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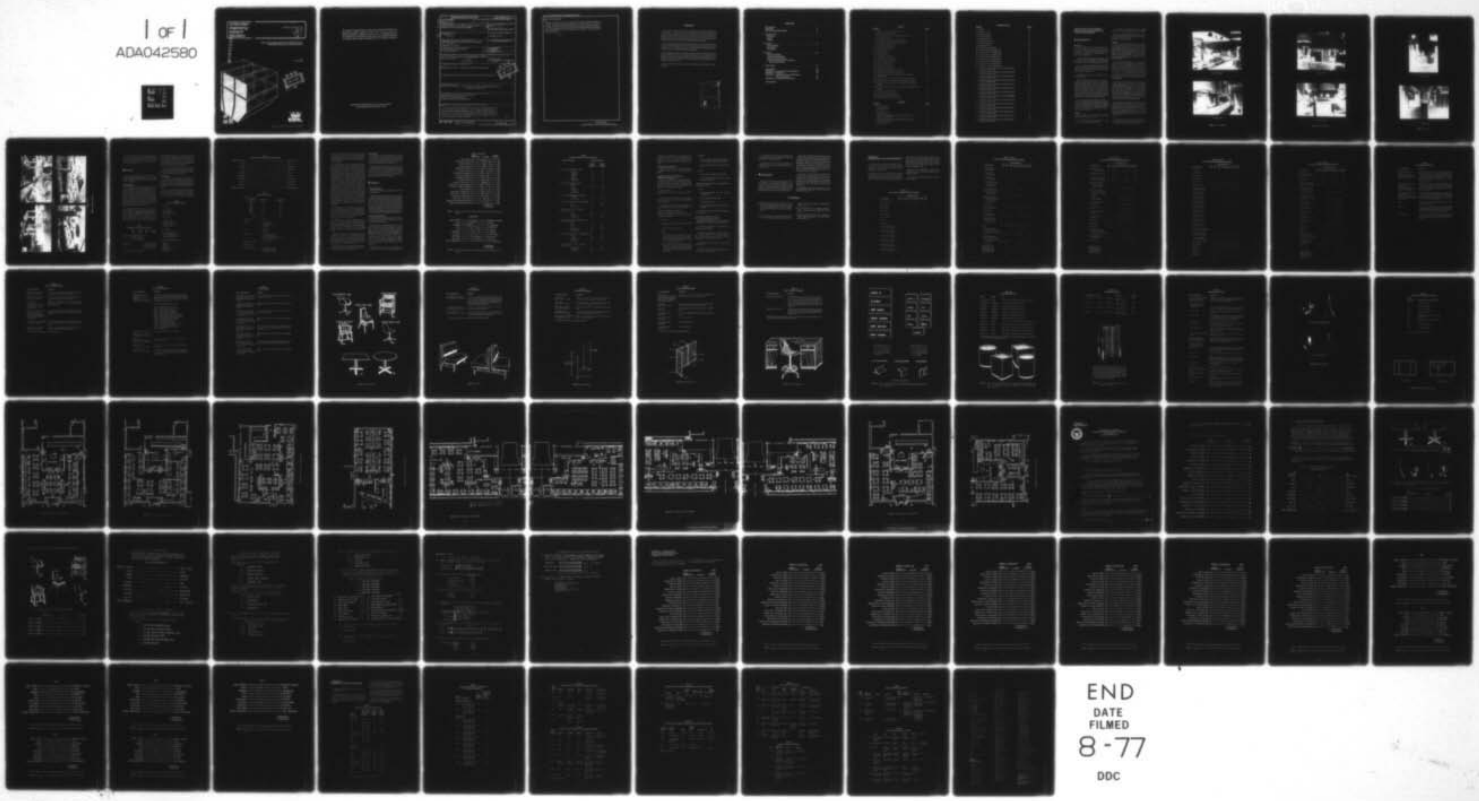

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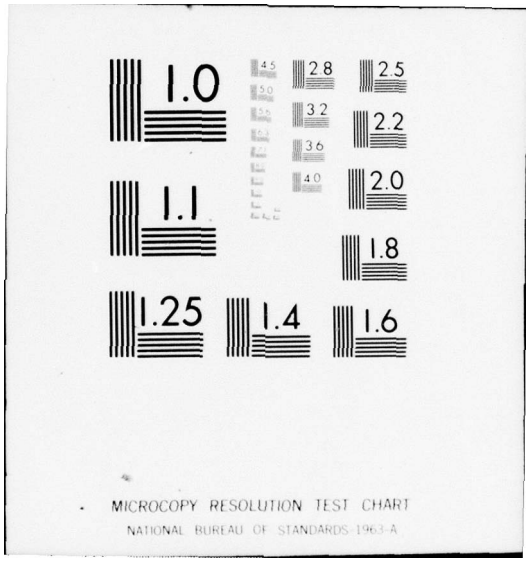
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FORT LEE ENLISTED PERSONNEL DINING FACILITY MODERNIZATION EVALUATION PROGRAM

by
J. H. Burgess

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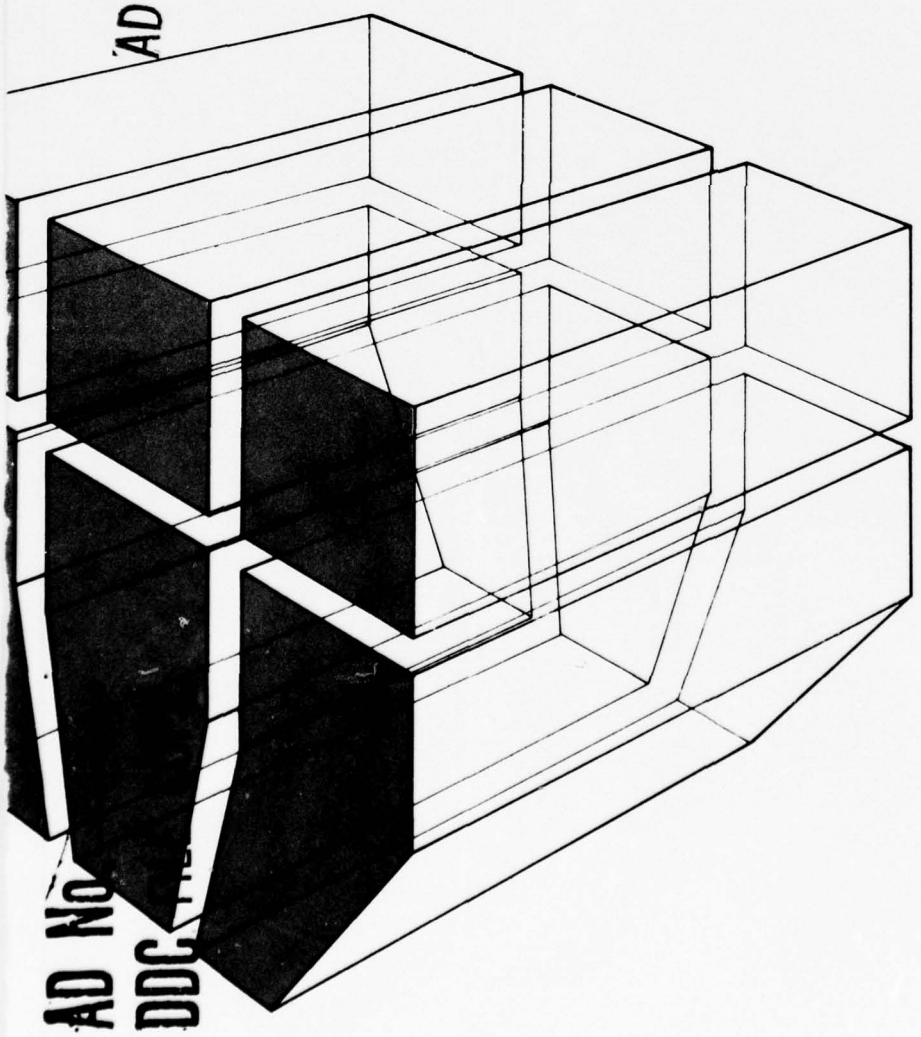

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20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

Seven enlisted personnel dining facilities at Fort Lee, VA, were studied prior to and after being modernized based on guidance in the *Decor Catalog for Dining Facilities* (U. S. Army Construction Engineering Research Laboratory [CERL] Technical Report D-1/AD760185, 1972). Oral and written questionnaires were used to measure soldiers' satisfaction before and after renovation. Responses indicated that modernization resulted in universal improvement in consumer satisfaction.

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Results also indicated that once the elements of the dining environment primarily responsible for dissatisfaction have been eliminated, type of decor scheme and alternative seating arrangements become salient consumer issues. In response to these requirements, a new and expanded *Decor Guide for Enlisted Personnel Dining Facilities* (CERL Technical Report D-38/ADA003828, 1974) was prepared and introduced to Army food advisers and facility engineers.

FOREWORD

This study was conducted by the Architecture Branch of the Habitability and Planning Division (HP), U. S. Army Construction Engineering Research Laboratory (CERL) under Intra-Army Order (IAO) AMX 73-155. The study was sponsored by the Troop Support Agency (TSA) at Fort Lee, VA, and monitored by the U. S. Army Natick Research and Development Command at Natick, MA. The Natick Project Officer was Mr. J. M. Tuomy; Mr. J. K. Prifti and Mr. G. Hertweck served as Alternate Project Officers.

Special acknowledgement is due to Mr. Richard Helmer of TSA for program coordination and to Lieutenant Hopkins and Captains Yates and Hogue of the Fort Lee Food Service Directorate for arranging access to the dining facilities and organizing group questionnaire sessions under difficult scheduling circumstances.

Mr. John Burgess was the CERL Principal Investigator; Mr. Richard Brittain, Mr. David Dressel, and Mr. Wes Gibbs were Associate Investigators. Mr. Robert Neathammer, the CERL staff statistician, provided statistical support. Project coordination and review of this report were provided by Mr. Robert Porter, Chief of the Architecture Branch, and Dr. Robert M. Dinnat, Chief of HP.

COL J. E. Hays is Commander and Director of CERL and Dr. L. R. Shaffer is Technical Director.

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CONTENTS

DD FORM 1473 1
FOREWORD 3
LIST OF TABLES AND FIGURES 5

1 INTRODUCTION 7
- Background
- Purpose
- Approach

2 METHOD 12
- Criterion Measures
- Data Collection
- Data Analysis

3 RESULTS 14
- Questionnaire Results
- Consumer Interview Results
- Comparative Physical Measures
- Summary of Comments From Command and Administrative Personnel

4 CONCLUSION 18

REFERENCES 18
APPENDIX A: Dining Decor Items and Components 19
APPENDIX B: Questionnaire 49
APPENDIX C: Comparisons of Pre- and Postrenovation Consumer Evaluations 59
APPENDIX D: Comparative Physical Measures 70

DISTRIBUTION

TABLES

Number		Page
1	Schedule of Effectiveness Measurements	12
2	Degree of Satisfaction Ratings	12
3	Scales for Dining Environment Descriptive Ratings	13
4	Sample Characteristics	13
5	Comparative Summary of Interview Responses	16
A1	Item Analysis by Dining Facility Where Installed	19
A2	Flooring Materials Description	23
A3	Drapery Material Description	24
A4	Music System Description	25
A5	Table Description	26
A6	Booth Description	28
A7	Vinyl Partition Description	29
A8	Acoustic Partition Description	30
A9	Sign-In Equipment Description	31
A10	Ash Urn and Planter Sizes	33
A11	Available Tray Rack Sizes	34
A12	Lighting Fixture Description	35
A13	Predominant Wall Paint Color and Patterns	37
D1	Average Square Footage per Number Served	70
D2	Average Square Footage per Number Served as a Function of Serving Time	71
D3	Relative Location of Serving Areas in Prerenovation Facilities	72
D4	Relative Location of Serving Areas in Postrenovation Facilities	72
D5	Sample of Traffic Circulation and Time Measures in Prerenovation Facilities	73
D6	Sample of Traffic Circulation and Time Measures in Postrenovation Facilities	73
D7	Characteristics of Furnishings	74
D8	Prerenovation Physical Conditions	74
D9	Postrenovation Physical Conditions	75
D10	Prerenovation Characteristics of Decor	75

FIGURES

Number		Page
1	Food Serving Line	8
2	Beverage Dispenser	9
3	General View	10
4	Dining Area Seating	11
5	Profile of Grand Means of Satisfaction Measures for Pre- and Postrenovation Facilities	15
6	Profile of Grand Means of Descriptive Measures for Pre- and Postrenovation Facilities	15
A1	Tables and Chairs	27

FIGURES (cont'd)

Number		Page
A2	Booths	28
A3	Partitions, Vinyl	29
A4	Partitions, Acoustic	30
A5	Sign-in Equipment	31
A6	Signage Description	32
A7	Planters and Ash Urns	33
A8	Tray Rack Description	34
A9	Lighting Fixtures	36
A10	Wall Paint Coloring Patterns	37
A11	Furniture Layout of Building 3024	38
A12	Furniture Layout of Building 3108	39
A13	Furniture Layout of Building 3206	40
A14	Furniture Layout of Building 3701	41
A15	Furniture Layout of Building 8400	43
A16	Furniture Layout of Building 8402	45
A17	Furniture Layout of Building 9303	47
A18	Furniture Layout of Building 9304	48
C1	Comparison of Pre- and Postrenovation Mean Satisfaction Ratings for Building 3024	59
C2	Comparison of Pre- and Postrenovation Mean Satisfaction Ratings for Building 3108	60
C3	Comparison of Pre- and Postrenovation Mean Satisfaction Ratings for Building 3701	61
C4	Comparison of Pre- and Postrenovation Mean Satisfaction Ratings for Building 8400	62
C5	Comparison of Pre- and Postrenovation Mean Satisfaction Ratings for Building 8402	63
C6	Comparison of Pre- and Postrenovation Mean Satisfaction Ratings for Building 9303	64
C7	Comparison of Pre- and Postrenovation Mean Satisfaction Ratings for Building 9304	65
C8	Comparison of Pre- and Postrenovation Mean Descriptive Ratings for Building 3024	66
C9	Comparison of Pre- and Postrenovation Mean Descriptive Ratings for Building 3108	66
C10	Comparison of Pre- and Postrenovation Mean Descriptive Ratings for Building 3701	67
C11	Comparison of Pre- and Postrenovation Mean Descriptive Ratings for Building 8400	67
C12	Comparison of Pre- and Postrenovation Mean Descriptive Ratings for Building 8402	68
C13	Comparison of Pre- and Postrenovation Mean Descriptive Ratings for Building 9303	68
C14	Comparison of Pre- and Postrenovation Mean Descriptive Ratings for Building 9304	69

FORT LEE ENLISTED PERSONNEL DINING FACILITY MODERNIZATION EVALUATION PROGRAM

1 INTRODUCTION

Background

U. S. Army Natick Research and Development Command, Natick, MA, is studying Army food service with the objectives of improving performance, increasing effectiveness, and reducing costs. The investigation consists of three separate efforts:

1. Defining and characterizing the existing system in terms of concept, configuration, and operation; and establishing its objectives, requirements, and constraints

2. Collecting and analyzing data for the performance evaluation of each of the various elements of the system, including facilities, equipment, personnel operations, consumer, and product

3. Identifying deficiencies and inefficiencies requiring improvements.

As part of these investigations, the U. S. Army Construction Engineering Research Laboratory (CERL) is conducting design research studies to determine how dining facility interiors relate to consumer satisfaction. The goal of CERL's research is to obtain accurate, quantitative information about the effectiveness of alternate environmental factors on increasing consumer use and acceptance of the dining halls, and to use this information as a basis for recommending improvements applicable to the entire Army food service system.

Part of this research involved CERL's assisting U. S. Army Natick Research and Development Command and the Troop Support Agency (TSA) in preparing and conducting an investigation of existing Army dining facilities at Fort Lee, VA, and evaluating the effect of modernizing such facilities.

Purpose

The objectives of the Fort Lee Dining Facility Modernization Program were twofold:

1. To develop model facilities designed to test different decor items and design hypotheses

2. To evaluate the effectiveness of the model facilities in terms of consumer acceptability and satisfaction.

This report presents the theoretical approach, selected measures, research design, and results of the evaluation portion of the investigation.

Approach

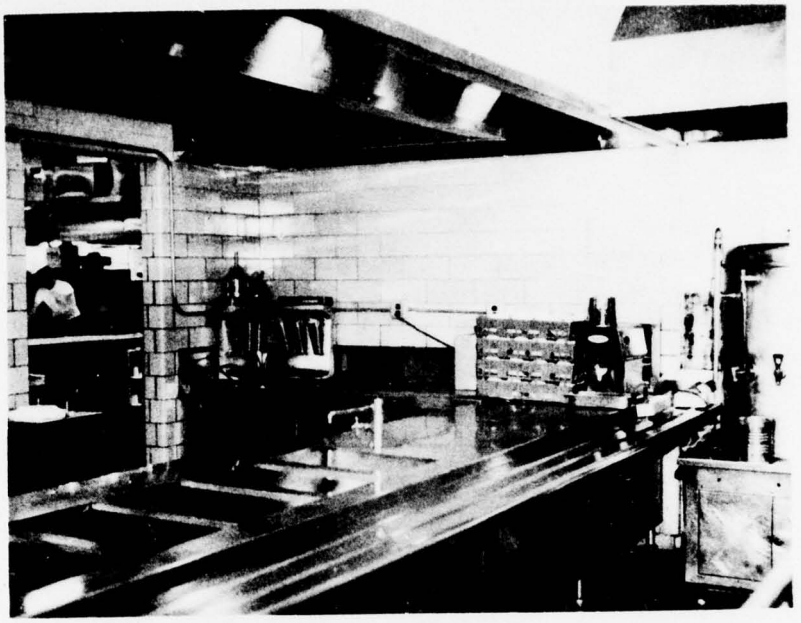
The Fort Lee study was conducted in three phases: (1) a survey phase to obtain troop evaluations of the existing dining facilities and to define improvements which would increase troop satisfaction, (2) a modification phase to introduce the improvements defined in phase one into the dining halls, and (3) an evaluation phase to determine the effect of changes on the consumer and to generalize them for application to other Army installations.

To evaluate the effectiveness of the renovated facilities, a measure of effectiveness was established and applied to the dining facilities before and after environmental improvements. The measurements were then compared to determine relative differences. Since the objective was to study dining facility environments in relation to consumer satisfaction, the effectiveness of a facility was defined as the relative degree of **consumer satisfaction** with the environment (appearance and atmosphere).

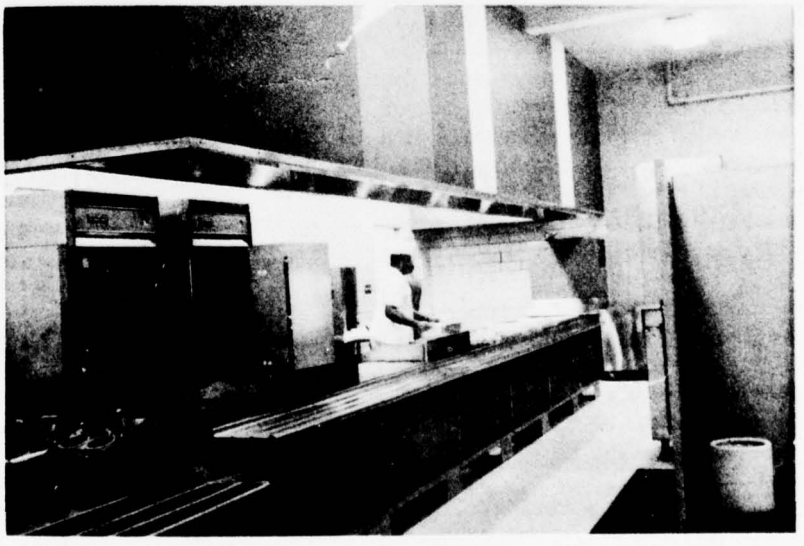
The program involved remodeling and updating the facilities, equipment, and processes of eight enlisted personnel dining facilities at Fort Lee, VA—buildings 3024, 3108, 3206, 3701, 8400, 8402, 9303, and 9304. The renovations were based on functional layouts developed by TSA, dining area drawings developed by CERL, and basic furnishings and decor packages selected from the *Decor Catalog for Dining Facilities*.[1] Appendix A provides the plans, specifications, and item correlation lists for each of the eight facilities.

The renovation construction was scheduled to be completed in two 8-month intervals, with four facilities being renovated in each interval. Modernization of buildings 3206, 8402, 9303, and 9304 was completed late in 1974. Construction was completed on the remaining four buildings early in 1976. Figures 1 through 4 are photographs of the facilities before and after renovation.

[1] N. Hintz and R. Cramer, *Decor Catalog of Dining Facilities*, Technical Report D-1/AD760185 (U. S. Army Construction Engineering Research Laboratory [CERL], 1972).

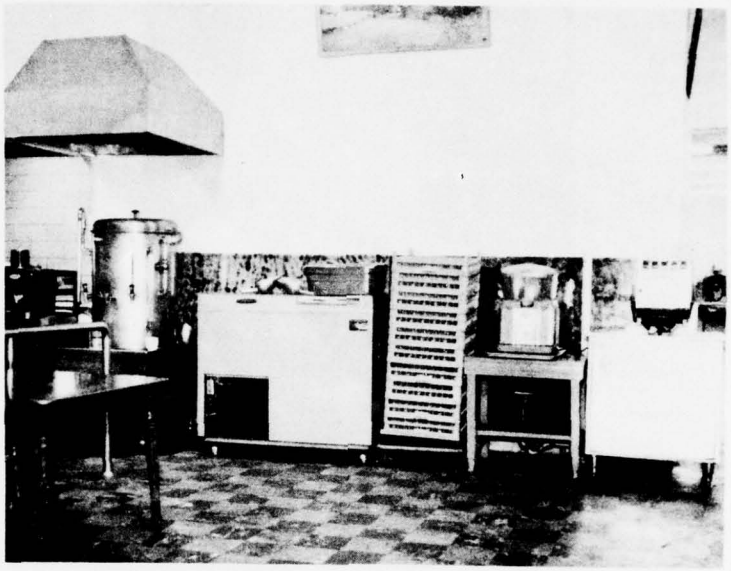


a. Prerenovation



b. Postrenovation

Figure 1. Food serving line.



a. Prerenovation

b. Postrenovation

Figure 2. Beverage dispenser.

a. Prerenovation

b. Postrenovation

Figure 3. General view.

a. Prerenovation

b. Postrenovation

Figure 4. Dining area seating.

Pre- and postrenovation effectiveness measurements were made at seven of the eight facilities (Table 1); no prerenovation measurements were made at building 3206 due to changes in the study and renovation schedule beyond CERL's control.

2 METHOD

This chapter describes the methods employed to quantify **consumer satisfaction**, the criterion measure selected for making comparative evaluations and judgments of alternatives.

Criterion Measures

Two quantitative measures of consumer satisfaction were employed. The first was a **direct** measure: consumers were asked to evaluate 20 **physical** factors in four categories of the existing dining environment on a degree of satisfaction scale. Table 2 presents the factors selected for this measure. The degree of satisfaction scale was a 100-mm line. The consumers rated each factor by marking the line at a point between 0 (highly dissatisfied) and 100 (highly satisfied). The data on all scales consisted of the measured distance in millimeters from 0 to the consumer's mark on the line.

In the second, indirect measure, consumer satisfaction was defined as the degree to which a consumer's attitudes about the **appearance and atmosphere** factors of the facility were changed by the renovation. Ten pairs of bipolar adjectives or scales (Table 3) were presented to consumers for their evaluations. The data again consisted of the measured distance in millimeters from the negative adjective to the consumer's mark on the 100-mm line. The premise was that the greater the numerical increase between before- and after-renovation ratings on the same scale, the more satisfied the consumer. Appendix B presents the questionnaire containing the consumer satisfaction measures.

To measure attributes of the environment not covered by the quantitative measures, interviews containing open-ended questions were administered to samples of consumers before and after renovation.

Data Collection

A total sample of 959 consumers was used to provide measurements of dining facility effectiveness: 474 consumers were used to evaluate unrenovated facilities, and another group of 485 to evaluate the facilities after modernization. Table 4 summarizes the sample characteristics.

One major constraint existed in the sample selection procedure and, thus, the design of the study: 80 percent of the enlisted personnel at Fort Lee were Quartermaster Corps trainees stationed there for an advanced

Table 1
Schedule of Effectiveness Measurements

	June 1973	October 1974	May 1975	February 1976
Prerenovation measures	Bldg 8402 Bldg 9303 Bldg 9304	Bldg 8400 Bldg 3024 Bldg 3108 Bldg 3701		
Postrenovation measures			Bldg 8402 Bldg 9303 Bldg 9304 Bldg 3206*	Bldg 8400 Bldg 3024 Bldg 3108 Bldg 3701

*No prerenovation measurements available

Table 2
Degree of Satisfaction Ratings

A. COLORS

Color of Table
Color of Chair
Color of Draperies
Color of Floor Coverings
Color of Walls

B. CONDITIONS

Condition of Tables
Condition of Chairs
Condition of Draperies
Condition of Floor Coverings
Condition of Walls

C. LOCATIONS

Location of Dishwash Room
Location of Salad Bar
Location of Beverage Dispenser
Location of Sign-In Desk

D. GENERAL CHARACTERISTICS

Light Fixtures
Light Level
Sound Level
Paintings, Posters, etc.
Size of Tables
Size of Chairs

Table 3
Scales for Dining Environment Descriptive Ratings

BRIGHTLY LIGHTED	DIMLY LIGHTED
QUIET	NOISY
CROWDED	UNCROWDED
UGLY	BEAUTIFUL
COLORFUL	DRAB
UNPLEASANT	PLEASANT
CLUTTERED	UNCLUTTERED
INVITING	UNINVITING
WELL KEPT	RUN DOWN
POORLY ORGANIZED	WELL ORGANIZED

Table 4
Sample Characteristics

Sample Sizes: Total - 959

Facility Number	Prerenovation	Postrenovation
3024	56	59
3108	52	43
3206	0	61
3701	56	84
8400	59	45
8402	96	79
9303	88	69
9304	67	45
TOTALS	474	485

Age (median)	20 years
Race (%)	53.0 Caucasian 39.0 Black American 1.8 Oriental 6.2 Other
Sex (%)	81.0 Male 19.0 Female
Education (%)	18.6 Some high school 50.3 High school graduate 26.3 Some college/skilled job training 4.8 College graduate
Military service (median)	1 year, 1 month
Grade (median)	E-2
Dining facility usage (%)	16.8 Breakfast everyday 21.9 Midday meal everyday 19.6 Evening meal everyday

training course lasting typically only 12 weeks. The time lapse between the pre- and postrenovation surveys meant that each survey covered a new group of trainees; control groups could therefore not be maintained for this investigation.

Normally, the lack of control groups would constitute a severe limit upon the interpretation and applicability of the research findings, particularly in determining if changes in responses (i.e., satisfaction) are due to the modernization or other factors not accounted for by the research. However, previous CERL research[2] conducted in military dining facilities where the same methodologies were employed with control groups demonstrated that: (1) consumer satisfaction is quantifiable, (2) improved consumer satisfaction is directly related to environmental improvements; and (3) the effect of modernization on satisfaction is much greater than other possible contributing causes such as personal demographics, attitudes about the military, geographic location, and type of mission. Therefore, in this Fort Lee investigation, it is reasonable to conclude that any measured improvement in consumers' rating is in part due to the modernization of the facilities. Recognizing the limitations imposed by the absence of strict controls, the conclusions of this effort do not include an attempt to assign each of the possible causes of improvement a quantified portion of the increased satisfaction.

The questionnaires were administered to groups of 33 to 69 consumers seated at tables in the dining facility they evaluated. One of the two CERL representatives present briefly described the background of the study to the consumers, who typically required 35 minutes to complete the questionnaire.

In addition to the consumer satisfaction data, a number of comparative physical dining facility operational measures were obtained for representative pre- and postrenovation dining facilities using photographs, stopwatches, speech interference levels of noise, light meters, serving hours, schedules, and serving load records.

Formal oral interviews with management and administrative personnel were also conducted. Personnel from the Fort Lee Food Service Directorate, the Training Brigade Commander, and dining facility managers were questioned about design, decor, operation, and maintenance of the modernized facilities.

[2] W. Gibbs, *Comparison of Consumer Satisfaction Before and After Dining Facility Renovations at Travis AFB, CA*, Technical Report D-28/AD784056 (CERL, 1974).

Data Analysis

In order to test directly whether facility effectiveness significantly improved with facility renovation, it was necessary to determine whether the before- and after-renovation measurements of the criterion measure (consumer satisfaction) differed significantly.

Quantified satisfaction data derived from the written questionnaires were processed using the Statistical Package for the Social Sciences (SPSS).[3] A one-tailed t-test was used for all comparisons of data from the before- and after-renovation groups to determine significant differences between group means.

3 RESULTS

Questionnaire Results

Appendix B summarizes the responses to the written questionnaire.

Appendix C presents the results of the comparisons of consumer satisfaction before and after renovation in profile format for each of the seven evaluated facilities. Figures 5 and 6 present comparisons of grand means before and after renovation for the direct and indirect measures of consumer satisfaction. Higher levels of consumer satisfaction were found after modernization. Statistically significant differences were not found for a few items (e.g., paintings and posters), but the trend was almost universally toward improved satisfaction.

Consumer Interview Results

The brief open-ended interviews generally indicated a noticeably improved overall response to the dining facilities after modernization.

Table 5 presents a comparative summary of interview responses before and after renovation at facilities 8402, 3701, and 9303. Several satisfaction response changes can be noted. In the modernized facilities, **food quality** assumed less importance while **appearance** factors tended to increase in importance. "Don't know" responses increased in both the best- and least-liked categories. Fewer consumers complained of **crowding** in the renovated facilities, and **relaxation** was identified more frequently as an important function of the dining hall.

[3] Norman H. Nie, Dale H. Bent, and C. Hadlai Hull, *SPSS—Statistical Package for the Social Sciences* (McGraw-Hill, 1975).

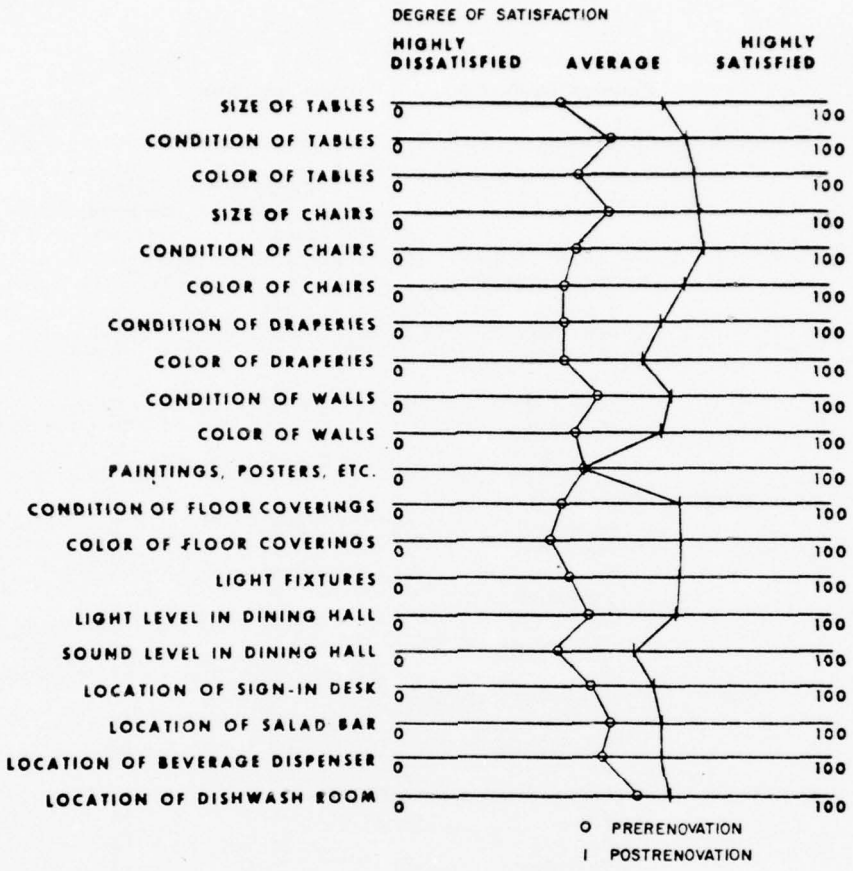


Figure 5. Profile of grand means of satisfaction measures for pre- and postrenovation facilities.

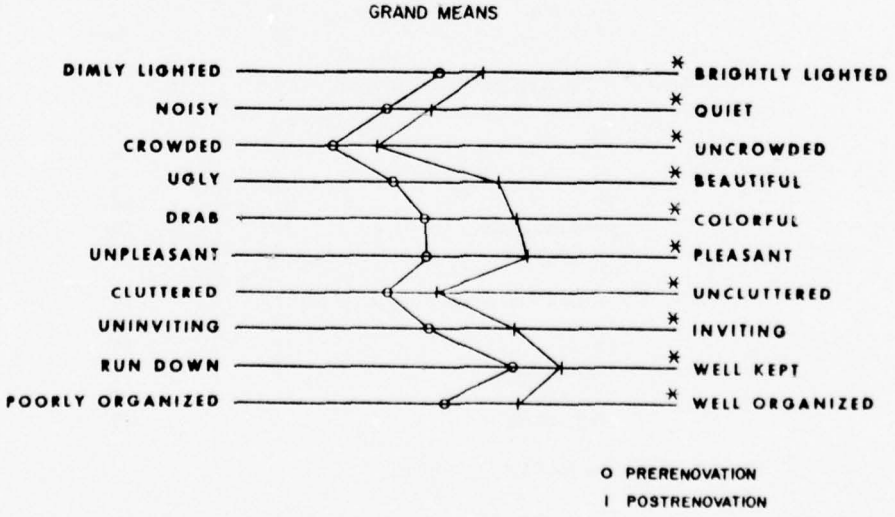


Figure 6. Profile of grand means of descriptive measures for pre- and postrenovation facilities.

Table 5
Comparative Summary of Interview Responses

Question and Responses	Percentage of Responses	
	Before Renovation (N=38)	After Renovation (N=38)
1. What do you **like best** in this facility?		
Food	71	36
Appearance	4	13
Appetizing	0	8
Comfort	0	5
Service	10	2
Don't Know	5	27
No Response	10	9
2. What do you **like least** in the facility?		
Crowded	65	32
Food	25	30
Service	5	2
Equipment	0	2
Don't Know	5	32
No Response	0	2
3. What is the **primary function** of this facility?		
Eat Only	33	18
Eat and Relax	67	82
4. Should Army dining facilities all be standardized?		
Yes	5	28
No	73	65
No Response	22	7
5. What is the first thing you would improve in this facility?		
Walls	38	6
Music	30	0
Everything	7	0
No response	25	94
6. What number of people do you think is best for eating with at your table?		
One	0	0
Two	0	6
Three	0	3
Four	83	66
More than Four	17	23
No Response	0	2
7. Where in the dining facility do you **most** prefer to sit?		
Center	25	35
Corner	62	35
Near Entrance	0	21
Near Exit	13	7
No Response	0	2
8. With what material is the floor of the dining facility covered?		
Correct Answer	61	69
Wrong Answers	38	31
No Response	1	0

Walls were occasionally cited as needing improvement after renovation (item 5), suggesting that a few respondents were not completely happy with the striped or geometric patterns in the modernized facilities.

Comparative Physical Measures

Appendix D presents the comparative physical measures developed for the pre- and postrenovation facilities.

Summary of Comments From Command and Administrative Personnel

This section summarizes comments made by personnel from the Fort Lee Food Service Directorate, the Training Brigade Commander, and dining facility managers concerning construction, operation, and maintenance of the modernized facilities.

Construction Problems

Construction problems cited included the following:

1. Using decorative color paint on the concrete walls required extensive wall preparation (sandblasting) to prevent peeling.

2. Negotiation on such factors as value engineering proposals and dispute clauses often caused delays.

Operation and Maintenance Problems Cited by Food Service Directorate Personnel

Operational problems seen by Food Service Directorate personnel included:

1. Carpeting
   a. Boot scraper is needed at entrance to protect carpet.
   b. Open tray carts drip on carpet.
2. Chairs
   a. Vinyl chairbacks cause occupants to perspire; in addition, vinyl backs become sticky. Consequently, upholstery backs would be preferable from an operational standpoint.
   b. Care should be used in the storage and warehousing of wood furniture (captain's chairs) to prevent problems caused by moisture, temperature, and stacking, such as breaking at glued joints.
3. Partitions
   a. Pre-use storage conditions are important to prevent damage to edges and fabric surface.
   b. Free-standing partitions are easily knocked over.
4. Tables
   a. No assembly instructions were provided.
   b. Tables wobble, supports come loose, and the bases are inadequate.

Maintenance problems cited by Food Service Directorate personnel were:

1. Carpet
   a. Commercial cleaning costs are excessive ($2000/month).
   b. Spot cleaning leaves white rings.
   c. Permanent stains occur.
   d. Vacuuming equipment is difficult to keep operational.
2. Walls. Paint cannot be cleaned over serving lines due to grease, etc.

Operational and Maintenance Problems Cited by Training Brigade Commander

Operational and maintenance comments made by Training Brigade Commander included the following:

1. General. Some equipment is underutilized, e.g., doughnut-making machines.

2. Carpeting. Carpet squares should be tested for use in dining facilities because of such advantages as easy repair of sections and no cementing down required. Runners may be a safety hazard.

3. Seating. Booths are too close, causing occupants to bump heads.

4. Partitions. Some privacy is desirable; low partitions may be sufficient, however.

5. Tray Carts. Tray carts take up too much room. Since central warewash is not used, holes for depositing trays should be reopened in the wall.

6. Self-Service. The self-service line in building 3701 probably saves money by eliminating the need to go back for seconds.

4 CONCLUSION

The pre- and postrenovation comparison of consumer responses at seven experimental facilities at Fort Lee, VA, indicated that interior renovations to Army enlisted personnel dining facilities improve consumer satisfaction. The effectiveness of the facilities was significantly improved by the modernization program.

These results, combined with results of other phases of CERL dining facility study, demonstrated that implementation of the *Decor Catalog for Dining Facilities* significantly improves the dining environment and eliminates the major elements associated with consumer dissatisfaction. Once these elements have been eliminated, the data suggest that type of decor scheme and variety in seating arrangements offered in one facility become salient issues to consumers.

In response to these findings, TSA and CERL have prepared a new decor guide which offers five complete coordinated interior designs, each with a unique motif.[4] This guide also provides alternatives in seating arrangements and type of seating available (e.g., round table, square table, booths, metal chairs, wood chairs, plastic shell chairs).

[4] B. D. Bershad, N. Hintz, and J. S. Mark, *Decor Guide for Enlisted Personnel Dining Facilities*, Technical Report D-38/ADA003828 (CERL, 1974).

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APPENDIX A: DINING DECOR ITEMS AND COMPONENTS

Table A1 indicates specific items employed in each dining facility, by building number. Tables A2 through A4 present item descriptions for flooring materials, draperies, and music systems.

Tables are described in Table A5 and illustrated along with chairs in Figure A1. Table A6 describes booths, which are illustrated in Figure A2. Tables A7 and A8 describe vinyl and acoustic partitions, illustrated in Figures A3 and A4. Sign-in equipment is described in Table A9 and illustrated in Figure A5. Figure A6 illustrates the signage used. Figures A7 and A8 and Tables A10 and A11 provide data on planters and ash urns, and tray racks. Table A12 and Figure A9 provide data on lighting fixtures.

Table A13 lists the predominant wall paint color and pattern used for each facility. Figure A10 illustrates these patterns.

The plans of the facilities are presented in Figures A11 through A18.

Table A1
Item Analysis by Dining Facility Where Installed

	Dining Hall Number							
Item Description	**3024**	**3108**	**3206**	**3701**	**8400**	**8402**	**9303**	**9304**
Chair, shell, swivel arm	√	–	√	–	√	–	–	–
Chair, swivel side	–	–	√	–	√	–	–	–
Chair, side arm	–	–	–	√	–	√	–	–
Chair, captain's	–	–	–	–	–	√	–	√
Chair, stacking side	√	√	–	–	–	–	√	–
Chair, stack/sled	–	–	–	–	–	–	–	–
Chair, arm	–	–	–	–	–	–	–	–
Chair, lounge	–	–	–	–	√	√	–	–
Table top, 36 in. × 48 in. (0.9 × 1.2 m) w/table base	–	√	–	√	√	–	√	√
Table top, 36 in. × 48 in. (0.9 × 1.2 m) w/table base	√	–	–	–	–	√	–	–
Table top, 36 in. × 48 in. (0.9 × 1.2 m) w/table base	–	–	√	–	–	–	–	–
Table top, 24 in. × 36 in. (0.6 × 0.9 m) w/table base	–	√	–	√	√	–	√	√
Table top, 24 in. × 36 in. (0.6 × 0.9 m) w/table base	√	–	–	–	–	√	–	–
Table top, 24 in. × 36 in. (0.6 × 0.9 m) w/table base	–	–	√	–	–	–	–	–

Table A1 (Cont'd)
Item Analysis by Dining Facility Where Installed

Item Description	Dining Hall Number							
	3024	3108	3206	3701	8400	8402	9303	9304
Table top, 54 in. (1.4 m) diameter	–	√	–	√	√	–	√	√
Table top, 54 in. (1.4 m) diameter	√	–	–	–	–	√	–	–
Table top, 54 in. (1.4 m) diameter	–	–	√	–	–	–	–	–
Booth, single island, 4 ft. 0. in. L × 2 ft 2 in. W × 3 ft 0 in. H (1.2 m × 0.7 m × 0.9 m)	√	√	√	–	√	√	–	–
Booth, double island, 4 ft 0 in. L × 4 ft 1 in. W × 3 ft 0 in. H (1.2 m × 1.2 m × 0.9 m)	√	√	√	–	√	√	–	–
Banquette wall seating, 8 ft 0 in. L × 2 ft 2 in. W × 3 ft 0 in. H (2.4 m × 0.7 m × 0.9 m)	√	–	–	√	√	–	–	–
Carpet, L-118-36	–	√	–	–	√	√	√	√
Carpet, flameguard plus	–	–	√	√	√	–	–	–
Carpet, royalty	√	–	–	–	–	√	–	–
Base, vinyl cove, 4 in. (10.2 cm) black	√	√	√	√	√	√	√	√
Vinyl asbestos tile, 12 in. × 12 in. × 1/8 in. (30.5 cm × 30.5 cm × 0.3 cm)	√	√	√	√	√	√	√	√
Paint	√	√	√	√	√	√	√	√
Partition, panel, portable 48 in. × 80 in. H × 1 3/4 in. T (1.2 m × 2.0 m × 4.4 cm) (AO 252)	√*	√*	√*	–	√*	√*	–	√*
Partition, panel, portable 24 in. × 80 in. H × 1 3/4 in. T (0.6 m × 2.0 m × 4.4 cm) (AO 253)	√*	√*	√*	–	√*	√*	–	√*

* √ Removed except around beverage area. Present in 9303, 9304, 3206, and 8402 during survey in May 1975.

Table A1 (Cont'd)
Item Analysis by Dining Facility Where Installed

Item Description	Dining Hall Number							
	3024	3108	3206	3701	8400	8402	9303	9304
Panel connector, 80 in. (2.0 m) black (AO 212)	√*	√*	√*	–	√*	√*	–	√*
Panel end cap, 80 in. (2.0 m) (AO 214)	√*	√*	√*	–	√*	√*	–	√*
Hinge and end cap assembly 80 in. (2.0 m) (AO 292)	√*	√*	√*	–	√*	√*	–	√*
Partition, panel, portable 48 7/8 in. × 72 in. × 1 3/4 in. (1.2 m × 1.8 m × 4.4 cm) (F63911)	–	–	–	√*	√*	√*	√*	–
Partition, panel, portable 30 in. × 72 in. × 1 3/4 in. (0.7 m × 1.8 m × 4.4 cm) (F63906)	–	–	–	√*	√*	√*	√*	–
90° hinge, vinyl, 6 ft (1.8 m) long (63975)	–	–	–	√*	√*	√*	√*	–
Two direction connector plate (63920)	–	–	–	√*	√*	√*	√*	–
6 in. (15.2 cm) vertical (63901)	–	–	–	√*	√*	√*	√*	–
90° two direction vertical (63909)	–	–	–	√*	√*	√*	√*	–
Two direction vertical (63936)	–	–	–	√*	√*	√*	√*	–
Window drapery	√	√	√	√	√	√	√	√
Drapery track set	–	–	–	√	–	–	–	–
Divider drapery	√	√	√	√	√	√	√	√
Sign-in desk, 6 ft 0 in. W × 2 ft 0 in. D × 3 ft 0 in. H (1.8 m × 0.6 m × 0.9 m)	√	√	√	√	√	√	√	√
Stool, adjustable, swivel side, plastic shell	√	√	√	√	√	√	√	√
Enter → (sign)	√	√	–	–	–	–	√	√

*√ Removed except around beverage area. Present in 9303, 9304, 3206, and 8402 during survey in May 1975.

Table A1 (Cont'd)
Item Analysis by Dining Facility Where Installed

Item Description	Dining Hall Number							
	3024	3108	3206	3701	8400	8402	9303	9304
← Enter (sign)	–	–	√	–	–	–	–	–
Full menu (sign)	√	√	√	√	√	–	–	√
Short orders (sign)	–	√	–	√	–	√	√	–
Self-service (sign)	–	√	–	√	–	–	–	√
Check-in (sign)	√	√	√	√	√	√	√	√
Tray deposit (sign)	√	√	√	√	√	√	√	√
Signage brackets, ceiling bracket (box of 10)	√	√	√	√	√	√	√	√
Banner, 45 in. × 50 in. (1.1 m × 1.5 m)	–	–	–	–	–	–	–	–
Banner, 47 in. × 47 in. (1.2 m × 1.2 m)	–	–	–	–	√	–	–	–
Banner, 47 in. × 47 in. (1.2 m × 1.2 m)	–	√	–	–	–	–	–	√
Banner, 45 in. × 58 in. (1.1 m × 1.5 m)	–	–	–	–	√	–	–	–
Banner, 23 in. × 65 in. (0.6 m × 1.7 m)	√	–	–	–	–	–	–	–
Banner, 21 in. × 58 in. (0.5 m × 1.5 m)	–	–	–	–	–	–	–	–
Banner, 23 in. × 65 in. (0.6 m × 1.7 m)	–	–	–	–	–	–	–	–
Banner, 21 in. × 76 in. (0.5 m × 1.9 m)	–	–	–	–	–	–	–	–
Banner, 46 in. × 74 in. (1.2 m × 1.9 m) custom made	–	–	√	–	–	–	–	–
Planter, 20 in. (50.8 cm) dia., 21 in. (53.3 cm) H	√	√	√	√	√	√	√	√
Ash urn, 10 in. (25.4 cm) dia., 20 in. (50.8 cm) H	√	√	√	√	√	√	√	√
Background music system	√	√	√	√	√	√	√	√
Music cartridge	√	√	√	√	√	√	√	√
Microphone	√	√	√	√	√	√	√	√
Speaker	√	√	√	√	√	√	√	√
Outdoor sign	–	–	√	–	–	–	–	–
Speaker baffle	√	√	√	√	√	√	√	√

Table A1 (Cont'd)
Item Analysis by Dining Facility Where Installed

Item Description	Dining Hall Number							
	3024	3108	3206	3701	8400	8402	9303	9304
Panel connector, 80 in. (2.0 m) black (AO 212)	√*	√*	√*	–	√*	√*	–	√*
Panel end cap, 80 in. (2.0 m) (AO 214)	√*	√*	√*	–	√*	√*	–	√*
Hinge and end cap assembly 80 in. (2.0 m) (AO 292)	√*	√*	√*	–	√*	√*	–	√*
Partition, panel, portable 48 7/8 in. × 72 in. × 1 3/4 in. (1.2 m × 1.8 m × 4.4 cm) (F63911)	–	–	–	√*	√*	√*	√*	–
Partition, panel, portable 30 in. × 72 in. × 1 3/4 in. (0.7 m × 1.8 m × 4.4 cm) (F63906)	–	–	–	√*	√*	√*	√*	–
90° hinge, vinyl, 6 ft (1.8 m) long (63975)	–	–	–	√*	√*	√*	√*	–
Two direction connector plate (63920)	–	–	–	√*	√*	√*	√*	–
6 in. (15.2 cm) vertical (63901)	–	–	–	√*	√*	√*	√*	–
90° two direction vertical (63909)	–	–	–	√*	√*	√*	√*	–
Two direction vertical (63936)	–	–	–	√*	√*	√*	√*	–
Window drapery	√	√	√	√	√	√	√	√
Drapery track set	–	–	–	√	–	–	–	–
Divider drapery	√	√	√	√	√	√	√	√
Sign-in desk, 6 ft 0 in. W × 2 ft 0 in. D × 3 ft 0 in. H (1.8 m × 0.6 m × 0.9 m)	√	√	√	√	√	√	√	√
Stool, adjustable, swivel side, plastic shell	√	√	√	√	√	√	√	√
Enter → (sign)	√	√	–	–	–	–	√	√

*√ Removed except around beverage area. Present in 9303, 9304, 3206, and 8402 during survey in May 1975.

Table A2
Flooring Materials Description

Item and Manufacturer	Description
Carpet, Flameguard Plus, Item 194-1623 Commercial Carpet Corp. (GSA Contract No. GS-00S-04673. Maximum order: $85,000.)	Tufted, single-level loop, 70 percent acrylic and 30 percent nylon, long staple worsted spun yarns, fire-retardant pile, with 1/8 in. (0.3 cm) attached high-density fire-retardant foam rubber backing, all synthetic or nonvegetable fibers, static controlled, ASTM E-84 flame spread rating of 75 or less, pile weight 36 oz/sq yd (1.2 kg/m^2) pile height, 0.187 in. (0.5 cm), 12 ft (3.7 m) width only.
Carpet, Densylon Royalty, NSN 7220-00-237-3459 Commercial Carpet Corp. (GSA Contract No. GS-00S-09580. Maximum order: $50,000.)	Woven level loop, 100 percent continuous filament nylon, single-level loop pile, with 0.187 in. (0.5 cm) attached rubber backing, all synthetic fibers and pile dyed yarn, static controlled, pile weight 18 oz/sq yd (0.6 kg/m^2), pile height 0.125 in. (0.3 cm), 54 in. (1.4 m) width only.
Carpet, Sequoya C35X-R8, NSN 7220-00-450-8951 Sequoya Carpet Mills (GSA Contract No. GS-00S-10109. Maximum order: $50,000.)	70 percent acrylic, 30 percent modacrylic, tufted, single-level, loop pile, flame-retardant, ASTM E-84 flame spread rating of 75 or less, static controlled, with 0.187 in. (0.5 cm) attached foam rubber backing, pile weight 42 oz/sq yd, pile height, 0.187 in. (0.5 cm), 12 ft (3.7 m) width only.
Base	Vinyl cove, 4 in. (10.2 cm) black. Installed along all permanent walls not having an existing base.
Quarry tile	6 in. × 6 in. × 1/2 in. (15.2 cm × 15.2 cm × 1.3 cm) standard grade quarry tile ground four sides to size after firing in umber or dark brown color. Tile installation is in accordance with the *Tile Council of America Installation Guide Handbook*.
Vinyl-asbestos tile	12 in. × 12 in. × 1/8 in. (30.5 cm × 30.5 cm × 0.13 cm). Used as an alternative to quarry tile when funds preclude the use of quarry tile. Umber or dark brown color with a minimum of pattern.

Table A3
Drapery Material Description

Item and Manufacturer	Description
Window drapery, Sparta 364 Ben Rose, Inc. (Commercial)	50 in. (1.3 m) width, 100 percent beta fiberglass, flame-retardant, available in solar beige, russet yellow and ivory.
Window drapery, Taurus 140 Payne & Co. (Commercial)	45 in. (1.1 m) width, 100 percent beta fiberglass, flame-retardant, available in parchment, gold, and champagne.
Drapery track,* window, #1000S Golden Line Co. (GSA Contract No. GS-00S-12822. Maximum order: $10,000.)	Roller track set, cord traverse, center draw, and Verti-pleat heading system, complete set ready for installation including snap tabs for draperies.
Drapery track,* window, Clickeze Drapery Traverse System Clickeze Corp. Order through Chas. G. Stott & Co. (GSA Contract No. GS-00S-11235. Maximum order: $10,000.)	Cord traverse, center draw, conventional size folds, standard fullness, preassembled channel track kit. Heading vanes ordered separately.
Divider drapery, Key Darien 48/987 Ben Rose, Inc. (Commercial)	48 in. (1.2 m) width, 70 percent verel, 30 percent rayon, fire-retardant, available in yellow, red, orange, blue green, blue, and green.
Divider Drapery, Gentry Stripe Payne & Co., (Commercial)	48 in. (1.2 m) width, 70 percent verel, 30 percent rayon, fire-retardant, available in melon, geranium, and aqua.

*Same track used for divider drapes, except with hand traverse.

Table A4
Music System Description

Item and Manufacturer	Description
Background music system, 3M Brand, "Cantata" 700, Model 94 BG 3M Business Products Sales, Inc. (GSA Contract No. GS-00S-13272)	Uses 3M prerecorded music libraries (special tape cartridges), each of which contains 80 to 700 selections (see list below); amplifier can drive up to 30 speakers; complete ready to plug into speaker system, 12 1/2 in. W, 16 1/4 in. D, 7 1/8 in. H (31.8 cm × 41.9 cm × 18.1 cm) Music cartridges available for "Cantata" 700: R-165 Rhythmic Library, 700 selections R-266 Rhythmic Library, 700 selections M-165 Melodic Library, 700 selections M-266 Melodic Library, 700 selections V-168 Variety Library, 700 selections RX-266 Rhythmic Christmas Library, 350 selections MX-266 Melodic Christmas Library, 350 selections VX-167 Christmas with Vocals, 350 selections CX-167 Continuous Christmas, 80 selections PL-166 Polynesian, 200 selections LL-166 Latin-American, 200 selections SL-167 Sacred Library (with vocals), 200 selections SL-267 Sacred Library, 130 selections A-169 American Country, 300 selections MR-170 Modified Rock
3M Stand Microphone w/volume control 3M Business Products Sales, Inc. (GSA Contract No. GS-00S-13272)	Used for paging or public address w/Cantata 700
Speaker, 3M 3M Business Products Sales, Inc. (GSA Contract No. GS-00S-13272)	8 in. (20.3 cm) round, 8 ohm, w/70V transformer. Baffle required for installation.
Speaker, B260-8 Soundolier, Inc. (Commercial)	8 in. (20.3 cm) round, 2.16 oz magnet, 8 ohm. Baffle required for installation.
Baffle, model 260-8 Soundolier, Inc. (Commercial)	Surface-mounted; aluminum enclosure to accommodate an 8 in. (20.3 cm) round speaker. One required for each ceiling-mounted speaker. Similar baffle available for flush mounting in suspended ceiling.

Table A5
Table Description

Item and Manufacturer	Description
Table top (Table A in Figure A1) Shelby Williams (GSA Contract No. GS-00S-09801. Maximum order: $25,000.)	24 in. × 36 in. (0.6 m × 0.9 m) w/type FE edge, Formica color 830 (-64) wormy chestnut.
Table base, 203-2230 (Table A) Shelby Williams (GSA Contract No. GS-00S-09801. Maximum order: $25,000.)	Black porcelain base, satin chrome column, and self-adjusting glides.
Rectangular table top (Table A) Falcon Products, Inc. (GSA Contract No. GS-00S-11652. Maximum order: $25,000.)	24 in. × 36 in. (0.6 m × 0.9 m), 3000 series, Formica color 830 (-64) wormy chestnut.
Table base, 203-2230 (Table A) Falcon Products, Inc. (GSA Contract No. GS-00S-11652. Maximum order: $25,000.)	Black porcelain base, satin chrome column, and self-adjusting glides.
Round table top (Table B) Shelby Williams (GSA Contract No. GS-00S-09801. Maximum order: $25,000.)	54 in. (1.4 m) diameter, w/self edge to match top, Formica solid colors available in scarlet, banner blue, harvest gold, and brick orange.
Table base, 204-30 (Table B) Shelby Williams (GSA Contract No. GS-00S-09801. Maximum order: $25,000.)	Black porcelain base, satin chrome column, and self-adjusting glides.
Round table top (Table B) Falcon Products, Inc. (GSA Contract No. GS-00S-11652. Maximum order: $25,000.)	54 in. (1.4 m) diameter, 3000 series. Formica solid color available in scarlet, banner blue, harvest gold, and brick orange.
Table base, 204-30 (Table B) Falcon Products, Inc. (GSA Contract No. GS-00S-11652. Maximum order: $25,000.)	Black porcelain base, satin chrome column, and self-adjusting glides.

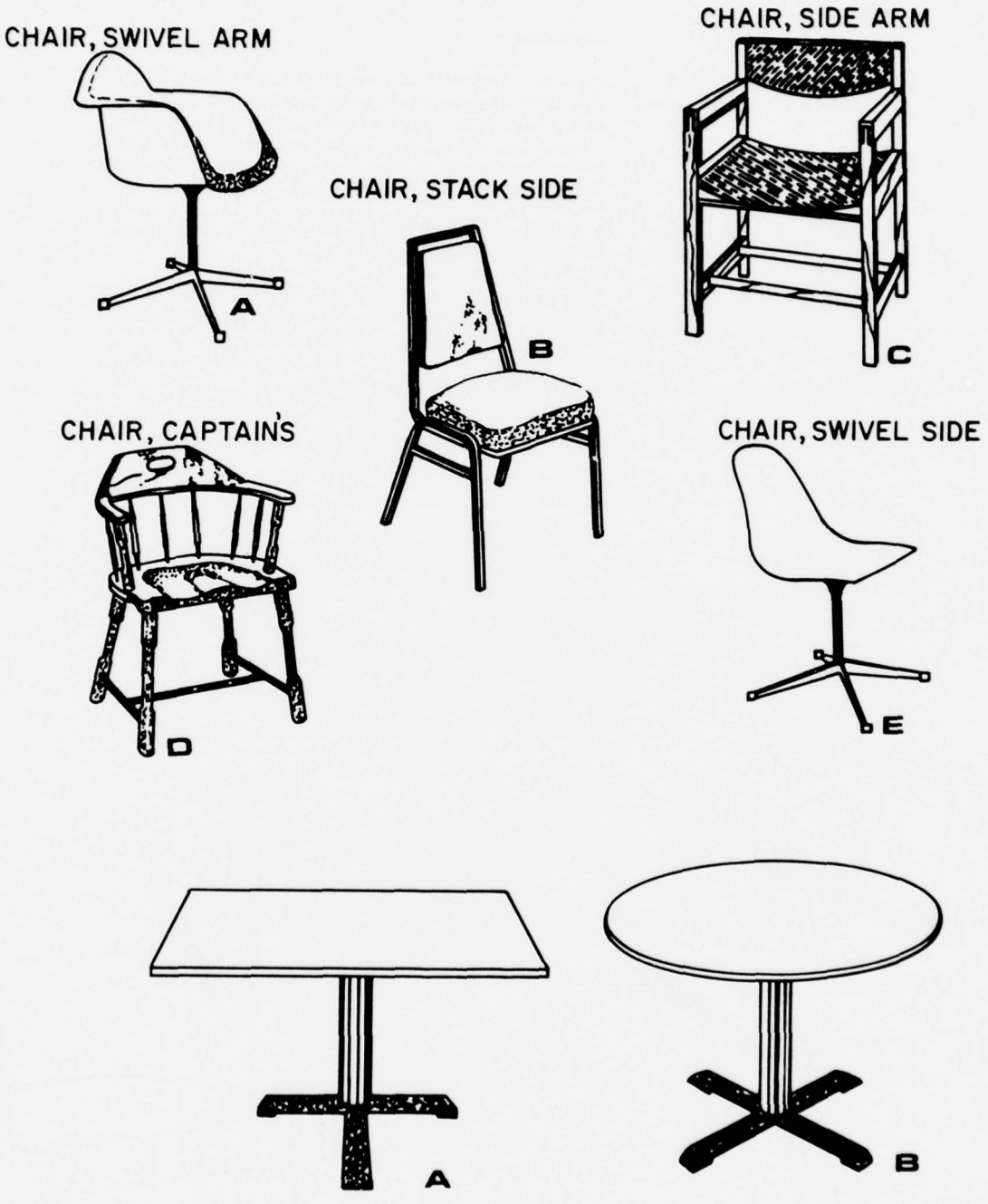


Figure A1. Tables and chairs.

Table A6
Booth Description

Item and Manufacturer	Description
Single-island booth, M-3802-36 K. C. Booth Mfg. Co. (Commercial)	4 ft 0 in. L, 2 ft 2 in. W, 3 ft 0 in. H* (1.2 m × 0.7 m × 0.9 m), 1 in. (2.5 cm) square black tubular steel welded frame, Formica 830 (-64) wormy chestnut panels and outside backs, no-sag springs in seat with foam, foam seat back, upholstered in Naugahyde Gladstone GE-65, dark brown, or pompeian red, ultramarine blue, goldenrod, and bittersweet.
Double-island booth, M-3802-36 K. C. Booth Mfg. Co. (Commercial)	4 ft 0 in. L, 4 ft 1 in. W, 3 ft 0 in. H* (1.2 m × 1.2 m × 0.9 m), otherwise same as single-island booth.
Banquette, M-3505-36 K. C. Booth Mfg. Co. (Commercial)	Wall seating, 8 ft 0 in. L, 2 ft 2 in. W, 3 ft 0 in. H* (2.4 × 0.7 m × 0.9 m), otherwise same as single-island booth except banquette has Naugahyde GE-65 finished back.

*Above items may be ordered with higher backs if additional privacy is desired.

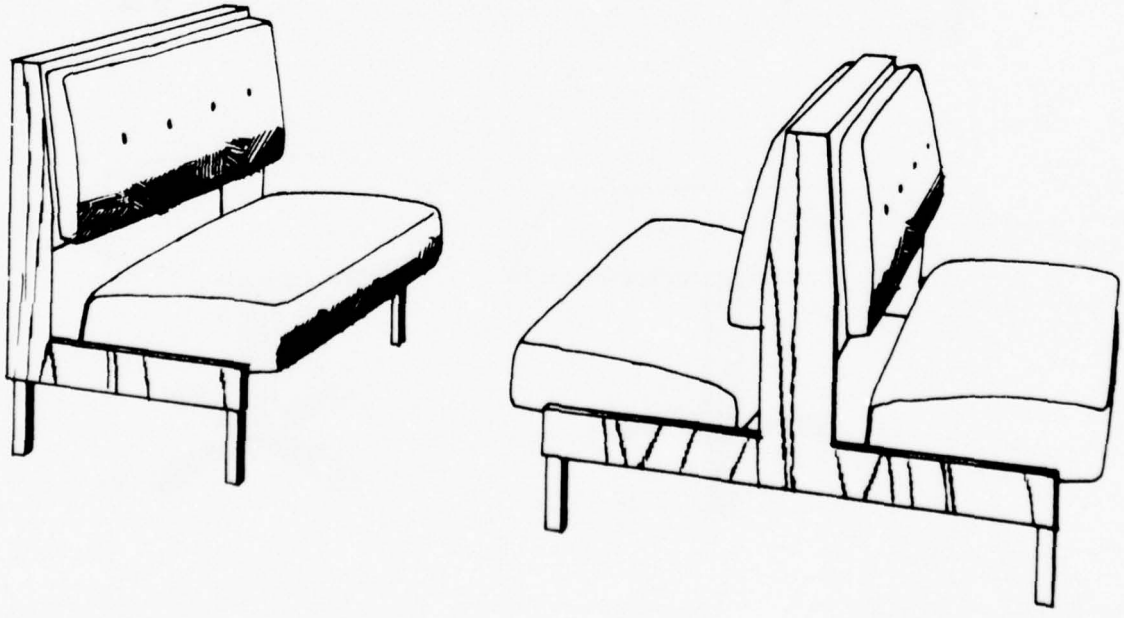


Figure A2. Booths.

Table A7
Vinyl Partition Description

Item and Manufacturer	Description
Panel, A0252* Herman Miller (Commercial)	48 in. W × 80 in. H × 1 3/4 in. thick (1.2 m × 2.0 m × 4.4 cm), vinyl surface, neutral light color, 95 lbs (43.1 kg).
Panel, A0253 Herman Miller (Commercial)	24 in. W × 80 in. H × 1 3/4 in. thick (0.6 m × 2.0 m × 4.4 cm) vinyl surface, neutral light color, 64 lbs (29.1 kg).
Panel connection, A0212 Herman Miller (Commercial)	80 in. (2.0 m), black, 2 lbs (0.9 kg); used to connect two panels in line.
Panel end cap, A0214 Herman Miller (Commercial)	80 in. (2.0 m), neutral light color, 10 lbs (4.5 kg); used to cover end of panel not connected to another panel.
Hinge and end cap assembly, A0292 Herman Miller (Commercial)	80 in. (2.0 m), neutral light color, 24 lbs (10.9 kg); used to connect two panels at an angle.

*See Figure A3 for location of items in partition assembly.

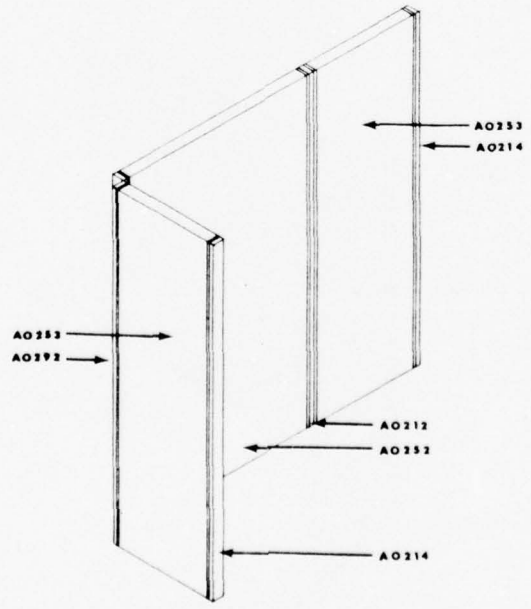


Figure A3. Partitions, vinyl.

Table A8
Acoustic Partition Description

Item and Manufacturer	Description
Panel F63911* Conwed Corp. Order from General Office Furniture Wholesalers, Inc. (GSA Contract No. GS-00S-06066. Maximum order: $25,000)	48 7/8 in. × 72 in. × 1 3/4 in. (1.2 m × 1.8 m × 4.4 cm) panel, fire-retardant acoustic surface, natural X075 color.
Panel F63906 Conwed Corp. (see above)	30 in. × 72 in. × 1 3/4 in. (0.7 m × 1.8 m × 4.4 cm) panel, fire-retardant acoustic surface, natural X075 color.
Hinge 63975 Conwed Corp.	90° vinyl hinge, 6 ft (1.8 m) long; used to connect two panels at 90°.
Panel connection 63920 Conwed Corp.	Two-direction connecting plate; used to connect two panels in line.
Vertical support 63901 Conwed Corp.	6 in. (15.2 cm) vertical
Vertical support 63909 Conwed Corp.	90° two-direction vertical
Vertical support 63936 Conwed Corp.	Two-direction vertical

*See Figure A4 for location of items in partition assembly.

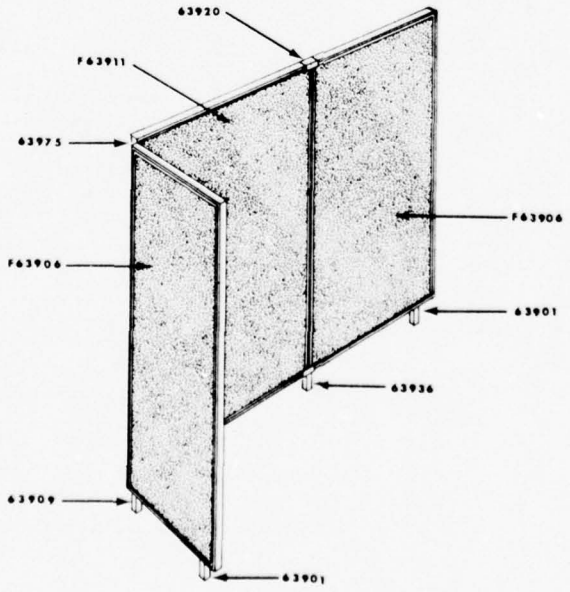


Figure A4. Partitions, acoustic.

Table A9
Sign-In Equipment Description*

Item and Manufacturer	Description
Sign-in desk, locally fabricated	Nominal dimensions 6 ft 0 in. W, 2 ft 0 in. D, 3 ft 0 in. H (1.8 m × 0.6 m × 0.9 m), wood grain laminated plastic sides and top to match tables and booths, caster-mounted, 3 in. (7.6 cm) diameter ball casters with brakes, 6 in. (15.2 cm) black toe base, lockable drawers and doors for storage of cash register and documents. Design may be varied to meet local requirements.
Adjustable stool, EC 123-00	Swivel side, plastic shell with casters, shell available in crimson, ultramarine blue, ochre light, and red orange, polished aluminum base and foot rest and black column. Suggested for use with sign-in desk.

*Planning guidance: one sign-in desk is required for a facility serving 251 to 650 individuals; two are required for a facility serving 651 to 2200 individuals.

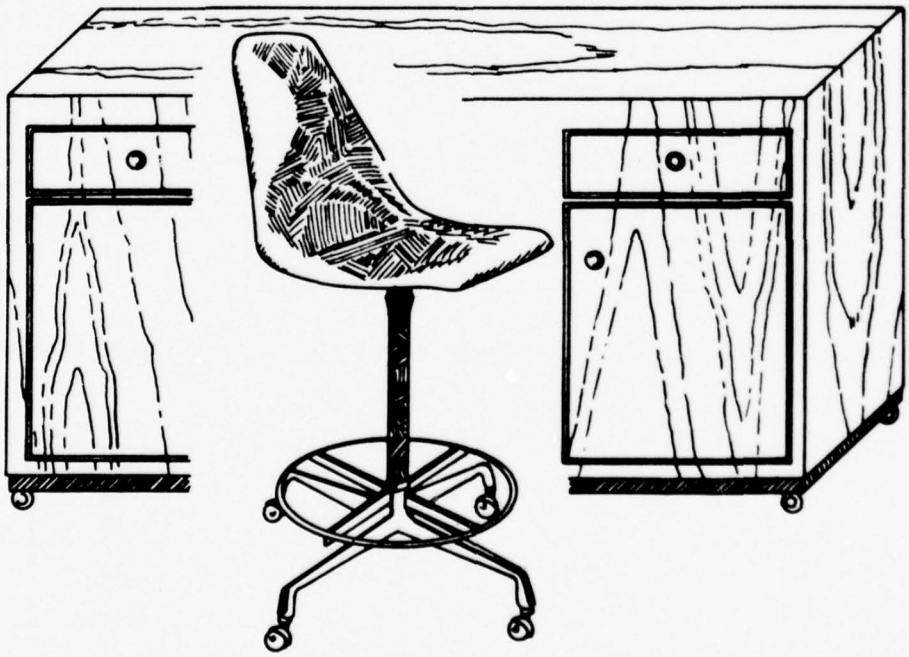
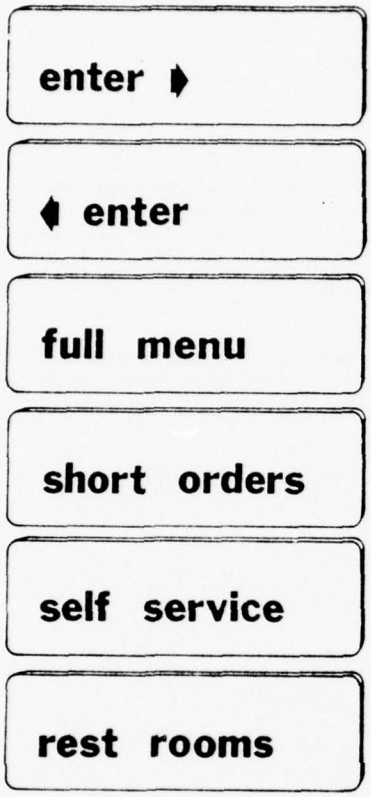
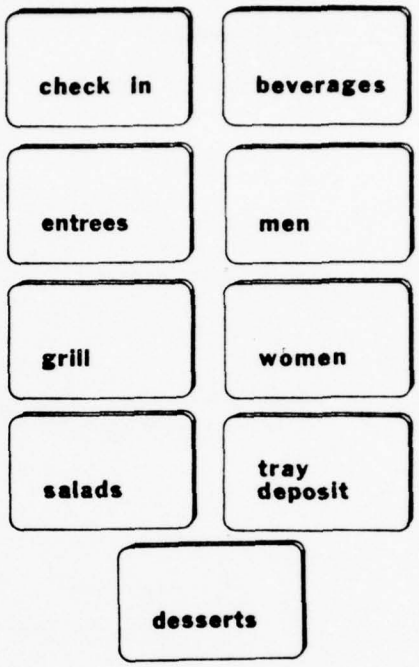


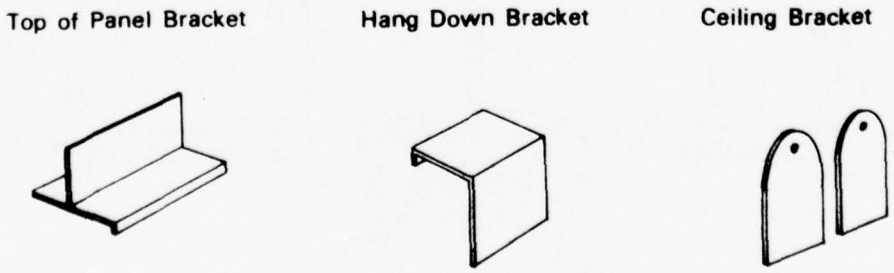
Figure A5. Sign-in equipment.



a. Signs AO343LN, 7 3/8 in. H × 23 13/16 in. W (25.7 cm × 60.3 cm), 2-in. (5.1 cm) letters, ordered in boxes of two (Herman Miller–Commercial.



b. Signs AO342LN, 7 3/8 in. H × 11 13/16 in. W (25.7 cm × 34.8 cm), 7/8 in. (2.3 cm) letters, ordered in boxes of five (Herman Miller–Commercial.



c. Brackets for hanging signs

Figure A6. Signage description. Signs are plastic-laminated neutral light plaques with black factory-applied letters.

Table A10
Ash Urn and Planter Sizes

Item*	Shape	Size
Ash urn 1012A	Square	10 in. × 10 in. × 20 in. H (25.4 cm × 25.4 cm × 50.8 cm)
Ash urn 810A	Cylindrical	10 in. dia × 20 in. H (25.4 cm × 50.8 cm)
Planter 612	Cylindrical	12 in. dia × 13 in. H (30.5 cm × 33.0 cm)
Planter 812	Cylindrical	12 in. dia × 25 in. H (30.5 cm × 63.5 cm)
Planter 616	Cylindrical	16 in. dia × 17 in. H (40.6 cm × 43.2 cm)
Planter 620	Cylindrical	20 in. dia × 21 in. H (50.8 cm × 53.3 cm)
Planter 624	Cylindrical	24 in. dia × 25 in. H (61.0 cm × 63.5 cm)
Planter 1012	Square	10 in. × 10 in. × 19 1/2 in. H (25.4 cm × 25.4 cm × 49.5 cm)
Planter 1014	Square	14 in. × 14 in. × 15 in. H (35.6 cm × 35.6 cm × 38.1 cm)
Planter 1018	Square	18 in. × 18 in. × 19 in. H (45.7 cm × 45.7 cm × 48.3 cm)
Planter 1020	Square	20 in. × 20 in. × 21 in. H (50.8 cm × 50.8 cm × 53.3 cm)
Planter 1021	Square	24 in. × 24 in. × 16 in. H (61.0 cm × 61.0 cm × 40.6 cm)

*All urns and planters manufactured by General Office Furniture Wholesalers, Inc. (GSA Contract No. GS-00S-08501. Maximum order $10,000.)

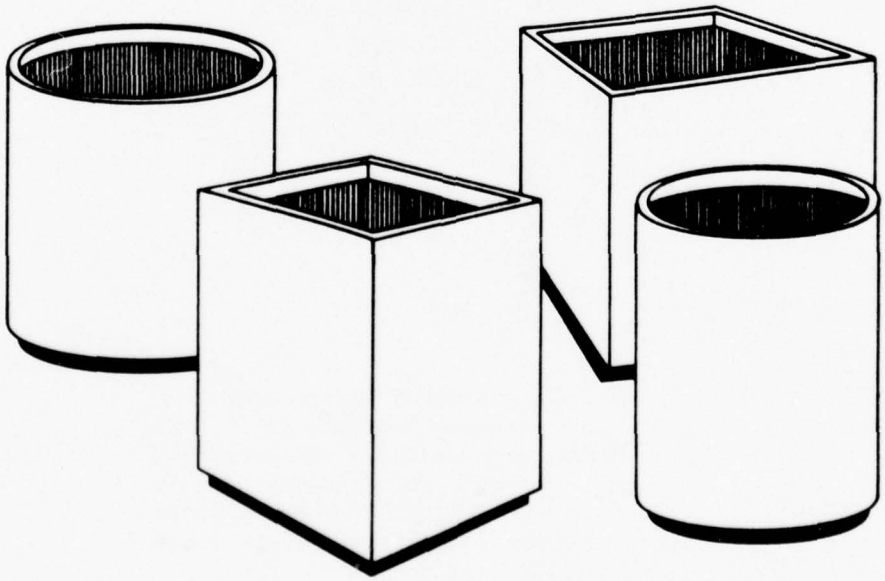
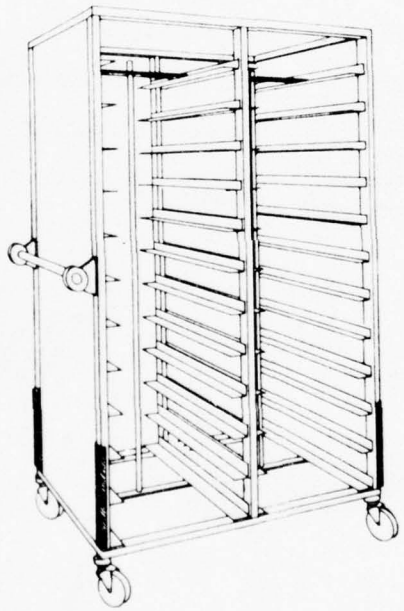


Figure A7. Planters and ash urns. Both are ivory-colored fiberglass, Pouliout Designs. Ash urns should be filled with clean sand. Available sizes, shapes, and costs are given in Table A10.

Table A11
Available Tray Rack Sizes

Nominal Dimensions, in. (m)			Tray Size	Capacity
37 7/16 W (0.9)	18 3/4 D (0.5)	69 3/4 H (1.8)	14 in. × 18 in. (35.6 cm × 45.7 cm)	22 tray
35 15/16 W (0.9)	23 1/4 D (0.6)	69 3/4 H (1.8)	15 in. × 20 in. (38.1 cm × 50.8 cm)	22 tray
41 15/16 W (1.1)	30 1/4 D (0.8)	69 9/16 H (1.8)	14 in. × 18 in. (35.6 cm × 45.7 cm)	48 tray
46 W (1.2)	31 D (0.8)	69 9/16 H (1.8)	15 in. × 20 in. (38.1 cm × 50.8 cm)	48 tray

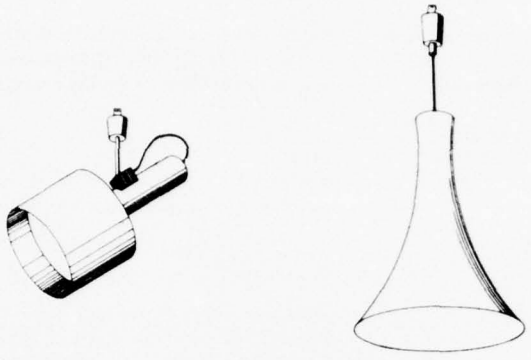


Aluminum alloy construction, bumpers, two sides enclosed, mobile, wide-tread heavy-duty 5-in. (12.7 cm) neoprene tires. Rust-proof, will accommodate trapezoid and standard-type trays, sure-hold suspension tray system prevents tray fallout. Two swivel and two stationary wheels, brakes, push-pull handle, will not corrode or peel. CTA 50-911 item; no NSN.

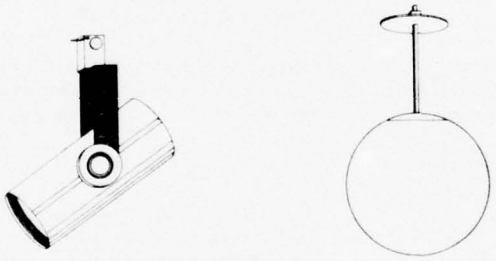
Figure A8. Tray rack description. Table A11 shows available tray rack sizes.

Table A12
Lighting Fixture Description

Item and Manufacturer	Description
Lite-Trac Phase 3 lighting system Prescolite, Division of U. S. Industries, Inc. (Commercial)	Pendant-mounted according to drawings; both fixtures shown in Figure A9a available. If suspended ceiling is used, this system may be recessed or surface mounted.
The following items are components of the system:	
Lite-Trac, 92124	4 ft (1.2 m) starter trac, 48 3/32 in. (1.2 m) long, includes electric feed and dead end, satin-anodized aluminum finish.
Lite-Trac, 92128	8 ft (2.4 m) Starter Trac, same as 92124 except 96 3/32 in. (2.4 m) long.
Lite-Trac, 92214	Stem mounting kit, includes canopy, stem, and mounting brackets. Mounted on 4 ft (1.2 m) centers to suspend Lite-Trac from ceiling; not required with suspended ceiling.
Lite-Trac, 92241	"X" kit, used to join Lite-Trac in "X" configuration.
Lite-Trac, 93411	150 W, PAR-38, 5 3/8 in. (13.6 cm) dia, 9 3/4 in. (24.3 cm) long, black and brushed aluminum finish.
Riviera Pendant, 94011	Tri-Plex glass shade, 10 1/2 in. (26.7 cm) dia at bottom of shade, 13 1/2 in. (34.3 cm) long, 60 to 100 W, suspended from Lite-Trac by cord.
Cord-Suspended Pendant Adaptor, 93022	Required for use with item 56a (Figure A9a), adapt cord-suspended fixture to Lite-Trac.
Power Trac lighting system. Halo Lighting Division, McGraw Edison Co. (Commercial)	Pendant-mounted according to drawings: fixtures shown in Figure A9b are available. If suspended ceiling is used, this system may be recessed or surface mounted.
The following items are components of the system:	
Power Trac, L60	4 ft (1.2 m) starter trac, 49 3/8 in. (1.2 m) long, includes electric feed end and dead end, anodized satin aluminum finish; raceway cover required.
Power Trac, L61	8 ft (2.4 m) starter trac, same as L60 except 97 3/8 in. (2.4 m) long.
Power Trac, L153	Pendant kit, includes canopy, 18 in. (45.7 cm) stem, and mounting bracket. Mounted on 4 ft (1.2 m) centers to suspend power trac from ceiling; not required with suspended ceiling.
Power Trac, L151	Universal joiner fitting, used to join power trac in "L," "T," or "+" configuration.
Power Trac, L152	Raceway cover, 4 in. (10.8 cm) long.
Lampholder, "Coilex Cylinder," L412	5 in. (12.7 cm) dia, 8 1/2 in. (21.6 cm) long, 75 W, R30, satin white finish, attaches directly to power trac.
Glass Bowl Pendant Fixture, H 2510	75 W, 10 in. (25.4 cm) dia. sphere, suspended from power trac by pendant.
Fixture adapter, L156	Required for use with item 56 in Figure A9 to adapt pendant fixture to power trac.
Exit lights	Satin-anodized aluminum housing, pendant-mount, incandescent, one face, approximately 12 in. × 7 in. × 3 in. (30.5 cm × 17.8 cm × 7.6 cm) deep. Also available with top, end, or back mount and two-faced.



a. Lite-Trac Phase 3 lighting system.



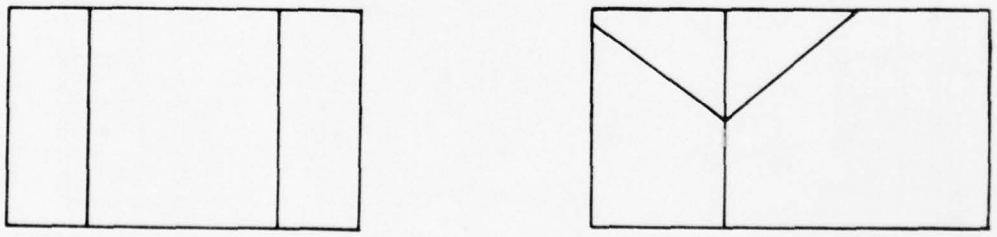
b. Power Trac lighting system.

Figure A9. Lighting fixtures.

Table A13
Predominant Wall Paint Color and Patterns

Dining Hall Number	Predominant Wall Color and Pattern*
3024	Red geometric pattern
3108	Brown geometric pattern
3206	Red geometric pattern
3701	Blue striped pattern
8400	Red-purple striped pattern and red-gray striped pattern
8402	Green geometric and blue geometric patterns
9303	Green geometric pattern
9304	Red geometric pattern

*See Figure A10 for illustration of patterns.



a. Striped pattern

b. Geometric pattern

Figure A10. Wall paint coloring patterns.

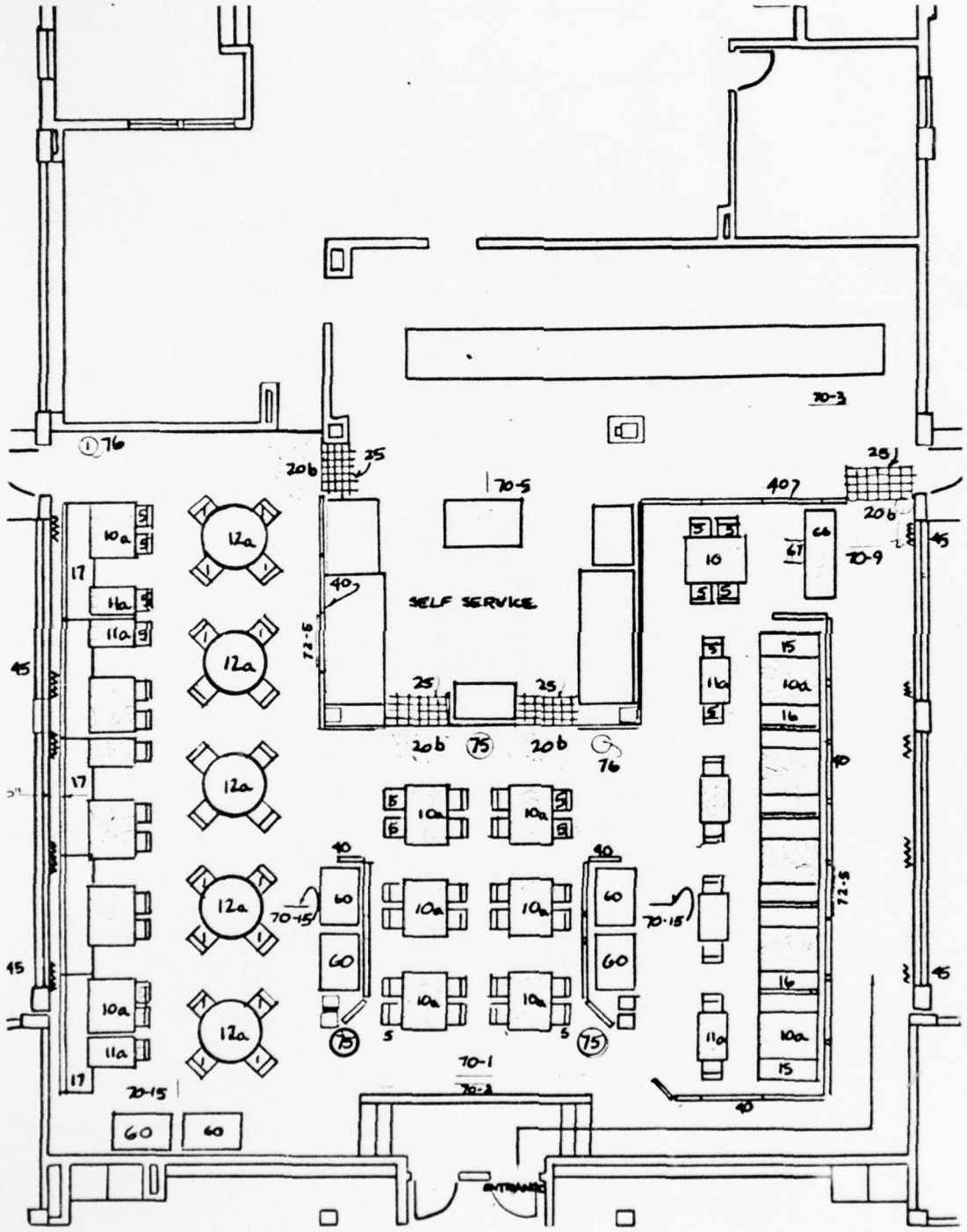


Figure A11. Furniture layout of building 3024.

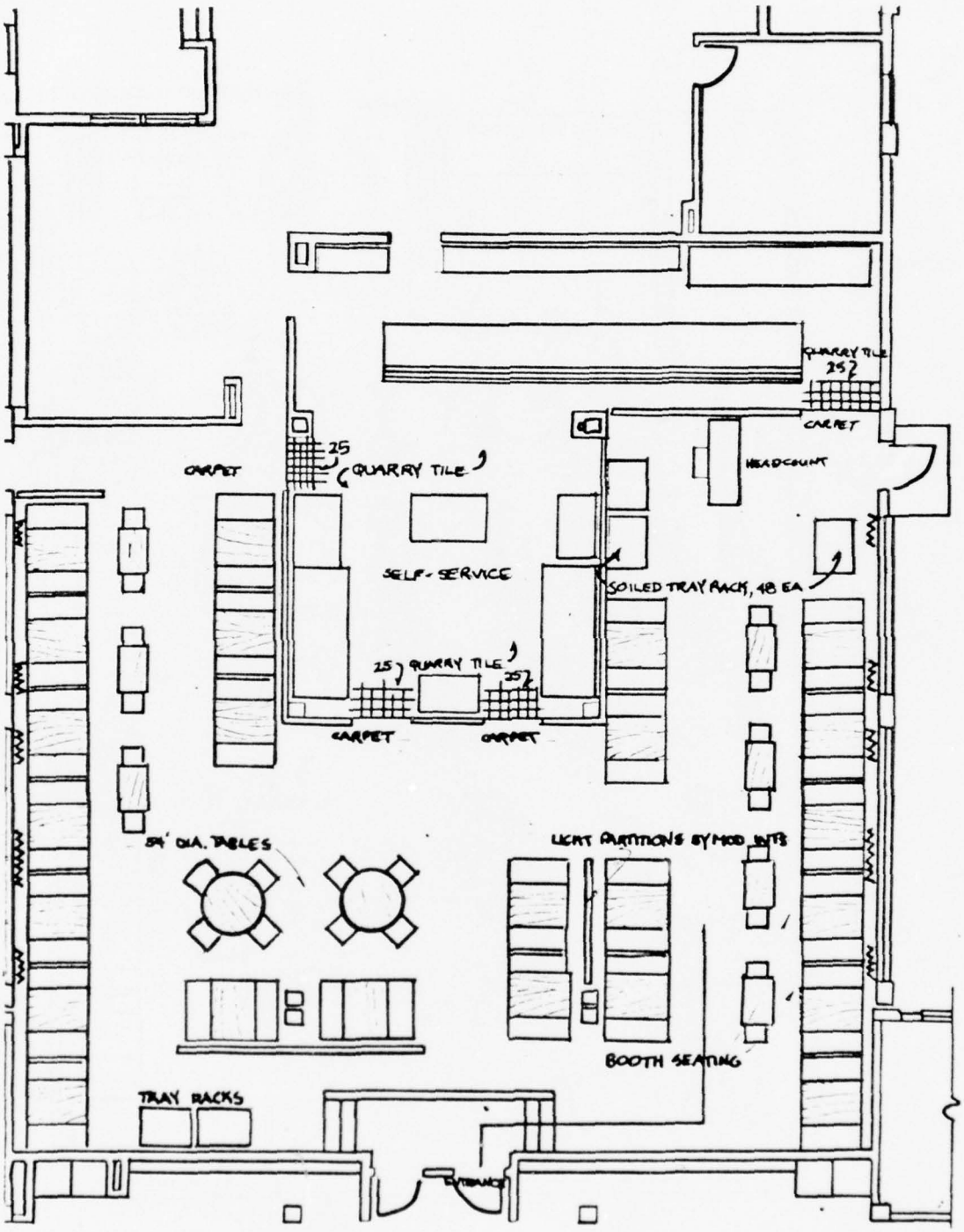


Figure A12. Furniture layout of building 3108.

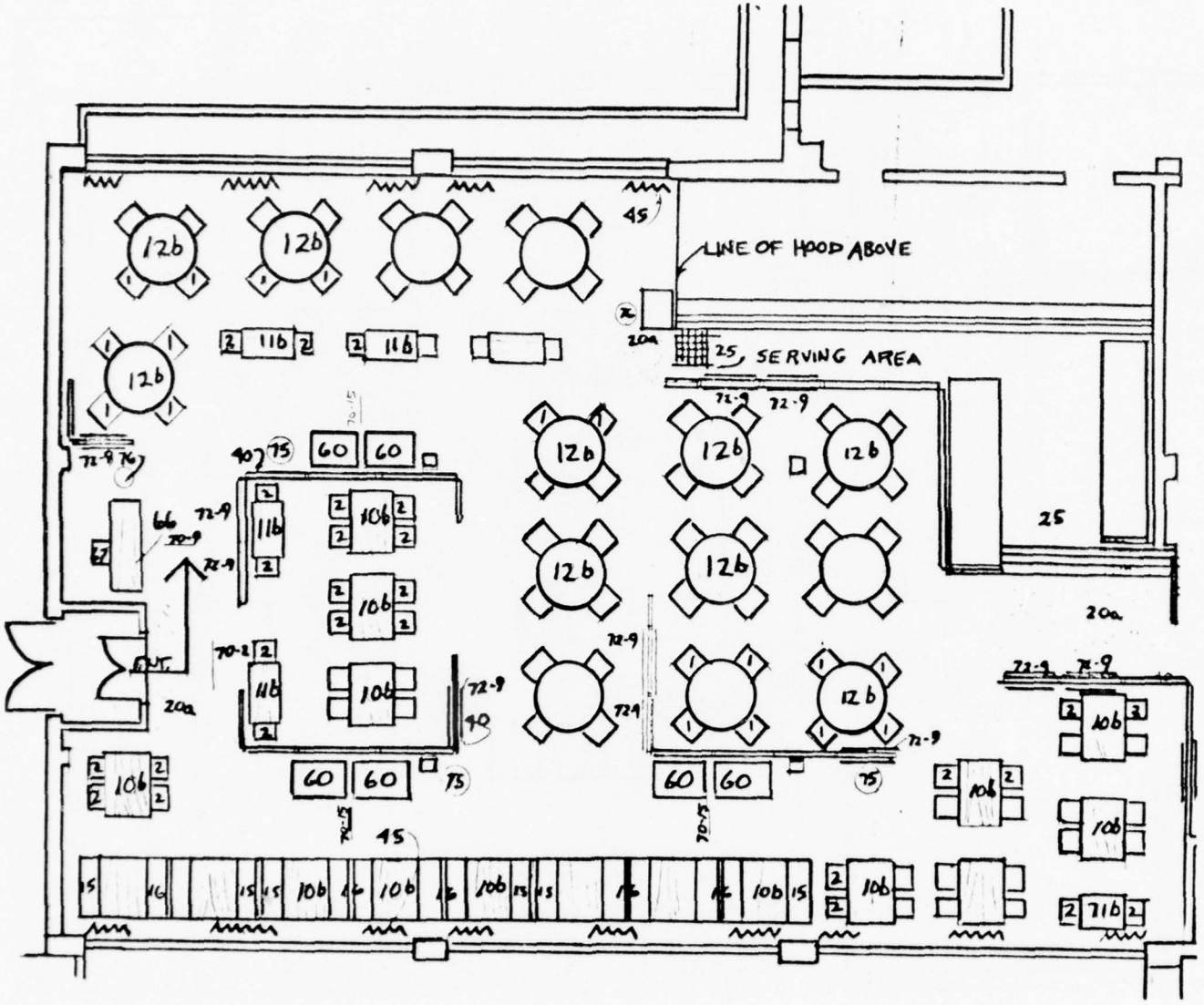


Figure A13. Furniture layout of building 3206.

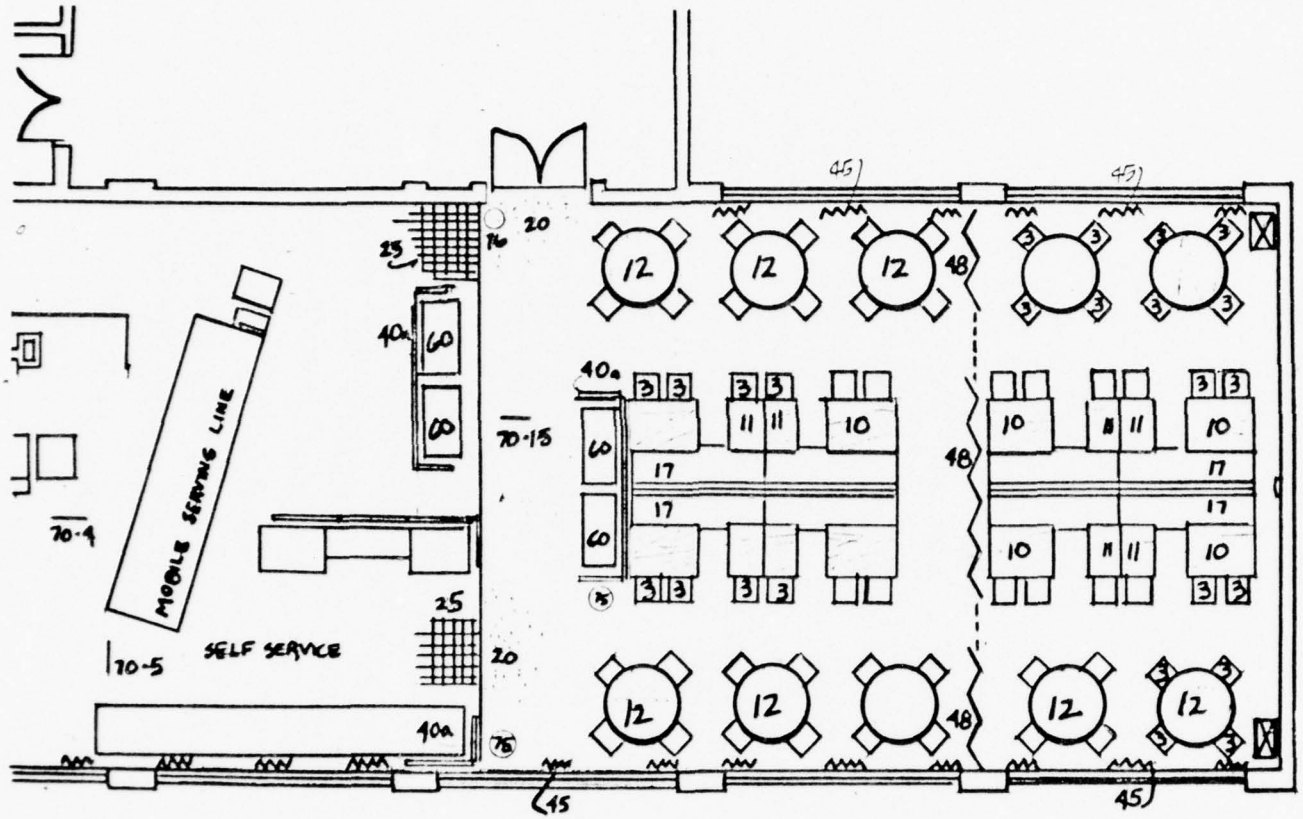


Figure A14. Furniture layout of building 3701.

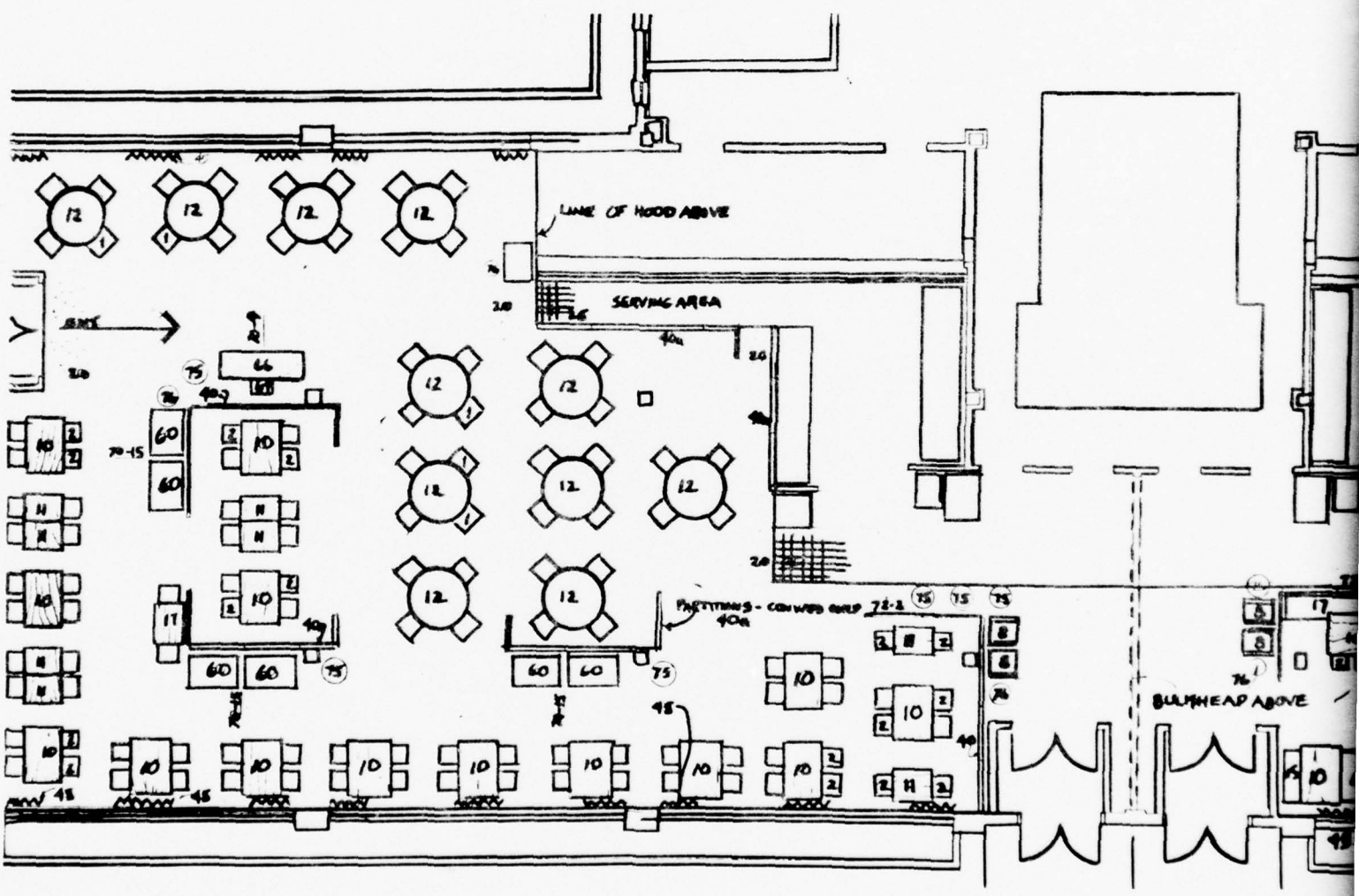


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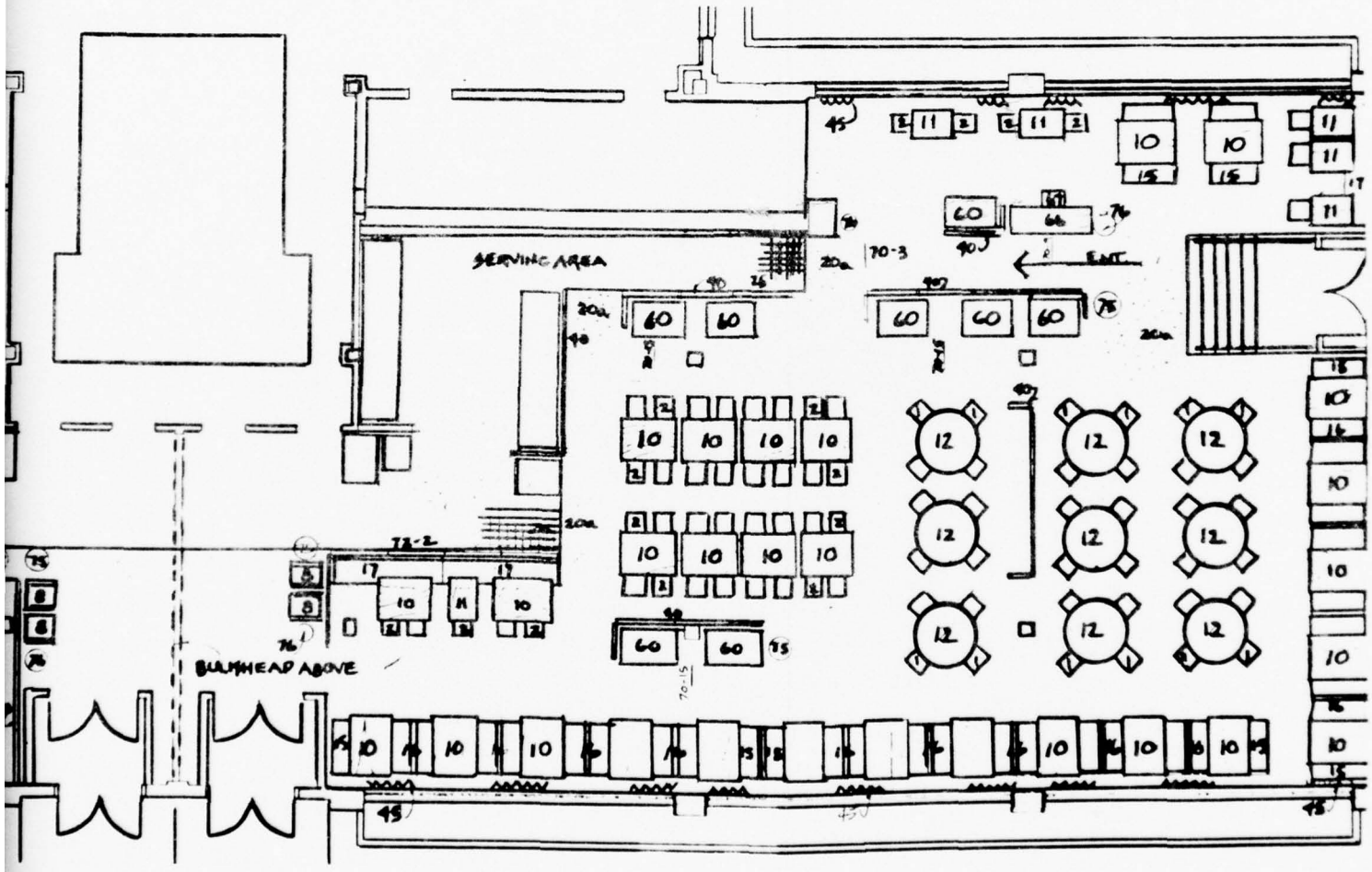
Figure A15. Furniture layout of building 8400.



PY

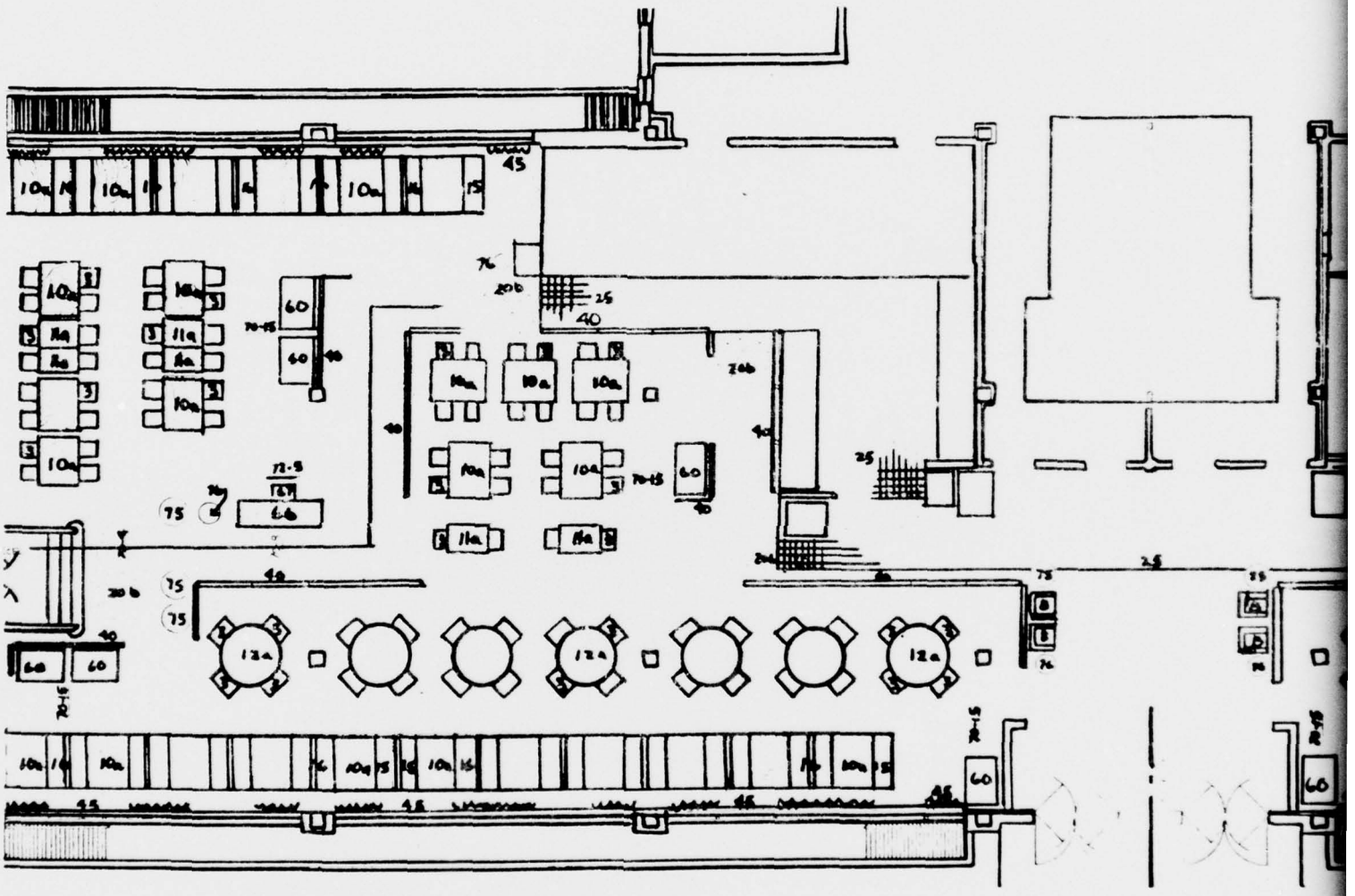


Figure A16. Furniture layout of building 8402.

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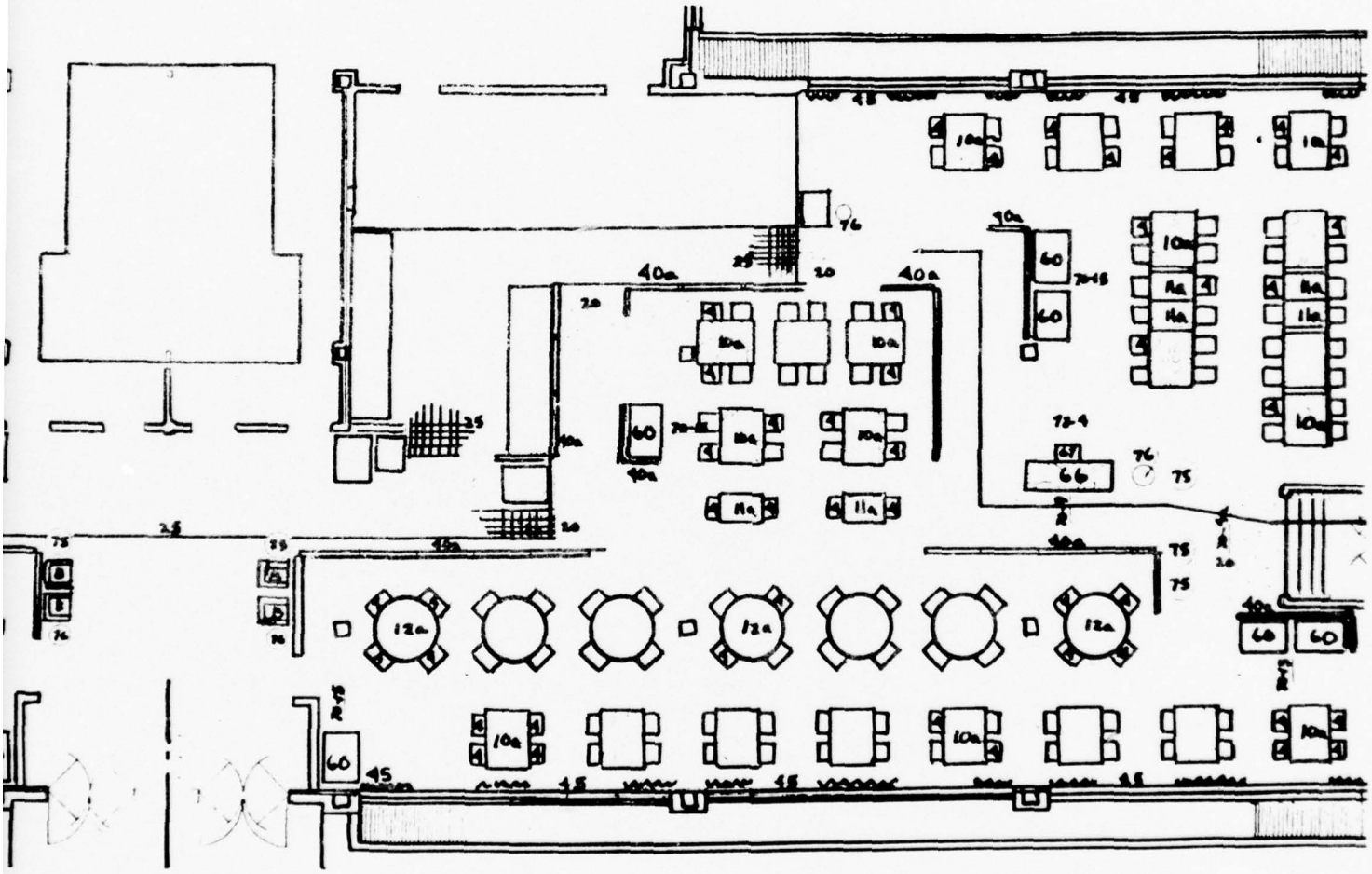
10a
60
40a
20
12a
11a
66
67
75
76
45

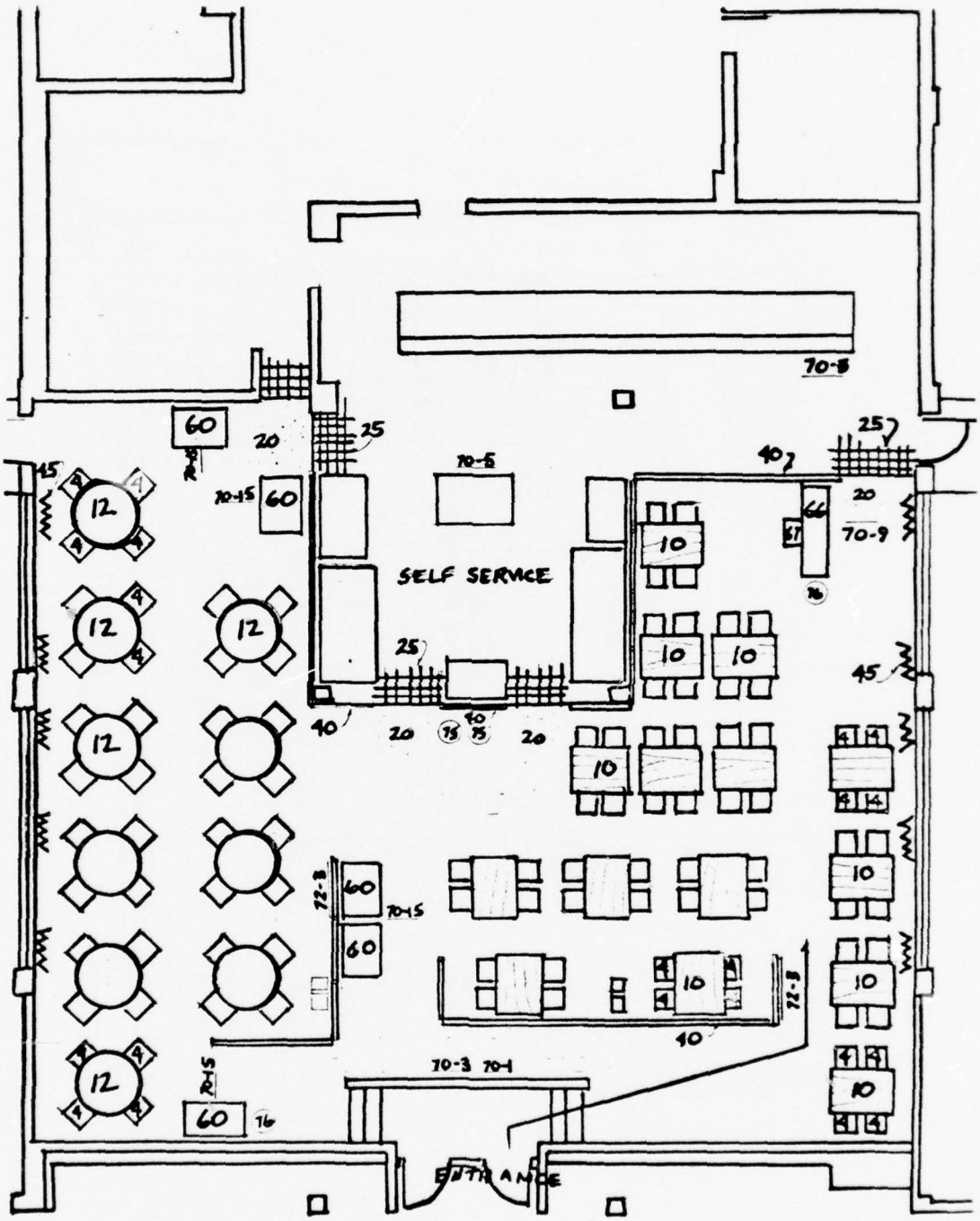

Figure A17. Furniture layout of building 9303.

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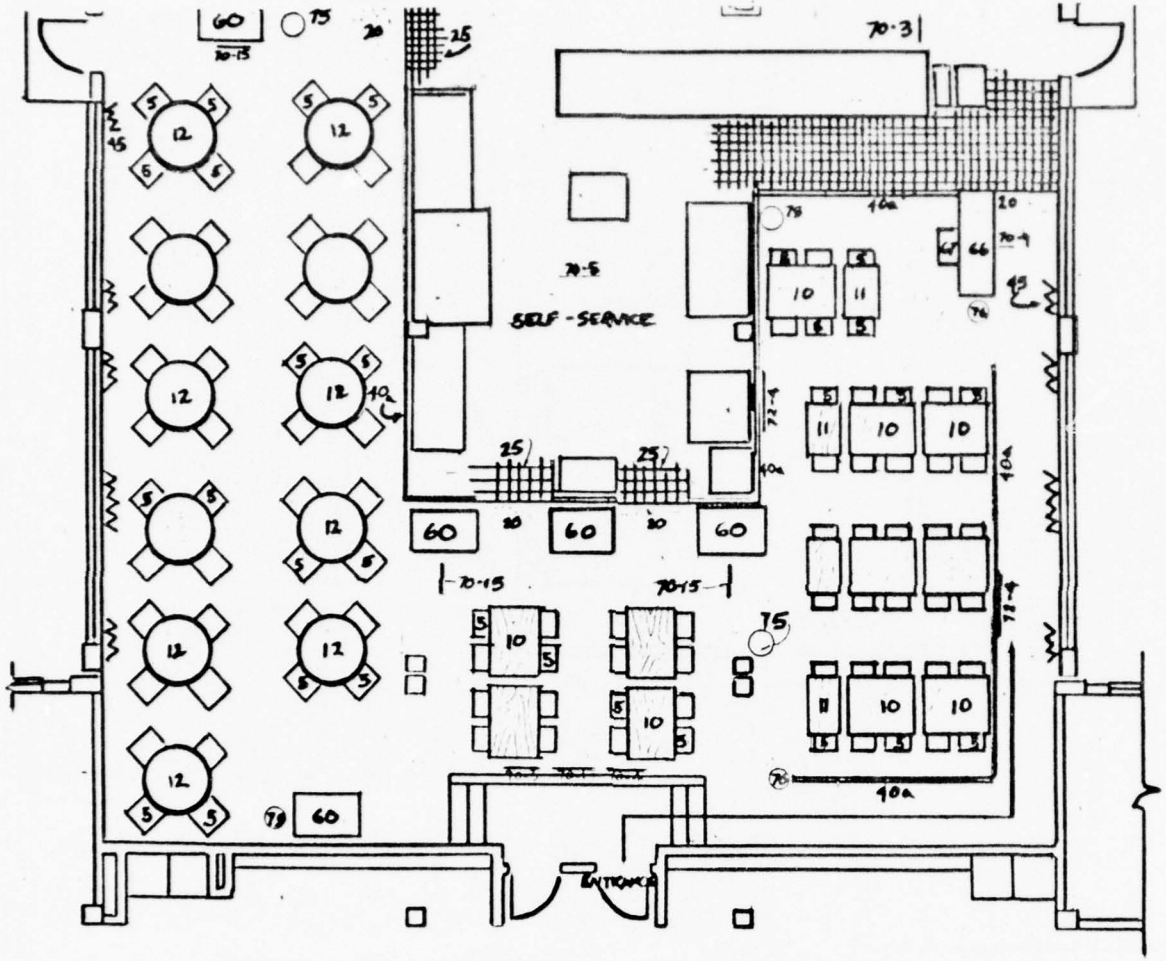


Figure A18. Furniture layout of building 9304.

APPENDIX B: QUESTIONNAIRE

DEPARTMENT OF THE ARMY
CONSTRUCTION ENGINEERING RESEARCH LABORATORY
P. O. BOX 4005
CHAMPAIGN, ILLINOIS 61820

The purpose of this study is to record your preferences to aid designers who are currently involved in the improvement of military dining facilities.

You can help improve these facilities by giving us your opinions about the dining hall, and by selecting decor items which you most prefer.

The information requested by this survey will be used for research purposes only and all responses will be held in strict confidence. Your name will not be linked with your answers.

Your assistance is greatly appreciated.

1. SATISFACTION WITH EXISTING DECOR ITEMS.

On the following page is a list of twenty items which you are asked to rate by indicating your degree of satisfaction with each item.

Indicate your DEGREE OF SATISFACTION by placing a mark on the 0-100 scale provided. If you have had average satisfaction with the item, make a mark near the midpoint of the scale. For satisfaction higher than average, make the mark closer to 100, and for satisfaction less than average, mark closer to 0.

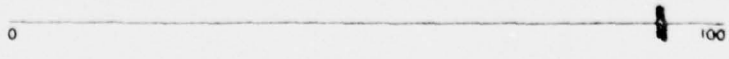
EXAMPLE 1a. *Indicate your satisfaction with the:*

CONDITION OF EXIT DOORS

If the exit doors are scratched, marred, and slam when shut, you might indicate your satisfaction with their condition as *low* by marking the line as shown above.

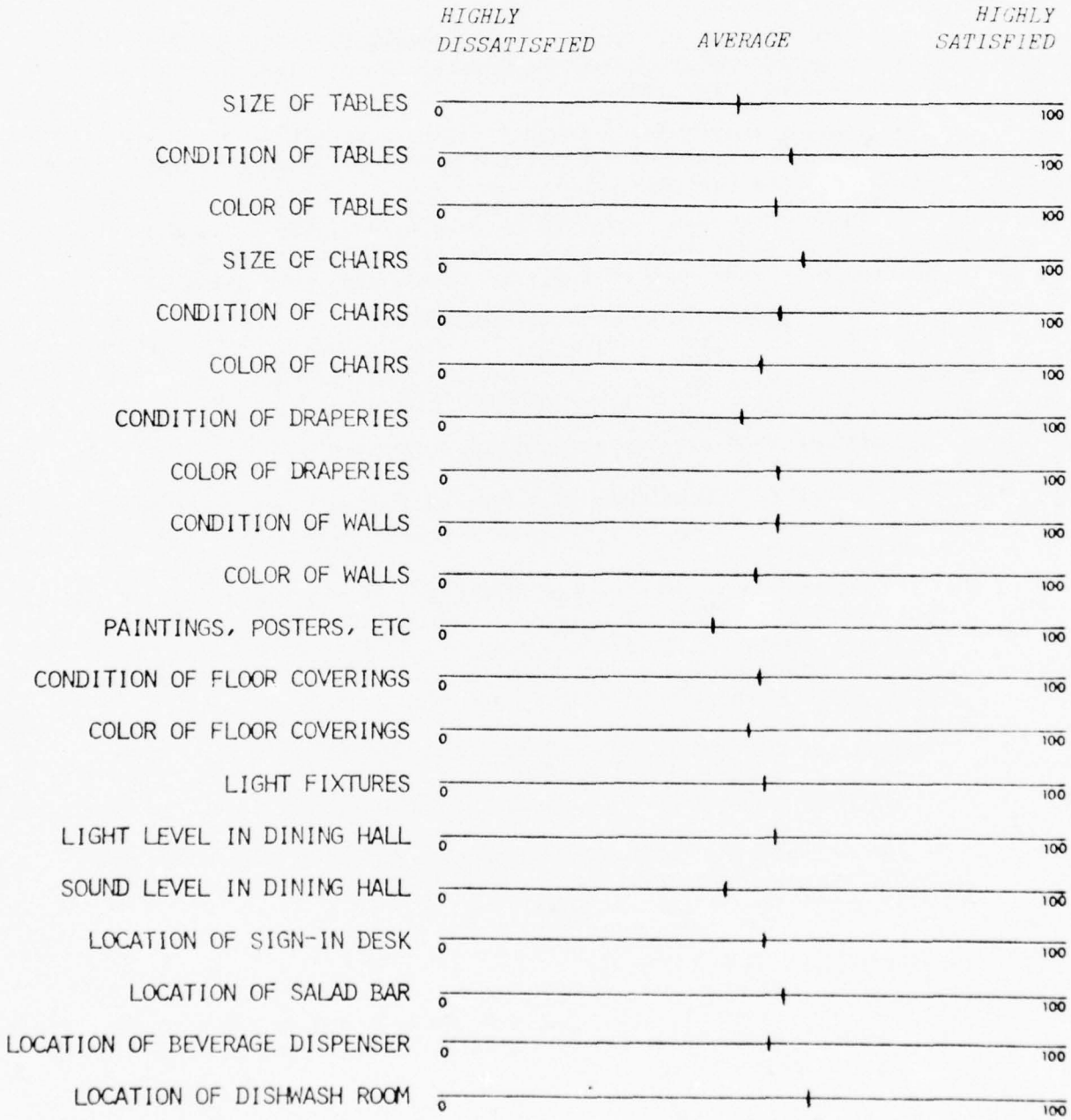
EXAMPLE 1b.

If the exit doors are not scratched, marred, and do not slam when shut, you might indicate your satisfaction with their condition as *high* by marking the line as shown below.

CONDITION OF EXIT DOORS 

Now, please indicate your DEGREE OF SATISFACTION with each of the following items:

MEANS, ENTIRE POPULATION (N=892)



2. DESCRIPTION OF YOUR DINING HALL

Between each pair of opposite adjectives a line has been provided. You are asked to mark each line at the point between the adjectives which best describes your dining hall. If you think the dining hall is SOMEWHAT CLUTTERED, *you would make a mark to the left of center toward* CLUTTERED. *If you think the dining hall is* SOMEWHAT UNCLUTTERED, *then you would make a mark to the right of center toward* UNCLUTTERED. *If you think that the dining hall is* NEITHER, *you would make a mark near the middle of the line provided.*

EXAMPLE 2. *Mark the line between the pair of opposite adjectives at the point which best describes the* INTERIOR OF YOUR DINING HALL.

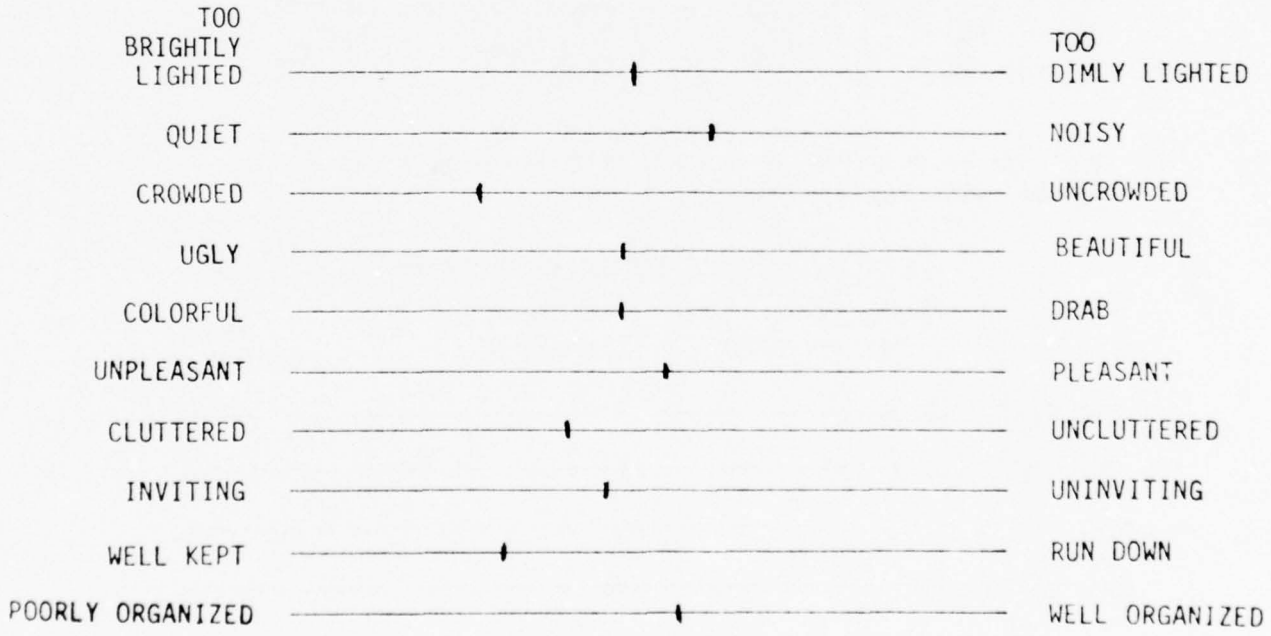
CLUTTERED ——|—————————————————— UNCLUTTERED

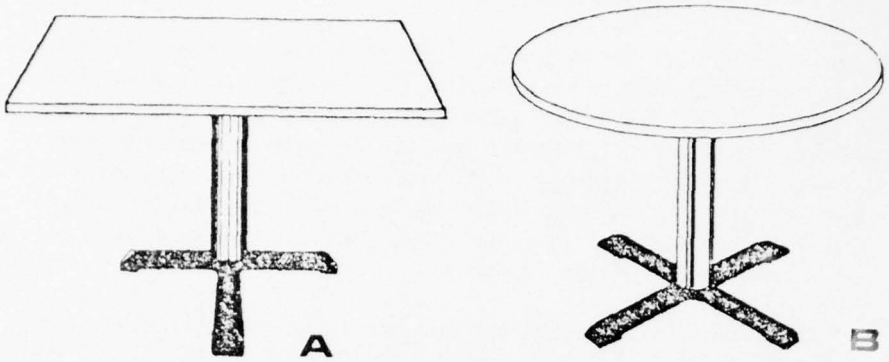
This mark says that you think your dining hall is VERY CLUTTERED.

Now, mark each line between the following pairs of opposite adjectives at the point which best describes the INTERIOR OF YOUR DINING HALL.

MEANS, ENTIRE POPULATION (N=875)

MY DINING HALL IS:

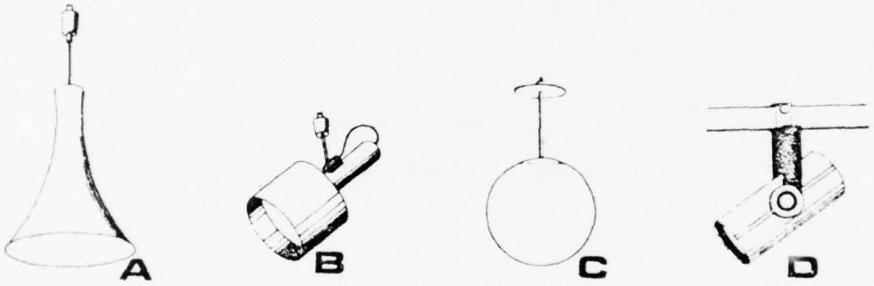




PERCENTAGES, ENTIRE POPULATION (N=904)

3. *Check the box of the* TABLE SHAPE *you most prefer.*

A	B
55%	45%

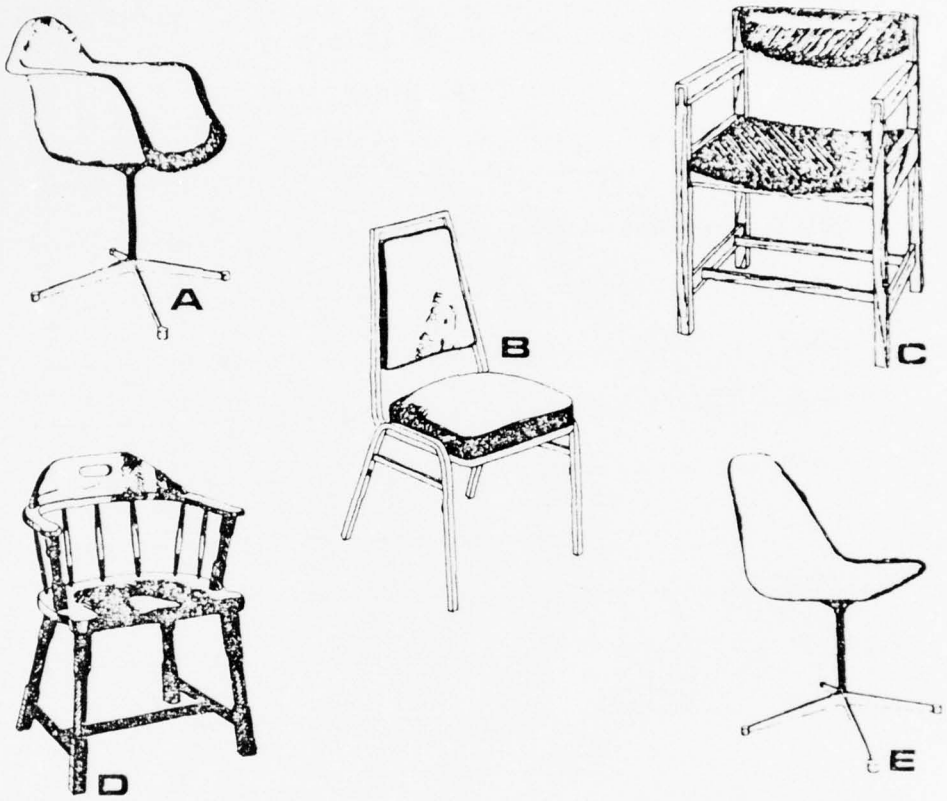


4. *Indicate your DEGREE OF SATISFACTION for each* LIGHT FIXTURE *on the 0-100 scale below.*

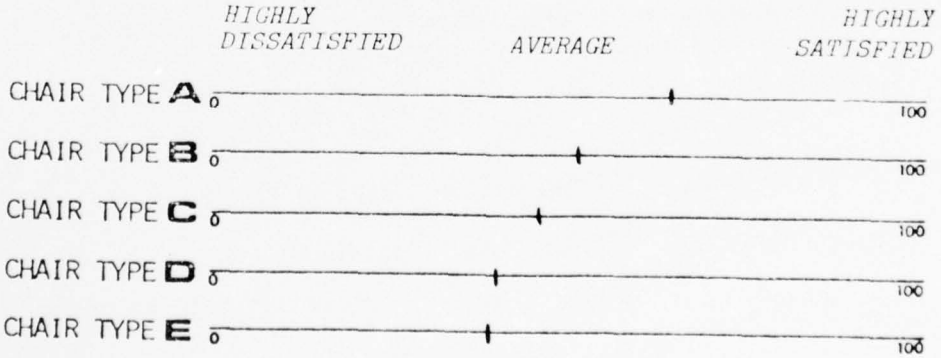
MEANS, ENTIRE POPULATION (N=859)

	HIGHLY DISSATISFIED 0	*AVERAGE*	*HIGHLY SATISFIED* 100
LIGHT FIXTURE **A**			
LIGHT FIXTURE **B**			
LIGHT FIXTURE **C**			
LIGHT FIXTURE **D**			

5. *Indicate your DEGREE OF SATISFACTION for each* CHAIR TYPE.



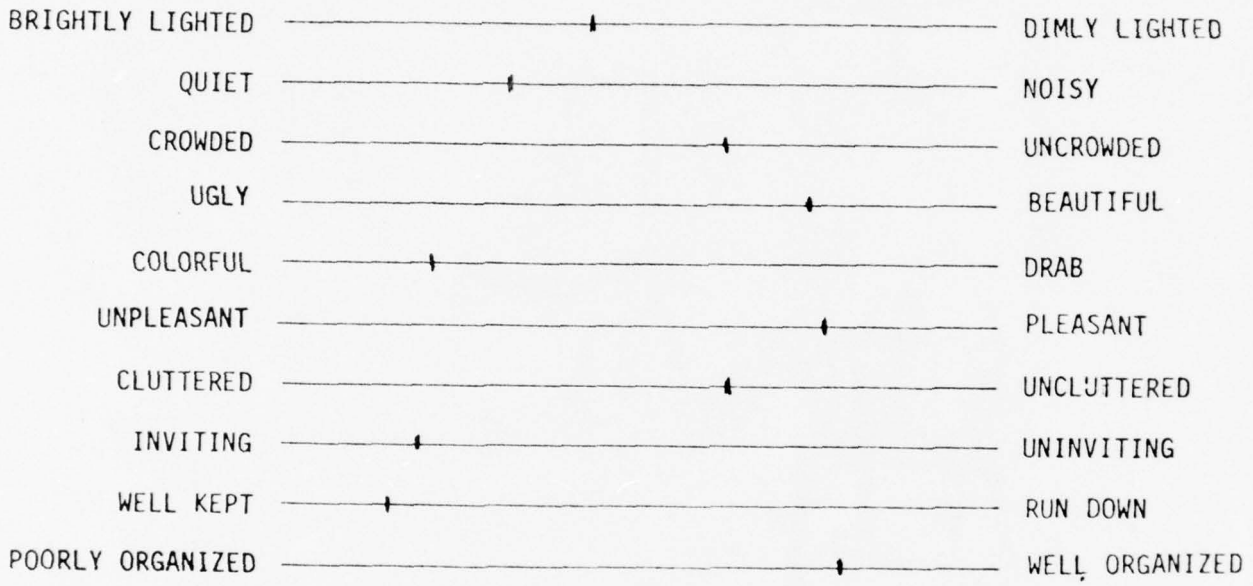
MEANS, ENTIRE POPULATION (N=860)



MEANS, ENTIRE POPULATION (N=880)

6. *Using the same technique which you used to describe your dining hall for question 2, please mark the line between each pair of opposite adjectives at the point which best describes an* IDEAL DINING HALL.

MY IDEAL DINING HALL IS:



PERCENTAGES, ENTIRE POPULATION (N=918)

7. Below is a list of six SEATING ARRANGEMENTS. *Please select <u>two</u> of the seating arrangements which you would prefer for your dining hall.*

Place Xs in the boxes next to your <u>two</u> preferences.

Percent	
1.0	☐ TWO MAN RECTANGULAR TABLE
9.4	☐ FOUR MAN RECTANGULAR TABLE
9.2	☐ MORE THAN FOUR MAN RECTANGULAR TABLE
17.0	☐ FOUR MAN ROUND TABLE
16.4	☐ MORE THAN FOUR MAN ROUND TABLE
47.1	☐ FOUR MAN BOOTH

PERCENTAGES, ENTIRE POPULATION (N=943)

8. Below is a list of five WALL FINISHES. *Please select two of the finishes which you would prefer for your dining hall.*

Place Xs in the boxes next to your two preferences.

Percent

1.8 ☐ SMOOTH FINISH

5.6 ☐ TEXTURED FINISH

47.5 ☐ WOOD PANELING

25.5 ☐ VINYL WALL COVERING

19.6 ☐ CERAMIC TILE

9. Below is a list of four types of FLOORING. *Please select two of the types of flooring which you would prefer for your dining hall.*

Place Xs in the boxes next to your two preferences.

PERCENTAGES, ENTIRE POPULATION (N=950)

2.6 ☐ VINYL TILE

6.5 ☐ HARDWOOD

8.8 ☐ QUARRY (CLAY) TILE

82.0 ☐ CARPETING

10. If a LOUNGE AREA was provided in your dining hall, would you use it

BEFORE YOUR MEAL? *Place an X in the box next to your answer.*

PERCENTAGES, ENTIRE POPULATION (N=900)

35.1 ☐ DEFINITELY YES

24.8 ☐ PROBABLY YES

23.5 ☐ MAYBE

12.4 ☐ PROBABLY NO

4.2 ☐ DEFINITELY NO

AFTER YOUR MEAL? *Place an X in the box next to your answer.*

42.3 ☐ DEFINITELY YES
28.9 ☐ PROBABLY YES
20.6 ☐ MAYBE
5.9 ☐ PROBABLY NO
2.3 ☐ DEFINITELY NO

11. Below is a list of eighteen DINING HALL INTERIOR DECOR ITEMS. *If you were to select new items for your dining hall, indicate which five would be* MOST IMPORTANT *to have by placing the letter of the item on the appropriate line.*

RANKS, ENTIRE POPULATION (N=950)

_____ 1ST MOST IMPORTANT
_____ 2ND MOST IMPORTANT
_____ 3RD MOST IMPORTANT
_____ 4TH MOST IMPORTANT
_____ 5TH MOST IMPORTANT

		Rank			Rank
A.	NEW PAINT ON THE WALLS	13th	J.	LIVE PLANTS IN PLANTERS	7th
B.	CARPET FOR THE FLOOR	5th	K.	AIR CONDITIONING	2nd
C.	NEW LIGHT FIXTURES	12th	L.	SCREENING PARTITIONS	16th
D.	NEW TABLES	11th	M.	COAT STANDS IN DINING AREA	15th
E.	NEW CHAIRS	10th	N.	NEW DRAPERIES	14th
F.	FOUR MAN BOOTHS	9th	O.	NEW POSTERS AND PAINTINGS ON WALLS	6th
G.	REST ROOMS	4th	P.	NEW MUSIC SYSTEM	1st
H.	LOWERED CEILING	17th	Q.	LOUNGE IN DINING AREA	3rd
I.	NEW ENTRY-EXIT DOORS	8th	R.	DOORS TO CLOSE OFF KITCHEN AREA	8th

12. *Please describe any* GOOD FEATURES *of the interior of your dining hall.*

None recorded

13. *Please describe any BAD FEATURES of the interior of your dinning hall.*

None recorded

BACKGROUND FACTORS

MEDIAN FOR ENTIRE POPULATION

14. *Darken the appropriate circles which indicate your* AGE *at your last birthday. Darken one circle in each row.*

FIRST DIGIT ① ⊗ ③ ④ ⑤ ⑥

SECOND DIGIT ⊗ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

15. *Darken the circle which indicates your* RACE.

	Percent
○ CAUCASIAN	53.0
○ BLACK AMERICAN	39.0
○ ORIENTAL	1.8
○ OTHER (SPECIFY 6.2)	

16. *Darken the circle which indicates your* SEX.

○ MALE	81.0
○ FEMALE	19.0

17. *Darken the circle which indicates your* HIGHEST LEVEL of EDUCATION.

Percent	
	○ SOME GRADE SCHOOL
	○ FINISHED GRADE SCHOOL
18.6	○ SOME HIGH SCHOOL
50.3	○ HIGH SCHOOL GRADUATE (*includes* GED)
26.3	○ SKILLED JOB TRAINING
	○ SOME COLLEGE
	○ COLLEGE GRADUATE
4.8	○ BEYOND COLLEGE

18. *How long have you been in* MILITARY SERVICE? *Darken one circle in each row.*

MEDIAN

YEARS ⓪ ⊗ ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯

MONTHS ⓪ ⊗ ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

19. *Darken the circle which indicates your* PRESENT GRADE.

Median ~~E-2~~

○ E-1
○ E-2
○ E-3
○ E-4
○ E-5
○ E-6
○ E-7
○ E-8
○ E-9

PERCENTAGES, ENTIRE POPULATION (N=865)

20. *How many* MEALS DO YOU EAT DURING A TYPICAL WEEK IN THIS DINING HALL? *If you have "BRUNCH" on Saturdays or Sundays, consider it to be a mid-day meal. Darken one circle in each row.*

BREAKFAST	⓪①②③④⑤⑥Ⓧ	16.8	All meals.
MID-DAY MEAL	⓪①②③④⑤⑥Ⓧ	21.9	" "
EVENING MEAL	⓪①②③④⑤⑥Ⓧ	19.6	" "

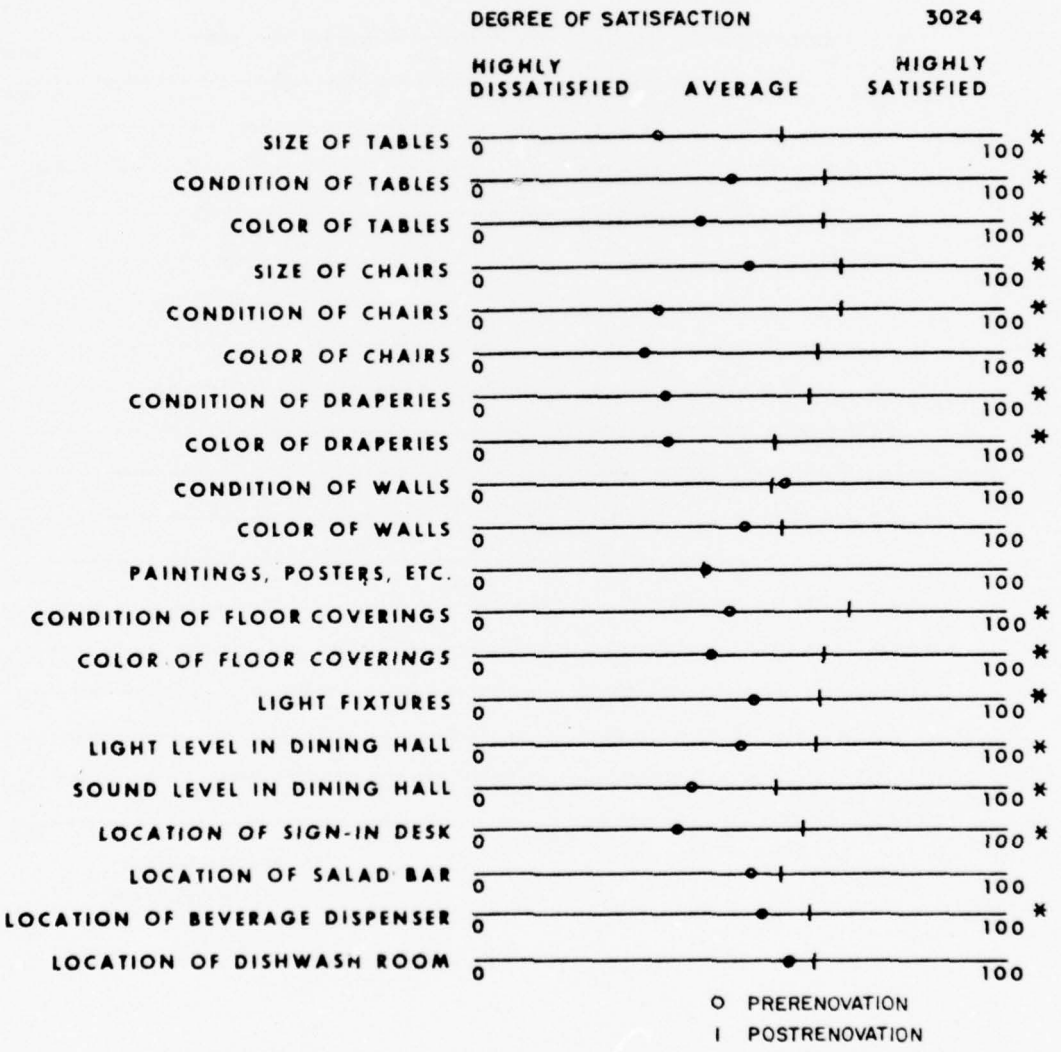
PERCENTAGES, ENTIRE POPULATION (N=923)

21. *Do you plan to* RENLIST *when your present enlistment ends? Darken the appropriate circle.*

○ DEFINITELY YES ○ PROBABLY YES	29.5
○ UNDECIDED	
○ PROBABLY NO ○ DEFINITELY NO	40.8

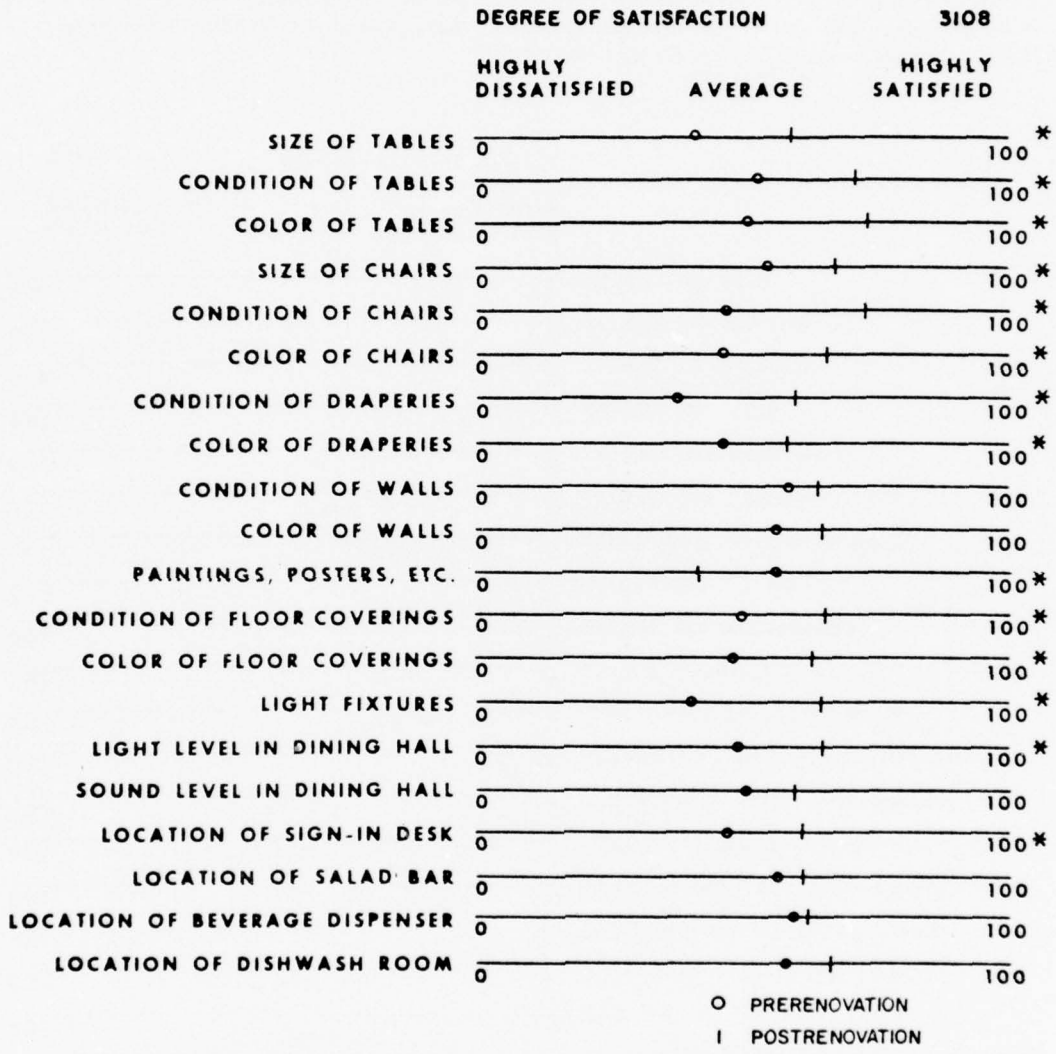
APPENDIX C: COMPARISONS OF PRE- AND POSTRENOVATION CONSUMER EVALUATIONS

Figures C1 through C7 present comparisons of pre- and postrenovation mean satisfaction ratings for the seven buildings evaluated. Figures C8 through C14 present comparisons of the pre- and postrenovation mean descriptive ratings for each building.



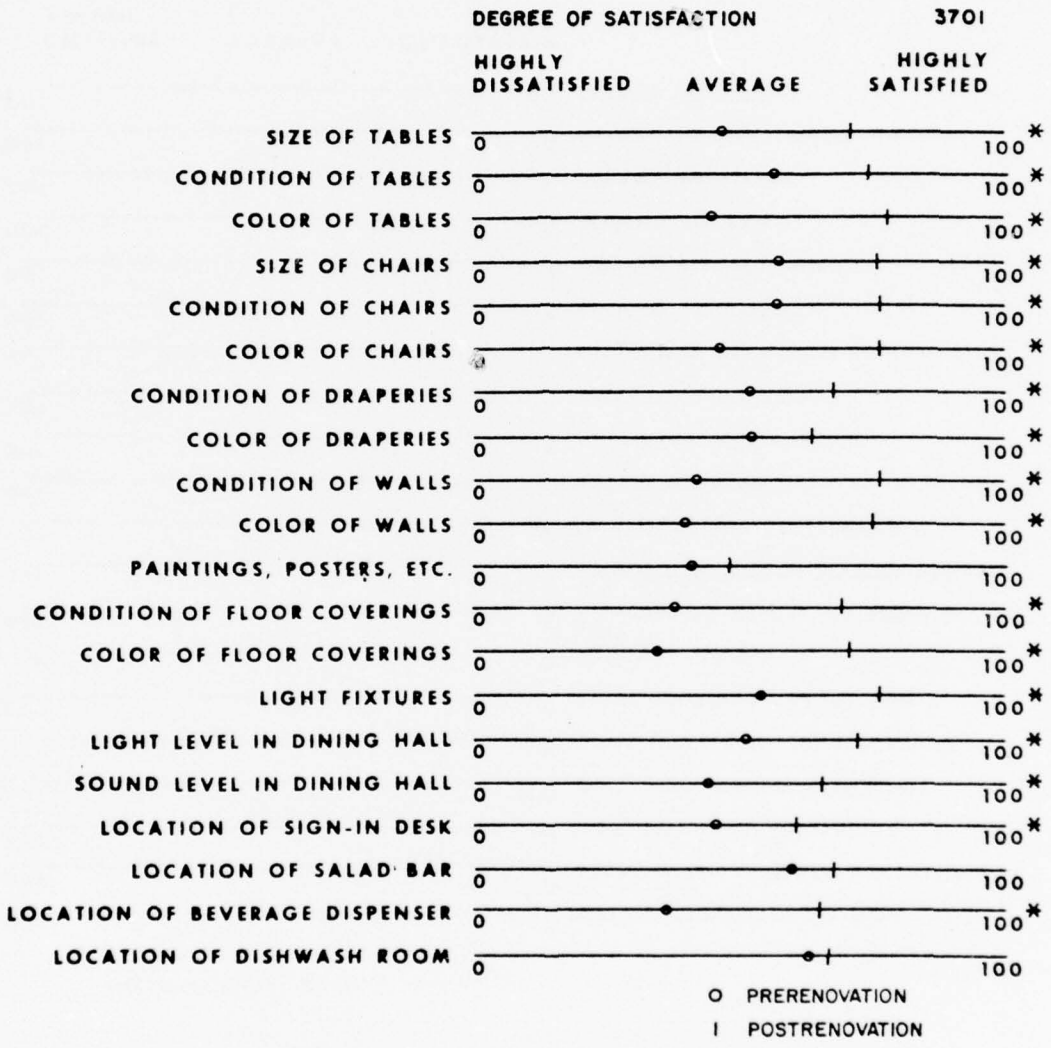
*indicates significant difference between group means based on a one-tailed t-test ($p \leq .05$).

Figure C1. Comparison of pre- and postrenovation mean satisfaction ratings of building 3204.



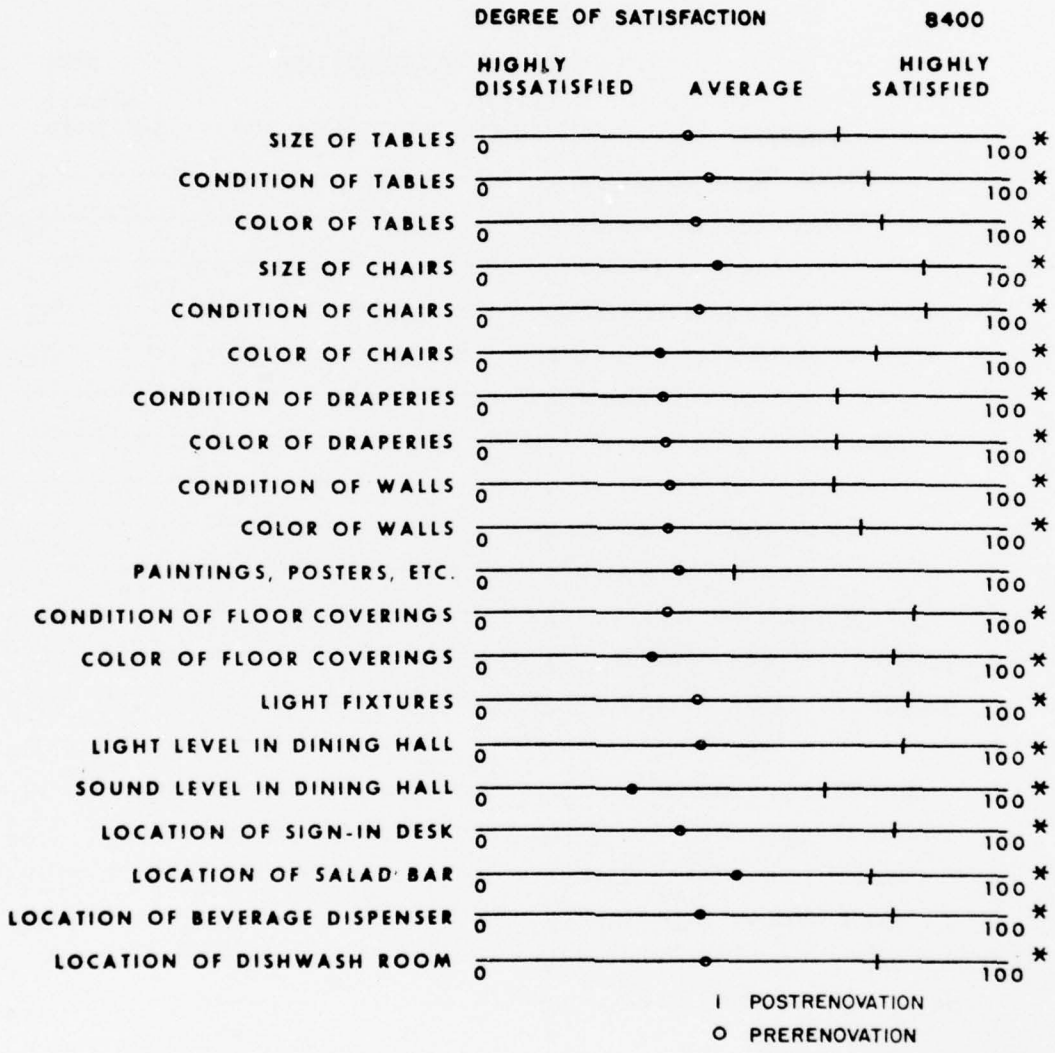
*indicates significant difference between group means based on a one-tailed t-test ($p \leq .05$).

Figure C2. Comparison of pre- and postrenovation mean satisfaction ratings of building 3108.



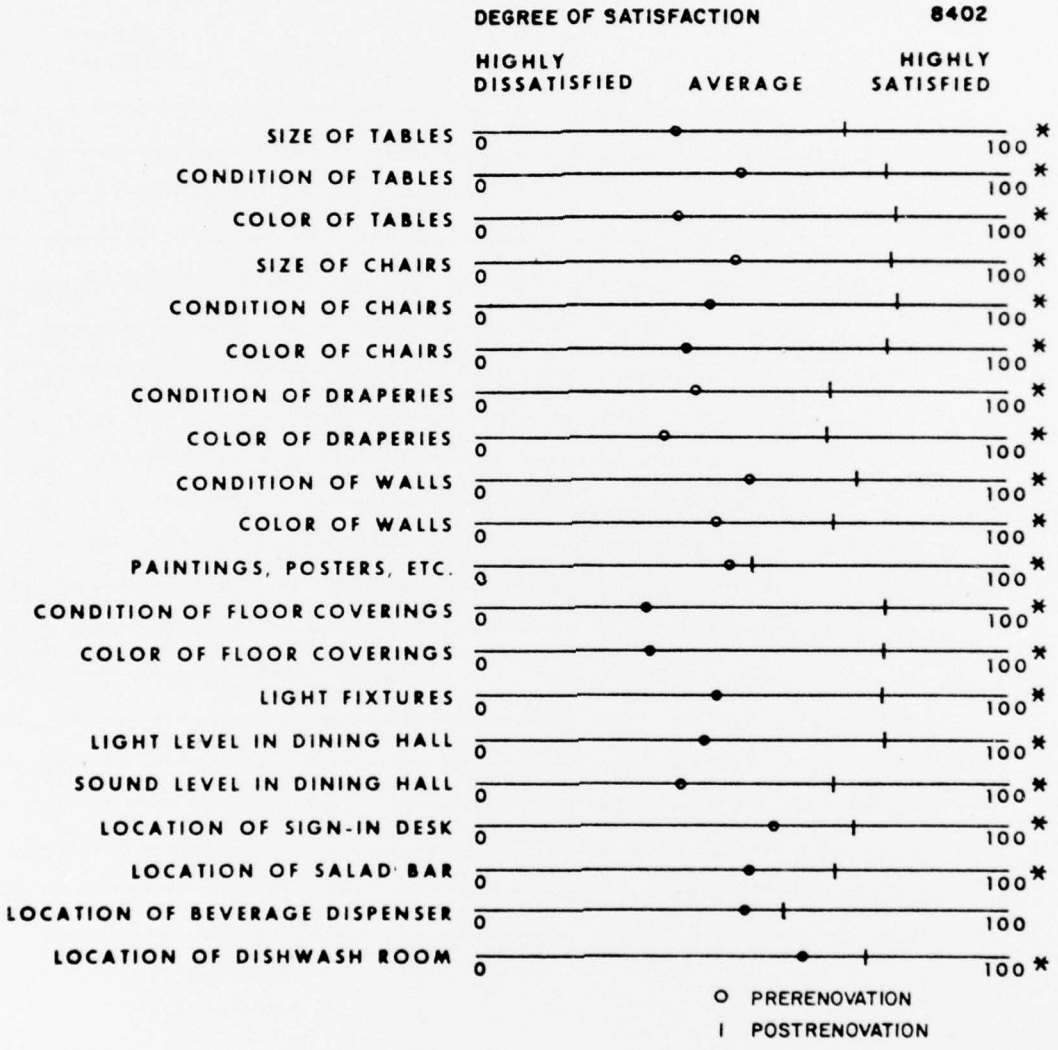
*indicates significant difference between group means based on a one-tailed t-test ($p \leq .05$).

Figure C3. Comparison of pre- and postrenovation mean satisfaction ratings of building 3701.



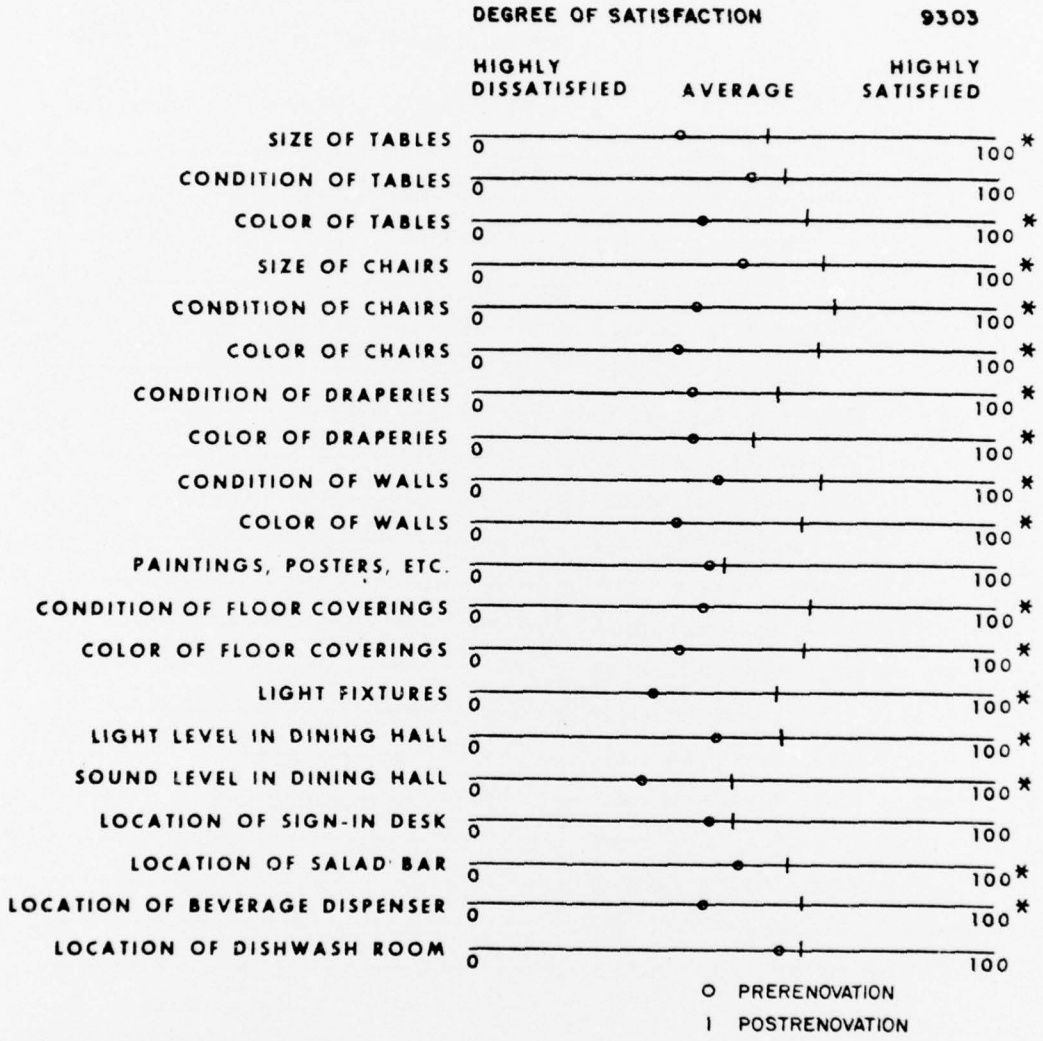
*indicates significant difference between group means based on a one-tailed t-test ($p \leq .05$).

Figure C4. Comparison of pre- and postrenovation mean satisfaction ratings of building 8400.



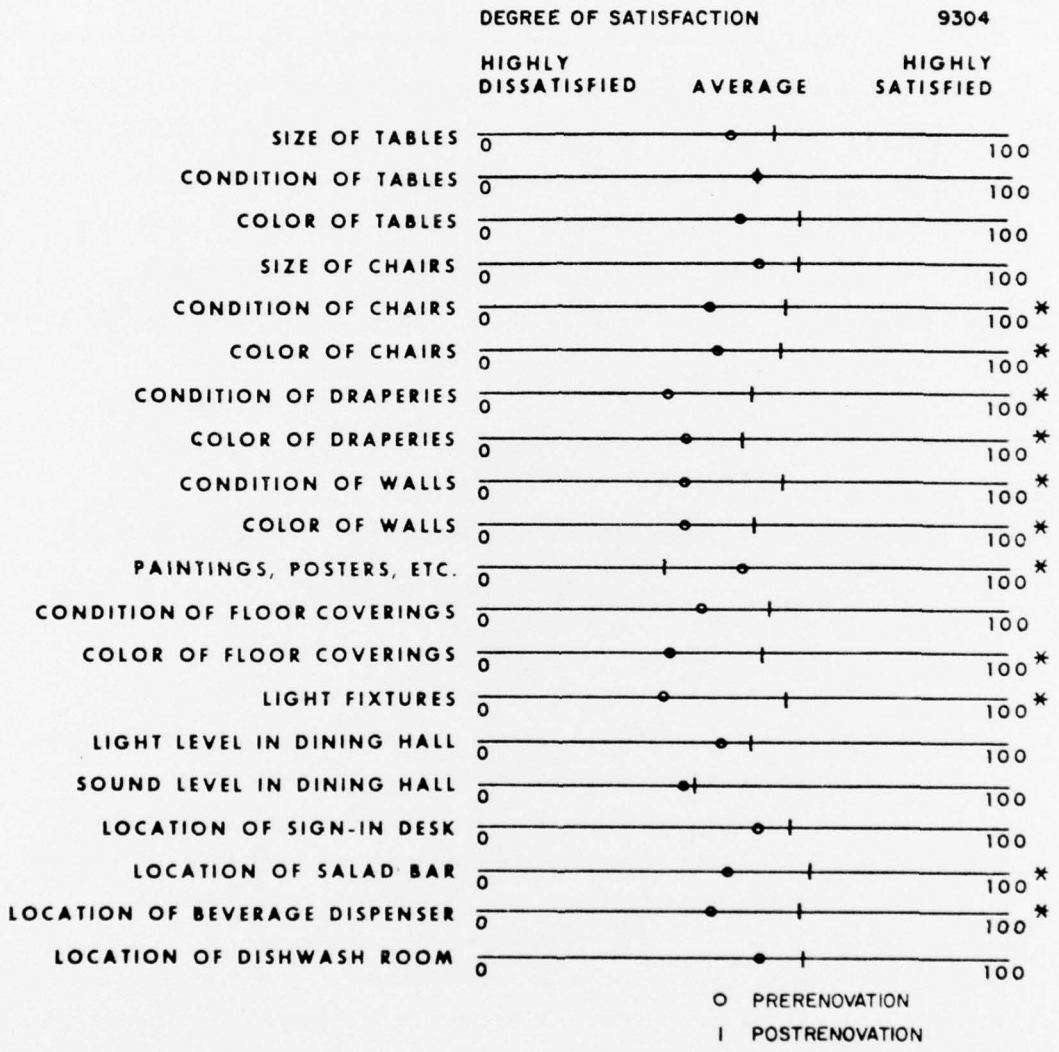
*indicates significant difference between group means based on a one-tailed t-test ($p \leq .05$).

Figure C5. Comparison of pre- and postrenovation mean satisfaction ratings of building 8402.



*indicates significant difference between group means based on a one-tailed *t*-test ($p \leq .05$).

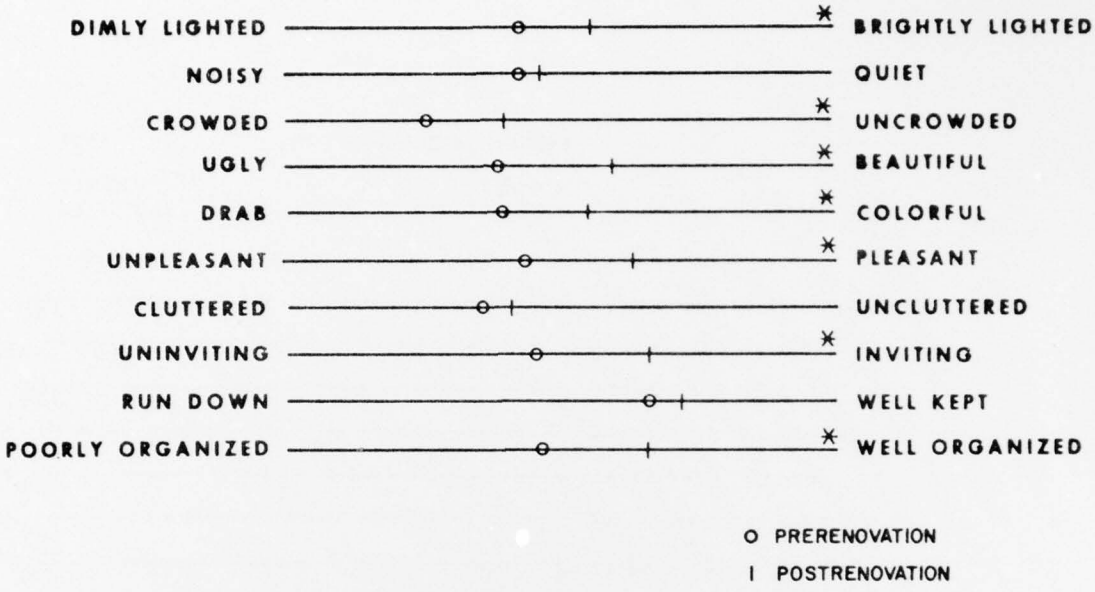
Figure C6. Comparison of pre- and postrenovation mean satisfaction ratings of building 9303.



*indicates significant difference between group means based on a one-tailed *t*-test ($p \leq .05$).

Figure C7. Comparison of pre- and postrenovation mean satisfaction ratings of building 9304.

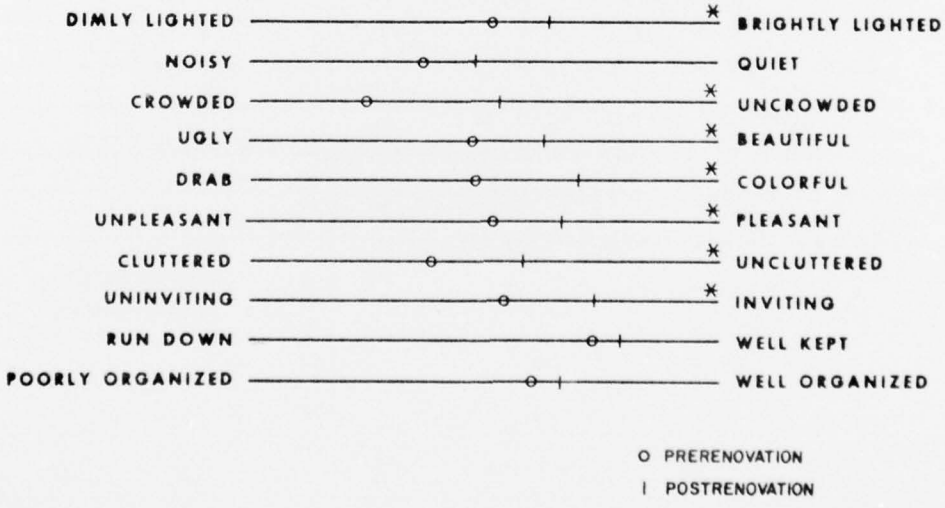
3024



*indicates significant difference between group means based on a one-tailed t-test ($p \leq .05$).

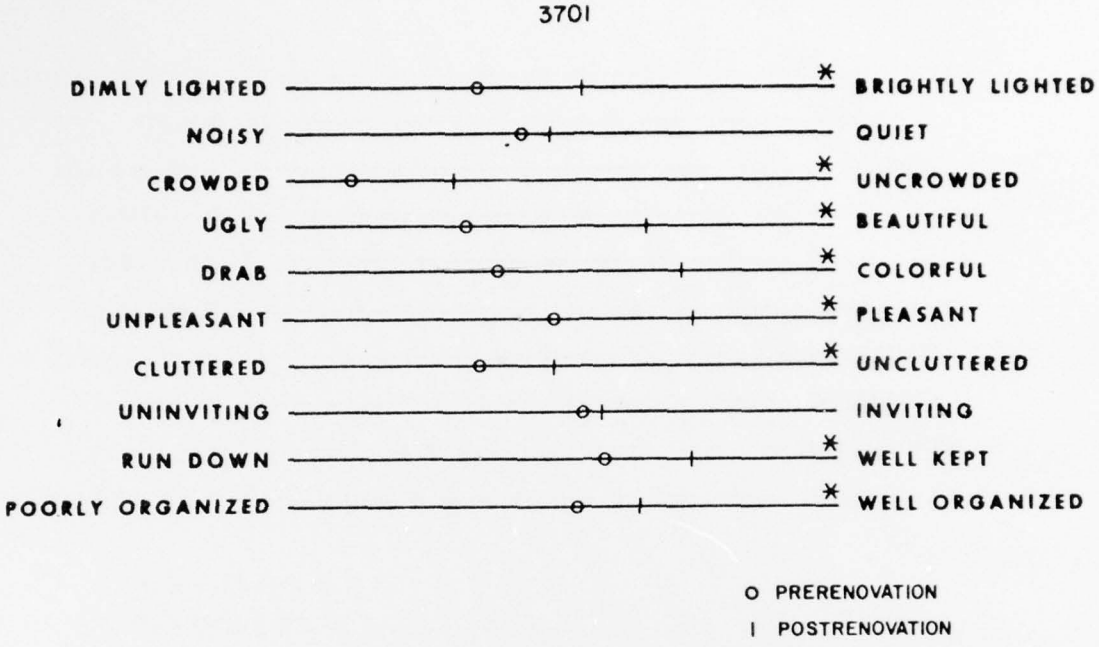
Figure C8. Comparison of pre- and postrenovation mean descriptive ratings for building 3024.

3108



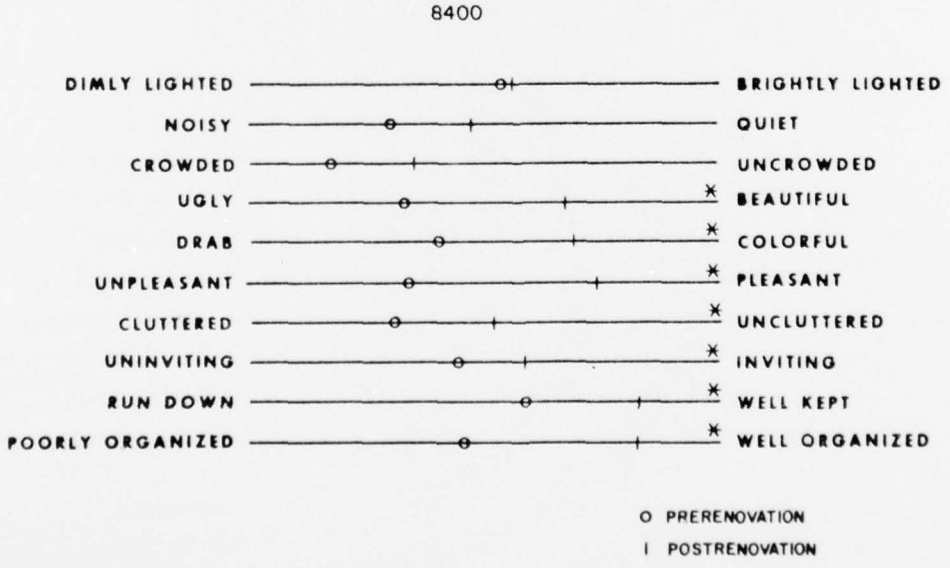
*indicates significant difference between group means based on a one-tailed t-test ($p \leq .05$).

Figure C9. Comparison of pre- and postrenovation mean descriptive ratings for building 3108.



*indicates significant difference between group means based on a one-tailed t-test ($p \leq .05$).

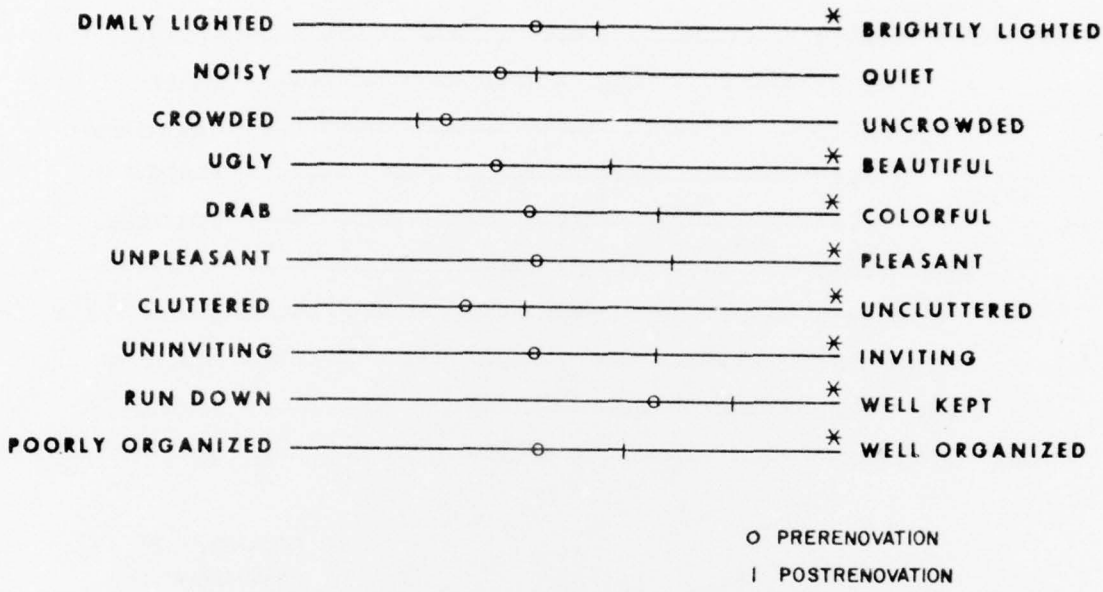
Figure C10. Comparison of pre- and postrenovation mean descriptive ratings of building 3701.



*indicates significant difference between group means based on a one-tailed t-test ($p \leq .05$).

Figure C11. Comparison of pre- and postrenovation mean descriptive ratings of building 8400.

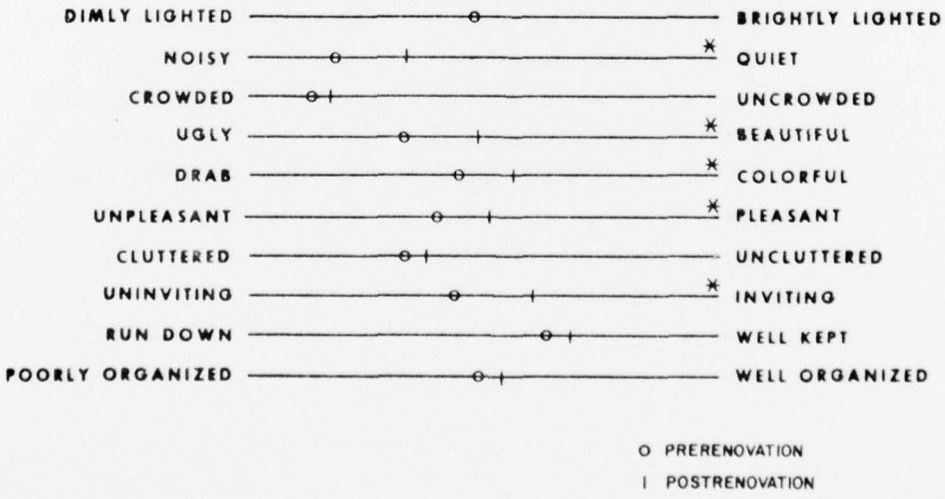
8402



*indicates significant difference between group means based on a one-tailed t-test ($p \leq .05$).

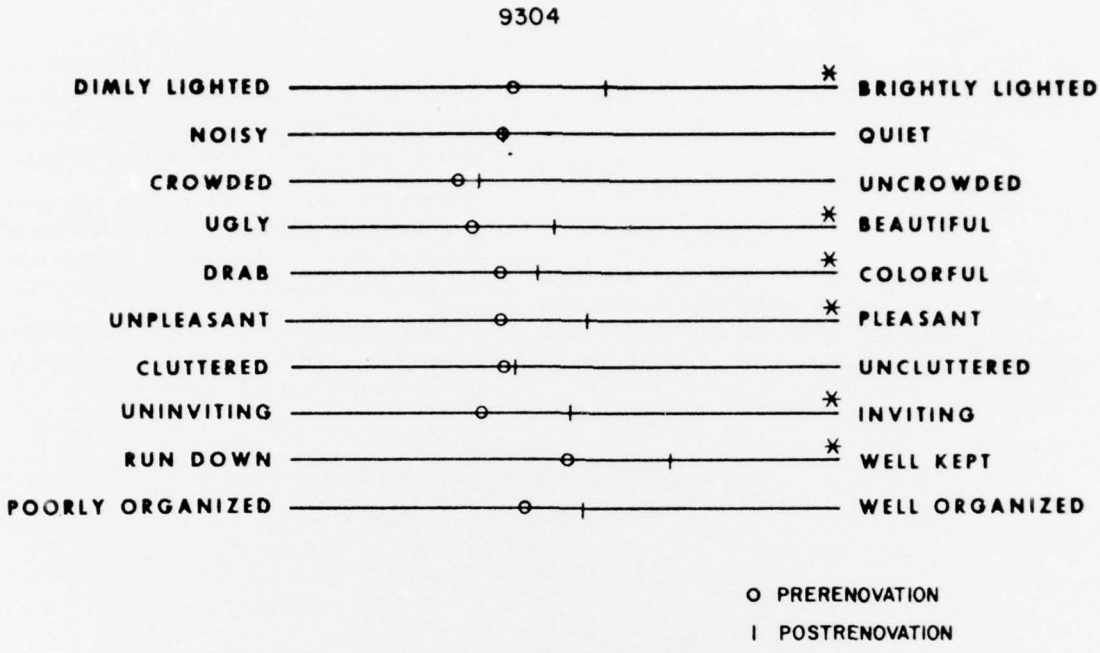
Figure C12. Comparison of pre- and postrenovation mean descriptive ratings of building 8402.

9303



*indicates significant difference between group means based on a one-tailed t-test ($p \leq .05$).

Figure C13. Comparison of pre- and postrenovation mean descriptive ratings of building 9303.



*indicates significant difference between group means based on a one-tailed t-test ($p \leq .05$).

Figure C14. Comparison of pre- and postrenovation mean descriptive ratings of building 9304.

APPENDIX D: COMPARATIVE PHYSICAL MEASURES

Tables D1 through D10 present the physical measures developed.

Table D1 describes square foot per average serving. In Table D2, this figure is factored by average hours per meal to yield a more specific crowding measure. (Crowding is inversely proportional to size of area described.)

Tables D3 and D4 describe relative locations of service machines in prerenovation and renovated facilities. Tables D5 and D6 present sample data on traffic patterns and individual time through service lines.

Table D7 describes prerenovation and postrenovation furnishings. Tables D8 and D9 describe physical conditions of light, noise, and heat sampled at prerenovation and postrenovation facilities, respectively.

Table D10 describes decor characteristics of the prerenovation facilities. Appendix A contains decor descriptions of the renovated facilities.

Table D1
Average Square Footage per Number Served

Facility Number	Dining/Serving Area, sq ft (m^2) (drawing measurements)	Average Number of Servings per Meal	Area per Average Serving, y, sq ft (m^2)
Prerenovation			
3024	2977.5 (276.6)	300	9.9 (0.9)
3108	2958.5 (274.8)	350	8.5 (0.8)
3206	3493.8 (324.6)	–	–
3701	2766.8 (257.0)	258	10.7 (1.0)
8400 (Battalion)	6544 (607.9)	904	7.2 (0.7)
8402 (Battalion)	6182 (574.3)	–	–
9303	2913.8 (270.7)	–	–
9304	2965.2 (275.4)	–	–
Average			9.1 (0.8)
Postrenovation			
3024*	2977.5 (276.6)	136.6	21.7 (2.0)
3108*	2958.5 (274.8)	108	27.3 (2.5)
3206	3493.8 (324.6)	353.3	9.8 (0.9)
3701*	2766.8 (257.0)	305	9.0 (0.8)
8400 (Battalion)*	6544 (607.9)	316.6	20.6 (1.9)
8402 (Battalion)	6182 (574.3)	925	6.6 (0.6)
9303	2904 (269.8)	198.6	14.6 (1.4)
9304	2965.4 (275.5)	133.3	22.3 (2.1)
Average			16.5 (1.5)

*Screening partitions removed at the time of survey

Table D2
Average Square Footage per Number Served as a Function of Serving Time

Facility Number	Serving Hours	Average Hours per Meal (x)	Hours Factored by Square Foot per Serving (x) x(y) (see Table D1)
Prerenovation October 1974			
3108	B 0545 - 0700 (1.2) L 1100 - 1230 (1.5) D 1630 - 1800 (1.5)	1.4	12.1
8400	B 0530 - 0730 (2.0) L 1115 - 1230 (1.2) D 1630 - 1800 (1.5)	1.6	11.5
Postrenovation			
3024	B 0545 - 0700 (1.2) L 1130 - 1230 (1.0) D 1630 - 1730 (1.0)	1.0	21.7
3108	B 0600 - 0700 (1.0) L 1130 - 1300 (1.5) D 1700 - 1800 (1.0)	1.2	32.7
3206	B 0500 - 0700 (2.0) L 1100 - 1230 (1.5) D 1630 - 1800 (1.5)	1.7	16.6
3701	B 0530 - 0700 (1.5) L 1130 - 1300 (1.5) D 1630 - 1800 (1.5)	1.5	13.5
8400	B 0500 - 0630 (1.5) L 1130 - 1300 (1.5) D 1630 - 1800 (1.5)	1.5	30.9
8402	B 0500 - 0700 (2.0) L 1115 - 1300 (1.7) D 1630 - 1800 (1.5)	1.8	35.1
9303	B 0600 - 0715 (1.2) L 1115 - 1230 (1.2) D 1630 - 1800 (1.5)	1.3	19.0
9304	B 0545 - 0700 (1.7) L 1100 - 1230 (1.5) D 1630 - 1800 (1.5)	1.6	26.4

Table D3
Relative Location of Serving Areas in Prerenovation Facilities

Dining Hall Number	Salad Bar	Beverage Bar	Milk Bar	Sign-In Desk	Dishwash Room
3024	Center	Center	Center	At doorway to outside	Near exit 10 ft (3.0 m) from door
3108	Center	Sidewall		At doorway to outside	Near exit 10 ft (3.0 m) from door
3206	Sidewall				
3701	Sidewall off serving line	In cross traffic to serving line	Far wall	At doorway with short hall	In cross traffic near serving line
8400	Center	Sidewall off serving line	Corner of far wall	Off hallway 5 to 10 ft (1.5 to 3.0 m) from stairs	In center between halls
8402	In serving line	Off serving line near dishwash room	Center near serving line		
9304		Sidewall	Near serving line		

Table D4
Relative Location of Serving Areas in Postrenovation Facilities

Dining Hall Number	Salad Bar	Beverage Bar	Milk Bar	Sign-In Desk	Tray Stack
3024	Center	Center	Center	About 5 ft (1.5 m) from side door	Trays to cart—then to kitchen
3108	Center	Center	Center	About 5 ft (1.5 m) from side door	
3206	Center	Center	Center	8 to 10 ft (2.4 to 3.0 m) from stairs	At far end near exit only*
3701	Center	Center	Center	2 to 3 ft (0.6 to 0.7 m) from door	Trays to cart—then to kitchen (three carts use up space)
8400	Center	Center	Center	30 to 40 ft (7.0 to 12.2 m) from entrance	Deliver dishes at dishwash area
8402	Center off serving line	Center off serving line	Center off serving line	Approximately 10 ft (3.0 m) off entrance stairs (both sides)	At exit area* (center)
9304	Center	Center	Center	Approximately 40 ft (12.2 m) down aisle	Rear and side*
9303	Center	Center	Center	5 to 8 ft (1.5 to 2.4 m) from side door	At side door exit area*

*Central warewash used

Table D5
Sample of Traffic Circulation and Time Measures in Prerenovation Facilities

	Circulation	Sign-In	Through Serving Line	Beverage Bar	Salad Bar	Total	Through Dishwash Line
3701	Counterclockwise with crossover and interference	12 sec; queuing time may vary from 0 to 12 minutes	2 min 45 sec	1 min	40 sec	4 min 37 sec	20 sec
8400	Clockwise on short-order side; counterclockwise on a la carte	12 sec	2 min 5 sec	4 min	1 min	7 min 17 sec	2 min

Table D6
Sample of Traffic Circulation and Time Measures in Postrenovation Facilities

Dining Hall Number	Circulation Pattern	Sign-In	Through Serving Line	Self-Service Line	Total
3206	Clockwise	1 min 5 sec	53 sec	2 min 2 sec	4 min 0 sec
3701*	Counterclockwise	47 sec	1 min 15 sec	1 min 40 sec	3 min 27 sec
8402	Counterclockwise at left; clockwise at right	30 sec	1 min 5 sec	2 min 25 sec	4 min 0 sec
9303	Counterclockwise	1 min 5 sec	1 min 40 sec	–	–
9304	Counterclockwise	30 sec	1 min 40 sec	50 sec	3 min 0 sec

*Self-service in main line

Table D7
Characteristics of Furnishings

Dining Hall Number	Prerenovation			Postrenovation		
	Chairs	Tables	Light Fixtures	Chairs (See Appendix A)	Tables	Light Fixtures
3024	Wooden, covered at back	Square, wooden, covered, seated four	Incandescent shade	A and B, and booths	Rectangular and round	Chrome, vertical, cylindrical, incandescent
3108	Wooden, covered at back	Square, wooden, covered, seated four	Frosted covers	B and booths at side	Rectangular and round	Chrome, vertical, cylindrical, incandescent
3206	Wooden, covered at back	Square, wooden, covered, seated four	Fluorescent blue-red covered	A and E	Square and round	Chrome, vertical, cylindrical, incandescent
3701	Metal	Square, wooden, covered, seated four	Multicolored globe	B, C, and booths	Rectangular and round	Frosted, spherical
8402	Wooden, plastic colored backs	Square, wooden, tablecloths, seated four	Fluorescent	D and C	Square and round	Flush-mounted trough
8400	Wooden, covered at back	Square, wooden, covered, seated four	Fluorescent	A and E short order, A a la carte (both booths)	Rectangular and round	Flush-mounted
9303	Wooden, covered at back	Square, wooden, covered, seated	Covered incandescent	B	Square and round	Chrome, cylindrical, incandescent
9304	Wooden, back-covered	Square, wooden, tablecloths, seated four	Frosted covers	D	Square and round	Chrome, cylindrical, incandescent

Table D8
Prerenovation Physical Conditions

Bldg.	Light, foot candles (lux)	Noise, dB	Humidity
3024	Intermediate—20 to 40 (215.3 to 430.5); Dim—16 (172.2)	Constant—45; peak at dishwash area	Air conditioning
3108	Intermediate—32 to 40 (344.4 to 430.6); Dim—16 (172.2)	Constant—50 to 55; peak—90 to 100 (5-sec periods) at dishwash	No air conditioning
3201	Intermediate—16 to 20 (172.2 to 215.3); Dim—8 (86.1)	Constant—55; peak at dishwash area	No air conditioning
8402	Intermediate—20 to 30 (215.3 to 322.9); Dim—8 (86.1) at dishwash area	Constant—55; peak at dishwash area	No air conditioning

Table D9
Postrenovation Physical Conditions

Dining Hall Number	Light, foot-candles (lux)	Noise (dB)	Humidity
3024	16 to 64 (172.2 to 688.8)		No air conditioning —partitions removed
3108	16 to 100 (172.2 to 1076.4)		No air conditioning —partitions removed
3206	Ranges from 16 at center to 125 at sides (172.2 to 1345.5)		No air conditioning
8400	32 to 64 (344.4 to 688.8)		No air conditioning —partitions removed
8402	—	About 45 to 55 dB SIL at center. No sound system.	No air conditioning
9303	Ranges from 10 to 16 at center to 125 at sides (107.6 to 172.2, to 1345.5)	About 45 to 55 db SIL at center. No sound system.	No air conditioning
9304	Ranges from 8 at entrance to 125 under light (86.1 to 1345.5)	About 45 to 60 db SIL at center. No sound system. Note: peak levels of 90 to 100 dB not oper. with tray-cart system	No air conditioning

Table D10
Prerenovation Characteristics of Decor

	General	Walls	Floors	Windows	Ceiling	Sound
3024	Quasi-modern decor, graphics partitions	Painted tan	Green-gray checked tile	Tan-pink draperies	Neutral gray	—
3108	Wood panels and pillar	Wood panels	Tan acrylic tile	Gold draperies	Neutral gray	Two speakers, one working
3206	Fish net	Painted tan walls, blue pillars	Green-gray checked tile	Blue-patterned draperies	Neutral tan, dark cross members	None
3701	Quasi-modern decor, graphics, partitions	Wood paneling painted blue walls	Green-gray checked tile	Blue and tan patterned draperies	Neutral tile squares	None
8400	Alpine decor—short order; Tahitian—a la carte	Blue, red paint	Green-black tile	Draperies	Neutral	None
8402	Quasi-woody pillars, artificial flowers	Painted green, wood-spotted pillars	Green-checked tile	Blue draperies	Brown ceilings, green cross members	—
9303	Quasi-modern wood patterns	Wood panel decor, white paint	Checked tile	Light patterned draperies	White tile	—
9304	Seasonal decor, e.g., Christmas	Wood paneling and pillars	Checked tile	Light-colored draperies	Neutral gray	—

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Little Rock
ATTN: Chief, Engr Div
Tulsa
ATTN: Chief, Engr Div
ATTN: Library
Fort Worth
ATTN: Chief, SWFED-D
Galveston
ATTN: Chief, SWGAS-L
ATTN: Chief, SWGED-DS
Albuquerque
ATTN: Library
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Los Angeles
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ATTN: Chief, SPLED-D
San Francisco
ATTN: Chief, Engr Div
Sacramento
ATTN: Chief, SPKED-D
ATTN: Library, Room 8307
Far East
ATTN: Chief, Engr Div
Japan
ATTN: Library
Portland
ATTN: Library
ATTN: Chief, DB-6
Seattle
ATTN: Chief, EN-DB-ST
ATTN: Chief, NPSEN-PL-ER
Walla Walla
ATTN: Library
ATTN: Chief, Engr Div
Alaska
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US Army Engineer Division
Europe
ATTN: Technical Library
New England
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North Atlantic
ATTN: Library
ATTN: Chief, NADEN-T
Middle East (Rear)
ATTN: MEDED-T

US Army Engineer Division
South Atlantic
ATTN: Chief, SADEN-TA
ATTN: Library
Huntsville
ATTN: Library (2)
ATTN: Chief, HNDED-CS
Lower Mississippi Valley
ATTN: Library
Ohio River
ATTN: Library
ATTN: Chief, Engr Div
North Central
ATTN: Library
ATTN: Chief, Engr Div
Missouri River
ATTN: Library (2)
ATTN: Chief, MRDED-T
Southwestern
ATTN: Library
ATTN: Chief, SWDED-TA
South Pacific
ATTN: Chief, SPDED-TG
Pacific Ocean
ATTN: Chief, Engr Div
ATTN: Chief, PODED-D
North Pacific
ATTN: Chief, Engr Div

Facilities Engineer
Ft Campbell, KY 42223
Ft Hood, TX 76544
FORSCOM
Ft Devens, MA 01433
Ft Carson, CO 80913
Ft Lewis, WA 98433
TRADOC
Ft Dix, NJ 08640
Ft Monroe, VA 23651
Ft Lee, VA 23801
Ft Gordon, GA 30905
Ft McClellan, AL 36201
Ft Knox, KY 40121
Ft Sill, OK 73503
Ft Bliss, TX 79916
DSCPER
West Point, NY 10996
USAIC
Ft Benning, GA 31905
USAAVNC
Ft Rucker, AL 36361
CAC&FL
Ft Leavenworth, KS 66027
AMC
Dugway, UT 84022
USACC
Ft Huachuca, AZ 85613
HQ, 1st Inf Div & Ft Riley, KS 66442
HQ, 5th Inf Div & Ft Polk, LA 71459
HQ, 7th Inf Div & Ft Ord, CA 93941
HQ, 24th Inf & Ft Stewart, GA 31313

AF Civil Engr Center/XRL
Tyndall AFB, FI 32401

Naval Facilities Engr Command
ATTN: Code 04
Alexandria, VA 22332

Port Hueneme, CA 93043
ATTN: Library (Code L08A)
ATTN: Moreell Library

Washington, DC
ATTN: Building Research Advisory Board
ATTN: Transportation Research Board
ATTN: Library of Congress (2)
ATTN: Dept of Transportation Library

Defense Documentation Center (12)

Engineering Societies Library
New York, NY 10017

Natick Research and Development
Command
ATTN: STSNLD-CP (5)
Natick, MA 01760

US Army Troop Support Agency
ATTN: DALO-TAF (5)
Ft Lee, VA 23801