in this FEIS as Appendix G, binds the University to a number of stipulations, including:

- Preservation of Morgan Building, Music Building, Towne Hall, Hayden Hall, and Cret Laboratory.

- Consideration of architectural salvage of components of Smith Hall.

- Historic American Building Survey (HABS) and Historic American Engineering Record (HAER) documentation of Smith Hall, Smith Walk, Morgan Building, and Music Building.

- Phase II, III, and IV design consultation requirements to ensure compatibility with the historic and architectural qualities of these buildings with the Philadelphia Historic Commission (PHC) and SHPO.

- Development and implementation of a plan for interpreting the history and buildings of the Central Science Precinct.

- Development and implementation of a University Cultural Resources Management Plan.

HABS and HAER recordation are intended to document America's historic buildings. The documentation is a permanent record, often the only remaining record of a site or structure. To ensure the consistency as well as the reliability of the documentation, standards have been published for the content and format of the HABS/HAER documentation. The HABS/HAER Standards provide for the following:

- Existing-condition measured drawings and photographs.

- Written historical reports of buildings and other structures.

- Large format photography to capture detail, textures, information on furnishings, visual context for drawings,

perspectives, and other types of views that are difficult or impossible to draw accurately. The historical reports accompanying the HABS/HAER package provide an analysis of the historical and architectural facets of the building.

4.4.2 Reuse of a Portion of Smith Hall Alternative

4.4.2.1 Geology and Soils

No impact would be anticipated.

4.4.2.2 Water Resources

No permanent impact would be anticipated.

4.4.2.3 Air Quality

Impacts would be the same as the Proposed Action, with the following exception.

The construction of the Phase I IAST in this configuration would create a small internal courtyard between it and the existing chemistry complex. Air emissions models indicate that the air intakes for the Chemistry Complex located within that courtyard might entrain exhaust gases from the new chemistry wet laboratory. To avoid this likelihood, the existing air intake structure would be relocated by extending it from that courtyard below the new wet laboratory to the vicinity of Smith Walk.

4.4.2.4 Noise

Demolition and construction activities would be equivalent to those for the Proposed Action. Therefore, impacts would be the same.

4.4.2.5 Biological Resources

Impacts would be the same as for the Proposed Action.

4.4.2.6 Cultural and Archaeological Resources

As with the Proposed Action, the Reuse of a Portion of Smith Hall Alternative involves changes that would occur in four phases. Phase I would involve demolition of the 1899 portion of Smith Hall, the introduction of a new building on the site of the 1899 portion of Smith Hall, and the rebuilding of Smith Walk. A new laboratory building, which would be physically linked to the 1958 and 1973 Wings of the Chemistry Building, and the remaining portion of Smith Hall, would be constructed between the 1973 Wing and Smith Hall. The new construction would tower over the Smith Wing and would create difficulties in ventilation and placement of windows. Almost all the space between the Chemistry Complex, Hayden Hall, and the remaining portion of Smith Hall would be filled by new construction. Much of the interior of Smith Hall would require extensive modification to remove lead and asbestos and other hazardous materials; introduction of modern HVAC and fire-safety equipment would have significant impacts on the remaining historic surfaces and materials.

While the Phase I structure would have many of the same "adverse effects" on the University of Pennsylvania Campus Historic District as would the Proposed Action, this alternative would not adversely affect Smith Walk. Neither its form nor design would be modified. Surface materials would be upgraded to match other campus pedestrian walkways. The vistas toward and from Smith Walk and the Furness Library would not be affected under this alternative.

Phase II construction and the adaptive uses and building rehabilitation of Phases II, III, and IV would be carried out as described for the Proposed Action and would have the same consequences for cultural resources (see Subsection 4.4.1.6).

Phases I and II in the Partial Reuse of Smith Hall Alternative are not expected to have any impact on archaeological resources.

4.4.3 LRSM Parking Lot Alternative

4.4.3.1 Geology and Soils

No impact is anticipated.

4.4.3.2 Water Resources

No permanent impact is anticipated.

4.4.3.3 Air Quality

The impacts would be the same as the Proposed Action.

4.4.3.4 Noise

The projected L_{eq} readings modeled for the two receptor locations (Points 1 and 2) that could be most impacted during the construction at this site range from 72.5 to 74.7 dBA. These noise readings represent an increase of less than 1 dBA over ambient noise levels. This increase is not significant. No mitigation measures are required for this alternative during the construction phase.

The projected L_{eq} readings modeled for the two receptor locations (Points 1 and 2) that could be impacted the most during the occupancy of this site range from 72.0 to 74.7 dBA. Noise from additional traffic and HVAC equipment generated by the site represents an increase of less than 1 dBA at the two receptor locations. Project operations would be in compliance with Philadelphia standards for noise. Noise generated from operations at this site would not be significant.

4.4.3.5 Biological Resources

Impacts would be the same as the Proposed Action.

4.4.3.6 Cultural and Archaeological Resources

The construction of the Phase I and II building on the site of the LRSM Parking Lot would have no impact on any known historic resources. The construction of Phases I and II in this location would not impact any known archaeological resources.

The proposed LRSM Parking Lot building would be sufficient to house programs in Phases I and II of the IAST. Phases III and IV are planned to be carried out in the same manner described in the Proposed Action.

4.4.4 Lott Tennis Courts Alternative

4.4.4.1 Geology and Soils

No impact would be anticipated.

4.4.4.2 Water Resources

No permanent impact would be anticipated.

4.4.4.3 Air Quality

The impacts would be the same as the Proposed Action.

4.4.4.4 Noise

The projected L_{eq} readings modeled for the two receptor locations (Points 3 and 4) that could be most impacted during the 1-month pile driving stage of the construction at the Alternative C site range from 78.1 to 81.6 dBA, representing an increase of 12.2 dBA and 11.2 dBA, respectively, over

ambient mid-day conditions. The same mitigation measure as suggested for the Proposed Action site (use of a 6-ft minimum high plywood fence) could be installed around the perimeter of the site to serve the dual purpose of securing the site and mitigating the noise increase due to construction.

Accordingly, the noise levels at the receptor locations were modeled assuming the installation of this fence. These values added to ambient conditions result in the project L_{eq} readings that would range from 68.4 to 73.9 dBA, representing an increase of 1 dBA and 2.5 dBA, respectively, over ambient conditions. These projected noise readings are comparable to the ambient noise readings presented in Subsection 3.4.5.2. These noise impacts are not significant.

The projected L_{eq} readings modeled for the two receptor locations (Points 3 and 4) that could be impacted the most during the occupancy of the Lott Tennis Courts Alternative site range from 64.5 to 72.9 dBA. Noise from additional traffic and HVAC equipment generated by the site represents an increase of less than 1 dBA at the two receptor locations. Operations of the project would be in compliance with Philadelphia standards for noise. No mitigation measures would be required for this alternative during the occupancy phase.

4.4.4.5 Biological Resources

Impacts would be similar to the Proposed Action.

4.4.4.6 Cultural and Archaeological Resources

The construction of the Phase I and II building on the site of the Lott Tennis Courts site would result in the loss of an important recreational resource and open space. This alternative would involve the demolition of six tennis courts and the introduction of a new building along the east side of 33rd Street between the DRL on the north and Franklin Field on the south.

This alternative would have an adverse effect on the University of Pennsylvania Campus Historic District. A building at this location would modify the character of the district's setting, including the relationships of the district components, which is a significant characteristic of the resource. This adverse effect could be mitigated through HABS documentation of the existing setting of the athletic campus and through sensitive design of the new building. Care should be exercised to ensure that the exterior of the new building is consistent in massing, scale, materials, and color with the exteriors of nearby contributing components of the district (e.g., Franklin Field, Hayden Hall, Hutchinson Gymnasium, Moore School, Palestra, Towne School of Engineering, Weightman Hall, and White Training House).

The proposed Lott Tennis Courts building would be sufficient to house programs in Phases I and II of the IAST. Phases III and IV are planned to be carried out in the same manner as described in the Proposed Action.

This alternative may also have an adverse effect on archaeological resources. Background research has suggested that a portion of this site may have served as a cemetery for the Blockley Almshouse, a 19th century charitable institution (Rosenthal, 1963). An archaeological field investigation would be needed to determine whether this cemetery may exist at this site. Should a significant archaeological site be located, any adverse effect could be mitigated through implementation of a data recovery program.

4.4.5 No Action Alternative

This alternative would have no impact upon the natural environment. However, a decision not to pursue either the Proposed Action Alternative or Reuse of a Portion of Smith Hall Alternative would result in the loss of an important opportunity to restore, rehabilitate, and reuse several contributing components of the University of Pennsylvania Campus Historic District.

4.5 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

The Proposed Action and Alternatives assume construction of the IAST at one of three sites on the Penn campus. The environmental consequences of the Proposed Action and Alternatives are minimal with the exception of aesthetics and cultural resources where significant impacts are noted. The significant environmental impacts associated with the No Action Alternative consist of the loss of an opportunity to restore, rehabilitate, and reuse several contributing components of the University of Pennsylvania Campus Historic District. The impacts of the Proposed Action and Alternatives are summarized below for each resource category.

Local Community. The Proposed Action and Alternatives would increase employment slightly in University City because of construction and anticipated new faculty. A temporary economic benefit would occur during construction.

Land Use and Aesthetics. The Proposed Action and the Reuse of a Portion of Smith Hall Alternative place Phases I and II of the IAST at one of the most sensitive locations on campus, on the site of Smith Hall, along Smith Walk. However, construction at this location is consistent with current campus land use precincts and is in accord with long-range planning studies undertaken by the University. The LRSM Parking Lot and the Lott Tennis Courts Alternatives would occupy space reserved for other uses. The Lott Tennis Courts Alternative would result in the loss of open space.

The Proposed Action and Reuse of a Portion of Smith Hall Alternative would affect the appearance of the west end of Smith Walk and its intersection with 34th Street. Views of the Furness Building, a national historic landmark, would be affected as well. The LRSM Parking Lot Alternative would have no significant aesthetic impacts; it would fill in a parking lot. The Lott Tennis Courts Alternative blocks the views of significant athletic structures and presents a loss of recreational facilities.

Transportation. Traffic would be affected temporarily by construction activities. Under the LRSM Parking Lot Site Alternative, Walnut Street, the major artery from Center City to the west, is likely to be the most affected by construction staging activities. Neither the Proposed Action nor the alternatives would permanently impact traffic flow or patterns.

Utilities. The demand for water, steam, electricity, wastewater disposal, and gas would increase, although not materially, with operation of the IAST. Local suppliers would not be strained to meet these demands.

Hazardous Materials and Hazardous Waste Management. The amount of hazardous materials and waste generated would increase. With the Lott Tennis Courts Alternative, extra personnel and an extra stop for delivery or pickup would be required. The actual handling and management methods would not be affected by the IAST project.

Soils and Geology. The IAST would not affect soils or geology because all alternative sites are developed.

Water Resources. The IAST would not permanently affect surface or groundwater resources.

Air Quality. Emissions from the IAST would minimally decrease local air quality, but emission rates are not sufficient to significantly affect the area. For example, construction activities would temporarily decrease air quality because of dust and construction vehicle exhaust. Regional air quality would not be affected by emissions from the IAST.

Noise. Operation of the IAST would not impact noise-related parameters.

Biological Resources. No significant biological resources exist in University City; therefore, there would be no impacts on any biological resources.

Cultural and Archaeological Resources. The Proposed Action would result in the demolition of Smith Hall and would alter the rear areas of the Morgan and Music Buildings, all contributing resources of the University of Pennsylvania Campus Historic District, and would affect Smith Walk from which are seen a number of contributing historic resources, including the Furness Building, a national historic landmark. Reuse of a Portion of Smith Hall Alternative would replace the 1899 Wing of Smith Hall with a structure that would rise above the remaining portion of Smith Hall and fill in open space between Hayden and Smith Halls and the Chemistry Complex. The LRSM Parking Lot Alternative would have no known direct cultural and archaeological impacts. In addition to affecting the character of the historic district, the Lott Tennis Courts Alternative could potentially cause impacts to a burial site that may exist beneath the tennis courts and 33rd Street. This could be mitigated by careful design, archaeological investigation, and data recovery.

For all alternatives, Phase III would result in the interior renovation of Hayden Hall, and Phase IV would result in the interior renovation of the Towne Building and the Cret Wing of the Chemistry Complex.

4.6 CUMULATIVE ENVIRONMENTAL EFFECTS

The construction and operation of the IAST under the Proposed Action would present no cumulative impacts and few unavoidable impacts. The demolition of Smith Hall and the construction of the Phase I structure at this site would have a significant and unavoidable impact on the aesthetics and historic character of the site. Some cumulative effects may arise through the implementation of Phases II, III, and IV, although the MOA currently under consideration provides for significant mitigation of these potential impacts. No cumulative and unavoidable impacts are anticipated to other resources. Additionally, none of the current planned or funded construction occurring elsewhere on campus would result in a cumulative impact.

The construction and operation of the IAST under the Reuse of a Portion of Smith Hall Alternative would produce fewer cumulative and unavoidable impacts than the Proposed Action since the preservation of a portion of the existing Smith Hall would produce fewer aesthetic and cultural resource impacts. Impacts associated with subsequent phases would be the same as described for the Proposed Action. None of the current planned or funded construction occurring elsewhere on campus would result in a cumulative impact.

No cumulative or unavoidable impacts have been identified for the LRSM Alternative, the Lott Tennis Courts Alternative, or the No Action Alternative.

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 5.0
CONSULTATION AND COORDINATION

5.0 CONSULTATION AND COORDINATION

The federal, state, and local agencies and private agencies/organizations that were contacted during the course of preparing this EIS are listed below.

Federal Agencies

- Department of Labor
- Environmental Protection Agency
- Federal Emergency Management Agency
- Fish and Wildlife Service
- National Advisory Council for Historic Preservation
- National Park Service

Commonwealth Agencies

- Department of Environmental Resources
- Department of Labor and Industry
- Fish Commission
- Game Commission
- Pennsylvania Historical and Museum Commission

Local and Regional Agencies

- Delaware Valley Hospital Council
- Delaware Valley Regional Planning Council
- Greater Philadelphia Chamber of Commerce
- Philadelphia City Planning Commission
- Philadelphia Department of Health
- Philadelphia Fire Department
- Philadelphia Historical Commission
- Philadelphia Police Department

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 6.0
LIST OF PREPARERS

6.0 LIST OF PREPARERS

Katherine T. Adams, Senior Technical Editor, WESTON
M.A., 1989, Communications, Temple University, Pennsylvania
Years of Experience: 20
Senior Technical Editor and Reviewer

Gary P. Baumgartel, P.E., Lieutenant Colonel, U.S. Air Force, Director, HQ AFCEE/EC
B.S., 1972, Science Degree in Civil Engineering, Lowell Technical Institute, Lowell, MA
M.S., 1979, Facilities Management, Air Force Institute of Technology, School of Systems and Logistics, Wright-Patterson AFB
Years of Experience: 20
Senior AFCEE Reviewer

Julia A. Cantrell, Environmental Protection Specialist, U.S. Air Force, HQ AFCEE/ECP
B.A., 1982, Political Science, University of Texas, Austin
M.S., 1987, Urban and Regional Planning, University of Wisconsin, Madison
Years of Experience: 12
Project Manager

John Cullinane, A.I.A., John Cullinane Associates
B.S., Architecture, 1961, University of Florida
City Planning, 1965, Cosanti Foundation
Years of Experience: 28
Architectural History and Aesthetics, Ch. 3 and 4

Amy R. Dumas, Assistant Project Scientist, WESTON
B.S., 1990, Animal Science, Cornell University, New York
Years of Experience: 2
Information Compilation

William A. Groves, Major, U.S. Air Force, Attorney, AFOSR/JA
J.D., 1982, University of Akron School of Law, Ohio
LL.M., 1990, George Washington University, Washington, DC
Years of Experience: 11
Air Force Policy, Ch. 1

Kevin L. Johnson, P.E., Ph.D., President, Traffic Planning and Design, Inc.
Ph.D., 1990, University of Pittsburgh, Pennsylvania
Years of Experience: 13
Traffic and Noise Studies, Ch. 3 and 4, Appendices D and F

Donald M. MacGregor, Cartographer, WESTON
Years of Experience: 20
Graphics Preparation

Isabel L. Mandelbaum, Senior Scientist, WESTON
Ph.D., 1975, Biology, University of Pennsylvania
Years of Experience: 19
Senior Technical Reviewer, Appendix E

Korah T. Mani, Technical Manager, WESTON
M.S., 1982, Civil Engineering, Villanova University, Pennsylvania
Years of Experience: 12
Community Impact Analysis, Ch. 3 and 4

Louis M. Militana, Principal Section Manager, WESTON
M.S., 1980, Meteorology, University of Maryland
Years of Experience: 14
Air Quality Analysis, Ch. 3 and 4

Donald R. Phoenix, Vice President/Project Director, WESTON
Ph.D., 1976, Biology/Ecology, University of Pennsylvania
Years of Experience: 18
Project Director

Sam C. Rupe, U.S. Air Force, Attorney, HQ AFCEE/JA
B.S., 1977, History, U.S. Air Force Academy
J.D., 1984, University of Miami, Florida
LL.M., 1991, George Washington University, Washington, DC
Years of Experience: 1
Air Force Legal Review

Kenneth J. Salamon, Vice President/Sr. Project Director, WESTON
Ph.D., 1979, Environmental Physiology, Fordham University, New York
Years of Experience: 15
Quality Assurance Review

Carolyn J. Stratton, Report Coordinator, WESTON
M.S., 1972, Library Science, University of Wisconsin
Years of Experience: 20
Report Production Coordinator

George E. Thomas, Vice-President, Clio Group, Inc.
Ph.D., 1975, History of Art, University of Pennsylvania
Years of Experience: 20
Cultural Resource Assessment, Ch. 3 and 4

Eva Timmer, Senior Scientist, WESTON
M.S., 1987, Ecotoxicology, Duke University, North Carolina
Years of Experience: 7
Exposure Assessment, Appendix E

James G. Van Ness, Lieutenant Colonel, U.S. Air Force, Attorney, HQ AFCEE/JA
B.S., 1971, Distributed Studies, Iowa State University, Ames
J.D., 1974, University of Iowa Law School, Iowa City
LL.M., 1984, Law and Marine Affairs, University of Washington School of Law, Seattle
Years of Experience: 18
Air Force Legal Reviewer

Michael T. Werner, Esq., Principal Investigator, WESTON
J.D., 1982, Syracuse University, New York
M.S., 1976, Biology, Clarion University, Pennsylvania
Years of Experience: 18
Principal Investigator

THIS PAGE INTENTIONALLY LEFT BLANK

CONFLICT OF INTEREST DISCLOSURE

THIS PAGE INTENTIONALLY LEFT BLANK

CONFLICT OF INTEREST DISCLOSURE

I, Kenneth J. Salamon, Ph.D., am the officer or employee responsible for the preparation of an offer made to the University of Pennsylvania to enter a contract with the University for all tasks necessary to the preparation of an Environmental Impact Statement which will satisfy National Environmental Policy Act requirements for the Institute of Advanced Science and Technology (IAST) project.

I hereby certify that, to the best of my knowledge and belief, Roy F. Weston, Incorporated, its officers or employees do not have any financial or other interest in the outcome of Institute of Advanced Science and Technology project except as disclosed below.

None

I ( ) am (x) am not aware of any organizational conflict of interest that would call into question the propriety of awarding a contract to Roy F. Weston, Incorporated, in connection with the IAST project. If an organizational conflict of interest exists, I have fully disclosed any and all facts to the University of Pennsylvania and the Air Force Office of Scientific Research surrounding the conflict.

Kenneth J. Salamon
Signature

1 May 1992
Date

Kenneth J. Salamon, Ph.D.-Vice President
Typed Name Of Employee Responsible For Offer

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 7.0
LIST OF REFERENCES

7.0 LIST OF REFERENCES

Advisory Council on Historic Preservation Regulations at 36 CFR 800.a(b)

Advisory Council on Historic Preservation Regulations at 36 CFR 800.a(b)

Advisory Council on Historic Preservation Regulations at 36 CFR 800.a(b)

Billings, John Shaw. 1880-1894. *Index Catalogue of the Library of the United States Surgeon General's Office* (16 volumes). Washington, DC.

Billings, John and Henry Hurd, M.D., eds. 1894. *Hospitals, Dispensaries, and Nursing*. Baltimore: Johns Hopkins Press.

Book of Business Lists, 1992 Edition. Philadelphia Business Journal, p.17.

Brink, T. et al. 1989. *In Our Backyard: Environmental Issues at UCLA, Proposals for Change, and the Institution's Potential as a Model*, M.A. Thesis. June 1989.

CERCLIS (CERCLA Information System). 1992. On-line database of the Chemical Information Society.

Clio Group. 1989. *An Advisory Report on Historic Resources for the University of Pennsylvania.*

Clio Group. 1990. *University of Pennsylvania Campus Survey*.

Clio Group. 1992. *Adverse Effect Documentation Report*. Institute for Advanced Science and Technology.

Cooper, David and Marshall Ledger. 1990. *Innovation and Tradition at the University of Pennsylvania School of Medicine*. Philadelphia: University of Pennsylvania Press.

Current Labor Market Information. 1992. Commonwealth of Pennsylvania, Department of Labor and Industry.

Garrison, Fielding. 1915. *John Shaw Billings: A Memoir*. New York: G.S. Putnam and Sons.

Hurst, R.E., S.P. LeGroe, J.H. Tinney, and G.A. West. 1992. *Right-to-Know Laws in Pennsylvania*. Pennsylvania Chamber of Business and Industry, Education Foundation Publication.

Initial List of Categories of Sources Under Section 112(c)(1) of the Clean Air Act Amendments of 1990, 1992. *Federal Register*, Vol. 57, No. 137, 16 July 1992.

Kohler, Robert. 1982. *From Medical Chemistry to Biochemistry: The Making of a Biomedical Discipline*. Cambridge: Cambridge University Press.

Lenz, G. November 1992. Permit Engineer, Bureau of Air Quality Control, Pennsylvania Department of Environmental Resources, Personal Communication.

OEHS. 1992. Personal Communication.

Pennsylvania Code Title 25 — Environmental Resources, Subpart C, Article III, Air Resources.

Pennsylvania Department of Environmental Resources, Division of Forestry Advisory Services, Bureau of Forestry. 12 August 1992. Letter from Edward T. Dix, Botanist, concerning the Pennsylvania Natural Diversity Inventory Species List.

Pennsylvania Fish Commission. 2 September 1992. Letter from Clark N. Shiffer, Herpetology and Endangered Species Coordinator, concerning endangered or threatened fish, amphibians, and reptiles in the project area.

Philadelphia City Planning Commission. 1990. "Selected Tables Population and Housing Data: 1990 and 1980," Technical Information Paper, 1990 Census.

Philadelphia City Planning Commission. 1990-1991. "West Philadelphia District Plan: Starting the Process," Working Paper.

Philadelphia Department of Health, Air Pollution Control Board. 1992. *Complex Source Review*, Air Management Regulation X.

Philadelphia Department of Health, Air Pollution Control Board. 1992. *Control of Emissions* of *Toxic Air Contaminants*, Air Management Regulation VI.

Quarles, J. and W.H. Lewis, Jr. 1990. *The New Clean Air Act: A Guide to the Clean Air Program as Amended in 1990*. Morgan, Lewis, and Bockius, Washington, DC.

Rosenthal, Leon S. 1963. *A History of Philadelphia's University City*. University of Pennsylvania Printing Office, Philadelphia, PA.

Traffic Planning and Design, Inc. 1992. (See Appendix D).

University of Pennsylvania, Center for Environmental Design and Planning. 1977. *Landscape Development Plan*, Graduate School of Fine Arts.

University of Pennsylvania, Center for Environmental Design and Planning. 1988. *A Master Plan for the Campus*, Almanac Supplement, Graduate School of Fine Arts, Philadelphia, PA.

University of Pennsylvania. 1988. Report of the Ad Hoc Planning Committee.

University of Pennsylvania, Institutional Biosafety Committee. 1991. *Biological Safety Manual*, Office of Environmental Health and Safety, Philadelphia, PA.

University of Pennsylvania. 1991. *Chemical Hygiene Plan*. Office of Environmental Health and Safety, Philadelphia, PA.

University of Pennsylvania. 1991. Realty Office. Personal Communication.

University of Pennsylvania. 1992. *Exposure Control Plan*. Office of Environmental Health and Safety, Philadelphia, PA.

University of Pennsylvania. 1992. *Guidelines for the Disposal of Chemical Wastes*. Office of Environmental Health and Safety, Philadelphia, PA.

University of Pennsylvania. 1992. *Lead Paint Assessment Protocol*. Office of Environmental Health and Safety, Philadelphia, PA.

University of Pennsylvania. 1990. *Research Investigator's Handbook*. Office of Research Administration, Philadelphia, PA.

University of Pennsylvania. 1990. *Radiation Safety Users' Guide*. Radiation Safety Office, Philadelphia, PA.

U.S. Fish and Wildlife Service. 9 September 1992. Letter from Edward Perry, Acting Supervisor, concerning federally listed or proposed threatened or endangered species in the project area.

Venturi, Rauch and Scott Brown, Inc. (VSBA) and Payette Associates, Inc. 1988. *Feasibility Study for the Expansion of SAS/SEAS Natural Science and Engineering Facilities*. University of Pennsylvania.

Venturi, Scott Brown, and Associates, Inc.; Payette Associates, Inc.; The Clio Group, Inc.; Keast and Hood, Co.; International Cost Consultants, Inc. 1990. *Feasibility Study: Institute for Advanced Science and Technology*.

Venturi, Scott Brown, and Associates, Inc.; Payette Associates, Inc.; The Clio Group, Inc.; Keast and Hood, Co.; International Cost Consultants, Inc. 1991. *Feasibility Study Addendum Material*.

Venturi, Scott Brown, and Associates, Inc.; Payette Associates, Inc.; Clio Group, Inc.; Keast and Hood, Co.; Bard, Rao, Athanas Consulting Engineers, Inc.; Hanna/Olin, Ltd.; International Consultants, Inc. 1992. *Phase II Feasibility Study: Institute for Advanced Science and Technology*.

Venturi, Scott Brown, and Associates, Inc. 1993. Personal Communication.

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 8.0
INDEX

8.0 INDEX

A

ACM S-7, 3-27, 3-28, 4-17
Ad Hoc Planning Committee 1-1, 1-2, 1-4, 7-2
aesthetics S-3, S-4, S-5, S-8, S-9, i, 1-11, 2-9, 2-12, 2-39, 3-1, 3-5, 3-10, 4-1, 4-2, 4-3, 4-8, 4-9, 4-10, 4-11, 4-12, 4-14, 4-30, 4-40, 4-42, 6-1
AFCEE 6-1, 6-2, 6-3
AFOSR 1-4, 1-5, 2-7, 2-33, 6-1, 5-16, 5-17
Air Force Office of Scientific Research (AFOSR) 1-4, 5-16
air quality S-3, S-5, S-7, ii, iv, 2-39, 3-1, 3-31, 3-32, 3-33, 3-34, 3-35, 4-1, 4-22, 4-24, 4-34, 4-36, 4-37, 4-41, 6-2, 7-1
American National Standards Institute (ANSI) 3-36
ANSI 3-36
archaeological resources S-3, S-7, ii, 3-1, 3-40, 3-46, 4-27, 4-35, 4-36, 4-37, 4-38, 4-39, 4-42
asbestos S-5, S-7, ii, 2-39, 3-21, 3-27, 3-28, 4-17, 4-18, 4-19, 4-20, 4-35
asbestos-containing material (ACM) S-7, 3-27

B

baseline information 3-1
bioengineering 1-5, 2-1, 2-3, 2-13, 4-2
Bioengineering Department 2-3
biological resources S-3, ii, 3-1, 3-39, 4-1, 4-26, 4-27, 4-35, 4-37, 4-38, 4-41
biotechnology 2-2, 2-3

C

CAA 3-31, 3-35, 3-36
carbon monoxide (CO) 3-32
catalyst development 2-2
CEB 2-1, 2-3, 2-13, 2-18
CECCE 2-1, 2-2, 2-13, 2-18
CECICS 2-1, 2-4, 2-5, 2-17
cellular engineering 2-2
Center for Excellence in Bioengineering (CEB) 2-1
Center for Excellence in Chemistry and Chemical Engineering (CECCE) 2-1
Center for Excellence in Computer, Information, and Cognitive Science (CECICS) 2-1
Center for Technology Transfer (CTT) 1-6
Central Science Precinct 2-7, 2-9, 2-12, 2-13, 2-21, 2-30, 2-34, 2-35, 3-8, 3-9, 3-12, 3-13, 3-46, 4-2, 4-3, 4-27, 4-33
CEQ 1-1, 1-7, 1-8
CERCLA 3-21, 7-1
Chemistry Department 1-2, 1-5, 2-2, 3-24, 3-43, 4-2
Children's Hospital of Philadelphia (CHOP) 3-3
CHOP 3-3
City of Philadelphia S-7, 1-3, 3-3, 3-5, 3-10, 3-20, 3-23, 3-27, 3-28, 3-32, 3-34, 3-35, 3-39, 4-2, 4-22
Civic Center 3-3, 4-6
Clean Air Act (CAA) 3-31
Clio Group 3-41, 6-2, 7-1, 7-3
CO 3-32, 3-35, 3-43, 4-23, 4-24, 7-3
community setting S-5, i, 2-39, 3-5, 4-2, 4-8, 4-10, 4-12, 4-14
computer animation 1-3, 2-4
computer modeling 2-2, 5-20
Computer, Information, and Cognitive Science 1-5, 2-1
Convention Hall 3-3
Council on Environmental Quality (CEQ) 1-1
Cret Wing S-2, S-5, S-7, S-8, 2-9, 2-21, 2-39, 3-12, 3-46, 4-32, 4-42
Critical Technologies Plan S-1, 1-4, 5-16
CSTIR 2-1, 2-5, 2-17, 2-21
CTT 1-6, 2-1, 2-5, 2-17
cultural resources S-5, S-8, S-9, 1-11, 2-39, 3-1, 3-10, 3-40, 4-1, 4-27, 4-33, 4-35, 4-40, 5-17
cumulative impacts 2-35, 2-37, 4-1, 4-42

D

David Rittenhouse Laboratory (DRL) S-9, 2-23
Delaware Valley Region 3-3
Delaware Valley Regional Planning Commission 3-16

DRL S-9, 2-23, 2-30, 2-33, 3-9, 3-13, 3-14, 3-16, 3-44, 4-10, 4-19, 4-38
dry laboratory 1-5, 2-13, 2-21

E

Edison Building S-2, S-5, 2-26, 2-39, 3-13, 3-28, 4-10, 4-19
emissions sources 3-31
employment S-3, S-4, S-5, S-8, 2-1, 2-39, 3-1, 3-3, 3-5, 4-2, 4-14, 4-40
endangered species 3-39, 7-2, 7-3
energy resources 2-2
Engineering and Chemistry Complex 1-5
environmental impact analysis process i, 1-1, 1-7, 5-1
Environmental Protection Agency (EPA) 1-8
EPA S-5, 1-8, 1-10, 1-12, 2-39, 3-21, 3-25, 3-27, 3-32, 3-35, 4-8, 4-17, 4-22, 4-25
exposure assessment iii, 1-12, 4-22, 4-23, 6-2, 5-19

F

flammable gases 2-7
flammable liquids 2-7, 3-24
flammable solids 2-7, 3-26
Furness Building 3-8, 3-13, 3-29, 3-42, 3-43, 4-3, 4-9, 4-12, 4-40, 4-42

G

GE Building 2-34, 5-24
genetic engineering 5-20
geology S-3, S-5, S-7, ii, 2-39, 3-1, 3-9, 3-29, 3-30, 4-1, 4-21, 4-34, 4-36, 4-37, 4-41
groundwater 2-35, 3-31, 4-21, 4-41

H

HABS 4-33, 4-34, 4-39
Hayden Hall S-2, S-5, S-7, S-8, 2-9, 2-13, 2-17, 2-18, 2-21, 2-39, 3-9, 3-12, 3-44, 4-3, 4-9, 4-28, 4-32, 4-33, 4-35, 4-39, 4-42, 5-23
hazardous materials S-3, S-4, S-5, S-7, S-8, S-9, S-10, i, ii, 1-10, 2-39, 3-1, 3-21, 3-22, 3-25, 4-1, 4-15, 4-17, 4-18, 4-19, 4-20, 4-35, 4-41
hazardous waste management S-4, S-5, S-8, S-9, S-10, i, ii, 1-10, 2-39, 3-21, 3-24, 4-15, 4-16, 4-17, 4-18, 4-20, 4-41
Historic American Building Survey (HABS) 4-33
Historic District S-3, S-5, S-7, S-11, v, 2-26, 2-39, 3-9, 3-10, 3-13, 3-40, 3-41, 3-43, 4-9, 4-12, 4-27, 4-28, 4-29, 4-30, 4-31, 4-32, 4-35, 4-39, 4-40, 4-42
Historic Preservation Ordinance 1-3
Hospital of the University of Pennsylvania (HUP) 3-37
human injury 1-5, 2-3, 5-21
HUP 2-36, 3-37

I

infill 2-7, 2-9
Institutional Development District v, 3-10, 4-2

L

LAAQS 4-24
land use S-3, S-4, S-5, S-8, i, 1-6, 2-9, 2-12, 2-39, 3-1, 3-5, 3-6, 3-8, 3-37, 4-1, 4-2, 4-8, 4-10, 4-12, 4-14, 4-40
Landscape Development Plan 2-18, 3-8, 3-39, 7-2
language acquisition 2-4
language and speech 1-3, 2-4
language processing 2-4
lead S-5, S-7, ii, 2-39, 3-27, 3-28, 3-32, 3-33, 3-35, 4-17, 4-18, 4-19, 4-20, 4-35, 7-3
Local Ambient Air Quality Standards (LAAQS) 4-24
LRSM Parking Lot Alternative S-8, S-10, i, ii, v, 2-23, 2-27, 3-1, 3-9, 3-13, 4-10, 4-18, 4-36, 4-40, 4-42

M

machine perception 2-4, 2-5
MACT 3-36
Maximum Achievable Control Technology (MACT) 3-36
medical/biohazardous waste 4-18, 4-19, 4-20
mercury ii, 3-21, 3-23, 3-24, 3-27, 3-28, 4-17, 4-18, 4-19, 4-20

mitigation measures S-1, 1-7, 4-25, 4-36, 4-38
Morgan Building 3-9, 3-12, 3-27, 3-29, 3-43, 4-3, 4-28, 4-33
Music Building S-2, 2-17, 2-39, 3-9, 3-12, 3-27, 3-28, 3-44, 4-3, 4-28, 4-33

N

NAAQS 3-32, 3-35, 4-24
National Advisory Council for Historic Preservation S-4, 1-12, 5-1
National Ambient Air Quality Standards (NAAQS) 3-32
National Environmental Policy Act (NEPA) S-1, 1-1, 5-1
National Primary Standards 3-32
National Register of Historic Places iii, 1-12, 3-40, 3-43
National Secondary Standards 3-32
natural environment S-3, S-5, S-7, S-8, S-9, S-10, S-11, ii, 1-10, 1-11, 2-39, 3-29, 4-1, 4-21, 4-39
NEPA S-1, 1-1, 1-4, 1-7, 1-10, 2-1, 5-1, 5-17
NMR 1-6, 2-2, 2-7, 2-29, 2-33, 5-20
NOI S-3, 1-7, 1-9
noise S-3, S-5, S-7, ii, iii, v, 1-12, 2-39, 3-1, 3-36, 3-37, 3-38, 3-39, 4-1, 4-25, 4-26, 4-34, 4-36, 4-37, 4-38, 4-41, 6-1, 5-17
noise abatement criteria 3-37
Noise Logging Dosimeters 3-36
noise sensitive areas 3-37
nonhalogenated solvents 2-7, 3-24
Notice of Intent (NOI) S-3, 1-7
NRC 1-13, 3-26
nuclear magnetic resonance (NMR) 1-6, 2-2
Nuclear Regulatory Commission (NRC) 1-13

O

OEHS 3-23, 3-25, 3-27, 3-28, 7-2
Office of Environmental Health and Safety (OEHS) 3-23
OSHA 2-7, 3-22, 3-27

P

PADER 1-12, 3-21, 3-32, 3-34, 3-39, 4-25
PCBs S-7, 4-16
pedestrian walks 3-16
Penn Dot 4-11
Pennsylvania Department of Environmental Resources (PADER) 1-12
Pennsylvania Solid Waste Management Act 3-24
permits i, 1-3, 1-12, 1-13
pesticides S-7, 4-16
Philadelphia Navy Yard 2-34, 5-24
physiography ii, 3-30
PM_{10} 3-32, 3-33, 3-35, 4-22
polychlorinated biphenyls (PCBs) S-5, S-7
population S-3, S-4, S-5, 2-39, 3-1, 3-5, 3-6, 4-1, 4-2, 4-4, 4-14, 4-23, 7-2
Preferred Alternative 2-13, 4-9
Project Site v, 2-11, 2-14, 2-35, 2-37, 3-1, 3-2, 3-10, 3-20, 3-24, 3-29, 3-30, 3-31, 3-36, 3-37, 3-41, 4-1, 4-4, 4-6, 4-25, 4-26
Proposed Action S-2, S-3, S-4, S-5, S-7, S-8, S-9, i, ii, v, 1-8, 1-9, 1-11, 1-12, 2-1, 2-12, 2-13, 2-15, 2-16, 2-20, 2-21, 2-22, 2-23, 2-26, 2-29, 2-30, 2-33, 2-37, 2-39, 3-1, 3-8, 3-14, 3-16, 3-21, 3-30, 3-37, 4-1, 4-2, 4-3, 4-4, 4-5, 4-7, 4-8, 4-9, 4-10, 4-11, 4-12, 4-13, 4-14, 4-15, 4-17, 4-18, 4-19, 4-20, 4-21, 4-22, 4-24, 4-25, 4-26, 4-27, 4-28, 4-29, 4-30, 4-32, 4-34, 4-35, 4-36, 4-37, 4-38, 4-39, 4-40, 4-41, 4-42, 4-43, 5-17
propulsion 2-2, 5-16
proximity 1-5, 2-9, 2-12, 2-34, 2-35, 3-3, 3-8, 3-17, 3-34, 3-39, 4-19, 4-25, 5-23, 5-24
public scoping meeting S-3, 2-34, 5-1, 5-24
public utility systems 3-1

R

radiation 2-6, 2-7, 3-23, 3-26, 3-27, 3-34, 7-3, 5-20
radon S-5, S-7, ii, 3-21, 3-28, 3-29, 4-17, 4-18, 4-19, 4-20
RCRA 3-21, 3-24, 3-25
Record of Decision (ROD) S-1, 1-7
Region of Influence (ROI) 3-1
Resource Conservation and Recovery Act (RCRA) 3-21
Reuse of a Portion of Smith Hall Alternative S-5, S-8, i, ii, v, 1-12, 2-12, 2-22, 2-24, 2-25, 2-39, 3-1, 3-8, 3-30, 4-8, 4-10, 4-17, 4-34, 4-35, 4-39, 4-40, 4-42, 4-43

robotics 2-4
ROD S-1, 1-7, 1-8
ROI 3-1, 3-5, 3-10, 3-14, 3-21, 3-34, 4-1, 4-2, 4-24

S

SAS 1-2, 1-3, 1-5, 7-3
Schnabel Engineering Associates 3-30
School of Arts and Sciences (SAS) 1-2
School of Engineering and Applied Science (SEAS) 1-2
scoping S-3, i, iii, iv, 1-7, 1-8, 1-9, 1-10, 1-11, 2-1, 2-13, 2-34, 5-1, 5-24
SEAS 1-2, 1-3, 1-5, 7-3
semiconductors 2-2
sensory systems 2-3
SIP 3-32, 4-24
Smith Walk S-2, S-4, S-5, v, 1-10, 2-9, 2-18, 2-19, 2-20, 2-35, 2-36, 2-39, 3-9, 3-11, 3-12, 3-13, 3-14, 3-16, 3-40, 3-45, 3-46, 4-3, 4-9, 4-12, 4-27, 4-28, 4-29, 4-30, 4-31, 4-33, 4-34, 4-35, 4-40, 4-42, 5-19
SO_2 3-32, 3-35, 4-23
soils S-3, S-5, S-7, ii, 2-39, 3-1, 3-25, 3-29, 3-30, 4-1, 4-21, 4-34, 4-36, 4-37, 4-41
solid waste i, 3-20, 3-21, 3-24, 4-8, 4-10, 4-11, 4-14, 4-15
spectroscopy 1-6, 2-2, 5-20, 5-21
Sports Complex S-9, S-10, 3-13, 3-14, 4-12
State Implementation Plan (SIP) 3-32
stormwater 3-31, 4-21
sulfur dioxide (SO_2) 3-32

T

Towne Building S-2, S-7, S-8, 2-9, 2-13, 2-17, 3-12, 3-29, 3-44, 4-3, 4-29, 4-32, 4-42
traffic S-4, S-5, S-8, S-9, iii, v, 1-12, 2-18, 2-22, 2-33, 2-39, 3-8, 3-11, 3-13, 3-14, 3-15, 3-16, 3-17, 3-18, 3-19, 3-35, 3-39, 4-4, 4-5, 4-6, 4-7, 4-10, 4-11, 4-12, 4-13, 4-24, 4-26, 4-36, 4-38, 4-41, 6-1, 7-2, 5-17, 5-18
transgenic work 2-6
transportation S-3, S-5, S-9, i, 2-39, 3-1, 3-14, 3-21, 4-1, 4-4, 4-5, 4-9, 4-11, 4-12, 4-14, 4-41

U

U.S. Department of Agriculture 3-29
U.S. Fish and Wildlife Service (USFWS) 3-39
University City 2-34, 3-3, 3-5, 3-6, 3-10, 3-14, 3-34, 3-39, 4-2, 4-40, 4-41, 7-2, 5-24
University City Science Center 2-34, 3-3, 3-6, 5-24
USFWS 3-39
utilities S-5, S-8, S-9, i, 2-39, 3-20, 4-8, 4-10, 4-11, 4-14, 4-15, 4-41

V

vegetation S-5, 2-39, 3-39, 4-26
Veterinary School 2-34
VOC 4-23, 4-24

W

water resources S-3, S-5, S-7, ii, 2-39, 3-31, 4-1, 4-21, 4-34, 4-36, 4-37, 4-41
wet laboratory 1-5, 2-13, 2-18, 2-22, 2-23, 4-34
wildlife 3-39, 4-26, 5-1, 7-3

X

X-ray crystallography 2-2, 5-20

Z

zoning 3-10, 4-2, 4-9, 4-11, 4-12, 4-14

CHAPTER 9.0
PUBLIC COMMENTS AND RESPONSES

9.0 PUBLIC COMMENTS AND RESPONSES

9.1 INTRODUCTION

Subsequent to the Public Scoping Meeting of August 19, 1992, the Air Force has complied with the National Environmental Policy Act (NEPA) mandate of public participation in the Environmental Impact Analysis Process by providing the following:

- Public Notice for the public hearing and the comment period was provided through a mass mailing of an announcement to all members of the mailing list as of February 26, 1993; distribution of fliers; press releases; paid advertisements in local newspapers; and publication on March 5, 1993 of a Notice of Availability for the DEIS and announcement of the public hearing (see Appendix B).

- The DEIS was made available for public review and comment in March 1993.

- A public hearing was held in Philadelphia, Pennsylvania, on March 30, 1993. The Air Force presented the findings of the DEIS for the IAST, and invited public comments.

- The public comment period was open for 45 days (March 5, 1993 to April 19, 1993). No requests for extensions of time to comment were received.

Public comments received both verbally at the public meeting and in writing during the public comment period have been reviewed and are responded to in this section.

9.2 ORGANIZATION

This chapter is organized into the following sections:

- An alphabetical list of commentors and a sequential list of commentors.
- A transcript of the public hearing and the Air Force response to comments.
- Written statements received at the public hearing or through the mail, and the Air Force response to comments.
- Generalized responses to consolidated comments.

During the public comment and review period, comments on the DEIS were received from government agencies and officials, as well as the general public. The comments included verbal and written statements submitted at the public hearing and statements received through the mail. Each statement was reviewed. Each section of a statement constituting a separate comment was numbered, and a vertical bar was superimposed on the statement along the left margin to aid in delineating the comment. A response has been made to each comment. In some cases, when a large number of comments on the same topic has been received, a single response has been provided as a generalized response to consolidated comments. These are found in Section 9.5.

Each of the statements has been identified by a specific number that is based upon the category of the statement and the sequence received. For example, statement number T1 refers to the first statement in the public hearing transcript. Statement number M5 refers to the fifth statement in the written materials received during the public hearing. Statement number C7 refers to the seventh statement in the written materials received during the public comment period.

All of the statements have been photographically reproduced in this document. These are found in Section 9.4. Immediately after the first page of each statement is the Air Force response. A reader who wishes to read the specific comment(s) and the Air Force response may turn to the photocopies included in this section. To avoid repetition, responses to identical comments previously addressed are referenced.

9.3 COMMENTORS

This section lists the statements received in alphabetical order as well as sequential order and indicates whether multiple statements were provided by the same commentor.

Statements are labeled as follows:

- T# — A statement received at the public hearing and recorded in the public hearing transcript.
- M# — A written statement received at the public hearing.
- C# — A written statement received during the public comment period.

Table 9.3-1 lists the originator of comments and statements in alphabetical order. This table also indexes locations where multiple statements have been submitted by the same commentor. For example, Elizabeth Campion made a statement at the public hearing, identified as T34; she submitted written statements at the public hearing, identified as M4 and M22; she also submitted a written statement during the public comment period, identified as C6.

Table 9.3-2 lists statements sequentially as recorded within the public hearing transcript, as received in writing at the public meeting, and as received later during the public comment period. This table also indicates

Table 9.3–1
Index of Statements Received by Individual

Commentor	Index #
Adams, F. Gerard	C8
Azarian, Karen	T20
Badler, Norman	C51
Bajcsy, Ruzena	C20
Berry, Donald	C26
Blasie, J. Kent	C12
Blatteau, John	C76
Blunt, Catherine (Cedar Park Neighbors)	M18, T12
Blythe, Linda (Spruce Hill Community Association)	C74
Bolt, Eugene	T26
Bradley, William	T8
Brey, M. Cynthia	C87
Brooks, Joshua	T30
Buchsbaum, Gershon	C24
Burdon, Carolyn	T2
Campion, Elizabeth	T34, M4, M22, C6
Carlson, Frederick (PADER)	C16
Cassedy, James H. (National Library of Medicine)	C17
Chen, Wang	C73
Christianson, David	C47
Claflin, Bill	C42
Cohen, David (City Councilman)	T1, M17
Cordatos, Harry	C21
Cubilie, Anne	M8
Cummings, Jim	T18, M11
Dailey, William	C27
Danner, Jeffrey	C68
Davidson, Denise	M7
Davis, Franklin A.	C81
de Soto, Alex	C13
Denmark, Roy E.	C90
Ducheyne, Paul	C25
Elkis, Patricia (DVRPC)	C4
Evers, Charles	C55
Fitzgerald, Robert	C57
Foster, Kenneth	C28
Frank, Morton	C37
Gasparro, Robert	C5
General petition	M19
General petition, Penn	M14
Gibson, David (SANE Freeze)	T27, C2
Girard, Harlan	T25
Glandt, Eduardo	C30
Glassman, Susan	C63
Goldstein, Jonathan	T6
Gorte, Raymond	C29
Gossel, Patricia	C85
Hamel, Mark (Penn Coal. Sci. Pub.Int.)	T11
Hankowsky, William (Phila Ind Dev Corp)	C10
Harrison, Mick (Gov't Accountability Project, Wash. D.C.)	T16
Hinton, Queen (Walnut Hill Community Assoc)	C35
Hochstrasser, Robin	C58
Holt, Kenneth	C65
Hutchins, Robert O.	C80
Jobs with Peace (No Signature)	M12
Johnson, Julie (Penn Coalition for Science in the Public Interest)	T28, C78
Joullie, Madeleine	C52
Kapps, Christianne (Petition)	T22
Kasloff, Stephen (for City Councilman David Cohen)	T1, M17
Klein, Michael	C33
Klopfer, Kevin	C72
Kober, Wayne (PADOT)	C54
Kohler, Robert (Friends of Smith Walk)	T15, C64, C77
Lamond, Melani (University City Historical Society)	T13, M6
Lane, Edward	M1
Lerman, Nina	T24
Lester, Marsha I.	C82
Levins, John	C84
Lewis, Marvin	M9
Lewis, Michael	C71
Lewis, Sarah	M20
Liberati, Nicole	C38

Table 9.3–1
Index of Statements Received by Individual

Commentor	Index #
Litt, Mitchell	C69
Loder, Laura	M21
MacDiarmid, Alan	C56
Mailen, Hallis David	T4
McCabe, Kathryn	T21
McDonough, Patrick	T33
McKinney, Julianne	T14
McRraty, Ed (4/17/93 Form Letter)	C46
McSweeney, Kevin	M2
Metaxas, Dimitri	C62
Miller, Dale	C48
Miner, Ruth	T10
Morman, Edward	C70
Mude, Meghana	M23
Mui, Sui San	M26
Mulroney, J.P.	C88
Noordergraaf, Abraham	C31
Opella, Stanley	C14
Palladino, George	C49
Parascandola, John	C44
Parrillo, David	C23
Petrie, William	C89
Pizzi, Charles P.	C91
Polashek, Marie	C1, C43
Pollack, Solomon	C60
Prince, Barry	M24
Prince, Barry	M3
Quinn, John	C3
Quivik, Fred	T32, M16
Quon, Roger	C75
Rozwadowski, Helen	C7
Rutman, Robert	T23
Scherer, Norbert	C61
Scott, John	C53
Seider, Warren	C83
Shneyer, Eli	T9
Shovers, Brian	T29, M15
Siberski, Regina	T17, M10
Sierra Club (No Signature)	M13
Silver–Isenstadt, Ari	T3
Silver–Isenstadt, Jean	T19
Smith, Amos III	C32
Smith, Gray	T5, M5, C11
Smith, Rosie (4/14/93 Form Letter)	C36
Sneddon, Larry	C50
Stuart–Whistler, William	T7
Therien, Michael	C59
Thornton, Edward	C18
Topp, Michael	C67
Unger, Lyle	C19
Vanderlick, Kyle	C79
Voth, Gregory	C22
Warner, John	C41
Waronker, Lou	T31
Wayland, Bradford	C34
Webber, Bonnie	C40
Weiner, Joan	C45
White, David	C66
Winfrey, Angela	M25
Winkler, Jeffrey	C86
Wolfe, Matthew	C9
Woods, John	C39
Yun, Xiaoping	C15

Index Designations:
T = Public Hearing Transcript
M = Public Hearing Material
C = Written statements during comment period

Table 9.3–2
Index of Statements by Type and Code

#	Commentor	See Also
T1	Kasloff, Stephen (for City Councilman David Cohen)	M17
T2	Burdon, Carolyn	
T3	Silver–Isenstadt, Ari	
T4	Mailen, Hallis David	
T5	Smith, Gray	M5, C11
T6	Goldstein, Jonathan	
T7	Stuart–Whistler, William	
T8	Bradley, William	
T9	Shneyer, Eli	
T10	Miner, Ruth	
T11	Hamel, Mark (Penn Coal. Sci. Pub.Int.)	
T12	Blunt, Catherine (Cedar Park Neighbors)	M18
T13	Lamond, Melani (Univ. City Historical Society)	M6
T14	McKinney, Julianne	
T15	Kohler, Robert (Friends of Smith Walk)	C64, 77
T16	Harrison, Mick (Gov't Accountability Project, Wash. D.C.)	
T17	Siberski, Regina	M10
T18	Cummings, Jim	M11
T19	Silver–Isenstadt, Jean	
T20	Azarian, Karen	
T21	McCabe, Kathryn	
T22	Kapps, Christianne (Petition)	
T23	Rutman, Robert	
T24	Lerman, Nina	
T25	Girard, Harlan	
T26	Bolt, Eugene	
T27	Gibson, David (SANE Freeze)	C2
T28	Johnson, Julie (Penn Coalition for Science in the Public Interest)	C78
T29	Shovers, Brian	M15
T30	Brooks, Joshua	
T31	Waronker, Lou	
T32	Quivik, Fred	M16
T33	McDonough, Patrick	
T34	Campion, Elizabeth	M4, M22, C6
M1	Lane, Edward	
M2	McSweeney, Kevin	
M3	Prince, Barry	
M4	Campion, Elizabeth	T34, M22, C6
M5	Smith, Gray	T5, C11
M6	Lamond, Melani (University City Historical Society)	T13
M7	Davidson, Denise	
M8	Cubilie, Anne	
M9	Lewis, Marvin	
M10	Siberski, Regina (Township of Newton)	T17
M11	Cummings, Jim	T18
M12	Jobs with Peace (No signature)	
M13	Sierra Club (No signature)	
M14	General petition, Penn	
M15	Shovers, Brian	T29
M16	Quivik, Fredric L.	T32
M17	Cohen, David (City Councilman)	T1
M18	Blunt, Catherine (Cedar Park Neighbors)	T12
M19	General petition	
M20	Lewis, Sarah	
M21	Loder, Laura	
M22	Campion, Elizabeth	T34, M4, C6
M23	Mude, Meghana	
M24	Prince, Barry	M3
M25	Winfrey, Angela	
M26	Mui, Sui San	
C1	Polachek, Marie	C43
C2	Gibson, David (Freeze Act for Peace and Justice)	T27
C3	Quinn, John	
C4	Elkis, Patricia (DVRPC)	
C5	Gasparro, Robert	
C6	Campion, Elizabeth	T34, M4, M22
C7	Rozwadowski, Helen	
C8	Adams, F. Gerard	
C9	Wolfe, Matthew	
C10	Hankowsky, William (Phila Ind Dev Corp)	

Table 9.3–2
Index of Statements by Type and Code

#	Commentor	See Also
C11	Smith, Gray	T5, M5
C12	Blasie, J. Kent	
C13	de Soto, Alex	
C14	Opella, Stanley	
C15	Yun, Xiaoping	
C16	Carlson, Frederick (PADER)	
C17	Cassedy, James (National Library of Medicine)	
C18	Thornton, Edward	
C19	Unger, Lyle	
C20	Bajcsy, Ruzena	
C21	Cordatos, Harry	
C22	Voth, Gregory	
C23	Parrillo, David	
C24	Buchsbaum, Gershon	
C25	Ducheyne, Paul	
C26	Berry, Donald	
C27	Dailey, William	
C28	Foster, Kenneth	
C29	Gorte, Raymond	
C30	Glandt, Eduardo	
C31	Noordergraaf, Abraham	
C32	Smith, Amos III	
C33	Klein, Michael	
C34	Wayland, Bradford	
C35	Hinton, Queen (Walnut Hill Community Assoc)	
C36	Smith, Rosie (4/14/93 Form Letter)	
C37	Frank, Morton	
C38	Liberati, Nicole	
C39	Woods, John	
C40	Webber, Bonnie	
C41	Warner, John	
C42	Claflin, Bill	
C43	Polachek, Marie	C1
C44	Parascandola, John	
C45	Weiner, Joan	
C46	McRraty, Ed (4/17/93 Form Letter)	
C47	Christianson, David	
C48	Miller, Dale	
C49	Palladino, George	
C50	Sneddon, Larry	
C51	Badler, Norman	
C52	Joullie, Madeleine	
C53	Scott, John	
C54	Kober, Wayne (PADOT)	
C55	Evers, Charles	
C56	MacDiarmid, Alan	
C57	Fitzgerald, Robert	
C58	Hochstrasser, Robin	
C59	Therien, Michael	
C60	Pollack, Solomon	
C61	Scherer, Norbert	
C62	Metaxas, Dimitri	
C63	Glassman, Susan	
C64	Kohler, Robert (Friends of Smith Walk)	T15
C65	Holt, Kenneth	
C66	White, David	
C67	Topp, Michael	
C68	Danner, Jeffrey	
C69	Litt, Mitchell	
C70	Morman, Edward	
C71	Lewis, Michael	
C72	Klopfer, Kevin	
C73	Chen, Wang	
C74	Blythe, Linda (Spruce Hill Community Association)	
C75	Quon, Roger	
C76	Blatteau, John	
C77	Kohler, Robert (Friends of Smith Walk)	C64, T15
C78	Johnson, Julie (Penn Coalition for Science in the Public Interest)	T28
C79	Vanderlick, Kyle	
C80	Hutchins, Robert O.	
C81	Davis, Franklin A.	
C82	Lester, Marsha I.	

Table 9.3–2
Index of Statements by Type and Code

#	Commentor	See Also
C83	Seider, Warren	
C84	Levins, John	
C85	Gossel, Patricia	
C86	Winkler, Jeffrey	
C87	Brey, M. Cynthia	
C88	Mulroney, J.P.	
C89	Petrie, William	
C90	Denmark, Roy E.	
C91	Pizzi, Charles P.	

Index Designations:

T = Public Hearing Transcript
M = Public Hearing Material
C = Written statements during comment period

where multiple submissions have been received. For example, Gray Smith, the fifth speaker at the public hearing, is listed as T5. Mr. Smith also submitted written materials at the public hearing, indicated as M5; he also submitted a written statement during the public comment period, indicated as C11.

Two types of form letters were received, with two dates, April 14, 1993, and April 17, 1993. Only one copy of each of the form letters are reproduced herein. The signatories of these two letters have been added to the mailing list.

9.4 TRANSCRIPT OF PUBLIC HEARING AND WRITTEN STATEMENTS RECEIVED AT THE PUBLIC HEARING OR THROUGH THE MAIL AND RESPONSES TO COMMENTS

9.4.1 Public Hearing Transcript and the Air Force Responses

A complete photocopy of the public hearing transcript follows. The Air Force response to comments is provided immediately after the first page of a commentor's remarks.

THIS PAGE INTENTIONALLY LEFT BLANK

UNITED STATES AIR FORCE

PUBLIC HEARING

on the

DRAFT

ENVIRONMENTAL IMPACT STATEMENT

AND THE SECTION 106 PROCESS

for the

INSTITUTE FOR ADVANCED SCIENCE and TECHNOLOGY

UNIVERSITY OF PENNYSLVANIA

Philadelphia, Pennsylvania

- - -

MARCH 30, 1993

- - -

Public Hearing held at the University of Pennsylvania, David Rittenhouse Laboratory, 209 South 33rd Street, Room A-1, Philadelphia, Pennsylvania, commencing at 7:00 p.m., on the above date before Margaret Peoples, a Registered Professional Reporter.

- - -

KRAUSS, KATZ & ACKERMAN, INC.
Litigation Support Services
4th Floor, Robinson Building
42 South 15th Street
Philadelphia, Pennsylvania 19102-2242
(215) 988-9191

- - -

PUBLIC HEARING TEAM :

LT. COL. GARY P. BAUMGARTEL, Air Force Center for Environmental Excellence, Brooks Air Force Base

COL. JAMES HEUPEL, USAF Judiciary

DR. CHARLES J. HOLLAND, Air Force Office of Scientific Research, Bolling Air Force Base

DR. BARRY COOPERMAN, Vice Provost for Research, University of Pennsylvania

- - -

I N D E X

	PAGE NO.
Introduction	
By Col. Heupel	6, 44
Background on IAST Grant	
By Dr. Holland	15
Background on University Proposal for IAST	
By Dr. Cooperman	19
EIS and Section 106 Process	
By Lt. Col. Baumgartel	25
Comment Period	
By Mr. Kasloff	53
By Ms. Burdon	60
By Mr. Silver-Isenstadt	61
By Mr. Mailen	64
By Mr. Smith	65
By Mr. Goldstein	73
By Mr. Stuart-Whistler	78
By Mr. Bradley	81
By Mr. Shneyer	83
By Ms. Miner	87
By Mr. Hamel	92
By Ms. Blunt	102

I N D E X (con't.)

	PAGE NO.
Comment Period	
By Ms. Lamond	107
By Ms. McKinney	111
By Mr. Kohler	115
By Mr. Harrison	121
By Ms. Siberski	133
By Mr. Cummings	138
By Ms. Silver-Isenstadt	145
By Ms. Azarian	148
By Ms. McCabe	149
By Ms. Kapps	153
By Mr. Rutman	158
By Ms. Lerman	164
By Mr. Girard	166
By Mr. Bolt	173
By Mr. Gibson	178
By Dr. Johnson	186
By Mr. Shovers	189
By Mr. Brooks	192
By Mr. Waronker	196
By Mr. Quivik	199

I N D E X (con't.)

	PAGE NO.
Comment Period	
By Mr. McDonough	203
By Ms. Campion	207

- - -

- - -

COL. HEUPEL: Good evening, ladies and gentlemen. We took a couple minutes longer, but we wanted to try to let everyone get here for the start.

I would like to welcome you to the public hearing on the Draft Environmental Impact Statement or we refer to it sometimes as a DEIS for the Institute for Advanced Science and Technology at the University of Pennsylvania.

My name is Colonel Jim Heupel. I will be the presiding officer for tonight's hearing.

Now, this hearing is being held in accordance with the provisions of the National Environmental Policy Act, the National Historic Preservation Act, and the regulations implementing those acts. The National Environmental Policy Act or NEPA requires federal agencies to analyze potential environmental impacts of certain proposed actions and alternatives and to consider the findings of those analyses in

deciding how to proceed. The National Historic Preservation Act requires federal agencies to take into account the effects of an agency's undertaking on property included in, or eligible for, the National Register of Historic Places and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings.

Now, on August 19, 1992, a scoping meeting was held here on the University of Pennsylvania campus to hear your suggestions concerning what you felt should be included in the Environmental Impact Statement, or EIS. Since that meeting, the Air Force has examined the environmental concerns that you raised, as well as others, and prepared the draft EIS that is the subject of tonight's hearing.

The purpose of tonight's hearing is to receive your comments on the draft EIS and to give you an opportunity to express your views concerning the effects that this proposal would have on historic properties.

For those of you who have not had the opportunity to review the draft EIS, you may want to read the summary of the major findings of the EIS that are available in this handout. If you did not get a copy of it, it's available at the table as you come in or go out the door. Now, the findings that are in here will also be addressed by panel members tonight in their presentations.

Before introducing the members of the panel to my right, I would like to explain my role here in the hearing tonight. I'm a military judge and primarily serve as a circuit trial judge for court martial cases. So I am not here as an expert on this draft EIS. I haven't had any connection with its development. And I'm not hear to act as a legal advisor for the Air Force representatives who will address these proposals. My purpose tonight is to ensure that we have a fair and an orderly hearing and that all who wish to be heard have a fair chance to speak.

Now, I would like to introduce the members of the public hearing panel. On my immediate right is Lieutenant Colonel Gary Baumgartel. Now, Colonel Baumgartel is the Chief of the Environmental Planning Division of the Air Force Center for Environmental Excellence located at Brooks Air Force Base, San Antonio, Texas. He'll brief you on the environmental impact analysis process and summarize the results reported in the draft EIS.

We have with us this evening a representative from the Air Force Office of Scientific Research, Dr. Charles J. Holland, to Colonel Baumgartel's right. He will discuss the relationship of the Air Force to the development of the Institute.

Now, in the center, between Dr. Holland and Colonel Baumgartel, we have a representative from the University, Dr. Barry Cooperman, Vice-Provost for Research. He'll present the University's plans for the development of the Institute.

Now, this hearing is a major

milestone in the environmental analysis process. Our intent this evening is to get your views on environmental concerns or problems that were discussed in the draft EIS and to solicit your viewpoints concerning the historic properties that may be affected by this undertaking. Your input will assist the Air Force in assuring that all environmental concerns have been addressed. Your participation is an integral component of this process.

Before we begin the presentaion, I would like to make a few administrative comments. This hearing is intended to provide a continuing public forum for two-way communication about the draft EIS and the National Historic Preservation Act, Section 106, which is the review process, with a view to improving the overall decision-making process.

Now, you'll notice that I said "two-way communication". In the first part of the hearing process, our most knowledgeable people will brief you on

details of the actions under consideration and the anticipated environmental impacts.

The second part of the process will give you an opportunity to provide information and make statements for the record. This input ensures that the decision-makers benefit from your knowledge of the local area and any adverse environmental effects, or effects on historic properties that you think may arise from this proposed action or alternatives.

Also, if you have any questions regarding the environmental impact analysis process, the environmental impacts presented in the draft EIS, or the Section 106 review process, please ask the panel members during the comment period and they'll answer to the extent they can.

Now, if your question is a technical one that requires further research and cannot be answered tonight, the Air Force will ensure your question will be addressed either in the final EIS itself or in a

separate comment response section. Tonight's hearing is designed to give you an opportunity to comment on the adequacy of the EIS and the Air Force's analysis of effects this proposal would have on historic properties.

Now, keep in mind that the EIS is intended only to ensure that decision-makers will be fully apprised of the environmental impacts associated with the various alternatives before they decide on a course of action. Consequently comments tonight on issues unrelated to the Environmental Impact Statement are really beyond the scope of this hearing and will not be addressed.

Now, when you came in tonight you were given, and some of you may have missed getting, an attendance card. Filling out this attendance card is not manditory. We would appreciate it if you would fill one out, just so there would be a record of who was in attendance, but also there's a block on here to check if you wish to make a

public comment tonight or public statement. And if you didn't get one of these, they will be available at the break. We'll take about a 15-minute break after all the presentations have been made and you'll have an opportunity at that time to fill it out and indicate that you want to make a statement. I'll be taking these statements, or these cards that have been checked after the recess. If we have elected public officials, they'll be given an opportunity to speak first. After that, I'm going to take those cards and I'm going to shuffle them so that they're in a random order and I'll call on people randomly to come up and speak. That way, everybody will have an opportunity to speak and everybody will have an equal opportunity to speak first or last.

Now, if you don't feel like standing up here tonight and making a statement, you have until April 19th of this year to submit a copy of your statement for the Air Force's consideration prior to the

publication of the final EIS.

Again, you'll note that there was a white sheet that looks like the one I'm holding up. If you want to just pen-in comments, that's fine. If you brought prepared comments with you, that's fine. If you wish to go back and submit other comments after tonight, that's fine, and you can send them to the address that's listed on the bottom of this sheet. This is just for your benefit should you wish to use it. But it's important that if you wish comments to be addressed, that the Air Force receive these by April 19th of this year. After that time, the Air Force cannot guarantee that late comments will be included in the final EIS.

As I say, even if you make comments tonight, you can still submit additional written comments to the address shown at the bottom on this form.

Whether a statement is made orally tonight or it's submitted in writing, either tonight or later, the statement will

have the same impact and will be considered to the same extent.

One thing I can't stress enough, you may have information about environmental impacts or effects on historic properties that are unknown to the Air Force. The Air Force is very interested in having and analyzing all potential environmental impacts of the proposed action and the alternatives. You have experience that comes from living in this area, so the second part of tonight's communication, that part that flows from you to us, is very important to us. So don't hesitate to be a part of the proceedings and to make a public statement.

At this time, it's my pleasure to introduce Dr. Charles J. Holland who will describe the Air Force's association with the development of the Institute. Dr. Holland?

DR. HOLLAND: Thank you, sir. Good evening. My name is Dr. Charles Holland. I am from the Air Force Office of

Scientific Research, based in Washington, D.C.

I would like to give you a brief background of why the Air Force is involved in this project and why we're preparing an Environmental Impact Statement and engaging in the Section 106 process.

The University of Pennsylvania was selected to receive federal funds as a partial grant for the Institute of Advanced Science and Technology. The Department of Defense directed that the Air Force Office of Scientific Research administer the grant. Because the Institute would be funded partially with federal money, the Air Force is required under the National Environmental Policy Act to evaluate the effects of this proposal on the environment, including historic properties. The environmental analysis is documented in the Environmental Impact Statement, or EIS, which will be finalized prior to making any decision concerning the development of the Institute. At this time, the EIS is in

draft form and will incorporate concerns and issues raised during the public comment period and at this hearing.

My presentation tonight will cover the background that led to the development of the proposed Institute.

In the Department of Defense Appropriations Act for fiscal year 1991, Congress directed that not less than $10 million of the funds appropriated for defense research be made available as a grant to establish an Institute for Advanced Science and Technology. The grant was to be awarded through the use of competitive procedures to an institution of higher education to establish the Institute.

Grant funds are to be used for initial construction of the Institute for Advanced Science and Technology research facilities. By statute, the federal share of funds supporting the project may not exceed 50 percent. The grant recipient must fund all costs of the IAST project not

supported with federal funds. In 1991, Congress indicated that the grant was designed to support development of those critical technologies identified by the Department of Defense and it's critical technology plan such as biotechnology, computers, software, sensors, communications networking, electronic devices, materials and processes, energy storage, propulsion and energy conversion, design automation, and human-system interface.

In September of 1991 the University of Pennsylvania was selected by the Air Force Office of Scientific Research to be the recipient of the IAST grant. Subsequent to that appropriation, an additional $10 million was made available with the potential of additional money yet to be appropriated.

The agreement executed between the Air Force and the University in connection with the grant precluded the University from actually using grant funds until the

Air Force satisfied the requirements of the National Environmental Policy Act, the statute that requires this public hearing. The federal action that is the subject of the Draft Environmental Impact Statement is the disbursement of the federal money for the IAST project at Penn, and the selection of a specific site for the construction of the IAST at Penn.

I would like now to introduce Dr. Barry Cooperman, who will give you an overview of the University's proposal regarding the Institute. Dr. Cooperman?

DR. COOPERMAN: Thank you, Dr. Holland. Good evening. My name is Dr. Barry Cooperman. I am the Vice-Provost for Research at the University of Pennsylvania. My presentation this evening will provide a background for the IAST which is the subject of the Air Force draft EIS.

In the 1980's, Penn studied the need for expanded and modernized facilities for chemistry and engineering sciences. Our studies concluded that additional high

quality laboratory space was required to allow these programs to develop well into the 21st century. In evaluating our feasibility studies, the University ultimately concluded that constructing new laboratory facilities within the central science precinct on the site of Smith Hall presented a unique opportunity to satisfy Penn's goal of encouraging a multidisciplinary approach in collaborative research in the sciences and engineering and to do so in a cost-efficient manner.

The Institute is envisioned as a complex of interactive facilities that will foster resarch in and between computer science, chemistry, chemical engineering, and bioengineering. The goal would be to provide facilities for cutting-edge research in these areas, as well as to train future scientists and engineers. Research goals will range from molecular research into life processes to minimizing human injury in the workplace.

Faculty from the School of

Engineering and Applied Science, as well as the School of Arts and Sciences, will participate in research at the Institute. A community of approximately 200 to 300 faculty, researchers, students, and support, are anticipated. This number would represent only a small increase of the total university population.

In November of 1990, the University proceeded with its plan to develop new science facilities on the site of Smith Hall. It applied to the City's Department of Licenses and Inspections for a demolition permit for Smith Hall which had been designated as an historic structure, pursuant to the City's preservation ordinance. Both the Commission and its Architectural Committee held public hearings in connection with the issuance of the demolition permit and evaluated detailed feasibility studies prepared by the University and its consultants in late 1990 and early 1991. These studies reviewed other possible locations for the

research facilities, as well as other configurations of the facilities, that could be located on the Smith Hall site.

On January 9, 1991, the Historic Commission voted to issue the demolition permit for Smith Hall.

The ruling of the Commission was appealed to the City's Board of Licenses and Inspections, which found in the University's favor. The matter was then appealed to the Court of Common Pleas of Philadelphia. Oral argument was heard on November 17, 1992. On February 26th of this year, the judge denied that appeal. An appeal may be filed.

In May of 1991, the University submitted its formal proposal for the IAST to the Air Force Office of Scientific Research. The proposal identified the Smith Hall site as the proposed location of Phase I of the Institute for Advanced Science and Technology. And you can see the Phase I building in yellow on the overhead, on the bottom, of the slide.

The Institute would include a modern type of wet laboratory of approximately 60,000 square feet with five above ground floors designed to meet the demands of modern research. The laboratory building would include highly controlled laboratory environments, waste disposal facilities, and air handling systems that would safeguard not only the researcher, but also the campus at large. This component of the Institute, known as Phase I, would occupy the Smith Hall site.

The IAST project also proposes the construction of an additional 45,000 square foot dry lab structure, this is the second area marked in yellow to the left of the first to be provided by an addition to the rear of the Morgan and Music Buildings, as well as by renovation of the Morgan and Music Buildings.

If the project proceeds as proposed, the construction of the wet lab will occur first, followed by construction of the dry lab. This will then be followed by an

adaptive reuse of Hayden Hall and the Cret and Towne Buildings in order to provide additional laboratory space. It is planned that a portion of Hayden Hall will be the home of a consolidated science and engineering library. All development activities will be sensitive to the historic character of the central science precinct.

The development of an Institute providing new science facilities on the Smith Hall site together with the preservation and renoation of the Morgan and Music Buildings, Hayden Hall, the Towne Building, and the Cret Wing of the Chemistry complex, would have the result that although one older structure, Smith Hall, would be demolished, five other historical structures would be maintained and used well into the next century.

I would now like to return the microphone to Lieutenant Colonel Baumgartel, who will discuss the Air Force analysis of the University's proposal

within the context of the EIS and the Section 106 processes. Lieutenant Colonel Baumgartel?

LT. COL. BAUMGARTEL: Thank you, Dr. Cooperman. I would like to return to an explanation of the EIS, or Environmental Impact Statement, and the Section 106 processes, and the role that you, the public, may play in helping promote informed decision making.

As already indicated, the Air Force has prepared a draft EIS that addresses the environmental issues associated with the IAST. And this evening I'm going to focus on five areas of the environmental impact analysis process and the Section 106 process. First, I want to explain why the Air Force has prepared the Environmental Impact Statement for the proposed action; second, I will discuss the National Historic Preservation Act; third, I will review the environmental impacts of the proposed action and the alternatives; and fourth, I will discuss the public comment

period and finally, to put this discussion in context with the rest of the environmental process, I will address what you can expect in the coming months.

The National Environmental Policy Act of 1969, known as NEPA, requires federal agencies to consider the environmental consequences of major federal actions that may significantly affect the quality of the human environment. Subsequent to the enactment of NEPA, the President's Council on Environmental Quality published regulations to implement NEPA. These regulations include procedures for both the content and the procedural aspects of the required environmental analysis.

Depending on the size and the complexity of the federal action, there are several levels of environmental analysis that a federal agency may conduct. In the case of this proposal - the development of the Institute - we have determined that the most comprehensive level of analysis - an Environmental Impact Statement - was

necessary.

In order to prepare a meaningful EIS, we identified the significant issues related to processed action based on the scoping meeting held on August 19, 1992, and comments received during the comment period. This comment period was extended to provide public agencies and interested individuals additional time to comment.

Analysis under the National Environmental Policy Act requires not only discussion and examination of the proposed action by the federal government, but also review of all reasonable alternatives to that proposed action.

Four alternative locations and configurations of the IAST are described in the draft EIS. These include the proposed action as described by Dr. Cooperman a moment ago, an alternative building scheme at the Smith Hall site that partially preserves Smith Hall, the LRSM parking lot site, and the Lott Tennis Courts site. The No-Action Alternative, that is, no federal

funding for the IAST, was also considered.

The proposed action, as described by Dr. Cooperman, is the Air Force preferred alternative. Under this alternative, all of Smith Hall would be demolished and replaced by a new structure, and several structures to the rear of Morgan and Music Buildings would be demolished and replaced by a new structure that would be connected to both of those buildings. The interiors of both the Morgan and Music Buildings would be renovated. Finally, the interior of Hayden Hall would be renovated for a central science library, and the interiors of the buildings vacated by relocation of the IAST would be renovated; namely, Towne and the Chemistry complex.

Within the reuse of a portion of Smith Hall alternative, the addition located between the earlier portion of Smith Hall and the 1973 Chemistry Building would be demolished and replaced with a wet laboratory building. What remains of Smith Hall could be renovated into office and

other administrative space. The renovation and additions to Morgan and Music would continue as planned for the proposed action, as would the renovations and reuse of Hayden, Towne and Cret.

Under the Laboratory for Research on the Structure of Matter parking lot, or LRSM Parking Lot Alternative, the entire new laboratory, both wet lab and dry lab space, would be constructed at this site. Construction at this location, however, would require the duplication of certain facilities that would not be required at the Smith Hall site. This duplication would impose a cost premium upon this alternative location, reducing the funds available for subsequent renovation work within Hayden, Towne, and the Cret Wing. Addtionally, under this alternative, no resources have been identified for the renovation or restoration of Smith Hall or the Morgan and Music Buildings.

Under the Lott Tennis Court Site Alternative, the entire new laboratory,

both wet lab space and dry lab space, would be constructed at this location. Like the LRSM parking lot site, construction at this location would require the duplication of certain facilities that would not be required if construction were to be undertaken at the Smith Hall site. As discussed for the LRSM site, this duplication would reduce funds available for renovation work within Hayden, Towne, and the Cret Wing and for the renovation or restoration of Smith Hall and the Morgan and Music Buildings.

The No-Action Alternative would result in the Air Force Office of Scientific Research not approving the expenditure of grant funds for the construction of the IAST at any of the specified sites at the University. Further, the University would not be able to proceed with the IAST in its currently planned form or time frame.

That completes the brief description of the alternatives. As I mentioned

before, these alternatives, as well as other alternatives which were considered and eliminated from further evaluation are described in more detail in Chapter 2 of the draft EIS. The description of the environment potentially affected by the IAST development is contained in Chapter 3 of the DEIS. The analysis of impacts associated with each alternative is contained in Chapter 4.

Twenty environmental resource categories were reviewed in developing the draft EIS. Of these, five resource categories were identified as environmental resources that might be potentially impacted by the proposed action and/or alternatives.

These resources were grouped into three areas: the local community; hazardous materials and hazardous waste management; and the natural environment.

Local community impacts were reviewed for each of the alternatives considered. No significant impacts were identified for

population, employment, land use, transportation or utilities.

Aesthetic changes would occur at the Smith Hall site and along Smith Walk if new buildings are constructed under either the proposed action or the reuse of Smith Hall alternative. Aesthetics would also be affected by the construction of the IAST in the Lott Tennis Courts site. Aesthetics are a little bit better than the slide shows.

Hazardous materials and waste management were evaluated for each of the alternatives. There were no significant impacts identified for hazardous materials and hazardous waste management, asbestos, lead, or medical/biohazardous wastes. While an increase in hazardous wastes generated at the site is anticipated, that increase is well within the range of storage and disposal services available and was not perceived to be significant. 8

Potential impacts to the natural environment were also evaluated. Again, no

significant impacts to soils, water, air quality, noise, or biological resources were identified with any of the alternatives.

Smith Hall and Morgan and Music Buildings have been identified as contributing components of the University of Pennsylvania National Register Historic District, an area bounded roughly by 33rd Street to the east, Walnut Street to the north, 38th Street to the west, and Spruce Street on the south side. The designation of a National Register Historic District identifies historic architectural resources that possess historic integrity and are significant in history for their design qualities or associations with outstanding people or events. Some properties in the district are significant in their own right when judged under these standards. Others require consideration only as contributing components to the character of the district. The University's historic resources potentially affected by the

Proposed Action and Alternatives are described in detail in Chapter 3 of the draft EIS.

We have determined that the demolition of Smith Hall and the renovation and reuse of Morgan and Music associated with the proposed addition to these two buildings constitutes an adverse effect to historic district under the terms of the National Historic Preservation Act. However, such an adverse effect can be mitigated through several means in careful consultation with the State Historic Preservation Office and the Advisory Council on Historic Preservation under Section 106 of the National Historic Preservation Act. That consultation is underway, and must be completed prior to the signing of a record of decision. The impacts and the mitigation process are described within Chapter 4 of the draft EIS.

Section 106 the National Historic Preservation Act requires a federal agency

with jurisdiction over a federally assisted undertaking to take into account the effects of the undertaking on properties that are included in, or are eligible for, the National Register of Historic Places. Section 106 requires further that, prior to approval of an undertaking, the federal agency provide the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. For those of you who are not familiar with the Section 106 compliance process, an explanatory handout is available at the reception table situated near the entrance where you filled out the card when you came into the auditorium tonight.

To satisfy the Section 106 requirements, the Air Force formally initiated consultation with the Pennsylvania State Historic Preservation Office, or the SHPO, and the Advisory Council on Historic Preservation on March 18th of this year. You may obtain a copy of this letter at the reception table also.

The purpose of this hearing, in addtion to discussing the environmental impacts resulting from the construction and operation of the IAST project, is to provide the public an opportunity to receive information and express their views concerning the Air Force's efforts to fulfill its National Historic Preservation Act responsibilities.

If approved for funding by the Air Force, the proposed action would have an adverse effect on the University of Pennsylvania's campus National Register Historic District. Implementation of reuse of a portion of Smith Hall and the Lott Tennis Court Site Alternatives would also have to have adverse effects on the historic district.

Let me briefly discuss Phase I under the various alternatives. Under the proposed action, Phase I would involve the demolition of Smith Hall, a contributing component to the National Register Historic District; the introduction of a new

building on the site of Smith Hall; and the rebuilding of Smith Walk. In addition to the physical destruction of Smith Hall, it would also result in alterations to the character of the district, including the visual relationships of district components.

Under the alternative of reusing a portion of Smith Hall, the 1899 portion of Smith Hall would be demolished and Smith Walk would be rebuilt. Incorporating the 1891 portion of Smith Hall would affect the design of the new building requiring extensive reconstruction of the 1891 portion of Smith Hall.

Under the LRSM Parking Lot Alternative, the construction of Phase I building would have no impact on historic resources.

The Lott Tennis Court Alternative would impact the aesthetics associated with the Sports complex, adversely affect portions of 33rd Street, as well as the termination of Smith Walk, and affect some

of the views of other historic resources. Construction of Phase I at this site would change the visual dynamics of Smith Walk.

Under the proposed action and reuse of Smith Hall alternative, Phase II construction would result in changes to the rear of the Morgan and Music Buildings by demolishing the rear wing of the Music Building and attaching the rear of both buildings to the new dry lab facility. The top of the dry lab addition will be higher than the roofline of Music and Morgan. The top of the dry lab would be visible when viewing the front facade of Music and Morgan.

The south side of Morgan building facing Smith Walk would be restored as would the main facades of both buildings facing west towards 34th Street. The 1970s Music annex would be demolished.

Under the LRSM Parking Lot Alternative the construction of the Phase II building would have no impact on the historic resources. The Lott Tennis Courts

Alternative would impact the aesthetics associated with the Sports complex, adversely affect portions of 33rd Street as well as the termination of Smith Walk and affect some of the views of other historic resources. Construction of Phase II at this site would change the visual dynamics of Smith Walk also.

Phase III of the proposed action would result in adaptive reuse of Hayden Hall with restoration of its second floor as a reading room. Phase IV would involve the rehabilitation and reuse of the vacated portions of the Towne and Cret buildings. Phase III and IV actions would be implemented consistent with the Secretary of Interior's Standards for Rehabilitation and the Guidelines for Rehabilitating Historic Buildings. For the other alternatives, Phase III and IV would be carried out as described for the proposed action.

The Air Force and the University of Pennsylvania will fully comply with the

National Historic Preservation Act and the regulations promulgated by the Advisory Council on Historic Preservation and the National Park Service. Several mitigation measures will be proposed to the State Historic Preservation Office and the Advisory Council.

First, the plans to restore the main facades of Morgan and Music Buildings in the adaptive reuse of the Towne Building and Cret Wing would meet the Secretary of Interior's Standards; and second, restoration of the Great Hall in Hayden would be undertaken in consultation with the SHPO and the Advisory Council. Third, Smith Hall has already been recorded to Historic American Building Survey (HABS) standards. And the documentation will be provided to the SHPO, Advisory Council, and the National Park Service for review and approval. Fourth, Morgan and Music Buildings, as well as Smith Walk, have been photographically recorded and that documentation will also be submitted to the

SHPO, Advisory Council, and the National Park Service for their review and approval. Any necessary additional research would be undertaken before any work occurs on the buildings. Finally, a display of the history of Smith Hall would be prepared in consultation with the SHPO and the Advisory Council.

The results of each step in the 106 consultation process will be filed in information repositories located at the Van Pelt Library on the University of Pennsylvania campus and the Free Library of Philadelphia (the Walnut Street West branch) for public review. Announcements of the memorandum of agreement will be published in several newspapers, including the Philadelphia Inquirer, the Daily Pennsylvanian, the Compass, and the University City Press. Comments submitted by the public regarding the Air Force's and University's efforts to fulfill the National Historic Preservation Act requirements will be provided to the SHPO

and Advisory Council.

Finally, I would like to talk about the milestone schedule. Most of the schedule is prescribed by law or Air Force policy. I mentioned that I want to put this hearing in context with the rest of the environmental process. We started this process with a notice of intent to prepare an EIS. The notice was published in the Federal Register on July 31, 1992. On August 19, 1992, a scoping meeting was held. And as a result of the meeting, the deadline for comments was extended to October 1, 1992. A notice of this change was published in the Federal Register on September 9, 1992.

Following this deadline, the draft EIS was prepared that addressed public comments. After the draft EIS was published, a comment period of 45 days was allotted by federal regulation for public commentary. That brings us to the next step in the process, which is tonight's hearing.

Following the hearing, we will take tonight's input, along with written comments that you provide in following weeks, and begin preparation of a final Environmental Impact Statement. Our efforts will include data review and response to comments and will culminate in the publication of the final Environmental Impact Statement.

The draft EIS has been available for review and comment since February 26, 1993. The public comment period is open until April 19th of this year. After the public comment period has expired, we will evaluate all comments, both written and verbal, and perform additional analysis or change the draft EIS where necessary.

Once this process is complete, we will produce a final Environmental Impact Statement. The final EIS is scheduled for completion in August 1993 and will be mailed to all individuals and groups on the original draft EIS distribution list, as well as additional people that request a

copy of the document.

The final EIS will serve as input for the record of decision, which will document the decision by the appropriate Air Force decision-maker. Other studies and consideration of other issues - besides those addressed in the EIS - will enter into the final decision of whether or not to proceed with this proposal. We expect to accomplish the record of decision in September of 1993.

I would like now to return the microphone to the Colonel Heupel.

COL. HEUPEL: Thank you, Colonel Baumgartel. In just a moment, we'll take a 15-minute recess that I had mentioned earlier, and then we'll go into the public comment portion of the hearing.

As we have been indicating and I know we've said it several times, but it's the basic reason that we're here, we're conducting this process to understand environmental consequences of the Air Force proposal. So we specifically want to

solicit your input on the draft EIS.

If you want to make an oral comment, please fill out the card, if you haven't already done so and check the block and turn it in to the people at the registration desk so that we can call you up here. As I said before, we'll do that in a random fashion. If we do have any elected public officials here tonight, then they will be given the opportunity to speak first. If you want to make comment but don't want to make it orally here tonight, you can send in your comments or you can write it out on the comment sheet and turn it in to us tonight. If you already have a prepared statement, turn that in tonight. We can accept any of those different opportunities.

Now, as I've sat down here and watched people coming in I know we have got some people that have got some signs with them tonight. So would you hold up your signs so I can see what they say. You kind of have been hiding them down so I couldn't

see them.

Okay. Do we have any other signs?

Let me just indicate that the signs aren't part of the record. If you want to put your signs up on the coat rack up there, I don't care. But we are looking to get public comment. I don't care whether you're for the proposal, whether you're against the proposal, if you have some comments that relate to the historic property or relate to the environment, we solicit your comments.

I will tell you now, I will explain the procedure a little bit more after the break, but basically we'll be limiting the public oral comment to five-minute presentations. If you don't take that long, that's fine. If have more than that to say, if you kind of prioritize what you want to say, so that we give everybody an opportunity to speak.

At this time we'll take a 15-minute recess.

- - -

(Whereupon, a brief recess was taken.)

- - -

COL. HEUPEL: Ladies and gentlemen, we're going to go ahead and get started here, if you could take your seats, please. Our panelists were being interviewed by the press in another room and I had to try to pry them away from the press. I want to get started because we do have a significant number of people that have indicated that they wish to speak tonight.

Let me point out several different things. First, the panel members are not the decision-makers regarding the proposed action or the alternatives. So, if a speaker during the comment period requires any clarification or information prior to providing comment, just please indicate what your question is, and we'll try to have the panel members provide an answer to your question.

To ensure that everyone has an opportunity to speak, I ask that repetitive

statements be avoided. Frankly, if you happen to agree with the comments of an earlier speaker and you're satisfied with saying. "I agree with the last speaker" or "I agree with what John or Mary Smith said", saying that is fine. That's up to you. But to let you know, from our standpoint that's also fine. We will still have your comments recorded in that respect.

I do want to ensure that all who wish to speak have a fair chance to be heard. We do have a court reporter here tonight who is recording everything that's said word for word, not only the panel members but also during the question and comments. It will all become a part of the final Environmental Impact Statement.

Now, we have mentioned the Draft Environmental Impact Statement several times. I don't think we actually said yet, many of you, I think, probably received a copy of it in the mail because you may have been here for the Scoping Meeting. But,

there are copies of it available. And it is, I suspect, a fairly thick document. Copies are available at the Van Pelt Library here at the University of Pennsylvania, also at the Walnut Street branch of the Philadelphia Free Library at the 40th and Walnut, if you want to take a look at the entire document.

It's important that I ask you to follow these ground rules. I will call upon you to speak. We have a representative of an elected official that I'm going to allow to speak first. Everybody else then, I'll take their names in random order. Some people want to speak first, some people want to speak last. It's all random. And that way everybody has the opportunity to speak first or last.

Please come down and speak from the microphone. They'll be adjusting the volume so that everybody is able to hear you. Please give your comments to me as the hearing officer. If you have written comments as well, or if you prepared

remarks that you're giving, I will be happy to receive a copy of that from you when you're done with your statement.

Speak clearly into the microphone. If you would, please indicate your name, what city you're from, and if you're representing an organization, if you would indicate that also. This will help the court reporter in preparing a professional transcript.

Third, as I indicated earlier, each person will be recognized for five minutes. That includes public officials, designated spokespersons for groups, and private individuals. Frankly, I have about 40 cards, so multiply that times five minutes and we're talking about close to three and a half hours, if everybody takes their full allotment of time and that doesn't always happen.

I'm also constrained to make sure that we have a rest break for everybody. If you have not found the comfort facilities for the women, go down to my

left. For the men, the closest one that I've found is you got to go through the double doors and up the stairs and on to the second floor. But we will have another break in about an hour, to an hour and a half.

But because of the number of people that we have to speak and time, it is important that you limit your time to the five minutes. What I'm going to do is I will raise my hand up, when it's five minutes. And if I raise my hand up, I ask you to please wrap-up your comments. I'm not going to require you to stop right there, but please wrap-up your comments so that other people also have the opportunity to speak.

Please don't speak when other speakers are speaking. I ask you to be courteous to all speakers regardless of what position they take or what their comments are. This is not a debate. As I say, none of us are the decision-makers, so the only thing that clapping is going to do

is it's going to extend the period of time that everybody is here because it's going to take away time that people have to speak. So, I would urge you to keep it to a minimum.

One of the things I'm going to do is, in fact, in just a moment here, I'm going to have Mr. Kasloff come down to speak and then I'm going to -- in fact, I'll pull it out right now, I've already shuffled these once, but I'm going to call two people at once. The first person will be the speaker and I ask the second person that I name to come down here -- I better take the tape off these chairs -- come down and have a seat. That way, you will be here ready to get up and start speaking. When the previous speaker is done, I will announce who the following speaker is going to be and that person can come down here so we don't have to wait for somebody who's up in the upper corner to come down and maybe we can save a little time that way.

So right now I'm going to dig in

right here and the second speaker will be Carolyn P. Burdon. I will come back in just a second with that.

Again, it's important for us to get your comments. If you know of environmental impacts that haven't been indicated in the draft EIS or if you're not sure if they have been indicated, please indicate those to us, so that we can make sure that all environmental issues are taken care of and that issues with regard to the historic properties are also addressed.

With that, I ask Mr. Stephen Kasloff, representing City Councilman David Cohen to come down to speak and Carolyn P. Burdon to come down and have a seat. And I think she may be on her way.

T1 MR. KASLOFF: I don't know how sensitive these mikes are.

COL. HEUPEL: He's back there --

MR. KASLOFF: You're adjusting it. Okay. Very good.

MR. KASLOFF: Thank you. Mr.

Response to Comments in : T1 (See Also M17)

From: Stephen Kasloff, for David Cohen (City Councilman)

Comment No.	Response
1.	Comment noted. No response required.
2.	Comment noted. See generalized response to consolidated comment #4.
3.	Comment noted. See generalized response to consolidated comment #6.
4.	Comment noted. See generalized response to consolidated comment #1.
5.	Comment noted. See generalized response to consolidated comment #3.

Chairman, Members of the Panel, ladies and gentlemen, my name is Stephen I. Kasloff, S-T-E-P-H-E-N, middle initial I, last name K-A-S-L-O-F-F. I am staff attorney for City Councilman, at large, David Cohen and I am here representing the Councilman this evening. He would have liked to have been here, but unfortunately had a prior commitment and could not, so I'm here instead.

I would like to read a statement into the record which Councilman Cohen has asked me to read on his behalf, and representing his point of view. The statement reads as follows:

1 I oppose the siting of the processed Air Force funded Institute for Advanced Science and Technology, or IAST, at the University of Pennsylvania for several reasons:

One, the environmental and health effects of this proposed facility on the surrounding community would be disastrous. The Draft Environmental Impact Statement of

February, 1993 admits that there will be an increase in low-level radioactive waste from the facility's operations, as well as an increase in Penn's generation of biochemical or infectious waste, a 10,000 pound per year increase in hazardous waste from this facility and a 200 ton per year increase in municipal waste. Anything which increases low-level radioactive waste, hazardous waste, and infectious waste is detrimental to the community and should not be permitted in densely populated areas, like University City.

2

Moreover, the proposed facility will be using hazardous and toxic chemicals, such as flammable liquids, flammable solids, flammable gases, corrosive oxidizers, various solvents, and ammonia. Its generator would emit sulfur dioxide, a toxic gas which causes lung damage and is used to form acid rain; nitrous oxides, also used in acid rain and contained in smog; carbon monoxide, a poisonous gas; and volatile organic compounds, which are

hazardous to health and the environment.

The use and emission of these chemicals is dangerous to the health, safety, and welfare of the community. Notwithstanding so-called precautions, it cannot be denied that there will be discharges of these hazardous substances into the atmosphere. No community should have to live in fear for the rest of their lives that they will be subjected to unknown risks to their health; indeed, threats to their very lives. And in the event of spillage, leakage, emission, or other discharge as a result of accident or error, the University and the City of Philadelphia would face a potential catastrophe.

Even the Draft Environmental Impact Statement admits that the specific chemical compounds to be used, the use rates, the amount of hazardous waste generated, and the specific types of waste are unknown. To say that there is no risk, and I would add, in the parlance of the gentleman on

the panel, "no significant impact" to public health in the facility is nonsense. As the Environmental Statement itself says and I quote from it,

"As research interests evolve, the use of the IAST would, in turn, also evolve. Therefore, uses and operations over the long term cannot be described with precision with regard to such issues as space and laboratory assignments, use of chemicals and potential waste streams." From Page 2-3.

The truth is that once in place, this facility will only increase its output of hazardous, infectious, and radioactive substances as it attempts to expand its project base. The danger to the public will grow ever greater as this operation tightens its grip upon the University City community. To be sure, the community is not deceived by promises of environmental controls, as these underscore just how dangerous this operation really is and how much of a threat to the public health and

safety is involved in such a proposal.

Moreover, the construction of this facility in an area already containing chemical and bioengineering facilities only multiplies the danger to the public because it concentrates that much more hazardous material in the same small area, creating the possibility of even greater harm from emission, spillage, or other discharge.

This proposal is directly contrary to the best interests of the surrounding community as it threatens their health, the air they breathe, and their physical and emotional well-being.

Point two. The specific uses of the proposed operation are not set forth. The Draft Statement speaks of the facility being, "consistent with" a Defense Department "Critical Technologies Plan". The contents of this plan are not spelled out. It is my understanding that this facility is going to be used partly, if not exclusively, for weapons research. Such a purpose is thoroughly inappropriate in a

3

4

facility located in a densely populated urban area like Philadelphia, especially in an area of replete with residential, commercial, institutional, and academic uses, like University City. Research of this type, with the use of hazardous substances it involves, should be conducted in areas far removed from population centers.

Three, Construction of the proposed facility would involve eliminating one lane of traffic on 34th Street between Walnut and Spruce. 34th Street is a narrow, congested street in the best of circumstances. It is a vital link to the two hospitals at 34th and Spruce, Children's and the University of Pennsylvania Hospital. This construction would delay emergency vehicles getting to the hospitals. The Draft Statement terms such impact "slight". Tell that to the person whose loved one is the patient in that ambulance, to whom seconds mean the difference between life and death. No

5

Response to Comments in : T2

From: Carolyn Burden

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #7.

1

patient's life should be threatened or compromised by any dely in response time as would occur from this construction.

We have additional comments, which are contained in our statement relating to the noise issues and also to the demolition of Smith Hall, which we consider to be a disgraceful event impacting upon the University's spirit and the most important issues of historic preservation and the contents of that are contained herein. Thank you.

COL. HEUPEL: Thank you. After Carolyn Burdon will be Ari Silver-Isenstadt. If I'm mispronouncing, I apologize. With a name like Heupel, I tend to see it myself. But, Ari Silver-Isenstadt.

Yes, ma'am?

T2

MS. BURDON: I support Mr. Cohen's comments, but I am here from a different viewpoint. I'm a resident and homeowner in the community that abuts the west end of the campus. It's very disturbing to me

that this is yet another example of the University's picking fights with the community. While Smith Hall might not have certain architectural atributes of some of the other buildings in the City, this is nonetheless a part of my neighborhood and there are other places to build the IAST that would not require the raising of an old building. And it's a section of campus that really is the last part of campus where you can walk through and imagine how it must have been many, many years ago. So I plead with you to consider the LRSM site. Simply put.

1

COL. HEUPEL: Thank you for your comments. After Mr. Silver-Isenstadt will be Hallis David Mailen.

T3

MR. SILVER-ISENSTADT: Hi. My name is Ari Silver-Isenstadt. And I just want to state up front that I agree with at least the verbal statements that were made on behalf of Representative Cohen.

My statement is the stretch of 34th Street between Walnut and Spruce is one of

Response to Comments in : T3

From: Ari Silver-Isenstadt

Comment No.	Response

1. Comment noted. Section 4.4.1.3 discusses the impacts to local air quality associated with new and/or increased truck deliveries at the Smith Hall site. This section has been revised to provide the supporting facts for the AF conclusions. Also see generalized response to consolidated comment #3.

the most highly trafficked on campus. Students, faculty, staff, and visitors to the campus and the hospitals daily become enveloped in clouds of smoke or at least by delivery trucks. Given that Philadelphia has some of the most lax emission standards in the nation, how can you call insignificant the increase in air polution in this area that will increase that will result from the daily deliveries made to the IAST.

1 How much will the addition of CO2, CO hydrocarbons released in the strip affect community members? And what will be done to control the increased emissions if the IAST goes through at the Smith Hall site?

LT. COL. BAUMBARTEL: We don't have the numbers in front of us. If you have a comment concerning those, we'll address them. The numbers are in the document, we --

MR. SILVER-ISENSTADT: In terms of the delivery trucks?

LT. COL. BAUMBARTEL: Yes. You're

concerned about the emissions from increased traffic due to the construction of the IAST?

MR. SILVER-ISENSTADT: Right. Increased traffic resulting from the facility existing.

COL. HEUPEL: You're talking about the operation?

LT. COL. BAUMGARTEL: Increased student load, increased faculty, services, that type of thing. Is that what you're --

COL. HEUPEL: That's what you are asking?

LT. COL. BAUMGARTEL: Increased traffic. More facilities on campus, in this case specifically.

MR. SILVER-ISENSTADT: Correct.

LT. COL. BAUMGARTEL: Submit the document. Now we'll look at it, if there's a specific point you think we missed. The analysis is in the draft.

MR. SILVER-ISENSTADT: Okay. I must have missed it.

COL. HEUPEL: After Mr. Mailen will

be Gray Smith.

T4

MR. MAILEN: Gentlemen, myself and the undersigned 120 signatures protest the increased presence of the Defense Department of the University of Pennsyvlania campus and the deliberate pursuit of scientific research projects that forward the militarization of the University in particular, and in society in general. 1

In a time of pressing domestic needs, we urge the administrators and researchers of the University and the elected representatives of Philadelphia to concentrate their energies and resources on peaceful applications of scientific research and expertise. The Penn administration sees its interest as entirely compatible to those of the military. We demand, instead, a research program compatible with the social welfare. 1 Penn needs to strenghten its scientific research program, but the Institute for the Advanced Science and Technology designed by

Response to Comments in : T4

From: Hallis David Mailen

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #1.

the Department of Defense specifications is not the answer. Thank you.

COL. HEUPEL: After Mr. Smith will be Johnathan Goldstein.

T5

MR. SMITH: I wonder if you would permit me a question before my time starts. The name Weston appears frequently in the participants in this study's name. Who is Weston and what was their role in the study and what are their other connections to the University, if I might ask?

1

LT. COL. BAUMGARTEL: Weston is an architectural engineering firm, environmental firm that was hired to help conduct analysis and put the draft document together for the University, for the Air Force.

MR. SMITH: They're from this region?

LT. COL. BAUMGARTEL: Pennsylvania, West Chester.

MR. SMITH: They helped put it together, that's the answer? They coordinated it or they helped it?

LT. COL. BAUMGARTEL: They provided a

Response to Comments in : T5 (See also M5 and C11)

From: Gray Smith

Comment No.	Response

1. Comment noted. Consistent with Council on Environmental Quality National Environmental Policy Act Implementing Regulations (1506.5), Roy F. Weston, Inc. (WESTON), an environmental and engineering services firm, was selected by the Air Force to assist the Air Force in evaluating the Proposed Action and siting alternatives for the Institute of Advanced Science and Technology (IAST). WESTON reports to and is supervised by the Air Force Center for Environmental Excellence, Environmental Conservation and Planning Directorate, Conservation and Planning Division (AFCEE/ECP). AFCEE/ECP is responsible for reviewing, editing, and revising the EIS. The University of Pennsylvania provided funding for the EIS. A disclosure statement, prepared by the proponent, the Air Force Office of Science Research, was signed by WESTON on 1 May 1992. This disclosure statement clearly states that WESTON has no financial or other interest in the outcome of the IAST project. A copy of that disclosure statement can be found on page 6-7, at the end of Chapter 6 of the EIS.

2. Comment noted. See generalized response to consolidated comment #7.

3. Comment noted. No response required.

4. Comment noted. The maintenance and enhancement of the east-west system of pedestrian paths have become critical parts of the design of both landscape and buildings at Penn. Phase I and the proposed conceptual design of Phase II of the Proposed Action respond to the continuing evolution of pedestrian access and are designed with arcaded entrances from Smith Walk. Further, the preservation of the plaza on Smith Walk at 34th Street retains the Smith Statue in its historic location, maintains the current axis of paving and tree locations, and shifts the pedestrian crossing towards the apse and steps of Furness. This forms a safer and more continuous transition to the westward section of the Walk.

   Also see generalized response to consolidated comment #5.

5. Comment noted. The drawing of the Proposed Action View at Smith Walk Looking West (Figure 2.2-4, page 2-20) was constructed from photograph and computer aided design (CAD). This process involved inputting measured site survey, building plan and building elevation drawing information to create a three-dimensional representation of the proposed project. A review of existing conditions survey and site drawings for the Proposed Action reveals that the distance between buildings at

34th street, framing views of Furness from Smith Walk, would be reduced by approximately 30%.

6. Comment noted. The EIS describes the manner in which the Proposed Action will include preservation activities affecting many buildings in the Historic District. The proposed conceptual design of Phase II of the Proposed Action would restore the main facades of Morgan and Music and adaptively reuse the interior of these buildings. Phase III of the proposed action would involve adaptive reuse of Hayden Hall with the restoration of its great second floor space as a reading room. The exterior of Hayden Hall has already been restored by the University. Phase IV of the Proposed Action would involve rehabilitation and reuse of those vacated portions of Towne and Cret Buildings. These Phase III and IV actions would be undertaken in accordance with the Secretary of Interior's "Standards" and will result in no adverse effects on the contributing components of the National Register Historic District. Also see generalized response to consolidated comment #7.

7. Comment noted. While sophisticated fire protection systems would be required for the IAST at any of the alternative locations, differences in program and space configurations result in different technical requirements for fire protection at various locations. The proposed action includes five occupied floors above grade to accommodate Phase I program activities. The alternatives for the Lott Tennis Courts Site and the LRSM Parking Lot Site would include Phase I and Phase II program activities in a single structure, thus necessitating at least six occupied floors above grade. These alternative configurations would result in additional compliance requirements to correspond to additional building height.

big part in the analysis. We hire them and their subcontractors are specialists in the particular areas to do the analysis. It's a document that's put together with the Air Force's input; hands-on. So it's not a contracted document with their name on it. It's an Air Force document.

MR. SMITH: Thank you. My name is Gray Smith. And I just want to point out Dr. Cooperman neglected to mention, it was the Friends of Smith Walk who filed all those appeals in court and at City agencies regarding the demolition permit.

And I am a member of the Friends of Smith Walk and I am here to continue my protest of the demolishion of Smith Hall, the construction of a much larger building in its place, and the adverse and irreversible impacts that those actions will have on fragile Smith Walk and its historically significant precinct.

Rather than reiterate all the obvious reasons why this project is wrong, and we have done that before to some degree, I

2

want simply to highlight some of the significant flaws in the Draft Environmental Impact Statement for the Institute proposed on Penn's campus at 34th Street. And I'm going to get right to the quick.

In all my years as an architect and urban planner, I have never read a more unprofessional and biased Environmental Impact Statement. This document cannot conceal the overt influence of the University's interest, cancelling out any and all objectively. Moreover, the report embarrasingly demonstrates the shortage of credentials of its preparers, undertaking a study of this magnitude and importance affecting so many people. The results are a failure to its purpose.

3

Why, for example, would there be not one architect involved in its entire preparation. Why is but one urban planner from Texas in the long list of perparers. A list primarily of biologists, meteorologists, and natural scientists. It

is fundamentally an architectural and planning problem that the University has created with this project. And the draft EIS fails miserably in recognizing the responsibility to solve it, no matter which alternative you looked at.

I will be submitting a much more detailed report because five minutes is certainly not long enough to deal with even the major flaws in this report. But I just want to mention a few of the more blatant ones.

The importance of Smith Walk as an irreplaceable, unique, and pristine outdoor room, is avoided in the discussion. The report's conclusion that its severe alteration will somehow be okay, is false and misleading. Preferring to characterize the changes as, "minor modification".

4

Second, another example of misleading treatment of the Smith Walk is the entirely incorrect drawing; the one that you showed up here earlier that didn't look good there, that didn't look good in the report.

This view seen from inside altered Smith Walk, which optimistically exposes over two-thirds of the magnificant 34th Street facade of Furness Library is false. It is a lie. Any view of the site plan which shown on Page 12-2 makes it obvious that less than half of the library would be visible, not three-quarters of it as shown in your drawing. 5

On the other hand, the photograph of this view today reveals the entire 34th Street facade; one of the greatest experiences of using Smith Walk. It is now framed and balanced. Yet you have called in your report, the result of building these two buildings flanking Smith Walk as a balanced and framed view, of what little is left of that magnificant building.

Third, in this entire document there is only one photograph, one photograph of the areas in question. Are the beauty of Smith Walk and the character of Smith Hall so stunning that they better not be displayed in a report that seeks to destroy

them?

The draft EIS pretends to analyze alternate sites. The discussions of the two so-called remote alternatives are accompanied by overt threats that all other potential historic preservation projects in the science precinct will be in jeopardy should these alternatives sites be built. The old blackmail game. Apparently this proposed Institute is so sacrosanct in its location at Smith Hall, that the University would sacrifice its stewardship of these structures to build it, if it can't have its way. 6

Fifth, what is the excuse for this threatened delay on the other preservation projects? Trumped up costs. Even though the available land at LSRM and Lott Tennis Courts site is substantially larger, at each one of them than the one at Smith Hall, the draft EIS concludes that the buildings have to be much taller than the one at the Smith Hall site, thereby somehow constituting them as highrise buildings. 16

7

And according to the report, a six or seven-story building needs more fire protection than a five-story building. Well, that's another lie. The level of fire protection systems will have to be the same and perhaps even more vigorous at the Smith Hall site because it's more confined and it's less accessible and today all of your buildings have to be protected just as well as any highrises. Any trained architect, who might have participated in this study, might have known better.

I do have a few more pages, but I will cut to the end with a couple of comments.

Speaking of the Lott Tennis Court Sites Alternative, let's look at the design that was proposed and much maligned in your report. On pages 228 and 229 are site studies of this proposal, the authorship of which is vague. Bob Venturi's architectural firm who wants so badly to build at Smith Hall is mentioned as "source".

The design shown for the tennis court sites is very easy to criticize. It's a lousy, lousy design. You did a good job of doing that. And your conclusions, also negative, must have assumed that a building sited at that tennis courts would not be designed by a world class architectural team, would not respect its historic context, and would get certainly improper review by the Philadelphia Historical and Planning Commissions and state and federal authorities. Would this prominent building site also escape the scrutiny of the public? I don't think so. Again, where is a good architect when you need one?

In closing, I want to reemphasize my personal and professional dismay at the crudeness of the draft EIS report. It insults my intelligence and that of my collegues in the design professions. The report is only noteworthy for its missing ingredients and its obviously unbalanced scatterring of positive and negative adjectives.

It, along with the obsessively complementary newsletter that you have been handing out, should be placed in every college library in the country as prime examples of 20th century propaganda. No better examples have I seen, including all of the prior reports of this project.

Finally, with very little optimism, I would hope that the final Environmental Impact Statement will be completely rewritten so as to be thorough and inclusive, professional and truthful. This one you can throw into a cocked hat, as far as I'm concerned.

COL. HEUPEL: After Mr. Goldstein will be William Stuart-Whistler.

T6

MR. GOLDSTEIN: Thank you. My name is Johnathan Goldstein. I represent no group. I have no questions. I wish to enter comments for the record.

I am one of a few undergraduates who is present tonight. I am truly sad to speak against a University which I love very much, but feel morally obliged to do

Response to Comments in : T6

From: Johnathan Goldstein

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #7.
2.	Comment noted. No response required.

so at this point.

When I was admitted to Penn, I was admitted to an Ivy League campus, an Ivy League university. One could feel the age coming from the setting. One could feel the power emanating from the campus, rooted in the buildings. This place is historic. These buildings are old. They speak to the longevity of the values of those who constructed them. These buildings are not "historical resources". They are buildings. They are old buildings, and they speak to old principles which carry weight and merit.

Tearing down these buildings emphasizes something which I feel very disturbed about. It emphasizes the deemphasis of the School of Arts and Sciences, particularly the nonscience departments in that school. Critical departments have been moved to the edge of campus. Take, for instance, philosophy, or the very advising office of the college itself. Soon American Civilization and

other departments will be moved to the edge.

Where will HSS, Music, and Fine Arts go when their building is modified? Significantly modified, in some cases torn down. Later, where will English and Afro-American studies go when their buildings are needed? They're in prime sites. They're right in the middle of all of this. Where will they go?

Further, the SAS deanship has changed hands often very recently, more often than other schools.

Third, nonscience SAS buildings are being renovated very, very, very, slowly; Logan Hall, College Hall, very slowly done. Now, not only will key departments be marginalized, not only will the slow pace of renovation to other buildings continue, not only will key buildings be torn down and other buildings be threatened, but science departments will overtake their space, further emasculating Arts and Sciences and demonstrating geographically

that Arts and Sciences is not central to this University. Science and engineering apparently are, which is not bad, but it must be stated. I, therefore, feel it is a poor idea to demolish Smith Hall for the following reasons, which I will recapitulate. It will deminish the Ivy League sense of the campus. And I, as an undergraduate, have experienced this from a prospective that many of you have not experienced or many of you may have, and that may be the very reason why you're sitting here. And this is largely intangible and -- it's intangible.

1

Second, it will further fragment and deemphasize SAS, School of Arts and Sciences, nonscience departments, while further increasing to what I feel is an unreasonable degree, the emphasis of science and engineering departments at this University. If one looks at a budget one will realize the impact that these departments already have over this University and the grip that they hold over

2

many, many, many areas here.

I am certainly pro science. I'm a progressive person. I have been educated at the University of Pennsylvania. I understand the value of science. I understand the value of scientific literacy. I understand the value of having chemistry taught and physics taught. And I am all for further and more stringent requirements in mathematics and science.

I am also very much pro Penn. Many of the people in this room who know me, or others who know me at this institution will tell you that I positively love this University.

I, therefore, ask the University to reconsider what it is doing. I urge the University to reconsider its plans for this site and the monumental error it would make in tearing down this very, very important building. And I also ask it to reconsider what it is saying with its actions.

Moving these departments to the edge, how long can you continue to have a ring of

SAS departments on the edge, with science sweeping in, literally, and flanking them, as a military maneuver? If one looked at this from the top, one would realize. And I expect some kind of a sweep into the center soon.

But, without further humor, I urge the University to reconsider its plans. And I truly, truly urge the Air Force to consider the LRSM site. I am pro science. I would like to see the University succeed. I would like to see it move to the top, if it is not at the top, and stay at top, if it is, in all fields but the LRSM site is much more suited to this. This must not happen. Smith Hall must stand.

1

COL. HEUPEL: After Mr. Stuart-Whistler will be William Bradley.

MR. STUART-WHISTLER: What was that gentleman's name?

T7

COL. HEUPEL: That was Mr. Goldstein.

MR. STUART-WHISTLER: He spoke well for the Arts and Science and the entire character of Penn.

Response to Comments in : T7

From: William Stuart-Whistler

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #1.

My name is William Stuart-Whistler. I am a former member of faculty in a sense. I was employed as an engineer in the field capacity.

I see two things that worry me here. And I guess it would be in addition to previous comments, which means I can shorten my own. I certainly agree with David Cohen, his representative, and in terms of the increased waste that will be generated by such a structure in a very crowded area.

I would like to, I guess, perhaps my focus is around what Mr. Mailen said and in particular, a statement that the bill, HR4739, which is conditioned, which concerns the awarding of this funding, implies that critical -- current technology research, currently underway at the University, in response to critical technologies research needs, identified by the Department of Defense in its Critical Technology Plan as required by public law 100456. There is there a direct indication

of a tie to a military structure that I firmly believe is like the nose of the camel under the tent, in terms of what will happen to freedom of thought at the University of Penn, which I greatly admire and was a part of and proud of for a number of years.

I think that now -- I raised, I think, a similar question at a previous hearing and there was no identifiable alternative source of such funding. I think now, in the past few weeks, a new source of funding that would not have the military taint has been identified. And that is they have taken DARVA and taken the D off it, to make it Advanced Research Projects Agency.

And I do favor the centralization of science that's proposed in here. I do not favor taking the money through a military agency with the implied connection to research of a nature that I cannot predict at this moment. Thank you.

COL. HEUPEL: Thank you.

After Mr. Bradley will be Eli Shneyer.

Mr. Bradley?

T8 MR. BRADLEY: It was good to see the Air Force with his advanced technology still using the basic overhead projector. Maybe they don't have that much money.

My name is William Bradley. I'm with the National Student Action Union. I'm the field organizer with the Student Action Union. We work in Philadelphia on an education project. We offer facts and personal accounts on the military that many recruiters hide from high school students while they're recruiting them.

Why we're even here tonight, our cold war enemies are gone, so military research and new weaponry development, which we have not discussed tonight, can be decreased along with the troop cutbacks in Europe. Yet we still finance the military budget with our tax and tuition dollars. And the military continues to recruit thousands of low income student and youth and people of

Response to Comments in : T8

From: William Bradley

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #1.

color because government, down to the University of Pennsylvania, refuses to subsidize these same people's education via scholarships and grants. It's like when you're a high school student wanting to go to college, or looking for better job training, but dear old Uncle Sam, the recruiter with his bag of opportunities, isn't given unless you sign on the dotted line and do your time.

1

What I'm saying is militarism and education do not mix. Smith Hall and the Air Force lab do not mix. And only us, students, faculty, homeowners, politicians, staff, community organizers, and peace activists working in a coalition can bring about the democratic process, which by the way, this meeting is not in any way democratic and open, being that they have decided to go ahead with this project no matter what we say.

Through the democratic process we can transfer our tax and tuition dollars into affordable and accessible higher education.

So we won't need Uncle Sam and his bag.

The National Student Action Union supports the building of research labs devoted to AIDS cure, cancer cures, a lab to devise new ways to educate the youth, to advance computer and engineering technology, but not one used for the Air Force's agenda. Thank you.

COL. HEUPEL: The following speaker will be Ruth Allan Miner.

T9

MR. SHNEYER: My name is Eli Shneyer. I'm a resident of the community, a few blocks from the edge of Penn campus.

The Department of Defense is supporting this project so some research can be conducted for items under critical technologies list, which according to the New York Times involves maintenance of existing weapons and creation of new ones.

Your DEIS has ruled out pathogens, biological weapons. You did not similarly rule out nonbiological weapons. Can you give us some specifics as to what kind of research and developments you're planning

1

Response to Comments in : T9

From: Eli Schneyer

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #6.
2.	Comment noted. The glossary has been amended to include a definition of the word "sharps."

to do in this agency?

Will there be development of weapons of mass destruction? That has not been ruled out. Weapons of any kind, whether used intentionally or functioning accidentally can cause a lot of damage to the environment, including human beings. What are the chances of that happening? What provisions are made to protect the community from that? **1**

Will there be any experiments or research in mind control? Perhaps some of these questions should be answered.

I have one final question. In the section where you rule out pathogens, it is stated that the only additional biological hazardous waste would be from used sharps. I looked in the glossary in the back and I could not find sharps, used, or otherwise. Can you please tell us? Thank you. **2**

COL. HEUPEL: Do we have any answers to Mr. Shneyer's questions?

DR. COOPERMAN: Yes. I think we can say categorically, and I think it's

important for a lot of people to hear this because I don't want to have to say it -- I'll say it as many times as I have to. There will be no weapons research in this building. Weapons research is, by its very nature, classified research.

UNIDENTIFIED WOMAN: No, it's not.

DR. COOPERMAN: Please. I'm afraid that we have to agree to listen to each other.

Let me say it again. Weapons research, and you have some experts here, is, by its very nature, classified. There are no weapons programs that are not classified research.

People can tell you that, but I would like to see the proof. As far as I know, there are no weapons research that are unclassified, for very obvious reasons. Countries that develop weapons don't want other contries to get their hands on them.

The University has an absolute policy, an absolute policy, of not accepting research that cannot be

published. Everything we accept must be publishable, in the open scientific literature. We simply will not accept research, contracts, or grants which stipulate that there is a control by the sponsor of the publishability of the material generated by that research.

So that is an absolute requirement. It's one that the University holds to very strongly. It's one of our absolute fundamental beliefs that work done at the University be freely communicable, freely publishable. That's what universities are about, and that's the line we will not cross.

There are a lot of people here who wish to indulge in propaganda. That's perfectly all right. It's an open forum. It's a free country. People can say what they like. But the facts of the matter are, the University will not accept the limitation as to the nature of the research it accepts.

So, in terms of the comment, to get

back to the question, there was no specification of other kinds of weapons because we don't consider that there will be weapons research conducted at that facility, period. Absolute statement.

To answer the second question about sharps, sharps are basically a materials that can puncture skin, so there can be glass pipets or syringe needles. The law is that those types of materials are classified as hazardous waste. It is arguable whether they should be. In some sense they are, in some sense they aren't. But by statute they are classified as hazardous waste. We treat them as hazardous waste. Our programs are designed to collect those materials and dispose of them as hazardous waste. And so that's the definition of sharp.

COL. HEUPEL: After Ruth Miner will be Mark Hamel.

T10

MS. MINER: I'm Ruth Miner. And I am an old member of the old guard having graduated in 1940 from the University. And

Response to Comments in : T10

From: Ruth Miner

Comment No.	Response
1.	Comment noted. Background testing has been conducted by the University Office of Environmental Health and Safety. The results of this survey are reported in Chapter 3, Section 3.3.2.2.

speaking of the Arts and Sciences connection, it was rather interesting to me to find last week an old Pennsylvania Gazette from 1918, when my -- after my father had died. And they had an article about Edgar Faus Smith, whose statute stands right there, right at the juncture of these buildings. And Edgar Faus Smith's view of the University at that time was he hoped that it would be an undergraduate Arts and Sciences college. And that all the other adjuncts to the University would be graduate schools. Now we see that business and other things have taken their place and almost pushed the Arts and Sciences out of site and it's sort of ironical that his statute stands there and nobody really remembers what he had in mind.

But that's not my point. My point is a particular part of the plan. I'm interested in Phase II of Alternatives I and II. Phase II has to do with the demolishing the rear wing and modern annex

of the Morgan and Music Buildings.

Now, when I was a student here, the Morgan Building, which is now designated as an Art building, and the Music Building were both Physics building at that time. And in back of the Morgan Building there was a strange looking conical structure that everybody pointed out as the atom smasher. It was an old particle accelerator. It was a curiosity, because this was before World War II.

Sometime last summer, since I had a small geiger counter, I thought it would be interesting to come out and walk around and see if there was any sign of that radioactivity around the area where the old atom smasher used to be and to my surprise, I found that it was rather a high count around there. I just walked around quickly.

This, now that I got the Environmental Impact Statement, and I found that the little building that I had been near is the Music annex. And I thought

that's funny. So, last Friday, when classes were out of session, I brought my geiger counter back again and I walked along about waist height, along the back end toward the Morgan Building of this new 1970 so-called Music annex and my alarm went off twice. The alarm, it's a RAD alert that's being used at Three Mile Island and also up around Maine Yankee by people who are monitoring emissions from nuclear reactors. And this particular one is calibrated on Cesium 137 and Cobalt 60. And when it gets up to -- it's fixed so that if you push the button and want to hear the alarm, when it gets up to a count of 30 millirams (ph), the alarm goes off. Well, the alarm went off twice while I was walking along the wall there. And then I went around the other side of the building. And it was a fairly high count of 24, which is above background, ordinary background radiation. And then I found out that the intent is to tear this building down. So if the building is going to be torn down,

really it should be carefully examined.

So I called the EPA and Mr. Toll, of the EPA's office and Craig Crystal's office, said that he would send a team out to look over the Music annex. And he was going to do that last Tuesday and report to me by Friday what the results were and I haven't heard from him. And I called today, and they said he was out on site. I don't know what site he was on, so I haven't heard from him.

But, the EPA should look into it. And my worry is that when the building is torn down, radioactive materials can get into the atmosphere so it has to be done extremely carefully and whatever is radioactive, which should have been removed before, should be carefully removed now. That's a health and safety concern for the college community and the neighborhood.

COL. HEUPEL: Thank you, ma'am.

Let me point out that particularly when we've said several times before earlier you may know about environmental

impacts of which we're unaware -- and frankly, I don't know whether there's anything in the draft EIS because I have not read the draft EIS -- but that's the type of thing that -- I'm a hearing officer. And like I said, I'm not involved with this. But that's the type of thing that we need to know. And so, I appreciate that very much.

After Mark Hamel will be Catherine Blunt. Mr. Hamel?

T11

MR. HAMEL: My name is Mark Hamel. I am representing the Penn Coalition for Science in the Public Interest. I'm also a graduate student in the History and Sociology of Science Department at Penn. So, I also have that particular interest in the demolition of Smith Hall.

But I would like to raise five questions and if I could get answers to them here, or at least some detailed response to them in the final end Environmental Impact Statement, I would appreciate it.

Response to Comments in : T11

From: Mark Hamel

Comment No.	Response

1. Comment noted. Research support from the Department of Defense has averaged 4.36% of the University of Pennsylvania's total sponsored projects support over the past five years. This percentage is slightly higher if non-science and engineering are eliminated from the base. For fiscal year (FY) 1992, the total amount of support for science and engineering, including the health schools, was approximately $209 million, of which $11.708 million, or 5.6% came from the Department of Defense. The Department of Defense funding for the IAST is primarily for facilities construction. This funding would not materially affect the University's ongoing programmatic support from the Department of Defense. It is anticipated that departments currently receiving research support from the Department of Defense will continue to expand their programs and receive additional Department of Defense funding though not necessarily increase the percentage of their total funding that is provided by the Department of Defense.

   Out of a total of 126 departments and centers at the University of Pennsylvania that received external funding for research in FY 1992, only 18 departments received more than one percent of their external research support from the Department of Defense in either FY 1992 or FY 1993. The following table lists these Departments and identifies the associated levels of funding.

   The Department of Defense represents approximately 4 - 5 % of the University's research support. The development of the IAST is likely to increase the Department of Defense research support to 5 - 7% by enabling the expansion of some departments currently receiving Department of Defense funds. See also generalized response to consolidated comment #1.

2. Comment noted. Section 4.4.1.6 has been amended to include a summary of the Secretary of Interior's "Standards." The "Standards" call for preservation and adaptive reuse as a principal goal, but not fragmentation of historic buildings and preservation of portions that never existed historically. Hence, under the "Standards" the proposed action's adaptive reuse of Morgan and Music is appropriate; keeping two-thirds of the 1891 portion of Smith is not appropriate.

3. Comment noted. The preliminary report on a potential archaeological site suggests that a Potter's Field exists beneath the Lott Tennis Courts. Maintenance under the tennis courts preserves the site because no of further sub-soil disturbance, while excavation of foundations would massively disrupt the site.

AWARDS RECEIVED

	FY1992			FY1993		
	Total Research Support	DOD Research Support	DOD % of Total Support	Total Research Support	DOD Research Support	DOD% of Total Support
School of Arts and Sciences						
Chemistry	$ 7,829,385	$ 827,279	10.6%	$10,743,068	$1,419,421	13.2%
Linguistics	1,756,841	1,008,263	57.4%	4,396,006	3,567,914	81.2%
Mathematics	774,951	100,000	12.9%	1,752,070	581,022	33.2%
Physics	9,033,304	813,312	9.0%	8,524,677	703,599	8.3%
Psychology	2,213,979	35,952	1.6%	2,504,244	0	0.0%
School of Engineering and Applied Science						
Bioengineering	$ 2,058,704	$ 287,215	14.0%	$ 1,733,512	$ 294,366	17.0%
Computer and Information Science	5,756,359	3,595,973	62.5%	5,814,661	3,007,142	51.7%
Electrical Engineering	2,390,126	492,834	20.6%	2,049,376	624,719	30.5%
Material Science	4,936,231	3,485,811	70.6%	3,548,729	958,578	27.0%
Mechanical Engineering	1,333,484	306,200	23.0%	1,348,814	49,523	3.7%
Graduate School of Fine Arts						
Fels Center of Government	$ 10,000	$ 10,000	100.0%	$ 18,648	$ 0	0.0%
School of Medicine						
Biochemistry/Biophysics	$ 2,058,704	$ 0	0.0%	$ 8,243,993	$ 87,749	1.1%
Institute for Environmental Medicine	2,513,737	490,000	19.5%	2,467,980	508,000	20.6%
Neuroscience	2,460,703	0	0.0%	4,185,371	20,000	0.5%
Radiation Oncology	1,680,672	0	0.0%	2,899,801	1,219,405	42.1%
Wharton School						
Operations and Information Management	$ 567,634	$ 48,322	8.5%	$ 620,719	$ 0	0.0%
PA Small Business Development Center	3,781,787	150,000	4.0%	3,834,117	150,000	3.9%
Statistics	88,060	55,060	62.5%	279,181	76,348	27.3%

4. Comment noted. No response required.

5. Comment noted. Although no formal undergraduate classes will meet in the IAST, undergraduates will be involved in the research projects of individual professors in the IAST.

6. Comment noted. No response required.

First of all, I would like to direct people's attention, if they have it, to the glossy publication that the University has put out. This is the first newsletter that I have ever seen for a building that has yet to be constructed. But, that's another issue. On Page 3 there's a pie chart that describes sponsored research and training at the University. The total research funding pie. According to that, there is $247.3 million for fiscal year 1992, of sponsored resource. Of that pie, 11.8 million is Department of Defense money. 4.72 percent.

According to Vice-Provost Cooperman on the back page of this document, in his interview, he says, "I don't expect the five percent DOD proportion of our overall funding to change significantly." I did a little bit of relatively simply mathematics which was I added the, at least $10 million Department of Defense money that the University would have received to the share already received from the Department of

Defense. And then also added $20 million to the total pie because Defense Department money will constitute 50 percent of IAST funding. And dividing the one by the other suggests that, at minimum, over 8 percent of University funding will come from Defense Department money.

Now, that seems to me to be a significant increase over 4.72 percent. Now, if my mathematics is faulty in any respect, I would appreciate some clarification on that. Moreover, that's at the minimum, 8 percent. And it's unclear exactly what proportion of Defense Department money will be allocated to the University on a year-to-year basis.

In addition, we need to ask whether the arts and humanities and professional schools are included in this pie. Are the research dollars allocated to those areas of the University included in this pie? If they are, if we subtract those portions of the pie, what percentage of basic science and engineering research is the Department

of Defense funded? If you have figures to provide on that score, I think they would be worth hearing.

1 More specifically, what percentage of Department of Defense funding goes for such fields as chemistry, information sciences, and some of the critical technologies that you mentioned?

How great will the change be when IAST funding is factored into those particular areas of research? I think the numbers would be a little bit more striking than the 4.72 percent mentioned in the pie chart.

The second question I have, I refer people to Page S8 on the Draft Environmental Impact Statement, if they have that. The proposed reuse of Smith Hall Alternative would violate the standards of the National Historic Preservation Act. What are those standards? I would like some clarification on that. Specifically, why do they affect the reuse a portion of Smith Hall

2

2 alternative, but not the renovation and expansion of the Morgan and Music Buildings? The additions to those buildings seem to be as much of a violation of whatever preservation standards exist as the reuse of a portion of Smith Hall. I would like some clarification on that.

Third of all, I would like to refer to the Lott Tennis Courts Site Alternative. On Page S10 of the Environmental Impact Statement, there's reference to the likelihood of a Potters Field cemetery lying under the tennis courts that would be a consideration for choosing that alternative for the IAST. It's not clear to me whether the University has any long-term plans to verify whether, in fact, such a cemetery exists or to conduct an archiological excavation of that cemetery and why it's a consideration against building the IAST there and not a consideration against having a tennis court built on top of it.

3

Also, Pages 226 through 228. I wish

I had a picture to make available for people to see. But having to do with the L shape and the highrise classification of the proposed Lott Tennis Courts Alternative, it's not clear to me who designed that particular L-shaped configuration, but if the University wanted to create a design that obstructed the view of the athletic facilities better than that particular L-shaped design, I'm not sure that they could do a better job. And it's not clear to me in that design why it's not possible to design it wider and lower to prevent obstruction or in a more compact blockier-fashion instead of in an L-shaped configuration. Those kinds of concerns seem to me very unclear.

4

I will wrap-up. The fifth question is, is it true that the IAST will have no facilities for undergraduate classes in laboratory experience. And if not, does the University have any long-range plans for providing those kinds of facilities for undergraduates?

5

I don't raise these issues concerning the various proposed alternatives in order to express preference for any of them, with the exception of the No-Action Alternative, which I think is by far the best. But, rather, in order to indicate the degree of bad faith and hypocrisy exhibited by Penn and the Air Force concerning the IAST where preservations and considerations matter in one case and not in another case. Thanks.

6

COL. HEUPEL: Thank you. Let me ask, is there any response at this time?

DR. COOPERMAN: Since he's left, I guess not.

2

COL. HEUPEL: After Catherine Blunt will be Melani Lamond.

DR. COOPERMAN: As the gentleman is now back, did you want me to just answer a few of those questions? Some of the questions will take a little longer than I think we have time for, but I just would like to address myself to the factual ones.

It is, of course, true in the years that money will come from the Defense

Department for the building, there would be a rise in the Defense Department share, but that would last for two, three years whereas we're talking about the continuity of the program. So, of course, you're right. In those particulars years, the total would rise. If you just talked about program money, which is really what most of that money is, essentially all, there's very little construction money in that total, then it would rise by that much.

Why do I anticipate no significant change in the totals; I mean, viewed as a percentage of the whole? It's because the Defense Department share's currently such a small percentage, so even a large percentage rise in the Defense Department's share would not make a very large rise in the total Defense Department share within the University. That is, it's conceivable you could go from 5 percent to 6 percent. That would be a 20 percent rise in the amount of the Defense Department funding, but still not a large rise in terms of the

funding of research overall at the University.

The numbers are for all programs at the University. In the main, these are programs in the sciences and medicine and engineering. There's very little dollars coming into humanities and social sciences programs. Those programs tend to operate with less need for dollars. So, the totals basically reflect the dollars going into the science engineering, that type of area.

The last part of your question, of course, no agency's dollars are uniformly spread throughout the University. There is, as you correctly point out, or imply, more of a concentration of Defense Department funding in the sciences and engineering than there would be throughout the University as a whole.

MR. HAMEL: Do you have percentages of that?

DR. COOPERMAN: I have access to them. I don't really have -- I would hesitate to give you numbers that were

incorrect.

Let me say that the numbers that I feel fairly confident about go about 25 to 30 percent in chemistry, somewhere about a quarter would be what it has been.

If you go back about, what is the ten-year average, what has it been. It's very high in computer and information sciences. It's in the 60's. Something like that. And the reason is that, historically, the Defense Department has been the major sponsor of computer science nationally. It's been the agency that has supported computer science more than any other agency in government.

In chemical engineering and bioengineering, the numbers are -- I don't have them at my fingertips but I'm confident that they're less than 20 percent. That order.

So, these are higher percentages than you would find in, let's say, the medical school, which tends to have HHS, health and human services as it's major sponsor.

But, that's our current percentages. I don't anticipate that those percentages will go up a great deal, if at all, because the programs that we envision as taking place in that building will be very similar to the programs that are currently taking place in our space. They will be higher quality because the space will be better, will attract better faculty, will attract better students. But the nature of the programs, in terms of their spread of disciplines, will be similar.

MR. HAMEL: What about undergraduate access?

COL. HEUPEL: I need to go on. We have a speaker and several other speakers to come. So I will tell you, we're going to take a break at 9:30. Our next speaker will be Catherine Blunt.

T12

MS. BLUNT: Yes. My name is Catherine Blunt. I'm from Cedar Park Neighbors which is a community organization between 56th and 52nd, Kingsessing and Larchwood. So I am here to speak for that

Response to Comments in : T12, see also M18

From: Catherine Blunt (Cedar Park Neighbors)

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #4.
2.	Comment noted. See generalized response to consolidated comment #6.

community. I am hopeful that other community representatives will come forward and speak.

There is a point of clarification I would like to make. Hopefully the issue of Smith Hall will be resolved in the affirmative. The issue of preserving human life and the quality of human life still would have to be addressed if we save Smith Hall, so let's not forget that.

3

At our March 24, 1993, Board of Directors meeting, the Board of Directors of Cedar Park Neighbors expressed concern about the Institute because of the demolition of Smith Hall and because we have grave concerns about the Institute's activities which can, may, and will affect the quality of life in our neighborhood. Some of us are more concerned because it is believed that the IAST work will serve to deprioritize protecting the environment, as well as serve to compromise the health and safety of the immediate and surrounding communities.

1

Tonight we go on record as not supporting the IAST because of the above reasons, and other reasons, including the fact that the impact statement had insufficient descriptions regarding the proposed projects and scientific technologies. 2

I have two questions. When we discussed this at our board meeting, one of our board members said, "listen, we shouldn't even bother to go down there because it's a done deal". And we said we would still come down and be represented. So my question is, one, if this is a done deal, why is this meeting occurring? And two, my question to both Penn and the Air Force, if indeed there is so much community opposition, that is broad base and the immediate and surrounding community to the IAST, why will Penn or why should Penn and the Air Force continue with the proposed IAST?

I would like an answer because I don't think I had five minutes. I would

like an answer.

COL. HEUPEL: Colonel Baumgartel, if you could just give an indication from the environmental process whether this has already been approved.

LT. COL. BAUMGARTEL: The decision has not -- no one has made a decision about the IAST. There's two parts of that. One is to continue on and provide money as a grant for this endevor. The other part is, if that is approved, what alternative out of the site selections, if any, at this point, would be approved. That has not happened.

Right now, if the impact statement stays on schedule, then, feasibly that decision could be in September of this year. But no one has made the decision. We're not going through it for fun. We are listening to the comments. Some I think have brought on some very good points. If we missed it, that's what we're here for. We're looking for critical look at what we have. We have a reporter here taking

everything down and I'm making some personal notes and some other folks are here doing the same thing and we'll follow-up on it. And we have to address those things before the final. If it takes longer, it takes longer.

COL. HEUPEL: I'm not going to go into the second part because the second part gets into a debate, and we're here to --

MS. BLUNT: I want Penn to address the same issue, regarding whether or not this is a done deal.

DR. COOPERMAN: It's not a done deal because we need the Air Force approval.

MS. BLUNT: Insofar as the community's opposition. It doesn't matter what we say and what we feel.

DR. COOPERMAN: No. I don't think I would say that. I would say that if you read the Environmental Impact Statement and you have questions that --

MS. BLUNT: I'm asking you.

DR. COOPERMAN: No. No. It's

important because I think many of the objections that you raise are dealt with there and dealt with in a way that --

MS. BLUNT: We're not satisfied with them.

DR. COOPERMAN: That's fine. And if you're not satisfied with it, then what I would hope you would do is be as specific in your complaints as we try to be, or as the Air Force tried to be, in putting the documents together so we understand the nature of your dissatisfaction. The question really is --

MS. BLUNT: Then let me go on record also in confirming what the representative of David Cohen's office said. He was very specific and they said, he said what we wanted to say. He said it.

COL. HEUPEL: I've got to call time because we've got another speaker here.

Our next speaker is Melani Lamond and then Julianne McKinney will be next.

MS. LAMOND: My name is Melani Lamond. I'm a University City neighbor,

T13

Response to Comments in : T13 (See also M6)

From: Melani Lamond (University City Historical Society)

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #7.
2.	Comment noted. Section 3.4.7.1 has been amended to include the nomination of Smith Hall to the National Register of Historic Places.

but I'm here as the president of the University City Historical Society, a neighborhood group with about 350 families as members which is a higher total membership than that, of course.

On behalf of the Board of Governors of the University City Historical Society I welcome this opportunity to present the Historical Society's position on the proposed Institute for Advanced Science and Technology and the Draft Environmental Impact Statement. With respect to the Institute, the Society is not opposed to its creation. We fully endorse the legitimate efforts on the part of a great university to expand our knowledge of both the human and the natural environment. We are only appealing the decision to place this ever expanding institute in the site currently occupied by historic Smith Hall and forever obliterate the special environment of Smith Walk and this portion of Penn's campus. As recognized in the nomination for the University of

4

1

Pennsylvania campus historic district, this constitutes the final remaining ensemble of late 19th and early 20th century buildings, still occupying their original landscape setting. 1

With respect to the Draft Environmental Impact Statement, we welcome it for two vital reasons. First, it provides a renewed opportunity to conduct a sounder analysis of the architectural and historical importance of Smith Hall and its complex subjects dealt with more fully by other speakers and at length in a proposal for individual nomination of Smith Hall to the National Register developed by Susan Glassman and Julie Johnson of the Wagner Free Institute of Science recently. That document should correct the inadequacies and errors that continue to remain in the historic assessment contained in the Draft Environmental Impact Statement. It also will firmly establish Smith Hall's significance in the history of education, medicine, science, and public health, 2

rather than assessing it purely in terms of architectural style. It indicates that the individual building possessses national significance beyond its contribution to the historic district. 2

Secondly, the statement also represents the first instance of a real attempt to look at alternative sites. Sites which provide not only for the much-needed and inevitable expansion sure to characterize such a facility, but one which does not trample on the historic resources of the campus. We are particularly struck by the opportunities offered by alternative locations such as the LRSM parking lot, not part of the campus national register historic district. Yet we also question why the GE Building at 32nd and Chestnut Streets was also not given full consideration. The explanation in the statement, that this location lacks proximity, seems arguable. It being but one further block removed from the LRSM site. The statement does, however, 1

represent a new attempt to seriously consider alternatives to the destruction of Smith Hall and Smith Walk. And we hope that this effort to reopen analysis and debate will characterize the next stage of the University's thinking about this project as well.

COL. HEUPEL: Thank you.

Our last speaker before the break will be Julianne McKinney. And the first person after the break that I have is Robert Kohler.

T14

MS. McKINNEY: My name is Julianne McKinney. I am a former Army intelligence officer, trained at the national level, served 16 and a half years before resigning for purposes of pursuing my present activity. I am a member of the Association of National Security alumni. Our organization is dedicated to putting an end to covert intelligence activity.

I was here last time. I'm happy to see that the audience has been expanded to be more representive of the University

Response to Comments in : T14

From: Julianne McKinney

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #1.

environment. The consequence of my last appearance in which I disseminated a document concerning what I regard as the unhealthy, symbiotic relationship betwen DOD and the University of Pennsylvania, resulted in the ice picking of my tires. I certainly hope that the University of Pennsylvania and/or the Air Force will be more hospitable under the present circumstances.

The reason I'm here, once again, is to protest what I regard as an unhealthy, growing symbiotic relationship between the military and establishment organizations within the United States to include academia, business, and the law; the American Bar Association. In this particular case there is no reason under the sun why the University of Pennsylvania should be dependent upon funding from the Air Force for a program for an institute which ultimately is going to be pursuing critical DOD technologies, to include biotechnology, sensors, human-system

interfacing, bioengineering.

The reason I'm bringing this to your attention is because what we are pursuing is very serious research into mind control experimentation in the United States, currently spread nationwide. Our organization has been contacted so far in the space of approximately five months, 50 individuals, only a few of whom are in prison systems, the vast majority are citizens such as you and I who have committed no offense. It is basically a recurrence of what happened back during the 1960's, '70s under MK LTRA (ph). It involves the current form of mind control experimentation, involves some of the technologies which the Air Force is pursuing, to include directed energy, weapons technologies, but also variants on that theme. Wright Patterson Air Force Base, Griffiss Air Force Base out of Rome, New York are, in fact, attracting our attention as being very, very actively involved in mind control experimentation.

So I would urge those of you who are attending the University of the Pennsylvania to pay very close attention to this what, again, what I regard as a very unhealthy, symbiotic relationship between the military, the Air Force, and the University of Pennsylvania.

1

If it's a matter of funding that you need, there is no need that -- you say that there's only one alternative. And that is no funding. That is incorrect. If the funding were removed from the Department of Defense, which has already far too much funding at its disposal, and transferred to some other account, the University of Pennsylvania could acquire that funding by other means. And I notice, Mr. Cooperman, that you apparently would like to make a comment. This does not qualify as propaganda, sir. I noticed your criticism of members of the audience for having made comments which you regard as propaganda. But, these comments are addressed to the public which the Air Force is going to

disregard ultimately because the Air Force is making the decision. Not the public. Thank you very much.

COL. HEUPEL: Thank you. We'll reconvene at quarter of 10:00. 15 minutes.

- - -

(Whereupon, a brief recess was taken.)

- - -

COL. HEUPEL: Our next speaker will be Robert Kohler, and following Mr. Kohler will be Mick Harrison.

Mr. Kohler?

T15

MR. KOHLER: My name is Robert Kohler, K-O-H-L-E-R. I teach the history and sociology of science at the University of Pennsylvania. And I represent myself and Friends of Smith Walk and I hope the increasing number of faculty at the University who are kind of fed-up with this project.

I am going to talk about the historical assessment of Smith Hall. The material in Chapter 4 on Pages 22 to 25,

Response to Comments in : T15 (See also C64 & C77)

From: Robert Kohler (Friends of Smith Walk)

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #5.

which I find, first, completely inadequate. Second, that it does not deal with the issues raised in the scoping session. Thirdly, that it presents information only favorable to the case against Smith Hall, with no attempt to get any kind of opposing views. And finally, that the arguments show a pretty clear sign of bias and complete misuse of historical methodology. Nothing in this report would pass muster with professional historians of medicine or science or American history.

First on the architectural point. The Air Force and the University say the architecture of Institute of Hygiene, that is the original name for Smith, was not cutting edge in 1891, either technologically or aesthetically. The Draft Statement denigrates the architecture by saying it won no prizes for innovative aesthetics and it doesn't figure in standard histories of architecture.

1

It didn't win prizes. It wasn't meant to and that's the entire point of its

significance. It was meant and built and designed to be a practical workshop of science. Billings was quit explicit on that point. His prize was turning out a generation of educated, trained public health workers.

On the technological side, the Draft Statement claims that the ventilation system was 20 years out of date at the time the building was built. This is a highly unlikely statement, since Billings was the acknowledged expert. It may have been outdated for building a skyscraper. The Institute of Hygiene wasn't a skyscraper. It was meant to be a model for a laboratory that was cheap to build and accessible to any city who wanted to build one. In order to judge the significance of architecture, either technologically or aesthetically, one must judge it by the historical purposes and intentions that it was built for. The draft takes it completely out of context.

Second, people. The draft claims

Smith Hall was not important because it didn't commemorate important people. It does acknowledge that John Shaw Billings, it's first director and designer, was important in library work but denigrates his role in public health at Penn, characterizing it as a failure. The problem is that the University and the Air Force relied for this information in assessment on a biography of Billings written in 1915; 80 years old.

There is a more recent one. It is unpublished and you get a very different view. And I would like to quote you very briefly from it. This is by Professor Carlton Chapman.

"The Institute of Hygiene at the University of Pennsylvania was at first glance a failure. Pepper, Lee and Billings moved too far, too fast. Their experiment was unique one mounted in the midst of and not conforming to firmly fixed academic and conservative faculties. To view it as a failure, however, is to ignore the enduring

influence of the pioneering design for the education of public health professionals worked out by Billings. In an important sense, Billings' influence and the academic precedence he set dominated the national scene when later academic public health programs began to take shape."

Third point, competing claims, that is claims for competing buildings. The University and the Air Force claim that the Institute of Hygiene is less important than other earlier laboratories built at the University of Pennsylvania campus in the 1870's.

1

Now, here, this report simply rehashes almost verbatim historical errors that have been previously exposed by myself and other historians. I will not go into the arguments again. They involve fundamental misunderstandings based on the ignorance of the history of the period. The point I would just like to make is that these opposing and refuting views are not considered. They are no included. They

are not refuted. Evidence of the bias use of evidence.

This draft report claims that the Institute of Hygiene was not the first Institute of Hygiene in the United States, so not worth saving. Again, a fundamental misunderstanding of how history is used. No historians pay much attention to what constitutes first because it's subjective and easily politicized as it, in fact, is done in this report. The best criteria of historical assessment are how well and fully a building embodies an important historical moment and movement and how well it's preserved.

To conclude, the draft assessment of the historical importance of Smith Hall would not stand up to scrutiny by professional historians. And this unprofessional character of the draft undermines the legitimacy of this entire process. If the Air Force wants a legitimate statement, it should make the University start over with more experienced

1

historical consultants who are independent, not tied to University and IAST sources, and to get information from a full range of sources and address issues raised in the scoping session. Stay clear of the IAST public relations team, assess the evidence objectively as the law requires.

COL. HEUPEL: Mick Harrison is the next speaker. Following him will be Regina Siberski. Mr. Harrison?

T16

MR. HARRISON: My name is Mick Harrison. I'm an attorney with the Government Accountability Project in Washington, D.C., a nonprofit public interest group. I'm making these comments on behalf of the Government Accountability Project and myself, although I have been asked to review the Draft Environmental Impact Statement by local concerned citizens.

I first wanted to note that this is a very complex issue. The study is very lengthy. I'm sure you've taken months to develop it. Your five-minute limit is a

Response to Comments in : T16

From: Mick Harrison

Comment No.	Response
1.	Comment noted. The list of preparers has been amended to reflect pertinent contributions.
2.	Working drafts of an EIS are intended to stimulate candid discussion among members of the team assembled to prepare the document. From these discussions, the team determines whether additional research and analysis is needed. This iterative exchange between agency personnel and members of the contractor's technical team consequently plays a critical role in ensuring that the statement is thoroughly reviewed and independently evaluated prior to its release. If working drafts were to be routinely released to the public, researchers would likely become less willing to share preliminary views for fear that they would be subsequently held to, or criticized for, their tentative conclusions. This "chilling effect" on free and open discussion would, in turn, result in a less thoroughly considered EIS, and a greater probability that a truly significant environmental impact would be dismissed.
3.	All participants in the preparation of this EIS are listed in the List of Preparers found in Chapter 6 of the EIS. The Air Force is ultimately responsible for the analysis contained in the environmental impact statement. Where appropriate, the University of Pennsylvania provided the Air Force with information on the scope of activities, design and operation of the IAST. This information was reviewed by the Air Force and was included in the EIS as appropriate. Other interested parties, including state agencies, are identified in the IAST-EIS mailing list found in Appendix C of the EIS.
4.	Comment noted. See generalized response to consolidated comment #6.
5.	Comment noted. See generalized response to consolidated comment #4.
6.	Comment noted. The EIS has been prepared in accordance with the National Environmental Policy Act of 1969, the Council on Environmental Quality regulations implementing NEPA (40 CFR 1500 - 1508), and the U.S. Air Force Environmental Impact Analysis Process Regulations (32 CFR 989; Air Force Regulation 19-2). Also see response to comment 3, above.
7.	Disclosure statements are on file. See page 6-7 of the FEIS.

8. Comment noted. See generalized response to comment #4.

9. Comment noted. The glossary has been amended to include a definition of "biologically active molecules."

10. Comment noted. See generalized response to comment #4.

11. Comment noted. The University's Chemical Hygiene Plan (CHP) covers the use of the chemical classes commented on, as follows:

Mutagens. Standard Operating Procedure REPRODUCTIVE HAZARDS, pages 69-71, and Appendix D, Page 39.

Carcinogens, Standard Operating Procedure CARCINOGENS, pages 49-51, and Appendix C, pages 36-38.

Acutely Toxic Gasses, Standard Operating Procedure ACUTELY TOXIC GASSES, pages 46-48, and Appendix A, page 34.

bit cumbersome in terms of meeting the requirements of the regulation, the Air Force's own regulation, at 32, CFR, 989.15, which states: "The time limitation on speakers must be reasonably exercised in order not to deny important information to the decision-makers." I assume we'll respect that and I will make my comments as concise as possible. They may run somewhat past five minutes.

COL. HEUPEL: I hope not too much past.

MR. HARRISON: I will do my best.

Dr. Cooperman, I believe it was, had urged us to be as specific as possible with respect to our complaints. I will try to oblige him, and I will oblige him further in our written comments. 7

First of all, the questions identify, I will simply identify for the record, I'm sure there won't be time to respond to them in my length of time, but hopefully later in writing or some other manner. I think it's important to identify in the list of

preparers in your Pages 6-1, 6-2, what each of those preparers did in regards to this draft, and also in regards to any prior drafts of this Environmental Impact Statement. I think it's important to disclose how many prior drafts of this draft there were, how they were changed, who they were changed by, and why they were changed.

1

2

I personally would like to request a copy of each of those prior drafts for my review, prior to the end of the deadline for written comments. I will leave my address.

I think it's important to disclose the role of all the state officials and state agencies, including University officials, in the preparation of this analysis, not just the report, but the analysis they went into. It's important to disclose in more detail than I can derive from this report what need, if any, there is for this facility, to disclose the precise research plans and activities known

3

4

to be either possible or probable to be conducted in this facility. If there are no known research activities that are possible or probable for this facility, and you certainly don't find them in this draft EIS, it implies there's no military mission for this facility, or no mission at all for this facility. And if there's no need for the facility that can be identified in this document, then why are we even considering the destruction of historic resources and considering an unknown risk to the local population, which is quite heavy, from accident, fire, explosion, from the chemicals acknowledged in this report at Page 2-4, 2-5, and those that aren't yet identified.

4

5

It would give the impression, if there's no need specifically identified here, no research tasks identified, that this would be as I believe the New York Times described it, as a pork barrel project. I'm sure that this multi-million dollar proposal is not pork barrel, but on

the other hand I don't find the need identified in that document.

There's one other possibility that concerns me. If there really is a military mission for this project, it's certainly not identified here. There is the possibility that there is, in fact, a specific mission. It simply isn't stated. And there was a statement by Dr. Cooperman, I believe, who I believe speaks for the University, not the Air Force, who stated that there would not be weapons research conducted in this facility. Weapons research is a broad concept. Animals can be used as weapons. Microorganisms can be used, chemicals can be used, people can be used as weapons. And there are weapons that are quite complex that involve many components, including guidance and computer controls and artificial intelligence and it requires special materials, and usually live and usually strong and so forth.

4 The real question is, is this research related to weapons development, is

it contributing to weapons development, is it part of some component of the weapon

4 system and is it, even if the total weapon system is not in place, present on the campus, is it not nonetheless, weapons research? And I would like the Air Force to speak to that before the night is over, not just the University.

There is a regulation that the Air Force follows, presumably, in preparing the Draft Environmental Impact Statements; 32, CFR, 989 -- I'm not sure, I think it's --

6 .12. It talks about the preparation of preliminary draft, the scoping, review of the draft, who it goes to, how it's modified and when it's released. I would like someone from the Air Force to make a statement tonight as to whether this regulation was followed in the preparation of this Draft Environmental Impact Statement. Yes?

COL. HEUPEL: Five minutes.

MR. HARRISON: Thanks. I will do my best to move quickly.

The real question is whether or not parties other than the Air Force and other than its choosen contractor, whoever that might be, were involved in the preparation of the draft or drafts, in reviewing the drafts and editing the drafts and rejecting parts of drafts. I don't see that disclosure on the record at the moment. 6

Furthermore, I would like to point out that I don't see any conflict of interest statements from the contractors in their disclosure statements. Maybe I missed them, they might be in here, if someone can point me to the pages. They have to be filed with the Air Force. I assume they have been filed. I would like copies of them. 7

The concern is that there may have been such substantial involvement by parties other than the Air Force, parties with financial or other interest in this project, that this Draft Environmental Impact Statement does not comply with 40, CFR, 1506.5 and the surrounding laws,

including the statute and the case law I'm interpreting which requires the Air Force to exercise its independent judgment and to maintain control of the project. It's not clear that's happened here.

There must be a full disclosure of all parties involved in the environmental and other analyses and all the drafts that proceded this draft, including the University's role, and the contractor. It's critical before one can analyze the environmental impacts. And it's an area in which I specialize, I direct a program called EPA watch. We help citizens enforce environmental laws. We deal with major problems of environmental exposures to chemicals such as dioxin, PCBs and so forth. You cannot do a risk assessment or impact assessment until you know the identity of the chemicals you're dealing with, their quantities, and how they will be handled. None of that is specified in this document. Essentially we're being asked to set up a black box and what 2 8

8 amounts to a statement to trust us, everything is going to be fine. That's not the purpose of an Environmental Impact Statement or NEPA. I don't trust the government or its contractors do a risk analysis based on my experience.

COL. HEUPEL: Mr. Harrison, I'm going to need to interrupt and ask you to give us the rest of your comments in writing. It's seven and a half, almost seven minutes and 50 seconds, you've been going and I've 24 other people, and it's 10:00 o'clock. And I need to be able to give these other people an opportunity to speak also.

MR. HARRISON: I appreciate your predicament and I hope you appreciate the law.

COL. HEUPEL: Well, I -- that's interesting you say that, but I do. And as you point out, it's the hearing officer that has got to give reasonable time and --

MR. LEWIS: I will put in a written statement and give him my five minutes of --

COL. HEUPEL: Well, that's fine. I will take your comments, but I've still got to cut Mr. Harrison off because I have already made the determination that we've got to be able to allow as many speakers to speak as possible. So you're welcome to give us as many pages as you want, but I've got to bring up Ms. Siberski at this time.

MR. HARRISON: I need to make a concluding comment. I think first of all --

COL. HEUPEL: If it's a concluding comment, I will permit it.

MR. HARRISON: I appreciate that. You are really too kind. I think this gentleman, having offered his five minutes, allows you to make a reasonable adjustment to the time limit. I don't understand why you're not taking advantage of it rather than to keep me from making my statement in public, which I find offensive.

COL. HEUPEL: Well, I've got 24 other people.

MR. HARRISON: You just lost one.

COL. HEUPEL: It doesn't matter. The point is --

MR. HARRISON: It matters to me.

COL. HEUPEL: We've got rules. The other people have gone along with the rules. And I need you to go along with them.

MR. HARRISON: In that case I will, I will make a concluding comment, and I will go along with the rules after this proceeding, as I attempt to enforce the law as is my right.

COL. HEUPEL: Be my guest.

MR. HARRISON: Thank you.

The concluding comment is this, and it's not really the concluding comment, but it is for the moment. And I will wait in line, and speak at the end, if you will allow me to finish my comments.

There is a statement, and I believe it's on Page 2-4, it talks about biologically active molecules being used. Biologically active molecules are not defined in the glossary in the back. It's

9

not defined in the text. Those molecules aren't listed. What I want to know is, what are they that you intend to be using? In my line of work, biologically active molecules include dioxins, furans, coplanar PCBs, diaphenes, and some of the most carcinogenic, teratogenic, mutagenic, immuno-tocis and acutely and chronically toxic substances known to the human race. It takes mighty quantities to cause serious harm to animals and humans in the environment. For example, about an ounce of 2378 tetrachlorinated debensyl P (ph) dioxin would be enough to kill the entire population of New York City if distributed.

9

Now, there's some assurance attempted to be given in this document that there will be no significant impacts; one, because they're not regulated, which is false. I refer you to 42, USC, 6972. And there's also a nuisance and other laws still in place, even in the State of Pennsylvania. And because they are only going to be used in quantities, that one

10

10 person can handle.

Do you know how much harm a few pounds of dioxin can cause? Think about it. There's no assessment of the fire, explosion, accident risk in many of these sort of chemicals. There's some reference

11 to a plan the University has for preventing release. How are you going to prevent the release of smoke in products and incomplete combustion which also aren't identified here?

I will stop for the moment at a protest.

COL. HEUPEL: Very well. I just note for the record, that was 11 minutes.

At this time Regina Siberski, followed by Marv, Lewis and then --

MR. LEWIS: I already gave up my five.

COL. HEUPEL: Okay.

And then Jim Cummings.

T17 MS. SIBERSKI: Good evening. I appreciate this opportunity to once again speak before this panel and the public

Response to Comments in : T17 (see also M10)

From: Regina Siberski

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #6.
2.	Research use of lasers at the University of Pennsylvania is restricted to within research laboratories.
3.	Comment noted. See generalized response to consolidated comment #4.

about a continuing concern. I refer to the biological effects of non-ionizing electromagnetic radiation. The acronym NIEMR.

I am Regina R. Siberski, a Pennsylvania registered dental hygienist, who became involved from the NIEMR issue in the late '70s. In 1986, I was awarded a platform by the Newtown Township Board of Supervisors and continue as chairperson of the Environmental Committee - Radiation. This unique committee helped raise the consciousness about health effects, electromagnetic fields, electromagnetic radiation and related concerns.

Having been involved for too many years in this emerging societal issue, I agreed to speak pro bono poplico at the scoping hearing on August 19, 1992. In light of the information gathered over the years, the type of interdisciplinary research mentioned basically prompted me to question the kind of activity which would be furthered at the proposed institute.

I appreciate the need for continuing research. I know that an expanded facility is on the wish list of many researchers at Penn campus because of crammed laboratories. Nonetheless, I repeat the question from ECR September 11, 1992, statement for the Air Force. With recent Congressional and Pentagon decisions, is IAST now considered a feasible project? 1

Since the criteria for the consideration by Congress and the Pentagon raise questions regarding possible interdisciplinary research, I wish to direct attention to the Draft Environmental Impact Statement in the one paragraph about electromagnetic radiation on Page 2.4.

Laser research is mentioned. Laser is light amplification by stimulated emissions of radiation. Research also requires testing outside the laboratory. 2

At times, technology races too far ahead of biology. Many subtle energies in use for military, and/or medicine are tested to either save, debilitate and/or

destroy a target, be it cellular or greater in size. Lazers are used in medicine for betterment, but can be used by the military against mankind. Dual track research is necessary. However, if the benefits are overshadowed with possible harm to the unsuspecting citizens, I ask that consideration be given relevant to one question which related to research which was done for the Navy by the University of Pennsylvania.

According to a newspaper account, microwave radiation was being used at a suburban location to identify vehicles on the parking lot of the Philadelphia Electric limerick plant. The person with whom I spoke said the researchers aimed their camera and the directed energy would hit the target, bounce back to register a mark on the film of the camera in development.

At that time, I questioned microwaves as the possible cause for a disturbing atmospheric aberation. I asked the person

if any consideration was given to an individual's entering the targeted area during the shooting of the picture. I wanted to know if the microwave would any way affect the person walking in the path of the research project. I was advised to contact a Dr. Showers. I never did ask the question. I did however, go to the University of Pennsylvania Moore School to speak with a now-retired professor. The electrical engineer and I were told that radio frequencies would in no way affect a persons well-being.

I also wrote and spoke with Dr. Herman P. Schwan, professor emeritus and scientist, who at the request of the Navy, set a standard for the upper end of the frequency spectrum. The ten milliwatt per square centimeter was changed in 1982. The present voluntary compliance measure is one milliwat per square centimeter. Such information is of no interest to the general public. It is most important to anyone interested in the NIEMR interest.

The military is concerned with this matter and such information must be included in a student instruction manual.

My point is to consider the safety of all within the radius of concern with any research in electromagnetics. Thank you.

3

COL. HEUPEL: Thank you. After Jim Cunnings will be Jean Silver-Isenstadt.

MR. CUMMINGS: It's Cummings, by the way.

COL. HEUPEL: Sorry.

T18

MR. CUMMINGS: My comments are addressed -- to save time, as you asked earlier, I would like to say that I agree with Mr. Cohen, Ms. Burdon, Mr. Isenstadt, Mr. Mailen, Mr. Smith, Mr. Goldstein, Mr. Bradley, Mr. Shneyer, Ms. Miner, Mr. Hamel, Ms. Blunt, Ms. McKinney, Mr. Kohler, that wonderful gentleman from the Goverment Accountability Project whose name I missed, and the last speaker as well.

My comments are addressed first to the human social environment, as this is the primary environment in an urban area.

Response to Comments in : T18, (See also M11)

From: Jim Cummings

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #1.
2.	Comment noted. See generalized response to consolidated comment #4.
3.	Comment noted. The Occupational Safety and Health Administration's (OSHA) "Lab Standard"-29 CFR 1910.1450 did not require a laboratory hygiene plan until January 31, 1991. Mr. Cummings left the University of Pennsylvania in 1991. As a student, Mr. Cummings may not have received formal training in the UCHP before he left the University, but the training is open to anyone who wishes to attend and is offered at least monthly. Department specific training is also offered if a department so desires. Student exposure to formaldehyde in anatomy and neurobiology classes is monitored. The most recent monitoring occurred in April 1993. No exposure concentrations reached either the OSHA permissible exposure limit of 0.75 parts per million (ppm) over a 7 to 8 hour period or the OSHA short term exposure limit of 2 ppm.
4.	Comment noted. See response comment #3 above. Also see generalized response to consolidated comment #6.
5.	Comment noted. See generalized response to consolidated comment #7.
6.	Comment noted. See response to comment #3 above. Also see generalized response to consolidated comment #4.
7.	Comment noted. The Air Force must decide whether or not to grant federal funds for construction of the IAST as proposed by Penn. Prior to making this decision, the Air Force will consider the environmental impacts identified in the DEIS that are associated with Penn's proposal. In addition to Penn's siting proposal, the DEIS addresses the environmental impacts of three reasonable siting alternatives and the No Action Alternative.
8.	The Final EIS is filed with the U.S. Environmental Protection Agency and is distributed to the interested public and government agencies.

For my five years as a science graduate student at the U of Penn -- I guess I should introduce myself. I have a Master's in neuroscience from the University and I am organizer with Saying Freeze Act for Peace and Justice.

For my five years experience as a science graduate student at Penn, I know the major effect of the IAST would be to increase funding to research of interest to the military. This drains scientific talent away from projects that are more scientifically interesting or socially useful.

In a country that is demilitarizing and is in danger of environmental collapse in the next generation, is spending 60 percent of federal R&D money in military research an appropriate priorty?

As a Ph.D. student in neuroscience here and earlier as a lab technician, I saw many attempts at securing grant funding. I saw researchers torturously mangle their projects in the forms that would satisfy

funders. With competition for funding so intense, projects would be priortized because they were fundable. The result is that science is done where funding exists, rather than the academic ideal of funding following the most interesting or useful science. In my own field, we studied how the mammalian visual system could accomplish perceptual feats in half a second that our fastest computers cannot duplicate in minutes. It was interesting to see how those researchers who did computational work, one of the -- actually, one of the critical technologies that we're talking about here, often use their latest theories on images of plains obscured by clouds or for the identification of buildings and terrain.

The plain and simple reason why the military wants to fund artificial intelligence research is to make robot warriors, to replace fallible human beings capable moral reasonings and able to say "no" with faster, more reliable amoral

machines of murder and destruction.

Similar scenarios can be constructed for the other crtitical technologies. Are we, as a nation, better off from research of fast burnt fuels that will allow the more efficient incernation of human beings with fewer explosives? My next point is, has our community in West Philadelphia been adequately informed about these issues? Have the voters and tax payers in Philadelphia, who are facing cuts in City services due to decreased federal funding, been informed that 35 million of their tax dollars are going to build a weapons research laboratory? Have the homeless people who will walk, sleep, or sit in front of this building been asked their opinion?

I saw the announcements. They were tucked away in the metro section, next to the weather. When the government really wants people to know something like the lies the Reagan administration perpetrated about the death in El Salvador, they make a

press release and we hear about it on TV. Obscure announcements are just another way that the form of democracy is kept, while those in power, keep the power.

The attendance at this public hearing is a result of community organizing and not of a formal notification procedure. And I would like to say it's actually good to finally see Colonel Baumgartel after collecting dozens of letters to him that we sent off earlier.

A further question applies to the handling of toxic and hazardous waste. This week I, for the first time, heard of the existence of the University Chemical Hygiene Plan, UCHP. I never received any formalized training or written procedures on handling of toxic chemicals or biological waste from 1986 to 1991, when I did research in the University labs. The UCHP specifically mandates that all laboratory workers be apprised of the location and availability of the plan, that is of the UCHP, and permissible exposure

limits for OSHA regulated substances like formaldehyde, a tissue preservative that every student taking anatomy or neurobiology inhales on a weekly basis. My experiences along these lines were the norm.

3

Before I see a new laboratory that will increase toxic chemical uses by 10 to 15 percent, as stated in the DEIS, I want to see proof that Penn is complying with safety regulations and conveying their importance to the students. When the DEIS proclaims that all increased production of toxics will be handled in a fashion that Penn has already established, this frightens me.

The purpose of this hearing is to fulfill part of the National Environmental Policy Act, NEPA's, purpose. To that end, I would like to read from a relevant regulation.

"NEPA's purpose is not to generate paperwork, even excellent paperwork, but to foster excellent action. The NEPA process

is intended to help public officials make decisions that are based on an understanding of environmental consequences and to take actions to protect, restore, and enhance the environment."

In summary, I would like the following questions to be answered in the final EIS, particularly in the context of the above regulation. One, the critical technolgies were selected on the basis of four criteria, according to a New York Times article; an ability to enhance the performance of given types of weapons systems; a potential for creating new capabilities or systems; a potential for improving the reliability, availability, and maintainability of weapon systems and affordability.

4

Will promoting research on these technologies for tax restore and enhance the environment? Will tearing down a 19th century historical landmark protect, restore, and enhance the environment? Does the University's current handling of toxic

5

6

and hazardous materials, particularly by students, comply with Pennsylvania DER regulations and OSHA regulations? 6

A couple others. These are just added at the last minute.

Who is actually making the decisions -- I'm summing up -- making the decisions on the final Environmental Impact Statement? And how can the public get a transcript of these hearings? 7 8

As a voter, a taxpayer, a scientist, and a human being, I sincerely hope that these answers will prevent further weapons research on a university campus. Finally, I'd just like to make the comment that it's odd that -- why should testimony that is about the fate of the community, which is one half women and significantly composed of people of color, be heard of by a panel of white men? Thank you.

MS. SILVER-ISENSTADT: My name is Jean Silver-Isenstadt, and I live in West Philadelphia. T19

Your opening summary indicated that

Response to Comments in : T19

From: Jean Silver-Isenstadt

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #7.
2.	Comment noted. Community setting referred to in this comment was used in the DEIS for the categories of population and employment. The term "human consequences" referred to by Ms. Silver-Isenstadt and in the text of the EIS is found in other sections of the EIS dealing with such topics as aesthetics and cultural resources, most notably those sections relating to the demolition of Smith Hall and the construction of IAST in its place. The comments regarding the funding and geographic placement of the various departments within the university are beyond the scope of the environmental analysis of the EIS.

there would be no significant adverse impact on the community setting if Smith Hall were to be demolished. As a graduate student currently studing the history of science in Smith Hall, I find this absurd. Already the effect of displacing the fine arts students has had an adverse affect on the community. They are now far from the libraries. They're peripheral to campus. Many art students, humanities students, and students of the social sciences are demoralized by the University's willingness to underfund and displace us in favor of chemical and militarily useful research.

1

With this plan, like the fine arts students, the history of science students would be denied the convenient use of what is arguably the most beautiful part of the campus, historic Smith Walk. We currently eat lunch there. We bring our books outside and read on the lawns there. Sometimes we lead our undergraduate discussions sections there. We relax there. The beauty of Penn's urban campus

is an exceptional strength of the school. To build an enormous research institute funded by the military, with no undergraduate classroom space in the heart of the campus, is to produce an enormously negative impact on the community setting, where humanities students now mingle with science and engineering students in a sheltered area, free from motor vehicle traffic. The IAST would introduce an imposing, uninviting industrial complex requiring increased traffic and chemical deliveries. So the definition of insignificance is not clear to me. The human, as well as the structural consequences, need serious attention which clearly has not yet been given. The experience of Penn students should be central to decisions draining such an enormous amount of money from our educational budget. And I would like to know exactly what efforts have been made to understand and promote the interest of the many arts and science students adversely

2

effected, both physically and financially by the proposed institute.

COL. HEUPEL: Thank you. Our next speaker will be Karen Azarian followed by Kathryn McCabe.

T20

MS. AZARIAN: Hi. My name is Karen Azarian. I'm a full-time staff in the University. I'm also a student at the College of General Studies. I started my academic career majoring in neurobiology. I'm currently studying English and the fine arts. But I want to say that given my modest experience in the sciences, I even interned in neurobiology for a summer, no person of credible scientific background would accept this document based on either -- on standards of either science or scientific ethics. I view this document as an experiment because what it really does is propose to change the environment of human beings and the animals and the natural elements that live in West Philadelphia. And there's no hard scientific, either references or, you know,

Response to Comments in : T20

From: Karen Azarian

Comment No.	Response
1.	Comment noted. The text has been amended, where appropriate, to describe the nature and extent of impacts identified as significant.

any kind of credible hard statements that support anything that's said in this document. The word substantial, as well as the word insubstantial, is used many, many times. And I would respectfully request that any subsequent draft would definitively and very specifically state what that means in each occasion that it's used. That's pretty much all I have to say.

1

COL. HEUPEL: Okay. Thank you.

After Kathryn McCabe will be Christianne Kapps.

T21

MS. McCABE: My name is Kathryn McCabe and I'm speaking as an undergraduate science major at the University of Pennsylvania.

An accurate compilation of all University researchers who receive military grants of any nature is necessary for a real account of the influence military research already has over the University.

1

I request a list of the professors who are to do research at that in-need

Response to Comments in : T21

From: Kathryn McCabe

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #6 for a list of the research activities to be located within the IAST. The inquiry concerning a complete list of "military research and funding" at the University of Pennsylvania is beyond the scope of the environmental analysis of the EIS for the reasons detailed in the generalized response to consolidated comment #1.
2.	Comment noted. See generalized response to consolidated comment #1.

proposed IAST. This list should include professors who are currently working for the University, and those who are currently being recruited, as well as a complete description of all the research projects. Specifically, I want to know their funding sources and the percentage of that research that is military-oriented. 1

The term military-oriented research, not only includes the funding from the Department of Defense, but also other defense projects sponsored by the Department of Energy, NASA, the National Science Foundation, and corporations known to hold defense contracts. The calculations that are used to derive the percentages should be included in the list.

A complete listing and description of military research done at the University should be compiled to evaluate possible defense monopolies on departmental research. Concentration of defense research will adversely affect undergraduate and graduate course work. 1

Many graduate students will be forced to do military research by the concentration of professors who choose to do so.. When finished with their graduate studies, the graduate students will be most qualified to do the type of research they have done in the past; namely, military. The effect of a possible cycle of military research on basic science, civilian products, and changes in students' attitudes and learning needs, needs to be evaluated. 13

I request that Penn's long term and short term research goals be determined and evaluated. Specifically it should include Penn's estimates not only of the percentage of military funding for research, but also what departments will be the focus of this funding. It should also state the direction of graduate and undergraduate research training.

I do not believe the increase of military funding will benefit Penn's competitiveness in research. The nature of any research funded by the Department of

Defense is by definition military because it must fulfill the terms of the criticals technologies list. This list contains only areas of research and development that fulfill military objectives and goals.

2 The standard justification of doing weapons research in an academic environment is that this research will lead to spin-offs or so-called civilian secondary applications. These spin-offs are not widespread, and top business leaders have suggested that it would be more efficient to fund civilian technological research and then through secondary application develop weapons.

Penn can only improve its image through beneficial research. It has argued that Penn will lose faculty unless we improve their working conditions and benefits. The IAST will not improve these conditions in short or long-term, or in the long run.

Independent foundations are not likely to donate money to this project due

to its military origins. Some foundations may not donate funds to other projects due to Penn's lack of commitment to solving non-military projects.

The DEIS states that there is a possibility of continuing increasing support of the Department of Defense. The University would then be obliged to take more grants from the Department of Defense and that would mean a further commitment from some of our most valuable resources, our scientists.

I do not think the negative impact of military research on Penn's campus has been fully investigated. Thank you.

COL. HEUPEL: Thank you. Christianne Kapps will be our next speaker and then we'll take a five-minute break.

T22 1 MS. KAPPS: First I would like to submit a petition with 141 signatures, basically stating the desires of people in the neighborhood to keep Smith Hall as it is and not destroy a historic site as it is.

Response to Comments in : T22

From: Christianne Kapps

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #5.
2.	See Section 4.2.1.1. for an evaluation of employment opportunities resulting from the IAST development.
3.	Comment noted. See generalized response to consolidated comment #4.
4.	Comment noted. No response required.
5.	Comment noted. See generalized response to consolidated comment #6 for a list of the research activities to be located within the IAST. The inquiry concerning a complete list of "military research and funding" at the University of Pennsylvania is beyond the scope of the environmental analysis of the EIS for the reasons detailed in the generalized response to consolidated comment #1.
6.	Comment noted. "Other federal monies" are a collection of small sources from other federal agencies such as the Small Business Administration, NASA, the Department of Transportation, the Department of Agriculture, the National Endowment for the Humanities, and the National Endowment for the Arts.

Secondly, I would like to say, my name is Christianne Kapps. I have lived in the zip code of 19104 for just about my entire life. I was born at the Hospital of the University of Pennsylvania. I grew up hanging around campus when my father was honorably discharged from the Army. He brought me, when he came back to Philadelphia, to play in the shade of the peace sign that is on campus here, not one block from Smith Hall now. We would spend a lot of time eating in the restaurants on campus. My father was an undergraduate student here. I have even recently planned to be married on campus. And this is my home, obviously.

I would like to say then, as such, I don't want Smith Hall taken down. I have never even been in Smith Hall and I would like to say it's a beautiful building. It is definitely a historic site. It's nice to have there and it's certainly more pleasing to look at than any science facility that would be put in its place. I

don't care who designs it, Venturi or otherwise.

I would also like to say that if the University is at all concerned with the community that lives in the neighborhood, which it hasn't seemed to be in the past, I think this is a perfect opportunity if they're looking for grants to fund the vital research in the area, maybe they should try AIDS research and treatment because this zip code and the surrounding neighborhoods, as I understand it, have the highest incurrence of AIDS, and HIV positive victims in the tri-state area. That shouldn't be ignored.

There also are huge numbers of homeless people. My church is on campus here at 39th and Locust Walk. And every Thursday night they have a dinner to feed the homeless people of the area. Every Thursday night, and that's only one of five nights that they have dinners served at area churches, there are over 200 people that come to get food because they have no

other place to get food from, except for handouts from people on the street. They have to have two sittings a night for people, just to maintain. And it's a lot of children and women and people who live on campus and not in a dormitory.

I would like to say that they should also be considered in this, you know, if the University is looking to help the community.

I also am wondering, maybe we could have in writing what sort of impact the IAST is proposing for employment for the areas. You know, this area has been hit very hard by the -- well, depression that the country has been going through. And, you know, aside from a few custodial positions that may be opening for people of color of anyone who lives in the neighborhood, as opposed to the students, I would like to know if there are any more employment opportunities that will be available.

I would also like to say that in

agreement with Jim Cummings to say that the IAST will comply with the University policies regarding waste management doesn't really answer the question for me because I note also that the University doesn't have a very good record with this kind of thing. And that I would hope in future drafts, and maybe in the final draft, of the Environmental Impact Statement that that be addressd much more clearly, as well as the other research and hazardous chemicals that are going to be used in the facility should it be approved.

And I just want to say, again, that I hope it is not approved. My push would be for the non-action policy and for -- if the University is looking for alternatives, that they should consider AIDS research and help for the homeless.

I also want to ask about that glossy little newsletter that you put out. There's, aside from -- if you add up all the percentage points of where the funding for the University comes from, that are

missing, I want to know about how much of the DOE percentage is directly related to either nuclear research or Defense Department research because I know the DOE and DOD work very closely together.

I would also like to know what other federal monies means, that two and a half percent that just says "other federal". What federal agency gives you that money? Thank you.

COL. HEUPEL: At this time we're going to take a five-minute break and Mr. Robert Rutman will be up at the end of that break.

- - -

(Whereupon, a brief recess was taken.)

- - -

COL. HEUPEL: If Nina Lerman is here, if she'd come down, she'll up next after Mr. Rutman. Nina Lerman.

At this time, Mr. Robert Rutman.

MR. RUTMAN: My name is Robert Rutman. I'm professor emeritus of

Response to Comments in : T23

From: Robert Rutman

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #6.
2.	Comment noted. See generalized response to consolidated comment #1.
3.	Comment noted. See generalized response to consolidated comment #7.
4.	Comment noted. A reply to the comment that the development of technology transfer center is an inappropriate corporate influence on academic activities is beyond the scope of the environmental analysis of the EIS.
5.	Comment noted. See generalized response to consolidated comment #4.

1

biochemistry. I have been around the University of Pennsylvania for approximately four decades. During this time I have seen the University arise from a deep depression in the '50s, to become a leading, a flagship university, research university in the United States. And it's to defense of this position that I am most concerned with. I believe the proposal in hand, although intended to aid scientific progress at the University, will do exactly the reverse and will have a negative impact on the qualities that make this a flagship university.

A university is not quite an assemblage of buildings or an assemblage of students and pupils or even a consortium of projects. It is, in fact, a complex and sensitive organism. An organism devoted to the disclosure and discovery of knowledge. As such, it produces and requires a special atmosphere and environment necessary to its task.

The projected technological Institute

negatively impacts this special environment in several different ways so as to disturb, alter, and/or damage the phsyical, the organizational, the intellectual, and the moral climate and environment of the University. In the first instance, it detracts from the historic task of leadership in basic and fundamental research which stands at the very core of Penn's status as a flagship university in order to make way in this case for the installation of a major venture in technology. The unified intellectual environment so vital to the inspirational teaching of students and the generation of scholarship and to fashioning the perception of young minds is thus distorted and diluted by this action and confused in the minds of participants as to what the function of universities are. Unfortunately, the intellectual qualities of a great university are built over decades but can be destroyed overnight.

1 Secondly, the plans for IAST are an

attack on the moral environment of the University. They represent the backward step from the highly advanced moral

1 position hammered out by the University community in the past post-war years which resulted in the rejection of chemical and biological weapon war and military research from the campus and its being barred from the University City science center.

Now, in 1993, with the world disarming and turning away from war, when there is every reason to strengthen Penn's dedication to world harmony and peace, the IAST represents a serious reversal and an

2 about-face and the devastating collaboration with the military and its need for weapons design and research. It is totally naive to say that DOD, after financing this enterprise, will expect no benefits to its task and seek no influence on the directions of research at the IAST.

I will leave to others the full examination of the aesthetic effects on the campus, the physical effects in that

dimension, only to mention that it's very difficult to understand why the preservation of the Smith Walk quadrangle, as it is, is of no grave concern when you look at the entire -- the great expense the University has gone to, to make a beautiful harmonious quadrangle bounded by the executive center, McNeil, Lauder and 37th Street. That's a contradiction in operations. 3

IAST plans also represent an invasion of a traditional standard of the University. And that is, the University has distinct and separate barriers to keep its academic activities free of corporate influence. The introduction into IAST of a technology transfer center means that the activities of corporate interests are now directly part of the financial and structural organization of the University which breaks a critical barrier surrounding academic and fundamental research. 4

Finally, I must draw attention to the fact that no matter what precautions are 5

taken, the introduction of these chemical facilities and the expansion of others, at the point of intersection of one of the most busy traffic areas of the University, necessarily constitutes a hazard. There is no way, whether by pledging before and/or erecting all kinds of safeguards that the risk to students passing through these corridors continuously day and night for exposure to either radiation or noxious chemicals or biological agents is not increased. Hopefully it will never lead to any catastrophe or damage. But, again, why place it there. If the these things are dangerous, put them on the periphery of the University. 5

The history role, status, and accomplishments and traditions of a great university are part of our national treasure. Those attributes are not something to be ignored, bypassed, or treated lightly in planning. In the final analysis, the Department of Defense and the Air Force is entrusted with a heavy

responsibility by the entire nation which cannot be discharged by superficially reviewing the obvious physical constraints, but must include evaluation of the impact of decisions on the tasks of the University on its total environment, physical, aesthetic, intellectual, and moral.

COL. HEUPEL: After Nina Lerman will be Susan Glassman.

UNIDENTIFIED WOMAN: She went home she got tired because it's so late.

COL. HEUPEL: Okay. Then Harlan Girard.

T24

MS. LERMAN: My name is Nina Lerman. I've been a resident of the Delaware Valley since 1979 and of Philadephia since 1987. I'm presently completing a Ph.D. dissertation in history of technology, but I came to that field from work in computer science, having worked for a major computer vendor as a systems engineer providing technical support to users of computers designed for use in science and engineering. Thus, I am both a

Response to Comments in : T24

From: Nina Lerman

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #5.
2.	Comment noted. See generalized response to consolidated comment #4.
3.	Comment noted. See generalized response to consolidated comment #6.
4.	Comment noted. See generalized response to consolidated comment #1.

technologist and a historian, but I speak tonight as a citizen and a member of the larger community of which this University is only a part.

My concerns about the environmental impact of the IAST are twofold and have not been lightened by this hearing. The Air Force finds significant alteration of the historical character of the district of the Smith Hall site and none whatsoever at the LRSM site. Yet, the Smith site was the chosen recommendation. 1

This choice of siting raises other questions for me. The EIS is very tame. I have experience reading scientific and technical documentation. This report is vague. The revised EIS must include complete explanation of the nature and extent of hazardous and toxic materials, usage, and waste production. I'm concerned about the siting of such a facility in close proximity to several hospitals, including a children's hospital, as well as in the midst of a densely populated urban 2

area.

Further, the rhetoric suggests that the research conducted in this expensive facility will be transferable to civilian use. I find this stance at odds with the lack of description of the scientific activity proposed here. 3

In my corporate experience, I associate the kind of secrecy and opaqueness that has been characteristic of the entire process within the University with classified defense research, which is not basic, which is not convertable to civilian use. And I cannot support the use of American tax dollars to fund such activities, least of all in the midst of a dense urban area. Thank you. 4

COL. HEUPEL: Thank you.

Harlan Girard, to be followed by Eugene Bolt.

T25 MR. GIRARD: Well, I have a number of things to say about the Institute for Advanced Science and Technology. Some of you have received a letter in which I state

Response to Comments in : T25

From: Harlan Girard

Comment No.	Response
1.	Comment noted. See generalized responses to consolidated comments #1 & #6.
2.	Comment noted. The University of Pennsylvania is committed to safeguarding the rights and welfare of all human beings who participate as subjects in research conducted at the institution. Internal and cooperative endeavors otherwise supported or subject to regulation by any federal agency, state or local authority, private sponsor and/or the investigator's School are covered by the same policies and procedures set forth in the University's Multiple Project Assurance (M1025) negotiated and approved by the Public Health Service of the Department of Health and Human Services through the Office for Protection from Research Risks. This document of "Assurance" outlines specifically what the University will implement in its program to comply with the regulations guiding the conduct of all University biomedical and behavioral research involving humans as subjects, in 45 CFR Part 46. All research proposals at the University calling for the use of human subjects must be reviewed by the University's Committee on Human Subjects. Human subjects reviews and approvals must be obtained either before the proposal is submitted or before a deadline is set by the sponsoring agency. No proposal will be processed by the University's Office of Research Administration (ORA) unless the human subjects protocol has been submitted for review. Human subjects "Guidelines" are available from ORA by contacting the Assistant Director for Regulatory Affairs at 215-898-2614.
3.	Comment noted. See generalized response to consolidated comment #6.
4.	Comment noted. See generalized response to consolidated comment #1.

1

that involuntary human subject research has been going on at the University. I will expand on that.

It has been going on at the the University in the current round since at least 1983. And despite the disclaimers of Dr. Cooperman over here, the University, anybody who believes that the University professors don't do classified research also believes in the tooth fairy and Santa Claus. 1

No research would involve the impact of directed energy or radiation upon thought processes. Now that's very interesting. Certainly an acknowledgement that such experimental work does go on. I could even read it to say that it's an acknowledgement that such experimental work does go on at the University of Pennsylvania.

Now, on the proceeding page, 2-2, we have the statement that the Center for Excellence in Bioengineering would enable members of the Bioengineering Department to

pursue research and training in visual and sensory systems, human injury. Human injury and molecular and cellular bioengineering. This linkage would enable research in these areas to look at the affects of high mechanical stress environments.

I think what you mean to say is highly psychological stress environments, because this involuntary human subject research and cognition, mind control, whatever you want to call it, has been funded, it's coming in under the decade of the brain funding from Congress, which was passed in 1989-90. And through the office enable research which is interested in decision-making under stress.

Now, I think, you know, if the brass here tonight from the Air Force would like to be tortured involuntarily, that's their prerogative. I don't think that type of work should be going on in the University campus.

When I entered the graduate school of

fine arts in February of 1984, I found the school to be wired by someone, presumably the Central Intelligence Agency, for sound and video, perhaps because in my class was the first student from Mainland China and the University considered it an appropriate way to welcome her. Su Ping was her name. We also had a retired officer of the Central Intelligence Agency studying architecture at the time. When he graduated in '87, the Central Intelligence Agency attempted to put another man into the school. When he was refused admission, George Herbert Walker Bush himself rang the architecture admissions committee chairman as to why this person couldn't be admitted to Penn. I think it's very touching to me that George Herbert Walker Bush's vice-president had a half an hour to ring the architecture admissions committee, why his stooge couldn't come to school here.

Now, I sent in a written statement to the Air Force and to Mr. Cooperman last August and I never received any

acknowledgement, so I assume nobody is interested in Nazi scientists on the faculty here. But I'm just going to read what I said for those of you who haven't seen it. What I said was, project paper clip was responsible for the transfer of the United States of two broad groups of Nazi scientists; those that had been responsible for German progress in rocket factory, and those that had been responsible for the atrocities committed on human beings in labor camps and in death camps. As we now know, slave labor was employed in the rocket factory so there may have been little to distinguish the two groups of scientists in 1947. The enduring legacy of Nazi science in America has been twofold. First the American scientist has been inculpated with the idea that science must bend to serve the military ambitions of the government in power. Nowhere is this better exemplified than in this gift that the Institute of Advanced Science and Technology. The expense of which to the

University will permanently cripple scientific research, except that which has been identified of value to the Department of Defense.

The second legacy in Nazi science has been to inculpate American scientists with the notion it is quite all right to torture, maim, and murder involuntary human subjects in bioengineering experiments. When the Air Force and the Central Intellegence Agency became interested in LSD, it was obvious they would turn to America's universities for cheap student minds for testing purposes. What the Air Force and the CIA were interested in, was not opening the experience of, not expanding the consciousness of undergraduates, but the threshold at which human beings would become permanently psychotic from ingesting LSD and the threshold at which students would die. This is the type of information which the Air Force and the CIA gained from all of the free LSD which was distributed on the

University of Pennsylvania campus.

Currently microwave weapons developed by the Air Force for interrogation and murder are being experimentally dealt with here. The means have changed, but the questions remain the same. How fast can we permanently subjugate human beings with these weapons and what threshold will they become inpaired by these weapons, either physically or psychologically? How fast can we kill them? And there is no one who has any problems accepting grants from the Air Force which will require faculty to torture, maim, and murder human beings in order to obtain the required results.

3

And incidentally I would look to point out, because it's a confusing issue here, that the grants for research and involuntary human subjects at the University here, at least some of them, are coming from the National Institute of Mental Health.

COL. HEUPEL: Mr. Girard, I need to ask you to finish up, please.

MR. GIRARD: Yes.

I said that coming from the National Institute of Mental Health and involved the use of phenomenon called synthetic telepathy, incognitive science experiments. And I point out that, you know, a lot of this research has gone on at Brooks Air Force. I'm sure Lieutenant Colonel Baumgartel can find out all about it. There's been quite a bit as unclassified, which is astonishing enough and one can only imagine what the classified work is.

At any rate, I'm very concerned about the ways in which bioengineering have been abused on this campus and the fact that this building is being built for the department of bioengineering and we are promised that additional studies will take place in human cognition in this building. I am inalterably opposed to the

4

construction of the Institute of Advanced Science and Technology. Thank you very much.

COL. HEUPEL: Thank you. After Mr.

Eugene Bolt will be David Gibson.

T26

MR. BOLT: My name is Eugene Bolt. I'm a graduate of the college of the University of Pennsylvania and currently a graduate student. I apologize in advance for the bit of repetition, but it seems necessary that after the scoping, after the many hearings that have been held, that certain things still did not appear in the proposed draft that we've seen. And I think that we're just going to have to keep saying them until maybe they do get in.

I don't think that this report accurately reflects the historic issues. There are severe inaccuracies of fact. I hope that the individual national register nomination will be included in the next draft or final draft as I hope that would be a much more accurate depiction of Smith Hall.

I also feel that there's an extreme bias with the report; an antipreservation bias, and an anti Smith Hall location bias. My analogy that I kept coming back to while

1

Response to Comments in : T26

From: Eugene Bolt

Comment No.	Response
1.	Comment noted. Section 3.4.7.1 has been amended, and the nomination of Smith Hall to the National Register of Historic Places is included in Appendix H.
2.	Comment noted. See generalized responses to consolidated comments #5 & #7.
3.	Comment noted. The Proposed Action reflects the full program for a minimum of 20 years. The design is for flexible laboratory space to accommodate changing needs.
4.	Comment noted. See generalized response to consolidated comment #3.
5.	Comment noted. See generalized response to consolidated comment #5.
6.	Comment noted. Decision making will be the responsibility of the Air Force and will occur in accordance with the process described in pages 1-6 and 1-7 of the FEIS.

reading this report was akin to commissioning a report on the relationship between cigarettes and cancer and asking RJR Reynolds and Phillip Morris to write the report.

I will agree with Mr. Smith, who spoke earlier this evening, on the alternate sites not being completely exhausted. And if they had been looked at, if only half as much as the Smith Hall site had been considered, we might have a more accurate report on the alternate sites. As it stands now, they definitely need more research before the final draft is compiled.

2

As the current draft stands, there is no adequate room for growth. Even the addition of one trash dumpster would significantly alter what's there making it even more untenable. I cannot underemphasize also that the issue of the traffic study should be relooked at, as they seem completely inaccurate. They also seem by someone who does not drive or walk

3

4

on 34th Street, with any regularity. I don't think that Mr. Cohen's statement earlier in the evening questioning the effect that this would have on ambulances is overemphasizing it as who would want to be stuck behind a trash dumpster being emptied if you were in the ambulance. A cursory examination of the traffic, again, is necessary.

The slides that were shown at the beginning of the proposed drawings for the new building were, in fact, accurate. I will say it. They're aesthetically hideous and historically null and void. To paraphrase a well-known architectural English critic, the proposed building is a monstrous carbuncle on the face of a deer and beloved friend. I'm sorry, but that isn't Mr. Venturi's best work. Perhaps we should just stick with the Furness Building.

Fans of Mr. Venturi's proposed building should more likely consider the alternate sites where he will have more

room, significantly more room, to build a better building. The LRSM site particularly stands out, as it is in a rather devoid area of any architectural detail and his building could single-handedly save an entire section of campus from its plight now.

5 Finally for a university so conscious of its image as an historic American university and a premier urban campus, the demolision of Smith Hall and the subsequent obliteration of an entire historic district will significantly diminish the University's campus. The proposed building, at the proposed site, is not in the best long-term interest of this University.

6 Finally during the break, when one member of the panel was asked by a member of the audience as to exactly who will be making the decision, we didn't get a clear answer on that. I think that is important because as it stands now, this draft, if it is not significantly altered, will not

present an accurate reflection of these issues, particularly the historic preservation issue. And I feel that those making the decision, since they aren't here with us this evening, should be informed of what the situation accurately is. Thank you.

COL. HEUPEL: Thank you. After David Gibson will be Dr. Julie Johnson.

T27 MR. GIBSON: Officers, doctors, fellow Philadelphians, my name is David Gibson. I'm organizer for Saying Freeze Act for Peace and Justice, an advocacy and action organization calling for massive reorientation of our national priorities from military to human needs. We oppose economic conversion, a foreign policy based on conflict resolution, and the concept of

1 global security. And we are opposed to funding of military research on this campus or any campus.

We are represented with over 6,000 persons in our mailing list in the Delaware Valley with a growing and active base. I

Response to Comments in : T27 (See also C2)

From: David Gibson (SANE Freeze)

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #1.
2.	Comment noted. See generalized responses to consolidated comments #5, and #7.

1

19

also want to state for the record that I, in regards, sent in -- I'm sorry, I sent in my written testimony but we also oppose the destruction of Smith Hall for both, aesthetic, historical, and community reasons. **2**

In my testimony tonight, I would like to show how military funding will contribute to research that perpetuates a new and dangerous high tech arms race; that this institute will have valuable research on civilian technologies not questioned, but based on the criteria for eligibility for defense department funding for the construction of this project; namely, HR4739, under Section 243, Subsection C, under limitations, the grant -- and I quote -- "The grant shall be available for initial construction of a cost shared facility, the federal share of which shall not exceed 50 percent of the total cost designed to support mutually supportive technology research currently underway at the institution in response to the critical

technologies research identified by the Department of Defense in its critical technologies plan."

It is obvious that research on military applications will be within the IAST scope and regardless of whether or not papers of this research can be published or not, it may not have occurred to Dr. Cooperman that military research does not necessarily have to be secret research.

I wish to examine these technologies in detail, a few of which I group together, based on my review of the DOD report to the armed service committee of the Congress, 1990. I understand that as of this writing there have been additions to the list.

First, for them to be -- these technologies to be even on the critical technologies list, there's certain criteria or selection that they have to meet: Enchancing performance of existing weapon systems; providing new military capabilities; contributing to availability, dependability, reliability; contributing to

weapon systems affordability; pervasiveness in major weapon systems; and strengthening the industrial base. So those are just basic criteria to be on the list in the first place.

The first one, microelectronics and their fabrication, meets each of the six major criteria used for selecting the criterial technologies. This technology experiences major performance improvements resulting in significantly improved military system and subsystem performance and capabilities. Furthermore, microminiaturization technologies proven to dramatically increase reliability, dependability and availability of components, by reducing their size and power requirements, which also provide massive economies of scale for cost effective production of large weapon systems, current or future. For example, increasing miniaturaization techniques allow major modifications of current weapons platforms, such as the creation of

aerodynamically unstable aircraft controlled by onboard microprocessors as on the F16. It's a development of radically new weapons concepts, for example, brilliant weapons or brilliant pebbles, which are planned for extensive use in star wars types weapons systems.

Second one is preparation of, and you'll have to excuse me for the pronunciation, the galium (ph) arsenide and other compound semiconductors to replace silicone. Silicone technology will continue to prevail during the very high speed integrated circuit era and for a long time thereafter and will continue to be the technology of choice for specialized applications such as high power solid state switches and hypervelocity beam weaponry. At the same time, these galium arsenides, arsenides I guess is how you pronounce it, will remain the most readily available and commonly used material for microwave and millimeter wave frequency devices and circuits. These circuits are critical

building blocks for DOD electronic warfare, radars, smart weapons and communications systems. They're also in solid state active aperture antennas for phased derays.

The next one, software productability, is a key element of virtually all major defense systems. Software development, maintenance cost and DOD are estimated to be as much as ten percent of the entire DOD budget, with rework, evolution, and maintanence counting for more than 80 percent of these costs. Because of the critical role that software plays in the system functionality, deficiencies in software affect overall system performance out of proportion to software development and maintenance cost. Automatic software generation also provides considerable leverage in the declining budget environment. Today's software development and support are labor intensive, costly activities. Secure and trusted software has lagged behind the development of other areas of software

technology but is increasing -- it is increasing in criticality and the size and complexity of the software in defense systems.

I will wrap-up as soon as I get to it here.

Parallel processing for computer technology, weapon system accuracy, and corresponding lethality improved importance in naval ground and air vehicles would be significantly enhanced through exploration of parallel computer architectures.

High performance parallel computing will enhance the DOD weapons systems in two ways. A utilization of powerful parallel machines in the design of weapon systems themselves. Also, the highly reliable space qualified imbedded parallel processors are being developed for elements of the stragegic defense systems, star wars again.

It goes on and on. I can go through this and probably bore people to tears with a lot of the technical stuff here. It will

be entered into the record.

The main point, the conclusion, I think the central question is, neither of these technologies are applicable to civilian applications. It is clear that some are and all have that potential. What is at issue is simply this. To what degree do military applications benefit the University and surrounding community and at what cost, how much will civilian based research and development suffer the competition for federal funding? How many more scientists and engineers will the military buy from Penn to the detriment of more pressing needs for specialists to help us design a sustainable society for our children?

The Saying Freeze Act for Peace and Justice urges a transfer of funds at the federal budget level directly from the Pentagon to Departments of Commerce and Department of Education to be awarded to universities such as Penn for research institutions, such as the one proposed

here. We further argue, urge rather, the people assembled here tonight to lobby their elected officials for such a transfer. I thank you for your time.

COL. HEUPEL: Thank you.

After Dr. Johnson will be Brian Shovers.

Dr. Johnson?

T28

DR. JOHNSON: My name is Julie Johnson. I'm a 14-year resident of University City. I am a graduate of the University of Pennsylvania with both my Bachelor's degree and my Ph.D. in science and technology policy. I run a business and technology think tank and I also teach at the University.

Barry Cooperman seeks to delude himself and us that military funded research in computer science, for example, will not be applied to the creation of new guided missle systems or to so-called smart bombs. I have, for instance, here a work unit summary from navy sponsored research obtained through the Freedom of Information

Response to Comments in : T28 (See also C78)

From: Julie Johnson (Penn Coalition for Science in the Public Interest

Comment No.	Response
1.	Comment Noted. See generalized response to consolidated comment #1.
2.	Comment noted. Consistent with Council on Environmental Quality National Environmental Policy Act Implementing Regulations (1506.5), Roy F. Weston, Inc. (WESTON), an environmental and engineering services firm, was selected by the Air Force to assist the Air Force in evaluating the Proposed Action and siting alternatives for the Institute of Advanced Science and Technology (IAST). WESTON reports to and is supervised by the Air Force Center for Environmental Excellence, Environmental Conservation and Planning Directorate, Conservation and Planning Division (AFCEE/ECP). AFCEE/ECP is responsible for reviewing, editing, and revising the EIS. The University of Pennsylvania provided funding for the EIS. A disclosure statement, prepared by the proponent, the Air Force Office of Science Research, was signed by WESTON on 1 May 1992. This disclosure statement clearly states that WESTON has no financial or other interest in the outcome of the IAST project. A copy of that disclosure statement can be found on page 6-1, at the end of Chapter 6 of the EIS.
3.	Comment noted. See generalized responses to consolidated comments #1 and #6.
4.	Comment noted. See generalized response to consolidated comment #2.
5.	Compliance with NEPA is required if a proposed action is classified. This action is not classified, and the EIS in hand is the EIS for this project.

Act in which the general use of the research in question is clearly labeled military.

In addition, I draw his attention to the following discussions of the unlikelihood of successful civilian spin-offs from so-called dual use technologies. Dismantling the Cold War Economy, published in 1990 by Basic Books and now available in paperback, by Ann Marcus, an economist at Rutgers University and Joel Yudcan, who an American Association for the Advancement of Science, Congressional Science and Engineering Fellow is one such good discussion. Also is Richard Florida and Martin Kenney's book, The Breakthrough Illusion, also Basic Books, 1990. Ann Marcus and Joel Yudcan have also authored an article, with the same title as their book. That was published in the April, 1992 issue of Technology Review.

1

Now, I would like to enter the following questions into the record,

please, with the hopes that they will receive full and complete answers.

Number one, who has paid Weston?

Who plans to pay Weston?

Who has Weston billed for the work that it has done?

2

How many consultants or contractors were used and would you please name them?

Do you have with you the conflict of interest disclosure forms filed by each consultant and contractor?

And will the Air Force formally comment now on the extent of military related research plan for the IAST and whether the Air Force would call it weapons related or not?

3

In addition, under the advice of my attorney, I would like to state that under 40, CFR, Section 1502.9A, that the Draft Environmental Impact Statement is inadequate as the testimony has clearly shown, inadequate to allow analysis and comment and must be revised as another Draft Environmental Impact Statement and

4

another public meeting must be held to make sure that our concerns, that all of the concerns that the community has made tonight have been addressed.

4

And then, finally one more legal query for the record. Again, in reference to 40, CFR, Section 1507.3, subsection 989.7, I would like to ask whether any EIS or environmental assessment has been prepared. Thank you very much.

COL. HEUPEL: Thank you. After Brian Shovers will be Joshua Brooks.

T29

MR. SHOVERS: My name is Brian Shovers. I work at Temple University as a manuscripts libarian in the Paley Library. My interest in the fate of Smith Hall comes out of my professional experience in historic preservation and my avocational interest in recycling and the conservation of materials.

A well documented link exists between preservation and restoration of existing buildings and energy conservation. For example, the energy necessary to fabricate

Response to Comments in : T29 (See also M15)

From: Brian Shovers

Comment No.	Response
1.	Comment noted. See generalized responses to consolidated comments #5 and #7.

and deliver a five-ton steel girder to a construction site is equivalent to 270 million BTUs or 2,000 gallons of gasoline. A building such as Smith Hall embodies enormous amounts of energy in the form of fossil fuels necessary to fabricate the building materials, transport them to the building site, and to construct a building of its size.

A set of figures presented by the University of Illinois Center for Advanced Computation illustrates this point vividly. The embodied energy found in brick is 400,000 BTUs per cubic foot and 25,000 BTUs per cubic foot for steel and iron. The same study calculated the embodied energy in a typical edcuational structure at 1,390 million BTUs per square foot.

The energy expenditure does not stop here. Demolision of a medium size masonry building is calculated at 12,000 BTUs per square foot. Compounding the issue of energy loss is that of the asbestos and lead removal from the demolision site.

During the 1980's literally tens of thousands of historic brick buildings were demolished in American cities to make way for newly constructed towers of glass and steel. Today much of this new office space remains vacant, creating the savings and loans crisis of historic proportion, while tons of valuable building materials were carried off and burried in municipal landfills.

If the Air Force selects the proposed alternative, what will become of Smith Hall and the energy embodied in that historic and still useful structure?

Have the contractors devised plans for salvaging of those materials? I would wager that they will consider salvage inconvenient and uneconomic.

Is it considered prudent at a time of rapidly deminishing natural resources to demolish a useful building in order to expand vast quanities of fossil fuels and new building materials?

The adoption of the proposed

1

alternative is inappropriate considering the availability of the LRSM Parking Lot Alternative, which lies outside the national register historic district. That alternative would not require the demolition of an existing building, nor would it damage the intact 19th century landscape currently found along Smith Walk. 1

I ask you to reconsider your options. I appreciate this opportunity to comment on this project.

I would also encourage the fellows here from the Air Force to take note that we have not heard anybody speak in favor of this project tonight. Penn tells us that this is a very important research project; however, they haven't sent anybody here to testify in favor of the project. Thank you.

COL. HEUPEL: The next speaker will be Joshua Brooks to be followed by Lou Waronker.

MR. BROOKS: Good evening. My name is Joshua Brooks. I'm a Penn T30

Response to Comments in : T30

From: Joshua Brooks

Comment No.	Response
1.	Comment noted. See generalized responses to consolidated comments #4 and #5.
2.	Comment noted. See generalized response to consolidated comment #1.

undergraduate, presently working on becoming a major in the English department. I represent no official group. I am not a technical expert. I have no list of points that I would like elaborate. I have no public office. I have no title. I have no letters after my name. I have no real prepared statement. What I do have is the truth.

I did not come to this University to be educated in a way subsidized by the US military establishment. I was offered that opportunity many times over the phone to a level verging on harassment. If I wanted to do that, I could have let them cut my hair, ship me off to basic, and then send me here for a lot less money. That's not what I wanted.

I did not wish to become part of an organization which is controlled in a nonelective fashion without any consideration for freedom of expression or for that matter, the truth. I think an excellent example of what I'm talking about

just occurred here tonight in the treatment of Mr. Harrison.

1 Looking at this project as a Penn student, my concern with the environmental questions is profound, although not quite as strong as my concern with the increased military presence here on the Penn campus. Addressing briefly the environmental concerns, I will say that as a resident of the Susquehanna Valley, having grown up within 50 miles of Three Mile Island, I somehow have litte faith in promises of safety precautions.

2

In answer to Mr. Cooperman's claim -- Dr. Cooperman's claims that there will be no weapons research taking place at this institute because such information is classified and the University does not indulge in classified research, I would like to point out that to become classified, research does not have to be originally identified as something that is going to be classified research. And that you don't always know what you're getting

into when you're dealing with the military. As an example of this, I would like to point out information which was just released last week wherein the military, and I believe specifically the Department of Navy, finally declassified a list of names. This list of names was soldiers, who during the early years of World War II, were subjected to poison gas and chemical warfare testing without their knowledge in order to discover exactly how effective certain forms of protection were going to be. This research included, in part, unwarned and occasionally completely unprotected exposures to mustard gas and chlorine. These men, after they were given these tests, were informed that they had been part of a chemical experiment and that this information was now classified and they could not tell anybody about it. They were not warned beforehand that this information would become classified. An involvement of this type could take place at the University. We don't know what

we're going to be finding out 40 years down the line about what was going on in this Institute.

To cover the more specific environmental concerns, I just would simply like to say that I would like to add my agreement with all those speakers who Mr. Cummings agreed with, as well as the two speakers who came after him and the three last speakers.

I think that this pretty much covers it. I simply wanted to speak here tonight because I recognize that there's an extreme absence of Penn undergraduates which could be because for some reasons there's been an incredible lack of publicity about this in the University Press. And I would imagine that most of the undergraduates don't know exactly what is about to move into their back yard. I think that tonight we have gotten a glimpse of what that might be, and frankly, it scares the hell out of me. Thank you, and good night.

COL. HEUPEL: After Mr. Waronker will

be Robert Smith.

T31

MR. WARONKER: Good evening. My name is Lou Waronker. I'm an a native Philadelphian, and I returned to Philadelphia after an absence of 25 years in New England. I represent no group, although I've worked with various groups in the area. And I'm speaking for myself.

I originally planned to have several questions put to people here, but a lot of those questions have already been asked so I will not take the group's time by repeating them, but I would like to say a brief statement which will be under the five-minute limit and give others a chance to talk.

I think, frankly, one of the statements was very good; we were still whispering when we should be shouting. A lot of obscenities have not been mentioned here; the obscenities of death, destruction, torture, environmental damage, environmental damage of environmental destruction, environmental destruction of,

Response to Comments in : T31

From: Lou Waronker

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #1.

1 that might result or will result if weapons
2 that are produced from here are used.
3 Frankly, some of the most honest
4 statements about all of this have come from
5 the military themselves. I can think of
6 two offhand. One mentioned by former
7 chairman of the joint chiefs of staff,
8 Thomas Power, who talked about the military
9 and said putting aside all the fancy
10 language, the purpose of the military was
11 twofold; to kill people and destroy the
12 works of man.
13 And one other thing I would say
14 before I stop is something that hasn't
15 really been mentioned here, that if this
16 building or project goes through in spite
17 of all the protest and we haven't heard one
18 in favor of it, the struggle shouldn't end
19 there. It should be extra legal in the
20 form of what some would call divine
21 obedience, some would call civil
22 disobedience.
23 Another well-known military man was
24 Alexander Hage, who said interestingly

1 enough that let them march and demonstrate
2 all they want, as long as they pay their
3 taxes. So those of you who are taxpayers,
4 consider not paying the taxes and funding
5 this research. That's all I have to say.
6 Thank you.
7 COL. HEUPEL: Robert Smith?
8 (No response.)
9 COL. HEUPEL: Fred Quivik to be
10 followed by Pat McDonough.
11 MR. QUIVIK: Good evening. My name
12 is Fred Quivik, that's Q-U-I-V as in
13 vegetable I-K. I'm a graduate student at
14 Penn in the history and sociology of
15 science, and we're residents in Smith Hall.
16 Prior to returning to graduate school, I
17 worked for quite a number of years as a
18 consultant in the field of historic
19 preservation and I would like to say that I
20 find the treatment that the University of
21 Pennsylvania and now the Air Force has
22 given consideration of Smith Hall to be
23 appalling from a professional standpoint.
24 I won't repeat what a lot of people

Response to Comments in : T32 (See also M16)

From: Fred Quivik

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #5.
2.	Comment noted. See generalized response to consolidated comment #1.

1 have said already tonight about the
2 significance of Smith Hall or the
3 significance of Smith Walk to the campus,
4 but I would like to say for the record that
5 during the course of hearings that go back
6 a couple of years now, the University has
7 heard information in testimony about the
8 significance of Smith Hall, of its
9 designers, and of its role in the
10 development of science education at
11 American universities and the University
12 has meticulously avoided incorporating that
13 information in its subsequent statements
14 and this EIS continues that grand
15 tradition.
16 I also would like to point out some
17 of the inconsistencies in the EIS itself
18 and that's been done here tonight. One I
19 would like to bring to folks' attention
20 deals with a statement, and I didn't write
21 down page number, but there's an argument
22 made in the EIS that oftentimes when we
23 modernize we bring about a juxtaposition of
24 architectural styles. And that's offered

1

1

as a justification or rationalization for the construction of a new building along Smith Walk which is a unique resource and environment on the campus.

On the other hand, the document argues against building a new building in the tennis courts here next door because that would damage the architecturally historically significant character of the Pelestra and Franklin Field and I would like point out that there's already been a juxtaposition of architectual styles with the construction of this building. And so, that step has already taken place with this environment and I find it inconsistent that that is not opted for and yet the Air Force and the University would like to destroy the unique environment along Smith Hall.

Finally, the main formal portion of my testimony deals with the architectural and historic characters of the building and its setting, but I'm also in agreement with those who oppose the use of our scarce resources to fund this kind of military

research instead of the kinds of research that we could be conducting at this University and would just like to make note of the parallel between the sacrifice that we in this community are being asked to make physically by losing something like Smith Hall and the sacrifices that we're being asked to make relative to the vitality of this academic community in favor of military research. Thank you.

COL. HEUPEL: Thank you. After Mr. McDonough will be Jerome, I believe it is Hunter.

We need a five-minute break first for the court reporter and kind of stay where you are while I want to give her a little bit of time, everybody is going so fast and I understand, but it's tough for her and we need to change the tape, too. She'll be about five minutes. We'll pick up, and I've got about three other people and then that's going to be it.

- - -

(Whereupon, a brief recess was

taken.)

- - -

COL. HEUPEL: Okay.

We're going to start back up.

It's as you can tell, the record doesn't necessarily know; it's just a little bit past 11:30. We're going to start in with Mr. McDonough and then Jerome Hunter, I believe is the name that I've got. And then after that, it will be Elizabeth Campion and then Phyllis Gilbert.

T33

MR. McDONOUGH: My name is Patrick McDonough, and I'm coming from the Graduate School of Fine Arts and Architecture Department. And this is one of those departments that have been pushed off to the boundaries of the campus, as seen by the GSFA temporary blue box, commonly known as the blah house, located on Chestnut.

And I would like to start off by quoting Venturi Scott Brown, the principal architect of the project, in which he says, "The design will enhance the architectual quality of the surrounding academic and

Response to Comments in : T33

From: Patrick McDonough

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #7.
2.	Comment noted. See generalized responses to comments #5 and #7. The University considered many criteria for choosing the Smith Hall site for the IAST. Among those criteria was appropriateness of existing buildings to proposed uses and the appropriateness of those uses within the overall plans for the University. There was no single plan document used by the University in this process.
3.	Comment noted. See generalized response to consolidated comment #1.

historic precedence. It will contribute to the visual richness of the historic district. Architectural relationships will be strengthened by the buildings whose plainer facade provide a backdrop for the rich ornamental, sculptural and historic buildings."

And if you go on this premise, you can could say that's building an ugly structure to show off a great one, which kind of typifies why the University of Pennsylvania has built Van Pelt to show off College Hall and they built Meyerson to show Furness.

So, and I don't want to take up any more of your time, so I will concur with many of the statements of the earlier lectures, such as Gray Smith and Jonathan Goldstein on the important significance of Smith Hall and to the Ivy League tradition of this university.

1 And I wanted to address the alternatives in which the advantage of these alternatives which were not addressed

1 in the DEIS report. In this report it shows both Phase I and II located on the LRSM parking lot site, found that no impact on the aesthetics or cultural resources would incur. And the site is flanked by modern architecture such as the chemistry building and the new hospital addition and expansions. The site has more room than the existing Smith Hall site and the traffic problem would easily be solved; as such, the site is surrounded by street accesses while the Smith Hall site is only surrounded by one road.

And I want to quote the master plan of the University of Pennsylvania. And it says, I quote, "an important aim of the master plan is to support the preservation of the University's many historic structures as individual buildings as well as the assemble, which collectively create historic areas on campus."

2 And obviously Smith Hall, as been stated earlier, is clearly one of these historic areas and we should follow the aim

of the University's Master's Plan by preserving not just the Smith Hall, but the entire area itself.

And I would like to end tonight by also quoting Vice-Provost Cooperman in which he says on this issue of Smith Hall and IAST, "the University's position on this is very clear. Penn will only accept research projects that are free of control of the sponsor."

The IAST research project, as we noted earlier, is 50 percent supported and sponsored by the US Air Force, and, thus, in all intents and purposes will be controlled by the United States Air Force. Thus I ask the University of Pennsylvania to stick the Provost's policy and not compromise their integrity and save the historic tradition of this prestigious Ivy League institution. Thank you very much.

COL. HEUPEL: Thank you.

Is Jerome Hunter here?

(No response.)

COL. HEUPÉL: If not, Elizabeth

Campion, and then Phyllis Gilbert.

UNIDENTIFIED GENTLEMAN: Ms. Gilbert went home. She'll file a statement.

COL. HEUPEL: Thank you.

MS. CAMPION: Hi. I'm Liz Campion, and I represent myself and my family and my family includes Michael, two and Katy, six. And I represent my company and I sell real estate in this area.

And I am opposed to this plan. And in my five minutes I would like to demonstrate my beliefs that what is, is good; that what is proposed, is frightening, and much of what I have heard tonight has made it even more so. And why from my own experience, as someone who grew up in this neighborhood and played and was educated in this neighborhood and -- it's so frightening to talk to a big crowd and ultimately went to Penn on a merit scholarship and graduated from Penn and continued to work in the neighborhood, I want to say why from my experience I don't trust Penn as a steward of this type of

Response to Comments in : T34 (See also M4, M22 and C6)

From: Elizabeth Campion

Comment No.	Response
1.	Comment noted. No response required.
2.	Comment noted. See generalized response to consolidated comment #5.
3.	Comment noted. See generalized response to consolidated comment #4.
4.	Comment noted. No response required.

project.

Um, first, what is, is good. I had a lot of choices. I was an orphan. I was a poor inner city kid. I was very bright. I had done well on SAT tests and I was widely recruited. And it was places like Smith Hall and College Hall and Logan Hall that appealed to me as a young urban child. It was why I chose this University. So I would hate to lose them. I'm so nervous.

Second, what is proposed and -- or one of the places that Penn is not a good steward, it doesn't even necessarily give good advice to its own student because they allowed someone who was an orphan with no background to become an art major, which is good or bad, but with my art training what I'm seeing is ugly. It's not a satisfactory replacement to me

2

5

And third, is Penn a good steward? I have a love/hate relationship with the University. It's been a big investment of my time. I work with University people now. I sell their houses. I'm not so

interested in selling a house as in trying to find buyers, bringing buyers to the neighborhood, telling them how wonderful it is to live here and meaning it because I live here and I rais my children here. I like the trees and the parks and the beautiful buildings.

And Penn didn't do a very good job with me as a student, which is probably all too good. And my experiences there showed they didn't do a very good job with their people or their buildings. They condemned, by eminent domain, the 3400 block of Walnut Street, what was our public use, a shopping mall with a food court.

I worked, as a merit scholar, you get into a Catch-22 situation. You only qualify for the scholarship if you're an inner city kid, but if you live in the City of Philadelphia, you can have no financial assistance for food or housing. So, here was someone with no food, no housing, but full scholarship to an institution, which at that time cost as much as the maximum

salary my parents had ever earned.

I took the scholarship. I was required to do 20 hours of work study. It was mandated that I would be paid minimum wage. I was worth more than that, but I had to do my 20 hours of minimum wage. The result was I sold blood. I did behavioral studies as a paid volunteer and I was smart enough not to do drug studies. But that's how they steward the student body. They make rules like that, that are arbitrary. You're too local to be subsidized for housing, but you're eligible for the scholarship. It's a good. It's a bad. I'm happy with the end result.

As a student, one of my work study jobs was in a science lab. I washed bottles. I actually saw a graduate student pour a radioactive material in his legs, but I don't know what it was. His first reaction was fear that I would see him do it because he was going to get those clothes off. His second reaction was fear that his academic advisor had found out

3

what he done. The way he solved that problem was he sent me racing home to my apartment to get him a clean pair of sweat pants, by promises that he would clean it up properly. I came back, I gave him the sweat pants, he danced around behind a newspaper. I believed that he cleaned it up properly until two weeks later when he offered my sweat pants back to me, then I got scared again but there was nothing I could do.

Another job I had was at the University museum in the anthropology department. It was in 1974. There was no systems in security for most of the artifacts, maybe the gold was under lock and key, but $10,000 spirit houses were sitting out in the open. People were walking out with them. Penn learned about security after they lost something.

4

If they're working with biological hazards, what they lose may be me. Okay.

Summing up, I don't know. I think, it's what I said in the beginning. What we

have is very beautiful and precious. What we want to sacrifice it for is very awful. Oh, and I guess as a real estate agent, the perception, whether it's good or it's bad, I'm not qualified. I was an art major. Now I sell houses. I'm not qualified to debate the science issues. But if there are enough people in the neighborhood that are afraid, that they're all here, then there's a perception of fear. And if I have a perception of fear, I'm not going to convince buyers that it's worth it to see pretty green trees and diapers as neighbors. They will flee and will further undermind part of the people part of the equation. And that would just be an unacceptable loss.

So, I live here. I love it here. I want the changes to be for the good. Thank you.

COL. HEUPEL: Ladies and gentlemen, thank you for coming tonight. It's 11:45. I am out of cards. I declare this hearing adjourned.

MR. HARRISON: Please note my objection.

- - -

(Whereupon, the deposition concluded at 11:50 p.m.)

- - -

C E R T I F I C A T I O N

I hereby certify that the proceedings and evidence noted are contained fully and accurately in the notes taken by me on the deposition of the above matter, and that this is a correct transcript of the same.

MARGARET PEOPLES RPR

- - -

(The foregoing certification of this transcript does not apply to any reproduction of the same by any means, unless under the direct control and/or supervision of the certifying reporter.)

- - -

9.4.2 Public Hearing Materials and the Air Force Responses

A complete photocopy of the materials received at the public hearing follows. The Air Force response to comments is provided immediately after the first page of each statement.

THIS PAGE INTENTIONALLY LEFT BLANK

M1

Laneland Farm
MILFORD, NEW JERSEY

DAVID E. LANE, *founder*
1886 - 1971

EDWARD F. LANE, *owner*

BRYAN P. LANE, *manager*

MARCH 12, 1993

DEAR COL BAUMGARTEL -

RECENTLY I RECIEVED THE DEIS FOR THE IAST AT THE UNIVERSITY OF PENNSYLVANIA AND THANK YOU FOR IT.

FOR SEVERAL OF THE 33 YEARS I WORKED FOR THE UNIVERSITY OUR OFFICES, DEVELOPMENT AND PUBLIC RELATIONS, WERE HOUSED IN THE NOW-NAMED MUSIC BUILDING. I WAS THE VICE-PRESIDENT'S ADMINISTRATIVE ASSISTANT. AT NO TIME DURING OUR STAY DO I RECALL ANY INTEREST, VIA ANY MEANS, IN THE BUILDING. NO MUNICIPAL BRANCH, NO COMMUNITY GROUP, NO ARCHITECTURAL FRATERNITY, NOR ANYONE ELSE CALLED, WROTE, OR VISITED TO ASK US ABOUT OR TELL US ABOUT THE STRUCTURE. NOBODY.

TO MY UNPRACTICED EYE THE PREPARERS, NONE OF WHOM I KNOW, HAVE BROUGHT BROAD-GAUGED BACKGROUNDS TO THEIR TASK. THE DEIS LAYS OUT THE VARIOUS OPTIONS IN IMPRESSIVE DETAIL AND CANDOR.

Response to Comments in : M1

From: Edward Lane

Comment No.	Response
1.	Comment noted. No response required.

M1

1 AFTER REVIEWING THE DRAFT WITH FAR MORE ATTENTION THAN I ORIGINALLY ANTICIPATED, I AGREE WITH THE PROPOSED ACTION. IT SEEMS THE BEST CHOICE TO REASONABLY ACCOMMODATE THE IMMEDIATE OBJECTIVES WHILE MAINTAINING THE INTEGRITY OF THE UNIVERSITY'S LONG RANGE PLANS AND ASPIRATIONS. TOMORROW IS REALLY PARTLY TODAY — JUST LATER.

NICE GOING.

Edward F. Rose
PENNSYLVANIA W'49

M2

MARCH 12, 1993

GENTLEMEN: I AM UNABLE TO ATTEND THE MEETING AT THE DAVID RITTENHOUSE LABORATORY AUDITORIUM. HOWEVER I AM IN FAVOR OF INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY AT THE UNIVERSITY OF PENNSYLVANIA. I RECIEVED A DRAFT ENVIRONMENTAL IMPACT STATEMENT ANALYZE THE POTENTIAL OF SITING + CONSTRUCTION AND

1 OPERATION. I READ IT. AND THINK IT WOULD BE GREAT FOR THE COMMUNITY AND THE UNIVERSITY OF PENNSYLVANIA GENTLEMEN I AM UNABLE TO ATTEND THE HEARING HOWEVER IN FAVOR.

SINCERELY,

Kevin J. McInerney
4721 TRINITY
PHILA., PA 19...

Response to Comments in : M2

From: Kevin J. McSweeney

Comment No.	Response
	Comment noted. No response required.

MARCH 8, 1993

LT COL GARY P. BRUNGARTEL
AFCEE/ESE
3106 PARKWAY Road
BROOKS AFB, TX 78235-5318

KEVIN J. MCSWEENEY
6721 TRINITY STREET
PHILADELPHIA PA. 19142

M3

612 W. LEHIGH AV
PHILA PA 19133
MAR. 15, 1993

DEAR LT. COL BAUMGARTEL:

I RECEIVED TWO PIECES OF MAIL TODAY, ONE FROM YOU ABOUT THE PUBLIC HEARING MAR 30 RE THE IAST AT PENN. THE SECOND IS FROM ACT FOR PEACE & JUSTICE AND PENN COALITION FOR SCIENCE IN THE PUBLIC INTEREST = PENN STUDENT ORGANIZATIONS.

I AM A SLOW READER AND I HAVE NOT BEGUN TO READ THE DEIS YOU SENT ME. I HAVE TURNED THRU IT PAGE-BY-PAGE TO SEE WHAT IT CONTAINS. I THINK I FOUND THE PHRASE "CRITICAL TECHNOLOGIES", THIS PHRASE APPEARS IN THE ACT FOR PEACE LETTER. IT PRESENTS A NASTY VIEW OF WHAT THE IAST IS BEING CONSTRUCTED FOR.

1 PLEASE, PLEASE, PLEASE. [A] TELL ME ON WHAT PAGE THIS INFO IS LOCATED, NOT THE EIS DATA. [B] OTHERWISE TELL ME SOMETHING OF WHAT WILL BE DONE IN THE IAST.

Response to Comments in : M3

From: Barry Prince

Comment No.	Response
1.	Comment noted. See section 1.2, Purpose and Need, as well as Section 2.2, Description of the Proposed Action of the Final EIS. Also see generalized response to consolidated comment #6.

M3

-2-

ACT FOR PEACE'S LETTER IS SLOPPILY PREPARED, SUCH THINGS INFLUENCE ME. ON THE OTHER HAND YEARS-AND-YEARS-AGO I WAS AN ACTIVE LIBERAL AND THEIR LETTER — BRIEF AS IT IS — IS VERY COMPELLING. ON THE OTHER HAND — AGAIN — ITS LANGUAGE "ARMS CONTRACTORS AND MILITARY PLANNERS ARE 'RIGGING' THE DEBATE," TURNS ME OFF, IT'S GROSSS.

I APPRECIATE YOUR REPLY TO MY QUERY, I AM SOMEWHAT DISABLED HAVING BEEN MENTALLY ILL ~~RECURRENTLY~~ MANY, MANY YEARS. I HAVE BEEN ASICED TO BE A RESPONSIBLE CITIZEN. I WANT TO DO MY BEST (I WAS AN NDEA FELLOW IN PENN GRAD SCHOOL, 1961-64)

THANK YOU.

SINCERELY YOURS,

BARRY PRINCE

M4.

NO CARBON PAPER REQUIRED: Type or write on original — impression will automatically appear on copies beneath

FROM
E. F. CAMPION & COMPANY, INC.
Real Estate Professionals
4529 Baltimore Avenue
PHILADELPHIA, PENNSYLVANIA 19143
(215) 386-6551

Message Reply

DATE: 3/25/93
FILE NO.
ATTENTION:
PRIORITY
☐ URGENT!
☐ SOON AS POSSIBLE
☐ NO REPLY NEEDED

TO
LT. COL. GARY BAUMGARTEL
AFCEE/ESE 8106 CHENNAULT RD
BROOKS AFB, TX 78235-5318

SUBJECT: I-95 U. OF PA

MESSAGE

Thank You For The Well Prepared DRAFT.
My Comments:
1. ① Table 5-1 - "Transportation" = "No Operational Impediments" This seems unbelievable in light of current sensitivity of traffic to any/all changes (e.g. Accident can result in gridlock) Even minor delays on 33rd &/or 34th Street could delay arrival at HUP, CHOP, PRESBY (38th), Childrens Services Offices
2. ② Questions re: Ethics & Hazardous Materials May Be Answered AT 3/30 Meeting - And SIGNED: Elizabeth F. Campion
3. IF SATISFIED ~~the LRSM~~ ~~SHE~~ ~~& 10-15% increase in Engineering~~ seems more appropriate to me. (Fig. 2.1-1)
4. ③ The PROPOSED BUILDINGS ARE MUCH TO UGLY TO BE CONSIDERED AS REPLACEMENT ~~FOR~~ SMITH HALL OR REDUCTION OF SMITH WALK. Thank You! Liz

REPLY

REPLY TO:

SIGNED:

40% Pre-Consumer Content • 10% Post-Consumer Content

SENDER: MAIL RECIPIENT WHITE AND PINK SHEETS.

TO REPLY: WRITE REPLY, RETURN WHITE TO SENDER, KEEP THIS PINK COPY.

Response to Comments in : M4 (See also T34 & M22 & C6)

From: Liz Campion

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #6.
2.	Comment noted. See generalized response to consolidated comment #4.
3.	Comment noted. See generalized response to consolidated comment #7.
4.	Comment noted. See generalized response to consolidated comment #5.

M5

Gray Smith's Office
Architecture & Community Development
Expert Analysis & Testimony

TESTIMONY OF GRAY SMITH AIA AICP
Regarding the
DRAFT ENVIRONMENTAL IMPACT STATEMENT
for the proposed
INSTITUTE FOR ADVANCED SCIENCE & TECHNOLOGY
at the
University of Pennsylvania

03.30.93

My name is GRAY SMITH. I am a member of the FRIENDS OF SMITH WALK. I am here to continue my protest of the demolition of Smith Hall, the construction of a much larger building in its place, and the adverse and irreversible impacts those actions will have on fragile Smith Walk and its historically significant precinct.

Rather than reiterate all the obvious reasons why this project is wrong -- the destructive ingredients of the so-called "Proposed Action" that bring us here tonight -- I want simply to highlight some of the significant flaws in the DRAFT ENVIRONMENTAL IMPACT STATEMENT for the Institute proposed on Penn's campus, at 34th Street.

1 In all my years as an architect and urban planner, I have never read a more unprofessional and biased Environmental Impact Statement. This document cannot conceal the overt influence of the University's interests, cancelling out any and all objectivity. Moreover, the report embarrassingly demonstates the shortage of credentials of its preparers,

Response to Comments in : M5 (See also response to T5 and C11)

From: Gray Smith

Comment No.	Response

1. Comment noted. See response to comment #1 in T5.

2. Comment noted. The United States Air Force selected John Cullinane Associates, Architects and Preservation Planners based in Washington, D.C., to assess the cultural resources impact of the proposed IAST Project (Phases I through IV). This consulting firm has no prior relationship with the University. Its work product has been incorporated into the FEIS in Chapters 3 and 4.

3. Comment noted. See response to comment #4 in T5.

4. Comment noted. See response to comment #5 in T5.

5. Comment noted. No response required.

6. Comment noted. See response to comment #6 in T5.

7. Comment noted. See response to comment #7 in T5.

8. Comment noted. Chemicals will not be moved through the "entire L-shaped length of Chemistry Complex." A freight elevator in Chemistry 73 will be used for chemicals transport to and from the IAST building. This elevator is located at the east side of Chemistry 73 and close to the loading dock.

9. Comment noted. The EIS concludes that the IAST complies with the permitted uses within the Institutional Development District Zone, which includes the various alternative sites. At such time as the final site is selected and the IAST design is completed, the University would comply with all zoning requirements.

10. Comment noted. See generalized response to consolidated comment #7.

11. Comment noted. The construction of the Phase I and II building on the Lott Tennis Courts would result in the loss of an important recreational resource and an open space that serves as a plaza in front of several of Penn's historic resources that are a part of the University of Pennsylvania Campus Historic District. These resources are major gathering places for the public. The tennis courts would be replaced by a new laboratory building that would not be physically linked to the Chemistry complex despite its being a 60 percent chemistry-related facility. This Phase I and II construction would also adversely affect portions of the 33rd Street as well as the termination of Smith Walk, a landscape component of the campus and would affect some of the views of other historic resources. The east end of Smith Walk is presently focused on a war memorial and flagpole. The construction of Phases I and II in this site would change the dynamic of Smith Walk which at this point proceeds from the open space of the tennis courts toward the solid of the Furness Building. Phase I and II in this location may impact archaeological resources, a Potter's Field which is believed to lie under the tennis courts and adjacent to 33rd Street.

11. Comment noted. See generalized response to consolidated comment #5.

M5

1 undertaking a study of this magnitude and importance. The results are a failure to its purpose. It begs the question: what are the Weston Company's other financial relationships with the University of Pennsylvania, if any?

2 Why, for example, would there be not one architect involved in its preparation? Why is but one "urban planner" from Texas in the long list of "Preparers", a list primarily of biologists, meteorologists, and natural scientists. It is fundamentally an architectural and planning problem the University has created with this project. The Draft EIS fails miserably in recognizing the responsibility to solve it.

Due to the shortness of time, I will be submitting a more detailed report on the Draft EIS report's failures, for the record, before the April 19 deadline; however I wish to mention a few of the more blatant ones tonight.

3 1. The importance of Smith Walk as an irreplacable, unique and pristine, outdoor room, is avoided in the discussion. The report's conclusion that its severe alteration will somehow be ok is false and misleading, preferring to characterize the changes as a "minor modification"!

Gray Smith's Office
Architecture & Community Development
Expert Analysis & Testimony
DRAFT ENVIRONMENTAL IMPACT STATEMENT
for the proposed
INSTITUTE FOR ADVANCED SCIENCE & TECHNOLOGY

4 2. Another example of the misleading treatment of Smith Walk is the entirely incorrect drawing of the placement of the proposed new Institute, shown on page 2-17. This view, seen from inside the altered Smith Walk, optomistically exposes over two thirds of the 34th Street facade of the restored Furness Library. Yet, the Site Plan on page 2-12 makes it obvious that less than half of the Library would be visible. On the other hand, the photograph of this view today reveals the entire 34th Street facade. The damage to this now "framed" and "balanced" view is not even mentioned as an "adverse effect" of this "proposed action". The drawing on page 2-17 is a lie. What's more, the proposed squinching of this view is misdescribed as "balanced" and "framed," along with other words of praise.

5 3. In the entire document, why is there only one photograph of the areas in question? Are the beauty of Smith Walk and the character of Smith Hall so stunning that they better not be displayed in a report that seeks to destroy them?

6 4. The Draft EIS purports to analyze alternative sites, including the Lott Tennis Courts, the LSRM Parking Lot, and the partial demolition of Smith Hall with an infill

6 structure. The discussions of the two so-called "remote" alternatives are accompanied by overt threats that all other potential historic preservation projects in the Science Precinct would be in jeopardy should these alternative sites be built. Apparently this proposed Institute is so sacrosanct that the University would sacrifice its stewardship of these structures to build it, if it can't have its way.

5. What is the excuse for this threatened delay? Trumped up costs. Even though the available land at LSRM and Lott Tennis Courts sites is substantially larger at each, the Draft EIS concludes that the buildings thereon must be taller than on the Smith Hall site. And that makes them cost more, because "a six or seven story building needs more fire protection than a five story building." Not true! The level of fire protection systems will be the same, and perhaps even more extensive, at the Smith Hall site, since it is more confined and less accessible in emergencies. Perhaps this false extra-cost conclusion is founded in the shortage of architects who participated in this study. Any trained architect would know better.

7

8 6. One of the smaller details of the comparisons of alternatives, that defies logic, concerns the loading and

unloading docks at the respective sites. Why is the rear, off-street, directly adjacent, interior loading dock, that is possible in a facility at the Tennis Courts site, terribly unsafe just because its driveway might occasionally conflict with sports traffic? On the other hand, why is it ok at the Smith Hall site to load and unload toxic materials, at a tiny loading area, right at the very intersection of South Street, Spruce Street and 33rd Street? And then transport them back and forth through the entire L-shaped length of the Chemistry Complex to the new Institute. The multiple dangers in this prospect are hushed up in the Draft EIS, and any related cost premiums are not admitted.

8

7. On a much larger scale, but in the briefest of statements, the Draft EIS arrogantly concludes, beyond a shadow of a doubt, that each of the alternatives complies with Philadelphia's "Institutional Development District" Zoning Ordinance requirements, which apply to the Penn campus. Neither scheme, most importantly that proposed at the Smith Hall site, has yet been submitted to, or passed the mandatory muster of the Philadelphia City Planning Commission and Philadelphia City Council -- no small hurdles. I suggest that those reviews might be

9

more vigorous than the roll-over-and-play-dead attitude of the Philadelphia Historical Commission, to date.

8. One of the central themes of the arguments offered for an Institute at the Smith Hall site is the insistence on "adjacency" and "proximity" to the other activities in the Science Precinct between 33rd and 34th Streets. There is this burning desire for interaction among professors, scientists and students. (Apparently this never happens at Penn now, because all the buildings are not attached to each other in a mile long string). A one-half block walk from one building to the next, along Smith Walk, is apparently a feared and dreaded experience. The direct connection to the Chemistry Complex will somehow miraculously accomplish this orgy of scientific interaction. Yet, although the Lott Tennis Courts site is actually closer to more of the square footage in the Science Precinct than a Smith Hall sited Institute, it might as well be miles away by the strange standards invoked in the Draft EIS.

10

9. Speaking of the Lott Tennis Courts site alternative, let's look at the design proposed, and maligned, in the Draft EIS for that site. On pages 2-28 and 2-29 are site studies of this proposal, the authorship of which is

11

vague (Venturi's architectural firm, who wants so badly to build at Smith Hall, is mentioned as a "source".) The design shown is very easy to criticize since, on its face, it violates many architectural and urban design principles -- too numerous to mention. It is a lousy design. So, of course, to use the words of the Draft EIS, an Institute at the Lott Tennis Courts site "would significantly detract from the historical value of (the Sports Complex), and it "would detract from the aesthetics of the University Sports Complex..." Such words do not apply, it seems, to an Institute sited at the Smith Hall site -- or at least they can't be found in the Draft EIS report.

11

These conclusions must have assumed that a building sited at the Tennis Courts would not be designed by a world-class architectural team, would not respect its historic context, and would get improper review by the Philadelphia Historical and Planning Commissions and State and Federal authorities. Would this prominant site also escape the scrutiny of the Public. Not likely.

Again, where is a good architect when you need one, in a study of this kind?

10. It is curious that the significant benefits of saving Smith Hall and protecting Smith Walk are not listed on the positive side of the environmental ledger, when alternative sites are discussed. 12

In closing, I want to re-emphasize my personal and professional dismay at the cruedness of the Draft EIS report. It insults my intelligence and that of my colleagues in the design professions. The report is only noteworthy for its missing ingredients and its obviously unbalanced scattering of positive and negative adjectives. It, along with that obsessively complimentary "Newsletter", should be placed in every college library in the country as prime examples of 20th century PROPAGANDA. No better examples have I seen, including all the related, biased reports that preceded it.

With very little optimism, I would hope that the Final Environmental Impact Statement will be completely rewritten, so as to be thorough and inclusive, professional and truthful. This one you can throw into a cocked hat, as far as I am concerned.

M6

25 TH ANNIVERSARY

THE UNIVERSITY CITY HISTORICAL SOCIETY

On behalf of the Board of Governors of the University City Historical Society, I welcome this opportunity to present the historical society's position on the proposed Institute for Advanced Science and Technology and the Draft Environmental Impact Statement.

With respect to the Institute, the society is not opposed to its creation. We fully endorse legitimate efforts on the part of a great university to expand our knowledge of both the human and the natural environment. We are only appealing the decision to place this ever-expanding institute in the site currently occupied by historic Smith Hall and forever obliterate the special environment of Smith Walk and this portion of Penn's campus. As recognized in the nomination for the University of Pennsylvania Campus Historic District, this constitutes the final remaining ensemble of late-19th and early 20th century buildings still occupying their original landscape setting.

With respect to the Draft Environmental Impact Statement, we welcome it for two vital reasons. First, it provides a renewed opportunity to conduct a sounder analysis of the architectural and historical importance of Smith Hall and this complex, subjects dealt with more fully by other speakers and at-length in the proposed individual nomination of Smith Hall to the National Register developed by Susan Glassman and Julie Johnson of the Wagner Free Institute of Science. That document should correct the inadequacies and errors that continue to remain in the historic assessment contained in the Draft Environmental Impact Statement. It also will firmly establish Smith Hall's significance in the history of education, medicine, science, and public health rather than assessing it purely in terms of architectural style. It indicates that the individual building possesses national significance beyond its contribution to the historic district. 1

Secondly, the Statement also represents the first instance of a real attempt to look at alternative sites, sites which provide not only for the much needed and inevitable expansion sure to characterize such a facility but one which does not trample on the historic resources of the campus. We are particularly struck by the opportunities offered by alternative locations such as the LRSM Parking Lot on the 3200 block of Walnut Street, not part of the campus National Register Historic District. Yet, we also question why the GE Building at 32 and Chestnut Streets was also not given full consideration. The explanation in the Statement that this location lacks "proximity" seems arguable, it being but one further block removed from the LRSM site. 2

The Statement does, however, represent a new attempt to seriously consider alternatives to the destruction of Smith Hall and Smith Walk and we hope that this effort to reopen analysis and debate will characterize the next stage of the University's thinking about this project as well.

Melani Lamond, President

THE WOODLANDS • 40TH & WOODLAND AVENUE • PHILADELPHIA, PA 19104 • (215) 387-3019

Response to Comments in : M6 (See also T13)

From: Melani Lamond (University City Historical Society)

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #5.
2.	Comment noted. See generalized response to consolidated comment #7.

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: Denise Davidson
Address: 1536 Pine St
Phila. PA 19102

Zip Code:

COMMENT: As ~~a historian and graduate student~~ of European history at the Univ. of Penn, I am concerned about the long-term historic and aesthetic impact of the demolition of Smith Hall and the construction of a large, modern research facility in its place. ~~How~~ For many reasons, environmental and aesthetic, as well as health and academic, any new research buildings should be constructed in more peripheral areas. Buildings such as Smith Hall need to be preserved. We need to consider our feelings as Americans when we visit centuries old buildings in Europe. ~~If Penn demolishes all its older buildings, then so do~~ Ours is a very young country, we need to allow ~~the~~ architectural monuments from our past to continue to exist. Otherwise, we will never have the American equivalent of ~~ancient~~ such ~~testiments to~~ magnificent architectural/historic sights as Cambridge + Oxford Universities.

1

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Response to Comments in : M7

From: Denise Davidson

Comment No.	Response
1.	Comment noted. See generalized responses to consolidated comments #4, #5 and #7.

M8

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: ANNE CUBILIÉ

Address: [redacted] 251 HOUSTON HALL / 3417 SPRUCE ST.
Univ. of Pennsylvania
Phila. PA [redacted]

Zip Code: 19104-6306

COMMENT: 1

For both aesthetic & historic reasons, I very strongly oppose the demolition of Smith Hall to build this West Tower. There is every reason to prefer the alternative site — it would be far less disruptive to University life, history and aesthetics. The pursuit of short-term profits should not blind the University to the long-term effects of this decision on the health and historical continuity of the University community.

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Response to Comments in : M8

From: Anne Cubilie

Comment No.	Response
1.	Comment noted. See generalized responses to consolidated comments #5 and #7.

M9

PAGE 1 of 2.

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: MARVIN LEWIS

Address: 7301 ROOSEVELT BLVD #62
PHILA PA 19152

(215) 624 1574 Zip Code: 19152

COMMENT: COL. HERRPEL CAST A SHADOW OVER THE PUBLIC COMMENT BY STATING THAT COMMENT SHOULD NOT EXCEED THOSE SUBJECTS "THAT WERE DISCUSSED IN THE EIS" AND THAT " COMMENTS BEYOND THE SCOP OF THIS HEARING SHOULD NOT BE DISCUSSED."
BOTH QUOTES LIMIT PUBLIC COMMENT INAPPROPRIATELY AND IN CONTRADICTION TO SEVERAL REGULATIONS GOVERNING PUBLIC COMMENT.
MY COMMENTS DO GO BEYOND THE INAPPROPRIATELY LIMITED SCOPE OF THE DEIS. MY COMMENTS GO TO THE ADVISABILITY AND WORTHINESS

1

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

1

Response to Comments in : M9

From: Marvin Lewis

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #1.

M9

PAGE 2 of 2.

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: MARVIN LEWIS
Address: 7801 ROOSEVELT BLVD #6E
PHILADA
(215)624 1574 Zip Code: 19152

1 COMMENT: OF PROJECTS INVOLVING AIR FORCE AND DOD FUNDING.
WE ARE NO LONGER IN A "COLD WAR" WITH USSR. WE MAY FIND THAT SMITH HALL IS DEMOLISHED AND THE AF MONEY STOPS! INSTEAD OF A USEFUL HISTORIC BUILDING, WE WIND UP WITH A PARKING LOT.
CONTRARIWISE, WE MAY FIND U of P AT THE MERCY OF DOD AND THE AF PROJECTS. WE CANNOT STOP PROJECTS SUCH AS MK ULTRA* ONCE THE AF, FBI CIA HAVE GOTTEN A STRONGER FOOTHOLD.

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

WE CANNOT CONTROL EXPERIMENTS.
SUCH AS MK ULTRA WHERE "VOLUNTEERS"
WERE GIVEN LSD WITHOUT THEIR KNOWLEDGE.
THE ONLY WAY TO KEEP UNETHICAL EXPERIMENTS
OUT IS TO REFUSE THEIR $ NOW!

*REF: PSYCHIATRY AND THE CIA AND JOURNEY INTO MADNESS - G. THOMAS

M10

Township of Newtown
ENVIRONMENTAL COMMITTEE – RADIATION
BISHOP HOLLOW ROAD & ELLIS AVENUE
P.O. BOX 393, NEWTOWN SQUARE
DELAWARE CO., PENNSYLVANIA 19073

REGINA R. SIBERSKI, R.D.H.
Chairperson
(215) 356-6615

STATEMENT FOR THE UNITED STATES AIR FORCE ON DRAFT EIS

for

DEVELOPMENT OF THE INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY

Tuesday, March 30, 1993

***

I appreciate this opportunity to once again speak before this panel and the public about a continuing concern. I refer to the biological effects of nonionizing electromagnetic radiation (NIEMR).

I am Regina R. Siberski, a Pennsylvania Registered Dental Hygienist who became involved in the NIEMR issue in the late seventies. In 1986, I was awarded a platform by the Newtown Township Board of Supervisors and continue as Chairperson of the Environmental Committee - Radiation. This unique committee helped raise the consciousness about health effects, electromagnetic fields,electromagnetic radiation and related concerns.

Having been involved for too many years in this emerging societal issue, I agreed to speak pro bono populo at the Scoping Meeting on August 19, 1992. In light of the information gathered over the years, the type of inter-disciplinary research mentioned basically promoted me to question the kind of activity which would be furthered at the proposed Institute.

I appreciate the need for continuing research. I know that an expanded facility is on the wish-list of many researchers on the Penn Campus because of the crammed laboratories. None-the-less, I repeat the question from EC-R's September 11, 1992 statement for the Air Force. "With recent Congressional and Pentagon decisions, is IAST now considered a feasible project?" 1

Since the criteria for the consideration by Congress and the Pentagon raised questions regarding possible inter-disciplinary research, I wish to direct attention to the Draft Environmental Impact Statement (EIS) in the one paragraph about electromagnetic radiation on page 2.4. Laser research is mentioned.

LASER is light amplification by stimulated emissions of radiation. Research also requires testing outside the laboratory. At times, technology races too far ahead of biology. Many subtle energies in use for military and/or medicine are tested to either save, debilitate and/or destroy a target - be it cellular or greater in size. Lasers are used in medicine for betterment but can be used by the military against man- 2

Response to Comments in : M10 (see also T17)

From: Regina Siberski

Comment No.	Response
1.	See responses to comment in #1 in T17.
2.	See responses to comment in #2 in T17.
3.	See responses to comment in #3 in T17.

M10

kind. Dual track research is necessary; however, if the benefits are overshadowed with possible harm to the unsuspecting citizen, I ask that consideration be given relevant to one question which related to research which was done for the Navy by the University of Pennsylvania.

According to a newspaper account, microwave radiation was being used at a suburban location.To identify vehicles on the parking lot of the Philadelphia Electric Limerick plant, the person with whom I spoke said the researchers aimed their camera and the directed energy would hit the target, bounce back to register a mark on the film of the camera in development.

At that time, I questioned microwaves as the possible cause for a disturbing atmospheric sound. I asked the person if any consideration was given to an individual's entering the targeted area during the shooting of the picture. I wanted to know if the microwave would in anyway affect the person walking in the path of the research project.

I was advised to contact a Doctor Showers for the answer. I never did ask the question. I did however go to the Uof P Moore School to speak with a now retired professor. The Electrical Engineer and I were told that radiofrequencies would in no way affect a person's well being.

I also wrote and spoke with Dr. Herman P. Schwan, Professor Emeritus and scientist who - at the request of the Navy - set a standard for the upper end of the frequency spectrum. The ten milliwatts per square centimeter was changed in 1982. The present voluntary compliance measure is one milliwatt per square centimeter.

Such information is of no interest to the general public. It is most important to anyone interested in the NIEHR interest. The military is concerned with this matter and such information must be included in the student instruction manuals.

3 My point is to consider the safety of all within the radius of concern with any research in electromagnetics.

***

M11

Testimony of Jim Cummings MS for

Draft Environmental Impact Statement for

Institute of Advanced Science & Technology

March 30, 1993

1 From my 5 years as a science graduate student at U. Penn I know that a major effect of the IAST will be to increase funding to research of interest to the military. This drains scientific talent away from projects that are more scientifically interesting or socially useful. In a country that is demilitarizing and is in danger of environmental collapse in the next generation, is spending 60% of federal R&D money on military research an appropriate priority?

As a Ph.D. student in Neuroscience here and earlier as a lab technician, I saw many attempts at securing grant funding. I saw researchers torturously mangle their projects into forms that would satisfy funders. With competition for funding so intense, projects would be prioritized because they were fundable. The result is that the science is done where funding exists, rather than the academic ideal of funding following the most interesting or useful science.

In my own field, we studied how the mammalian visual system could accomplish perceptual feats in a half second that our fastest computers can not duplicate in minutes. It was interesting to see how those researchers who did computational work would often use their latest theories on images of planes obscured by clouds or for identification of buildings in terrain. The plain and simple reason why the military wants to fund artificial intelligence research is to make robot warriors - to replace fallible, human beings capable of moral reasoning and able to say no with faster, more reliable amoral machines of murder and destruction - my sources tell me that this has always been the goal of basic training in the military.

Response to Comments in : M11 (See also T18)

From: Jim Cummings

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #1.
2.	See Section 1.4.3 for a discussion of the Public Notice provisions of this EIS.
3.	Comment noted. See generalized response to consolidated comment #1.
4.	Comment noted. See generalized response to consolidated comment #5.
5.	Comment noted. See generalized response to consolidated comment #4.

M11

Similar scenarios can be constructed for the other critical technologies: are we as nation better off from research in fast burn fuels that will allow the more efficient incineration of human beings with fuel air explosives?

Has our community in University City been adequately informed about these issues? Have the voters and taxpayers in Philadelphia - who are facing cuts in city services due to decreased federal funding- been informed that $35 million of their tax dollars are going to build a weapons research laboratory? Have the homeless people who will walk, or sleep, or sit in front of this building been asked their opinion? I saw the announcements - tucked away in the metro section next to the weather. When the government wants people to know something - like the lies that the Reagan administration perpetrated about the death squads in El Salvador - they make a press release and we hear it on TV. Obscure announcements are just another way that the form of democracy is kept while those in power keep the power. The attendance at this public hearing is the result of community organizing and not of the formal notification procedures

A further question applies to the handling of toxic and hazardous wastes. This week I, for the first time, heard of the existence of the University Chemical Hygiene Plan (UCHP). I never received any formalized training or written procedures on handling of toxic chemicals or biological waste from 1986 - 1991 when I did research in University labs. The UCHP specifically mandates that all laboratory workers be apprised of the location and availability of the plan and permissible exposure limits for OSHA regulated substances like formaldehyde - a tissue preservative that every student taking anatomy or neurobiology inhales on a weekly basis. My experiences along these lines were the norm. Before I see a new laboratory that will increase toxic chemical usage by 10 to 15% as stated in the DEIS. I want to see proof that Penn is complying with safety regulations and conveying their importance to the students. When the DEIS proclaims that all increased production of toxics will be handled in the fashion that Penn has already established - this frightens me.

The purpose of this hearing is to fulfill part of the National Environmental Policy Act's (NEPA) purpose. To that end, I would like to read from a relevant regulation:

"NEPA's purpose is not to generate paperwork - even excellent paperwork - but to foster excellent action. The NEPA process is intended to help public

officials make decisions that are based on an understanding of environmental consequences, and take actions to *protect, restore and enhance the environment.*" (CEQ 1500.1 (c))

In summary, I would like the following questions answered in the Final EIS, particularly in context of the above regulation:

2 Was there adequate public notification for these hearings?

3 The 22 critical technologies were selected on the basis of four criteria, according to a New York Times article: an ability to enhance the performance of given types of weapon systems, a potential for creating new capabilities or systems, a potential for improving the reliability, availability and maintainability of weapon systems and affordability. Will promoting research on these technologies protect, restore and enhance the environment?

4 Will tearing down a 19th Century historical landmark protect, restore and enhance the environment?

5 Does the University's current handling of toxic and hazardous materials, particularly by students, comply with PADER and OSHA regulations?

As a voter, a taxpayer, a scientist and a human being, I sincerely hope that the answers will prevent further weapons research on the University campus.

I hope you will take excellent action on this.

JOBS WITH PEACE★
Pennsylvania Campaign
321 Willings Alley
Philadelphia PA 19106
215-925-5567

For a healthy economy in a peaceful world.

March 29, 1993

1 The Philadelphia Jobs with Peace Campaign would like to go on record as opposing university research that is driven by military funding and military demands. We urge the attenders at this hearing to demand full disclosure of the negative implications of Penn's plans in this direction.

Sponsors Include:
Amalgamated Clothing and Textile Workers Union (ACTWU), Mid-Atlantic Regional and Philadelphia Joint Boards
American Federation of State, County, and Municipal Employees (AFSCME), Pennsylvania Council 13
Commonwealth Association of Students (CAS)
Episcopal Diocese of Pennsylvania
Lutheran Church in America, Southeast Pennsylvania Synod
National Association for the Advancement of Colored People (NAACP), Pittsburgh
National Congress for Puerto Rican Rights
National Union of Hospital and Health Care Employees, Districts 1199C and 1199P
Pennsylvania Campaign for a Nuclear Weapons Freeze
Pennsylvania Council of Churches
Pennsylvania National Organization for Women (NOW)
Pennsylvania Public Interest Coalition (PennPIC)
Pennsylvania Social Services Union (PSSU)
Pennsylvania State Education Association (PSEA)
Presbyterian Church (U.S.A.), Philadelphia Presbytery
Religious Society of Friends, Philadelphia Yearly Meeting
Roman Council of the Archdiocese of Pennsylvania
United Church of Christ, South Eastern Pennsylvania Conference
United Electrical Workers (UE), District 1
United Food and Commercial Workers (UFCW), Locals 1357 and 23
United Methodist Church, Eastern Pennsylvania Conference
United Steel Workers of America (USWA)

Pittsburgh Office:
822 N. Homewood
Pittsburgh, PA 15208
(412) 362-6700
Delaware County Office:
P.O. Box 752
Chester, PA 19016
(215) 872-7565

Response to Comments in : M12

From: Jobs With Peace

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #1.

M13

SIERRA CLUB

SOUTHEASTERN PENNSYLVANIA GROUP
619 CATHARINE STREET • 3RD FLOOR
PHILADELPHIA, PENNSYLVANIA 19147
OFFICE (215) 592-4063
PROGRAM HOTLINE (215) 592-4073

TESTIMONY RE: THE INSTITUTE FOR ADVANCED SCIENCE & TECHNOLOGY
(proposed for the University of Pennsylvania)

Thank you for the opportunity to testify on this important matter. My name is Phyllis Gilbert and I am a leader in the local, state and national levels of the Sierra Club. The Sierra Club is one of the oldest and largest environmental protection organizations in the nation. In accord with its long standing committment to preventing pollution and cleaning up the contamination caused by military production and maintenance, the Club lead the legislative effort which now mandates that the Departments of Defense and Energy obey basic environmental laws. In response to the demise of the Cold War, Sierra Club developed a position called "Environmental Security," which calls for a redirection of federal spending from heavy investment in the defense industry to the needs of the domestic economy, with an emphasis on environmental protection and restoration.

In the early 1980's and at an intense period of the Cold War, many of the University of Pennsylvania(UofP) faculty members signed petitions which urged the University to not accept the government's Strategic Defense Initiative (SDI) research opportunities. In so doing these professors also agreed to not personally participate in such research, a selfless and courageous position to take publically. Ironically, now that the world tensions have diminished, the University is planning to use Department of Defense (DOD) money for partial weapons research at the proposed Institute for Advanced Science and Technology.

1

In the authorizing bill H.R.4739 the grant offered by DOD comes with the stipulation that, "The grant shall be available for initial construction of a cost-shared facility," . . ."designed to support mutually supportive technology research currently underway at the institution in response to the critical technologies research needs identified by the DOD in its Critical Technologies Plan as required by Public Law 100-456. Public Law 100-456 calls for "Critical Technology or technologies with great promise of ensuring long term superiority of U.S. weapons systems" . . . "however, that promise can be realized only when they are integrated into a balanced science and technology program with a full spectrum of mutually supportive technologies."

"To explore, enjoy and protect the Earth"

Response to Comments in : M13

From: Sierra Club

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #1.
2.	Comment noted. See generalized response to consolidated comment #6.
3.	Comment noted. See generalized response to consolidated comment #4.
4.	Comment noted. The storage of short lived radioactive waste until it can be disposed as non-radioactive has always been one of the methods of waste disposal used by the University. Long lived radioactive wastes were sent to commercial waste disposal facilities. Barnwell, South Carolina was not one of the facilities used by the University. On January 1, 1993, commercial waste disposal facilities were permitted to refuse waste from radioisotope users located in Pennsylvania. In anticipation of this shutdown, the university upgraded its waste holding facilities to permit additional storage of short lived radioactive waste and also to permit the storage of long lived radioactive waste until a disposal facility is available. The Commonwealth of Pennsylvania, a member of the Appalachian Compact Users of Radioactive Isotopes, is in the process of siting a radioactive waste disposal facility within Pennsylvania and expects to have it operational in 1998. This facility will be available to the University for radioactive waste disposal.

M13

Although the Sierra Club is most supportive of the University providing competitive research opportunities for its faculty and students, our

1 organization is opposed to your taking money from DOD with its stipulation that weapons research be an integral part of the recipient's program. The needs of our domestic economy are huge for improved pollution prevention, contamination cleanup, resource conservation and renewable energy technologies, to mention a few. The most important world competition now lies in domestic product development rather than higher and higher weapons technology. In Germany and Japan, our foremost economic competitors, the governments support 60 to 75% of their domestic research, whereas the U.S. has historically allocated up to 65% for military related research. Rather than accept this misguided government policy, we must instead insist that our government offer universities, such as the U of P, support for civilian research.

2 The Sierra Club is concerned both with the numbers of technologies on the "Critical Technology List" which would support further refinement of SDI, which the Club has considered provocative, and with the dangerousness of the chemicals and toxics needed and produced as by-products of the stipulated research. After examining the "Critical Technology List" we are raising the following concerns:

SUPER CONDUCTIVITY will require mega quantities of energy to realize low enough temperatures and will likely be applied to space weapons development.

BIO TECHNOLOGY often produces genetic mutations and highly toxic substances, which, if released in tiny amounts can contaminate broad areas.

MICRO ELECTRONIC CIRCUITS require highly flamable and toxic solvents and plating solutions, which are harmful to sewage systems and ground water.

GALENIUM ARSENITE is extremely toxic.

COMPUTER SOFT WARE improvement requires the use of plastic monomers and highly active solvents which easily take fire and sometimes explode.

SENSITIVE RADARS uses micro wave which is so dangerous that the Russians have mandated protective exposure standards ten times stricter than ours.

PHASED RADAR is most applicable to SDI tracking and target recognition, which some scientists hope to apply to SDI's "Brilliant Pebbles" envisioned control from the ground.

-2-

HIGH POWERED MICRO WAVES are applicable to weapons systems and need out of the ordinary shields. Even a small hole could allow a "Buck Rogers" like accident.

PULSED POWER is aimed at SDI improvement.

HYPER VELOCITY PROJECTILES is applicable to weapons such as SDI.

HIGH TEMPERATUARE & STRENGTH/LIGHT WEIGHT COMPOSITE MATERIALS is used to improve the performance of airplane wings, space craft and missiles, particularly SDI.

3 Although the planners will claim that the new facility will provide adequate protection for researchers and the public, Sierra Club is aware that the U of P has a questionable record on its handling of toxic materials and wastes. A local toxic waste regulatory official, who wishes to remain nameless, admitted that U of P had a number of unreported waste handling violations in the past few years. Moreover, the ~~former~~ director of Philadelphia's Fire Department's Emergency Response Section stated that the U of P has an extremely bad record of compliance with safety regulations.

I would like to reiterate that the Sierra Club would welcome advanced technological research into the needs of our domestic economy. We would like to collaborate in convincing the government to make a change in priorities.

4 * U of P has recently decided to keep rad waste on site until it decays sufficiently to dispose in a non-nuclear waste disposal facility. The prior practice was to ship the waste to Barnwell, South Carolina.

TO THE ADMINISTRATION AND TRUSTEES OF
THE UNIVERSITY OF PENNSYLVANIA

We the undersigned ~~students and faculty of the University of Pennsylvania~~ are greatly concerned about the University's intent to demolish Smith Hall. Smith Hall has been certified as an historic building by the City of Philadelphia. Smith Hall is the sole remaining example of the University's 19th-century laboratory buildings, and as such its historical significance is equal to that of the Furness Library and Logan Hall.

1 The administration, by its own admission, has made regrettable and irrevocable architectural decisions in campus planning. By tearing down Smith Hall they will be making another egregious mistake. Smith Hall is the cornerstone of beautiful Smith Walk, the only part of campus whose appearance has been untouched by the twentieth century.

1 We urge the administration to reconsider both the historical importance of Smith Hall and the aesthetic character of Smith Walk--precious assets of the University of Pennsylvania that can neither be quantified nor replaced.

1. Joan J. Suziedelis '80
2. Daryl M. Ford
3. Betsy M Moore
4. Valerie McCall
5. Dwynetta Barson
6. Ethel Mae Lawson
7. Robert P. Hynes
8. Earl McCabe
9. Gregory D. Sagar
10. Carol E. Ulmer
11. Curtis A. Bell
12. Nancy Kath
13. Jacquelyn Williams
14. Elaine Trosset
15. Denise Porter
16. Frank Giunta
17. Andrea Giunta
18. Francesca Giunta
19. Marina Isaac
20. Howard Moreland
21. Lisa Kopp

Response to Comments in : M14

From: General Petition

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #5.

TO THE ADMINISTRATION AND TRUSTEES OF
THE UNIVERSITY OF PENNSYLVANIA

We the undersigned ~~students and faculty of the University of Pennsylvania~~ are greatly concerned about the University's intent to demolish Smith Hall. Smith Hall has been certified as an historic building by the City of Philadelphia. Smith Hall is the sole remaining example of the University's 19th-century laboratory buildings, and as such its historical significance is equal to that of the Furness Library and Logan Hall.

The administration, by its own admission, has made regrettable and irrevocable architectural decisions in campus planning. By tearing down Smith Hall they will be making another egregious mistake. Smith Hall is the cornerstone of beautiful Smith Walk, the only part of campus whose appearance has been untouched by the twentieth century.

We urge the administration to reconsider both the historical importance of Smith Hall and the aesthetic character of Smith Walk--precious assets of the University of Pennsylvania that can neither be quantified nor replaced.

1. _____ 11. _____
2. _____ 12. _____
3. _____ 13. _____
4. _____ 14. _____
5. _____ 15. _____
6. _____ 16. _____
7. _____ 17. _____
8. _____ 18. _____
9. _____ 19. _____
10. _____ 20. _____

M14

TO THE ADMINISTRATION AND TRUSTEES OF
THE UNIVERSITY OF PENNSYLVANIA

We the undersigned students, alumni and faculty of the University of Pennsylvania are greatly concerned about the University's intent to demolish Smith Hall. Smith Hall has been certified as an historic building by the City of Philadelphia. Smith Hall is the sole remaining example of the University's 19th-century laboratory buildings, and as such its historical significance is equal to that of the Furness Library and Logan Hall.

The administration, by its own admission, has made regrettable and irrevocable architectural decisions in campus planning. By tearing down Smith Hall they will be making another egregious mistake. Smith Hall is the cornerstone of beautiful Smith Walk, the only part of campus whose appearance has been untouched by the twentieth century.

We urge the administration to reconsider both the historical importance of Smith Hall and the aesthetic character of Smith Walk--precious assets of the University of Pennsylvania that can neither be quantified nor replaced.

1. E.M. Sweeney
2. J. Haddad
3. M. Ro-
4. John F. Boyer
5. Maria M. Stoff
6. Alison Sneep
7. Anne Spencer Lin Ag
8. Keith Walker
9. Jennifer Gunn
10. S. G.
11. Lara Vecchiarello
12. Emily Schwartz
13. Michel Habib
14. Cary Reynolds
15. Mark T. Reed
16. Sheila Moran
17. Susan Oman
18. Felix Neubergh
19. H. L. Goodwin
20. K. L.

M14

TO THE ADMINISTRATION AND TRUSTEES OF
THE UNIVERSITY OF PENNSYLVANIA

We the undersigned students, alumni and faculty of the University of Pennsylvania are greatly concerned about the University's intent to demolish Smith Hall. Smith Hall has been certified as an historic building by the City of Philadelphia. Smith Hall is the sole remaining example of the University's 19th-century laboratory buildings, and as such its historical significance is equal to that of the Furness Library and Logan Hall.

The administration, by its own admission, has made regrettable and irrevocable architectural decisions in campus planning. By tearing down Smith Hall they will be making another egregious mistake. Smith Hall is the cornerstone of beautiful Smith Walk, the only part of campus whose appearance has been untouched by the twentieth century.

We urge the administration to reconsider both the historical importance of Smith Hall and the aesthetic character of Smith Walk--precious assets of the University of Pennsylvania that can neither be quantified nor replaced.

1. Scott Hutton
2. Kami LaSam
3. W.C. Moore
4. A. TAVAKOLIAN
5. J.E. LUCAS
6. Lance M. Rothstein
7. Matthew Johnson
8. Christopher G. Sleeper
9. LISA SIGNORELLO
10. ALEX LENARD
11. Isaac Parker
12. Stacey Goldberg
13. LYNN BAYARD
14. Eva Vasilindes
15. Doreen Hettich
16. Teresa M. Mullaji '89
17. Mary Boas Hayes
18. Daniela Ascanio
19. Renée LaMar
20. Ellen Gay Hayes

M14

TO THE ADMINISTRATION AND TRUSTEES OF
THE UNIVERSITY OF PENNSYLVANIA

We the undersigned ~~students and faculty of the University of Pennsylvania~~ are greatly concerned about the University's intent to demolish Smith Hall. Smith Hall has been certified as an historic building by the City of Philadelphia. Smith Hall is the sole remaining example of the University's 19th-century laboratory buildings, and as such its historical significance is equal to that of the Furness Library and Logan Hall.

The administration, by its own admission, has made regrettable and irrevocable architectural decisions in campus planning. By tearing down Smith Hall they will be making another egregious mistake. Smith Hall is the cornerstone of beautiful Smith Walk, the only part of campus whose appearance has been untouched by the twentieth century.

We urge the administration to reconsider both the historical importance of Smith Hall and the aesthetic character of Smith Walk--precious assets of the University of Pennsylvania that can neither be quantified nor replaced.

1. Carol Patraitis
2. Carol Trotman
3. Carmen Richter
4. Jon Richter
5. Gloria Napolitano
6. Roger Masters
7. Joan Gowan
8. Ellen Starks
9. Brian Ratigan
10. Melani Lanier
11. Glenn Hoge
12. Judith L. Berg
13. Marie K. Langan
14. Hannah Stapleton
15. Gabriella C. Rice D.C.
16. Rashida Banks
17. Shawn Gill
18. Dinnie Kerge
19. Mark Rosenberg
20. Mary Elizabeth O'Neil 1976

M14

TO THE ADMINISTRATION AND TRUSTEES OF
THE UNIVERSITY OF PENNSYLVANIA

We the undersigned ~~students and faculty of the University of Pennsylvania~~ are greatly concerned about the University's intent to demolish Smith Hall. Smith Hall has been certified as an historic building by the City of Philadelphia. Smith Hall is the sole remaining example of the University's 19th-century laboratory buildings, and as such its historical significance is equal to that of the Furness Library and Logan Hall.

The administration, by its own admission, has made regrettable and irrevocable architectural decisions in campus planning. By tearing down Smith Hall they will be making another egregious mistake. Smith Hall is the cornerstone of beautiful Smith Walk, the only part of campus whose appearance has been untouched by the twentieth century.

We urge the administration to reconsider both the historical importance of Smith Hall and the aesthetic character of Smith Walk--precious assets of the University of Pennsylvania that can neither be quantified nor replaced.

1. Brian McCann
2. Matt Dee
3. Henry
4. Mary K Walton
5. Amy Levine
6. Bob A. Rue
7. Ellen R. Memorgan, Ph.D.
8. Jim Kelly
9. John K Carstens
10. Thomas M. Luse
11. Eleanor Wedeman
12. Katherine J. Tate
13. Christine D'Arcy
14. Doug Luse
15. Phebe Ellis
16. Jill Nelle
17. Jonathan Dooley
18. [illegible]
19. Kenneth Rogers
20. Joseph D. Kelly

M14

TO THE ADMINISTRATION AND TRUSTEES OF
THE UNIVERSITY OF PENNSYLVANIA

We the undersigned ~~students and faculty of the University of Pennsylvania~~ are greatly concerned about the University's intent to demolish Smith Hall. Smith Hall has been certified as an historic building by the City of Philadelphia. Smith Hall is the sole remaining example of the University's 19th-century laboratory buildings, and as such its historical significance is equal to that of the Furness Library and Logan Hall.

The administration, by its own admission, has made regrettable and irrevocable architectural decisions in campus planning. By tearing down Smith Hall they will be making another egregious mistake. Smith Hall is the cornerstone of beautiful Smith Walk, the only part of campus whose appearance has been untouched by the twentieth century.

We urge the administration to reconsider both the historical importance of Smith Hall and the aesthetic character of Smith Walk--precious assets of the University of Pennsylvania that can neither be quantified nor replaced.

1. [signature]
2. [signature]
3. [signature]
4. [signature]
5. [signature]
6. [signature]
7. [signature]
8. [signature]
9. [signature]
10. [signature]
11. [signature]
12. [signature]
13. [signature]
14. [signature]
15. [signature]
16. [signature]
17. [signature]
18. [signature]
19. [signature]
20. [signature]

M15

Comment on Draft EIS for Institute for Advanced Science and Technology

Submitted to Lt. Col. Gary Baumgartel, Chief of Environmental Planning
U.S. Air Force
March 30, 1993

My name is Brian Shovers; I live at 269 W. Walnut Ln., Philadelphia, PA. 19144, and I work at Temple University as a manuscripts librarian in Paley Library. My interest in the fate of Smith Hall comes out of my professional experience in historic preservation and my avocational interest in recyling and the conservation of materials. A well documented link exists between the preservation and restoration of existing buildings and energy conservation. For example, the energy necessary to fabricate and deliver a five-ton steel girder to a construction site is equivalent to 270 million Btu's or 2,000 gallons of gasoline. A building such as Smith Hall embodies enormous amounts of energy in the form of fossil fuels necessary to fabricate the building materials, transport them to the building site, and to construct a building of its size. A set of figures presented by the University of Illinois Center for Advanced Computation illustrates this point vividly: the embodied energy found in brick is 400,000 Btu's/cubic ft. and 25,000 Btu's/cubic ft. for steel and iron. The same study calculated the embodied energy in a typical educational structure at 1,390 million Btu/sq. ft. The energy expenditures do not stop here: demolition of a medium-sized masonry building is calculated at 12,000 Btu/sq. ft. Compounding the issue of energy losses is that of asbestos and lead removal from the demolition site.

During the 1980s, literally ten of thousands of historic brick buildings were demolished in American cities to make way for newly constructed towers of glass and steel. Today, much of this new office space remains vacant creating a savings and loan crisis of historic proportions, while tons of valuable building materials were carted off and buried in municipal landfills. If the Air Force selects the proposed alternative, what will become of Smith Hall and the energy embodied in that historic and still useful structure? Have the contractors devised plans for salvaging those materials? I would wager that they will consider salvage inconvenient and uneconomic. Is it considered prudent--at a time of rapidly diminishing natural resources--to demolish a useable building in order to expend vast quantities of fossil fuels on new building materials?

1 The adoption of the Proposed Alternative is inappropriate considering the availability of the LRSM Parking Lot Alternative, which lies outside the National Register Historic District. That alternative would not require the demolition of an existing building nor would it damage the intact nineteenth century landscape currently found along Smith Walk. I ask you to reconsider your

Response to Comments in : M15 (See also T29)

From: Brian Shovers

Comment No.	Response
1.	Comment noted. See generalized responses to consolidated comments #5 and #7.

options. I appreciate the opportunity to comment on this project.

Brian Shovers

Brian Shovers

M16

- TESTIMONY -

of Fredric L. Quivik

at the Air Force Hearing
for the Institute of Advanced Science and Technology
University of Pennsylvania

OPPOSED TO THE DEMOLITION OF SMITH HALL

I am a graduate student in the History and Sociology of Science, the Department resident in Smith Hall. Prior to returning to graduate school, I worked as a consultant in historic preservation. As a long-time architectural historian who has prepared many nominations to the National Register of Historic Places and has conducted numerous determinations of eligibility for listing in the Register, I can readily see that
1 the University's consultant has done a poor job of assessing the significance of Smith Hall. The assessment of the historical and architectural significance of Penn's buildings was done in the mid-1970s, when buildings were generally judged on their architectural merits and their associations with prominent architects. Unfortunately, the assessments prepared by the University's consultant are equally out-dated. During the course of hearings before the City's Historic Preservation Commission, testimony was provided demonstrating the importance of Smith Hall's architect, the firm of Collins and Autenreith, in developing a new architectural sensibility late in the 19th century attuned to the new scientific values of the era, and demonstrating the historical significance of the building for its association with a major transition in the way science education was conducted at America's universities. Likewise, the University has not acknowledged the importance of the fact that
1 Smith Walk is the only place on campus where one can be surrounded in an environment solely of turn-of-the-century buildings. Rather than responsibly endeavoring to up-date the quality of the University's documentation of the importance of its buildings, the University's consultant has meticulously avoided the main points of the testimony regarding the significance of the Smith Hall. By continuing to insist that Smith Hall has little historic and architectural merit, and by diminishing the value of Smith Walk, the University hopes to show that its preferred location for the IAST is in the best interest of the University community.

The University is not using its rationalizations consistently. If the University's argument that the need to modernize results in the juxtaposition of architectural styles
1 can be used to rationalize placing a new building on the cite of Smith Hall, than it can certainly be used to rationalize placing a new building on the site of the tennis courts. The University says it does not like the site of the tennis courts because a new building would damage the setting of Franklin Field and the

Response to Comments in : M16 (See also T32)

From: Fred Quivik

Comment No.	Response
1.	Comment noted. See generalized responses to consolidated comments #1 and #5 and response to comment #11 in M5.

FRED QUIVIK, P. 2 M16

Pallestra. That setting has already been altered, however, by the construction of the David Rittenhouse Labs. The construction of a new building on the cite of Smith Hall, on the other hand, would destroy an historically significant building as well as the only turn-of-the-century environment remaining on the campus. Why impose the juxtaposition of style on a unique treasure at the heart of the campus when other alternatives would not require such a sacrifice by the University community?

The sacrifice of Smith Hall and Smith Walk the University is asking the community to make physically embodies the financial sacrifice the University is asking the community to make to support the operations of the proposed IAST. The financial
1 resources that the University will have to contribute to support the military research in the proposed IAST are scarce resources that could be used to support other facets of the educational life of this community. Smith Hall, Smith Walk, and the vitality of other functions of the University are worth more than the IAST.

M17

PUBLIC HEARING - PROPOSED INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY - UNIVERSITY OF PENNSYLVANIA: MARCH 30, 1993

STATEMENT OF CITY COUNCILMAN DAVID COHEN

1 I oppose the siting of the proposed Air Force funded Institute for Advanced Science and Technology (IAST) at the University of Pennsylvania, for several reasons:

1. The environmental and health effects of this proposed facility on the surrounding community would be disastrous. The Draft Environmental Impact Statement of February, 1993 (DEIS) admits that there will be an increase in low-level radioactive waste from the facility's operations, as well as an increase in Penn's generation of biomedical or infectious waste, a 10,000 pound per year increase in hazardous waste from this facility and a 200 ton per year increase in municipal waste. Anything which increases low-level radioactive waste, hazardous waste and infectious waste is detrimental to the community and should not be permitted in densely populated areas, like University City.

2 Moreover, the proposed facility will be using hazardous and toxic chemicals, such as flammable liquids, flammable solids, flammable gases, corrosive oxidizers, various solvents and ammonia. Its generator would emit sulfur dioxide, a toxic gas which causes lung damage and is used to form acid rain, nitrous oxides, also used in acid rain and contained in smog, carbon monoxide, a poisonous gas, and volatile organic compounds, which are hazardous to health and the environment.

The use and emission of these chemicals is dangerous to the health, safety and welfare of the community. Notwithstanding so-called precautions, it cannot be denied that there will be discharges of these hazardous substances into the atmosphere. No community should have to live in fear that for the rest of their lives, they will be subjected to unknown risks to their health, indeed threats to their lives. And in the event of spillage, leakage, emission or other discharge as a result of accident or error, the University and the City of Philadelphia would face a potential catastrophe.

Even the Draft Environmental Impact Statement admits that the specific chemical compounds to be used, the use rates, the amount of hazardous waste generated and the specific types of waste are unknown. To say that there is no risk to public health from this facility is nonsense. As the Environmental Statement says:

Response to Comments in : M17 (See also T1)

From: David Cohen (City Councilman)

Comment No.	Response
1.	Comment noted. No response required.
2.	Comment noted. See generalized response to consolidated comment #4.
3.	Comment noted. See generalized responses to consolidated comments #1, #6, and #7.
4.	Comment noted. See generalized response to consolidated comment #3.
5.	Comment noted. Construction at the Smith Hall site will be disruptive to some of the areas adjacent to the site. Although there is always a noise factor associated with construction, it should not be substantial enough to disrupt classes being taught.
6.	Comment noted. See generalized response to consolidated comment #5.

M17

Statement of City Councilman David Cohen
March 30, 1993
-2-

"As research interests evolve, the use of the IAST would, in turn, also evolve. Therefore, uses and operations over the long term cannot be described with precision with regard to such issues as space and laboratory assignments, use of chemicals, and potential waste streams."
(Draft Statement, p.2-3, emphasis added)

2 The truth is that once in place, this facility will only increase its output of hazardous, infectious, and radioactive substances as it attempts to expand its project base. The danger to the public will grow ever greater as this operation tightens its grip upon the University City community. To be sure, the community is not deceived by promises of environmental controls, as these underscore just how dangerous this operation really is and how much of a threat to the public health and safety is involved in such a proposal.

Moreover, the construction of this facility in an area already containing chemistry and bioengineering facilities only multiplies the danger to the public, because it concentrates that much more hazardous material in the same small area, creating the possibility of even greater harm from emission, spillage or other discharge.

This proposal is directly contrary to the best interests of the surrounding community as it threatens their health, the air they breathe, and their physical and emotional well-being.

3 2. The specific uses of the proposed operation are not set forth. The Draft Statement speaks of the facility being "consistent with" a Defense Department "Critical Technologies Plan". The contents of this plan are not spelled out. It is my understanding that this facility is going to be used partly, if not exclusively, for weapons research. Such a purpose is thoroughly inappropriate in a facility located in a densely populated urban area like Philadelphia, especially in an area replete with residential, commercial, institutional and academic uses, like University City. Research of this type, with the use of hazardous substances it involves, should be conducted in areas far removed from population centers.

4 3. Construction of the proposed facility would involve eliminating one lane of traffic on 34th Street between Walnut and Spruce. 34th Street is a narrow, congested street in the best of circumstances. It is a vital link to the two hospitals at 34th and Spruce, Childrens' and the University of Pennsylvania Hospital. This construction would delay emergency vehicles getting to the hospitals. The Draft Statement terms such impact "slight". Tell that to the person whose loved one is the patient in that ambulance, to whom seconds mean the difference between life and death. No patient's life should be threatened or compromised by any delay in response time as would occur from this construction.

M17

Statement of City Councilman David Cohen
March 30, 1993
-3-

4. Construction at the Smith Hall site would cause disruptive noise in the area all around the site. Numerous classroom buildings surround or are adjacent to Smith Hall and this project means classes disrupted, loss of concentration and loss of ability to study, as well as a general decline in the quality of life. In fact, the Draft Statement admits this. For while it attempts to minimize the noise factor, it recommends a fence as a mitigating measure. Aside from the unsightliness of this, it should be noted that the Draft Statement says that it suggests mitigation measures for those situations where the effect is likely to be substantial and adverse (p. 4-1). To suggest a fence or other mitigation measure is an admission that the noise will be both substantial and adverse to those around the site.

5

5. The proposal to demolish Smith Hall is disgraceful. Smith Hall is an historic building, constructed 100 years ago. It is a component of Penn's National Register Historic District. Its history has been addressed in several histories of Penn's outstanding medical school. Smith Hall's unique design of radiators in its lab enabled its early students to use the building itself to test ventilation. It remains today a link to Penn's past and a monument to the ingenuity of its creators.

Further, Smith Hall sits amidst a surrounding community of buildings from the late 19th and early 20th centuries which, taken as a whole, create an atmosphere of beauty and tranquility and a refuge from the encroachments of contemporary urban life. To tear down Smith Hall would not only destroy this unique and historic structure, it would destroy forever the sublime ambience of Smith Walk. The Draft Statement admits that this facility would alter the character and appearance of the entire Smith Walk area. It would be like putting the Empire State Building in the middle of a Currier and Ives print. The proposed facility would dwarf and overwhelm the historic Furness Building, now standing as the grand focal point at the western terminus of Smith Walk. There is no way to remediate a change in scale which is so disruptive, it utterly ruins the character and integrity of this area. To say that there are other places on the Penn campus where contemporary buildings sit beside older buildings is no answer. Smith Walk is a small area, with its own atmosphere. It cannot be "remedied" by being destroyed.

6

Conclusion: In conclusion, the proposal to construct this facility at the University of Pennsylvania should be withdrawn or turned down. It will adversely affect the lives and health, safety and welfare of the residents of the University community and the larger community. It will create untold threats to the environment, and to the sanctity of life. And it will cause disruption, noise, congestion, delay in emergency response, and a blight on the Penn campus. It does not belong in a densely populated, urban area. I urge the rejection of this senseless proposal.

Thank you.

M18

March 30, 1993

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: Cedar Park Neighbors - Cath. Bluett
Address: PO Box 19912

Phila, PA Zip Code: 19143

COMMENT: Cedar Park Neighbors (46 to 52nd; Larchwood to Kingsessing) goes on record as opposing the ~~Penn~~ because of the demolition of Smith Hall and because of our concerns about protecting the environment as well as protecting the health and safety of immediate and surrounding communities. The above concerns were expressed at our 3/24/93 Board of Directors' meeting. Further, the "Impact Study" does not sufficiently describe proposed projects and technologies. It's vagueness promotes rather than dispells fear.

1

Scientific

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Response to Comments in : M18 (See also T12)

From: Catherine Blunt (Cedar Park Neighbors)

Comment No.	Response
1.	Comment noted. See generalized responses to consolidated comments #4, #5, and #6.

M19

PETITION

1

WE, THE UNDERSIGNED, PROTEST THE INCREASED PRESENCE OF THE DEFENSE DEPARTMENT ON THE UNIVERSITY OF PENNSYLVANIA CAMPUS AND THE DELIBERATE PURSUIT OF SCIENTIFIC RESEARCH PROJECTS THAT FORWARD THE MILITARIZATION OF THE UNIVERSITY IN PARTICULAR AND SOCIETY IN GENERAL.

IN A TIME OF PRESSING DOMESTIC NEEDS, WE URGE THE ADMINISTRATORS AND RESEARCHERS OF THE UNIVERSITY, AND THE ELECTED REPRESENTATIVES OF PHILADELPHIA, TO CONCENTRATE THEIR ENERGIES AND RESOURCES ON PEACEFUL APPLICATIONS OF SCIENTIFIC RESEARCH AND EXPERTISE.

THE PENN ADMINISTRATION SEES ITS INTERESTS AS "ENTIRELY COMPATIBLE" TO THOSE OF THE MILITARY: WE DEMAND INSTEAD A RESEARCH PROGRAM COMPATIBLE WITH THE SOCIAL WELFARE.

PENN NEEDS TO STRENGTHEN ITS SCIENTIFIC RESEARCH PROGRAM, BUT THE INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY, DESIGNED TO DEPARTMENT OF DEFENSE SPECIFICATIONS, IS NOT THE ANSWER.

1. Sherri Hastmen
2. Leonard Thompson
3. [illegible]
4. [illegible]
5. [illegible]
6. Greg Wilka
7. [illegible]
8. Gwyneth Bacon
9. [illegible]
10. Melani Lamond
11. Earl McCombs
12. Bill Gyllman
13. Tony Cyus
14. [illegible]
15. [illegible]
16. Charlotte Fleiner
17. David M Arler EE '71
18. Richard Sebon '66
19. Clark Loveridge
20. Sherry A. Nahay
21. Jay E Gibson
22. John Kmiec
23. Margie Cole
24. [illegible]
25. Joyce A. Lechner
26. Alan D. Sorz
27. Denis F. Dayon
28. William L Rawn
29. Alan F. M. Dickard
30. Kelly Mooney

Response to Comments in : M19

From: General Petition

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #1.

PETITION

WE, THE UNDERSIGNED, PROTEST THE INCREASED PRESENCE OF THE DEFENSE DEPARTMENT ON THE UNIVERSITY OF PENNSYLVANIA CAMPUS AND THE DELIBERATE PURSUIT OF SCIENTIFIC RESEARCH PROJECTS THAT FORWARD THE MILITARIZATION OF THE UNIVERSITY IN PARTICULAR AND SOCIETY IN GENERAL.

IN A TIME OF PRESSING DOMESTIC NEEDS, WE URGE THE ADMINISTRATORS AND RESEARCHERS OF THE UNIVERSITY, AND THE ELECTED REPRESENTATIVES OF PHILADELPHIA, TO CONCENTRATE THEIR ENERGIES AND RESOURCES ON PEACEFUL APPLICATIONS OF SCIENTIFIC RESEARCH AND EXPERTISE.

THE PENN ADMINISTRATION SEES ITS INTERESTS AS "ENTIRELY COMPATIBLE" TO THOSE OF THE MILITARY: WE DEMAND INSTEAD A RESEARCH PROGRAM COMPATIBLE WITH THE SOCIAL WELFARE.

PENN NEEDS TO STRENGTHEN ITS SCIENTIFIC RESEARCH PROGRAM, BUT THE INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY, DESIGNED TO DEPARTMENT OF DEFENSE SPECIFICATIONS, IS NOT THE ANSWER.

1. Maureen Demmell
2. Liz Gemmell
3. Rea Frankel
4. Lauren Applegate
5. Jessica Zvolar
6. Kinsey Banta
7. Robert L Peck
8. [illegible]
9. Helen Kolenda
10. [illegible]
11. Sheila Kinney
12. Laura Lynch
13. Hans Peters
14. Cheryl Lataif
15. L. LeDon Nisly
16. Deborah Nisly
17. [illegible]
18. [illegible]
19. [illegible]
20. [illegible]
21. [illegible]
22. [illegible]
23. [illegible]
24. [illegible]
25. [illegible]
26. Joseph Kors
27. [illegible]
28. [illegible]
29. Dara Forman
30. Dana L. Atwood

M19

PETITION

WE, THE UNDERSIGNED, PROTEST THE INCREASED PRESENCE OF THE DEFENSE DEPARTMENT ON THE UNIVERSITY OF PENNSYLVANIA CAMPUS AND THE DELIBERATE PURSUIT OF SCIENTIFIC RESEARCH PROJECTS THAT FORWARD THE MILITARIZATION OF THE UNIVERSITY IN PARTICULAR AND SOCIETY IN GENERAL.

IN A TIME OF PRESSING DOMESTIC NEEDS, WE URGE THE ADMINISTRATORS AND RESEARCHERS OF THE UNIVERSITY, AND THE ELECTED REPRESENTATIVES OF PHILADELPHIA, TO CONCENTRATE THEIR ENERGIES AND RESOURCES ON PEACEFUL APPLICATIONS OF SCIENTIFIC RESEARCH AND EXPERTISE.

THE PENN ADMINISTRATION SEES ITS INTERESTS AS "ENTIRELY COMPATIBLE" TO THOSE OF THE MILITARY: WE DEMAND INSTEAD A RESEARCH PROGRAM COMPATIBLE WITH THE SOCIAL WELFARE.

PENN NEEDS TO STRENGTHEN ITS SCIENTIFIC RESEARCH PROGRAM, BUT THE INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY, DESIGNED TO DEPARTMENT OF DEFENSE SPECIFICATIONS, IS NOT THE ANSWER.

1. Julie Johnson
2. Lisa Ann Blumenthal
3. Marie Forr
4. Virginia Hunt
5. John A. Lee
6. Maneesha Lal
7. W. W. VanLandingham
8. John T. Eger
9. Alison Dooley
10. Martha M. Hilfiker
11. Kate Isobel
12. Julie Erin Kinsley
13. [illegible]
14. Linda Vasquez
15. Andy Schmookler
16. Mark Hamel
17. Elissa Baker
18. Felicity Ward
19. Sheila Doran
20. Susan Ormon
21. Peggy Gilbertsen
22. Ted Smolinski
23. Vasha Rao
24. Richard Amato
25. Edward Frankel
26. Ray Sha
27. Jon Howarth
28. Joan Rosen
29. Jon Anderson
30. Tina Dias

M19

PETITION

WE, THE UNDERSIGNED, PROTEST THE INCREASED PRESENCE OF THE DEFENSE DEPARTMENT ON THE UNIVERSITY OF PENNSYLVANIA CAMPUS AND THE DELIBERATE PURSUIT OF SCIENTIFIC RESEARCH PROJECTS THAT FORWARD THE MILITARIZATION OF THE UNIVERSITY IN PARTICULAR AND SOCIETY IN GENERAL.

IN A TIME OF PRESSING DOMESTIC NEEDS, WE URGE THE ADMINISTRATORS AND RESEARCHERS OF THE UNIVERSITY, AND THE ELECTED REPRESENTATIVES OF PHILADELPHIA, TO CONCENTRATE THEIR ENERGIES AND RESOURCES ON PEACEFUL APPLICATIONS OF SCIENTIFIC RESEARCH AND EXPERTISE.

THE PENN ADMINISTRATION SEES ITS INTERESTS AS "ENTIRELY COMPATIBLE" TO THOSE OF THE MILITARY: WE DEMAND INSTEAD A RESEARCH PROGRAM COMPATIBLE WITH THE SOCIAL WELFARE.

PENN NEEDS TO STRENGTHEN ITS SCIENTIFIC RESEARCH PROGRAM, BUT THE INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY, DESIGNED TO DEPARTMENT OF DEFENSE SPECIFICATIONS, IS NOT THE ANSWER.

1. Bella Spinoza
2. Alan Wooten
3. Marjorie Kaplan
4. Marie Bloom
5. Edith W. Seng
6. Sarah Nachmias
7. Suzanne Lardaro
8. [illegible]
9. Mark Dickson
10. [illegible]
11. Maria Kohlfs
12. [illegible]
13. Professor Emmons
14. Peggy W. Brown
15. [illegible]
16. Scott Kohn
17. Marie Freeman
18. Beatrice Mendez 7/13/91
19. Gina Burnett
20. Marjorie Kaplan
21. Alvin Jackson
22. Lynn Anderson
23. Elizabeth Bird
24. Margaret Petersen
25. Lisa Neary
26. Kathy Gilly
27. Kate M. Esposito
28. Barbara A. Becker
29. Margaret Compton
30. Fred Levy

05-23-93 09:14PM FROM AFCEE BROOKS B1161 TO 8621E430740: P008/008 **M20**

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: Sarah Lewis
Address: 4017 Spruce St
Phila, PA
Zip Code: 19139

1 | COMMENT: I oppose the proposed DAST

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Response to Comments in : M20

From: Sarah Lewis

Comment No.	Response
1.	Comment noted. No response required.

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: Laura Loder

Address: La Salle University TC 4BA
Phila, Pa 19141

this facility
It should due to all verbal objections

COMMENT: " You have broader considerations that might follow what you might call the 'falling dominoe principle. You have a row of dominoes set up. You knock over the first one, and what will happen to the last one is that it will go over very quickly. So you have the beginning of a disintegration that would have the most profound influences.
- Dwight Eisenhower 16 April 1953
the Public Power of Presidents
Not only is there potential danger to the city and the ruin of a perfectly useable historical building, this project is a risk to the moral advancement of society. Surely there are more practical and worthy ways of employing people and advancing technology.

1

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Response to Comments in : M21

From: Laura Loder

Comment No.	Response
1.	Comment noted. No response required.

06-23-93 08:14PM FROM AFCEE BROOKS 8:161 TO 8621543307491 P003/006 M22

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: ELIZABETH F. CAMPION
Address: 4828 WALTON AVE
PHILA. PA.
Zip Code: 19143

COMMENT:

1 (1) The EXISTING BUILDINGS & VISTAS ARE Lovely — The proposed PROJECTS ARE UGLY.

2 (2) TRAFFIC DELAYS ALONG the MAIN ARTERIES TO HUP & CHOP COULD BE LIFE THREATENING. PENN + CONSTRUCTION = TRAFFIC DELAYS

3 (3) PENN IS ALREADY ALLOWING "PAYMENT" TO "VOLUNTEERS" FOR RESEARCH, SOME OF IT WITH RISKS WHICH FRIGHTEN ME. MORE RESEARCH COULD LEAD TO the SEDUCTION OF the YOUNG & / OR POOR (FOR RESEARCH SUBJECTS) WHO ARE MINORITIES & UNDERPRIVILEGED AT PENN & in West Phila.

#Elizabeth Campion

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Response to Comments in : M22

From: Elizabeth F. Campion

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #5.
2.	Comment noted. See generalized response to consolidated comment #3.
3.	Comment noted. The University of Pennsylvania is committed to safeguarding the rights and welfare of all human beings who participate as subjects in research conducted at the institution. Internal and cooperative endeavors otherwise supported or subject to regulation by any federal agency, state or local authority, private sponsor and/or the investigator's School are covered by the same policies and procedures set forth in the University's Multiple Project Assurance (M1025) negotiated and approved by the Public Health Service of the Department of Health and Human Services through the Office for Protection from Research Risks. This document of "Assurance" outlines specifically what the University will implement in its program to comply with the regulations guiding the conduct of all University biomedical and behavioral research involving humans as subjects, in 45 CFR Part 46. All research proposals at the University calling for the use of human subjects must be reviewed by the University's Committee on Human Subjects. Human subjects reviews and approvals must be obtained either before the proposal is submitted or before a deadline is set by the sponsoring agency. No proposal will be processed by the University's Office of Research Administration (ORA) unless the human subjects protocol has been submitted for review. Human subjects "Guidelines" are available from ORA by contacting the Assistant Director for Regulatory Affairs at 215-898-2614.

05-03-93 08:14PM FROM AFCEE BROOKS AFB TO 8621E430T401 P004/009

M23

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: MEGHANA MUDE

Address: 2029 NORTH BROAD ST
JOHNSON HALL -706
PHILADELPHIA, PA

Zip Code: 19122

COMMENT:

1 The socioeconomic implications of this MODAL ARE OUTRAGEOUS. THERE IS A DISTINCT LACK OF COMMUNITY CONCERN, ALTHOUGH THE FORCE AND PROPAGANDA OF THE "PUBLIC GOOD" ARE CONSISTENTLY BEING USED AS A SHIELD. THE PUBLIC GOOD IS THE LAST CONCERN IN THIS PROJECT

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Cheanault Road
Brooks AFB, Texas 78235-5318

Response to Comments in : M23

From: Meghana Mude

Comment No.	Response
1.	Comment noted. No response required.

04-23-93 08:14PM FROM AFCEE BROOKS B:1161 TO 8621E:307401 P005/008 M24

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: BARRY PRINCE
Address: 612 W. LEHIGH AV

PHILA PA Zip Code: 19133

1 COMMENT: AS AN ALUMNUS OF PENN I WOULD REGRET THE DEMOLITION OF SMITH HALL. I HAVE READ THE DEIS. I NOTED THE DISCUSSION OF THE HISTORICITY OF THIS BUILDING; IT LACKS. ON THE OTHER HAND GETTING THE LAST AT PENN

2 IS A PLUS FACTOR FOR MY UNIVERSITY. PERHAPS ONE DAY THE ARCHEOLOGICAL REMAINS UNDER THE LOTT TENNIS COURTS WILL BE EXCAVATED AND REAP A RICH REWARD.

I HOPE SMITH WALK WILL BE CLOSED NO LONGER THAN NECESSARY DURING CONSTRUCTION. IT WOULD TAKE A LONG WALK TO GO AROUND.

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Response to Comments in : M24 (See also M3)

From: Barry Prince

Comment No.	Response
1.	Comment noted. See Generalized response to consolidated comment #5.
2.	Comment noted. No response required.

04-23-93 08:14PM FROM AFCEE BROOKS 3:IF1 TO 8621564337401 P.05/020

M25

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: Angela Winfrey
Address: P.O. Box 19912
Cedar Park Neighbors
Phila. Pa. Zip Code: 19143

COMMENT:

1 As a resident of the Cedar Park community, I am opposed to the development of the Inst. for Advanced Science and Technology due to the insufficient information provided on the proposed projects for research. Also, I am opposed to any use of taxpayer money being used for the creation of new weapons and research on ways to safely biodegrade them. Biotechnology should be focused on saving the environment and on developing safe and resourceful ways to eliminate existing weaponry threats to the ecosystem. No more focus on military armament development should be made at the taxpayers expense.

2

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Response to Comments in : M25

From: Angela Winfrey

Comment No.	Response
1.	Comment noted. See Generalized response to consolidated comment #6
2.	Comment noted. See Generalized response to consolidated comment #1.

05-23-93 08:14PM FROM AFCEE BROOKS B1161 TO 8621543907401 P007/009

M26

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: Sui San Mui

Address: 219 S. 49 Apt. 2
Philadelphia, PA 19104

Zip Code:

COMMENT: I am a City Planning student @ Penn. Last semester my planning workshop class met in Smith but there was no room for us in Meyerson. As I study preservation more I am moved in the direction of supporting and rehabilitating old buildings of aesthetic, historic, sentimental merit. More - I like Smith Hall. A major, if not the major, reason I came to Penn was because of the beauty and age of the buildings. I am against tearing down Smith Hall. Once Smith Hall is gone it will not be able to be rebuilt. As part of Penn's am- thenticity will be gone.

1

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Response to Comments in : M26

From: Sui San Mui

Comment No.	Response
1.	Comment noted. No response required.

THIS PAGE INTENTIONALLY LEFT BLANK

9.4.3 Comment Letters and the Air Force Responses

A complete photocopy of the materials received during the public comment period follows, except as noted below. The Air Force response to comments is provided immediately after the first page of each statement. Two sizable attachments were provided in the materials submitted as C78. Because of their size, these materials were not included. Additionally, these materials are readily available for public review through the University library system.

THIS PAGE INTENTIONALLY LEFT BLANK

C1

March 30, 1993

Lt Col Gary Baumgartel
of the
Air Force Center for Environmental
Excellence, Environmental
Planning Division.

Sir

Written here are my remarks
and my knowledge (of 26
years study) for this Public
Hearing held this 30th day
of March 1993 at the David
Rittenhouse Laboratory Annex
toward (on the University of
Penna. Campus) in Room (A1
First Floor 209 S 33rd St. (Phila)
starting at 7 pm.

1 What is Draft Environmental
Impact Statement?
When was the National Historic
Preservation Bureau formed?
Where was Act (Section 106 Review-
Process) on the proposed Institute
to advanced Science and Techno-
logy at the Univ of Pa enacted

Response to Comments in : C1 (See also C43)

From: Marie Polachek

Comment No.	Response
1.	Comment noted. No response required.

C1

2

There isn't any need for this advanced Science and Technology Institute especially at the Univ. of Pa

all knowledge of past and present environmental impact has been given tweets & scientists along with proceedings necessary to have a plush green, flourishing, decay free earth (which will result in semi desert free statis also) but were ignored in 1988-89 and again in the beginning of this year 1993, probably (I hope) because of lack of records on the past and some unanswered questions of the 1966-67 beginnings of the impact worse than envrg in 'Z6 from auto emissions.

I have questions my self of 1966-67. Following are my questions and the possible questions of the others. (I feel confident that (as a theory I have) C.O. impact around 1966-67 will be proven fact.)

C1

3

I am not going to write my theory because it needs discussion in great depth.

Has the Air Force studied the environmental impact, starting with the envrg day in '70 A.D. from auto emmissions?

There hasn't been any mention of underground testing for decades. What happened to Nuclear weapons. Is the sand used by Kuwait in Desert Storm a Nuclear weapon?

What happened to devices for auto emmission control?

What happened to Government regulations and devices for smoke stack emmissions and controls on waste being emmited in streams and rivers?

Why was only florocarbons blamed for wearing away the Ozone?

Why did a Phila Weather man on T.V. say that pollution is the

C1

4

Ozone and it is 30 miles high (in California I believe)

Was the Dept of Agriculture consulted about the mutations in plants and animals?

Were the Doctors consulted about nature eradicating some diseases?

What happened to Sickel cell anemia? What happened to Lupus? How come the DPT's infant injections started causing the infants to trouble. What happened to the Miracle Drugs, the mycins (Aeromycin, Neomycin)

Why didn't the FDA stop the abundance of medications that cause the most part prodruce side effects (some severe) that needed a counteracting medicine. Did the FDA figure natures intervention and remain silent and step out of the picture?

So the Military governed by Scientists now too? (Scientists are into engineering in Universities

C1

5

in New England (they are making microscopic wires smaller than a hair than) (It was reported they were manufactured into auto air bags when autos don't have air bags anymore and only a couple ever had them) Why were all those Florida engineers fired or laid off years ago Engineering was supposed to be either obsolete or a saturated field. and Scientists are into research in medical labs. They are tampering with brain cells and the blood I believe (at seperate locations) supposedly to cure brain cancer (& forget the blood disease,))

I'll get back to the Military. Did Scientists tell Pres Carter to end the Selective Service? Who called the disease hitting the men in Vietnam Agent Orange (so unthinkable. Malaria II is for a tropical disease) Did Scientists do it? I suspect Nature made the new Malaria strain as I suspect nature made the Aids (another unthinkable name) strain of V.D. (I figure the hetero

C1

6
service getting hit (and the others with it was due to elections (like radon and that either you encountered in sitting closer than 6 ft in front of a T.V (don't get the name) They now have articles on HIV Aids. HIV is just as untechnical. It was intravenous feeding.

What are the Military like now with our volunteer army? Are they War mongers or really patriotic. (I take fault with Pres. Regan and Pres Bush.) The NA never attacked. Who directed Pres Regan to bomb Kadafy? Who was directing Pres Bush in Desert Storm? Was it Secretary? (I didn't like much about the invasion of Granada. I have an idea that we were helping an army as the U.S Constitution says the U.S can do. (help army's)

I'm hoping for the return of the Selective Service if the population numbers of age can

C1

2

warrant it without over the number, size Military and over burdening the budget

I feel in the military should be the Reps (or the unlicensed none) They have effeminate chromosomes in them but I know our women go to combat now. Those woman were condolenced a lot wrong. They have a personality ~~deficiency~~ deficiency. They might be war mongers. (I liked the Wacs and Waves)

I believe there is only one thing more for the air force to investigate (I must not forget though - Why ~~does~~ did the National Historic Preservation Office make an Act strictly for the University of Pa? (Was it the Secretary again directing them too?)

Is Lt Col a correct rank for the Air Force Personnel? (I never knew the air force ranking.) Why did they make ~~Colonel~~

C1

8

Admiral - Rear Admiral. Shea
of the Pentagon take the rank
of Colonel. (He was on TV about
1989. I only remember him saying
his boys didn't like the
newspaper.) Was it the Scientists again?

Is the Navy on a blacklist because
of usurping with their Crystal
City in Washington. (The Scien-
tists probably ordered it built
to counteract their going against
the Constitution and making
DC a city. The Constitution says
the don't must cede 10 or so acres
from a State for the Capital. It so
easy enough isn't it to disem-
body a city. I haven't read where
it is in the works

I have a Brother who was in
charge of traveling the globe to
the nuclear submarine bases
(His exact duties I don't know.) He
just returned after being employed
by the Navy Dept for about 35
years. He developed something

C1

9

for them. I still have contact with him
about it. Another Brother is
employed at the Gyromatic
Air Station, in the Northeast. His
title I don't know. Length of service
is about 30 years. Started with the
Govt in the Navy Dept. Another
Brother is accountable to the
Bureau of Weights and Measures
on his job. A job of 30 or 35 years
also.

My ex Husband was a bio chemist
Employed with Smith Kline
Pharmacies for about 20 years.
He just retired too.

Yr A Citizen
Mrs Marie Palached
Dreft Wood Pa

P.S. Do you know if the FAA
ever investigated the VOR
Radar rectangular box coloring
with oil deals and metals that
I reported to them in 1967? I asked
why. VOR as it vocationally
organized Radar (Witchmade
I figured then too)

C1

PS- I just read that J. Edgar Hoover investigated the Mafia way back. I wish he were still alive so I could tell him that Mafia were the dentists or ~~the~~ were men ~~running~~ directed by the Soviets. (I had been to the FBI on Feb 6th or 7th 1967 to report a Mafia type that I had encountered with that Mafia though it wasn't a gather wealth operation)

I almost forgot I'm worried about ~~Yeltzin~~ Yeltsin (I haven't had time to read a thing on Russia though except headlines)

Pres Clinton wants an appropriation for him & Hillary. Can you inform anyone? Yeltzin should not ~~is~~ in the Russian Congress. He appears to be another Hitler. Can't Russia go to a Parliament with a Communist party seat, like England with the Labor Party ~~now~~ in the House of Commons and House of Lords and France just voted in Socialist party along with its Mitterand's Parliament

C2

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: DAVID E. Gibson ; SANE/FREEZE & ACT FOR PEACE Justice
Address: 3700 Chestnut St. Phila PA 19104

Zip Code: 19104

COMMENT: Attached

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

received
8 APR 1993

Response to Comments in: C2 (See also T27)

From: David Gibson (SANE Freeze)

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #1.

C2

Testimony of David E. Gibson; for SANE/FREEZE & Act For Peace & Justice regarding the proposed Institute for Advanced Science and Technology at U of Penn

1 My name is David Gibson, I am organizer for SANE/FREEZE * Act for Peace & Justice, an advocacy and action organization calling for massive reorientation of our national priorities from military to human needs. We promote economic conversion, a foreign policy based on conflict resolution and the concept of Global Security and we are opposed to the funding of military research on campus. Tis or any campus. We represent over 6000 persons on our mailing list in the Delaware valley, with a growing and active base.

In my testimony tonight I would like to show how military funding will contribute to research that perpetuates a new and dangerous high tech arms race. That this institute will have valuable research on civilian technology is not questioned. But based on the criteria for eligibility for Defense Department funding for the construction of this project H. R. 4739 under section 243, subsection (c) LIMITATIONS– The grant shall be available for initial construction of a cost-shared facility, the Federal share of which shall not exceed 50 percent of the total cost, designed to support mutually supportive technology research currently underway at the institution in response to the critical technologies research identified by the Department of Defense in its critical technologies plan... It is obvious that research on military applications will be within the IAST's scope.

I wish to examine these technologies in detail, (some of which are grouped together) in the DoD report to the Armed Services Committees of the Congress, 1990. I understand that as of this writing, there have been additions to the list.

All of the writing that follows until the conclusion is taken directly from the DoD report to Congress except where the comments are clearly editorial. = *Itailc*

pervasiveness of some technologies is demonstrated by the fact that they support all 12 goals, as shown by the lines in the table.

Table 1. Major Long-Term Goals of the Investment Strategy

DETERRENCE

Goal 1. Weapon systems that can locate, identify, track, and target strategically relocatable targets.

Goal 2. Worldwide, all-weather force projection capability to conduct limited warfare operations (including special operations forces and low intensity conflict) without the requirement for main operating bases, including a rapid deployment force that is logistically independent for 30 days.

Goal 3. Defense against ballistic missiles of all ranges through non-nuclear methods and in compliance with all existing treaties.

MILITARY SUPERIORITY

Goal 4. Affordable, on-demand launch and orbit transfer capabilities for space-deployed assets with robust, survivable command and control links.

Goal 5. Substantial antisubmarine warfare advantages the United States enjoyed until recent years.

Goal 6. Worldwide, instantaneous, secure, survivable, and robust command, control, communications, and intelligence (C3I) capabilities within 20 years, to include: (a) on-demand surveillance of selected geographical areas; (b) real-time information transfer to command and control authority; and (c) responsive, secure communications from decision makers for operational implementation.

Goal 7. Weapon systems and platforms that deny enemy targeting and allow penetration of enemy defenses by taking full advantage of signature management and electronic warfare.

Goal 8. Enhanced, affordable close combat and air defense systems to overmatch threat systems.

Goal 9. Affordable "brilliant weapons" which can autonomously acquire, classify, track, and destroy a broad spectrum of targets (hard fixed, hard mobile, communications nodes, etc.).

AFFORDABILITY

Goal 10. Operations and support resource requirements reduced by 50 percent without impairing combat capability.

Goal 11. Manpower requirements reduced for a given military capability by 10 percent or more by 2010.

Goal 12. Enhanced affordability, producibility, and availability of future weapons systems.

Table 2. Major Linkages Between Critical Technologies and Major Long-Term Goals for the S&T Program

Critical Technology \ Goal	1. Strategically Relocatable Targets	2. Force Projection/Rapid Deployment	3. Defense Against Ballistic Missiles	4. On-Demand Space Asset Deployments	5. Antisubmarine Warfare	6. Worldwide, All-Weather C3I/Surveillance	7. Signature Management	8. Close Combat/Air Defense	9. Brilliant Weapons	10. Reduced Support Requirements	11. Personnel Reduction	12. Affordable/Producible Weapon Systems
1. Semiconductor Materials and Microelectronic Circuits	◄											►
2. Software Producibility	◄											►
3. Parallel Computer Architectures				X		X			X	X		
4. Machine Intelligence and Robotics				X				X	X	X	X	X
5. Simulation and Modeling		X				X		X		X	X	X
6. Photonics						X			X			X
7. Sensitive Radars	X		X		X	X		X	X			
8. Passive Sensors	X		X		X	X		X	X			
9. Signal Processing	X		X	X	X	X			X		X	
10. Signature Control	X		X		X		X					
11. Weapon System Environment	X	X	X		X			X	X			
12. Data Fusion	X		X	X	X	X				X	X	
13. Computational Fluid Dynamics				X	X			X				X
14. Air-Breathing Propulsion		X		X			X	X		X		X
15. Pulsed Power			X					X				X
16. Hypervelocity Projectiles			X					X	X			X
17. High Energy Density Materials			X	X				X		X	X	X
18. Composite Materials	◄											►
19. Superconductivity			X		X	X				X		
20. Biotechnology Materials and Processes										X	X	X

C. SELECTING THE CRITICAL TECHNOLOGIES

This section presents the criteria used for selecting the 20 critical technologies, which are then listed and prioritized.

1. Criteria for Selection

The critical technologies selected must meet the following criteria:

Performance Criteria

- Enhancing performance of existing weapons systems
- Providing new military capabilities

Quality Design Criteria

- Contributing to availability, dependability, reliability
- Contributing to weapons systems affordability (lower life cycle cost through producibility, maintainability, etc.)

Multiple Use Criteria

- Pervasiveness in major weapon systems
- Strengthening the industrial base

For a technology to be considered critical, major improvements in one or more selection criteria are sought. (As a guide, improvements by a factor of three in some performance parameters are considered appropriate.) The first four parameters are the same as in last year's plan; the last two criteria have been added this year, one of them to reflect explicitly the growing concern for spin-off to the industrial base.

2. The Selected Critical Technologies

The following 20 critical technologies were selected. (They are not shown in order of priority.)

- Semiconductor Materials and Microelectronic Circuits
- Software Producibility
- Parallel Computer Architectures
- Machine Intelligence and Robotics
- Simulation and Modeling
- Photonics
- Sensitive Radars
- Passive Sensors
- Signal Processing
- Signature Control
- Weapon System Environment
- Data Fusion
- Computational Fluid Dynamics
- Air-Breathing Propulsion
- Pulsed Power
- Hypervelocity Projectiles
- High Energy Density Materials
- Composite Materials
- Superconductivity
- Biotechnology Materials and Processes

The Military Applications of the Defense Department's 22 Critical Technologies

1. Microelectronics and their fabrication

Microelectronics technology meets each of the six major criteria used for selecting the critical technologies. This technology experiences major performance improvements resulting in significantly improved military system and subsystem performance and capabilities. Furthermore, micro-miniaturization technology has proven to dramatically increase reliability, dependability and availability of components by reducing their size and power requirements, while also providing massive economies of scale for cost-effective production of large quantities of devices. Furthermore, microelectronics technology has pervasive effect on virtually every us weapon system, current or future. For example, increasing miniaturization techniques allow major modifications of current weapons platforms. (such as the creation of aerodynamically unstable aircraft controlled by on-board microprocessors, as on the F-16) to the development of radically new weapons concepts (e.g., "brilliant" weapons, *planned for extensive use in "star-wars" type weapons systems*). Increasing circuit complexity and functionality also will allow major expansion of key military operational capabilities for reconnaissance, surveillance and target acquisition (RSTA), command, control and communications (C3), and battlefield lethality.

2. Preparation of Gallium Arsenide and other Compound Semiconductors (to replace silicon)

Silicon Technology will continue to prevail during the very high-speed integrated circuit (VHSIC) era and for a long time thereafter and will continue to be the technology of choice for specialized applications (such as high-power solid-state switches in hypervelocity and beam weaponry). At the same time GaAs will remain the most readily available and commonly used material for microwave and millimeter-wave frequency devices and circuits, These circuits are critical building blocks for DoD electronic warfare, radar, smart weapons, and communications systems. GaAs is also in solid-state active aperture antennas (phased arrays). In the 1990's the same integrated circuit elements will appear more frequently in equipment for communications, electronic warfare, electronic intelligence, avionics, missile guidance and control, and surveillance from space. Important as microelectronics circuits are today, future weapons will rely even more upon advances in semiconductor fabrication techniques.

3. Software productibility

Software is a key element of virtually all major defense systems. Software development and maintenance costs in DoD are estimated to be as much as 10 percent of the entire DoD budget, with rework, evolution, and maintenance accounting for more than 80 percent of these costs. Because of the critical role that software plays in system functionality, deficiencies in software affect overall system performance out of proportion to the software development and maintenance costs. Automatic software generation also provides considerable leverage in a declining budget environment. Today, software development and support are labor-intensive, costly activities. Secure and trusted software has lagged behind the development of other areas of software technology but is increasing in criticality with the size and complexity of the software in defense systems. DoD must take the lead in secure and trusted software research since security is frequently outweighed economically in the commercial marketplace by other requirements. *So much for dual use.*

4. Parallel Processing Computer Technology

Computer system technology is expected to continue to provide a critical edge in performance for all classes of weapons and command and control systems. Weapons system accuracy and corresponding lethality,-

-plus improved performance in Naval, ground, and air vehicles will be significantly enhanced through the exploitation of parallel computer architectures. High-performance parallel computing will enhance DoD weapon systems in two primary ways... First, utilization of powerful parallel machines in the design of weapons systems themselves and of platforms that deliver these systems will result in more effective individual weapon systems and lower amortized cost per system. Highly reliable, space-qualified embedded parallel processors are being developed for elements of the strategic defense system (*star wars*), and current commercial parallel processors are very applicable to ground-based processing requirements. Second, larger military platforms will be able to carry high-performance parallel processors and be able to execute currently infeasible computations while in an operational status. Shipboard signal processing vastly superior to current Airborne Warning and Control Systems (AWACS) aircraft functionality is conceivable. Similarly, the notions of "smart hulls" for submarines and "smart skins" for aircraft are dependent on high-performance, parallel computing systems. High-performance, embedded systems are also crucial for automatic target recognition capability by smart weapons. Finally, parallel computing can enable predictive modeling of atmospheric and oceanographic events, which can effect the employment of advanced weapons systems.

5. Machine Intelligence/Robotics

The battlefield of the future will be fast paced. Sensors and weapons will identify targets on a real-time basis. Intelligent machines will fuse, process, and analyze data and present usable results almost instantaneously *in shoot first ask question later program-like efficiency*. Efforts also are underway to develop complex decision-making aids – battlefield management system (BMS) by processing huge amounts of information, machine intelligence can provide much more efficient tools for effective military intelligence, data analysis, battle management assessment, timely decision making, rapid replanning and survivability through distribution of tasking, machines and data repositories. Thus, machine intelligence and robotics applications will reduce the need for person-power while improving human response times. Additional advantages will result from the use of autonomous robotic ground vehicles and unmanned aerial vehicles. Removing crews from hazardous environments and exposed platforms also will improve survivability. *It will also make decisions to go to war less dependent on calculating the political costs of enduring casualties to US or allied troops while allowing us to target and impact foreign (or domestic) populations with decreasing risk of protest based on the self-interest of voting and taxpaying constituencies*. Intelligent self-diagnostic on-line and off-line systems will improve readiness and reduce maintenance and logistics costs, *making war cheaper and more cost efficient*. These robotic devices (with lighter components) will accomplish missions such as weapon loading, mine-field breaching, materials handling, refueling and assembly more rapidly and with less power consumption. *It also reduces the likelihood of any dissension in the ranks.*

6. Simulation and Modeling

Simulation and modeling technology can be applied to every major DoD weapons program to reduce design and production cost, improve performance, improve diagnostics and maintenance, etc. Training cost effectiveness and safety can be significantly increased by providing a realistic interactive simulation of tanks, armored personnel carriers (APC's), portable weapons etc. simulators and models are used also to estimate human factors in this environment, including behavioral modeling of crew performance and the like. Also nuclear effects simulation is a critical element in estimating the vulnerability of weapon systems during a nuclear weapons exchange. *This is most alarming to find that the DoD continues to maintain the expectation of fighting and prevailing in a nuclear exchange, regardless of the effects on civilian populations.*

C2

7. Integrated Optics and Fiber Optics

The superiority of fiber optics over copper-based systems can be measured by information-carrying capacity (which sometimes exceeds 10,000 times that for optical systems), energy loss in signal transmission (100 times lower), error rate (10 times lower), greatly reduced size and weight, and by its resistance to electromagnetic interference, nuclear environments, and other harsh environments. Future developments in semiconductor lasers, diode-pumped lasers and modulators promise still greater improvements in data rate capacity and link margin. Ultra low-loss fiber optics is of great importance to DoD in a number of critical military capabilities...• Wide area communications • Wide area surveillance • Undersea and tactical missile guidance • Remote surveillance and tele-operated weapons platforms (removing the requirement for personnel to enter high-threat areas). This technology will also help in the development of Diode-pumped solid-state lasers, which are 10 times higher in efficiency and 100 times better in reliability than flashlamp-pumped laser systems

8. Sensitive Radars

This technology is a major factor providing a technological edge to US forces by enhancing detection, localization, classification, identification and tracking capabilities. Radar sensor technology, at both RF and laser frequencies will remain a major factor in future warfare. It is crucial that techniques be developed to counter ongoing threat efforts to reduce observable radar signatures of weapon platforms. Laser radar technology will have its greatest impact in the areas of navigation for cruise missiles, helicopters and robotic vehicles to name but a few.

9. Passive Sensors

This is a critical adjunct to US anti-stealth efforts. The effective exploitation of passive sensors enhances US system survivability even in high-threat nuclear environments. Integrated sensor approaches will allow for multiple functions and collection of multiple target signatures. Such capabilities are not now available. The development of this kind of capability, *much like the advance of the arms race itself merely makes high tech nuclear warfare more likely*. Fiber optic sensors also support major improvements in anti-submarine warfare (ASW) surveillance as well as provide the basis for autonomous underwater vehicle guidance.

10. Automatic Target Recognition

Application of signature processing technology to conventional weapon systems offers advantages such as relieving operator workload and increasing kill probability. Signal processing can automate wide area surveillance, target search, classification, identification, tracking and aimpoint selection. The aerodynamics of flight requires that airborne antennas be located within the structural envelope of the aircraft, for example, in bubble-like radomes transparent to microwave radiation. These radomes must be robust and able to operate in trans- and post-nuclear environments.

11. Signature Controls

Reduction in the signature of weapon systems significantly affects their design, support and effectiveness. The use of signature reduction technology for strategic systems can render early warning radar less effective, thus allowing greater penetration with reduced weapon system losses thereby improving the capability to find and destroy targets. Stealth technology not only enables the US military to penetrate Russian airspace, *the mission that it was originally designed for, but it is superior to conventional approaches for intervention capability when engaged in war fare with developing nations who are at a much lower level of technological development.*

12. Data Fusion

Dramatic advances in data processing technology have enabled significant advances in command, control and intelligence (C3I) and battle management during the past 20 years. This technology has advanced to the point that many functions performed by military operators and intelligence analysts can now be performed by data processing systems. Data fusion technology includes data processing techniques for a wider range of military applications from battle management to cockpit display integration.

13. Computational Fluid Dynamics

Overall CFD, with advances in computer hardware architecture, will provide design tools for surface ships and submarines to support quieter, more stable and more maneuverable operations. This will also make the design of smaller, quieter, more survivable designs with low vibration levels which will reduce crew fatigue and improve weapons accuracy and component lives. CFD can be applied to the analysis and design of high-performance parachutes. Parachutes are thought of principally for aircrew survival and airborne assault; however, they also are important components on a variety of advanced weapons as well as in recovery, evaluation and reuse of expensive weapons systems and research vehicles. For ground forces, longer range artillery will provide a new capability in deep attack. Higher muzzle velocities will significantly affect anti-armor measures.

14. Air-Breathing Propulsion

Generic air-breathing propulsion technology has application to a wide range of military systems, including aircraft, cruise missiles, future hypersonic systems, land combat vehicles and ships. Types of propulsion systems involved include those based on gas-turbine, ramjet and diesel engines.

15. Pulsed Power

Changes in battlefield scenarios are possible because of major improvements in pulsed power technology that allow the development of high-power weapons and sensors. These include directed energy weapons (DEW), and kinetic energy weapons (KEW), improved target identification and surveillance systems, and rapid fire earth-to-orbit (ETO) launchers. DEWs (lasers, microwaves and particle beams) provide speed -of-light operations with high firing rates at long ranges, which are capable of destroying or disabling missiles and other targets. *More Star Wars madness.*

16. Hypervelocity Projectiles

Hypervelocity projectile technology involves the capability to propel projectiles to greater than conventional velocities (over 2.0 km/sec) as well as understanding the behavior of projectiles and targets at such velocities. Propulsion systems that are being investigated include electromagnetic guns, electrothermal guns, traveling-charge guns with liquid or solid high-energy propellants, hypervelocity rockets and explosively driven shock tubes. New designs in armor-piercing rod-shaped charges etc.

17. High Energy Density Materials

These materials are compositions of high-energy ingredients used as explosives, propellants or pyrotechnics. They are used in almost all weapons systems, fielded by all of the services. They provide the means for getting most ordnance items, whether bullet, missile/rocket or kinetic energy vehicle to target, and once near, they provide the means to kill the target.

C2

18. Composite Materials

Composite materials technology affects virtually every new weapon system. These materials are required in a wide range of vehicle structures, including high-temperature propulsion systems, hypervelocity vehicles, short take-off and landing (STOL) and vertical take-off and landing (VTOL) vehicles as well as spacecraft, protection against directed energy threats and advanced hull forms and submarine structures.

19. Superconductivity

Potential applications, many of which have already been tested , include more compact, higher efficiency electric drive systems for ships and possibly land vehicles and aircraft, electric generators, electric energy storage systems for directed energy weapons, superconducting cavity particle accelerator directed-energy weapons, electromagnetic guns and aircraft catapults, magnetic and electromagnetic shields are among the many uses for superconductivity in military applications.

20. Biotechnology Materials and Processes

The effect of biotechnology on the military capabilities of the US in the non-medical arena can lead to the development of a vast array of products, processes, and technologies including new or improved lightweight, high-strength polymers and composites for construction of aircraft, protective clothing and gear and other military equipment; sensors for detecting chemical, biological And toxic agents *or their production.* In addition to these and a myriad of other uses, one beneficial use regards DoD's significant hazardous waste problem and the enormous cost of the required remediation of DoD sites. This cost cannot be deferred because of compliance as a legal requirement.

Dual use is a myth

Lastly I would like to point out that the Dual use argument is a fallacy. Of the original 20 critical technologies addressed in the DoD/DoE report to the armed services committees of the Congress in 1990 there is a comparison of each technology to determine for which DoD/DoE R&D leads the US effort and military applications drive the technology, as opposed to which DoD/DoE R&D is comparable to private industry use and which is mainly civilian use driven. Of the original 20, for only 4 is DoD/DoE heavily reliant on private industry. 6 are compatible while 10 are mainly driven by military applications.

Military commanders that I have interviewed have assured me that the planners in the Pentagon will ensure that they get the most out of each dollar that they invest to achieve the highest rate of return on their money. Much like the proverbial "camels nose", once it gets into the tent, it will not be long before the rest of the camel is inside as well. Such is the case with military funding on campus.

It is common practice at universities across the country that when research papers are put together to complete a wholistic report on technological research on critical technologies these papers as a group are often considered to be a new and separate document than each of the individual papers and can then be classified. This does not bode well for academic freedom or any means of accountability to hold the Pentagon to any promises that this research will be benign.

Conclusion:

The central question is not if these technologies are applicable to civilian applications. It is clear that some are, and all have that potential. What is at issue is simply this... To what degree do military applications benefit the university and surrounding community and at what cost. How much will civilian based R&D suffer the competition for federal funding. How many more scientists and engineers will the military buy from Penn. to the detriment of more pressing needs for specialists to help us design a sustainable society for our children.

C2

SANE/FREEZE & Act For Peace & Justice urges a transfer of funds at the federal budget level directly from the Pentagon, to the Department of Commerce and the Department of Education to be awarded to universities such as Penn. for research institutions such as the one proposed here tonight. We further urge the people assembled here tonight to lobby your elected officials for such a transfer.

I thank you for your time.

C2

Table C-1. Summary of Critical Technology Challenges

Technology	Technology Challenge		Defense Role
1. Semiconductor Materials and Microelectronic Circuits	• Low-volume production techniques for sub 0.2 micron devices • Radiation hardening • CAD for complex circuits • Sub 0.3 micron production lithography • Packaging/interconnect • Compound semiconductor materials preparation	○	• Focus R&D on unique military needs • Support generic R&D in faltering areas
2. Software Producibility	• Reusable software • Automatic software generation • Secure and trusted software • Software for distributed systems • Software and system engineering environments • Real-time/fault-tolerant software	○	• Provide R&D support for unique DoD software • Lead US efforts in metrics and tools
3. Parallel Computer Architectures	• Integration of heterogeneous processor elements • Architectural design • Integration of special-purpose systems • Algorithms, tools, and languages • Specialized compiling, operating, and debugging approaches	●	• Government-supported R&D leads US effort • Component technology from commercial sources
4. Machine Intelligence and Robotics	• Knowledge acquisition and representation • Automated reasoning • Man-machine interface • Training • Articulated mechanical devices	○	• Exploit extensive commercial R&D for unique needs • Rely on commercial hardware
5. Simulation and Modeling	• Complex battle management • Training in complex military environments • Industrial design and production	●	• DoD R&D on military weapon systems and environments • Rely heavily on commercially available computing hardware

(Continued)

Key: ● DoD/DoE R&D leads the US effort—DoD/DoE applications drive the technology ◐ DoD/DoE R&D comparable to industry and other agencies—many non-defense applications ○ DoD/DoE heavily reliant on industry or other agency R&D—non-defense applications dominate

C-2

Table C-1. Summary of Critical Technology Challenges (Continued)

Technology	Technology Challenge		Defense Role
6. Photonics	• Ultra low-loss fiber optics • High-power laser diodes and arrays • High-speed networks with fiber optic backplane • High-speed, low-energy switches • High-performance spatial light modulators • High-speed optical interconnects • Opto-electronic integrated circuits • Nuclear-hardened components	●	• Exploit extensive commercial R&D • Lead US R&D effort in laser diode arrays • Focus on military-unique applications
7. Sensitive Radars	• Wide bandwidth radar • Laser radar • Sensors for non-cooperative identification • Miniature synthetic aperture radars	●	• DoD leads major R&D efforts • Exploit specialized components and software of industry
8. Passive Sensors	• Passive threat warning • Microwave/millimeter-wave radiometry • Passive coherent radar • Advanced thermal imagers • IR search/track • IR focal plane arrays • Compact antennas • Superconducting sensors • Fiber optic sensors • Large volumetric acoustic arrays • Sensor integration	●	• DoD leads major R&D efforts • Exploit specialized components and software of industry
9. Signal Processing	• Matched filter techniques • Model-based approaches • Artificial neural networks • Hybrid optical-digital techniques • Signal processing for phased arrays • Algorithm development • Training set development	●	• Aggressive R&D on military-unique applications • Lead US R&D effort in algorithms and performance evaluation

(Continued)

Key: ● DoD/DoE R&D leads the US effort--DoD/DoE applications drive the technology ◉ DoD/DoE R&D comparable to industry and other agencies--many non-defense applications ○ DoD/DoE heavily reliant on industry or other agency R&D--non-defense applications dominate

Table C-1. Summary of Critical Technology Challenges (Continued)

Technology	Technology Challenge		Defense Role
10. Signature Control	• Design for low observability • Radar-absorbing materials • IR signature reduction • Acoustic quieting • Visual and UV signature reduction • Deceptive emissions and decoys	●	• Provide R&D supporting full range of military needs
11. Weapon Systems Environment	• Underwater acoustic propagation • High-resolution environmental remote sensing • High accuracy environmental prediction • Scene models for system design and evolution	●	• Integrated effort of empirical data collection and modeling
12. Data Fusion	• Man-machine interface • Distributed, real-time systems • Algorithm development • Multi-level security • Expert systems development	●	• Lead US-wide R&D effort in man-machine interface aspects (e.g., displays) • Displays • Rely on industry R&D for hardware and many aspects of software
13. Computational Fluid Dynamics	• Validation of CFD codes • Unsteady aerodynamics • Submarine design • High-performance rotorcraft • Hypersonic flight • Propulsion system internal flows • Interdisciplinary CFD	◉	• Employ commercially available computing hardware for military systems and weapons
14. Air-Breathing Propulsion	• Aerothermodynamics • High-temperature and light-weight materials and coatings • Lightweight structural design • High-pressure ratio compression systems • High-temperature combustors and turbines • Reduced signature, multi-functional nozzles	◉	• DoD R&D leads national efforts to provide the basis for future generations of aircraft gas turbine engines

(Continued)

Key: ● DoD/DoE R&D leads the US effort--DoD/DoE applications drive the technology ◉ DoD/DoE R&D comparable to industry and other agencies--many non-defense applications ○ DoD/DoE heavily reliant on industry or other agency R&D--non-defense applications dominate

C2

Table C-1. Summary of Critical Technology Challenges (Concluded)

Technology	Technology Challenge	Defense Role	
15. Pulsed Power	• Compact high-power sources • Power conditioning • Power switching	●	• DoD and DoE developing all aspects of the technology
16. Hypervelocity Projectiles	• Projectile design • Projectile propulsion • Projectile-target interaction	●	• DoD and DoE developing all aspects of the technology
17. High-Energy Density Materials	• Insensitive energetic materials • Low-signature, low-hazard, reliable missile propulsion • Non-toxic propulsion for space application • Low-signature, low-vulnerability gun propulsion • Explosives for enhanced blast, fragment energy, and bubble energy for increased lethality warheads and torpedoes, and shaped charge jets for armor penetration	●	• DoD and DoE leading US R&D effort
18. Composite Materials	• Ultra-high-temperature metal, carbon, and ceramic matrix composites • Exterior and reinforcement coatings • Aerothermal responsive and life cycle effects	●	• DoD lead in R&D of life cycle effects on composites • Transition commercial technology to military platforms/systems
19. Superconductivity	• HTS materials and processing • LTS applications • Integration with semiconductors	◕	• Lead US effort in R&D of high-temperature superconductors • Evaluate applications of low-temperature superconductors
20. Biotechnology Materials and Processes	• Materials • Processes • Sensors	○	• Evaluate DoD applications of industry and other agency R&D

Key: ● DoD/DoE R&D leads the US effort–DoD/DoE applications drive the technology ◕ DoD/DoE R&D comparable to industry and other agencies–many non-defense applications ○ DoD/DoE heavily reliant on industry or other agency R&D–non-defense applications dominate

C-5

C2

A High-Tech Research Agenda

1. Microelectronic circuits and their fabrication. Decreasing the size and increasing the capabilities of computer chips.
2. Preparation of gallium arsenide and other compound semiconductors. Replacing silicon in computer chips. Increasing their speed and other capabilities.
3. Software productivity. Increasing productivity among computer software programmers.
4. Parallel processing. Computer technology in which problems are broken into many parts and solved by several computers in tandem.
5. Machine intelligence/robotics. Computers programmed to learn from past experience and make decisions.
6. Simulating and modeling the physical world with a computer.
7. Integrated optics. Using light instead of electricity in electronic circuits and computers.
8. Fiber optics. Cables that transmit light for telecommunications.
9. Sensitive radars. Radar that can detect stealth-type aircraft.
10. Passive sensors. Sensors that monitor their surroundings without revealing their presence.
11. Automatic target recognition. Machines that could track targets and use artificial intelligence to classify them.
12. Phased arrays. Radar technology that does not require physical movement of the antenna.
13. Data fusion. Machines that process large amounts of raw data and present it in convenient forms.
14. Signature controls. Making "stealth" weapons less visible to radar.
15. Computational fluid dynamics. Computer simulation of flow of fluids, such as air, across aircraft or rocket surfaces.
16. Air breathing propulsion. Improvement in weight to power ratio of jet engines.
17. High power microwaves. Used as an offensive weapon.
18. Mobile high power sources. Mobile devices to fire pulses of laser or microwave energy.
19. Kinetic kill energy. Devices like electromagnetic guns that fire ultra high velocity projectiles.
20. High temperature / high strength / lightweight composite materials. Embedding substances in plastic matrixes to create new materials.
21. Superconductivity. Creating devices in which electrical resistance is very low and can be used in a wide varieties of applications involving electricity.
22. Biotechnology materials and processing. Altering bacteria and other living organisms to produce new substances.

Crucial Technologies: 22 Make the U.S. List

By MARTIN TOLCHIN

Special to The New York Times

WASHINGTON, March 16 — The Government has designated 22 technologies as critical to national security and "the long-term qualitative superiority of U.S. weapons systems."

The technologies include biotechnology, laser weapons technology and the manufacture of sophisticated composite materials that might be used on aircraft or elsewhere.

The list and an accompanying report have been circulating in Washington for several days. They are a result of legislation Congress passed last year requiring the Departments of Defense and Energy to designate technologies that merit special consideration in Government spending.

The legislation required that the departments set goals for developing the chosen technologies, compare the positions of the United States and the Soviet Union in developing the technologies, and cite the potential contributions that America's allies could make to the technologies.

The law does not establish new barriers to foreign access to American technology, nor does it provide new safeguards against foreign competition for American companies.

Other Federal laws, however, give the President authority to block corporate takeovers by foreign companies when the transaction is considered a threat to national security. And the Pentagon and the Commerce Department are required to approve certain sales and transfers of technology.

The 22 technologies were selected on the basis of four criteria: an ability to significantly enhance the performance of proven types of weapons

Continued on Page D3

Business Day

The New York Times

U.S. Designates 22 Technologies as Crucial

Continued From First Business Page

systems; a potential for creating new capabilities or systems; a potential for improving the reliability, availability and "maintainability" of weapon systems, and "affordability."

The Defense and Energy Departments will now plan special efforts to finance research and development of the technologies. The report does not include an estimate of the cost of such efforts, but the sum is likely to be in the billions of dollars. And directly or indirectly, that money would have to be authorized by Congress.

Some Defense Department officials expressed surprise that the list did not put more emphasis on space technology. Others thought that high-definition television belonged on the list.

The two departments said the list should not be considered final. "Other important technologies may become prime candidates for another year's list," the report said.

The four criteria "are not necessarily independent, nor are they the only criteria to be taken into consideration," the report said. "A sputnik-like surprise, or an unexpected surge in terrorist activity, could affect the technologies selected."

A Senator's Reaction

Senator Jeff Bingaman, the New Mexico Democrat who sponsored the list legislation last year, said today: "We're going to look at whether the right things are in there, and whether there are technologies not included that should be included. There's also the question of how well we're managing the development of these critical technologies, and how well we're funding their development."

Senator Bingaman, chairman of the Armed Services subcommittee on the military industry, will convene a hearing Friday at which the report will be officially released.

The legislation requiring the list was a reflection of Congressional concerns that the nation was losing its edge in technologies crucial to the military, like supercomputers.

While the law did not specifically address overseas competition, its enactment was regarded as a victory for those whose priority is military self-sufficiency and a defeat for those who counsel reliance on allies, the free market and the global economy.

The list could be altered by a 'sputnik-like surprise.'

Previous Lists

In the past, the Department of Defense has made its own lists of critical technologies, but these have tended to be so broad that they were all-inclusive. To avoid this problem, Congress asked the two agencies to specify only 20 technologies, but the agencies came up with 22.

"Maintaining America's lead in key national security technologies will not be an easy goal to achieve in the future," Senator Bingaman said. "I am hopeful that this plan will not only force us, as a nation, to think strategically about how we spend billions of research dollars every year, but it will also strengthen coordination among agencies toward achieving that goal."

Senator Bingaman's hearing on Friday will take testimony from the two officials responsible for the report in their agencies: Milton Lohr, Principal Deputy Under Secretary of Defense for acquisition, and Troy E. Wade 3d, Assistant Secretary of Energy for defense programs.

Craig Fields, deputy director of the Defense Advanced Research Projects Agency, told a conference on Wednesday that he was concerned about the shortage of computer software capability. He said the Pentagon was already facing a shortage of software writers.

Dr. Fields was among two dozen participants at a conference on foreign ownership of the United States' military industrial base. The conference was sponsored by the Johns Hopkins University Foreign Policy Institute in Washington.

The 22 critical technologies are: microelectronic circuitry; preparation of gallium arsenide and other compound semiconductors; software design productivity; parallel processing for high-speed computing; robotics; simulation and modeling; integrated optics that use light instead of electricity for circuits and computers; fiber optics, which is used in telecommunications cables; sensitive radars; passive sensors, which can detect targets or monitor equipment without emitting a signal, and automatic target recognition;

Also, phased arrays, a kind of radar that does not require moving an antenna; data fusion, in which machines process raw data into more usable forms; signature control which is used in creating hard-to-detect weapons; computational fluid dynamics, in which computers simulate the flow of liquids or gases; air-breathing propulsion, which can improve jet engine efficiency; high-power microwaves, which can be used as weapons; mobile high-power lasers; kinetic kill energy, a potential use of electromagnetic energy in firing projectiles at high speeds; lightweight composite materials; superconductivity, which can be used to create devices in which electrical resistance is very low, and biotechnology materials and processing.

C3

UNIVERSITY of PENNSYLVANIA

Department of Chemical Engineering
Towne Building
220 S. 33rd Street
Philadelphia, PA 19104-6393
Tel: 215-898-8351 FAX: 215-573-2093

April 8, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Dear Colonel Baumgartel:

Re: Institute for Advanced Science and Technology
The University of Pennsylvania

1 I write in support of the construction of the IAST Building, according to the proposed architectural plans and at the proposed site, adjacent to the present chemistry building. I do so as a senior member of the Department of Chemical Engineering and an engineering scientist active in academic research for the past 35 years.

Laboratories of the type to be constructed for the IAST Building are sorely needed if we are to continue our academic mission and provide the fundamental basis for the new chemical technologies our nation must have in the next century. Given the careful planning that has taken place in preparation for this building and its full compliance with all relevant environmental, safety and building codes, it will be an exemplary addition to the laboratory facilities on this campus. Moreover, it is essential that it be placed at the proposed site, adjoining existing chemistry labs and providing immediate access for those of us in engineering who will be active in the collaborative research to be featured in this enterprise.

I trust that construction can commence as soon as possible. It has been 20 years since space of this type has been added on this campus. We are losing valuable opportunities every day this project is delayed.

Sincerely your,

JAQuinn

John A. Quinn
Robert D. Bent Professor
of Chemical Engineering

cc: Eduardo D. Glandt, Chairman, Department of Chemical Engineering
Gregory Farrington, Dean, School of Engineering and Applied Sciences
Barry S. Cooperman, Vice Provost of Research

JAQ/mdj

100 Years of CHEMICAL ENGINEERING at PENN

Response to Comments in : C3

From: John Quinn

Comment No.	Response
1.	Comment noted. No response required.

C4

DELAWARE VALLEY
REGIONAL PLANNING COMMISSION

The Bourse Building, 21 South 5th Street
Philadelphia, PA 19106

Telephone: (215) 592-1800
FAX: (215) 592-9125

April 8, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Lt. Col. Baumgartel:

The Delaware Valley Regional Planning Commission (DVRPC) is the Metropolitan Planning Organization responsible for long-range planning in the nine county Delaware Valley region. We have received and reviewed the Draft Environmental Impact Statement (DEIS) concerning the proposed Institute for Advanced Science and Technology (IAST) at the University of Pennsylvania. While we support the construction of the IAST as a positive step toward advancing interdisciplinary collaboration in the scientific and technological fields, we question the proposed action to build the majority of the project on the site of the Smith Building, a certified historic structure and a contributing resource to the campus National Register Historic District.

Currently, we are working on a comprehensive plan for our region, and one of the goals in this plan is "To Preserve and Promote Historical and Cultural Resources." We are therefore concerned by the proposal to completely demolish Smith Hall and significantly alter the special 19th century ambiance of Smith Walk. 1

Instead, we think the best compromise is the "Reuse of a Portion of Smith Hall Alternative". In this alternative, the most number of historic buildings are renovated, including the remaining portion of Smith Hall, the Morgan, Music and Towne Buildings, Hayden Hall, and the Cret Wing. This scheme will alter the views and ambiance of Smith Walk, but not as much as the complete demolition of Smith Hall would. In addition, the design of the Phase I and II IAST structures should honor and relect, rather than dominate, the historic neighborhood that they are joining.

Response to Comments in : C4

From: Patricia Elkins, Delaware Valley Regional Planning Commission

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #5.

C4

If the development of the IAST is carried out as such, we believe that the negative impacts to Smith Hall (the Duhring Wing) and Smith Walk will be outweighed by the positive impact of the IAST and the adaptive reuse of the six historic buildings to be renovated.

Thank you for the opportunity to comment on the DEIS.

Sincerely,

Patricia Elkis

Patricia Elkis, AICP
Research Analyst

C5

Robert P. Gasparro
4128 Chester Ave. #1
Phila. PA 19104
(215) 387-9471

Lt. Gary P. Baumgartel AFCEE/ESE
8106 Chennault Rad
Brooks AFB Texas
78235-5318

April 8, 1993

Re: IAST site at Univ. of PA

1 Dispatching note of my opposition.

Am acquainted of a course of conduct designed to tear down a building on an Ivy League University. To wit, Smith Hall.

Am also aware of the people in the neighborhood who oppose the plan, and the significance they bear in community affairs and politics.

2 Am willing to contribute to litigation or help subsidize opposition if one of the alternative sites for construction is not chosen.

Sincerely,

Robert P. Gasparro

Robert P. Gasparro, Esquire

Reply(optional): (Retain one copy/ return one copy)

Response to Comments in : C5

From: Robert Gasparro

Comment No.	Response
1.	Comment noted. No response required.
1.	Comment noted. No response required.

C6

ELIZABETH F. CAMPION
4828 WALTON AVENUE
PHILADELPHIA, PA 19143
215-472-9210

Lt Col Gary P. BAUMGARTEL
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Rd
Brooks AFB TX 78235-5318

RE: U. of PA. - SMITH HALL - I.A.S.T. PROJECT 04/07/93 p. 1 of 3

Dear Sir:

I attended the IAST meeting at PENN-DRL on 3/31/93. I was surprised (but not dismayed) that ALL of the speakers took a position against the project.

By the luck of the shuffle, I was the last speaker and heard all the protests; many that further fueled my opposition to the IAST project.

I did not plan to speak, so I had no notes. I suffer from "stage fright" and remain insecure about the words I spoke, therefore, I am sending this letter to define my position and supplement my speech.

I protest for myself - a lifetime neighbor, alumna (CW-'77), and local business owner (E.F. CAMPION & COMPANY, INC.).
I protest for my children, Katie Rose (age 6) and MAC (age 2), both lifetime neighbors.
I protest for my company, which markets the homes of University City.

The basis of my protest is:

1. What is - is good, and
2. What is proposed - is ugly, inconvenient and frightening, and
3. PENN has been a poor steward of its own people, places and artifacts, and has been a worse steward of its neighbors and neighborhoods.
   I am unable to trust PENN with this project.

WHAT IS - IS GOOD
Smith walk is healthy and verdant. It appears timeless. It helped "sell" me on PENN. It is one of the last "Ivy" areas of campus visible to the public. It has enormous value as scenery - earning the interest (and possibly students and donations) from those who travel on 34th street and/or Locust Walk.
SMITH HALL has a special history and is lovely to look at.

IAST AS PROPOSED IS ...
... UGLY:
This is subjective, but some powerful architects and Urban planners spoke out to confirm my view.

IAST AS PROPOSED IS ...
... INCONVENIENT:
1 This is a heavily trafficked area. There are buses on Spruce, Walnut and 34th. Pedestrians walk through from the Campus and also from the Subway, the Elevated, Center City and 30th Street. There will be delays on 34th street (both during construction and ongoing because the loading area is inadequate).

Response to Comments in : C6 (See also T34 & M4 & M22)

From: Liz Campion

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #3.
2.	Comment noted. See generalized response to consolidated comment #4.
3.	Comment noted. No response required.

1 Treatment may be delayed for patients caught in traffic delays. Death/s or unnecessary damage may be the result. Pedestrians (students, employees, patients, consumers, conventioneers, etc.) will have to detour the construction causing risk and delay.

IAST AS PROPOSED IS ...
... FRIGHTENING:

2 I am most afraid of testing on humans, use of hazardous materials, and disposal of biological and other hazardous materials. The many other speakers did nothing to allay my fears and spoke to issues I had not considered and now fear.

PENN IS A POOR STEWARD OF ITS OWN...
... PEOPLE:

I was a "Mayor's Scholar" at PENN. I came from a background of almost unimaginable need. I entered PENN in 1973 as a functional orphan (mother on a machine then considered experimental; father declared dead several times (he ultimately died 9/5/75)), tenth of twelve kids, living with a sister so dramatically schizophrenic that there were very real and constant fears that she would permanently hurt herself or someone else. It took me a long time to interpret some of the subtle damage and neglect perpetrated by PENN.
Some examples:

- *PENN determined that there was no basis for me to live on campus, location only (not need) was the determining factor.
- *PENN bypassed the intent of the Mayor's Scholarship Program by requiring "Work-Study" and loans as part of my scholarship package. They did not consider that both were a hardship and neither filled my actual needs - so I had to be a student, do PENN's silly (lifeguarding = work-study?), underpaid work and find income elsewhere that could be earned at times compatible with my course and work-study obligations.
- *PENN required only one meeting with an Academic advisor. The advice was bad and sexist. I majored in Fine Arts.

I had experience with other students who had worse complaints.

- *Rape victims who had not been protected from (or even informed of) crime/s.
- *Other work-study students who were more afraid of their advisors than of the materiels they worked with. I saw mishandling of hazardous material.
- *I knew many students (including myself) who sold blood on 32nd street, and/or became paid "volunteers" of experiments.

PENN is so large it has no true accountability.
PENN has so many "comfortable" people at the top that it is not anticipating the real world issues of need, greed, exhaustion, laziness, etc.

PENN IS A POOR STEWARD OF ITS OWN...
... ARTIFACTS:

In 1973 I took an anthropology course with Dr. F. Rainey. During this course I learned that most of the artifacts stored in the basement of the University Museum were not yet cataloged. The storage methods (or lack of method) were damaging to the artifacts, and additionally there was terrible security. When I asked "what keeps people from stealing?" I was told "honor". There was acknowledgement of widespread theft.
I experienced similar careless handling of towels and locker combinations when I worked at Hutchinson Pool in 1976 and 1977.
Today, when I go to research the history of West Philadelphia, I am told that the library has been "looted" of its photos, papers, books, etc. and that the suspect is a tenured professor still on campus.

C6

RE: U. of PA. - SMITH HALL - I.A.S.T. PROJECT 04/07/93 p. 3 of 3

PENN IS A POOR STEWARD OF ITS OWN...
...BUILDINGS:
PENN has allowed the neglect and deterioration of many beautiful buildings, while erecting the equivalent of a suburban mall on one of its main avenues. Recent renovations should be applauded, but they are not in areas so readily accessed by the public. We need to preserve the Smith Walk vista not only for the Campus, but also for the citizens of the neighborhood and the commuters who travel 34th street.

3

PENN IS A POOR STEWARD OF ITS OWN...
...NEIGHBORS AND NEIGHBORHOODS:
PENN has done a lot of damage with previous ill considered expansion. It has stolen public streets for private use (Locust, 36th, etc.). It used "eminent domain" to raze the stores and homes of the 3400 block of Walnut. The resultant structure houses a mini-mall and food court. The neighborhood lost families, and neighborhood services (e.g. a "mom and pop" owner occupied pharmacy was replaced with a franchised sandwich stand). The impact was felt in the neighborhood and its other institutions (e.g. St. James closed its elementary school). Please realize any proposal to increase hazardous waste could result in further home owner flight and subsequent deterioration of a beautiful residential neighborhood.

In summary:
PENN should not be allowed to destroy the accessible beauty which is SMITH HALL and SMITH WALK.
PENN should not be allowed to bring research to an urban area whose occupants fears that research and/or its by products.

Thank you for your kind attention to this matter and for allowing me to present my objections in written form.

Sincerely,

Liz Campion

Liz Campion

enc: 8/8/91 letter
cc: Lucien Blackwell, Thomas Foglietta, James Roebuck, Arlen Spector, Harris Wofford, PCSPI, UCHS, U.C. PRESS, Sylvia Barkan, Mike Hardy, Harlan Girard, and to the UNIVERSITY OF PENNSYLVANIA c/o
DORIS COCHRAN-FIKES, ALUMNI OFFICER;
BARRY COOPERMAN, VICE-PROVOST
SHELDON HACKNEY, PRESIDENT;

C6

ELIZABETH F. CAMPION
4828 WALTON AVENUE
PHILADELPHIA, PA 19143
New FAX: 215-471-0151 or at work 215-~~386-6551~~ New 472-9210

08/08/91

SHELDON HACKNEY, PRESIDENT
DORIS COCHRAN-FIKES, ALUMNI OFFICER
UNIVERSITY OF PENNSYLVANIA
Philadelphia, Pa. 19104

COPY

RE: SMITH HALL

Dear President Hackney and Ms. Cochran-Fikes,

I graduated from PENN in 1977. I was raised at 4324 Larchwood Avenue and continue to live and work in University City.

I love the look of SMITH HALL and think it provides a unique benefit for your campus. I was a bright high school student from a desperately poor inner city family with 12 kids. My National Merit Status made me eligible for complete financial aid packages from many major universities (including HARVARD in its first year of accepting woman). I chose PENN because it was familiar and appeared timeless, verdant, open and permanent. The walks, lawns and ivy covered buildings were effective seducers of my mind and scholarships. They were like the "props" used in bank lobbies and law firms. I am discouraged by much of PENN's recent construction. Many lovely buildings remain inside the Campus. But PENN is closing out the public thoroughfares. Walnut, Spruce, 33rd, 34th, 36th and 38th, are public roads. PENN seems to be doing its best to remove any identification with the "IVY LEAGUE" (prestige, accomplishment, etc.) along those roads. Some recent buildings appear "modern/generic" or suburban commercial.

Please think of the work PENN does to "sell" itself to faculty and students. SMITH HALL and SMITH WALK help convince lookers of the permanence and value of PENN. And, it gives that message to the passengers of every car that passes down 34th street (probably 10,000 or more per day). Think of families going to performances at the CIVIC CENTER and at IRVINE (Ice Capades, Raffi, etc.). Consider the Doctors at HUP & CHOP. Think of business people trying to get on and off the Expressway. Don't you want to capture their interest, donations and students? I believe SMITH WALK charms the public, has subliminal advertising value and is a doorway to ADMISSIONS and FUND RAISING.

Conversely, destroying SMITH HAll will remove these benefits AND create traffic headaches during construction and demolition (34th Street already suffers delays during major events like the FLOWER SHOW and PENN RELAYS).

I hope you will leave SMITH HALL as is.

I am prepared to picket or make other protest as recommended by the University City Historical Society.

Sincerely, Liz Campion

cc: McGrath, Barkan, Johnson, UCHS, MacDonald, Gray, Blackwell, Foglietta, Roebuck, Williams

C7

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: Helen Rozwadowski
Address: 4602 Springfield Ave
Philadelphia PA
Zip Code: 19143

COMMENT: At the meeting, one of the speakers reported that the Smith site was better than the others (including LRSM lot) due to availability of certain back-ups necessary for the wet labs. My understanding, based on the previous hearing I attended, was that BOTH the Smith site & the LRSM adjacent one provided those backups. Please look into this discrepancy, because this sort of misrepresentation, if that is what is going on here, seems typical of the effort to discredit all alternative sites so thoroughly that the choice of the Smith Hall site seems like the only option, which I do not believe is the case.

1

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Response to Comments in : C7

From: Helen Rozwadowski

Comment No.	Response
1.	Comment noted. See section 2.3.2 of the EIS for a discussion of shared resources available in an IAST at the Smith Hall and LRSM sites, as well as those resources which must be duplicated.

C8

UNIVERSITY OF PENNSYLVANIA

DEPARTMENT OF ECONOMICS — ECONOMICS RESEARCH UNIT

F. Gerard Adams
Professor of Economics

Office
McNeil Building
3718 Locust Walk
Philadelphia, Pa. 19104-6297
Phone (215) 898-7725

Home
1 University Mews
Philadelphia, Pa. 19104-4756
Phone (215) 476 0645

March 22, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Rorad
Brooks AFB
TX78235-5318

Dear Mr. Baumgartel:

This letter is letter is with regard to the draft environmental impact statement for the Institute of Advanced Science and Technology in Philadelphia, Pa. I believe the Environmental Impact Statement fails to recognize adequately the considerations affecting the siting of the IAST on the present site of Smith Hall.

The following are my principal objections:

1 | 1. Definition of the Community--the relevant community is not only the surrounding area in Philadelphia, of which I am a resident, or the faculty, researchers and graduate students in the sciences of the University of Pennsylvania. It includes the undergraduate students who make up by far a greater number, and faculty, professional students, and graduate students in other fields. From their perspective the proposed site is entirely inappropriate.

2 | 2, Siting--the location proposed is near the center of campus easily connected with a pedestrian bridge to the College Green mai.: part of the campus. This is an appropriate site for classroom facilities, not a research building. The proposed siting is for the convenience of a small number of faculty and graduate students, but at the cost of limiting the space potentially available in mid campus for classroom buildings.

3 | 3. Aesthetics--I would be willing to accept the demolition of Smith Hall, not exactly an attractive building. But the proposed large scale building on that site creates a canyon for the traffic flow on 34th Street. That is not desirable.

4 | 4. Toxic materials--the fact that some toxic materials are presently brought to the adjacent site, the Chemistry Building, is not an excuse for erecting a facility that requires toxic materials in the center of campus.

5 | The University has many other more suitable sites in the parking lot next to LRSM or in the vast area just east of campus that is presently vacant or in little used train yards. These areas are more appropriate for a research facility.

Yours sincerely,
F. Gerard Adams

Response to Comments in : C8

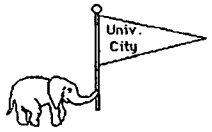
From: Gerard Adams

Comment No.	Response
1.	Comment noted. See section 3.2, Local Community, which identifies West Philadelphia as the community, including students, faculty, and staff of Penn.
2.	Comment noted. See generalized response to consolidated comment #7 with regard to need for proximity to existing laboratory facilities.
3.	Comment noted. See generalized response to consolidated comment #5.
4.	Comment noted. See generalized response to consolidated comment #4.
5.	Comment noted. See generalized response to consolidated comment #7 with regard to need for proximity to existing laboratory facilities.

C9

University City Republican Committee

4529 Baltimore Avenue, Philadelphia, Pennsylvania 19143 - (215) 387-7300



Matthew Wolfe, Esq.
Chairman

March 24, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Lt. Col. Baumgartel:

I have been made aware of your plan to construct an Institute for Advanced Science and Technology (IAST) in our area. While we know that many groups are opposing the construction in part because they are opposed to the type of research and the military uses of that research, that is not our perspective at all. We are very much in support of the research intended for the project, as well as both its military and non-military uses. Further, we are very pleased that there is a possibility that the IAST may be located in the Philadelphia area generally and in University City more specifically. Our concerns go more towards the environmental impact on the historical architecture of the University of Pennsylvania, and specifically Smith Hall.

You have recognized the University of Pennsylvania as one of the country's premier scientific research institutions. In addition, the University City Science Center, in close proximity to the university, has also been in the forefront for scientific research as well as a producer of needed employment in our community. The University of Pennsylvania meets many of your criteria, including being a recognized center conducting artificial intelligence research education, carrying out research on electronically and bionically conducted organic polymers, and having demonstrated competence in research and education in nonlinear optics and visual analysis. Penn already conducts a great deal of research under federal and other grants. We would agree, however, that overcrowded laboratory space has limited Penn's existing research capabilities and that the construction of an IAST on campus would be important in the research contemplated.

The University of Pennsylvania has done a fairly good job at making its campus aesthetically pleasing. We consider the composition of the University of Pennsylvania's campus to be vital to the ambiance of University City. Smith Hall fits into the campus very well aesthetically. Smith Hall was constructed in 1891/1892, with changes made in 1899. Smith Hall must also be looked at in the context of the surrounding buildings on Smith Walk and 34th Street, including the Morgan Building, Bennett Hall, the Furness Building, Irvine Auditorium, the Music Building, Haden Hall and the Town Building. These are all older buildings of a similar composition.

1 In the draft of your Environmental Impact Statement , you denigrate the importance of Smith Hall historically. While you correctly point out that Smith Hall was not listed in the National Register of Historic Places application for inclusion in the Historic District, Smith Hall has had a long and close association with the University of Pennsylvania, particularly in the scientific area. You refer to Smith Hall as a modest example of Collins and Autenreith's work at the end of their careers. You further indicate that while Smith Hall is significant as a building devoted to laboratory purposes at Penn, that there are many late nineteenth century laboratories that survived on university campuses at this time. "Many" is certainly subjective in its use. There are not "many" in University City as there are not "many" examples, modest

received
APR 1993

Response to Comments in : C9

From: Matthew Wolfe

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #5.
2.	Comment noted. See generalized response to consolidated comment #7.

or otherwise, of Collins and Autenreith's architectural designs in University City. All this aside, however, the proposed demolition of Smith Hall must be looked at in the context where Smith Hall sits today.

1 Dropping a modern structure out of scale with its surroundings harms each and every of the older buildings in the Smith Hall area. It further takes up more of the valuable open space than is necessary and makes both 34th Street and Smith Walk much less pleasing aesthetically. While you state that the inclusion of new design in existing architectural groupings is consistent with university planning principles, if that is a genuine principle which the university adheres to, it should be changed.

The new appeal of Smith Walk is that the buildings are all of a traditional brick or stone style with architectural ornamentation and features characteristics of the nineteenth century or early twentieth century. There are very few other areas of the University of Pennsylvania campus that retain such quiet elegance, dignity, and history. That atmosphere is an appealing vital an attractive part of the Victorian atmosphere of University City. Replacing Smith Hall with a modern structure would destroy the aesthetic integrity of Smith Walk an harm students, staff, and visitors to the campus.

2 Let us speak strongly in favor of the IAST being constructed on the parking lot of the Laboratory for Research for the Structure of Matter (LRSM). While this would entail the demolition of the Edison Building (a singularly unimportant structure) and the loss of some parking places, it would seem that its environmental impact would be negligible. It is in the middle of the East Science Precinct of the University of Pennsylvania and is bounded on the north by Drexel University. All of the structures immediately adjacent to this site are modern. Placing your ugly building next to the ugly LRSM building makes much more sense. That site is outside of the Campus National Register Historic District. It could therefore be designed with more freedom in terms of bulk, scale, height and materials. The site would appear to be sufficient for your current needs. While you claim that there are more economies of scale in locating next to the Chemistry Building, you admit that there are still many economies in terms of possible use of the facilities located in the LRSM Building, such as the way stream and materials handling capabilities and the loading dock. The loss of some economies is certainly a small price to pay in order to salvage Smith Hall. The bottom line is that Walnut Street is simply not a street that carries an enormous amount of foot traffic. The automobiles whizzing by are unlikely to concern themselves one way or the other regarding the modern architecture or the loss of open space (parking lot) at that site.

All of the other proposed alternatives would be unacceptable. Thereuse of a portion of Smith Hall alternative removes a portion of this significant building but also plunks down a building out of scale and of modern construction in the historic district. We would have the same objections to that alternative. The Lott's Tennis Courts alternative removes a very important area of open space and harms the area's use as an Athletic Center. The Palestra is a hallowed hall in athletic lore, and the construction of your building would make it a structure that could only be seen from a few feet in front of it. It is unlikely that space could be found for the tennis courts at other locations. We would oppose that alternative. Finally, you

2 indicate that you have rejected other locations in the University City area. We would hope that you choose the LRSM parking lot alternative, but while the University City Science Center and the old GE building at 32nd and Chestnut Streets do not meet all of your criteria, you could take great latitude in the design and us of your facility at those locations. While we would agree that they are not as optimal as the LRSM parking lot site, if you reject all of the proposed alternatives, we would encourage you to look at those sites in our community again.

Thank you for your careful consideration of this matter.

Sincerely,

Matthew Wolfe

MW/lc

Paid For By the University City Republican Committee, William A. Roper, Jr., Treasurer

PIDC

PHILADELPHIA'S ECONOMIC DEVELOPMENT CORPORATION

WILLIAM P. HANKOWSKY
President

March 29, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

RE: Institute for Advanced Science & Technology at the University of Pennsylvania

Dear Colonel Baumgartel:

1 On behalf of the Philadelphia Industrial Development Corporation ("PIDC"), it is my pleasure to indicate our strong support for the proposed Institute for Advanced Science & Technology ("IAST") at the University of Pennsylvania.

PIDC will act as administrator of $1 million of Pennsylvania Capital Redevelopment Assistance grant funding for the renovation of the Morgan Building for the Center for Technology Transfer as part of the overall IAST project. This funding was appropriated in the fiscal year 1991 State Capital Budget by the Pennsylvania General Assembly and was subsequently signed into law by Governor Casey.

PIDC strongly supports the innovative effort of the Center for Technology Transfer to bridge the worlds of academia and business. Specifically, we believe the technology - research brokerage services provided by the Center will have significant economic impact on the Philadelphia region. It is currently anticipated that the entire IAST project will provide new employment for over 300 scientists, researchers and support personnel and will attract an estimated $20 million per year in new sponsored research. Additionally, the proposed construction and renovation will provide a minimum of 75-100 construction jobs. As was recently noted by Mr. Barry Cooperman (Vice President for Research at the University of Pennsylvania):

Philadelphia Industrial Development Corporation
2600 Centre Square West 1500 Market Street Philadelphia PA 19102-2126 215.496.8020 FAX 215.977.9618

Response to Comments in : C10

From: William Hankowsky (Philadelphia Industrial Development Corporation)

Comment No.	Response
1.	Comment noted. No response required.

"The Center facilitates the involvement of University inventions toward commercially important products and brings together Penn researchers, venture capitalists and private investors with complementary skills and resources."

For these reasons, PIDC supports the IAST proposal at the University of Pennsylvania and appreciates the opportunity to comment on the Draft Environmental Impact Statement.

Thank you.

Sincerely,

WILLIAM P. HANKOWSKY

WPH:mmcc

cc: Mayor Edward G. Rendell

C11

Gray Smith's Office
Architecture & Community Development
Expert Analysis & Testimony

Philadelphia, Pa.
Sylvania House • 16th Floor
Juniper/Locust 19107
215•546•4985
215•546•4960 • FAX

Gray Smith AIA AICP

BY FEDERAL EXPRESS

April 19, 1993

AFCEE/ESE
Lt. Col. Gary P. Baumgartel, Chief
Environmental Planning Division
8106 Chennault Road
Brooks AFB, TX 78235-5318

RE: DRAFT EIS
Proposed for Advanced Science and Technology
University of Pennsylvania, Philadelphia, PA

Dear Lt. Col. Gary P. Baumgartel:

Enclosed are my revised and updated comments on the DRAFT EIS, submitted by Federal Express "postmarked" April 19, 1993.

My comments are more brief than necessary and less extensive than I wanted them to be. To have thoroughly pointed out the flaws, missing ingredients and untruths in the Draft EIS would have, however, required a critique of as many pages as the Draft EIS.

You must be embarrassed to have been in charge of a study that made so many mistakes and so many enemies. I am frankly surprised at its unprofessionalism and bias.

Fortunately, these flagrant flaws make the appeal to the next level much easier for us. Needless to say, the environmental attorneys have found lots of grist for the mill.

The chairperson of the Public Hearing made it clear that you and your colleagues were there to take into account all of those environmental details that we "locals" might know about. Hopefully you listened carefully to, and will now review more carefully, the information you obtained in March and April. If you and your colleagues use it properly and professionally (with some more help from real architects and planners) you might just get the point:

Response to Comments in : C11 (See also T5 & M5)

From: Gray Smith

Comment No.	Response
1.	Comment noted. See response to comment #1 in T5. Like many other corporate citizens of the Delaware Valley, Roy F. Weston, Inc. from time to time makes contributions to corporate research and teaching centers at Penn as well as to scholastic award funds at the university. No such contributions have been in any way connected to the IAST, and WESTON has no financial interest in the future plans for IAST.
2.	Comment noted. See response to comment #2 in M5.
3.	Comment noted. See response to comment #4 in T5.
4.	Comment noted. See response to comment #5 in T5.
5.	Comment noted. No response required.
6.	Comment noted. See response to comment #6 in T5.
7.	Comment noted. See response to comment #7 in T5.
8.	Comment noted. See response to comment #8 in M5.
9.	Comment noted. See response to comment #9 in M5.
10.	Comment noted. See generalized response to consolidated comment #7.
11.	Comment noted. See response to comment #11 in M5.
12.	Comment noted. No response required.
13.	Comment noted. No response required.

C11

Gray Smith's Office
Architecture & Community Development
Expert Analysis & Testimony

RE: DRAFT EIS
April 19, 1993
Page 2

IT AIN'T RIGHT, SO DON'T DO IT!

Sincerely,

Gray Smith AIA AICP
GS/kal

cc: Dr. Hackney
Dr. Cooperman
Honorable Harris Wofford
Honorable Arlen Specter
Honorable Lucian Blackwell
Honorable Tom Foglietta
Honorable Janie Blackwell
Honorable David Cohen
Dr. Richard Tyler
Barbara Kaplan, Phila. City Planning Commission
Foundation for Architecture
Preservation Coalition of Greater Philadelphia
Philadelphia Chapter, American Institute of Architects
Friends of Smith Walk
Allen Kaplan, Esquire
Tom Hine, Philadelphia Inquirer
Editor, Philadelphia City Paper
Howard Goodman, Inquirer Staff Writer
Editor, Philadelphia Daily News

C11

Gray Smith's Office
Architecture & Community Development
Expert Analysis & Testimony

COMMENTS OF GRAY SMITH AIA AICP
Regarding the
DRAFT ENVIRONMENTAL IMPACT STATEMENT
for the proposed
INSTITUTE FOR ADVANCED SCIENCE & TECHNOLOGY
at the
University of Pennsylvania

04.16.93 (Revised and Updated)

My name is GRAY SMITH. I am a member of the FRIENDS OF SMITH WALK. I continue my protest of the demolition of Smith Hall, the construction of a much larger building in its place, and the adverse and irreversible impacts those actions will have on fragile Smith Walk and its historically significant precinct.

Rather than reiterate all the obvious reasons why this project is wrong -- the destructive ingredients of the so-called "Proposed Action" that require an Environmental Impact Analysis in the first place -- I will simply highlight some of the significant flaws in the DRAFT ENVIRONMENTAL IMPACT STATEMENT for the toxic Institute proposed on Penn's campus, at 34th Street.

In all my years as an architect and urban planner, I have never read a more unprofessional and biased Environmental Impact Statement. The Draft EIS document cannot conceal the

Gray Smith's Office
Architecture & Community Development
Expert Analysis & Testimony

meddling by key Penn personnel to insert the overt influence of the University's interests, cancelling out any and all objectivity. Moreover, the report embarrassingly demonstates the shortage of credentials of its preparers, undertaking a study of this magnitude and importance. The results are a failure to its purpose. We are told vaguely that Weston "Designers/Consultants" played some unexplained role in the study. The firm is not an architectural and planning firm. Moreover, it begs the question: what are the Weston Company's other financial relationships with the University of Pennsylvania, if any?

1

Why, for example, would there be not one architect involved in the preparation of the Draft EIS? Why is but one "urban planner", from Texas, in the long list of "Preparers", a list primarily of biologists, meteorologists, and natural scientists. It is fundamentally an architectural and planning problem the University has created with this project. The Draft EIS fails miserably in recognizing the responsibility to solve it, and assigns noone with the appropriate credentials to do so.

2

C11

Gray Smith's Office
Architecture & Community Development
Expert Analysis & Testimony

Due to the shortness of time and limitations placed on presentations at the 03.30.93 "Public Hearing", this writing is a more detailed report on the Draft EIS report's failures. I except full consideration of these comments, by more capable professionals, in the Final EIS.

1. Smith Walk: The importance of Smith Walk as an irreplacable, unique and pristine, outdoor room, is avoided in the discussion. The report's conclusion that its severe alteration will somehow be hardly noticable is false and misleading, preferring to characterize the changes as a "minor modification"!

3

2. False Rendering: Another example of the misleading treatment of Smith Walk is the entirely incorrect drawing of the placement of the proposed new Institute, shown on page 2-17. This view, seen from inside the altered Smith Walk, optomistically exposes over two thirds of the 34th Street facade of the historically restored Furness Library. Yet, the Site Plan on page 2-12 makes it obvious that less than half of the Library would be visible. On the other hand, the photograph of this view today reveals the entire 34th Street facade. The damage to this now "framed" and "balanced" view is not even mentioned as an "adverse effect" of this "proposed

4

action". The drawing on page 2-17 is a lie. What's more, the proposed squinching of this view is insultingly misdescribed as "balanced" and "framed," along with other words of praise.

3. Photographs: In the entire document, why is there only one photograph of the areas in question? Are the beauty of Smith Walk and the character of Smith Hall so stunning that they better not be displayed in a report that seeks to destroy them?

5

4. Blackmail: The Draft EIS glibly pretends to analyze alternative sites, including the Lott Tennis Courts, the LSRM Parking Lot, and the partial demolition of Smith Hall with an infill structure. The discussions of the two so-called "remote" alternatives are accompanied by overt threats that all other potential historic preservation projects in the Science Precinct would be in jeopardy, should these alternative sites be built. Apparently this proposed Institute is so sacrosanct that the University would sacrifice its stewardship of these structures to build it, if it can't have its way with its favorite site.

6

C11

Gray Smith's Office
Architecture & Community Development
Expert Analysis & Testimony

5. Made-up Costs: What is the excuse for this threatened delay to those other preservation projects? Trumped up costs. Even though the available land at the LSRM and Lott Tennis Courts sites is substantially larger at each, the Draft EIS somehow (not explained) concludes that the buildings thereon must be taller than on the Smith Hall site. And that makes them cost more, because "a six or seven story building needs more fire protection than a five story building." Not true! The level of fire protection systems will be the same, and perhaps even more extensive, at the Smith Hall site, since it is more confined and less accessible in emergencies. Perhaps this false extra construction cost conclusion is founded in the shortage of architects participating in this study. Any trained (an honest) architect would know better. Extra costs at alternative sites is a lie!

7

6. Loading Dock Hokum: One of the smaller details in the comparisons of alternatives, that defies logic, concerns the comparison loading and unloading docks at the respective sites. Why is a rear, off-street, directly adjacent, interior loading dock, that is possible in a facility at the Tennis Courts site, terribly unsafe just because its driveway might occasionally conflict with

8

8

sports traffic? On the other hand, why is it ok at the Smith Hall site to load and unload toxic materials, at a tiny loading area, right at the very intersection of South Street, Spruce Street and 33rd Street? And then transport them back and forth through the entire L-shaped length of the Chemistry Complex to the new Institute. The multiple dangers in this latter prospect are hushed up in the Draft EIS, and any related cost premiums are not admitted. Surely someone on the EIS Team is worried about this matter!

9

7. Zoning Hokus-Pokus: On a much larger scale, but in the briefest of statements, the Draft EIS arrogantly (or ignorantly) concludes, beyond a shadow of a doubt, that each of the site alternatives complies with Philadelphia's "Institutional Development District" Zoning Ordinance requirements, which apply to the Penn campus. Again - another untruth! Neither scheme, most importantly that proposed at the Smith Hall site, has yet been submitted to, or passed the mandatory muster of, the Philadelphia City Planning Commission and Philadelphia City Council -- no small hurdles. I suggest that those reviews might be more vigorous than the roll-over-and-play-dead attitude of the Philadelphia Historical

Commission, to date. The Draft EIS Team might ask a Philadelphia city planner who would know about such "technical details".

10

8. Essential Togetherness: One of the central themes of the arguments offered for an Institute at the Smith Hall site is the insistence on "adjacency" and "proximity" to the other activities in the Science Precinct between 33rd and 34th Streets. There is this burning desire for interaction among professors, scientists and students. (Apparently this never happens at Penn now, because all the buildings are not attached to each other in a block long string). A one-half block walk from one science building to the next, along Smith Walk, is apparently a feared and dreaded experience to the "proximity" fanatics. The proposed direct connection to the Chemistry Building will somehow miraculously accomplish this orgy of scientific interaction. Yet, although the Lott Tennis Courts site is actually closer to more of the Science Building square footage in the Science Precinct than a Smith Hall sited Institute, it might as well be miles away by the strange standards invoked in the Draft EIS.

C11

Gray Smith's Office
Architecture & Community Development
Expert Analysis & Testimony

DRAFT ENVIRONMENTAL IMPACT STATEMENT
for the proposed
INSTITUTE FOR ADVANCED SCIENCE & TECHNOLOGY
Page 8

9. Straw Man Alternatives: Speaking of the Lott Tennis Courts site alternative, let's look at the design proposed, and maligned, in the Draft EIS for that site. On pages 2-28 and 2-29 are site plan studies of this proposal, the authorship of which is vague (Venturi's architectural firm, who wants so badly to build at Smith Hall, is mentioned only as a "source".) The design shown for the Tennis Courts Site is very easy to criticize since, on its face, it violates many architectural and urban design principles -- too numerous to mention. It is a lousy design! So, of course, to use the words of the Draft EIS, an Institute at the Lott Tennis Courts site "would significantly detract from the historical value of (the Sports Complex); and it "would detract from the aesthetics of the University Sports Complex..." Such words do not apply, it seems, to an Institute sited at the Smith Hall site -- or at least they can't be found in the Draft EIS report.

11

These negative conclusions must have assumed, that a building sited at the Tennis Courts would not be designed by a world-class architectural team, would not respect its historic context, and would not get proper review by the Philadelphia Historical and Planning Commissions,

C11

Gray Smith's Office
Architecture & Community Development
Expert Analysis & Testimony

DRAFT ENVIRONMENTAL IMPACT STATEMENT
for the proposed
INSTITUTE FOR ADVANCED SCIENCE & TECHNOLOGY
Page 9

City Council, and State and Federal authorities. Would this prominant site also escape the scrutiny of a now - enraged Public? Not likely.

Again, where is a good architect when you need one, in a study of this kind?

10. Environmental Cheating: It is curious that the significant benefits of saving Smith Hall and protecting Smith Walk are not listed on the positive side of the environmental ledger, when alternative sites are discussed.

12

11. No Action is Best!: Even the most devious, unprofessional and/or stupid EIS Preparers can't hide the fact that the No Action Alternative is by far the BEST! Better scrap the whole thing when you can still save face.

13

In closing, I must re-emphasize my personal and professional dismay at the crudeness of the Draft EIS report. It insults my intelligence and that of my colleagues in the design professions. The report is only noteworthy for its missing essential ingredients and its obviously unbalanced and

Gray Smith's Office
Architecture & Community Development
Expert Analysis & Testimony

C11

DRAFT ENVIRONMENTAL IMPACT STATEMENT
for the proposed
INSTITUTE FOR ADVANCED SCIENCE & TECHNOLOGY
Page 10

skillful scattering of positive and negative adjectives. It, along with that self-centered and obsessively complimentary "Newsletter", should be placed in every college library in the country as prime examples of 20th century PROPAGANDA. No better examples have I seen, including all the related, biased reports that preceded it.

With very little optimism, I would hope that the Final Environmental Impact Statement will be completely rewritten, so as to be thorough and inclusive, professional and truthful.

Submitted by:

GRAY SMITH AIA AICP

C12

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences
Department of Chemistry
Chemistry Building
Philadelphia, PA 19104-6323

April 12, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Lt. Col. Baumgartel:

As the Chairman of the Department of Chemistry in 1983, it was obvious that inorder for the newly initiated Chemistry Development Plan to succeed, additional high quality laboratory space would have to be provided to accommodate the expanding research programs of the faculty to be recruited. It was also quickly apparent with some study that the most suitable space for research space contiguous with the existing Chemistry complex was the Smith Hall site. Over the following ten year period, the Chemistry Development Program has been spectacularly successful in recruiting a large number of exceptionally talented, mostly junior and some senior faculty whose research programs are indeed rapidly expanding. It is now imperative that the proposed Institute for Advanced Science and Technology be constructed as quickly as possible so that laboratory space limitations not stifle these highly competitive research programs of National prominence. Furthermore, the Smith Hall site has remained through the intervening years the primary site for this expansion of research space for the Chemistry Department, and more recently also the School of Engineering.

1

Sincerely,

J. Kent Blasie
Professor of Chemistry

Response to Comments in : C12

From: J. Kent Blasie

Comment No.	Response
1.	Comment noted. No response required.

C13

921 South 48th Street
Philadelphia, PA 19143

April 11, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

RE: Institute for Advanced Science and Technology,
The University of Pennsylvania

Please include the following comments on the Draft Environmental Impact Statement for the project mentioned above in the public record.

LACK OF DETAIL IN PROPOSED ACTION LEADS TO LACK OF DETAIL IN ENVIRONMENTAL IMPACT INFORMATION

The information contained in the draft Impact Statement for the proposed Institute for Advanced Science and Technology at the University of Pennsylvania is not sufficient for our community to evaluate the full extent of the Institute's impact on the community, an "already crowded campus" (page 1-2) and the environment.

The document leaves out specific details about the research to take place in the proposed buildings and is vague in the plans for the institute's future research. The word "anticipated" (foresee, or realize beforehand) used in Table 1.4-1. is ambiguous and does not leave me with a feeling of confidence about the research goals of the Institute.

1 The word "expected" (to look forward to the probable occurrence or appearance of) is used on page 2-4 in relation to gene therapy or transgenic work. Again, I must insist that this ambivalence be removed from the document. Either the Institute will do such research or it will not. Either way, we need to know the answer to evaluate the proposed action.

We are told on page 2-3 that "cell cultures would be used in some laboratories, but would be free of either human or animal pathogens." We are not told of the possible use of pathogens of other biological or chemical nature.

You and the University of Pennsylvania must be as specific as possible so that we may evaluate this project. The draft of the Impact Statement even states that "The level of detail and the extent of the analysis for each of the elements [*hazardous materials and waste*] depend on the element's significance in light of the Proposed Action and Alternatives as described in Chapter 2.0." If the exact nature of the "action" is not detailed, we cannot expect to receive detailed environmental impact information on radiation, infectious/biomedical, chemical, radioactive and medical/hazardous wastes.

WEAPONS RESEARCH DOES NOT HAVE TO BE CLASSIFIED TO BE OF CONCERN TO THE COMMUNITY

On Page S-1, first paragraph the draft states: "...Congress directed that at least $10 million be made available as a competitive grant to construct an Institute for Advanced Science and Technology (IAST) to an institution of higher learning that is conducting research in areas that support the DOD Critical Technologies Plan." (My emphasis.)

Since the draft did not list these areas, I went to the Free Library's main branch where I found copies of the CRITICAL TECHNOLOGIES PLAN AD-A219 300 of 15 March 1990. The introduction to the Plan states that the Critical Technologies Plan responds to Public Law 101-189 of November 29, 1989, which requires that "the Secretary of Defense shall submit to the Committees on Armed Services of the Senate and House of Representatives an annual plan for

Response to Comments in : C13

From: Alex deSoto

Comment No.	Response
1.	Comment noted. See Section 2.1.2 of the EIS. No infectious systems are planned for use in the IAST. Also see generalized responses to consolidated comments #4 and #6.
2.	Comment noted. The FEIS is complete and there have been no deletions of classified materials. See generalized respose to consolidated comment #1 and see response to comment #3 below.
3.	Comment noted. Unrestricted dissemination of all findings and conclusions derived from sponsored programs at the University of Pennsylvania must be an integral part of a sponsored program's agreement, except where the privacy of an individual is concerned. The University regards any infringement on complete access to research findings as detrimental to free inquiry. It therefore neither seeks nor accepts security clearance for itself or any administrative unit. The decision whether to seek clearance is an individual one to be made by each faculty member according to his or her judgment. Such decision will not be influenced or judged in any way by the University and must be made in each instance on the basis that the benefits of clearance balance its academic shortcomings. Exception may be granted by the Provost for privileged information but only in the form of a delay in the release of such information. The delay will only on rare occasions exceed three months.
4.	Comment noted. See generalized responses to consolidated comments #1 and #2.
5.	Comment noted. See generalized response to consolidated comment #4.

developing the technologies considered by the Secretary of Defense and the Secretary of Energy to be technologies most critical to ensuring the long-term qualitative superiority of United States weapon systems." (My emphasis.)

Although Vice Provost Cooperman has denied that research at the Institute would be related to weapons, I cannot understand how the Department of Defense would award this grant to an institution that would not be willing to cooperate in developing technologies that would be geared to ensure our superiority in weapon systems. Although I am not opposed to the development of weapon systems elsewhere, I do not believe that the Impact Statement categorically denies that the Institute at the University, located in a densely populated community will participate in such research.

2

Furthermore, even though it is stated in Table 1.4-1. that the University of Pennsylvania requires that all research agreements permit the unrestricted dissemination of all findings and conclusions, it does not say whether dissemination will be public or private. Your DOD Critical Technologies Plan states that "company-sponsored R&D data is proprietary." To me this can only mean that the information generated at Penn will be considered private, not public information .

ARE PARTS OF THE IMPACT STATEMENT CLASSIFIED?

2

I am not convinced that the Impact Statement is complete. In CFR 32 National Defense 400-629 7-1-92 it is stated that "Classified information in environmental documents shall be safeguarded in accordance with Executive Order 12065 implemented by DOD 5200.1-R (32 CFR part 159). The requirements for circulation and public involvement (CEQ 1506.6) do not apply to classified environmental documents except where segregation of material and circulation and involvement can be accomplished consistently with the provisions of DOD5200.1-R." Again the Impact Statement does not categorically state that it is complete and that no classified information was deleted or edited from its draft form.

I understand that some information requires at least a review before de-classification. This may be relevant to some of the categories of information about the research carried on at the University of Pennsylvania. CFR 32 §158.7 mentions some of the categories that require review: "(e) Information that could affect the current or future military usefulness of policies, programs, weapon systems, operations, or plans when such information would reveal courses of action, concepts, tactics, or techniques that area used in current operation plans...(f) Research, development, test and evaluation (RDT&E) of chemical and biological weapons and defensive systems; specific identification of chemicals and biological warfare plans; and U.S. vulnerability to chemical or biological warfare attack."

In the Impact Statement, you do not specifically deny that the review of the research or the information generated at the Institute will be subject to review by the DOD before it is released to the public. Again I can't help but wonder how forthcoming all the parties are in this Impact Statement.

SUGGESTIONS

My suggestions are as follow:

2

1. That the *entire* Critical Technologies Plan be included as an Addendum to the Impact Statement so that the community can read the details of the plan and the specific areas of action:

- Semiconductor Materials and Microelectronic Circuits
- Software Producibility
- Parallel Computer Architectures
- Machine Intelligence and Robotics
- Simulation and Modeling
- Photonics
- Sensitive Radars
- Passive Sensors
- Signal Processing
- Signature Control
- Weapon System Environment
- Data Fusion
- Computational Fluid Dynamics
- Air-Breathing Propulsion
- Pulsed Power

C13

- Hypervelocity Projectiles
- High Energy Density Materials
- Composite Materials
- Superconductivity
- Biotechnology Materials and Processes

2 | 2. That you and the University be specific about research areas and their relation to weapons development. I realize that we cannot predict the future or anticipate every direction that the research will take. You can, however, state what you will not do in the Impact Statement in order to calm the community's fears and concerns.

3 | 3. That you include a statement about how information will be disseminated to the public and refute that any information resulting from the research will be temporarily or permanently classified.

4 | 4. That you meet with the community again before approving the action.

5 | Vice Provost Cooperman acknowledges in the projects's newsletter that "no research is risk-free..." We must make sure that it is as risk free as is humanly possible and it it contributes to the well-being of our community and the world we live in, not to its endangerment.

I thank you for the opportunity to voice my concerns.

Alex de Soto
Resident of University City

C14

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences
Department of Chemistry
231 South 34th Street
Philadelphia, PA 19104-6323

Phone: 215-898-6459
Fax: 215-573-2123

Stanley J. Opella
Bernard E. and Ida L. Grossman Professor

April 9, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

re: IAST Environmental Impact Statement

Dear Mr. Baumgartel,

1 | I write in support of the IAST at the University of Pennsylvania. This Institute is central to the development of basic and applied research at the University and the entire Delaware Valley. It represents a consolidation of intellectual resources in addition to providing facilities for research. Its placement on the Smith Hall Site is important for facilitating interactions among a broad range of scientists and engineers, and this location will ensure that the largest possible research return is obtained from the investment used to construct the building.

As a member of the Department of Chemistry working in the 1973 building, I can assure you of the critical need for the space that will be available in the new building. Many of my experiments and calculations are performed on instruments and computers placed in the hallways. The only way to move the equipment to proper rooms is through construction of the new building. In addition, I am participating in an ambitious expansion of the programs and instrumentation for NMR spectroscopy. Here, the placement of new instruments is crucial to their high performance and, again, the only way to generate space for new spectrometers is through construction of the new building.

We would all like to have the unanimous support of our community for our endeavors, especially those that involve construction of permanent landmarks. Although this is not realistic in a fractious urban society, it is important to have broad-based support, both in the local and research communities, which I think the IAST does have. Most of the opposition to the construction reflects differences of opinion about the utilization of space and esthetic values, and these can be judged in balance with the substantial benefits that will be gained from the building. Some of the opposition to the construction reflects deep ignorance and misunderstanding about the nature of science and research and, perhaps, this is all the more reason to support the IAST. The results of the activities that will take place in the building will demonstrate, by themselves, the complete absence of demons and the great benefits of research in science and engineering.

Sincerely,

cc: A. Smith

Response to Comments in : C14

From: Stanley J. Opella

Comment No.	Response
1.	Comment noted. No response required.

C15

UNIVERSITY of PENNSYLVANIA

School of Engineering and Applied Science
Department of Computer and Information Science
200 South 33rd Street
Philadelphia, PA 19104-6389
Telephone: (215) 898-6783
Fax: (215) 573-2048
Email: yun@central.cis.upenn.edu

April 13, 1993

ATTN: Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

RE: Institute for Advanced Science and Technology
The University of Pennsylvania

Dear Lt. Col. Baumgartel:

1 I am writing to strongly support the establishment of the Institute for Advanced Science and Technology (IAST) at the University of Pennsylvania. Among the several eventual occupants of this Institute, the Computer and Information Science Department is anxious to consolidate its activities, faculty, and staff in one building. The department is presently distributed over four buildings, and is not appropriately arranged for the collaboration among the faculty and students. Other potential sitings for the IAST have been examined and the

1 site selected by the Draft Environmental Impact Statement is clearly the most satisfactory based on our need to be located adjacent to other Engineering and Applied Science faculty, facilities, classrooms, administrative services, and library. I urge speedy acceptance of the Draft Statement so that we may proceed with the IAST.

Sincerely,

Xiaoping Yun
Assistant Professor

Response to Comments in : C15

From: Xiaoping Yun

Comment No.	Response
1.	Comment noted. No response required.

C16

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES

P.O. Box 2063
Harrisburg, PA 17105-2063

April 5, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Colonel Baumgartel:

The Pennsylvania Department of Environmental Resources (DER) has reviewed the project notice involving the Draft Environmental Impact Statement (DEIS) for the proposed Institute for Advanced Science and Technology in Philadelphia, PA. We have the following comments:

1. Two of the alternatives propose constructing the facility on the site of the present Smith Hall Building. We have no comments concerning these alternatives.

2. The two other alternatives propose constructing the facility at and in the vicinity of either an existing parking lot or an existing tennis court complex. Either of these alternatives would involve the excavation and either regrading or removal of soils. In these cases, it is recommended that an environmental assessment include soil sampling to insure the soils at the construction site are uncontaminated. The DEIS does not provide for such testing.

If you have any questions, please feel free to contact John Kennedy at DER's Southeast Regional Office at 215-832-6000.

We appreciate the opportunity to comment on this proposal.

Sincerely,

Frederick G. Carlson, Director
Secretary's Office of Policy

ity/Affirmative Action Employer

Recycled Paper

Response to Comments in : C16

From: Frederick Carlson, PADER

Comment No.	Response
1.	Comment noted. No response required.
2.	Comment noted. The University would conduct an investigation similar to a "Phase 1 Environmental Audit" of any alternative site selected. Based upon the findings of the Phase 1 audit, a limited Phase 2 audit with appropriate soil sampling would be conducted. Any contaminated soil would be submitted for appropriate treatment or disposal after consultation with PADER.

C17

DEPARTMENT OF HEALTH & HUMAN SERVICES — Public Health Service

National Institutes of Health
National Library of Medicine
Bethesda MD 20894

April 12, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks Air Force Base
Texas 78235

Dear Colonel Baumgartel:

I write to strongly recommend the preservation of E. F. Smith Hall, the former Institute of Hygiene of the University of Pennsylvania, as a building of high significance in the history of American medical science and public health. In so doing, I must question the predominantly negative views of this building that are expressed in the "Draft Environmental Impact Statement" dated February 1993. That statement contains a number of inaccuracies; it is based in part on irrelevancies and in part on outmoded historical authority; and above all, it shows little awareness of the larger historical significance either of the E. F. Smith Hall or of its designer, John Shaw Billings.

Among other reasons for preserving this notable structure, I particularly urge the following:

1. The Institute of Hygiene deserves to be preserved, not merely as one example among several late nineteenth century laboratory buildings associated with the various sciences, but for for its uniqueness as one of very few surviving structures that played influential ~~roles in~~ the revolutionary changeover of American medicine during that period. In fact, along with the Johns Hopkins Hospital (opened 1889), it is known as one of this country's landmark post-Civil War institutions. It was one that, in 1892, became the first center in the United States to provide comprehensive research and training facilities in all branches of public health as that field was then constituted: sanitary science, microbiology, statistics, personal hygiene, and epidemiology. It far exceeded the scope of either the Bellevue or Hoagland laboratories, and it predated the Johns Hopkins School of Hygiene and Public Health by 25 years.

health related

1

2. When John Shaw Billings went to the University of Pennsylvania in the 1890s to design and direct the Institute of Hygiene, he was known not merely as "a cataloger of medical literature," but as by far the most versatile and influential medical figure in the United States. Along with professional expertise in sanitation, statistics, hospital organization, etc., he took with him an overarching commitment to and remarkable record in the systematization and modernization of public health measures. To pursue that work further, he thus fashioned an Institute of Hygiene that was modelled closely after the famous hygiene and bacteriological insti-

Response to Comments in : C17

From: James H. Cassedy, National Library of Medicine

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #5.

tutes of Paris, Munich, London, and Berlin, and in so doing he created a truly pioneering institution, America's earliest center for advancing a scientific preventive medicine and public health.

3. Billings's design of the Institute of Hygiene, like his designs for his several hospitals and libraries, stands out for its emphasis on utilitarianism and functionalism. As such, for architectural as well as biomedical historians, it offers a striking and important historical contrast to late nineteenth-century American institutional neoclassicism and gothicism. For this reason alone, the building richly deserves to be preserved.

Sincerely yours,

James H. Cassedy

James H. Cassedy, Ph.D.
Historian

(Former President, American Association for the History of Medicine)

Copies to: Ms. Brenda Barrett
Prof. Robert Kohler

C18

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences
Department of Chemistry
Chemistry Building
Philadelphia, PA 19104-6323

Edward R. Thornton · (215) 898-8309

FAX: (215) 898-5129

April 13, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Col. Baumgartel:

1 I am writing to express my support for the urgently needed construction of the University's proposed Institute for Advanced Science and Technology (IAST) building on the site of the present Smith Building, on 34th Street north of Spruce Street. I have been on the Penn faculty for almost 32 years. I have also been chair of the Chemistry Department's building committee since 1982 and have thus thought extensively about our needed new research space. We have considered alternatives all along the way, but no feasible solution exists other than the use of the Smith Building site for the IAST.

The reason is that we have a great need for more research space, which must be contiguous to the existing Chemistry facilities because this is a teaching institute and not just a separate research institute. This teaching function also includes the need to have our students and faculty located within the main science block of the University, i. e., within the area bounded on the East and West by 33rd and 34th Streets and on the North and South by Walnut and Spruce Streets, to permit optimal interactions and sharing of facilities between different disciplines. Beyond these educational needs, the added cost of building the IAST in a noncontiguous location would be enormous, since, to be effective, it would then require a great deal of duplication of facilities and instruments. In present times, such great added costs are really not justified when construction of a contiguous IAST will result in large savings.

(1) There is no doubt about the need for more space. Research in the Chemistry Department is being hindered by overcrowding. On my floor, for example, we have had to put 4 researchers into rooms that were designed for 3, store away equipment that should be available for use, put a major high-pressure facility into a closet, put much equipment into offices that were designed for our students (so that students have no office except their lab desk), and put much other equipment into hallways. This

Response to Comments in : C18

From: Edward Thornton

Comment No.	Response
1.	Comment noted. No response required.

Department has developed and enhanced its National reputation greatly over the last several years, but it has done so only by great overcrowding. Meanwhile, other Universities with whom we compete for faculty, students, discoveries, and grant funds, have built new space while we have not. In other words, we are in an unstable situation if we cannot proceed at last to build the long-needed research space. The University has recognized the need for this space since 1982, when our building committee actually started to develop a Program for Chemistry space needs. We are not even seeking to make a major expansion of the Department, only a modest one envisioned in a Department Development proposal from November, 1981. Many of our space needs result from overcrowding. The new space is urgently needed to keep us competitive with other major U.S. Chemistry Departments. Remaining competitive and improving our standing is not only important to this Department but will have a positive impact on Philadelphia area students and jobs. Such long-term benefits to the Philadelphia area should not be overlooked when weighing the desirability of constructing the IAST.

(2) Contiguous space is absolutely essential because of the teaching function of the Institute for Advanced Science and Technology. The Institute cannot be compared to an independently operated research institute such as would be found outside the University, because its mission is not only research but also the training of students in research as they work toward their M.S. and Ph.D. degrees. The costs required by a remote site (such as duplication of equipment and facilities and the handling of chemical wastes) would be enormous, but an even more crucial problem exists: in a research degree-granting department such as the Department of Chemistry, essentially all research is done by small groups of students working with a single faculty member (occasionally, with two). This apprenticeship system is the only known way of training students in Advanced Science and Technology. Consequently, the faculty must be located in the same place as the students—there is no other staff that can guide the students' detailed daily work and safety. We must strive to keep our research at the cutting edge of the field; only in this way can we prepare our graduates for the challenges of the 21st Century. Because of the cutting-edge nature of the research, continuous faculty guidance is crucial to the success of the research projects, to teaching, and to safety.

However, the faculty can serve their other teaching functions—such as availability to students from their classroom courses and day-to-day consultation with other faculty colleagues which is so essential to the mission of cutting-edge research—only by having their offices in the present Chemistry building at 34th and Spruce Streets. If the Institute were built at a remote site, the faculty whose research groups were located there would necessarily have to have their offices in the Institute and would thus be forced to forsake their other teaching functions, which require them to be located at 34th and Spruce Streets. In addition, many graduate students, who are involved in Laboratory and Recitation teaching of our undergraduates, would be doing their own research at the remote site and would thus be largely inaccessible to their undergraduate students. All of this means that the University's mission to serve its own undergraduate students would be severely compromised by remote siting of the IAST. This splintering of the

Department would directly oppose the whole purpose of the IAST, which is to bring *together* groups doing research and teaching in Advanced Science and Technology so that their interactions can lead to major advances.

The costs of remote siting are truly prohibitive for an academic institution such as the University. As just one relevant example of many that could be given, our research students carry out preparations of new, sometimes unstable, compounds and need to run NMR (nuclear magnetic resonance) spectra on samples of these preparations as soon as possible, in order that they may know whether the structure is the correct one, and thus whether they can proceed immediately with the next step of a complex reaction sequence. To permit effective research of this sort, we have NMR available adjacent to the laboratories in which the reactions are carried out, and students sign up for 15-minute time slots to run their spectra. It is not possible to have students located in a remote IAST building running constantly to the Chemistry building to run such samples. Research productivity would be dramatically reduced. Hence, we would have to provide NMR facilities in the remote building which would significantly duplicate facilities already here. This alone would cost over $1 million. Moreover, our NMR facilities Supervisor, who keeps these instruments operating and tuned up, would be constantly traveling back and forth between buildings, unless we also duplicated his position in the IAST. Such costs are simply unfeasible for an academic, teaching institute. NMR is just a single example of the kinds of costs for added equipment and positions which would be incurred with a remote site. They are avoided by the plan for IAST construction contiguous to the present Chemistry building.

Beyond such research costs, there would be major additional costs of construction and ongoing costs in staffing, since a remote site would require duplication of stockroom and shipping facilities, etc., along with personnel to operate them.

(3) We have considered possible contiguous sites. What follows are my own personal feelings. Without replacing any existing building, the only possibilities that have been identified involve construction of tall buildings either facing 33rd Street or in the courtyard defined by Chemistry, Hayden, and Smith. Either of these alternatives would have great architectural and cost problems, but even more important, in my view, would be the fact that either structure would detract so strongly from the existing Hayden and Smith buildings that it would destroy the whole purpose of preserving any historical beauty by preserving these buildings.

The alternatives then involved replacing either the Cret building, facing Spruce Street at 33rd, or replacing Smith. Replacement of Cret would again require a tall structure, with the aesthetic problem described above. Moreover, it would involve a major disturbance of Department programs—almost a shut-down, since it is virtually unfeasible to move chemistry labs elsewhere temporarily—as well as a loss of major renovation investments made by the University in order to relieve overcrowding. Consequently, I cannot see how replacement of Cret is a viable option. I have been led by the reasoning I have described to the conclusion that Smith should be replaced. We

C18

would preserve the architecturally significant Cret Building, which faces the University Museum, the Civic Center, and Franklin Field. Cret contributes nicely to the ambiance of the corner of 33rd and Spruce. Cret's facade is seen by more of the public-at-large than Smith's.

(4) I recognize that the idea of a cluster of historic buildings, including Smith, seems nice, but architecturally-based arguments for keeping Smith do not persuade me at all. In fact, to me, the models with the proposed new building show that looking south along 34th Street gives a very nice feeling, because the new building is a little taller and more comparable to the height of Furness across the street. In addition, I find the argument against introducing a slight bend in Smith Walk unpersuasive. The architects' models clearly show that one could see a good deal of the interesting end of Furness as one proceeded along the slightly bent Smith Walk. On the other hand, the present arrangement is really awful, because it in effect dead-ends at Furness. One is only left with the feeling of a makeshift and unplanned walkway if a major campus thoroughfare dead-ends in this way. I have encountered many confused people over the past 30 years who have been given instructions to follow Smith–Locust Walk and who are standing on 34th Street facing Furness and wondering where they went wrong. Smith Walk *should* be slightly bent so as to prevent this incongruity.

I feel that the physical sciences have a right to some relatively central area of this campus. The only plausible area is the block where the IAST would be located, in which the Chemistry and Geology Departments and the School of Engineering and Applied Sciences already are located, with Physics and Mathematics just across 33rd Street. The University is planning to renovate and preserve all of the other buildings in this block, but, since the Smith building cannot be renovated into laboratory space, we really need to replace it.

Sincerely yours,

Edward R. Thornton

Edward R. Thornton
Professor of Chemistry

cc: Amos B. Smith, III

C19

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: Lyle Unger

Address: 528 S. 45th St
Phila, PA

Zip Code: 19104

COMMENT: As a resident of University City, ~~and~~ and as a Professor at Penn, I would like to support the IAST building to be put at the current location of Smith Walk. I have reviewed the work proposed to be done there and do not see any unusual adverse environmental impact. I believe my support is typical of that of the large "silent majority" of people living and working close to the proposed center

1

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Response to Comments in : C19

From: Lyle Ungar

Comment No.	Response
1.	Comment noted. No response required.

C20

UNIVERSITY of PENNSYLVANIA

School of Engineering and Applied Science
Department of Computer and Information Science
GRASP Laboratory — Room 301C
3401 Walnut Street
Philadelphia, PA 19104-6228
Telephone: (215) 898-0370
Fax: (215) 573-2048
Email: bajcsy@cis.upenn.edu

April 14, 1993

ATT: Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Lieutenant Baumbgartel:

1 I am writing to strongly support the establishment of the Institute for Advanced Science and Technology (IAST) at the University of Pennsylvania. Among the several eventual occupants of this Institute, the Computer and Information Science Department is anxious to consolidate its activities, faculty, and staff in one building. We are presently distributed over four buildings, three of them older and not appropriately arranged for the, collaboration, laboratory, and networking requirements of future technology. Other potential sitings for the IAST have been examined and the site selected by the Draft Environmental Impact Statement is clearly the most satisfactory based on our need to be located adjacent to other Engineering and Applied Science faculty, facilities, classrooms, administrative services, and library. I urge speedy acceptance of the Draft Statement so that we may proceed with the IAST.

Sincerely,

Ruzena Bajcsy
Professor and Director

Response to Comments in : C20

From: Ruzena Bajcsy

Comment No.	Response
1.	Comment noted. No response required.

C21

UNIVERSITY OF PENNSYLVANIA
DEPARTMENT OF CHEMICAL ENGINEERING
311A Towne bldg.,220 S. 33rd street
Philadelphia,PA 19104-6393

April 15,1993

Lt Col Gary P.Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Prof. Baumgartel,

1 I would like to express my support for the continuation of the project of IAST at the Univ. of Pennsylvania.

A considerable number of graduate students at the Chem. Eng. Department are currently obliged to divide our research time in two or more different buildings,experiencing in a daily basis the negative impact this fact has in the exchange of information and equipment.

Convenience of course would be absolutely out of the question if IAST had a negative impact in the environment.But it appears that the issues raised by several groups do not have any sound basis (our research does not involve any dangerous chemicals or mysterious waves). In addition,a modern building designed especially to contain chemical laboratories,would be much safer for the environment (and, even more important,the health of the graduate and undergraduate students who are using them every day) than e.g. the Towne bldg., which is not designed for such purposes.

We strongly feel that the IAST will increase the potential of the Univ. of Pennsylvania for Chemistry-related research,and we hope to see the project coming to its completion.

Sincerely,

Harry Cordatos
Graduate Student
Dept. of Chem. Engineering.

Response to Comments in : C21

From: Harry Cordatos

Comment No.	Response
1.	Comment noted. No response required.

C22

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences
Department of Chemistry
Chemistry Building
Philadelphia, PA 19104-6323
(215) 898-3048 (office)
(215) 573-2112 (FAX)
voth@a.chem.upenn.edu

April 15, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Dear Col. Baumgartel:

1 I am writing to express my strong support for the construction of the Institute for Advanced Science and Technology (IAST) at Penn on the site of Smith Hall. I was appointed to my position at Penn in July of 1989. Because of the extreme space limitations in our department, I have barely been able to get enough space to accommodate my research group. As you might imagine, I view the construction of the IAST as being crucial to my future at Penn. If the IAST is not constructed, I run the risk of having my research effort strangulated and thus will ultimately have to leave the University.

The issue of contiguous versus remote laboratory space also deserves some comment. I can tell you that a successful scientific environment largely depends on the ease with which the scientists can collaborate. A remote site–one in which half of the faculty are in one building and half are in another–would destroy the heart and soul of the Institute. Such a situation would seriously hinder interdisciplinary and collaborative research among scientists. This is why construction on the Smith Hall site is crucial to the success of the IAST.

Thank you for giving me the opportunity to express my views.

Sincerely yours,

Gregory A. Voth
Assistant Professor of Chemistry

Response to Comments in : C22

From: Gregory Voth

Comment No.	Response
1.	Comment noted. No response required.

C23

University of Pennsylvania

Department of Chemical Engineering
Towne Building - 220 S. 33rd Street
Philadelphia, PA 19104-6393
Tel:(215)898-4439 or (215)898-0056 : FAX:(215)573-2093

April 13, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Dear Mr. Baumgartel,

I am writing to you in order to voice my opinion on the proposed construction of the Institute of Advanced Science and Technology (IAST) at the University of Pennsylvania. The construction of such a center is an extremely important step in the advancement of research capabilities here at PENN. IAST will not only provide sorely needed lab space but also foster increased collaboration between scientific disciplines at PENN.

I realize that you must inevitably receive opinions that are contrary to mine on the proposed construction, and I believe that there are two important misconceptions about the project that I should comment on. First, there are those who suggest that the building should not be built in the proposed but relocated elsewhere. The new building will replace a useless structure with a attractive building housing state of the art laboratories, and **it is the location of the laboratories that are inexorably linked to the success of IAST**. The proposed location of IAST, next to the chemistry building, is essential in order to foster new and innovative collaboration between the chemistry department and other disciplines at PENN, one of the primary missions of the IAST project. Second, there are the ridiculous claims that the building will, in some way, endanger nearby residents with toxic fumes and "mysterious waves". Such outlandish claims must be placed in context with the reality of **PENN's commitment to safety and the professionalism of its scientists and researchers**.

1 I support the construction of IAST on the proposed site because it is a crucial link in future high technology research here at PENN. I hope that misconceptions about a valuable project will not deter the construction of IAST and the implementation of the project's goals.

Sincerely,

David J. Parrillo

Response to Comments in : C23

From: David Parrillo

Comment No.	Response
1.	Comment noted. No response required.

C24

UNIVERSITY of PENNSYLVANIA

School of Engineering and Applied Science
Department of Bioengineering
Suite 120 Hayden Hall
240 S. 33rd Street
Philadelphia, PA 19104-6392
TEL: 215-898-8501
FAX: 215-573-2071

April 15, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Colonel Baumgartel:

Re: Institute for Advanced Science and Technology
The University of Pennsylvania

1 I write in support of the construction of the IAST Building, according to the proposed architectural plans and proposed site. I do so as a member of the Department of Bioengineering and an engineering scientist active in academic research for the past 16 years.

Laboratories of the type to be constructed in the IAST Building are in dire need if we are to continue our academic mission and provide the research and research training foundations for the emerging new technologies our nation must have in the next century. Given the careful planning that has taken place in preparation for this building and its compliance with all relevant environmental, safety and building codes, it will be an outstanding and exemplary addition to the engineering and science research facilities on this campus. The proposed IAST site, adjacent to present facilities in the School of Engineering and Applied Science and the Chemistry Department will provide immediate access for the collaborative research planned in the new laboratories, and give them optimum utilization.

I am hopeful that construction of the IAST can begin as soon as possible so we can capitalize on the opportunities it presents.

Sincerely,

Gershon Buchsbaum
Associate Professor
Bioengineering

cc: Lawrence E. Thibault, Chairman, Department of Bioengineering
Gregory Farrington, Dean, School of Engineering and Applied Sciences
Barry S. Cooperman, Vice Provost of Research

PENN

Response to Comments in : C24

From: Gershon Buchsbaum

Comment No.	Response
1.	Comment noted. No response required.

C25

UNIVERSITY of PENNSYLVANIA

School of Engineering and Applied Science
Department of Bioengineering
Philadelphia, PA 19104-6392
215-898-8501

April 13, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Dear Colonel Baumgartel:

It has come to my attention that you are currently reviewing the various possible sites at which the IAST building could be constructed. You may recall that after extensive consultation and thorough research, the site adjoining the present chemistry building and bioengineering building was selected.

The laboratories that will be housed in the new building are germane to our mission as an advanced research institute. For our country to maintain its status as the most advanced country in the world, we must continue to emphasize the quality of our Institutions of Higher Learning. They are still the envy of the rest of the world. 1

As a bioengineering professor, involved in advanced materials research for more than twenty years, I continuously emphasize to my students the importance of integrating different approaches to the problem in order to formulate an optimized solution. We cannot teach what we would not adhere to in the professional world. Integration is also essential in the way we conduct our research. This is to say, the quality of our research depends on our ability to interact with our colleagues. Thus, we must achieve integration of our new laboratory space with the space we already occupy. Separating the new site from the location where our current facilities are located would disperse the faculty and thereby negate important modalities in state-of-the-art science: cross fertilization and synergism.

Response to Comments in : C25

From: Paul Ducheyne

Comment No.	Response
1.	Comment noted. No response required.

I trust that construction can commence as soon as possible. Laboratories with international recognition have been deprived for too long from state-of-the-art facilities. No one is really served by any further undue delays.

Sincerely,

Paul Ducheyne
Professor, Bioengineering

cc: Lawrence E. Thibault, Chairman, Department of Bioengineering, Gregory Farrington, Dean, School of Engineering and Applied Sciences, Barry S. Cooperman, Vice Provost of Research

C26

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences
Department of Chemistry
Chemistry Building
Philadelphia, PA 19104-6323

April 9, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Lt. Col. Baumgartel:

As a faculty member in the Chemistry Department of the University of Pennsylvania, I wish to reiterate the importance and significance of the Institute for Advanced Science and Technology, the fate of which was addressed in a Draft Environmental Impact Statement released last month.

I joined the faculty at Penn in 1985, relatively early into a period of expansion and development of the Chemistry Department. Indeed, the past eight years have seen the continued rise of the Department to truly national prominence. However, this period of growth and improvement has severely taxed our current facilities, leaving myself and other relatively young faculty virtually no room for the expansion of our research groups. I can not emphasize enough that the failure of the University to address this problem will lead to a disastrous situation in which it will difficult to keep our most successful young scientists from being lured away by institutions with more modern and spacious facilities.

An examination of the current situation of my research group clearly illustrates the problem. Inadequate laboratory space has forced me to limit the size of my group to six graduate students and postdoctoral associates, despite the fact that I have research funding available to support a larger group. Just maintaining my current group size has required extraordinary measures, including the installation of ca. $50,000 worth of equipment into essentially unsecured hallways outside the laboratories.

In addition to the equipment in my own laboratories, research in my group is highly dependent upon access to approximately $6 million worth of Departmental instruments. Experiments are run on these instruments seven days a week, and at virtually all hours of the day. Students must constantly monitor simultaneous experiments taking place in our laboratories and in the Departmental facilities. It is primarily for this reason that it is imperative the IAST be located as close as possible to our existing laboratories and facilities. Physical separation of the new and current buildings by even a few blocks would pose a tremendous obstacle to efficient conduct of research in both facilities, and in some instances could give rise to potentially serious safety risks.

Response to Comments in : C26

From: Donald Berry

Comment No.	**Response**
1.	Comment noted. No response required.

C26

1 In the interest of the continued strength of a outstanding centers for scientific education and research, I urge you to allow the University of Pennsylvania's to proceed with the construction of the IAST as proposed. Thank you for your time and consideration of this complex issue.

Sincerely yours,

Donald H. Berry
Associate Professor

C27

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences
Department of Chemistry
Chemistry Building
Philadelphia, PA 19104-6323

April 15, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Lt. Col. Baumgartel,

1 I am writing to indicate my enthusiastic support for construction of the Institute of Advanced Science and Technology (IAST) on the campus of the University of Pennsylvania. This Institute is crucial to the continued success and well being of the natural sciences and engineering departments at the University of Pennsylvania. At the present time the Chemistry building is badly overcrowded. New, high quality research space that will allow several groups in chemistry and engineering to easily interact will undoubtedly foster future scientific breakthroughs. In this regard, I feel that it is absolutely essential that the IAST be located adjacent to the Chemistry building where Smith Hall now stands. To place the IAST at a remote location, even if a suitable one could be found, would greatly diminish its potential impact here at Penn. Placement of the IAST on a site other than that occupied by Smith Hall would require the duplication of many of the facilities presently housed in the Chemistry Building. More importantly, such a fragmentation would not encourage the interdisciplinary interactions that will be necessary to solve the major scientific problems of today and tomorrow.

Sincerely,

William P. Dailey
Associate Professor of Chemistry

Response to Comments in : C27

From: William Dailey

Comment No.	Response
1.	Comment noted. No response required.

C28

UNIVERSITY of PENNSYLVANIA

School of Engineering and Applied Science
Department of Bioengineering
Suite 120 Hayden Hall
240 S. 33rd Street
Philadelphia, PA 19104-6392
TEL: 215-898-8501
FAX: 215-573-2071

April 14, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Dear Colonel Baumgartel:

Re: Institute for Advanced Science and Technology The University of Pennsylvania

1 I am writing in strong support of the construction of the IAST Building, according to the proposed architectural plans and at the proposed site, adjacent to the present chemistry building.

The laboratories in the proposed IAST Building are sorely needed if we are to continue our academic mission and provide the fundamental basis for the new chemical technologies our nation must have in the next century. The plans for this building were carefully prepared, and are in full compliance with all relevant environmental, safety and building codes. It is essential that the building be placed at the proposed site, adjoining existing chemistry labs, to share support facilities with the chemistry and engineering buildings. This location will provide immediate access for researchers in engineering who will be active in the collaborative research in the Institute.

Sincerely yours,

Kenneth R. Foster
Associate Professor

cc: L. Thibault

PENN

Response to Comments in : C28

From: Kenneth Foster

Comment No.	Response
1.	Comment noted. No response required.

C29

University of Pennsylvania

Department of Chemical Engineering
311 Towne Building
220 S. 33rd Street
Philadelphia, PA 19104-6393
Tel: (215)898-4439 FAX: (215)573-2093

April 13, 1993

Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Prof Baumgartel:

I am writing this letter in answer to your request for input on the Environmental Impact Statement for the proposed Institute of Advanced Science and Technology at the University of Pennsylvania. This project is of immense importance to Penn and I am deeply disturbed at hearing the outlandish claims that opponents to this project have made about it. I truly hope that claims by fringe elements in the community of "brain-wave" experiments and other such nonsense will not affect any decisions on this matter. I would also like to add a few other comments which I feel are pertinent to this issue.

1

First, it seems obvious that the building will not change the local environment; it will simply replace a useless building with one that can be used for research. Clearly, no wet-lands or other natural habitats will be affected. Second, it is absolutely essential that the building be placed next to the present Chemistry building in order for it to have an impact on the research which is carried out here at Penn. As someone who has laboratories in several buildings on the Penn campus, I am well aware of the difficulties associated with splitting research groups. Placing the building at a remote location would seriously affect the chemistry department and undo all of the interactions the Institute is aimed at fostering.

In summary, the IAST will greatly increase the research capabilities at the University of Pennsylvania. It is my sincere hope that the absolutely absurd claims that opponents to the project have leveled against it will be discounted.

Sincerely,

Raymond Gorte

Raymond Gorte
Associate Professor

Response to Comments in : C29

From: Raymond Gorte

Comment No.	Response
1.	Comment noted. No response required.

C30

UNIVERSITY of PENNSYLVANIA

Department of Chemical Engineering
Towne Building
220 S. 33rd Street
Philadelphia, PA 19104-6393
Tel: 215-898-8351 FAX: 215-573-2093

Eduardo D. Glandt
glandt@cheme.seas.upenn.edu
Tel: 215-898-6928

April 12, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Dear Colonel Baumgartel:

I am writing in response to your request for input on the environmental impact of the various phases of the Institute for Advanced Science and Technology. I am chairman of the Department of Chemical Engineering at the University of Pennsylvania. The wet-chemistry activities of my department are slated to be moved to the Phase-I or wet building of the Institute, both because of their natural affinity with the Chemistry department and because of pressing environmental needs.

Chemical engineering research is concerned with scientific and technological issues of vital importance to the nation and, indeed, to our daily lives, relating to a cleaner environment, a more efficient use of our energy resources and a better health. It involves industries as varied as pharmaceuticals and plastics, as fundamental as fuels, food, and synthetic fibers, not to mention a near infinity of specialty chemicals. Among the research frontiers in chemical engineering are the separations that make biotechnology possible, the development of advanced microstructures for electronic and other devices, the in-situ processing of energy and mineral resources, and the responsible management and destruction of hazardous waste.

Chemical engineering has a long and distinguished history at the University of Pennsylvania. Ours is the second oldest program in our discipline in the the nation, and we are in fact celebrating its centennial in 1993. This program has a distinguished faculty and equally distinguished alumni in positions of leadership in industry, government and academia. As it reaches its 100th year, the main factor interfering with its vitality and productivity is the lack not of space but of *appropriate* space. The Towne Building, which houses the Penn chemical engineering laboratories, is a grand structure built between 1906 and 1909. It was of course designed for the engineering of those times, and it originally contained foundries, shops, and many rooms for mechanical drawing. After nearly 90 years, it should not be surprising that it is not appropriate for

100 Years of CHEMICAL ENGINEERING at PENN

Response to Comments in : C30

From: Eduardo Glandte

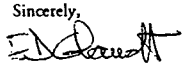
Comment No.	Response
1.	Comment noted. No response required.

modern chemical research, in spite of its successive renovations. Our current knowledge and practices are very different from what they were then, and so is the training of our researchers. The result is our urgent need for well-ventilated facilities and appropriate space for the storage and handling of reagents. Environmental reasons actually demand that new laboratories be built.

I am extremely pleased that the plans for the IAST building address the great majority of our needs, especially at the "chemical end" of the activities of our department. These activities include three groups, concerned with (i) catalysis to control automobile emissions, (ii) oxide surfaces and polymer films for devices, corrosion control, etc., and (iii) fabrication of thin films and membranes for separations and related applications. They will be housed on the fifth floor of the Phase-I building, adjacent to similar activities in chemistry, and will benefit greatly from interactions and from the sharing of resources, especially of instrumental methods. Chemical laboratories are extremely specialized these days, and many are built around just one or two analytical tools. As analytical instruments become more sophisticated, they also become prohibitive to duplicate: groups lead by different faculty members must form teams in order to be able to afford them. The site adjacent to the existing chemistry laboratories is the only one that offers us this possibility of association with our natural partner on campus: the Department of Chemistry. The concept of an "Institute of Advanced Science and Technology," which might sound abstract to some, is a very concrete and practical solution for us.

1

Sincerely,



Eduardo D. Glandt
Carl V.S. Patterson Professor
and Chairman

C31

UNIVERSITY of PENNSYLVANIA

Cardiovascular Studies Unit
Biophysics and Bioengineering Series
101 Hayden Hall
Philadelphia, PA 19104-6392
215-898-5881 / 649-1242
Abraham Noordergraaf

April 14, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Colonel Baumgartel:

Re: Institute for Advanced Science and Technology
The University of Pennsylvania

1 I write in support of the construction of the IAST Building, according to the proposed architectural plans and at the proposed site adjacent to Hayden Hall. I do so as a senior member of the Department of Bioengineering and scientist active in academic research for the past 40 years.

It has been 20 years since space such as that to be provided by the IAST Building has been created on our campus. Laboratories of the type to be furnished by the IAST Building are urgently needed to continue our academic mission of generating new ideas and conceiving new experiments to evaluate these ideas. Considering the careful planning of this building, including full compliance with relevant environmental, safety and building codes, the new facility will become a model laboratory addition on our campus.

It is essential that the IAST Building be built at the proposed site, adjoining the current Bioengineering space, which is to be retained in the future.

I hope that commencement of construction is immanent to prevent loss of irretrievable opportunities.

Sincerely,

Abraham Noordergraaf

Abraham Noordergraaf
Professor of Bioengineering
Professor of Dutch Culture
Professor of Veterinary Medicine
Professor of Anesthesia

cc: Lawrence E. Thibault, Chairman, Department of Bioengineering
Gregory Farrington, Dean, School of Engineering and Applied Sciences
Barry S. Cooperman, Vice Provost of Research

Response to Comments in : C31

From: Abraham Noordergraaf

Comment No.	Response
1.	Comment noted. No response required.

C32

UNIVERSITY of PENNSYLVANIA

Department of Chemistry
Philadelphia, PA 19104-6323

Amos B. Smith, III
Rhodes-Thompson Professor of Chemistry and Chairman
215-898-2440

April 15, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Colonel Baumgartel:

1 With this letter I would like to go on record as supporting, in the strongest possible terms, the Draft Environmental Impact Statement for the Institute for Advanced Science and Technology (IAST) here at the University of Pennsylvania. As Chairman of the Department of Chemistry for nearly five years and as Member of the Faculty now for nearly twenty years, I believe I have an important perspective vis-à-vis the IAST for your consideration.

The Chemistry Department at the University of Pennsylvania has made what is nothing short of outstanding strides during the past twenty years to meet the goal of truly excellence in its mission which includes (a) undergraduate and graduate education and (b) research in the chemical and molecular sciences. For example, the Department of Chemistry is now ninth in the United States in its receipt of federal research dollars for chemical research. Second, we are the eleventh largest producer of Ph.D. scientists trained in chemistry and the molecular sciences, and we graduate approximately fifty undergraduate chemistry and biochemistry majors per year. The question is not, "Does the University of Pennsylvania need an Institute for Advanced Science and Technology?" (the answer is obviously yes), but instead, "Is the planned utilization of the Smith site in the best interest of the University, the Community, and the United States?" The answer I believe is unquestionably, "YES." The importance of having the Institute adjacent to and contiguous with the current 1973 chemistry facility is obvious. One can not propose to split a major internationally ranked department such as Chemistry. Moreover, the University can ill afford to build a completely new Chemistry building on the LRSM site which in turn would be contiguous to the proposed alternative IAST site. In today's world of research, interaction and interdisciplinary research at the boundaries of the classical sciences is all-important. It is where most of the major breakthroughs can be anticipated as we enter the twenty-first century. Penn has conceived and planned well the IAST; on the Smith site it will house the Departments of Chemistry,

Response to Comments in : C32

From: Amos Smith III

Comment No.	Response
1.	Comment noted. No response required.

Chemical Engineering, and Bioengineering. Proximity to the current department is critical. Indeed, this is a superb match which from my perspective as Chairman and a researcher will certainly yield much more than the sum of the parts. It is envisaged that by this contiguous arrangement, major advances for the welfare of the human existence will arise. Consider the interactions of excellence in chemistry with excellence in chemical engineering. One can anticipate new processes, new catalysts, new materials, and of equal importance students and colleagues trained in these all-important interdisciplinary fields. Moreover, the potential interactions between chemists and bioengineers leading to new materials for prosthesis is also very exciting and important to the well being of the citizens of the United States.

Finally, as Chairman let me assure you that the need for the Institute for Advanced Science and Technology is very real. Currently I have junior faculty as well as senior faculty who have no opportunity for expansion of their research programs, even though they are able to raise the required funding to support their endeavors. This is an intolerable situation and one which, if the Institute for Advanced Science and Technology, located adjacent to the current Chemistry Building, is not forthcoming, can certainly anticipate the intellectual and federal resource-base collapse of this excellent department.

In closing, I hope these few comments demonstrate clearly the importance as well as my support for the approval of the Draft Environmental Impact Statement for the planned Institute for Advanced Science and Technology. If you require any additional information, please do not hesitate to contact me.

Sincerely yours,

Amos B. Smith, III
Rhodes-Thompson Professor
and Chairman

ABS:wlb

UNIVERSITY of PENNSYLVANIA

Laboratory for Research on
the Structure of Matter
3231 Walnut Street
Philadelphia, PA 19104-6202
Telephone: (215) 898-5425
Fax: (215) 898-8296
Michael L. Klein
Director

April 15, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Lt. Col. Baumgartel,

Thank you for sending me a copy of your report on the Environmental Impact Statement of the University of Pennsylvania's proposed IAST.

1 I am writing to formally register my enthusiastic support for the IAST project. The need for the resulting high quality laboratory research space is not only critical to Penn's future development but absolutely vital if Penn is to maintain its position as a major research university. The advantages and disadvantages of the Smith Hall Site are well documented in the report. The location, adjacent to Chemistry, offers the discipline a unique opportunity for growth and participation in interdisciplinary research activities. I therefore urge you to recommend that the IAST be located on the Smith Hall Site.

It is now more than two decades since the "new" chemistry laboratory was built. By the time the IAST is finished, and occupied, a quarter of a century will have passed. The nature of science and technology has changed dramatically in this time period. If Penn is to participate in the development of the technologies of the next century, the IAST must be built.

Finally, as a property owner in West Philadelphia, I feel compelled to endorse the IAST project. The importance of construction and development projects brought into this community cannot be overemphasized. Notwithstanding recent efforts at gentrification, the community has major socioeconomic problems. The IAST will lead to expanded job opportunities and at the same time, revitalization of Penn's infrastructure. Penn is the major employer - direct and indirect - in West Philadelphia. The long term prosperity of the community is surely inextricably linked to Penn's growth and future development. For this reason I feel compelled to endorse the IAST project.

Yours sincerely,

Michael L. Klein
Hepburn Professor of Physical Sciences

Response to Comments in : C33

From: Michael Klein

Comment No.	Response
1.	Comment noted. No response required.

C34

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences
Department of Chemistry
Chemistry Building
Philadelphia, PA 19104-6323

April 16, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooke AFB, TX 78235-5318

Dear Colonel Baumgartel,

1 I am writing to provide my enthusiastic support for establishing the University of Pennsylvania Institute for Advanced Science and Technology (IAST) on the current Smith Hall site.

The primary objective of the IAST program is to nurture interdisciplinary research in areas that have been identified as national critical technologies. The IAST program and associated laboratories and facilities have been designed to integrate advances in chemical and biological sciences with their engineering counterparts and facilitate the practical application of these emerging technologies. Realization of the IAST objective in dependent on locating the laboratory at a site which integrates the chemistry - biochemistry complex with the chemical engineering - bioengineering facility. The Smith Hall site uniquely accomplishes the physical interconnection of this shared interdisciplinary research facility. Utilization of the Smith Hall location for the IAST research facility is an essential element for the success of the entire IAST program and I believe that it is the only site that can be expected to accomplish the goal of integrating research in fundamental sciences with technological applications.

I strongly recommend a timely decision to permit the utilization of the Smith Hall site as the location for the IAST research facility.

Sincerely,

Brad Wayland

Bradford B. Wayland
Professor of Chemistry

BW/eab

Response to Comments in : C34

From: Bradford Wayland

Comment No.	Response
1.	Comment noted. No response required.

C35

Walnut Hill Community Association
4932 Sansom Street
Philadelphia, PA 19139

April 14, 1993

Lt. Col. Gary P. Baumgartel, Chief
Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB TX 78235-5318

RE: Proposal for New Science Laboratory at the University of Pennsylvania

Dear Sir:

1 The Walnut Hill Community Association is very much concerned about the health and safety of our community. We don't believe that your DEIS has satisfactorily explained your position on just how much care and responsibility will be taken to ascertain the health and welfare of the employees as well as the surrounding neighborhood.

2 We ask that another draft be prepared to ensure that the errors in the current draft are corrected and another public hearing be held. Also, we ask that the historical significance of Smith Hall be
3 strongly considered before its demolition.

4 Additionally, we hope that the laboratory can serve as a community outreach program to provide training and experience to public school students that are in the science field and who live in the community. We request that a program be developed that will include this provision of hands-on experience for our youth.

Yours truly,

Queen M. Hinton

Queen M. Hinton, President

QMH:gh

Response to Comments in : C35

From: Queen Hinton, Walnut Hill Comm. Assn.

Comment No.	Response

1. Comment noted. The University Office of Environmental Health and Safety (OEHS) develops and conducts special programs and training sessions for academics, professional, technical and support staff, and students to promote their knowledge and understanding of environmental health and safety issues and regulatory compliance requirements. The training sessions cover a broad range of topics, for example:

   Chemical Hygiene Plan Training
   -University Safety Offices
   -Components of the Laboratory Standard
   -Standard Operating Procedures
   -Toxicology Overview
   -Chemical Hazard Assessment
   -Employee Injuries
   -Chemical Storage by Classes of Chemicals
   -Safety Equipment
   -Chemical Spill Procedure
   -Waste Disposal
   -Formaldehyde Regulation
   -Laser Program

   Bloodborne Pathogen Training
   -University Safety Offices
   -Blood Borne Pathogens (Hepatitis B, HIV, Other Bloodborne Pathogens)
   -Exposure Control Plan (Definitions, Compliance Methods, Medical Surveillance Program)

   OEHS also develops and conducts training sessions for specific topic areas upon request.

   OEHS conducts inspections periodically to verify compliance with University environmental health and safety requirements. OEHS provides principal investigators and department chairpersons inspection reports that may recommend corrective actions. Where appropriate, as determined by OEHS, laboratory reinspections occur to assure implementation of necessary corrections.

2. Request noted. See generalized response to consolidated comment #2.

3. Comment noted. See generalized response to consolidated comment #5.

4. Comment noted. This issue is beyond the scope of this EIS. This EIS discusses the potential environmental impacts associated with the funding of the IAST. Your request will be directed to the University's Center for Community Partnerships, Mellon Building, 5th Floor, 36th and Walnut Streets, Philadelphia, Pa. 19104. (215-898-5351).

C36

April 14, 1993

Lt Col Gary P Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB TX 78235-5318

Dear Colonel Baumgartel:

Owing to the magnitude of the errors of the present Draft Environmental Impact Statement for the Institute for Advanced Science and Technology, I request, in accordance with the requirements of the National Environmental Policy Act, that another draft be prepared and another public hearing held before the EIS is approved and forwarded to the Environmental Protection Agency. 1

I object to the current DEIS because of the following inaccuracies, in addition to others entered on record at the March 30 hearing:

1. The failure to evaluate the impact of several categories of chemicals, such as mutagens, carcinogens, phosgenes, and explosives, which would be necessary to carry out the research planned for the IAST, and which would negatively impact the health and safety of students, workers, and residents of West Philadelphia 2

2. The effects of increased production and continued storage of radioactive waste on campus 3

3. The characterization of the surrounding West Philadelphia neighborhood as predominantly transient 4

4. The flawed and biassed historical evaluation of Smith Hall and surrounding Smith Walk 5

5. The unprofessional and evasive references to a "Master Plan" which eliminated many viable alternative sites for the IAST 6

6. The proposed constriction of traffic to the Hospital of the University of Pennsylvania and Children's Hospital 7

Please notify me directly of all meetings, notices, etc., and provide me with copies of all reports. 8

Name: Rosie M. Smith Rosie M Smith

Address:
750 N. 43rd Street
Phila., PA 19104

Response to Comments in : C36 (Representative 4/14/93 Form Letter)

From: Rosie M. Smith

Comment No.	Response

1. Comment noted. See generalized response to consolidated comment #2.

2. Comment noted. WESTON evaluated many classes of chemicals, and specific chemicals were evaluated. Moreover, the University's Chemical Hygiene Plan (CHP) covers the use of the chemical classes commented upon as follows:

   Mutagens. Standard Operating Procedure REPRODUCTIVE HAZARDS, pages 69-71, and Appendix D at page 39.

   Carcinogens. Standard Operating Procedure CARCINOGENS, pages 49-51, and Appendix C at pages 36-48.

   Phosgenes. Standard Operating Procedure ACUTELY TOXIC GASES, pages 46-48, and Appendix A page 34.

   Explosives. There is no known use of commercial explosives on campus. However, when experimental (e.g. small scale) quantities of pyrophoric (spontaneously igniting, e.g. phosphorous and sodium metals) and reactive solids, reactive liquids, or water sensitive chemicals are used, the appropriate Standard Operating Procedure is followed, as described on pages 63-65, 66-68. 75-77, and 72-74, respectively. Shock sensitive chemicals are discussed on page 15, and are listed in Table 2 on page 16.

3. Comment noted. All radioactive materials at the University of Pennsylvania are handled, stored, and disposed of in accordance with regulations of the Nuclear Regulatory Commission. The research in the IAST is expected to generate less than 0.5 percent by volume of the total radioactive waste generated by the University of Pennsylvania program. It is therefore not expected to adversely impact the program.

4. Comment noted. The EIS does not refer to the population in and around the campus as predominately transient. Section 3.2, Local Community, focuses on the Philadelphia region, and West Philadelphia, specifically, as the region most closely associated with the University. The region of influence or population issues was described as the City of Philadelphia.

5. Comment noted. See generalized response to consolidated comment #5.

6. Comment noted. See generalized responses to consolidated comments #5 and #7.

The University considered many criteria for choosing the Smith Hall site for the IAST. Among those criteria was appropriateness of existing buildings to proposed uses and the appropriateness of those uses within the overall plans for the University. There was no single plan document used by the University in this process: rather this process was integrated with the University's ongoing planning and development.

7. Comment noted. See generalized response to consolidated comment #3.

8. Comment noted. Commenter's name has been added to the IAST-EIS mailing list. (see Appendix C)

C37

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: Morton H. Frank, Ph.D.

Address: 25 East Gowen Ave.
Philadelphia, PA
Zip Code: 19119

COMMENT: The environmental impact of the proposed demolition of Smith Hall on the University of Pennsylvania campus is adverse in several respects:

1 1. The physical impact is adverse. Not only would a handsome and historic structure and its associated landscape be lost; these would be replaced by a featureless, utilitarian structure. This loss would be irreversible.

2 2. The social environment would be adversely affected. Loss of Smith Hall means an irrevocable loss of our past. Relocation of the Department of the History and Sociology of Science of the University would also degrade the social environment. Construction of a building to be funded through the Department of Defence would enhance military control over academic policies, further degrading the social and academic environment.

Conclusions: In order to minimize the adverse environmental impact of the proposed Institute for Advanced Science and Technology, its funding should be shifted to civilian auspices and the proposed new structure sited far from Smith Hall. If military funding is not reversed, the new building should not be located on campus.

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Response to Comments in : C37

From: Morton Frank

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #5.
2.	Comment noted. See generalized response to consolidated comment #1.

C38

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: Nicole Liberati

Address: 225 Buckhorn Dr
Williamstown, NJ 08094

Zip Code:

COMMENT:

1

The Air Force has offered Penn a wonderful Economic opportunity. I fear though, that the Air Force may be putting a price on history & tradition. What scares me much more is the fact that, in a country where military spending is supposedly on the decline, weapons research will take place in IAST. Finally, I implore Congress not to neglect the terribly important Environmental Issue at hand. If IAST is to be built further be absolutely sure that it will not threaten our already decrepit environment. Our rivers are poisoned & we have the responsibility to prevent further waste buildup.

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Response to Comments in : C38

From: Nicole Liberati

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #1.

C39

Member of
APPRAISERS ASSOCIATION
OF AMERICA, INC.

JOHN A. WOODS
Appraisers
347 MAIN STREET
SOUTH WINDSOR, CONNECTICUT 06074
PHONE (203) 289-3927

Senior Member of
AMERICAN SOCIETY
OF APPRAISERS

April 16, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB TX 78235

Dear Colonel Baumgartel:

I have received information on the Electronic Mail Network that the John Shaw Billings Labaoratory of Hygiene at the University of Pennsylvania, now known as Edgar Fahs Smith Hall, is scheduled for demolition.

1

I ask that this decision be reviewed in line with correspondence provided me by C. Everett Koop, M.D., John Parascandola, and others who feel that the building should be on The National Register of Historic Places.

I have visited many buildings across this country and feel that the committee would be better served if the building remained standing, not only as a monument but as a reflection of past history and a famous physician in the community.

Please feel free to contact me if you have any questions.

Cordially,

John A. Woods

John A. Woods
jm

Response to Comments in : C39

From: John Woods

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #5.

C40

UNIVERSITY of PENNSYLVANIA

School of Engineering and Applied Science
Department of Computer and Information Science
200 South 33rd Street
Philadelphia, PA 19104-6389
Telephone: 215 898-7745
Email: bonnie@cis.upenn.edu

April 13, 1993

ATTN: Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Lt. Col. Baumgartel:

Institute for Advanced Science and Technology
The University of Pennsylvania

I am writing to express my support for the establishment of an Institute for Advanced Science and Technology (IAST) at the University of Pennsylvania. Among the several eventual occupants of this Institute, my department (Computer and Information Science) is anxious to consolidate its activities, faculty, and staff in one building. We are presently distributed over four buildings, three of them older and not appropriately arranged for the, collaboration, laboratory, and networking requirements of future technology. I am also an active participant in Penn's Institute for Research in Cognitive Science (one of NSF's Science and Technology Center). As IRCS is another of the eventual occupants of the IAST, it will doubly enrich my research abilities, to have the IRCS and CIS Departments in a single location.

1 Other potential sitings for the IAST have been examined and the site selected by the Draft Environmental Impact Statement is clearly the most satisfactory. I urge speedy acceptance of the Draft Statement so that we may proceed with the IAST.

Yours sincerely,

Bonnie Lynn Webber
Professor

Response to Comments in : C40

From: Bonnie Lynn Webber

Comment No.	Response
1.	Comment noted. No response required.

C41

Yale University

Section of the History of Medicine
School of Medicine
L130 SHM
P.O. Box 3333
New Haven, Connecticut 06510-8015

Campus address:
L130 Sterling Hall of Medicine
333 Cedar Street
Telephone: 203 785-4338
Fax: 203 737-4130

April 13, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Rd.
Brooks Air Force Base
San Antonio, Texas 78235

Dear Lt. Col. Baumgartel:

1 I am writing to express my distress at the envisaged demolition of E.F. Smith Hall at the University of Pennsylvania, and to protest against that plan.

As an historian of medicine, I want to underscore the historical significance of a building designed and constructed explicitly to serve as John Shaw Billings's Laboratory of Hygiene. The conceptual and physical shaping of this structure in the late 1880s and start of the 1890s places it at a crucial moment in the development of the biomedical sciences and public health practices in America. It stands as a physical embodiment of the German laboratory model in the new science of bacteriology as it was first fully transplanted to American soil, and as an enduring expression of the aspirations of such leading figures in American medicine and public health as Billings to, for the first time, make the United States a equal participant in the international biomedical sciences community. I have visited Smith Hall and, if its architecture seems plain compared with the academic neo-gothic that abounds on the campuses of American universities, it is a splendid and elegant bricks-and-mortar statement of the functional, democratic, service role scientists such as Billings hoped the new biomedical sciences of the 1880s and 1890s would play in American society.

As much as I deplore the proposed destruction of an important monument, however, I am even more disturbed by the loss of a unique historical document. In my teaching in the history of medicine, I try to convey to undergraduate, graduate, and medical students at Yale a sense of the variety of ways that we can use artifacts -- including such structures as hospitals, laboratories, and museums -- as texts that add immeasurably to our understanding of the past. Smith Hall stands as one such text, and a singularly significant one. At the interface of the history of medicine, public health, and education, and taking shape during the crucial decades of the 1880s and 1890s, it represents

Response to Comments in : C41

From: John Warner

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #5.

C41

Lt. Col. Baumgartel
April 13, 1993
p. 2

precisely the transformations that students in the graduate seminar on the history of public health in America I have been teaching this term agree are most in need of a intensive historical re-examination.

That Smith Hall has survived is remarkable; that it should be torn down would be a travesty.

Yours very sincerely,

John Harley Warner
Professor and Acting Chair

cc: Robert E. Kohler

JHW/jg

C42

Bill Claflin Box 22
1520 Spruce St
Philadelphia, PA 19102

7/15/93

Dear Col. Baumgartel.

I urge that a new Draft EIS be prepared for the proposed EAST at the University of Pennsylvania, Philadelphia.

1 It is regretable that the present EIS is incomplete and contains errors of fact. Also, a more realistic look at alternative sites is indicated.

2 Another public hearing should take place when the new EIS is issued

1 your view?

Bill Claflin

Response to Comments in : C42

From: Bill Claflin

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #2.
2.	Comment noted. See generalized response to consolidated comment #7.

C43

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: Miss Marie R Polachek

Address: 30-9 Revere Rd
Drexel Hill, Pa. 19026

Zip Code:

COMMENT: After 26 years of intensive study as to why Electronics Experimenting on the Solar System was only investigated by J. Edgar Hoover and the FBI until his death, which untimely caused the FBI to abandon the investigation of the destructive phenomenon being caused on the U.S. the FBI being kept from conferring with me who reported the start of the Electronics Experimenting (by Einstein and Von Braun) at the FBI Philadelphia Office Window Bldg to Director C. Donald Dwaited patiently 21 years, investigation

1

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Response to Comments in : C43, (See also C1)

From: Marie Polachek

Comment No.	Response
1.	Comment noted. No response required.

cont 2
part time on my own, using my own money, then in January 1988 I was able to fit and connect the Phenomenon, the mutations in plants and animals, the irregularity of wildlife and foliage, the computer viruses, the unethical established in all fields including the Military Business Industry and especially in Government, the Black-out of National Network News of Europe and the free world Nations Rulers and their nations problems, for about 8 years, the unconstitutional allowed into the U.S. Govt in Washington and in all the States (the 100 State Senators elected to office besides the 100 Senators in Congress, + the 50 extra Supreme Courts put in all the States plus allowing the District of Columbia to become a city plus the erection of a second Pentagon, called Crystal City, strictly for the U.S. Navy) the extremely ugly and gaudy allowed in architecture

3
design and style, the declining of morals of most, the slipping back to tyrant bosses in business and industry and slipping back to tyrant Law-enforcement offices, the improper jump of a 300% rise in inflation overnight around 1970, the spiraling costs at a rapid rate the imbalance in salary structure leaving for the minimum wage at $3.35 per hour for over 100 or 15 years, the stagnation of the Supreme Court, the changes in the procedures of Congress especially in the House (televised all day long 1982 - 1989 on C-Span) T.V. of Atlanta Ga. connect all of this mentioned to the descent of the Sun (now and staying 100% discovered after studying it 1 year in 1980, 4 years 1987 to 1991 and now again since Nov 1992.

I mentioned in the comment to Lt Col Gary P. Baumgartel that I left at the Hearing (typed) March 30th in the David Satterhouse

4

Auditorium on the possible construction of an Institute for Advanced Science and Technology on Penn's Smith Hall site that all knowledge has been given to the U.S. Scientists (of my 26 years part time investigation - free lance - with solutions stipulated but has been ignored so far.)

President Clinton, Congress, The Philadelphia Inquirer newspaper, Newsweek Magazine, some Corporation Presidents, Business owners and managers, civilian government employees, IRS and many more were also given entire information, and none of these mentioned would take action, especially Pres. Clinton and Congress. They won't let the news of the unconstitutional ICC action, the 50 officers, nor some Courts get into the airwaves or into the newspapers, they won't tell World Rulers, and of course they won't tell the World Court and say they will straighten it out. (I believe

5

the Jews of Israel in Bosnia - at services meeting with Pres. Bush and Bosnia's President are the World Court force based in Bosnia Switzerland but they will never get the news that Bosnia's President was Einstein but by the phenomenon (a mutation now) hiding out and still giving orders to the U.S. Scientists, they worship him like a God, treating him as infallible and telling the world that his "efforts" were scientifically tested and proven when it was all shot at random, dangerous and very very destructive both to the Solar System and Earth, Earth being the Nucleus of the Planets solar system and distances with the Sun still the main source of energy even at its current 1/2% decrease and erosion. (At speeding with and at equivalents now of the Earth was at 93 million miles from the Sun. They are also keeping

the Solar System at the East Coasts 29% 29% 29% for the whole (100%) not willing to let it ascend to regain (apparent) its 33 1/3% 33 1/3% 33 1/3% for the whole (apparent) (100%) Leaving it back to Natural order of things - Crime solved irregularities discovered having a connection (Sherrow and how told of the connection) making the next to follow the news of the crime, etc then the news of the arrests and then the trials.

President Clinton, Congress and the U.S. Senate (which includes NASA) are holding the World at Bay and will start trying to World Rulers and the F.B.I. I believe it's the State Dept (who let the Trade Center (Egypt) Terrorist Bomber go free in America and gave him working papers. Isn't claimed Political Asylum

Washington needs to be bombed Holding the World at

7

Bay, Negotiating with Mad Man South Eastern by reason of not telling the Will of Friends as an exception to the Rule (World War) and has to be dealt with by bombing and shooting. And the World Court I know they will agree and order such.

Is the stealth bomber available in numbers enough to carry out the mission of bombing Washington, the White House, State Office Bldg. State Dept (Main Office) House of Representatives Crystal City and Nash.

If the Air Force can't able to do justice Can the Air Force get a free World Nation to bomb Washington. Maybe Russia and France will do it if they were allowed to have an exception like ours

C43

per in the ~~Eastern~~ Fourths and Eastern
(Plus the Northeast) of U.S.
following) Philly Metropolitan Area
covered by all of those just
mentioned

I know the entire history
of the distressful Solon
System needs to be known
by the Un-Informed.

My study of 26 years has
all the details precise and
in order. It's extremely
lengthy and will take much
much time to write

Will you call me or
come to my residence to
confer. It will help alleviate
the 29% 29% 29% (the
irregular which the east
coast breakaway - having
a correct Government
man at the Central-East
Coast Phila Pa. (Drexel Hill
- is a Western Suburb about

5 miles from the Conv. of Penna)

Please Please Please Call me
or come here to confer. It's
important and necessary really.
I'll be Masochist if I
write it all again for the
15th time approximately
mid Jan. 1988.

Yours truly
Mrs Marie Polachek
30-9 Revere Rd
Drexel Hill Pa
19026

Phone 215-259-6376

P.S. I'm the niece of World
War II Veterans, Sister
of 4 US Army Veterans
(Korean War time) and
ex-wife of Air Force Veteran
(also Korean War Time)
I haven't any Sons (2 Daughters
only) to "offer" to the Military

10

but I have a Grandson age
10 whom I plan to make
an excellent citizen very
Patriotic.

P.P.S. To explain the sum
expance currently as 29%
29% 29% when in fact it
need the true expanse of
33 1/3% 33 1/3% 33 1/3% and
can ascend and regain its
exact expanse. I have
proof and know for sure.

P.P.S Please don't listen
to the opponents of the Antiticks
construction on the Mall stop
telling of the type waste it
it will cause. They are Einstein
cult followers using a just
the opposite side. Notice they
won't say type waste and
just how much "gasses" can
escape through the test
tubes and the walls.
(I'm employed at Bogaar/MacC)

11

Bogaar MacC. being on
Clayton Knights (Delaware County)
Pa. also (Western Suburb of
Phila Pa. also about 5 miles
from Penn. (I'm a "Nasert"
for the Mall)

I was born and raised on
West Rhinegard attended
Wharton there. Moved to the
Wharton Suburbs also 5
miles from Penn. in 1953.
Moved to Alaska 7-59 Moved
back to Delaware Co. 2-67.

I was employed in Center
City Phila from 3-51 to
10-55 then worked on
Navy Phila Brewing 10-55
to 3-59 when I quit to go re
to my first Retired.
born to my first child.

(Please excuse my poor grammar
handwriting and my
being overwrought for the
thousandth time)

C44

DEPARTMENT OF HEALTH & HUMAN SERVICES — Public Health Service

Rockville, Md. 20857

Office of the PHS Historian
17-31 Parklawn Building
5600 Fishers Lane
Phone: 301-443-5363
Fax: 301-443-0358

April 13, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Dear Colonel Baumgartel:

I am writing in reference to the Draft Environmental Impact Statement (DEIS) for the proposed siting and construction of the Institute for Advanced Science and Technology (IAST) at the University of Pennsylvania.

1 I am concerned that the DEIS does not sufficiently address the historic significance of Edgar Fahs Smith Hall, which would be demolished as a part of the projected IAST project. On December 31, 1992, I wrote to Brenda Barrett of the Pennsylvania Historic and Museum Commission, in support of an effort to save the Smith building. I enclose a copy of that letter, which gives the reasons for my support of this preservation effort.

I urge you and your colleagues in the Department of the Air Force to carefully consider the importance of Smith Hall in the history of medicine and science before moving ahead with the IAST project. I sincerely hope that you will recognize the value of preserving Smith Hall and will develop alternative plans that do not involve the destruction of this historic landmark.

Sincerely,

John Parascandola

John Parascandola, Ph.D.
Public Health Service Historian

Enclosure

Response to Comments in : C44

From: John Parascandola

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #5.

C44

DEPARTMENT OF HEALTH & HUMAN SERVICES — Public Health Service

Washington DC 20201

December 31, 1992

Brenda Barrett
Pennsylvania Historic and Museum Commission
P.O. Box 1026
Harrisburg, PA 17108-1026

Dear Ms. Barrett:

I am writing in support of the effort to save the historic building at the University of Pennsylvania in which John Shaw Billings' Laboratory of Hygiene was once located, now called Edgar Fahs Smith Hall.

Given my professional career, I am very familiar with Billings and his importance to American medicine and public health. For the past nine years, until I moved to my current job in October of this year, I was Chief of the History of Medicine Division of the National Library of Medicine. Billings built the forerunner of that institution, the Library of the Surgeon General of the Army, from a small collection of books into the largest medical library in the world. He also began the indexing of the medical literature in Index Medicus, a publication that still continues today in hard copy and online as MEDLINE. William Welch, the great American bacteriologist and medical educator at Johns Hopkins, once wrote that Billings' contributions in this area were America's greatest contributions to medicine to that time.

But Billings was a pioneer in other areas as well, not least of which was public health. He helped to refine the science of vital statistics, and was instrumental in the creation of a National Board of Health. In my current capacity as Historian for the Public Health Service, I have come to better appreciate his work in this field. When he left the Library, he went to the University of Pennsylvania, where he established the important Laboratory of Hygiene mentioned above. This Laboratory was uniquely designed by Billings to demonstrate scientific principles of sanitary design and the elimination of contagion in the heating and ventilation systems of the building. It represents an important milestone in the history of American public health, and it would be a great misfortune if the building were demolished. I am therefore adding my voice to the others calling for preservation of this historic building.

Sincerely,

John Parascandola

John Parascandola, Ph.D.
Public Health Service Historian

C45

4217 Pine St.
Phila., Pa. 19104
April 13, 1993

Lt. Col Gary P. Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Rd.
Brooks AFB, TX 78235-5318

Dear Lt. Col. Baumgartel:

I have been watching with great interest the controversy surrounding the proposed demolition of Smith Hall to make way for a new science laboratory at the University of Pennsylvania. Although I have not actively "taken sides" I am very concerned that, whatever happens, it be based on impeccably accurate data and information.

For this reason, I am writing to you to urge

1 that the Air Force prepare a second Draft EIS and conduct another hearing, to ensure that the obvious errors in the first draft (regarding the

2 historical significance of Smith Hall) be corrected.

Very truly yours,

Joan Weiner

Joan Weiner
Attorney-at-Law

Response to Comments in : C45

From: Joan Weiner

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #2.
2.	Comment noted. See generalized response to consolidated comment #5.

C46

April 17, 1993

Lt Col Gary P Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB TX 78235-5318

Dear Colonel Baumgartel:

1 Owing to the magnitude of the errors of the present Draft Environmental Impact Statement for the Institute for Advanced Science and Technology, I request, in accordance with the requirements of the National Environmental Policy Act, that another draft be prepared and another public hearing held before the EIS is approved and forwarded to the Environmental Protection Agency.

I object to the current DEIS because of the following inaccuracies, in addition to others entered on record at the March 30 hearing:

2 1. The failure to evaluate the impact of several categories of chemicals, such as mutagens, carcinogens, phosgenes, and explosives, which would be necessary to carry out the research planned for the IAST, and which would negatively impact the health and safety of students, workers, and residents of West Philadelphia

3 2. The effects of increased production and continued storage of radioactive waste on campus

4 3. The characterization of the surrounding West Philadelphia neighborhood as predominantly transient

5 4. The flawed and biased historical evaluation of Smith Hall and surrounding Smith Walk

6 5. The unprofessional and evasive references to a "Master Plan" which eliminated many viable alternative sites for the IAST

7 6. The proposed constriction of traffic to the Hospital of the University of Pennsylvania and Children's Hospital

8 Please notify me directly of all meetings, notices, etc., and provide me with copies of all reports.

Name: ED O'FERRALL

Address: 515 S. 45th St.
Phila., Pa. 19104

Response to Comments in : C46 (Representative 4/17/93 Form Letter)

From: Ed McRraty

Comment No.	Response

1. Comment noted. See generalized response to consolidated comment #2.

2. Comment noted. WESTON evaluated many classes of chemicals, and specific chemicals were evaluated. Moreover, the University's Chemical Hygiene Plan (CHP) covers the use of the chemical classes commented upon as follows:

   Mutagens. Standard Operating Procedure REPRODUCTIVE HAZARDS, pages 69-71, and Appendix D at page 39.

   Carcinogens. Standard Operating Procedure CARCINOGENS, pages 49-51, and Appendix C at pages 36-48.

   Phosgenes. Standard Operating Procedure ACUTELY TOXIC GASES, pages 46-48, and Appendix A page 34.

   Explosives. There is no known use of commercial explosives on campus. However, when experimental (e.g. small scale) quantities of pyrophoric (spontaneously igniting, e.g. phosphorous and sodium metals) and reactive solids, reactive liquids, or water sensitive chemicals are used, the appropriate Standard Operating Procedure is followed, as described on pages 63-65, 66-68. 75-77, and 72-74, respectively. Shock sensitive chemicals are discussed on page 15, and are listed in Table 2 on page 16.

3. Comment noted. All radioactive materials at the University of Pennsylvania are handled, stored, and disposed of in accordance with regulations of the Nuclear Regulatory Commission. The research in the IAST is expected to generate less than 0.5 percent by volume of the total radioactive waste generated by the University of Pennsylvania program. It is therefore not expected to adversely impact the program.

4. Comment noted. The EIS does not refer to the population in and around the campus as predominately transient. Section 3.2, Local Community, focuses on the Philadelphia region, and West Philadelphia, specifically, as the region most closely associated with the University. The region of influence or population issues was described as the City of Philadelphia.

5. Comment noted. See generalized response to consolidated comment #5.

6. Comment noted. See generalized responses to consolidated comments #5 and #7.

The University considered many criteria for choosing the Smith Hall site for the IAST. Among those criteria was appropriateness of existing buildings to proposed uses and the appropriateness of those uses within the overall plans for the University. There was no single plan document used by the University in this process: rather this process was integrated with the University's ongoing planning and development.

7. Comment noted. See generalized response to consolidated comment #3.

8. Comment noted. Commenter's name has been added to the IAST-EIS mailing list. (see Appendix C)

C47

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences
Department of Chemistry
Chemistry Building
Philadelphia, PA 19104-6323

16 April 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Lt. Col. Baumgartel,

1 As a citizen of Philadelphia and a member of the Penn Chemistry faculty, I herewith formally indicate my support for the Institute for Advanced Science and Technology (IAST), to be constructed on the Smith Hall site.

As you are well aware, other West Philadelphia sites for the IAST have been ruled out based on their lack of proximity to the current science complex at Penn. It is extremely important that the IAST be contiguous with the currently-existing Chemistry Building, in order to maximize the scholarly interactions of faculty and students. There are other educational and technical advantages for placing the IAST on the Smith Hall site, which are already well-documented and need not be recapitulated here.

Although Smith Hall is an old laboratory building, it is not historic, in my opinion. Laboratory science evolves with time, and so do the structural and physical requirements of the laboratory space in which it is conducted. To register a laboratory building as a historic landmark virtually guarantees its obsolescence for laboratory science 50 or more years later. Smith Hall must be sacrificed for the science that will lead Penn into the 21st century.

Sincerely yours,

David W. Christianson
Assistant Professor of Chemistry
Adjunct Assistant Professor, The Wistar Institute

Response to Comments in : C47

From: David W. Christianson

Comment No.	Response
1.	Comment noted. No response required.

C48

UNIVERSITY of PENNSYLVANIA

School of Engineering and Applied Science
Department of Computer and Information Science
200 South 33rd Street
Philadelphia, PA 19104-6389
Telephone: 215-898-1593
Email: dale@saul.cis.upenn.edu

April 14, 1993

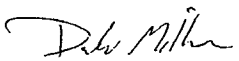
Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Lt. Col. Baumgartel:

1 I am writing to you to strongly demonstrate my support for the establishment of the **Institute for Advanced Science and Technology (IAST) at the University of Pennsylvania**. The Computer and Information Science Department is currently distributed over four buildings, three of them old and not adequately designed for the collaboration, class rooms, laboratory, and networking requirements of future technology. Other potential sitings for the IAST, which is planned to house the Computer and Information Science Department, have been examined and the site selected by the Draft Environmental Impact Statement is clearly the most satisfactory based on our need to be located adjacent to other Engineering and Applied Science faculty, facilities, classrooms, administrative services, and library.

I urge a speedy acceptance of the Draft Statement so that construction of the IAST can begin.

Sincerely,



Dale Miller
Associate Professor

Response to Comments in : C48

From: Dale Miller

Comment No.	Response
1.	Comment noted. No response required.

C49

UNIVERSITY of PENNSYLVANIA

Department of Chemistry
Philadelphia, PA 19104-6323

George F. Palladino
Vice Chairman, Chemistry
215-898-4193

April 9, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Sir:

1 I want to register my strong support for the Institute for Advanced Science and Technology proposed to be built at the University of Pennsylvania. I also want to say that I believe the DEIS, dated February 1993, is a fundamentally sound document which will be adequate for an informed decision when modified to answer the few substantive criticisms presented in the public hearing held 30 March 1993.

I am a professional chemist and am currently Vice Chairman of the Department of Chemistry at the University of Pennsylvania. I live in West Philadelphia only twelve blocks from the proposed site for the IAST. I have watched the evolution of the IAST project since my arrival at Penn five years ago. My comments will focus on the need for and concept of the IAST, the historical aspects of Smith Hall, the type of research to be conducted in that IAST, and the hazardous waste stream associated with the IAST.

NEED: The Department of Chemistry has the good fortune to have an outstanding faculty, which has developed outstanding and particularly valuable research programs that range from health related chemistry to new materials and includes remarkable programs in the development of lasers to study chemical and biological phenomena and the use of Nuclear Magnetic Resonance Spectroscopy to study biological structure. To a large extent the Department is a victim of its own success and the current research efforts are severely space limited. Several of our faculty, mostly those hired since 1982, have programmatic needs for space which cannot be met within our current buildings. In addition, the Department has a large interdisciplinary effort which overlaps with engineering programs and those in the Medical School.

IAST CONCEPT: The intermingling of engineering programs and basic science is a unique way to increase the interactions between them and produce a serendipitous environment for new discoveries. I am reminded of the research of Jan Haagen-Smit of California Institute of Technology. Dr. Haagen-Smit was a chemist who explored the volatile oils of plants. He developed new methods and equipment for microanalysis of natural materials. Using the same background, he was also the scientist who elucidated the atmospheric villains causing smog. From this unlikely source came the effort that resulted in catalytic converters. This is but one example of technology development from basic science. The IAST concept, commingling science and engineering research, will only hasten similar technological progress.

RESEARCH IN THE IAST: The type of research to be conducted in the IAST is consistent with the requirements in the Request for Proposal. The research in this department is squarely in line with our nation's critical technologies. Furthermore, I doubt that anyone could predict with reliability what type of basic research will give major technological breakthroughs.

Response to Comments in : C49

From: George F. Palladino

Comment No.	Response
1.	Comment noted. No response required.

Response to Comments in : C50

From: Larry G. Sneddon

Comment No.	Response
1.	Comment noted. No response required.

C51

UNIVERSITY of PENNSYLVANIA

School of Engineering and Applied Science
Department of Computer and Information Science
200 South 33rd Street
Philadelphia, PA 19104-6389
FAX: (215) 898-0587
Telephone: (215) 898-5862
Email: badler@central.cis.upenn.edu

April 12, 1993

ATTN: Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Lt. Col. Baumgartel:

RE: Institute for Advanced Science and Technology
The University of Pennsylvania

1 I am writing to strongly support the establishment of the Institute for Advanced Science and Technology (IAST) at the University of Pennsylvania. Among the several eventual occupants of this Institute, the Computer and Information Science Department is anxious to consolidate its activities, faculty, and staff in one building. We are presently distributed over four buildings, three of them older and not appropriately arranged for the, collaboration, laboratory, and networking requirements of future technology. Other potential sitings for the IAST have been examined and the site selected by the Draft Environmental Impact Statement is clearly the most satisfactory based on our need to be located adjacent to other Engineering and Applied Science faculty, facilities, classrooms, administrative services, and library. I urge speedy acceptance of the Draft Statement so that we may proceed with the IAST.

Sincerely,

Norman I. Badler
Cecilia Fitler Moore Professor and Chair

C49

HISTORICAL ASPECTS: I have listened to the complete range of arguments on the historical significance of the Smith Building. My conclusions are:

1. Smith Hall is an old building.

2. If Smith Hall were still assigned to the Department of Chemistry (it was until 1974) there would be little interest in preserving it.

3. The faculty and associated faculty from the Department of History and Sociology of Science are only using the historical arguments to further their own agenda (i.e. preserving their own offices).

4. The building itself is undistinguished and past occupants, with the notable exception of a couple of renowned faculty in Chemistry, are also undistinguished. (Iwould add here that those distinguished Chemistry Faculty would prefer the building be removed in favor of the IAST.)

HAZARDOUS WASTE: In my capacity as vice chairman of the Chemistry Department, I have intimate knowledge of the type and amount of waste, including hazardous waste and radioactive waste generated in the department. I am also well versed in the University's program for handling hazardous waste and radioactive waste. There are two key points to be made. First, the IAST will generate about ten percent more hazardous waste and less than 5 percent additional radioactive waste (I estimate it to be less than 1 percent!). Second, and most importantly, the University of Pennsylvania has extremely effective hazardous waste and radioactive waste programs. The DEIS adequately addresses these issues.

In summary, I want to endorse the DEIS and recommend to you that the conclusions are correct and cost effective.

Sincerely,

George F. Palladino, Ph.D.
COL. USA Ret.

GFP/dh

C50

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences
Department of Chemistry
Chemistry Building
Philadelphia, PA 19104-6323

April 15, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Sir:

1 I am writing to indicate my strong support for the IAST project at the University of Pennsylvania.

The IAST facility will house research programs which have previously been identified as central to the development of nationally recognized priorities in fundamental science, as well as defense and health related fields. The new IAST building will significantly enhance the capabilies and scope of these research programs.

Due to its proximity to the existing chemistry and engineering building, the Smith Hall Site is the only viable building site for the IAST. I therefore urge your immediate approval for this project in the strongest possible terms.

Sincerely,

Larry G. Sneddon
Professor of Chemistry

LGS:er

Response to Comments in : C52

From: Madeleine Joullie

Comment No.	Response
1.	Comment noted. No response required.

C53

The Rev. John M. Scott
4605 Larchwood Ave.
Philadelphia, PA. 19143
(215) 747-3117

April 14, 1993

Lt.Col. Gary P. Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Rd.
Brooks AFB, TX 78235-5318

re: Smith Hall, University of Pennsylvania

Dear Colonel Baumgartel:

1 Although I was not present at the March 30th hearing, I have been following the serious effort of many University of Pennsylvania faculty, local residents (as am I), and community leaders who feel Smith Hall should not be demolished.

2 Science would not be honored by sacrificing a building honoring science itself. An architectural landmark, and a walkway of University and Philadelphia historic significance should be maintained. Furthermore all University buildings south and east of where Woodland Avenue formerly existed are already on the National Historic Register. Smith Hall is one of them. Since alternative sites have already been identified, why are they not under serious consideration so that this historic landmark is preserved? Too often, in American history, citizens have later questioned such destruction or dereliction to have been a serious mistake. Let this not be another such occasion,

Very truly yours,

John M. Scott

Response to Comments in : C51

From: Norman Badler

Comment No.	Response
1.	Comment noted. No response required.

C52

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences
Department of Chemistry
Chemistry Building
Philadelphia, PA 19104-6323

April 14, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Lt. Col. Baumgartel:

1 I wish to express my strong support for the IAST and its planned location. I am probably the person most familiar with the Smith building at the University. As a Penn graduate student I did my thesis in Smith Hall and supervised the organic laboratory there for more than 25 years. I know the building as the palm of my hand and I can vouch that it is a totally inadequate building for any use. I also know that the many additions that were made over the years were poor and if this building ever had any historical value, it certainly has been destroyed long ago. When I came to Penn as a graduate student it was referred to as the Hygiene Building as there were some government labs in there. It had no adequate ventilation or provisions to eliminate chemical work. Therefore, little will be lost in razing Smith Hall.

On the other hand, much is to be gained by building the IAST. The space is essential even vital to my young colleagues so they can grow adequately. The building will promote interdisciplinary work which is of utmost importance to the University and as I see it the new building will improve the environmental quality of the area by replacing a totally inadequate building with a state of the art one. As the person who probably will be the most inconvenienced by the construction as the building will be connected just outside my office, I still support it vigorously because I know it is essential for the growth and advancement of science and technology at the University.

Sincerely,

Madeleine M. Joullié

Madeleine M. Joullié
Professor of Chemistry

MMJ:mp

Response to Comments in : C53

From: Rev. John M. Scott

Comment No.	Response
1.	Comment noted. No response required.
2.	Comment noted. Alternative locations for the IAST have been identified in Chapter 2 and evaluated in Chapter 4. The Smith Hall site is identified by Penn as the most suitable location for the IAST. See generalized responses to consolidated comments #5 and #7.

C54

OS-2 (3-89)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

IN REPLY REFER TO

April 12, 1993

Lt. Col. Gary Baumgartel, Chief
Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX, 78235-5318

Dear Lt. Col. Baumgartel:

1 The Pennsylvania Department of Transportation has no comments on the draft Environmental Impact Statement prepared for the proposed siting and construction of the Institute for Advanced Sceince and Technology (IAST) at the University of Pennsylvania, Philadelphia, Pennsylvania.

Sincerely,

Wayne W. Kober, Director
Bureau of Environmental Quality

Making It Happen

Response to Comments in : C54

From: Wayne Kober, PADOT

Comment No.	Response
1.	Comment noted. No response required.

C55

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: Charles A. Evers
Address: 229 S. 42ND ST.
Philadelphia, PA
Zip Code: 19104

COMMENT: I have written a letter of comment which is attached.

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Response to Comments in : C55

From: Charles Evers

Comment No.	Response

1. Comment noted. See generalized response to consolidated comment #5.

2. Comment noted. See generalized response to consolidated comment #7 for a discussion of adjacency.

While comparative costs are a factor in the University of Pennsylvania's planning and in the ultimate decision to be made by the AF, costs are not relevant to the analysis of environmental impacts between alternatives. Accordingly, costs are considered to be outside the scope of analysis of this EIS, a cost-blind study. The AF is providing construction funds. Equipment and personnel costs are University costs. The history of process costs is also outside the scope of this EIS. However, to respond to the specific requests, the comparative construction project costs of the alternatives can be briefly stated as follows:

Alternative	Costs
Proposed Action	$50,581,650
Partial Reuse of Smith Hall Alternative	$55,181,575
LRSM Alternative	$57,856,425
Lott Tennis Court Site	$59,113,900

Differences in costs associated with operating the research program of the IAST in each of the sites are not included in these estimates.

C55

April 19, 1993

Charles A. Evers
229 South 42nd Street
Philadelphia, PA 19104

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

RE: Public Comment on the Draft Environmental Impact Statement
IAST Laboratory at the University of Pennsylvania

Dear Lt. Col. Baumgartel:

Thank you for the opportunity to express my opposition to the demolition of Smith Hall. I am a Friend of Smith Walk. I am also a neighbor and an alumnus of the University. Furthermore, having been born at the University's hospital, and spent much of my childhood on campus where my father taught chemistry, I consider myself to be a lifelong "friend of the University as a whole", in spite of what President Hackney has written in letters to supporters of Friends of Smith Hall. I was very much in agreement with the testimony of Mr. Jonathan Goldstein, a student, and Ms. Melanie La Mond of the University City Historical Society. However, there are two points I would like to make that I feel were not adequately addressed in the Draft Environmental Impact Statement

1

1. Status of the District. The construction of the first two phases of the IAST will have an extraordinarily negative impact on the historic resources in the University's Historic district, including the demolition of Smith Hall, the obstruction of Smith Walk, and the mutilation of both the Morgan and Music Buildings. Furthermore, the first two phases will adversely impact five adjacent historic structures: Irvine Auditorium, the Furness Library, Bennett Hall, the Towne Building, and Hayden Hall. This impact will be by definition destructive, since the new building will be a vastly different scale and will alter the exterior configuration and relationships of the various buildings. Current cultural resource practice would consider this development to be so destructive that the existence of the district itself is threatened. At best, the district could survive by being divided into two, smaller, discontinuous districts: one around College Hall and another along 33rd Street. Although the current administration claims that the adjacent buildings are safe from demolition and will be restored, we do not known what an administration in twenty or thirty years' time will attempt to do once these buildings are compromised by the new construction and not protected by a sound, whole historic district.

2

2. Comparative Costs of Alternate Sites: A common reason for rejecting many of the alternate sites is the issue of non-adjacency and the fact that many facilities will have to be duplicated at considerable cost. However, it was never directly stated what are

2 the additional cost of proposing to build on the Smith Hall site rather than on a site where there is no impact on historic resources, such as the LRSM parking lot. Since comparative cost has been made an issue by the University, the final environmental impact statement should let the alumni and community know what these extra costs are, especially for the following:

-legal fees for commission and court hearings

-staff and administration costs for public relations, attending Historic Commission hearings, Historic Commission Architectural Advisory Committee hearings and community presentations

-extra designs and feasibility studies

-historic preservation consultants

-extra architectural fees for design in a difficult site, and architectural fees for redesign

-potential loss of donations from disaffected alumni

Thank you for your attention to this matter.

Sincerely,

Charles A. Evers

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences
Department of Chemistry
Chemistry Building
Philadelphia, PA 19104-6323

April 14, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Col. Baumgartel:

As a member of the faculty of the Department of Chemistry of the University of Pennsylvania, for the past 38 years, I have had ample opportunity to observe the continued growth of the University in academic stature and in the form of new buildings, some of which involved the closing of city streets which ran through the "old" campus. These two types of growth have played an important role in adding to the cultural environment of the part of Philadelphia within which Penn is located and in increasing the overall beauty of the campus including the beneficial effect it has on the surrounding area.

The deliberations in which many of us with conflicting points of view are presently engaged are healthy for the whole University City area. The real problem with which we are faced is: "What is the best course of action for the whole University City community concerning the Smith building and the new IAST building?". As an urban campus, Penn has no room into which it can expand and modernize its buildings and facilities without the demolition of old buildings. If it cannot keep up with advancing times it will slowly wither with consequent adverse effects on the whole surrounding community. On the other hand, the demolition of old buildings is not what we would want if we had room into which we could move. We are faced with a dilemma!

1 In the best interests of the future of the University and University City community I regretfully but strongly advocate demolition of the Smith Building and construction of the new IAST building.

Sincerely yours,

Alan G. MacDiarmid
Blanchard Professor of Chemistry

cc: Dr. Amos B. Smith, III
AGM/hw

Response to Comments in : C56

From: Alan MacDiarmid

Comment No.	Response
1.	Comment noted. No response required.

C57

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: ROBERT FITZGERALD (UNIV. OF PA GRAD STUDENT)
Address: 2016 WAVERLY ST.
PHILADELPHIA, PA
Zip Code: 19146

COMMENT: DEAR LT. COL BAUMGARTEL:

PLEASE DO WHAT YOU CAN TO WITHDRAW FEDERAL SUPPORT FROM THE UNIV. OF PA'S CURRENT CHOICE OF SITE FOR THE IAST. I HAVE NO OBJECTIONS TO THE FACILITY ITSELF, IF PROPER ENVIRONMENTAL CONCERNS ARE ADDRESSED. CONSTRUCTION OF THE IAST ON THE SITE OF SMITH HALL WOULD DISRUPT THE LAST ENSEMBLE OF NINETEENTH AND EARLY TWENTIETH CENTURY BUILDINGS ON CAMPUS. IT IS AN AREA THAT MANY FACULTY AND STUDENTS TRAVERSE EVERY DAY, ARE FOND OF, AND WOULD LIKE TO SEE PRESERVED. IT SEEMS EXTRAORDINARILY SHORT-SIGHTED OF PENN'S PLANNING DEPT. TO INSIST ON THE SMITH HALL SITE MERELY BECAUSE OF ITS ADJACENCY TO THE CHEMISTRY BUILDING, AN UGLY AND EXPENDIBLE BUILDING ON THE VERGE OF OBSOLESCENCE IF THERE EVER WAS ONE. PENN HAS BEEN SYSTEMATICALLY PHASING OUT ITS ENGINEERING PROGRAMS AT TOWNE. THE ENTIRE FOCUS OF THE SCIENCES HAS BEEN SHIFTING NORTH TO THE SCIENCE CENTER ON MARKET AND TOWARD DREXEL. SOME FEEL THAT FUTURE COLLABORATION WITH THE LATTER INSTITUTION IS AN INEVITABILITY. THE SITE NEXT TO THE LABORATORY FOR RESEARCH ON THE STRUCTURE OF MATTER OR SOME OTHER NORTHERLY SITE IS A MUCH MORE APPROPRIATE CHOICE FOR THE LONG HAUL. PLEASE ENCOURAGE THE AIR FORCE TO REJECT THE SMITH HALL SITE FOR THE NEW IAST.

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

1

Response to Comments in : C57

From: Robert Fitzgerald

Comment No.	Response
1.	Comment noted. See generalized responses to consolidated comments #5 and #7.

C58

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences
Department of Chemistry
Chemistry Building
Philadelphia, PA 19104-6323

April 19, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Lt.Col. Baumgartel;

I am writing this letter in support of the IAST development.

1 The creation of IAST makes a major contribution to taking Penn into the 21st century of scientific research. Furthermore the choice of the Smith Hall site is ideal in its proximity to various Departments involved in the project.

Sincerely yours,

Robin M. Hochstrasser
Donner Professor of Chemistry

Response to Comments in : C59

From: Michael Therien

Comment No.	Response
1.	Comment noted. No response required.

Finally, as a current contributor to the Sierra Club and a former contributor SANE/FREEZE, it is with personal regret that I find the arguments put forth against the IAST by these organizations focus on the horrors of the imagined weapons and intelligence research that will supposedly go on in the facility. Firstly, no such work will go on in the facility nor is it in the scope of the institute's mission. Secondly, no "secret" research will be carried out at the facility; like all research undertaken at the University of Pennsylvania, work carried out in the IAST will be published in the open literature.

DOD has seen fit to give Penn a generous and tremendous gift. It is my belief that the research carried out at the IAST will not only impact basic science; technologies developed there may significantly affect the economic well-being of Philadelphia. Many of the objections to the proposed facility as well as its location stem from the scientifically illiterate; I can not help but feel that if we do not follow through with construction of the IAST, we will be contributing to the further development of a society that fears rather than embraces the scientific and technological vision that emanates from America's research universities.

Yours sincerely,

Michael J. Therien
Assistant Professor

Response to Comments in : C58

From: Robin Hochstrasser

Comment No.	Response
1.	Comment noted. No response required.

C59

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences
Department of Chemistry
Chemistry Building
Philadelphia, PA 19104-6323

April 19, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Col. Baumgartel,

1 I am writing to express my enthusiastic and unqualified support for the Institute for Advanced Science and Technology (IAST) at the University of Pennsylvania. As a member of the Penn faculty, I am certainly aware of the tremendous and long-lasting impact the IAST will have on the scientific community here at Penn: the IAST will be an integral part of the infrastructure that will enable Penn faculty to train researchers well into the 21st century. As a member of the local community (I live in Center City), I am thrilled that the Department of Defense is infusing a substantial amount of capital into the city of Philadelphia.

Since I am an active researcher, it is my opinion that the original Proposed Action and site selection should be implemented as planned. The selection of an alternate site will only diminish the impact that the facility will have on the materials science, biotechnology, and chemistry research communities here at Penn; a location other than the current Smith Hall site will diminish faculty-faculty and faculty-student interactions and thus dramatically impair the significant training potential of the facility.

It is unfortunate that there has been some objections to the IAST from some members of the community. Though certainly not an expert on architecture, I fail to see the esthetic objections to the IAST given the complete lack of visual appeal of Smith Hall. It is certainly in the best interest of an urban university (where land is at a premium) to use its existing real estate efficiently; it is certainly not in the best interest of the University of Pennsylvania to be forced to make the preservation and continued restoration of every pre-twentieth century building on campus a financial priority. Given Penn's goal to maintain a leadership role in science education, the IAST is essential to Penn and will be a tremendous asset over the years to the community here in the Delaware Valley.

C60

UNIVERSITY of PENNSYLVANIA

School of Engineering and Applied Science
Department of Bioengineering
Suite 120 Hayden Hall
240 S. 33rd Street
Philadelphia, PA 19104-6392
TEL: 215-898-8501
FAX: 215-573-2071

April 19, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
81006 Chennault Road
Brooks AFB, Texas 78235-5318

Dear Colonel Baumgartel:

RE: Institute for Advanced Science and Technology
The University of Pennsylvania

1 I am writing in support of the construction of the IAST Building. This building is to be located at a most central location on campus to enable the multidiciplinary efforts to take place that are required of 21st Century sciences and technology. The location adjacent to Chemistry and attached to Hayden Hall via an underground tunnel will facilitate the best options for bioengineering, chemistry and chemical engineering collaboration.

Careful planning has taken place to assure that full compliance with environmental safety standards and building codes have been met. The well being of the entire University Community was placed at the highest priority during all phases of design of this building.

It has been some 30 years since engineering has had new laboratory space capable of supporting the new technologies this nation needs. These laboratories are a major step forward in coupling basic and applied research to the efforts of technology transfer built into the entire IAST program. It is our hope that this building will rise swiftly so that long overdue programs can move forward in a rigorous manner.

Sincerely,

S.R. Pollack

Solomon R. Pollack
Professor, Bioengineering

cc: L.E. Thibault, Chair, Bioengineering Department
G. Farrington, Dean, School of Engineering and Applied Sciences
B. Cooperman, Vice Provost of Research

PENN

Response to Comments in : C60

From: Solomon Pollack

Comment No.	Response
1.	Comment noted. No response required.

C61

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences
Department of Chemistry
Chemistry Building
Philadelphia, PA 19104-6323

April 19, 1993

Lt. Col. Gary Baumgartel
Cheif, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Col. Baumgartel,

1 I am writing to you to express my support for the Institute for Advanced Science and Technology (IAST) at the University of Pennsylvania. I express this opinion both as a member of the Penn faculty and as a member of the Penn community; my home is within 1½ miles of the IAST proposed site. I believe stongly that the construction of this facility must go forward. The original Proposed Action and original site location (replacing Smith Hall) is the most appropriate plan with which to proceed. This Action meets the long range development plans of the university and the science community.

The IAST is an essential part of the future development of sciences at the University of Pennsylvania. Phase I will provide a much needed state-of-the-art facility for expansion of materials related chemistry and biotechnologies on this campus. These are important future directions for more than just basic research; will have an important impact on our society as well. The proximity of IAST to the current chemistry buildings is an essential ingredient in the successful undertaking of novel materials research on this campus. A remote site will decouple and isolate new faculty, students and efforts from close interaction with current personel and expertise. New ideas in science often result from such interactions; their implementation benefits from new facilities and capabilities.

Nearly all of the persons objecting to the Proposed Action are largely ignorant of the impact that this facility will have on the future implementation of cutting-edge research on this campus. The esthetic objections are not easy to understand considering the rather complete lack of visual appeal of Smith Hall. The University has already developed science facilities apart from the main quadrangle so that these modern looking structures to not detract from the beauty of the 19th century structures. Simply put, we can develop the Smith walk portion of the campus to reflect the real needs of the sciences into the 21st century or sacrifice the quality of education in the sciences for the sake of a misguided esthetic. I strongly recomend that we preceed with the Proposed Action without delay!

Sincerely,

Norbert Scherer
Assistant Professor of Chemistry
(215) 898-6137

Response to Comments in : C61

From: Norbert Scherer

Comment No.	Response
1.	Comment noted. No response required.

C62

UNIVERSITY of PENNSYLVANIA

School of Engineering and Applied Science
Department of Computer and Information Science
200 South 33rd Street
Philadelphia, PA 19104-6389
Telephone: (215) 898-0945

April 20, 1993

ATTN: Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

RE: Institute for Advanced Science and Technology
The University of Pennsylvania

Dear Lt. Col. Baumgartel,

1 I am writing to strongly support the establishment of the Institute for Advanced Science and Technology (IAST) at the University of Pennsylvania. Among the several eventual occupants of this Institute, the Computer and Information Science Department is anxious to consolidate its activities, faculty, and staff in one building. We are presently distributed over four buildings, three of them older and not appropriately arranged for the, collaboration, laboratory, and networking requirements of future technology. In my particular case, since my research spans both computer vision and computer graphics I have to move between two buildings several times every week!

1 Several potential sitings for the IAST have been examined and the site selected by the Draft Environmental Impact Statement is clearly the most satisfactory based on our need to be located adjacent to other Engineering and Applied Science faculty, facilities, classrooms, administrative services, and library. I urge speedy acceptance of the Draft Statement so that we may proceed with the IAST.

Sincerely,

Dimitri Metaxas
Assistant Professor

Response to Comments in : C62

From: Dimitri Metaxas

Comment No.	Response
1.	Comment noted. No response required.

C63

April 15, 1993

Lt. Col. Gary P. Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Re: The Institute of Advanced Science and Technology (IAST)
University of Pennsylvania, Philadelphia, Pennsylvania
Draft, Environmental Impact Statement

Dear Lt. Col. Baumgartel,

I am writing to note my concerns about information presented in the draft Environmental Impact Statement for the proposed siting and construction of the Institute of Advanced Science and Technology at the University of Pennsylvania.

1 This draft, like the studies previously prepared by the University, does not accurately or adequately address the historic significance of Smith Hall itself or the aesthetic and historic impact of the project on the Smith Walk site. This is a serious omission because to date all evaluations of adverse impact have been predicated on an assessment of Smith Hall as a purely contributing component in the district when in fact the building possesses national significance in its own right. Its importance, which is not reflected in the University's original studies nor in the current draft EIS, has been documented in testimonies, letters and articles prepared by historians and scholars from a number of different fields which were submitted during the scoping process and at hearings before the Philadelphia Historical Commission. These findings show Smith Hall to have national significance in the history of science, medicine, public health, architecture, engineering and through its connection with some of the most pre-eminent figures in nineteenth century American history.

1 At minimum this important information should be added to the documentation and research concerning the building and be strongly considered in evaluating the impact of its proposed demolition. Without this information the adverse effect will not have been fairly considered during either the EIS or 106 processes. Further, should the project proceed not only will the building have been lost but the important insight it provides to nineteenth century science will not have been preserved for future generations of scholars.

1 I note too the danger of dismissing buildings whose architectural style is not in keeping with current taste. Only a few decades ago the University gave serious consideration to demolishing the Furness Library, then considered an eye-sore and now an official National Landmark. Smith Hall is among a class of buildings, early science laboratories, whose historic significance has not yet been addressed in depth by the architectural historical community. Because of their essentially utilitarian nature and because technology changes so rapidly, this is a class of buildings which are routinely altered and replaced. Without recognition of their role and formal study, the historic information they provide is disappearing rapidly. Thus the survival of Smith Hall, which is astonishingly well-preserved including its innovative heating and ventilating system, in itself enhances its value as a document in the history of science. It contributes as well to the as yet untold story of the German influence on nineteenth century American

Response to Comments in : C63

From: Susan Glassman

Comment No.	Response

EDITOR'S NOTE: PORTIONS OF TEXT IN ORIGINAL LETTER ARE ILLEGIBLE. COPY IS IDENTICAL TO ORIGINAL LETTER.

1. Comment noted. See generalized response to consolidated comment #5.

2. Comment noted. The proposed action is the full program for a minimum of 20 years. The design is for flexible laboratory space to accommodate changing needs.

3. Comment noted. See generalized response to consolidated comment #7.

4. Comment noted. Text correctly states that Smith Hall was not specifically listed in the NRHD nomination. Nevertheless, because one of the principal impacts of the proposed action is the demolition of Smith Hall, extensive consideration is given to the building history and significance. Also see generalized response to consolidated comment #5.

C63

architecture and education, areas in which significant research is just now being done.

1 Also missing from this report is a full consideration of the impact on the Smith Walk site in the short and longer terms. The proposed plan not only replaces Smith with a much larger building that will have a significant impact on the scale of the district but allows for construction of very large additions on the historic Music and Morgan buildings across the Walk. Together these changes will have a major impact on both the historic integrity of this last remaining section of the University's nineteenth century campus, and on its humane scale and aesthetic character. Further, because the site provides no room for the inevitable expansion of the complex, it is probable that in twenty years or less the remaining historic

2 buildings in the district will be demolished to make way for new facilities. The EIS and 106 reviews should consider the full impact on this important historic section of the campus which will be significantly altered under the proposed plan and is likely to be lost entirely in the next round of expansion.

3 The draft EIS, like the Feasibility Study prepared by the University, has examined only a very limited range of possible alternative sites for the IAST despite the large number of available sites within a few blocks that do not necessitate the demolition of significant buildings and are not located along the highly trafficked hospital corridor. These alternatives should be seriously considered weighing their relative costs -- financial and otherwise -- against the Smith site, as well as their ability to fulfill the program planned for the IAST in the short and long term. Comparative assessments should be made of all sites with regard to how adequately they will serve the aims of the Department of Defense in its future development of the facility.

4 Finally, I note that the report is riddled with errors and oversights. One obvious and serious one occurs is section 3 on pages 34 and 35. Here Smith Hall is cited as not being included as part of the University of Pennsylvania Campus Historic District. In fact the building is included (which is noted elsewhere in the report). These types of serious errors however raises questions about the care that went into the preparation of the report and the accuracy of the research.

I urge that the final report give full consideration to these issues and require a full review of the reports assessing the significance of the building by qualified historians of science as well as architecture. Full documentation and fair critical assessment are required to ensure that the value of the building has been adequately considered and weighed in the site selection process.

I thank you for considering the above points. I hope that the EIS will fully explore these issues and those raised by the other participants in the March 30 public hearing and submitted by concerned members of the community.

Please notify me directly of any meetings, hearings, etc.

Sincerely,

Susan Glassman

Susan Glassman
2136 Naudain Street
Philadelphia, PA 19146

C64

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences
Department of History and
Sociology of Science
215 South 34th Street
Philadelphia, PA 19104-6310
215-898-8400

16 April 1993

Lt Col Gary P. Baumgartel
AFCEE/ESE
Building 1155
Brooks Air Force Base, Texas 78235

Dear Col Baumgartel,

Re: Institute for Advanced Science and Technology, University of Pennsylvania (IAST).

On behalf of the Friends of Smith Walk I request that the following specific issues and matters of fact be addressed in revising the draft Environmental Impact Statement (EIS).

1. The draft EIS rejects alternative sites for the IAST simply and solely for the reason that they are not adjacent to the University's Department of Chemistry. This assumes that the interest of the Air Force and Congress is identical to the interest of the University of Pennsylvania, which is not the case. Proximity is important for academic functions, such as undergraduate

1 teaching and advising. It is not essential for developing a scientific basis for military technologies of interest to the military branches, which is the justification of public funds being given to the IAST under the Critical Technologies Program. The final draft of the EIS must show that the proximity of the Smith Hall site is essential for the Air Force's purposes, as distinct from the University's purely academic purposes. Why cannot scientific research be done on potential technologies at the Walnut St. or Tennis Court sites, or the GE building.

Arguments should be presented why a distance of 100 yards between the Tennis Courts and the present chemistry labs is not a close proximity. On most crowded campuses it would be regarded as adjacent.

2 An outside and independent architectural firm, with no interest in the IAST project, should be called in to assess the comparative costs of alternative sites: Tennis Court, Walnut St., GE building, plan 3a. Testimony presented by John Blateau, Peter Aarfa and others suggests that alternative sites would not be nearly as costly, in comparison with the Smith site, as the University, Venturi, and IAST promoters would have it. An independent assessment is needed.

3 2. The Tennis Court site is to be excluded because it may be the site of a Potters Field cemetery. This is suppostion and should not be cited until

Response to Comments in : C64

From: Robert Kohler

Comment No.	Response

1. Comment noted. Congress sought proposals for the IAST from a limited group: institutions of higher learning. Neither the congressional action nor the University response contemplates an isolated military research institute. The Air Force determined that Penn's proposal of an integrated, multi-disciplinary teaching and research facility best satisfied Department of Defense goals. Thus, the proximity which is acknowledged to be important to Penns' academic functions is also important to the Air Force's goals of strengthening research in critical technologies through higher education. Also see generalized response to consolidated comment #7.

2. Comment noted. While comparative costs are a factor in the University of Pennsylvania's planning and in the ultimate decision to be made by the AF, costs are not relevant to the analysis of environmental impacts between alternatives. Accordingly, costs are considered to be outside the scope of analysis of this EIS, a cost-blind study. The AF is providing construction funds. Equipment and personnel costs are University costs. History of process costs is also outside the scope of this EIS. However, to respond to the specific requests, the comparative costs of the alternatives are presented in response to comment #2, in C55.

3. The possibility of a Potter's Field beneath the Lott Tennis Courts is identified as a potential archaeological resource. The potential Potter's Field is not the basis for excluding the Lott Tennis Court Site alternative. Section 4.4.5 does not discount this site because of the Potter's Field, but instead states that an archaeological investigation would have to be conducted to confirm any documentary evidence. Data recovery could mitigate any adverse impacts.

4. Comment noted. The Air Force evaluated many classes of chemicals, and specific chemicals were evaluated. Moreover, the University's Chemical Hygiene Plan (CHP) covers the use of the chemical classes commented upon as follows:

   Mutagens. Standard Operating Procedure REPRODUCTIVE HAZARDS, pages 69-71, and Appendix D at page 39.

   Carcinogens. Standard Operating Procedure CARCINOGENS, pages 49-51, and Appendix C at pages 36-48.

   Phosgenes. Standard Operating Procedure ACUTELY TOXIC GASES, pages 46-48, and Appendix A page 34.

   Explosives. There is no known use of commercial explosives on campus. However, when experimental (i.e. small scale) quantities of pyrophoric (spontaneously igniting, i.e. phosphorous and sodium metals) and reactive solids, reactive liquids, or water sensitive chemicals are used, the appropriate Standard Operating Procedure is followed, as described on pages 63-65, 66-68. 75-77, and 72-74, respectively. Shock sensitive chemicals are discussed on page 15, and are listed in Table 2 on page 16.

   Poly-acetylenes (sic). These will not be worked on in the IAST in connection with fast burning rocket fuels. Research using polyacetylenes at the University focuses on their conductive properties.

5. Comment noted. There is no unofficial unreported record. There have been no incidents that should have been reported to the EPA but were not. This may be confirmed with the Philadelphia Fire Department (PFD) with which the University has consulted on numerous occasions regarding emergency response to hazardous materials incidents. The university's contact is Battalion Chief G. Janda, Hazardous Material Administrative Unit (215-592-4888) regarding this matter.

6. Comment noted. The issue of the integrity of a portion of Smith Hall relates to the notion of the aesthetic whole of the original design - which was very nearly symmetrical. Gabled masses on either side of a recessed central wing linked the original design to the Victorian classicism at the root of Collins and Autenrieth's work. That quality was changed in 1899 when the south wing was replaced by a new. larger wing that produced a balanced but less symmetrical appearance. The proposal to completely remove the south wing would produce a design that was neither balanced nor symmetrical. As such, it does not present the originally intended appearance and is a fragment that never existed as an historical entity. This approach is inconsistent with Standard 3 of the Secretary of Interior's Standards for Rehabilitation which states that "...alterations that have no historical basis and which seek to create an earlier appearance shall be avoided."

   Also see generalized responses to consolidated comments #5 and #7.

C64

sufficient archeological work is done to prove or disprove the supposition.

4 | 3. The categories of hazardous chemicals (p. 3-20) should include: carcinogens and mutagens, poison gases and volatiles (e.g., isocyanates, halo-phosphates, phosgene), and explosives. Attention should be paid especially to poly-acetylenes, which are to be worked on in the IAST in connection with fast-burning rocket fuels.

5 | 4. The safety record of the University's department of chemistry is dismissed with the bland assurance that official procedures are in place. What is the unofficial record of safety? How many incidents that should have been reported to the EPA were not in fact? Ask people in the Philadelphila fire department.

6 | 5. The alternative 3a, which calls only for demolition of the Duhring wing of Smith Hall, is dismissed on the grounds that the "remaining fragment" would lack aesthetic integrity and not have its original appearance (p. 4-8). The final draft of the EIS should also deal with the fact that the original wing of the Institute of Hygiene was much smaller than the 1899 addition, just about 14 feet. What would remain is hardly a "fragment" but about 80 percent of the original structure. This issue needs to be assessed in a more objective way.

The final EIS should also assess the possibility of preserving a part of the facade of the Duhring wing, and of restoration of the interior of the main part of Smith Hall for use as office and teaching space.

Sincerely Yours,

Robert E. Kohler

Robert E. Kohler
Professor

C65

DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service

Centers for Disease Control
Atlanta GA 30333

April 15, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Dear Lt. Col. Baumgartel:

We have completed our review of the Draft Environmental Impact Statement (DEIS) for the proposed siting and construction of the Institute for Advanced Science and Technology (IAST) at the University of Pennsylvania, Philadelphia, Pennsylvania. We are responding on behalf of the U.S. Public Health Service. Technical assistance for this review was provided by the Office of Health and Safety, Centers for Disease Control and Prevention.

We note that the Institute will be constructed for continuing research in areas that support the Department of Defense Critical Technologies Plan. We offer the following review comments for your consideration:

1 | 1. SUMMARY, page 1-11/1.6, Relevant Federal Permits, Licenses, and Entitlements:
A Small or Large Quantity Generator that generates, transports, or handles hazardous wastes must obtain a USEPA identification number (40 CFR 262.12(a) and 262.12(b); 40 CFR 264.11; 40 CFR 265.11(b)).

2 | 2. AFFECTED ENVIRONMENT, page 3-21/3.3.2.1, Chemical Waste:
The generator status of the facility should be stated. Assuming 67,000 pounds per year equals 2,533 kg/month, this would qualify the facility as a Large Quantity Generator. The generator status is important since it determines the type of records the facility is required to keep and design standards for storage areas.

3 | 3. AFFECTED ENVIRONMENT, page 3-24/3/3/5 Medical/Biohazardous Wastes:
It is not clear if the wastes are properly packaged in boxes and transported to incinerators off-site or to incinerators on-site. Permitting of the incinerators would be an issue.

4 | 4. AFFECTED ENVIRONMENT, page 3-30/3.4.4.2, Air Pollutant Emission sources; ENVIRONMENTAL CONSEQUENCES, page 4-19/4.4.1.3, Air Quality:
In the above sections, there are inconsistent dates referring to the EPA's list of categories of source air pollutants. "As of July 1992 research facilities were not added to the list" and "As of February 1993, research facilities were not added to the list..."

Response to Comments in : C65

From: Kenneth Holt

Comment No.	Response
1.	Comment noted. EPA ID# is PAD042250712. Section 3.3 has been revised to reflect the appropriate permit.
2.	Comment noted. The University of Pennsylvania is a large quantity generator.
3.	Comment noted. Medical/biohazardous waste will be packaged and transported per PADER regulations, and transported off-site for incineration.
4.	Comment noted. Review of the pertinent regulations indicates that research facilities were not added to the list either by the date of issuance of the DEIS or the FEIS.

C65

Page 2 - Lt. Col. Baumgartel

Thank you for the opportunity to review and comment on this draft document. Please ensure that we are included on your mailing list to receive a copy of the Final EIS, and future EIS's which may indicate potential public health impact and are developed under the National Environmental Policy Act (NEPA).

Sincerely yours,

Kenneth W. Holt

Kenneth W. Holt, M.S.E.H.
Special Programs Group (F29)
National Center for Environmental Health

cc:
Rebecca West - OH&S

C66

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: Dr. David White, Professor of Chemistry

Address: 231 S. 34th St. Univ. of Pennsyvlania, Dept. of Chemistry
Philadelphia, PA 19104-6323

Zip Code:

1 COMMENT: Having followed the debate on the pros and cons of construction of the IAST, it is amazing how the issues are constantly being redefined. There is an agenda here which has little to do with environmental impact. We have several demagogues on campus who are trying to preserve what they feel is their turf, (more properly, their playground), who have successfully brought the issue to the level of support of motherhood, peace, and happiness. Today, it is an environmental protection, tomorrow you can rest assured it will be a social issue. Perhaps religion is next, and so on and so on.

I have never heard so much bullshit being thrown about in a room. It grieves me to see so many of our Penn. graduates mouthing this bullshit to the point when I wonder what we in the sciences have been teaching at his as well as other distinguished research institutions.

continued below

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Living in a democracy we are obliged to periodically waddle in bullshit. I sincerely hope however, reason will eventually prevail hopefully before the demagogues have left their turf for happiness in eternity.

Response to Comments in : C66

From: David White

Comment No.	Response
1.	Comment noted. No response required.

C67

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences
Department of Chemistry
Chemistry Building
Philadelphia, PA 19104-6323

April 19, 1993

Lt. Col. Gary Baumgartel,
Chief, Environmental Planning Division,
AFCEE/ESE 8106,
Chennault Road,
Brooks AFB,
TX 78235-5318

Dear Sir,

1 I am writing about the proposed construction of the Institute for Advanced Science and Technology (IAST) at the University of Pennsylvania. In particular, I wish to express my support for the Proposed Action to construct the IAST next to the Chemistry complex. Having read the DEIS document in detail, I congratulate the authors on the depth, objectivity and completeness of the study - I learned much from it about my own institution.

I have been at Penn for about twenty years. During this time, I have occupied space mainly on the second floor of the 1973 wing of the Chemistry Building. My research area involves laser spectroscopy, and I run one of five laser oriented research groups in Physical Chemistry. Currently, there are in my group two postdoctoral associates including one from Switzerland, and three students, including a visitor from England. Both foreign visitors obtained fellowships in their home countries to finance their stay at Penn. Although small, my group typifies the international recognition of our program. Since 1978, I have also been involved with the Regional Laser Laboratories, which have now become the Regional Laser and Biotechnology Laboratories. This facility is primarily located in the basement of the 1958 wing of Chemistry. However, several operations essential to the functioning of the facility are housed on the second floor of Chemistry 1973. For the past decade, I have served on the executive committee of the Laser Facility, and one of my laboratories is within the main Laser Facility area. A great strength of the Penn Laser group is in the large body of expertise and shared facilities that we currently enjoy. This has grown from the single laboratory of Robin Hochstrasser, with subsequent additions of current faculty: Topp (1973); Lester (1982); Dai (1983) and Scherer (1992). The presence of laser expertise has played a vital role in attracting top flight faculty and postdoctoral researchers. Also, we are constantly reminded that the presence of a large, integrated facility and associated academic program plays a major role in our ability to attract graduate students. This largely accounts for our continued recruiting success in a time of increased competition.

Because of the current space limitations, the continued development of the laser area and its constituent programs could be threatened. Some groups occupy spaces smaller than allowed by strict safety guidelines. This situation will probably worsen steadily in the current confined space, as our programs naturally evolve. The future expansion of programs for faculty at all levels of seniority is limited by the current space available. Ultimately, this will threaten our ability to retain our excellent faculty in competition with outside offers. I consider an expansion into a new facility necessary for the continued development of the physical chemistry program.

Response to Comments in : C67

From: Michael Topp

Comment No.	Response
1.	Comment noted. No response required.

C67

Page 2
Lt. Col. Gary Baumgartel
April 19, 1993

The physical chemistry research effort is concentrated primarily in the chemistry complex, employing elevators and corridors for the efficient movement of personnel and the transport of shared equipment. A significant part of our laser-related research occurs also in the LRSM building. This arrangement complicates the exchange of instrumentation between the LRSM laboratories and other groups in Chemistry, and requires the duplication of significant resources and support personnel. A major reason for construction of the IAST must be to provide needed space and to enhance our ability to carry out first-class research. This includes interdisciplinary research. An IAST building adjoining Chemistry would allow the considerable instrumentation facilities of the chemistry program to contribute more directly, for example, to collaborations with Engineering projects. Although much needed space would be provided by any of the proposed alternatives, by far the greatest positive impact would be obtained by directly connecting the IAST to Chemistry. Placement of the IAST in any other place than contiguously with the Chemistry complex would further disperse our resources and personnel, and could weaken the impact of the new facility.

In closing, I wish to express my strong support for the Proposed Action. Of the alternatives, it should achieve the maximum benefit to the continued development of science and engineering at Penn.

Yours sincerely,

Michael R. Topp
Professor of Chemistry

MRT:er

C68

April 15, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/SEE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Dear Lt. Col. Baumgartel:

As a graduate student in the department of chemical engineering, I am writing you this letter in reference to the Draft Environmental Impact Statement being prepared by the Air Force concerning the construction of the Institute for Advanced Science and Technology (IAST) at the University of Pennsylvania (Penn). Although the majority of the opinions voiced in the public hearings have been against the construction of the IAST, I feel strongly that those opinions are not held by either the Penn or West Philadelphia community at large. Furthermore, it is apparent that many of these opinions are based on inaccurate information which have been disseminated by interest groups opposed to the project.

The University of Pennsylvania has a strong program in basic scientific research which contributes both to the economic development and national security of the country. In order to sustain this important contribution we obviously need to upgrade our research facilities from time to time. The university has taken great care in selecting both the site and function of the IAST and it is vital that this project be approved.

1 Opposition to the project, from an environmental impact standpoint, seems to center around the fear; fear of "secret military research" being conducted and fear of "dangerous" chemicals. Neither concern has a strong foundation. As you may know the University of Pennsylvania has a policy not to accept research money for non-publishable work, thereby precluding any secret projects. Additionally, construction the IAST should actually decrease the risk to the community from "dangerous" chemicals by providing state-of-the-art materials handling facilities to the scientific community at Penn.

I would appreciate it if you would take into consideration the view point which I have presented and enter this letter into the public record concerning the environmental impact of the IAST.

Sincerely,

Jeffrey B. Danner

Response to Comments in : C68

From: Jeffrey Danner

Comment No.	Response
1.	Comment noted. No response required.

C69

UNIVERSITY of PENNSYLVANIA

School of Engineering and Applied Science
Department of Bioengineering
Suite 120 Hayden Hall
240 S. 33rd Street
Philadelphia, PA 19104-6392
TEL: 215-898-8501
FAX: 215-573-2071

April 13, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Dear Colonel Baumgartel:

Ref: Institute for Advanced Science and Technology
The University of Pennsylvania

1 As a senior member of the Bioengineering faculty at the University, who was Chair of the Bioengineering Department during the initiation of the IAST concept, I wish to give my wholehearted support to construction of the IAST building.

The Bioengineering Department at Penn was the first in the country to offer graduate research degrees in Bioengineering, and has produced a significant number of the leading academic and industrial practitioners in the field. If we are to maintain our educational and research mission, it is imperative that state-of-the-art laboratories of the type designed for the IAST building be built and available to us. Furthermore, the building site, adjacent to existing laboratory facilities, both of our department and collaborating departments, is essential if we are to accomplish our mission. Many years of careful planning have gone into this building, with full consideration given to its fulfilling the needs of our mission and satisfying all necessary and relevant construction factors with regard to safety and environment.

There is no rational basis for further delay of this important project, and I urge that construction be allowed to proceed forthwith.

Sincerely,

Mitchell Litt
Professor, Bioengineering and
Chemical Engineering

cc: Lawrence E. Thibault, Chair, Department of Bioengineering
Gregory Farrington, Dean, School of Engineering and Applied Science
Barry S. Cooperman, Vice-Provost for Research

PENN

Response to Comments in : C69

From: Mitchell Litt

Comment No.	Response
1.	Comment noted. No response required.

C70

THE JOHNS HOPKINS UNIVERSITY
INSTITUTE OF THE HISTORY OF MEDICINE
1900 EAST MONUMENT STREET
BALTIMORE, MD 21205-2169

April 16, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE 8106 Chennault Road
Brooks Air Force Base TX 78235

Dear Col. Baumgartel:

I am writing to protest the proposed demolition of Edgar Fahs Smith Hall, the building on the University of Pennsylvania campus constructed in 1892 as the Institute of Hygiene.

As a medical historian, I believe I well understand its historical significance. In my doctoral dissertation, "Scientific Medicine Comes to Philadelphia: Public Health Transformed, 1854-1899" (University of Pennsylvania, 1986), the laboratory on South 34th Street is shown to play a significant role in the introduction of bacteriological practice to the Philadelphia public health community. Very soon after the laboratory opened, when Philadelphia was threatened with a cholera epidemic, the city's Board of Health directed its medical inspector to use the facility for bacteriological testing of the excreta of suspected cholera victims. For the following two decades, people who had worked or had been trained at the Institute of Hygiene helped institutionalize scientific medicine in the municipal bureaucracy.

1 I have seen portions of the draft EIS prepared by for the Institute for Advanced Science and Technology, and I must comment on the shoddy historical scholarship it represents. That the Institute of Hygiene was mentioned neither by Billings in his 1894 survey of hospitals, nor by Kohler in his recent treatise on the development of American biochemistry is irrelevant to the question at hand; and the inclusion of this information in the EIS only indicates the sophistic nature of that document. Billings did not mention this building because his book was a discussion of hospitals -- and the Institute of Hygiene was not a hospital facility. Kohler did not mention this building because biochemistry was never pursued there. The Institute of Hygiene was primarily a laboratory of bacteriology, with an auxiliary chemical (not biochemical) laboratory oriented toward food, water, and specimen analysis.

Please do not hesitate to contact me if I can be of further assistance.

Yours truly,

Edward T. Morman
Curator, Historical Collection

Response to Comments in : C70

From: Edward Morman

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #5.

C71

CCA

Centre Canadien d'Architecture/Canadian Centre for Architecture

Lt. Col. Gary Baumgartel
United States Air Force

re: University of Pennsylvania Science Center

April 13, 1993

Dear Sir:

I am an historian of architecture with a speciality in the nineteenth-century architecture of Germany. I have already written to you in connection with the intended construction of a science center at the University of Pennsylvania and the proposed demolition of the Smith Hall site. In the meantime I have read the replies presented two weeks ago in response to the questions raised at the public meeting that you hosted last fall. Please permit me to make several observations:

1

1. I wrote to voice my concerns that hazardous or toxic chemicals may have accumulated in the floorboards and other structural parts of Smith Hall. In particular I am thinking of mercury, frequently used in the laboratory, or other substances that are inert in globular form but which are quite dangerous when agitated and atomized during the course of demolition. I requested that studies be taken to assess the chemical hazards resulting from demolition. The response has involved neither scientific testing of the building nor research on the history of materials used, and I regard this as an inadequate response.

2

2. It is once more clear that the university historians have misrepresented the importance of Smith Hall to the university, the public and to the Air Force. They have systematically downplayed the importance of the building and the architect without actually having consulted any of the archives where materials concerning it exists--especially the architect's papers at the University of Delaware or his personal files at the city archives in Karlsruhe, Germany. Clearly they delivered a report which they thought the university (and the Air Force) wanted to hear. I urge you to consult with an historian of architecture who has no pecuniary stake in the outcome of the building project in order that you might hear an unbiased pronouncement as to its importance (or lack thereof.)

3

3. Finally: the studies of the proposed sites was inadequate, and plausible alternative sites were not assessed fairly on a cost-benefit basis. If you examine the figures you will note that the cramped site on Smith Walk admits little possible expansion--and in the rapidly changing

4

1920, rue Baile, Montréal, Québec, Canada H3H 2S6
Téléphone 514 939-7000 Télécopieur 514 939-7020

Response to Comments in : C71

From: Michael Lewis

Comment No.	Response
1.	Comment noted. In response to concerns regarding the potential for mercury contamination in Smith Hall raised at the August 19, 1992 Scoping Meeting, the Morgan and Music Buildings and Smith Hall were surveyed for mercury contamination. The air was sampled below the floorboards using a Bachrach Model MV-2 Mercury Vapor Sniffer®. The results of the tests indicate that no mercury exists in the occupied locations in the buildings. Tests of interstitial sites indicate no significant concentrations.
2.	Comment noted. See generalized response to consolidated comment #5.
3.	Comment noted. See response to Comment #2, in C55.
4.	Comment noted. The Proposed Action is the full program for a minimum of 20 years. The design is for flexible laboratory space to accommodate changing needs. Also see generalized response to consolidated comment #7.

CCA

hamstrings future plans for expansion. The relinquishing of future expansion possibilities imposes a cost--that is, it is an option that is being surrendered now that will be much more costly to regain later. I believe that the Air Force should strongly conduct its own independent study of the site. I am delighted that the Air Force will be sponsoring scientific research at the University of Pennsylvania. But I certainly do not believe that the Air Force should be expected to subsidize a building on a site where it would only sit for the convenience of the university's out of date land use plan. During the long course of public meetings on this building, I have heard many architects of importance speak out against these flawed land-use studies. Some of them, like John Blatteau, are architects of national reputation. It is clear that their independent studies offer the possibility of alternative sites that will meet the requirements of the university, the Air Force and the surrounding neighborhood. I request that the Air Force investigate these alternative studies.

I would be willing to present these views in person. I have testified in Federal Court as an expert witness on issues of historical evaluation and demolition, and I would be glad to provide any information that you might need. Please understand, Lt. Col. Baumgartel, that I write not out of any general opposition to the proposed science facility, but out of grave misgivings concerning this site.

Cordially yours,

Dr. Michael J. Lewis

Dr. Michael J. Lewis

C72

UNIVERSITY of PENNSYLVANIA

Department of Chemical Engineering
Towne Building
220 S. 33rd Street
Philadelphia, PA 19104-6393
Tel: 215-898-8351 FAX: 215-573-2093

16 April, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Dear Lt. Col. Baumgartel.

1. I am a graduate student in the Chemical Engineering department at the University of Pennsylvania, and I am writing to support the construction of the Institute for Advanced Science and Technology (IAST). In order to carry out state of the art research, state of the art research facilities are needed. The labs that are currently used for Chemical Engineering research are grossly inadequate. The construction of the IAST will meet this need for labs. The placement of these labs is also critical with research increasingly becoming a collaborative effort (between engineering, chemistry, and materials science(LRSM)), the Smith Hall site is ideal for this collaboration. Thank you for your time.

Sincerely,

Kevin Klopfer

100 Years of CHEMICAL ENGINEERING at PENN

Response to Comments in : C72

From: Kevin Klopfer

Comment No.	Response
1.	Comment noted. No response required.

C73

Wang Chen
414 Spruce St., Apt 209
Phila. PA 19104

Attn: Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Rd
Brooks AFB, TX 78235-5318

April 18, 1993

Re: Institute for Advanced Science & Technology
Univ. of Pennsylvania

Dear Lt. Col. Baumgartel:

1 I am writing to strongly support the establishment of the IAST at Univ. of Penn. As a junior major in computer science. I think its very important to have advanced lab for both research & educational purpose. And the disruption to the environment will be minimal and can be justified. I urge speedy acceptance of the Draft Statement.

Sincerely,
Wang Chen

Response to Comments in : C73

From: Wang Chen

Comment No.	Response
1.	Comment noted. No response required.

C74

SPRUCE HILL COMMUNITY ASSOCIATION, Inc.

257 SOUTH 45TH STREET • PHILADELPHIA, PA. 19104

April 18, 1993

Lt Col Gary Baumgartel
Chief
Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Lt Col Baumgartel:

After reviewing the draft environmental impact statement for the Institute for Advanced Science and Technology, I have several questions that I would like to see addressed in the final impact statement.

The first questions pertain to environmental impact of the materials to be used in the new facility. Your study lists the various regulations that the IAST is subject to and the various plans that Penn has in place pertaining to the safe handling and disposal of chemicals. My questions in this area are:

1 How well does Penn adhere to the written ppcedures that are in place?

Has Penn been subject to inspections by the EPA or PADER? What were the results?

2 I understand that the types and uses of chemicals in the new building will be no different from the current facility. My concern is that if unsafe practices are currently a problem, the increased quantity of hazardous materials and waste pose an increase in risk. I am especially concerned since you listed two minor fires in the list of lab accidents in the Chemistry building.

3 I also have a question about your rejection of the LRSM site. Two major reasons are given for rejecting the site. The distance from the Chemistry building and the increased cost. I would like to see an estimate of the increased cost. Even though some duplicate facilities would need to be built at this site, there should also be substantial cost savings associated with the demolition of a smaller temporary building rather than the demolition associated with your preferred option.

Sincerely,

Linda Blythe
Executive Vice President

Spruce Hill is the section of University City immediately west of the University of Pennsylvania extending to Forty-sixth Street. The Spruce Hill Community Association was organized in 1956 and granted a Charter as a non-profit organization in 1963. The Association is dedicated to making Spruce Hill a better place to live and work and welcomes to membership everyone who lives, works or is interested in Spruce Hill.

Response to Comments in : C74

From: Linda Blythe, Spruce Hill Community Association

Comment No.	Response
1.	Comment noted. The University places the overall responsibility for safety in tis laboratories on the principal investigator (laboratory supervisor). To assist the principal investigator with this responsibility periodic laboratory inspections are conducted by the Office of Environmental health and Safety and the Radiation Safety Office. Both of these offices also consult with laboratory workers regarding the safe storage, use and disposal of hazardous materials. The University is also subject to inspections by a number of regulatory authorities including the EPA and PADER. In the past several years the PADER issued one "Notice of Violation" for hazardous waste management, containing three violations. The violations were resolved within one month. Current hazardous waste management status, based upon an inspection conducted on May 4, 1993, is in compliance.
2.	Comment noted. See generalized response to consolidated comment #4.
3.	Comment noted. While comparative costs are a factor in the University of Pennsylvania's planning and in the ultimate decision to be made by the AF, costs are not relevant to the analysis of environmental impacts between alternatives. Accordingly, costs are considered to be outside the scope of analysis of this EIS, a cost-blind study. The AF is providing construction funds. Equipment and personnel costs are University costs. History of process costs is also outside the scope of this EIS. However, to respond to the specific requests, the comparative costs of the alternatives are presented in response to comment #2, in C55.

C75

UNIVERSITY of PENNSYLVANIA

Department of Chemical Engineering
Towne Building
220 S. 33rd Street
Philadelphia, PA 19104-6393
Tel: 215-898-8351 FAX: 215-573-2093

April 16, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Dear Lt. Col. Baumgartel,

1 I am writing in support of building the Institute for Advanced Science and Technology (IAST) at the University of Pennsylvania. The IAST will provide much needed laboratory space; laboratory space designed for the rigors and standards for excellence into the next century. The proposed site for the IAST is natural. Located between the chemistry and engineering buildings, the IAST will serve as a gathering point for many related disciplines. As well, research groups centered in the IAST will not be separated from their home department and colleagues.

Once again, as a graduate student in the department of chemical engineering, I affirm my support of constructing the Institute at the University of Pennsylvania, and specifically, constructing the Institute on the current site of Smith Hall. Thank you for your attention.

Sincerely,

Roger Quon

100 Years of CHEMICAL ENGINEERING at PENN

Response to Comments in : C75

From: Roger Quon

Comment No.	Response
1.	Comment noted. No response required.

C76

JOHN BLATTEAU ASSOCIATES
ARCHITECTS
1930 CHESTNUT STREET, PHILADELPHIA, PA 19103
TEL: 215-51[illegible]9 FAX: 215-51[illegible]4

April 19, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

RE: University of Pennsylvania/IAST
Smith Building Demolition

Dear Lt. Col. Baumgartel:

I enclose as part of this letter, a detailed discussion of my objections to the proposed demolition of the Smith Building by the University of Pennsylvania.

Thank you for your attention to this most serious matter.

Sincerely,

John Blatteau, AIA
JOHN BLATTEAU ASSOCIATES

kaw

cc: Sheldon Hackney, President of
the University of Pennsylvania
Robert Venturi, Venturi Scott Brown & Associates

Response to Comments in : C76

From: John Blatteau

Comment No.	Response

1. Comment noted. See generalized response to consolidated comment #5.

   The University considered many criteria for choosing the Smith Hall site for the IAST. Among those criteria was appropriateness of existing buildings to proposed uses and the appropriateness of those uses within the overall plans for the University.

   Dates alone are not the only appropriate criteria for preservation. It should be noted that Smith (1891) post-dates Morgan and Music (1890) and Furness (1888-1890) across 34th Street. Smith Walk was not named for Smith Hall, but rather for R. Tait Mckenzie's statue of Provost Smith at the base of the walk. Smith Walk would be Smith Walk with or without Smith Hall. A critique of art or architecture and especially any rankings of architectural designs invites legitimate debate. Some experts believe that the architectural merits of Morgan and Music Halls rest on the largeness and monumentality of form in Cope and Stewardson's project and the vigor of their detail.

   Adjacency is important, not only because it is safer for the community, and more economical, but because it encourages continued concentration of resources in the proper site between Medical Sciences and the Natural and Applied Sciences.

2. Comment noted. The Proposed Action meets the full program of the IAST for a minimum of 20 years. The flexible laboratory space will accommodate changing needs for the foreseeable future.

3. Comment noted. The construction of the Phase I and II building on the Lott Tennis Courts would result in the loss of an important recreational resource and an open space that serves as a plaza in front of several of Penn's historic resources that are a part of the University of Pennsylvania Campus Historic District. These resources are major gathering places for the public. The tennis courts would be replaced by a new laboratory building that will not be physically linked to the Chemistry complex despite its being a 60 percent chemistry-related facility. This Phase I and II construction would also adversely affect portions of the 33rd Street as well as the termination of Smith Walk, a landscape component of the campus and would affect some of the views of other historic resources. The east end of Smith Walk is presently focused on a war memorial and flagpole. The construction of Phases I and II in this site would change the dynamic of Smith Walk which at this point proceeds from the open space of the tennis courts toward the solid of the Furness Building.

Phase I and II in this location may impact archaeological resources, a Potter's Field which is believed to lie under the tennis courts and adjacent to 33rd Street.

4. Comment noted. See generalized response to consolidated comment #7.

5. Comment noted. The costs which Mr. Blatteau references as the architect's estimates were developed for the consideration of the Philadelphia Historical Commission pursuant to a local ordinance which includes a review of financial circumstances in the decisionmaking process. While comparative costs are a factor in the ultimate decision to be made by the Air Force, a detailed analysis is not relevant to the dsicussion of environmental impacts between alternatives in this EIS. See response to Comment #2, in C55 for a presentation of comparative contruction costs.

6. Comment noted. No response required.

C76

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brroks AFB, Texas, 78235-5318

RE: University of Pennsylvania/IAST
Smith Building Demolition

I am a representative of the Friends of Smith Walk and I am very interested in the development of the University's Science Institute and I am deeply troubled by the proposed demolition of the Smith building.

On the one hand I am convinced that the new Institute that will be created must be the best possible, given the enormous amount of prestige it will brig to the University and the great sums of money that will be spent in its making. The proposed scheme is by everyone's admission a solution that compromises the programmatic needs of the Institute; and a wholly inadequate answer to the University's stated desire to create a world class facility that not only meets current programmatic needs but also provides for the inevitable changes and expansion that will surely follow in the wake of the Institute's success.

The architects, in a study begun in July 1988 for the expansion of the Natural Science and Engineering Science Facilities at Penn, recommended the construction of two new laboratory buildings flanking Smith Walk along the east side of 34th Street, a proposal requiring the demolition of the Smith, Music and Morgan Buildings. One assumes that the proposal was the best solution to the functional and programmatic needs of the Institute, a solution that would provide for programmed space and expansion while at the same time creating an architectural image befitting the importance of the proposed facility. However, it was also a solution that completely ignored the precious and irreplaceable Smith Walk and the 34th Street frontage containing some of the oldest buildings on the campus.

Subsequently the historical certification of Smith, Morgan, and Music, led the University and their architects to revise their plans, revisions that have inevitably compromised the image and future growth of the new Institute. The northernmost building of the two has been eliminated in favor of a hybrid graft of dry labs behind Morgan and Music. The remaining proposed new building, is much less than one half of the original proposal. As presented it is just another lab building addition, lacking the presence and architectural strength of the original scheme, some-

1

thing with which both the University and the architects can not be completely happy. Compounding these circumstances, it has the added disadvantage of destroying the historically certified Smith building and in the process forever altering the distinctly 19th century quality of Smith Walk, replacing views of the Furness Building from Franklin Field with views of the rear of a lab building as the western visual terminus of Smith Walk.

Rather than the bold statement needed for the Institute to express its presence as a great, creative, scientific force; the plan, as delivered, is flawed. Lacking the ideal programmatic solution, the strong visually coherent image that could be the physical expression of the new Institute is absent, as is the necessary flexibility for expansion. The proposed solution will leave the University with a series of less than first class renovated laboratory spaces linked only tenuously to, in essence, one new laboratory building. The image is destroyed, the program compromised, future expansion made an impossibility, with added service and deliveries crushing an already overburdened street system. All in the name of adjacency.

The University of Pennsylvania Campus Development Plan 1982-84 Report on the Development of the East Central Precinct, the precinct in which the Chemistry Department is now located and wishes to expand. This document is a thoughtful and well reasoned guide for the development of the precinct, and contains many conclusions and recommendations that are directly in conflict with the proposed solution put before you. The most important issues are the unique and tremendously important architectural character of the precinct and in particular Smith walk and the 34th Street frontage and the required proximity of the needed lab space expansion to the existing lab space.

The development Plan rightly makes much of the intangible, yet unquestionably excellent quality of the campus along 34th Street. On page 7 for example it says "... 34th Street, north of the Chemistry Building, and the corner of 34th and Walnut Streets, provides some of the best edge conditions on the Campus. The four buildings are Smith Building, the Morgan Building, the Music Building, and at the corner, Bennett Hall. ....." it continues "The small scale of the three buildings fronting on 34th Street, as well as their porches and richly ornamented facades, make this short stretch of 34th Street one of the most pleasant edges on the Pennsylvania Campus."

1 My position is simply this, given the importance of the campus character to past, present and future alumni and citizens of Philadelphia; given the irreversibility of demolition; given the irreplaceable quality of 34th Street with Smith, Morgan and Music addressing Furness and Irvine; can we justify the creation of a laboratory addition in a location that would destroy all of this simply because it is the most convenient for one department of the University.

The Smith Building, completed in 1892 is the oldest existing building in the precinct. The oldest building would have been the original Bennett Hall, constructed in 1890, however that was demolished and replaced with the existing Bennett Hall in 1925. After Morgan and Music, both of 1892, the next oldest building on the precinct would have been Cope and Stewardson's Harrison Hall, the original chemistry building, a fine, handsome structure that was replaced in 1973 with what can only charitably be described as the uninspired New Chemistry building. A third building to be demolished on the precinct, other than Bennett, which was thoughtfully replaced, and Harrison, which was not, was a small structure built in the mid-twenties to house the Moore school.

Three structures in one hundred years, so far. Smith, if it falls will be the fourth. The proposed replacement of Smith Building represents a throw back to the mentality that allowed for the creation of New Chemistry with little respect for the existing elegance of Smith Walk and the historic structures that flank it. Smith Building is the symbolic anchor of the walk and the entire precinct. Times have changed since New Chemistry was built over the ruins of Harrison, we have learned our lessons from the wanton destruction of the 70's and we should be much more respectful of our architectural heritage in the 90's.

1 Smith Building is an original science building. How did Smith Building come to be ranked "contextual"? How "contextual" can a building be, when it is the oldest building in the precinct, one of the original structures for the department that occupies the precinct, the name-sake of the entire open space of the precinct and an integral part of the overall delightful and important historic edge along 34th Street? How can Morgan and Music be ranked "distinguished" and Smith "contextual"? Because it does not fit the ideas of expansion envisioned by the Chemistry Department and the University? Is there a real qualitative superiority of Morgan and Music to Smith that has escaped all past studies and commentary about the area? I think not. The reality is that Morgan, Music and Smith, along with Smith Walk, Towne and Hayden form an ensemble, the whole of which is indisputably greater than the sum of its parts. Ranking the individual buildings within the ensemble is a ludicrous enterprise. They are a whole. Their success is intertwined and cannot be ranked greater than the whole. Singly they are old buildings, together they form a historic district.

While much of the discussion to date has focused on historically certified Smith, Morgan and Music as buildings, as objects, and as artifacts of our past, very little has been said of their contribution to the make-up of the historic district known as the Science Precinct. With this proposal we are faced with the loss of two aspects of University history, the historic buildings themselves and the humanely scaled open space they create and define. The intangible qualities of Smith Walk, its open space, the historic buildings which define its edges, allow us and all future generations to experience a genuine 19th century urban campus, an experience that connects us with all past generations of Penn Alumni. Must the University sacrifice not one but two

historically significant places in the creation of this Institute?

Let us address the primacy of the adjacency argument. Five years ago, in 1985, when the Development Plan was issued, chemistry was interested in approximately 70,000 S.F. of wet lab expansion. Today the scheme has grown to double that size with the addition of an equal amount of dry laboratory space required by SEAS. This is to be expected. Successful, world class institutes generally have an unending pressure to expand. What will happen five years hence, when after the proposed new additions are show horned into the delicate balance of this precinct, tenaciously clinging to the existing chemistry building in order to preserve adjacency, the institute wants to expand again? How easy it will be to destroy the rest of Smith Walk, even Morgan and Music, once the area has already been compromised with the proposed solution involving the demolition of Smith Building. The University should be aware of the future pressures that will bear on the area if off site locations for expansion are not considered now.

2

Serious consideration must be given, to developing the Science Institute outside the historic district. Several other sites have presented themselves. The concern has been expressed that the Lott Tennis Court site represents an important open space and recreational resource of considerable value. While this may well be true, neither resource seems irreplaceable in the way that the demolition of the Smith Walk complex is certain to be. The Lott Tennis Court site on the other hand offers the opportunity for an architecturally significant building for the Institute, a building that not only will be unencumbered by the many restrictions of the Smith Walk site, but also is ideally situated to take on the added potential of becoming a true 20th century landmark, an expression of 20th century science of equal importance and quality to that of the Furness building, which so beautifully anchors the western end of Smith Walk. Two poles, art and science, architectural monuments of the 19th and 20th century, each a major focal point of Smith Walk. A unique and unparalleled opportunity for the University, all at the considerably small cost of a few tennis courts, courts easily recreated on any of a number of other sites.

3

While not so conveniently located to the existing New Chemistry Building as the Lott Tennis Court site, the site on the north side of Walnut Street between LRSM and the garage offers an excellent opportunity for development. It has the advantage of providing a gateway to the University. The size of the site could easily accommodate the proposed program and there would be ample area for service, parking and with forethought, the building could be structured to accommodate future growth.

4

To strengthen the argument of development outside of the historic precinct. I would like to briefly address the issue of construction costs. For this purpose I will use the Architects own cost estimates. We must all accept the fact that construction cost for such a project will be enormous regardless of the scheme chosen. However, I would like to make a brief comparison between the cost outlined for the totally remote site option and with

5

that for option number 7 of the architects' report. For the remote site, the new building cost is estimated at approximately $46.5 million for a new facility of approximately 195,000 gross square feet. In this scenario the architects have included the renovation costs for the Morgan, Music and Smith Buildings at a figure of approximately $7.5 million. In the interest of a fair comparison with the costs for scheme 7, I would like to suggest that this figure of $7.5 million be eliminated from the total project cost since it represents work that falls outside the stated program for the Institute. I would like to further suggest that the cost of the renovation of each of these three historic buildings in small enough, and the buildings are attractive enough and historically significant enough to attract their own renovation funds either from the University or private sources or a combination of both.

It is also true that land development costs are high, although these costs will be a constant for any of the proposed options. For the totally remote site the architects estimate this figure to be approximately $7 million. Since the need to "demolish existing structures, supply the site with central utilities, University communications and probably parking", is a constant, an equal percentage of this figure should also be carried in the cost estimate for scheme 7. With the elimination of the cost of the renovation of the three historic buildings the estimated projected cost for the remote site would
be approximately $53.5 million.

In the architects' estimates for scheme 7, the first phase construction cost projection is approximately $27 million. To this should be added 15% for the land development cost or approximately $4 million for a total of $31 million. The second phase is estimated at approximately $18 million to which should be added approximately $1.5 million in land development costs, for a total of $19.5 million. However, construction is not scheduled to begin on this second phase for at least three years. It is only prudent to add an additional 5% per year escalation to this figure or approximately $3 million bringing the total cost of phase two to $22.5 million. The combined total for phase I and II of scheme 7 therefore is approximately $53.5 million, the same cost as that for the remote site. AS to the question of renovation of Smith, Morgan and Music, this cost is probably comparable to the cost of phase III of scheme 7 which is not included in the architects' cost summary.

The University has the difficult mission of providing for future academic needs while maintaining stewardship of the patrimony which is the University's legacy to that future. The University should hold itself not only to the letter of preservation cause but also to its spirit and intent. The University has an opportunity to show that meaningful change is not only inevitable but also can be a positive act, one which need not destroy the past to be accomplished.

By raising these issues it is hoped that the University will be able to reconsider the many diverse forces which pull and push at this project. The creation of the Institute is of tremendous importance for the University in its desire to assert its predominance in this field well into the 21st century. The success of the project is too important, the need too great, and the potential benefits too long lasting to compromise so much at the outset.

6 I recommend that the Air Force reject the proposal to demolish Smith Hall.

Thank you for your consideration.

John Blatteau

John Blatteau, AIA
Lecturer in Architecture
University of Pennsylvania
Philadelphia, 1993

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences
Department of History and
Sociology of Science
215 South 34th Street
Philadelphia, PA 19104-6310
215-898-8400

16 April 1993

Lt Col Gary P. Baumgartel
AFCEE/ESE
Building 1155
Brooks Air Force Base, Texas 78235

Dear Col Baumgartel,

Re: Institute for Advanced Science and Technology, University of Pennsylvania (IAST).

On behalf of the Friends of Smith Walk I request that the following specific issues and matters of fact be addressed in revising the draft Environmental Impact Statement (EIS).

This letter refers to section 4.4.1.6 "Cultural Resources" (pp. 4-22 to 4-24).

1 The draft EIS relies almost exclusively on material provided by George Thomas, who was and is a hired contractor for the University and is in a clear conflict of interest. No effort was made to consult with other historical experts and to balance their information and views against those of Thomas and the promoters of the IAST. The Air Force must make a more objective and even-handed asessment in the final draft.

2 1. The draft alleges that Collins and Authenreith were Lea's "family architects" and that they were not "cutting edge" in 1891 (4-23). In fact, historians Michael Lewis and Susan Glassman have shown that Collins and Authenreith were not just important for their Lea projects. Also, few professional historians would agree that architects who happen to be out of fashion do not do significant work. What about Louis Sullivan's late work, for example? The architectural significance of the Institute of Hygiene must be assessed on merit, not by outmoded historical judgments. Consult Lewis and Glassman.

2. The draft claims that the ventilation system of the Institute of Hygiene was out of date when built. In fact, Billings was still at that time the outstanding authority on hygienic ventilation. It is true that the ventiliation system he designed was extremely simple, relying on steam-heated flues and manually-operated inlet vents. But Billings intended this system of ventilation to be simple and inexpensive, because he wanted his Instiute of Hygiene to be widely imitated by other cities, and for that it had to be simple and affordable. A simple ventilation technology would not have done for

Response to Comments in : C77

From: Robert Kohler

Comment No.	Response

1. Comment noted. Dr. George E. Thomas has served as a consultant to the University on issues of historic preservation and restoration, undertaking preparation of such items as a campus-wide inventory of historic resources and significant research regarding Smith Hall. The use of his work product in connection with the Environmental Impact Statement presents no conflict of interest. Dr. Thomas, who received his Ph.D. in Art History from the University in 1975, provides consulting services to a wide variety of clients, including Penn. He has no financial or other interest in the construction of the IAST.

   To supplement the work done by Dr. Thomas, the United States Air Force selected John Cullinane Associates, Architects and Preservation Planners, based in Washington, D.C. This consulting firm has no prior relationship with the university. Its work product has been incorporated into the FEIS throughout Chapters 3 and 4.

2. Comment noted. See generalized response to consolidated comment #5. Chapters 3 & 4 have been revised.

skyscrapers, and in that presentist sense was not "cutting edge." However, the Institute of Hygiene was not a skyscraper and did not need mechanical systems.

The architectural significance of the Hygiene Institute must be assessed according to the intents and purposes of the building and its designers, not some presentist standard, as in the current draft IES. Its importance lies in its role as a model of an affordable civic public health facility for growing but financially hard-pressed cities.

Significantly, when the Institute of Hygiene was reconverted for use as a chemistry laboratory in the 1970s, all that was necessary to upgrade the ventilation was to install electrical fans in the venting flues under the roof. Evidentally, Billings's system of ventilation was extremely well designed, requiring the most simple modifications to fit it for a use that was far more demanding of large-volume air flow.

3. The draft states that Billings was important as a "cataloguer of medical literature," in hospital design, and in librarianship, but it downplays Billings's importance in public health reform and in establishing hygiene as a field of research and professional instruction. The draft alleges, in addition, that Billings's brief Penn career was a "disappointment," according to a biographical sketch of Billings published in 1915 — a document now 70 years old and long out of date. **2**

Historians of public health now agree that Billings was one of the most prominent and influential leaders in the public health movement in the United States. This aspect of his life is at least as important as his other three lines of work, if not more important. It is true that Billings did not like academic life and left Penn a few years after coming there. But that in no way deprives his Institute of Hygiene of its historical significance.

I will quote from the modern, authoritative biography of Billings, written by Prof. Carleton Chapman (ch. 13).

"There can be no doubt that Billings' knowledge and experience in the vast field called public health was equal or supperior to those of anyone in the country." (p. 22)

"The Institute of Hygiene at the University of Pennsylvnaia was, at first glance, a failure. Pepper, Lea, and Billings moved too far too fast; their experiment was a unique one mounted in the midst of — and not conforming to — firmly fixed academic patterns and conervative faculties. To view it as a failure, however, is to ignore the enduring influence of the pioneering design for the education of public health professional worked out by Billings...." (p. 31)

"In an important sense, Billings' influence and the academic precedents he set dominated the national scene when later academic public health programs began to take shape [at Harvard, MIT, and Johns Hopkins]. ... It is not too much to

say that since Billings' death and owing in part to his influence, public health in some form has become standard in American medical curriculums, and free-standing Schools of Public Health are today important components of many American universities." (p. 33)

The draft IES relies on historical sources and views that are 70 years old and completely outmoded. The University's paid consultants did not do work they were paid to do. Their historical work is slipshod and unprofessional. Consult people who know their business.

4. The draft EIS states that other buildings (Johns Hopkins Hospital, U.S. Army College of Surgeons, New York Public Library) are more appropriate places to commemorate Billings than the Institute of Hygiene, as evidenced by the fact that they have portraits of Billings in them. In fact, Billings's central role in the history of hygiene, as shown above, makes the Institute of Hygiene no less important than the other three places associated with Billings's career. It clearly deserves like the other three to be preserved and honored.

The Univerity of Pennsylvania does in fact have an extremely fine oil portrait of Billings by E. F. Faber, which hangs in a prominent place in the Library of the University's School of Medicine. Doubtless it was moved from its real home in the Institute of Hygiene when the Institute was converted into a chemistry lab. When Billings's Institute is saved and restored, Billings's portrait will again occupy the place of honor which it deserves.

2

5. The draft EIS states that, because the Institute of Hygiene won no prizes for innovative aesthetic and does not figure in standard histories of architecture, it is therefore not historically important. No professional historian would take such an argument seriously, because of its presentist bias and its failure to judge the signficance of an historical object in context. The Institute of Hygiene was it was not built to win artistic prizes, and that is precisely why it is historically signficiant. It was designed and built to be a practical workshop of science, and as a symbolic statement of the practical values of civic science, Billings and Collins omitted the artistic flourishes of the kind that won prizes at the time.

Billings was very explicit about his intention to shun recycled academic gothic style. A research laboratory, in his eye, was a knowledge factory, and his Institute of Hygiene was designed to be simple, practical, and not intimidatingly academic but accessible to all citizens. These powerful ideas of science and civic practice remain embodied in the simple functional design and spare ornamentatation of the Institute of Hygiene. These aesthetic ideas were ahead of their time in 1891 and were misunderstood then and still are, at least by George Thomas and the drafters of the EIS, who do are not historians.

6. The draft EIS asserts that the Institute of Hygiene is less important historically than other early laboratories at Penn, such as Logan Hall, Hare Hall (demolished), and Wistar. This assertion rehashes arguments by George Thomas, which are based on ignorance of the history of medical and scientific research and teaching, and which have been discredited by subsequent research by myself and others. No professional historian of medicine or science would credit the views expressed in the EIS.

The draft EIS fails to distinguished between routine laboratory exercises for students and real research and training of researchers. This is a fundamental distinction, which any professional historian would know to make. Routine lab excercises date from the mid-19th century. Dedicated buildings for doing research and training professional researchers appeared first in the 1890s, and the Institute of Hygiene was the first and most distinctive of this generation of facilities at Penn.

Hare and Logan were standard academic buildings, not research laboratories. They were designed to accommodate large classes in elementary chemistry and anatomy, not original research and training of researchers. Logan Hall housed a medical museum but no research labs, as did also its successor, Wistar. There are lots of buildings like Logan Hall on American campuses. There are very few as important and well preserved as the Institute of Hygiene, which was designed specifically for research and research training and represent the key turning point in the history of science and scientific medicine.

2

The Pepper clinical lab and Harrison chemistry laboratory would approach the Institute of Hygiene in significance, but they were built a few years later and were demolished long ago. The Institute of Hygiene is the last survivor at Penn of a crucial period in the history of scientific and medical research in American universities. The University of pennsylvania should consider itself fortunate to have such an important historical resource.

I attach a document that gives this history in more detail.

Finally, the fact that the Wistar Institute's high-ceilinged museum hall was turned into laboratories in the 1980s is no argument against the importance of the Institute of Hygiene, as the draft EIS implies.

7. The draft EIS claims that the Institute of Hygiene was not first lab of hygiene in the U.S. so is not worth saving.

This argument shows a fundamental misunderstanding of historical method on the part of George Thomas and the drafters of the EIS. Being first is no longer regarded as a proper criterion of historical significance. This is because what constitutes "first" is highly subjective, presentist, and easily politicized, as is evident in this document. Arguing about "firsts" is no longer considered good history. Professional historians ask, rather, how well and how fully a building embodies an important historical movement, and how well it is preserved.

The Institute of Hygiene is significant on both these counts. It is the fullest and best embodiment of the hygiene and public health movement in the U.S.. It dates from the precise moment in history when the hygiene movement in this country took its modern shape in the early 1890s, in free-standing laboratories that were built specifically and exclusively for doing research in hygiene and teaching researchers and public health officers. It is a landmark expression of the public health movement in full bloom. And the Institute of Hygiene is amazinging well preserved, because it was never disembowled, as the Wistar Institute was, to convert it into a modern lab.

A closer look at the "firsts" alleged in the draft EIS reveals that they are not really firsts at all. The "Welsh" (sic) laboratory of pathology and hygiene at Bellevue (1885) is cited as a first. In fact, no hygiene was done there for almost a decade. William Welch's "hygiene" laboratory at Bellevue circa 1885 consisted of 3 small rooms and some ancient microscopes. Welch was able to do almost no research, having to spend most of his time doing pathology autopsies. (Welch left Bellevue in 1885 despite the promise of the new building.) This was typical of the 1880s. European hygiene was fashionable and Americans wanted to be part of it, so gave academic buildings the name of "pathology and hygiene," well before any research in hygiene was really done in them. In reality, pathology and hygiene meant pathology, i.e., old-fashioned autopsy work, not research. Any professional historian of medicine knows that. Reality did not catch up with aspiration until the 1890s, with the construction of Penn's Institute of Hygiene. George Thomas and the drafters of the EIS do not know their history and so take names for reality. Consult real historians of science and medicine.

2

Citation of other "firsts" from the late 1880s are no less misleading. For example, the so-called "Hoagland" lab in Brooklyn (1887) was a very small, improvised facility for routine bacteriological diagnosis. There were other such improvised "labs" in the late 1880s, including one at the University of Pennsylvania, which Professor George Corner believes to be the first such laboratory in the U.S., predating others in Brooklyn and Ann Arbor, Michigan. However, none of these small, improvised facilities were in any way comparable to the fully appointed, dedicated research facility of Billings's Institute of Hgyiene.

8. The draft EIS claims that the Institute of Hyggiene does not figure in standard histories so is not important. As evidence, however, it cites only Billings's book on hospitals and dispensaries, and my own book on the history of biochemistry. neither of which is about the history of hygiene. Of course the Institute of Hygiene was not mentioned, but that means nothing. The drafters of the EIS must have been pretty desperate to use such an embarrassingly silly argument and call it "objective" when it is openly subjective and biased. Future books on the history of laboratory design are certain to deal centrally with Billings's Institute of Hygiene.

9. Conclusion.

If the Air Force is sincerely trying to get an objective assessment of the historical value of the Institute of Hygiene — Smith Hall — then it has been very poorly served by George Thomas, Barry Cooperman, IAST promoters at the University, and the consultants who drew up this draft EIS. Their assessment of the historical meaning of Smith Hall would not stand up to scrutiny by professional historians. It is apparent from the poor quality and one-sided bias of the arguments that the contractors of the EIS were working in the interest of promoters of the IAST and not in the public interest. It is also apparent that no efforts were made to seek out other sources of historical information, which might disagree with the information provided to the EIS contractors by the University of Pennsylvania. The biased and unprofessional quality of this draft undermines the legitimacy of the environmental review process.

I request that the Air Force begin the review process over, with a contractor that is more professional, independent of the IAST, and willing to consult with professional experts in relevant areas of the history of laboratory architecture and of medicine, science, public health. For example: Philip Pauly (Rutgers), Patricia Peck Gossell (Smithsonian), Dr. C. Everett Koop (Washington, D.C.), James Cassedy, Susan Glassman (Wagner Free Institute), Michael Lewis, Charles Rosenberg (Penn), Julie Johnson (Hagley Museum and Library), Robert Kohler (Penn), P. Thomas Carroll (Rensselaer), Carleton Chapman, Barbara Rosenkranz (Harvard), Elizabeth Fee (Johns Hopkins), Dr. Gert Brieger (Johns Hopkins), John Duffy, John Harley Warner (Yale), F. Lawrence Holmes (Yale), Harry Marks (Johns Hopkins), Allen Brandt, and others whose names I will be glad to provide.

Sincerely Yours,

Robert E Kohler

Robert E. Kohler
Professor

Speaking Out continued from page 5

History and Smith Hall

Controversy continues over the proposed demolition of E. F. Smith Hall and the erection, in its place, of a Pentagon-sponsored chemistry lab. Historical and moral questions continue to be raised about the long-term costs of this project: about the loss of an irreplaceable piece of campus history, and about the ethics of military underwriting of academic science. University officials have offered only bland assurances that no bombs will be built here, ignoring the subtle but insidious obligations that follow from military sponsorship. Also, they have systematically denigrated and distorted the historic significance of one of the oldest and most unusual buildings on the Penn campus. I would like, here, to set the historical record straight.

E. F. Smith Hall, on 34th Street at Smith Walk, was built in 1891-92 and was the first fully-realized hygiene laboratory in the country. That is, it was the first facility that was designed and built specifically and exclusively for research and training in the then-new science of bacteriology. It is one of five laboratories that were built at Penn during the provostship of William Pepper, and the only one that has escaped demo-lition. Architecturally, Smith Hall is also an unusual survival. Plain, unornamented, and understated, it is one of the very few buildings that is not British academic Gothic. In the shadow of the flamboyant Furness Building across 34th Street, it tends to be overlooked and undervalued as an effort at academic Gothic that failed for lack of imagination. In fact, Smith Hall embodies deeply-rooted values of newly industrializing and urbanizing nation.

The deliberately un-academic look of Smith Hall was the result of four people coming together, with complementary vision. Dr. John Shaw Billings, the nation's leading public health expert, conceived the new design and directed the new institute. For him, the new hygiene lab represented an ideal workshop of applied science: functional, commodious, and open to anyone who wanted to add to scientific knowledge, whether or not they had academic credentials. For William Pepper, the new hygiene lab represented the ideal of a university that was not a Gothic ivory tower but a vital urban institution serving the practical needs of a growing industrial city. For the architect, the German-American Edward Collins, the new lab represented the fruition, in a new and unexpected way, a modernist style that developed in mid-19th Century Prussia. Ideals of scientific research, democratic education, and civic service came together in the architecture of Smith Hall. Few buildings on Penn's campus have such a rich historical meaning or embody their historic period in such an immediate and evident way.

The meaning of Edward Collins' architectural design is perhaps hardest to understand, because its roots in German history have only recently been recovered from long neglect by historian Mike Lewis. Briefly, the plain, functional style that Collins learned at Karlsruhe in the 1840's was an early form of modernism, favored for a brief time by reformers who were faced with the problem of constructing, fast and inexpensively, a national system of public schools and other civic institutions. These liberal, reforming civil servants saw, in a simple, functional and inexpensive architecture, an embodiment of their hopes for democratic and accessible institutions. Simplicity and modesty symbolized the break from an imperial past. The reformers were, of course, disappointed. The democratic revolutions of 1848 were crushed. New imperial governments preferred a more pompous and imposing style of architecture, symbolic of wealth and power. Edward Collins fled to the United States where, forty years later, his early hopes for a plain, democratic architecture were unexpectedly revived.

John Billings Shaw, too, believed in democratic national institutions that were freely accessible to, anyone of talent and ambition. He believed in the transforming power of knowledge and research, and devoted his life to creating institutions for the diffusion and creation of useful knowledge. The National Library of Medicine and the New York Public Library were his brainchildren, and he envisioned the new hygiene Laboratory at Penn in the same way, as an exemplary civic institution for research and training in public health. The service aspect is crucial. A career Army surgeon, Billings was nonacademic; even anti-academic, and the new Hygiene Lab was not just an academic department but a civic facility, to which Philadelphia physicians or officials could resort to be trained, carry out bacterial and chemical tests, and do research essential to the health of Philadelphians. For this purpose Billings envisioned a laboratory designed specifically and solely for the purpose of efficient work. Inside, every detail was designed for this end. Indeed, the building' plumbing, heating, and ventilating systems were designed to be sued for research on sanitary engineering and construction. The laboratory building itself was an instrument of research. Outside, Collins' plain, functional design symbolized Billings' belief that academic filigree was meant to challenge and provoke established academic habits of elitism and isolation, and it did.

Billings' vision of research was practical civic service and of a university as a serving, civic institution were fully shared by Provost Pepper, and by Henry C. Lea, the remarkable benefactor of the new laboratory. Lea was a noted historian, medical publisher and civic reformer, whose varied activities were all inspired by his belief that experimental science was the engine of progress from closed to open societies. (His history of the Inquisition was widely read.) When approached about financing a bacteriology laboratory, Lea agreed on the condition that Billings be brought in to design and head the lab and that Penn modernize its medical curriculum. The Hygiene Laboratory—Smith Hall—remains the quintessential expression of Lea and Pepper's almost religious faith in the transforming power of science.

It was no accident that Edward Collins was Lea's chosen architect. Collins' plain, functional and pointedly unpretentious style, expressive of the liberal ideals suppressed in 1848, was no less expressive of Lea and Pepper's vision of experimental science as a reforming force in civic government and higher education. These ideals, so characteristic of their time and place, are visible in the architecture of Smith Hall, for those who have the historical knowledge to see them.

The hopes that Billings, Pepper, Lea and Collins held for the Hygiene Institute were partly realized. Many of the men and women who led Philadelphia's public health movement were trained in the Hygiene Lab. Research did become the basis of many practical professions, as Billings and Pepper had hoped. Architecturally, however, the provocatively unacademic and democratic style of Collins, Billing and Pepper did not catch on. British academic Gothic remained the norm. University officials on the make, socially elite trustees, and wealthy patrons generally preferred something more pretentious, more obviously fashionable and safe; something with more flash. Thus Smith Hall remained a singular, extreme case of a marriage of aesthetic symbols with sociopolitical ideals. It may best be seen, perhaps, as a variety of functional modernism that never became mainstream, caught in the still water between the utopia of European liberalism and the utopia of twentieth-Century modernism.

In no other building that I know of are the ideals of a democratic, public-service science so self-consciously expressed in architecture. That is what makes Smith Hall so special.

Buildings are historical documents, texts, so to speak, and like literary texts that need to be read and interpreted in their historical contexts. To those who are ignorant of history, Smith Hall naturally means nothing. It just seems out of place, an ugly ducking, a squatter on valuable real estate. So, too, did the Furness Library, once upon a time, because officials were ignorant of its history. So too with Smith Hall now. Its history is being ignored or distorted by University officials, and an irreplaceable historical text is again threatened with destruction. It would be like burning a book.

"History is bunk," said Henry Ford, and as history is being misused to devalue Smith Hall, old Henry was dead right.

—Robert E. Kohler, Professor, History and Sociology of Science.

Reprinted from ALMANAC September 17, 1991

Penn Coalition for Science *in the* Public Interest

1001 South 46th Street
Philadelphia, Pennsylvania 19143
(215) 222-2038

April 19, 1993

Lt Col Gary P Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB TX 78235-5318

Dear Colonel Baumgartel:

Owing to the magnitude of the errors of the present Draft Environmental Impact Statement for the Institute for Advanced Science and Technology, I request, in accordance with the requirements of the National Environmental Policy Act, that another draft be prepared and another public hearing held before the EIS is approved and forwarded to the Environmental Protection Agency. 1

I object to the current DEIS because of the following inaccuracies, in addition to others entered on record at the March 30 hearing:

1. The University of Pennsylvania has made no effort at an objective evaluation of the historical significance of Smith Hall, ignoring the research and testimony of noted historians of medicine. 2

2. The University of Pennsylvania has made no effort at an objective evaluation of alternative sites, and has ignored the advice and scholarship of its own scholars and planners; 3
The 1983-84 University Campus Development Plan (enclosed), authored by Professor Alan Levy et al. recommended against the demolition of Smith Hall and Smith Walk. Similarly, the Landscape Development Plan, produced by Penn's Center for Environmental Design (enclosed), cites Smith Walk as one of the most aesthetically pleasing landscapes on campus, and one that should most definitely be preserved unaltered.

Barry Cooperman, as a Chemistry professor in addition to his role as Vice Provost for Research, seeks only to bestow a little intra-institutional pork barrel by building the IAST—of which he will become the head—next to the existing Chemistry building. This much touted issue of adjacency is just smoke and mirrors—with so much prize-winning scientific research being conducted by scientists whose primary communication is through electronic mail, the role of face-to-face communication will become increasingly outmoded and unnecessary.

3. It is ludicrous to argue that building on the huge site afforded by the LRSM parking lot, which also affords the space for expansion that the Smith Hall site does not, would result in more traffic disruption than attempting to demolish and build on the much tinier Smith Hall footprint 4

Response to Comments in : C78

From: Julie Johnson, Penn Coalition for Science in the Public Interest

Comment No.	Response

1. Comment noted. See generalized response to consolidated comment #2.

2. Comment noted. See generalized response to consolidated comment #5.

3. Comment noted. See generalized response to consolidated comment #9. **Editor's Note**: Two enclosures were attached to Dr. Johnson's statement, one copy of the 1983-84 Campus Development Plan, and one copy of the 1977 Landscape Development Plan. These enclosures are not reproduced in this appendix because of their volume. Copies of both documents are readily available at the Van Pelt Library on the campus of the University of Pennsylvania.

4. Comment noted. See generalized response to consolidated comment #3.

5. Comment noted. The possibility of a Potter's Field beneath the Lott Tennis Courts is identified as a potential archaeological resource. The potential Potter's Field is not the basis for excluding the Lott Tennis Court Site alternative. Section 4.4.5 does not discount this site because of the Potter's Field, but instead states that an archaeological investigation would have to be conducted to confirm any documentary evidence. Data recovery could mitigate any adverse impacts.

6. Comment noted. No response required.

7. Comment noted. The EIS does not refer to the population in and around the campus as predominately transient. Section 3.2, Local Community, focuses on the philadelphia region, and West Philadelphia specifically, as the region most closely associated with the University. The region of influence for population issues was described as the City of Philadelphia.

8. No environmentally hazardous activities related to the construction and operation of the IAST has been or will be undertaken prior to the completion of this EIS and a signed Record of Decision.

   The storage of short lived radioactive waste until it can be disposed as non-radioactive has always been one of the methods of waste disposal used by the University. Long lived radioactive wastes were sent to commercial waste disposal facilities.

   On January 1, 1993, commercial waste disposal facilities were permitted to refuse waste from radioisotope users located in Pennsylvania. In anticipation of this shutdown, the university upgraded its waste holding facilities to permit additional storage of short lived radioactive waste and also to permit the storage of long lived radioactive waste until a disposal facility is available.

   The Commonwealth of Pennsylvania, a member of the Appalachian Compact Users of Radioactive Isotopes, is in the process of siting a radioactive waste disposal facility within Pennsylvania and expects to have it operational in 1998. This facility will be available to the University for radioactive waste disposal.

9. Comment noted. The Institutional Development District Requirement is for the parking to be within 1000 feet of the building (see §14-1105 City of Philadelphia Zoning Code). The University Museum Parking garage meets this requirement.

10. Comment noted. See Chapter 2 for a discussion of the duplication of resources.

11. Comment noted. The only former head of the Philadelphia Fire Department Hazardous Material Administrative Unit, Harry Cusick, (Ph. 601-701-7525) has no recollection of stating that the University of Pennsylvania had a dismal reporting record.

    The Philadelphia Office of Emergency Management, John Hadalski (215-686-8671), does not agree that the University should have been reported to the EPA for violations.

    See generalized response to consolidated comment #3.

12. Comment noted. No response required.

13. Comment noted. As provided for in 40 CFR §1506.5, the AF has furnished guidance and directed the preparation of this EIS. Additionally, the AF has independently evaluated the analysis in the EIS prior to its release to the public and is fully responsible for its scope and content.

and the far more constricted 34th Street site, which is a major route to both the University and Children's hospital. This is simply one example of the specious and biased reasoning that renders Penn's DEIS such a profoundly flawed document.

5 4. Another example: there MIGHT be a significant archaeological site under the Tennis Courts? Smith Hall is already most definitely historically significant, yet its destruction is deemed far less important than the possible disruption of a potential archaeological site. This can in no way be deemed objective evaluation--grasping at straws, perhaps.

6 5. Penn has not received a Nobel prize in Chemistry--the activities of its prize winning physicians, economists, and physicists will not be reflected in the IAST. US News and World Report's recent national rankings of Engineering schools failed to place Penn in the top 20; Hugo Sonnenschein, former Dean of Arts and Sciences at Penn, ranked Penn's chemistry department in the low teens.

7 6. Penn falsely characterizes its surrounding neighborhood as predominantly transient, ignoring the prevailing numbers of long term home owners.

8 7. Penn is seeking to evade the scrutiny of its activities provided for in NEPA by commencing environmentally hazardous practices that will be continued in the IAST before its construction--such as the storage of radioactive waste on campus, begun in January 1993.

9 8. The Institutional Development District requirements demand that for any new building the University must provide 1 parking space for every 3000 square feet within 400-800 feet of the building. The plan for the IAST at the Smith Hall site fails to meet this requirement--while the LRSM site fulfills it easily. The General Electric Building site also includes four acres of open space in the land parcel, that would meet both open space and parking requirements.

10 9. Since additional stockroom personnel will be required at both the Smith Hall and LRSM sites, their need at LRSM is not an valid argument against the site.

10. An oil portrait of John Shaw Billings hangs in the University Medical School Library--as Penn's historical consultant might know if he had ever set foot in that building in order to do research. Dr. Carleton Chapman's forthcoming biography of Billings, to be published by Harvard University's Countway Library characterizes the Institute of Hygiene as groundbreaking and ahead of its

C78

time--an excellent example of Billings genius and commitment to public health and education.

11. The other laboratories mentioned in the DEIS were a) not purpose-built like the Institute of Hygiene, but merely undifferentiated space that could as easily have served as a lecture room or storage area; b) so significantly altered in their interiors as to be useless as documents to science education at Penn, or c)long demolished. Again, Penn's historical consultant's ignorance of the history of science is glaringly apparent.

11 12. The former head of the Philadelphia Fire Department's Hazardous Waste Administration Unit has told me that Penn has a dismal record of compliance with city reporting regulations. A spokesperson at the City emergency management planning office said that Penn should have been reported to the EPA for violations at least twice. None of this is reflected in the DEIS.

12 12. As you saw at the hearing, there is much strong--and continually growing--community opposition to the construction of the IAST at the Smith Hall site. Barry Cooperman could have spared you the unpleasant experience of being the focal point of much anger by agreeing, as he could have years ago, to site the IAST elsewhere. The Penn Coalition for Science in the Public Interest, in concert with other neighborhood organizations, is prepared to go to Federal court if necessary--and our attorney, Mick Harrison, is of the opinion that we have an excellent case.

13 I hope that you will conduct a fair and unbiased assessment of the historical and environmental issues involved in this case. Although allowed by the Council on Environmental Quality (which President Clinton dissolved immediately upon taking office), the payment for and editorial oversight of the DEIS by the potential contractor and most clearly interested party strikes me as a clear conflict of interest, and a practice unlikely to result in any objective presentation or evaluation of alternatives.

I look forward to seeing you again at the next public hearing,

Yours sincerely,

Julie Johnson, Ph.D.

C79

UNIVERSITY of PENNSYLVANIA

Department of Chemical Engineering
Towne Building
220 S. 33rd Street
Philadelphia, PA 19104-6393
215-898-8351

April 19, 1993

Lt Col Gary Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Dear Lt Col Baumgartel,

1 I am writing to voice my support for the construction of the Institute for Advanced Science and Technology. I am an assistant professor of chemical engineering at the University of Pennsylvania. My research activities are centered on the properties of ultrathin organic films, and the use of such films to modify—in a controlled way—the chemical and physical properties of surfaces. The results of our research could benefit many existing technologies (such as lubricant and adhesive manufacture) as well as pave the way for development of new technologies. The success of my research program relies greatly on two key factors. One is the availability of state-of-the-art laboratories; the other is close collaboration with researchers in chemistry. The IAST fulfills both of these needs. I will address these issues in more detail in what follows.

One of key our research objectives is to understand how the forces acting between two surfaces is related to the chemical and physical properties of the interacting surfaces. We use organic thin films to create surfaces with different properties, and we measure the forces acting between surfaces as they are brought into molecular contact. To accomplish these experiments we require a laboratory environment with precise and stable control of both particulates and temperature; in addition, we required adequate fume hoods to synthesize and prepare the organic thin films. We are currently making due with the facilities available, but the success and progress of our research is limited by the inadequacies of our current facilities. Construction of the IAST will make available state-of-the-art laboratories needed to carry out our research mission effectively.

Finally, our research is multidisciplinary in nature, crossing the boundaries between chemical engineering, chemistry, and materials science. It is critical for my research group to interact with, both formally and informally, researchers from these other disciplines. The proposed location of the IAST (adjacent to the Engineering and Chemistry Departments) will allow such interactions to develop and prosper. In summary, the success and impact of my research program at the University of Pennsylvania depends critically on the construction–and location–of the IAST.

Sincerely,

T. Kyle Vanderlick

Response to Comments in : C79

From: Kyle Vanderlick

Comment No.	Response
1.	Comment noted. No response required.

C80

DREXEL UNIVERSITY

Department of Chemistry
College of Arts & Sciences
32nd & Chestnut Streets
Philadelphia, Pennsylvania 19104
TEL 215 895-2638, 2639
FAX 215 895-1265

(215) 895-2647
(215) 895-1265 (fax)
E Mail:Franklin_Davis@
coasmail.physics.drexel.edu

April 16, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Colonel Baumgartel:

I wish to express my strong endorcement of the Draft Environmental Impact Statement for the Institute for Advance Science and Technology (IAST) at the University of Pennsylvania. Since Drexel University resides adjacent to the University of Pennsylvania there has been significant scientific and facility collaborations among the faculty with mutual important benefits to both institutions.

In the past twenty years the Chemistry Department at UP has developed into one of the primer departments in terms of undergraduate and graduate education and research in the chemical and molecular sciences. This has resulted in a ranking of ninth nationally in receipt of federal research funding and UP now ranks eleventh in annual production of Ph.D's in chemistry.

In my opinion there is no question that the Department needs an Institute for Advances Science and Technology and the Smith location seems the logical and obvious choice since the Smith site is adjacent to the present chemistry building. To place it at another location would seriously cripple the interdisciplinary nature of the science and severely hamper the development of new materials, catalysis, etc. Location of the site away from the Chemistry Department would require duplication of support personnel, supplies and equipment and thus lead to further costs down the road.

1 In summary, I strongly support the Draft Environmental Impact Statement and the Smith location for the planned Institute for Advance Science and Technology at the University of Pennsylvania.

Sincerely,

Robert O. Hutchins
Professor and Head

Response to Comments in : C80

From: Robert Hutchins

Comment No.	Response
1.	Comment noted. No response required.

C81

DREXEL UNIVERSITY

Department of Chemistry
College of Arts & Sciences
32nd & Chestnut Streets
Philadelphia, Pennsylvania 19104
TEL 215 895-2638, 2639
FAX 215 895-1265

(215) 895-2647
(215) 895-1265 (fax)
E Mail:Franklin_Davis@
coasmail.physics.drexel.edu

April 16, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Colonel Baumgartel:

I am writing in support of the Draft Environmental Impact Statement for the Institute for Advance Science and Technology (IAST) at the University of Pennsylvania. The campuses of Drexel University and the University of Pennsylvania are contiguous and there is continuing and important collaborations among the faculty. What benefits the Chemistry Department at the University of Pennsylvania also benefits us at Drexel because of these interactions.

In the past two decades the Chemistry Department at UP has developed into one of the primer departments in terms of undergraduate and graduate education and research in the chemical and molecular sciences. For example, the department ranks ninth in the US in receipt of federal research dollars for chemical research and is the eleventh largest producer of Ph.D.'s in chemistry.

There is little question that the Department needs an Institute for Advances Science and Technology. Apparently the question is whether the Smith site the best location. The answer seems obvious. The Smith site is adjacent to the present chemistry building. To place it in any other location would seriously jeopardize the interdisciplinary nature of the science and severely impede the development of new materials, catalysis, etc. In the long run additional costs would incur if the institute were locate elsewhere because of the need to duplicate equipment and support personnel.

1 In summary I strongly support the Draft Environmental Impact Statement and the Smith location for the planned Institute for Advance Science and Technology at the University of Pennsylvania.

Sincerely,

Franklin A. Davis
G. S. Sasin Professor of
Organic Chemistry

Response to Comments in : C81

From: Franklin Davis

Comment No.	Response
1.	Comment noted. No response required.

C82

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences
Department of Chemistry
Chemistry Building
Philadelphia, PA 19104-6323

April 17, 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Lt. Col. Baumgartel:

1 I am writing to voice my support of the proposed Institute for Advanced Science and Technology (IAST) at the University of Pennsylvania. The IAST promises to be a state-of-the-art facility for scientific research in Chemistry, Chemical Engineering, Bioengineering, as well as Computer, Information and Cognitive Science. The IAST will bring together researchers from diverse areas of science and will create an environment that will foster new scientific and technological advances in interdisciplinary fields. This mode of scientific research should help bridge the gap between basic science and the technological improvements which can have major societal impact.

A modern facility is crucial for modern research. The existing laboratory facilities at the University of Pennsylvania are overcrowded and outdated. In the Chemistry Building, for example, instrumentation now fills the hallways as the designated laboratory space has been exhausted for several years. It has been 20 years since the last research laboratory building was constructed. The IAST has been designed to be aesthetically pleasing and, at the same time, functional as a modern research facility.

The IAST will be equipped with the latest safety features. This will create a safe environment for researchers working inside the building as well as our neighbors in the community that surrounds the facility. Since I will be a researcher in the IAST and I live within a 20 block radius of the proposed IAST site, I am reassured to know that safety is a top priority. The University of Pennsylvania has developed a comprehensive environmental safety and health program which is in compliance with federal and state regulations. These guidelines will be imposed on all research conducted within the IAST.

The Smith Hall site has been chosen for its proximity to the Chemistry Building and the School of Engineering and Applied Science. This will allow researchers in the IAST to continue to use centralized facilities located at these sites, avoiding costly duplication of instrumentation. In addition, this proximity will permit essential services, such as a loading dock for deliveries, stockroom, and chemical storage, to be shared between buildings, resulting in further cost savings. Most importantly, the Smith Hall site for the IAST is centrally located and therefore can foster intellectual exchange between Penn scientists.

Response to Comments in : C82

From: Marsha I. Lester

Comment No.	Response
1.	Comment noted. No response required.

C82

The University of Pennsylvania is committed to being a major research university in the 21st Century. The IAST is an essential part of this plan. I ask for your help in making this plan a reality.

Sincerely,

Marsha I. Lester
Professor of Chemistry

C83

UNIVERSITY of PENNSYLVANIA

Department of Chemical Engineering
Towne Building
220 S. 33rd Street
Philadelphia, PA 19104-6393

Prof. Warren D. Seider
Towne Building, Room 376
215-898-7953
FAX: 215-573-2093
E-MAIL (Internet):
seider@cheme.seas.upenn.edu

April 19, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Dear Lt. Col. Baumgartel:

I have been frustrated by the lengthy process of public hearings concerning the environmental and historical aspects of the University of Pennsylvania's plans to build the Institute for Advanced Science and Technology on the site of Smith Hall. It is important to recognize, however, that the views of the small and vocal group of dissenters, who protest at every opportunity, are opposed by a large majority of faculty, students, administrators, and residents who support the IAST and prefer to avoid taking the time to listen to their views expressed over and over again.

The IAST is sorely needed to maintain Penn's competitive edge in science and technology. Counter to the position of the dissenters, it seems clear that the historical significance of Smith Hall is not an important factor. The issues concerning the environment and defense-oriented research are also not significant. Like all new laboratory buildings, at universities and research centers across the United States, the appropriate environmental safeguards are being taken. In fact, these buildings are far better equipped to protect the environment than laboratory buildings, like our Towne Building, that were built almost 90 years ago. With regard to defense-related research, virtually all scientific and engineering research is defense-related. The IAST opponents surely cannot expect that the IAST, or the many other research facilities at Penn, can contribute significantly to the defense mission. By Penn policy, no "classified" research contracts are permitted.

1 In summary, the IAST is critically important to Penn's position in science and engineering. I strongly support the plans for the IAST, which I believe have been prepared with special care to allay many of the fears of this small vocal minority.

Sincerely,

Warren D. Seider
Professor

WDS/jml
cc: E.D. Glandt

PENN

Response to Comments in : C83

From: Warren Seider

Comment No.	Response
1.	Comment noted. No response required.

C84

UNIVERSITY of PENNSYLVANIA

Department of Chemical Engineering
Towne Building
220 S. 33rd Street
Philadelphia, PA 19104-6393
Tel: 215-898-8351 FAX: 215-573-2093

16 April, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Dear Lt. Col. Baumgartel,

1 I am a graduate student in the Chemical Engineering department at the University of Pennsylvania, and I am writing to support the construction of the Institute for Advanced Science and Technology (IAST). Our current laboratory facilities are old are not adequate to support modern day research. Moreover, there is not enough space available for our growing department, and we have been forced to find laboratory space in the other buildings on campus. The new IAST will provide us with state-of-the-art facilities and with the additional space we need. Also, its location next to the Chemistry building will allow us to strengthen the collaborative ties that we already have with the Chemistry department.

Sincerely,

John M. Levins

100 Years of CHEMICAL ENGINEERING at PENN

Response to Comments in : C84

From: John Levins

Comment No.	Response
1.	Comment noted. No response required.

C85

April 19, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE 8106 Channault Rd
Brooks Air Force Base
Texas 78235

Dear Lt. Col. Baumgartel:

1 I am writing to urge you not to demolish Smith Hall on the University of Pennsylvania campus. As a curator in the Department of the History of Science and Technology at the National Museum of American History who specializes in the history of American bacteriology, I know how few 19th century public health laboratories remain. None of them have the merits of Smith Hall.

John Shaw Billings' Laboratory of Hygiene is especially unusual in the way it embodies 19th century concepts of public health. The advent of bacteriology in the United States in the 1880s marked a major shift in the understanding of what caused infectious disease. Billings literally built the old approach, which focused on ventilation, light, and sanitary plumbing to combat foul and infectious air, directly into laboratory spaces for the study of new approaches to hygiene and bacteriology. The building's plumbing was as much a part of laboratory education for Billings as any microscope or test tube.

Because its interior fittings remain, this building is a truly unique artifact for the history of medicine and public health. To suggest sacrificing the building because it lacks architectural merit and the ventilation systems were out-of-date when it was built in 1892, as the Draft Environmental Impact Statement of February 1993 does, is to miss the point entirely. It should be preserved for its substantial historic importance as a record of the debates and accomplishments of American public health.

Sincerely,

Patricia Gossel

Patricia Gossel, Ph.D.
4710 Bethesda Ave. #410
Bethesda, MD 20814

Response to Comments in : C85

From: Patricia Gossel

Comment No.	Response
1.	Comment noted. See generalized response to consolidated comment #5.

C86

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences
Department of Chemistry
Chemistry Building
Philadelphia, PA 19104-6323

April 16, 1993

Lt. Colonel Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-3869

Dear Lt. Colonel Baumgartel,

1 I am writing to you regarding the Draft Environmental Impact Statement (DEIS) for the proposed siting and construction of the Institute for Advanced Science and Technology at the University of Pennsylvania. **I feel that it is imperative that the construction of the IAST at Penn take place as soon as possible and that the proposed site, which is contiguous to the existing Chemistry Building, is optimal.**

As a member of the faculty of the Chemistry Department at the University of Pennsylvania, I can state unequivocally that it is imperative that the new research facility be contiguous to the existing Chemistry Building. To foster the kinds of interdisciplinary interactions which are at the heart of the mission of the IAST, it is imperative to make interaction and communication amongst the scientists in the Chemistry Department and the IAST as simple as possible. It is therefore necessary to have the IAST adjoining the Chemistry Building.

Research space in the Chemistry Building is already very limited and the new space is already long overdue. Every effort to accelerate the process of construction of the new facility would be greatly appreciated.

Sincerely,

Jeffrey Winkler
Associate Professor

Response to Comments in : C86

From: Jeffrey Winkler

Comment No.	Response
1.	Comment noted. No response required.

C87

WRITTEN COMMENT SHEET
PUBLIC HEARING

INSTITUTE FOR ADVANCED SCIENCE AND TECHNOLOGY
THE UNIVERSITY OF PENNSYLVANIA

Thank you for attending this Public Hearing. Our purpose for hosting this public hearing is to give you the opportunity to assist the Air Force by providing comments on the Draft Environmental Impact Statement. To provide a written comment, please fill out this sheet and leave it with an Air Force representative or mail it to the address listed below.

Name: M. Cynthia Brey

Address: 2000 Delancey Place

Phila., PA

Zip Code: 19103

COMMENT: I have written and attached a letter of comment.

To be included in the public record, comments should be mailed to the following address and postmarked by April 19, 1993.

ATTN: Lt Col Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

received
5-10-93 JAC

Response to Comments in : C87

From: Cynthia Brey

Comment No.	Response
1.	Comment noted. The Proposed Action reflects the full program for a minimum of 20 years. The design is for flexible laboratory space to accommodate changing needs.
2.	Comment noted. See generalized response to consolidated comment #7.

M. Cynthia Brey, AIA, 2000 Delancey Place, Phila., PA 19103

19 April 1993

Lt. Col. Gary P. Baumgartel
AFCEE/ESE
8106 Chenault Road
Brooks AFB, Texas 78235-5318

Re: Public Comment on the Draft Environmental Impact Statement
IAST Laboratory at the University of Pennsylvania

Dear Lt. Col. Baumgartel,

I appreciate the opportunity to express my opposition to the proposed demolition of Smith Hall and the Construction of the IAST on that "vacated" site. I am a Friend of Smith Walk and an alumna of the University both for my undergraduate and graduate degrees. Many poignant criticisms were made at the public hearing on the deleterious environmental and historical impact of the "Proposed Action." I was very much in agreement with my cohort Gray Smith, AIA, but there are some additional points that need iteration concerning the site selection.

1 **Expansion:** The salient issue of future expansion potential of the proposed Smith Hall site is not sufficiently addressed in the draft EIS. The footprint of the Lott Tennis Courts site and the LRSM parking lot site are respectively two and three times larger than the proposed Smith Hall site. The smaller Smith Hall site is inherently inflexible in accommodating any further expansion of the IAST beyond the current program. The proposed IAST is a five-story addition to the Chemistry Building which was built in 1972. As expansion is an inevitable concern in the burgeoning industry of research education, where will the next "addition" occur twenty years hence?

2 **Alternative Site Analysis:** The draft EIS fails to analyze comprehensively the various site alternatives. The university has three designated science precincts: the Central Science Precinct bounded by 33rd, 34th Walnut, and Spruce Streets; the East Science Precinct bounded by the 33rd Street, the sports complex (Pallestra & Franklin Field), and Sansom Street; the South Science Precinct adjacent to Hamilton Walk. The "concomitant requirements that the new facility be located near the existing facilities"[1] would be satisfied by locating the new facility within either the Central or the East Science Precincts. In addition to the Lott Tennis Courts and the LRSM sites, there are several other potential sites for possible expansion identified in previous Planning Studies conducted by the University which were not even addressed by the draft EIS.

Thank you in advance for your attention to my particular concerns. I will look forward to receiving a copy of the response.

Sincerely,

M. Cynthia Brey, AIA

1. Feasibility Study for the IAST(1990), Venturi Scott-Brown.

C88

ROHM AND HAAS COMPANY
PHILADELPHIA, PA. 19105

J. P. MULRONEY
PRESIDENT

May 3, 1993

Lt. Col. Gary Baumgartel
Chief of Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks Air Force Base, Texas 78235-5318

Dear Sir:

I have read the Draft Environmental Impact Statement for the Institute for Advanced Science and Technology at the University of Pennsylvania with interest and would like to add the following commentary to the public record.

1 We believe that the IAST will add greatly to the region's ability to remain at the forefront of science and technology. While four alternative locations for this new facility were considered, we agree with the conclusion supported by the DEIS that the Smith Hall site (the Proposed Action) is the most feasible. At the heart of the IAST project is the necessity for interdisciplinary research. This academic-research approach to scientific inquiry will not only make the Delaware Valley more attractive to industry, but will also help prepare researchers for the future. The Proposed Action site allows such a model of collaborative research to succeed most efficiently.

Penn's IAST proposal, as envisioned in the Proposed Action alternative, will make an important contribution to the technological and industrial competitiveness of Pennsylvania and the Nation.

Sincerely,

JPM:das

received
5-12-93
JAZ

Response to Comments in : C88

From: J.P. Mulroney

Comment No.	Response
1.	Comment noted. No response required.

C89

4408 Walnut St. #2-R
Philadelphia, PA 19104
April 20, 1993

Lt. Col. Gary P. Baumgartel
AFCEE/SEE
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Dear Lt. Col. Baumgartel:

I am writing you in reference to the Draft Environmental Impact Statement being prepared by the Air Force concerning the construction of the Institute for Advanced Science and Technology at the University of Pennsylvania. I am both a graduate student in the department of Chemical Engineering at the University of Pennsylvania and a West Philadelphia resident. Although many of the opinions voiced in the public hearings in Philadelphia have been against the construction of the IAST, I believe that those opinions are not held by either the Penn or West Philadelphia community at large. In addition, several of the arguments raised by the opposition groups appear to be based on false propaganda generated by a few persons vehemently opposed to the project for personal reasons.

The University of Pennsylvania has a strong program in basic scientific research which contributes both to the economic development and national security of the country. Innovative research requires state-of-the-art equipment for its success. Considering that no new scientific research laboratories have been constructed at Penn in the past twenty years, there is obviously a serious need for modern research facilities. The University has taken great care in selecting both the site and function of the IAST and it is vital that this project be approved.

1 One of the main arguments against the IAST raised by those opposed to the project is that the facility will be used for "secret military research." However, the University of Pennsylvania has a strict policy not to accept research funds for any work that cannot be published in the public domain, thereby precluding any secret projects. The second argument is that hazardous materials used by those working will pose a threat to the surrounding community. The fact is that chemicals have been safely used at the University for many years without incident or release of toxic materials to the environment. Advanced materials handling facilities provided by the IAST would reduce the risk to the residents of West Philadelphia even further.

I would appreciate your entering this letter into the public record concerning the environmental impact of the IAST.

Sincerely,

William T. Petrie

William T. Petrie

Response to Comments in : C89

From: William T. Petrie

Comment No.	Response
1.	Comment noted. No response required.

C90

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

APR 09 1993

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Re: Institute for Advanced Science and Technology (IAST), Philadelphia, PA

Dear Lt. Col. Baumgartel:

In accordance with the National Environmental Policy Act (NEPA) of 1969 and Section 309 of the Clean Air Act, EPA has reviewed the Draft Environmental Impact Statement (DEIS) for the above referenced project. In general, the environmental impacts associated with this project appear to be minor (provided the evaluation of impacts on archaeological and historic architectural resources conducted in consultation with the State Historic Preservation Office and the National Advisory Council on Historic Preservation results in a favorable outcome). Therefore, EPA has assigned a rating of LO-1 (Lack of Objections-Adequate) based on EPA's EIS rating scale, a copy of which is enclosed for your reference. In addition, the following comments have be made for your consideration.

1 • EPA is concerned with the impact on traffic/streets as a result of the proposed project. It may be worth noting in the Final Environmental Impact Statement the existing and proposed levels of service of the major intersections near the alternatives as a result of an increase of faculty, staff, and students to the IAST facility. This data would support the DEIS's claim that "The traffic generated by the facility operations would not significantly impact traffic." and "Baseline intersection delays and levels of service would not be affected by the Proposed Action..."

We question whether the average daily traffic data used in Table 3.2-1. "Existing Traffic Volume" and Table 4.2-1. "Projected Traffic Volume During Construction" adequately supports minimal impacts to traffic/streets. Also, specifically define ADT and what this encompasses (pedestrians, vehicles, or both).

2 • Page 3-40 can be deleted as it duplicates the previous page.

Response to Comments in : C90

From: Roy E. Denmark, Jr. (USEPA, Region III)

Comment No.	Response
1.	Comment noted. Sections 3.2.3 and 4.2.1.3, 4.2.2.3, 4.2.3.3, 4.2.4.3, have been amended, and Appendix D has been incorporated in response to this concern. Also see Generalized Response to Consolidated Comment #3.
2.	Comment noted.

C90

POLICY AND PROCEDURES 16.
107.

SUMMARY OF RATING DEFINITIONS
AND FOLLOW-UP ACTION*

Environmental Impact of the Action

LO--Lack of Objections
The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC--Environmental Concerns
The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

EO--Environmental Objections
The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU--Environmentally Unsatisfactory
The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1--Adequate
EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2--Insufficient Information
The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3--Inadequate
EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment.

Figure 4-1

C90

2

Thank you for the opportunity to review and comment on this project. If you have questions, please feel free to contact Karen Del Grosso of my staff at 215-597-7336.

Sincerely,

Jeffrey T. Burke for RED

Roy E. Denmark, Jr., Chief
Environmental Planning
and Assessment Section

Enclosure (1)

C91

GREATER PHILADELPHIA
CHAMBER OF COMMERCE

May 7, 1993

Lt. Col. Gary Baumgartel
Chief of Environmental Planning Division
AFCEE/ESE
8106 Chennault Road
Brooks Air Force Base, Texas 78235-5318

Dear Sir:

I have read the Draft Environmental Impact Statement (DEIS) for the Institute for Advanced Science and Technology at the University of Pennsylvania with interest and would like to add the following commentary to the public record.

We believe that the IAST will add greatly to the region's ability to remain at the forefront of science and technology. While four alternative locations for this new facility were considered, we agree with the conclusion supported by the DEIS that the Smith Hall site (the Proposed Action) is the most feasible. At the heart of the IAST project is the necessity for interdisciplinary research. This academic-research approach to scientific inquiry will not only make the Delaware Valley more attractive to industry, but will also help prepare researchers for the future. The Proposed Action site allows such a model of collaborative research to succeed most efficiently.

1 Penn's IAST proposal, as envisioned is the Proposed Action alternative, will make an important contribution to the technological and industrial competitiveness of Pennsylvania and the nation.

Sincerely,

Charles P. Pizzi
President

[illegible]

Response to Comments in : C91

From: Charles P. Pizzi (Greater Philadelphia Chamber of Commerce)

Comment No.	Response
1.	Comment noted. No response required.

THIS PAGE INTENTIONALLY LEFT BLANK

9.5 GENERALIZED RESPONSE TO CONSOLIDATED COMMENTS

9.5.1 Introduction

A total of 315 statements was received during the public comment period. This includes: 34 statements made at the public hearing; 26 written statements submitted at the public hearing; 91 written statements submitted during the public comment period; and 164 signatories to two form letters. Because of the similarities found in many of the comments, a summary of those individual comments has been developed and the Air Force response is provided. Those comments making up that summary statement are also provided.

9.5.2 Generalized Response to Consolidated Comments

1. **Comment:** The advisability of military research generally, and the relationship of Department of Defense funding to weapons research conducted in a university laboratory was raised in several statements, including a petition received at the public hearing. The performance of that research at a university, the advisability of the use of tax dollars for such research, and the manner of informing the public of the planned research was also questioned.

   Comment location: T1, T4, T7, T8, T11, T14, T18, T21, T22, T23, T24, T25, T27, T28, T30, T31, T32, T33, M9, M11, M12, M13, M16, M17, M19, M25, C2, C13, C37, C38.

   Response: As described in Chapter 1 of the EIS, the authorizing legislation for the IAST project provided a grant to establish the IAST. That legislation required that the IAST "shall be designed to support development of critical technologies as identified by the Department of Defense in

its Critical Technologies Plan as required by Public Law 100-456." The Plan identifies 11 key technical areas in which future DOD science and technology investments will be focused. Each technology area is broadly defined. The Plan as a whole can be considered a description of 11 broadly defined "cutting edge" areas of research in which DOD, as well as private and commercial entities, are interested. These areas include computers, software, sensors, communications/networking, electronic devices, environmental effects, materials and processes, energy storage, propulsion and energy conversion, design automation, and human system interfaces.

The significance of the Plan with relation to the IAST project is that expertise, and future plans for research in technology areas listed in the plan were considered, along with other criteria enacted by Congress, during selection of the recipient for the IAST project. The University of Pennsylvania was found to meet these criteria by either currently conducting such research or through plans for the future conduct of that research.

The funds authorized by Congress for the IAST were awarded by the Air Force Office of Scientific Research (AFOSR). AFOSR supports basic research performed by universities, non-profit organizations, and contractors throughout the United States and overseas. Basic research is not weapons research.

The AFOSR grant in 1991 to establish the IAST does not contain any requirement that Penn faculty or students conduct classified research. In fact, the grant does not provide funds for any research at all, classified or

unclassified. The grant funds are intended to be used to "establish" the IAST, through construction and renovation.

Operation of the IAST, once constructed, would be the responsibility of the University of Pennsylvania. Once constructed, the IAST would compete based on merit for research funding, from DOD and other sources. The AFOSR grant to establish the IAST does not guarantee the IAST would receive future DOD research funding.

All AFOSR grants and contracts require publication of the research results in the open scientific literature. AFOSR does not sponsor any classified research efforts. The University policy against accepting research support for classified projects will continue in effect.

2. **Comment:** One hundred and seventy commentors requested that a new draft EIS be published, with an opportunity for another public hearing.

Comment location: T28, C13, C35, C36 (4/14/93 Form Letter), C42, C45, C46 (4/17/93 Form Letter), C78.

Response: NEPA requires the publication of a supplemental DEIS when the agency makes substantial changes in the Proposed Action that are relevant to the environmental concerns; or there are significant new circumstances or information relevant to environmental concerns and bearing on the Proposed Action (40 CFR §1502.9(c)). While appendices on hazardous material risk, traffic, and noise have been added with accompanying revisions to text, and the sections on cultural resources and aesthetic impacts have been revised, these changes clarify original text and provide backup data for summary materials originally

provided in the DEIS. These textual revisions do not substantially or significantly change the conclusions outlined in the DEIS. Accordingly, the production of a supplemental DEIS and public hearing is not warranted.

3. **Comment:** The impacts associated with the potential constriction of traffic on 34th Street with particular concern for traffic to the Hospital of the University of Pennsylvania and Children's Hospital were questioned by 174 commentors.

Comment location: T1, T3, T26, M4, M5, M17, M22, C6, C36 (4/14/93 Form Letter), C46 (4/17/93 Form Letter), C78, C90.

Response: Appendix D, Traffic Analysis, has been added for clarification and text in Chapters 3 and 4 has been revised accordingly. The materials added are backup materials that support the analysis already presented in the DEIS and repeated in the FEIS. The conclusion reached in the FEIS is the same as that originally published. The temporary closure of one lane of traffic on 34th Street during the construction of the IAST at the preferred action site would not have a significant impact.

4. **Comment:** The evaluation of risks and impacts associated with laboratory operations, including the delivery, storage, use, handling, and disposal of laboratory chemicals and radioactive materials in the IAST was questioned by 22 commentors.

Comment location: T1, T12, T16, T17, T18, T22, T23, T24, T25, T30, T34, M4, M7, M10, M11, M13, M17, M18, C6, C8, C13, C74.

Response: Appendix E contains an Exposure Assessment, and text Section 4.3, Subsection 4.4.1.3, and associated summaries have been revised accordingly. Appendix E evaluates the risks, acute and carcinogenic, of exposure to exhaust emissions of chemicals expected to be used in the IAST. The exposure assessment was completed prior to publication of the DEIS and formed the basis for conclusions contained in the DEIS; it supports the conclusion that there is no significant risk associated with the scenarios described.

5. **Comment:** The preservation of Smith Hall and Smith Walk for their aesthetic, historical, and cultural value and the treatment of these areas in the DEIS were of concern to commentors.

Comment locations: T5, T15, T22, T24, T26, T27, T29, T30, T32, T33, T34, M4, M5, M6, M7, M8, M11, M14 (General Petition, 141 signatures), M15, M16, M17, M18, M22, M24, C8, C9, C11, C17, C35, C36 (4/14/93 Form Letter), C37, C39, C41, C44, C45, C46 (4/17/93 Form Letter), C53, C55, C57, C63, C64, C70, C71, C76, C77, C78, C85.

Response: In response to the concerns for the preservation of Smith Hall and Smith Walk and to the questions regarding the treatment of the aesthetic, historical, and cultural value of Smith Hall and Smith Walk in the DEIS, the Air Force conducted supplemental independent analyses of those sections of the text. Subsections 3.2.2.2, 3.4.7, 4.2.1.2, 4.2.2.2, 4.2.4.2, 4.4.1.6, 4.4.2.6, 4.4.3.6, 4.4.4.6, and associated summary sections have been revised to reflect this analysis.

6. Requests for a complete list or complete identification of all research activities to be conducted within the IAST were submitted by commentors.

Comment location: T1, T9, T12, T16, T17, T18, T21, T23, T24, T25, T28, M3, M10, M13, M17, M18, M25, C13.

Response: Research interests anticipated for the IAST are summarized in Subection 2.1.1 of the EIS, and described below:

Phase I (New Construction)

Molecular Understanding of Life Processes. The focus of this research would be on the development of potential therapeutic agents based on detailed knowledge of the structure and function of cells and their biomolecular components (proteins, nucleic acids, and biological membranes) and the involvement of these components in gene expressions and cellular function. The approaches to be employed include: synthetic and mechanistic organic chemistry, biological chemistry, genetic engineering, biomacromolecular structure determination (including X-ray crystallography, X-ray and laser light scattering, NMR spectroscopy, and computer modeling of biomacromolecular structure, making strong use of advanced graphics), studies of cell migration, adhesion, and growth and their relationships to bioreactor design and to the efficient purification of biological macromolecules, and studies of cellular interaction with electrical and radiation energy.

New Materials and Catalysts. This research would focus on exploiting new methods of polymer and organometallic synthesis and characterization and new methods of forming

and characterizing surfaces to develop materials and catalysts of wide potential applicability. Specific examples include conducting and semiconducting polymers, with a long-term goal of developing lightweight, high-power-density batteries; the development of materials having high energy bonds and rapid burn rates, having great potential as propellants; and the formulation and engineering of specific probes for use in advanced sensors.

Human Injury and Aging. This research would focus on the use of rational engineering design to minimize human injury in the workplace and on the development of advanced diagnostic tools and prosthetic devices to address health problems of particular relevance to the elderly. Of particular interest are the redesign of vehicles to minimize the risk of head injury in the event of an accident, the development of convenient, lightweight modalities enabling human beings to function well in extreme environments, the use of electric currents, implants, and new materials for the treatment of patients with muscular or skeletal diseases or injuries and the use of advanced instrumentation for the early detection of retinal detachment.

The Phase I building would also include space for common facilities in such areas as spectroscopy, routine chemical and cellular preparations, electrical and machine shops, and a stockroom.

Phase II (Renovated Space Plus Additional New Construction)

Computer and Information Science. Research in this area would concentrate on the analysis and optimization of computer and communications network management and control, the development of parallel computing machines

offering great speed and reliability, the development of highly intelligent machines (or robots) that can respond to their environments through their own sensors (i.e., optical, aural, thermal, tactile, or chemical), and the improved integration of databases and programming languages that lead to the development of more flexible and higher order programming languages offering greater reliability and easier accessibility to programmers.

Cognitive Science. Research in this area seeks to determine the essential nature of cognition: how do people think and learn. The application of this multidisciplinary work would be important for the integration of syntax, semantics, discourse, and spoken language, leading to the interaction of people with computers through the use of natural language.

Imaging and Graphics. Research in this area is directed toward the development of methods of display that allow for maximally efficient presentation of the vast amounts of data that followed the introduction of microprocessors into detecting equipment. Such work requires sophisticated data-handling procedures, and must incorporate the pattern recognition properties of the human brain. A particular area of interest is the images produced by the use of non-invasive techniques such as CAT, MI, or PET scanning.

Ultrafast Detectors. Research in this area focuses on the development of ultrafast, intelligent detectors, capable not only of detecting as many as 10^8 signals per second, but also of selecting, through rapid calculation, which of the signals provide the most important information on the phenomenon under investigation.

The Phase II building would also include: (a) the Center for Technology Transfer, which would have as its goal the formation of strong collaborative linkages between the University and private corporations, with the twin aims of transferring the results of University research to the commercial sector and of identifying new sources of funding for University research efforts; and (b) space for common facilities in such areas as advanced workstations, graphic/ design, and microfabrication.

Phase III (Major Renovation of Hayden Hall)

The Center for Scientific and Technological Information Resources to be housed in the renovated Hayden Hall would have as its goal the support of scientific and engineering research at the University through the use of state-of-the-art electronic information bases, reference services, and delivery techniques, with the goal of discovering information and making it available to faculty and students wherever they work, in formats that foster easy and effective use.

7. **Comment:** Several commentors stated that the EIS failed to adequately describe why proximity is such a critical issue for the location of the IAST structure. Also, the recommendation that a more extensive list of alternatives should be considered and evaluated and/or the list of alternatives evaluated was insufficient was received from various commentors. Some commentors believed that more extensive or different considerations should be devoted to the alternatives examined in the EIS.

Comment location: T2, T5, T6, T13, T18, T19, T23, T26, T27, T29, T33, M4, M5, M6, M7, M8, M15, M17, C8, C9,

C11, C36, C42, C46, C53, C55, C57, C63, C64, C71, C78, C87.

Response: Laboratory scientists do not work in isolation. While each investigator may have his/her own research program and interest, much is gained through interaction with other scientists pursuing similar or related interests. This process builds upon itself with faculty and staff generating new ideas among each other in a synergistic fashion. Although some of this interaction takes place in formal settings such as seminars and formal collaborations, much of it occurs in an informal context. Casual contact during the course of the day can produce creative insights essential to a successful research environment.

The proximity of the proposed Phase I IAST building with the Chemistry and Engineering buildings would also provide more efficient use of space and equipment. This proximity would allow expanding programs to utilize space within two buildings, which would be impossible in disparate locations. In addition, support staff and equipment can be shared among programs in these buildings, which would have to be replicated should the IAST be constructed at an alternative site.

The five alternatives evaluated within the EIS are seen as a reasonable range of options resulting from the public scoping meeting. Other alternatives, such as the GE Building, the University City Science Center, and the Philadelphia Navy Yard are all considered outside the range of reasonable alternatives for the reasons set forth in the DEIS. No alternatives are added to the discussion in the FEIS.