

AD-A040 758

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAI--ETC F/G 13/13
EFFECTIVE USE OF SYSTEMS BUILDING TECHNOLOGY: OPEN SYSTEMS CATA--ETC(U)
JUN 77 T A KENNEY

UNCLASSIFIED

CERL-SR-D-73-VOL-3

NL

1 of 1
AD
A040758



AD A 040758

DDC FILE COPY

**construction
engineering
research
laboratory**

special report D-73
june 1977

effective use of systems building technology

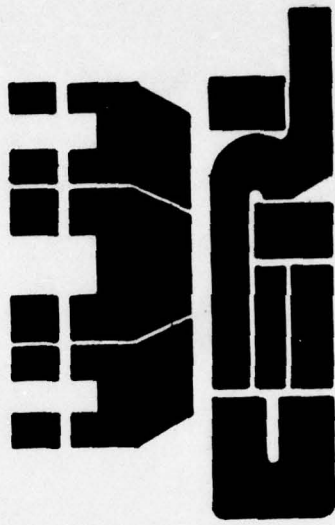
QNA

TE

Open Systems Catalog volume III:

building products information

by
thomas a. kenney



approved for public release; distribution unlimited.

THE CONTENTS OF THIS GUIDE ARE NOT TO BE USED FOR ADVERTISING, PUBLICATION, OR PROMOTIONAL PURPOSES. CITATION OF TRADE NAMES DOES NOT CONSTITUTE AN OFFICIAL ENDORSEMENT OR APPROVAL OF THE USE OF SUCH COMMERCIAL PRODUCTS. THE CONTENTS OF THIS CATALOG SHOULD NOT BE CONSTRUED AS AN OFFICIAL DEPARTMENT OF THE ARMY POSITION UNLESS SO DESIGNATED BY OTHER AUTHORIZED DOCUMENTS.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER CERL-SR-D-73-Vol-3	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER 9
4. TITLE (and Subtitle) EFFECTIVE USE OF SYSTEMS BUILDING TECHNOLOGY: OPEN SYSTEMS CATALOG, VOLUME III. BUILDING PRODUCTS INFORMATION.	5. TYPE OF REPORT & PERIOD COVERED FINAL rept.	
7. AUTHOR(s) Thomas A. Kenney	8. CONTRACT OR GRANT NUMBER(s) 12 PL	
9. PERFORMING ORGANIZATION NAME AND ADDRESS CONSTRUCTION ENGINEERING RESEARCH LABORATORY P.O. Box 4005 Champaign, IL 61820	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 4A762719AT02-01-002	
11. CONTROLLING OFFICE NAME AND ADDRESS	12. REPORT DATE June 1977	13. NUMBER OF PAGES 92
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) 1294p.	15. SECURITY CLASS. (of this report) Unclassified	
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES Copies are obtainable from National Technical Information Service Springfield, VA 22151		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) systems building open systems industrialized subsystems		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This Building Products Information is intended to be an aid in the use of advanced building technology and methods. This document can best be utilized in connection with its companion volumes of <i>Effective Use of Systems Building Technology: Open Systems Catalog--Vol I, Open Systems Guide</i> by Tibor D. Csizmadia, and <i>Vol II, Prototype Performance Specifications</i> , by Richard L. Schneider. This document includes a Data Summary developed from a survey of selected open systems projects and industrialized subsystem manufacturers.		

foreword

This report was prepared for the Directorate of Military Construction, Office of the Chief of Engineers (OCE) under Project 4A762719AT02, "Development of Industrialized Construction for Military Facilities"; Task 01, "Guides on Using Industrialized Buildings for Military Construction"; Work Unit 002, "Open Systems Guide." The OCE Technical Monitor was W. Johnson. This is the final report from this work unit. Work in this area is continuing under Project 4A762731AT41, "Design, Construction, and Operation and Maintenance Technology for Military Facilities"; Task T2, "Development of Industrialized Construction for Military Facilities"; Work Units 006, "Computerized Information on Industrialized Building"; and 007, "Design Documentation Procedures."

The report was prepared by the Master Planning and Systems Building Branch (HPM), Habitability and Planning Division (HP) of the U.S. Army Construction Engineering Research Laboratory (CERL). Contributing CERL personnel were Dale A. Bryant, Michael G. Carroll, Tibor D. Csizmadia, Thomas A. Kenney, and Richard L. Schneider of HPM. Dr. D. Gordon Bagby is Chief of HPM and Dr. Robert M. Dinnat is Chief of HP.

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

APPROVAL FOR	White Section <input checked="" type="checkbox"/>
RTIS	B-11 Section <input type="checkbox"/>
BDC	UNANNOUNCED <input type="checkbox"/>
JUSTIFICATION	
BY	
DISTRIBUTION/AVAILABILITY CODES	
Dist. Avail. Code/for SPECIAL	A

contents

DD FORM 1473

FOREWORD

3:10	INTRODUCTION	
	Background	3:10-01
	Purpose	3:10-01
	Problems	3:10-02
	Further Stages	3:10-02
	Organization	3:10-03
		3:10-03

3:20	DATA SUMMARY	
	Product Data	3:20-01
	Structural	3:20-01
	Interior Partitions	3:20-03
	Heating, Ventilating, and Cooling	3:20-18
	Lighting/Ceiling	3:20-30
	Electric/Electronic	3:20-34
	Compatibility	3:20-44
		3:20-47

APPENDICES

A: Questionnaire

a-1

B: Listing of Nonrespondent
Manufacturers or Those with
Insufficient Data

b-1

REFERENCES

r-1

introduction

Background:

Traditionally, buildings have been fully designed, detailed, and specified before the selection of the construction operators, i.e., construction manager, contractors, subcontractors, manufacturers, etc. Current trends, problems, and necessities suggest that in a significant number of cases, alternatives to the traditional approach should be considered.

One alternative is the open systems approach, which utilizes pre-engineered, industrialized subsystems. Use of these subsystems is now possible on a competitive basis for public and private building projects.

Although these building subsystems may be used in the traditional approach to project design and construction, they are most effectively used as part of the systems approach. Properly used, the systems approach provides means for tapping the creativity and judgment of many relevant technical and professional disciplines.¹

A number of important building clients use the industrialized subsystems to reduce project time and costs and to increase a facility's quality and flexibility. In addition, recent progress toward reduced energy consumption and estimated life-cycle costs through subsystem development has been made. Application of these developments and benefits to

¹ *Building Systems Planning Manual*, Building Systems Information Clearinghouse, Special Report Number Three (BSIC/EFL, Menlo Park, California, 1971).

government projects will represent a considerable challenge.

Purpose:

The purpose of this catalog and its associated documents² is to provide information to facilitate effective use of advanced building products and methods.

Problems:

This "catalog" summarizes and analyzes a survey of selected open systems projects and industrialized subsystem manufacturers. The catalog is still being developed and continuous development of new materials will prevent it from ever being totally complete. Both material organization and content must be refined and updated as new experience and information become available; hopefully, feedback from this "prototype" catalog will greatly enhance this process.

This prototype catalog may be regarded as a representative cross-section of the subsystem industry. Many of the leads have been obtained either by analyzing completed building projects or by surveying recognized systems building experts in the United States and Canada. However, information in this catalog can be fully reliable only if it is used continually and if new material is constantly verified.

The products contained herein can be modified or discontinued without notice; informational items obtained from surveys carry no obligations

²Tibor D. Cszimadia, *Effective Use of Systems Building Technology: Open Systems Catalog--Vol I, Open Systems Guide, Special Report D-73* (U.S. Army Construction Engineering Research Laboratory [CERL], 1977).

²Richard L. Schneider, *Effective Use of Systems Building Technology: Open Systems Catalog--Vol II, Prototype Performance Specifications, Special Report D-73* (CERL, 1977).

and represent no contractual agreements. The catalog is only for information purposes, and use of any item in it should be carefully considered in terms of its context. It is recommended that manufacturers be contacted for verification of and addition to the product data.

Further Stages:

Further stages or "upgrades" of the catalog are envisioned after expansion, field testing, and revision of this "information" catalog. The first of these is now proposed as "Upgrade 2" or a "Catalog of Certified Products." A second proposal is "Upgrade 3," which may be a catalog of pre-purchased or pre-contracted products. The proposed "Upgrade 3" will be developed through competitive bidding, which will necessitate certain guarantees from the client and from the manufacturer.

Organization:

The present catalog contains a Data Summary which has the necessary product data and compatibility information, summarized from a Computerized Data Bank, in a working format for easy reference and use. The Computerized Data Bank* was developed from a survey of industrialized subsystem manufacturers. All information contained in the Computerized Data Bank is the response of the manufacturers to the questionnaire. (Appendix A)

* Computerized Information on Industrialized Building Systems, a CERL-maintained data bank.

The Data Summary is divided into sections according to subsystems. A subsystem is a coordinated, preengineered

assemblage of components forming a package that can be readily manufactured, shipped to, and installed in a total building system. It is a major contributor to the building's form and/or function. The five subsystems chosen for inclusion in this first edition are the structural subsystem; the interior partitions or interior space division subsystem; the mechanical, or heating, ventilating, and cooling subsystem; the lighting/ceiling subsystem; and the electric/electronic distribution subsystem.

In the Data Summary, an alphabetical listing of manufacturers, which includes address, contact, phone number, and product(s) precedes each subsystem section. Appendix B provides a subsystem listing of manufacturers not included in this edition.

The Computerized Data Bank contains information about each subsystem manufacturer and his product(s), which includes the manufacturer's profile, experience, product data, and compatibility information. The profile contains information about services and products provided, approval by codes and standards, applicable building types, and the economical delivery distance of the product. Information about the manufacturer's experience includes government organizations which have used the product(s), whether the product is approved for FHA or VA insurance, and a listing of

projects in which the product(s) have been used. Product data information provides subsystem general information, assembly type, maximum/minimum dimensions, capacities, fire protection ratings, acoustical information, etc. Compatibility information provides data concerning a subsystem's compatibility with the subsystems of other manufacturers.

The Data Summary is a graphical presentation of product data information from the Computerized Data Bank. A set of charts compares, by subsystem, each manufacturer's product data with that of other manufacturers. In addition, the data Summary includes a set of charts which indicates the various levels of compatibility between subsystem manufacturers.

This Building Products Information Catalog should be used as an aid to the open systems approach to the building process. Information included should be used in conjunction with other associated documents³ designed to facilitate effective use of advanced building products and methods.

³Tibor D. Csizmadia, *Effective Use of Systems Building Technology: Open Systems Catalog--Vol I, Open Systems Guide*, Special Report D-73 (CERL, 1977).

³Richard L. Schneider, *Effective Use of Systems Building Technology: Open Systems Catalog--Vol II, Prototype Performance Specifications*, Special Report D-73 (CERL, 1977).

data summary

Product Data:

The following set of charts includes product data summaries from the Computerized Data Bank, by subsystems. Other information about the manufacturer's profile/experience must be obtained from the Computerized Data Bank.⁴ An alphabetical listing of the manufacturer's address, contact, phone number, and product(s) precedes each subsystem chart.

The data are self-explanatory, with the exception of the performance ratings and tests used in the Fire Protection and Acoustics sections. These are determined as follows:

FIRE PROTECTION RATINGS

Fire Resistance is given in terms of hours, as specified by NFPA No. 251.

Flame Spread is given in numbers relating to the standard, select grade red-oak flooring = 100 tested in accordance with NFPA No. 255.

Smoke Development is given in terms of optical density or light absorption, tested in accordance with NFPA No. 255.

ACOUSTICAL RATINGS

STC Rating is the sound transmission classification in db as determined by ASTM E90-61T.

⁴Thomas A. Kenney, *Computerized Information on Industrialized Building Systems*, Draft Users Manual (CERL, 1977).

PERFORMANCE TESTS

...conducted by outside agency...is if the subsystem has been tested by an independent testing agency, such as U.L., NBS, or ASTM, or if the product is of a conventional construction for which standard test results are known.

...conducted in-house...is if the manufacturer has conducted formal performance tests within his* own organization, or if the manufacturers of the components that he uses have conducted similar tests.

...planned or desired...is if the manufacturer desires to have his product tested or plans to have it tested.

...not planned...is if testing is not required or applicable or not economically feasible at this time.

* The masculine pronoun is used in the document to represent both genders.

manufacturers of structural subsystems

MANUFACTURER	CONTACT	PRODUCT
Bellaire Products, Inc. P.O. Drawer C Tellevast, FL 33588	Donald V. Cartledge Douglas Snyder (813) 355-7166 FTS: (904) 791-2011	BELLCORE BELLWOOD
Bethlehem Contracting Co. Route 512, P.O. Box 40 Bath, PA 18014	J. A. Wright Henry Lerch (215) 837-1851 FTS: (215) 597-3311	No system identified
Canam Hambro Systems, Inc. 114 E. 25th Street Baltimore, MD 21218	Stuart Hettleman Steve Weissberg (301) 338-0800 FTS: (301) 597-3311	HAMBRO, D-500 COMPOSITE FLOOR/ROOF
C/O/A Corp. 9305 Michigan Ave. Detroit, MI 48211	M. L. Ollman (313) 846-2500 FTS: (313) 226-6000	C/O TRUSS-JOIST
Coronis Building Systems, Inc. Jobstown Rd. Columbus, NJ 08022	Emanuel A. Coronis, Jr. (609) 261-2200 FTS: (201) 645-3000	TRUSSFRAMES TRUSSBEAMS
Cuckler Steel Span Co. P.O. Box 346 Monticello, IA 52310	James Townsend Steve Jones (319) 465-3595 FTS: (515) 284-4000	No system identified
Harter Concrete Products, Inc. 1628 W. Main St. Oklahoma City, OK 73106	Owen Donaldson Lee Deschamps (405) 236-0491 FTS: (405) 231-4011	No system identified

manufacturers of structural subsystems

MANUFACTURER	CONTACT	PRODUCT
Houdaille-Duval-Wright P.O. Box 8068 1050 N.E. Fifth Terrace Fort Lauderdale, FL 33310	Harry Griesemer (305) 781-4040 G-I Runyan (305) 764-2000 FTS: (305) 735-6011	HOUDAILLE-FRAME
Inland-Ryerson Construction Co. P.O. Box 393 Milwaukee, WI 53201	Gene Herbst John Peterson (414) 383-4030 FTS: (414) 224-0111	No system identified
John-Manville Corp. Greenwood Plaza Denver, CO 80217	Tom Madden (303) 770-1000 FTS: (303) 837-0111	CORSPAN
Kirby Buildings Systems, Inc. P.O. Box 36429 Houston, TX 77036	Donald Sea (Kirbytruss) Henry Kohlleffel (Building Systems) (713) 666-1941 FTS: (713) 226-4011	KIRBYTRUSS KIRBY BUILDING SYSTEMS
Lone Star Ind. P.O. Box 1778 Norfolk, VA 23501	D. K. MacCubbin (804) 855-2063 FTS: (804) 441-6000	No system identified
Macomber, Inc. P.O. Box 8830 Canton, OH 44711	Bernard E. Cromi H. Russell Fink, Jr. (216) 456-2841 FTS: (216) 455-8971	MACOTRUS
McCaw Industries P.O. Box 3546 Portland, ME 04101	Clyde S. Esty William T. Russell, Jr. (207) 775-2351 FTS: (207) 775-3131	No system identified

manufacturers of structural subsystems

MANUFACTURER	CONTACT	PRODUCT
Mesco Metal Building Corp. P.O. Box G Grapevine, TX 76051	J. Frank Moore David J. Montague (817) 488-8511 FTS: (214) 749-1011	No system identified
Mitchell Engineering Co. P.O. Drawer 911 Columbus, MS 39701	Robert A. Russell James E. Easter (601) 328-6722 FTS: (601) 948-7821	No system identified
Pascoe Steel Corp. P.O. Box 2628 Pamona, CA 91766	J. D. Title O. S. Lord (714) 623-1411 FTS: (213) 688-2000	PASCOE
Precast Concrete Co., Inc. Epson, NH 03234	Richard J. Gayer (603) 736-9322 FTS: (603) 669-7011	No system identified
Precast Systems, Inc. 10400 W. Higgins Rosemont, IL 60018	Carl F. Roth George J. Ziverts (312) 298-5570 FTS: (312) 353-4400	VERSA-SPACE
Rocky Mountain Prestress, Inc. 3900 S. Federal Blvd. P.O. Box 1434 Englewood, CO 80110	John Nanna Tom O'Arcy (303) 789-2757 FTS: (303) 837-0111	No system identified
Romac Steel Co. Inc. P.O. Box 5085, South Station Fort Myers, FL 33902	F. Paul R. Macomber (813) 936-8153 FTS: (904) 791-2011	MODULOC

manufacturers of structural subsystems

MANUFACTURER	CONTACT	PRODUCT
Spancrete Co. 10919 W. Bluemound Rd. Milwaukee, WI 53226	John R. Pankratz Wallace Weihing (414) 453-7980 FTS: (414) 224-0111	STITCH WALL
Steel Fabricators, Inc. P.O. Box 23219 721 N.E. 44th Place Fort Lauderdale, FL 33307	Arthur M. Applegate (305) 772-0440 FTS: (305) 735-6011	FAB-LOK
Steel & Span, Inc. 140 Wood Rd. Braintree, MA 02184	F. O'Neill Glenn S. Orenstein (617) 848-4770 FTS: (617) 223-2100	No system identified
Structural Foam, Inc. RTE. 724 & Wells Rd. Parker Ford, PA 19457	Robert M. Jones David M. Peifer (215) 495-6256 FTS: (215) 597-3311	No system identified
Texas Inc. P. O. Box 400 Arlington, TX 76010	H. C. Cook C. T. Daniel (214) 638-8933 FTS: (214) 749-1011	No system identified
Trus Joist Corp. P.O. Box 663 Ames, IA 50010	K. P. Wilden (515) 232-7109 FTS: (515) 232-0011	TRUS JOIST

manufacturers of structural subsystems

MANUFACTURER	CONTACT	PRODUCT
Unistrut Corporation Moduspan Division 4118 S. Wayne Rd. Wayne, MI 48184	Sun Chein Hsiao (313) 721-4040 FTS: (313) 226-6000	MODUSPAN SPACE-FRAME
Western Precast Inc. 16203 Arrow Hwy. Irwindale, CA 91706	Richard S. Balon Herb Stockinger (213) 384-1281 FTS: (213) 688-2000	No system identified
Automated Building Components 7525 North West 37th Ave. Miami, FL 33159	W. W. Wittmack J. E. Meeks (305) 696-0930 FTS: (305) 350-5011	WOOD TRUSSES
Marino Industries Corp. Montrose Road Westbury, NY 11590		No system identified

subsystem product data: structure

1a

STRUCTURAL TYPE	MAJOR MATERIAL	EXTERIOR WALL			FIRE PROTECTION					
		3 Dimensional Box	Structural Panel	Frame and Infill	Other	Part of Subsystem	No Structural Purpose	Not Supplied	RATING	TEST
Bellaire Products, Inc.	Aluminum, Steel, Wood	●	●	●	●	●				
Bethlehem Contracting Co.	Structural steel	●	●	●	●	●		As req'd		
Canam Hambro Systems, Inc.	Struct. steel, Concrete	●	●	●	●	●		2-3 hrs	■	
C/O/A Corporation										
C/O 18/18-8 Truss Joist	Galvanized steel	●	●	●	●	●		2-3 hrs	◇	
C/O 18/22-6 Truss Joist	Galvanized steel	●	●	●	●	●		2-3 hrs	◇	
MELCO Roof Truss	Galvanized steel	●	●	●	●	●		2 hrs	◇	
Coronis Building Systems, Inc.	Structural steel	●	●	●	●	●				
Cuckler Steel Span Co.	Structural steel	●	●	●	●	●			■	
Harter Concrete Products, Inc.	Reinforced Concrete	●	●	●	●	●		As req'd		
Houdaille-Duval-Wright	Reinforced concrete	●	●	●	●	●				■
Inland-Ryerson Construction Co.	Structural steel	●	●	●	●	●				
Johns-Manville Corp.	Concrete, Steel	●	●	●	●	●		As req'd		
Kirby Buildings Systems, Inc.		●	●	●	●	●				
Kirbytruss	Metals	●	●	●	●	●				
Kirby Building Systems		●	●	●	●	●				
Lone Star Ind.	Concrete	●	●	●	●	●		2-4 hrs	■	

Preferred
 Alternate
 Conducted by outside agency
 Conducted in-house
 Planned or desired
 Not planned
 3:20 Data Summary 08

**subsystem
product data:
structure**

2a

DIMENSIONS											
PRIMARY SPAN				SECONDARY SPAN				FLOOR-FLOOR HEIGHT			
MAX	OPT	MIN		MAX	OPT	MIN		MAX	OPT	MIN	
12'-00"	11'-00"	10'-00"						10'-00"	8'-00"	8'-00"	
*	*	*		*	*	*		*	*	*	
*	30'-0"	*		*	*	*		*	*	*	
C/O 18/18-8 Truss Joist	16'-0"	12'-0"		60'-0"	40'-0"	20'-0"		30'-0"	20'-0"	10'-0"	
C/O 18/22-6 Truss Joist	18'-0"	8'-0"		56'-0"	40'-0"	20'-0"		20'-0"	8'-6"	8'-0"	
MELCO Roof Truss	30'-0"	24'-0"		45'-0"	40'-0"	24'-0"					
Coronis Building Systems, Inc.	*	*		*	*	*		*	*	*	
Cuckler Steel Span Co.	130'-0"	80'-0"		100'-0"	80'-0"	20'-0"		N/A	N/A	N/A	
Harter Concrete Products, Inc.	*	*		*	*	*		*	*	*	
Houdaille-Duval-Wright	40'-0"	25'-0"		75'-0"	30'-0"	0'-0"		N/A	N/A	N/A	
Inland-Ryerson Construction Co.	120'-0"	60'-0"		27'-0"	24'-0"	15'-0"		N/A	N/A	N/A	
Johns-Manville Corp.	*	*		*	*	*		*	*	*	
Kirby Buildings Systems, Inc.											
Kirbytruss											
Kirby Building Systems	120'-0"	20'-0"									
Lone Star Ind.	75'-0"	65'-0"		55'-0"	50'-0"	20'-0"		45'-0"	25'-0"		

* As required

subsystem product data: structure

3^a

	DIMENSIONS										
	FLOOR-CEILING HEIGHT			CANTILEVER			PLANNING MODULE				
	MAX	OPT	MIN	MAX	OPT	MIN	MAX	OPT	MIN	MAX	MIN
Bellaire Products, Inc.	3'-0"	8'-0"	8'-0"	2'-0"	1'-0"	0'-6"					
Bethlehem Contracting Co.	*	*	*	*	*	*	*	*	*	*	*
Canam Hambro Systems, Inc.	*	*	*	*	*	*	*	*	*	*	*
C/O/A Corporation											
C/O 18/18-8 Truss Joist	20'-0"	10'-0"	8'-0"	10'-0"	6'-0"	0'-6"				0'-6"	
C/O 18/22-6 Truss Joist	16'-0"	12'-0"	8'-0"	6'-0"	4'-0"	0'-6"				0'-6"	
MELCO Roof Truss											
Coronis Building Systems, Inc.	*	*	*	*	*	*	*	*	*	*	*
Cuckler Steel Span Co.	40'-0"	26'-0"	8'-0"	20'-0"	12'-0"	2'-0"				1'-0"	
Harter Concrete Products, Inc.	*	*	*	*	*	*	*	*	*	*	*
Houdaille-Duval-Wright	N/A	N/A	N/A	12'-0"	8'-0"	0'-0"				8'-0"	1'-8"
Inland-Ryerson Construction Co.	20'-0"		10'-0"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Johns-Manville Corp.	*	*	*	*	*	*	*	*	*	*	*
Kirby Buildings Systems, Inc.											
Kirbytruss											
Kirby Building Systems	25'-0"		10'-0"	15'-0"		5'-0"					
Lone Star Ind.	45'-0"	8'-0"	7'-0"	10'-0"	8'-0"	0'-0"				8'-0"	4'-0"

* As required

subsystem product data: structure

4a

	CLEAR AREA (sq. ft.)			GROSS AREA (sq. ft.)			TOTAL HEIGHT (stories)			MAX LIVE LOAD (PSI)			LATERAL FORCE RESISTANCE			
	MAX	OPT	MIN	MAX	OPT	MIN	MAX	OPT	MIN	FLOOR	ROOF	WIND LOAD	Moment Frame	Shear Walls	Cross Bearing Walls	Other
Bellaire Products, Inc.	48	44	40	48	44	40	1	1	1	80	30	30	●	●	●	
Bethlehem Contracting Co.	*	*	*	*	*	*	*	*	*	*	*	*	As required			
Canam Hambro Systems, Inc.	*	*	*	*	*	*	*	*	*	*	*	*				
C/O/A Corporation																
C/O 18/18-8 Truss Joist							100	1	200	200	50	50	●	●	●	
C/O 18/22-6 Truss Joist									80	80	50	50	●	●	●	
MELCO Roof Truss										40			●			
Coronis Building Systems, Inc.	*	*	*	*	*	*	*	*	*	*	*	*				
Cuckler Steel Span Co.								1	1	1	75	75	●			
Harter Concrete Products, Inc.	*	*	*	*	*	*	*	*	*	*	*	*	As required			
Houdaille-Duval-Wright	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	250	60			●	●	●	
Inland-Ryerson Construction Co.	N/A	N/A	N/A	N/A	N/A	N/A	2	1	100	50	20	20	●	●	●	
Johns-Manville Corp.	*	*	*	*	*	*	*	*	*	*	*	*	As required			
Kirby Buildings Systems, Inc.																
Kirbytruss								1	*	*	*	*	●			
Kirby Building Systems										40	25	25	●	●	●	
Lone Star Ind.	2400	1675	800	Non-4	100	40k	15	16	230	140	50	50	●	●	●	

* As required
● Preferred
○ Alternate

**subsystem
product data:
structure**

5a

	LARGEST DUCT THROUGH PRIMARY SPANNING MEMBER		LARGEST DUCT THROUGH SECONDARY SPANNING MEMBER	
	RECTANGULAR	ROUND	RECTANGULAR	ROUND
Bellaire Products, Inc.				
Bethlehem Contracting Co.				
Canam Hambro Systems, Inc.				
C/O/A Corporation	6" X 10"	6" dia	5" X 10"	5" dia
C/O 18/18-8 Truss Joist	6" X 10"	6" dia	5" X 10"	5" dia
C/O 18/22-6 Truss Joist	6" X 10"	6" dia	5" X 10"	5" dia
MELCO Roof Truss				
Coronis Building Systems, Inc.	30"	40"	1 1/2"	1 1/2"
Cuckler Steel Span Co.				
Harter Concrete Products, Inc.	6"	6"	40"	40"
Houdaille-Duval-Wright				
Inland-Ryerson Construction Co.				
Johns-Manville Corp.				
Kirby Buildings Systems, Inc.				
Kirbytruss		23"		20"
Kirby Building Systems	N/A	N/A	N/A	N/A
Lone Star Ind.				

**subsystem
product data:
structure**

1b

MAJOR MATERIAL	STRUCTURAL TYPE			EXTERIOR WALL			FIRE PROTECTION			
	3 Dimensional Box	Structural Panel	Frame and Infill	Other	Part of Subsystem	Structural Element	No Structural Purpose	Not Supplied	RATING	TEST
Macomber, Inc.									2 hrs	■
McCaw Industries		●						●		
Mesco Metal Building Corp.	●	●								
Mitchell Engineering Co.	●									◇
Pascoe Steel Corp.		●			○			●		
Precast Concrete Co.		●			○			○	2 hrs	
Precast Systems, Inc.		●			○			○	As req'd	
Rocky Mountain Prestress, Inc.	●	●			●			○	As req'd	
Romac Steel Co., Inc.		●						●	2-4 hrs	■
Spancrete Co.		●			○			○	4 hrs	■
Steel Fabricators, Inc.								●		
Steel & Span, Inc.	●	●			●			●		◇
Structural Foam, Inc.		●								■
Texas, Inc.		●							2-4 hrs	◇
Trus Joist Corp.		●			○			○		◇
Unistrut Corporation		●						●		
Western Precast Inc.	●				○			○	-4 hrs	■

Preferred Alternates Conducted by outside agency Conducted in-house
 Planned or desired Not planned

**subsystem
product data:
structure**

2b

	DIMENSIONS											
	PRIMARY SPAN			SECONDARY SPAN			FLOOR-FLOOR HEIGHT					
	MAX	OPT	MIN	MAX	OPT	MIN	MAX	OPT	MIN	MAX	OPT	MIN
Macomber, Inc.	45'-0"	30'-0"	10'-0"	80'-0"	60'-0"	10'-0"	*	*	*	*	*	*
McCaw Industries												
Mesco Metal Building Corp.	300'-0"	50'-0"	10'-0"	25'-0"	25'-0"	10'-0"						
Mitchell Engineering Co.	180'-0"	70'-0"	20'-0"	30'-0"	25'-0"	20'-0"	N/A	N/A	N/A	N/A	N/A	N/A
Pascoe Steel Corp.	200'-0"	60'-0"	20'-0"	40'-0"	30'-0"	20'-0"	N/A	N/A	N/A	N/A	N/A	N/A
Precast Concrete Co.	25'-0"	20'-0"								16'-0"	10'-0"	
Precast Systems, Inc.	*	*	*	*	*	*	*	*	*	*	*	*
Rocky Mountain Prestress, Inc.	*	*	*	*	*	*	*	*	*	*	*	*
Romac Steel Co., Inc.	40'-0"	30'-0"	8'-0"	120'-0"	60'-0"	4'-0"	*	*	*	13'-0"	10'-0"	
Spancrete Co.	40'-0"	40'-0"								10'-0"	8'-0"	
Steel Fabricators, Inc.	40'-0"	30'-0"	15'-0"	60'-0"	30'-0"	10'-0"	*	*	*	12'-0"		
Steel & Span, Inc.	150'-0"	90'-0"	20'-0"	30'-0"	24'-0"	10'-0"	30'-0"	30'-0"	10'-0"	10'-0"	8'-0"	
Structural Foam, Inc.												
Texas, Inc.	72'-0"	48'-0"	0'-0"	40'-0"	32'-0"	0'-0"	40'-0"	30'-0"	0'-0"	30'-0"		
Trus Joist Corp.	125'-0"	40'-0"	12'-0"									
Unistrut Corporation	60'-0"	40'-0"	20'-0"							N/A	N/A	N/A
Western Precast Inc.	120'-0"			40'-0"						11'-0"		

* As required

**subsystem
product data:
structure**

3b

	DIMENSIONS											
	FLOOR-CEILING HEIGHT			CANTILEVER			PLANNING MODULE					
	MAX	OPT	MIN	MAX	OPT	MIN	MAX	OPT	MIN			
Macomber, Inc.	6'-4"	4'-6"	4'-6"	10'-4"	10'-4"	5'-4"	5'-0"	5'-0"	5'-0"			
McCaw Industries												
Mesco Metal Building Corp.				20'-0"	10'-0"	2'-6"	2'-6"	2'-6"	2'-6"			
Mitchell Engineering Co.	125'-0"	20'-0"	10'-0"	25'-0"	10'-0"	5'-0"	20'-0"					
Pascoe Steel Corp.	50'-0"	20'-0"	10'-0"	20'-0"	10'-0"	3'-0"	N/A	N/A	N/A		N/A	
Precast Concrete Co.	16'-0"	10'-0"							8'-0"			
Precast Systems, Inc.	*	*	*	*	*	*	*	*	*	*	*	
Rocky Mountain Prestress, Inc.	*	*	*	*	*	*	*	*	*	*	*	
Romac Steel Co., Inc.	*	9'-0"	7'-6"	10'-0"	5'-0"	0'-0"	8'-0"	5'-0"	5'-0"	4'-0"		
Spancrete Co.	9'-2"	7'-2"		10'-0"	6'-0"							
Steel Fabricators, Inc.		8'-0"		8'-0"	5'-0"		5'-0"	5'-0"	5'-0"	5'-0"		
Steel & Span, Inc.	30'-0"	20'-0"	8'-0"	N/A	N/A	N/A						
Structural Foam, Inc.												
Texas, Inc.	28'-0"			15'-0"			4'-0"					
Trus Joist Corp.					12'-0"							
Unistrut Corporation	N/A	N/A	N/A	20'-0"	10'-0"					4"		
Western Precast Inc.	8'-0"			8'-0"								

* As required

**subsystem
product data:
structure**

4b

Company	CLEAR AREA (sq. ft.)			GROSS AREA (sq. ft.)			TOTAL HEIGHT			MAX LIVE LOAD (PSI)			LATERAL FORCE RESISTANCE			
	MAX	OPT	MIN	MAX	OPT	MIN	MAX	OPT	MIN	FLOOR	ROOF	WIND LOAD	Moment Frame	Shear Walls	Cross Bearing Walls	Other
Macomber, Inc.							2	2	2	100	50	20	●	●	●	●
McCaw Industries																
Mesco Metal Building Corp.							2	1	1	150	50	25	●	●		
Mitchell Engineering Co.	117k	80k	400	N/A	N/A	N/A	N/A	N/A	N/A	N/A	40	55	●	●		
Pascoe Steel Corp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	125	80	●	●		
Precast Concrete Co.								8				50	●	●		
Precast Systems, Inc.	*	*	*	*	*	*	*	*	*	*	*	*	●	●		
Rocky Mountain Prestress, Inc.	*	*	*	*	*	*	*	*	*	*	*	*	●	●		
Romac Steel Co., Inc.	4.8k	1.8k	32	300k	100k	15k	10	5	1	150	60	75	●	●		
Spancrete Co.	980	980		1k	1k		30	20	1	600	600	100	●	●		
Steel Fabricators, Inc.							5	1	1				●	●		
Steel & Span, Inc.	100k	1.6k	400	100k	240k	400	3	1	1	200	60	35	●	●		
Structural Foam, Inc.										N/A	N/A	N/A				
Texas, Inc.	N/A	N/A	N/A	N/A	N/A	N/A	1	1	1	150	100	20	●	●		
Trus Joist Corp.																●
Unistrut Corporation							N/A	N/A	N/A	N/A	40	N/A	●	●		
Western Precast Inc.													●	●		

* As required
 ● Preferred
 ○ Alternate

**subsystem
product data:**

structure

5b

	LARGEST DUCT THROUGH PRIMARY SPANNING MEMBER		LARGEST DUCT THROUGH SECONDARY SPANNING MEMBER	
	RECTANGULAR	ROUND	RECTANGULAR	ROUND
Macomber, Inc.	12" X 24"	20" dia	12" X 24"	20" dia
McCaw Industries				
Mesco Metal Building Corp.				
Mitchell Engineering Co.				
Pascoe Steel Corp.	12" X 12"	12" dia	3" X 3"	3" dia
Precast Concrete Co.				
Precast Systems, Inc.				
Rocky Mountain Prestress, Inc.				
Romac Steel Co., Inc.	12" X 22"	20" dia	14" X 30"	24" dia
Spancrete Co.	10' X 10'	10' dia	10' X 10'	10' dia
Steel Fabricators, Inc.	*	*	*	*
Steel & Span, Inc.				
Structural Foam, Inc.				
Texas, Inc.				
Trus Joist Corp.	30" X 30"	30" dia		
Unistrut Corporation		22" dia		
Western Precast Inc.				

* As required

manufacturers of interior partitions subsystems

MANUFACTURER	CONTACT	PRODUCT
Adanlock Jamestown Corp. 55 Jones Jamestown, NY 14701	Pete Coffin Harold Ase1 (716) 483-1551 FTS: (716) 842-3311	THINWALL
Advanced Equipment Corp. 241 Crescent Way Anaheim, CA 92801	Wesley B. Dickson (714) 635-5350 FTS: (213) 688-2000	TYPE 12 PORTABLE WALL ASONIC OPERABLE WALL
Airwall Division Richard-Wilcox Mfg. Co. 8140 E. Rosecrans Paramount, CA 90723	Arthur G. Imbrecht (213) 634-3116 FTS: (213) 536-6000	AIRWALL 300 Series 400 Series 700 Series 800 Series
Alliance Wall Corp. P.O. Box 247 Alliance, OH 44601	Jerome R. Salton (216) 823-1605 FTS: (216) 455-8971	No system identified
Bellaire Products Inc. P.O. Drawer C Tellevast, FL 33588	Donald V. Cartledge Douglas Snyder (813) 355-7166 FTS: (904) 791-2011	No system identified
The Brewster Corp. Old Saybrook, CT 06475	I. G. Murray (203) 388-4441 FTS: (203) 244-2000	SHO-WALL
Donn Products, Inc. 1000 Crocker Rd. Westlake, OH 44091	Pete Reynard Bill Timko (216) 282-2604 FTS: (216) 522-3131	VANGUARD UNITIZED CRUSADER

manufacturers of interior partitions subsystems

MANUFACTURER	CONTACT	PRODUCT
Flangeklamp of California 1433 Tillie Lewis Stockton, CA 95204	Don Jones (209) 466-4636 FTS: (209) 466-2671	DIMENSION-WALL
Glen O'Brien Movable Partition Co., Inc. 5301 E. 59th P.O. Box 6988 Kansas City, MO 64130	Steve Nichols (816) 361-5700 Dave Anderson (816) 361-2334 FTS: (816) 374-7212	QUICK-CHANGE #175 #275
H. L. Birum, Corp. 75 S. Union St. Lambertville, NJ 08530	H. L. Birum, Jr. (609) 396-1750 FTS: (201) 645-3000	No system identified
Hough Manufacturing Corp. 1809 Adel Street Janesville, WI 53545	Eli D. Bernheim (608) 756-1241 FTS: (414) 224-0111	No system identified
Keene Corporation Metal Products Division Rt. #1, Box #14 Vienna, WV 26101	Robert Lane Doyle Boothroy (304) 295-4581 FTS: (304) 343-6181	SPEED STEEL FRAMING SYSTEM
Kwik Wall Division Capitol Wood Works P.O. Box 3267 Springfield, IL 62708	Verlin Robbins Walter Claypool (217) 522-5553 FTS: (217) 525-4200	KWIK WALL

manufacturers of interior partitions subsystems

MANUFACTURER	CONTACT	PRODUCT
Precast Concrete Co., Inc. Epson, NH 03234	Richard Gayer (608) 736-9322 FTS: (603) 669-7011	No system identified
Rockaway Metal Products Corp. 175 Roger Ave. Inwood, Long Island NY 11696	Michael J. O'Leary (516) 239-1000 FTS: (212) 460-0100	PARTITIONER SPACESTYLER
Saturn Mfg. Corp. 20100 Hamilton Ave. Torrence, CA 90502	Don Codrea (213) 321-8602 FTS: (213) 688-2000	STAUERN MOVABLE PARTITIONS SATURN LANDSCAPE PARTITIONS
Unistrut Corporation 4118 S. Wayne Road Wayne, MI 48184	Harvey Phillips Ellwood Irish (313) 721-4040 FTS: (313) 226-6000	No system identified
United States Gypsum Co. 101 S. Wacker Drive Chicago, IL 60606	R. Lindegard (312) 321-4000 FTS: (312) 353-4400	USG DEMOUNTABLE PARTITION ULTRAWALL MOVABLE PART. VAUGHAN WALL
Vaughan Interior Walls, Inc. 11681 San Vicente Blvd. Los Angeles, CA 90049	Lloyd S. Henry (213) 879-0840 FTS: (213) 688-2000	VAUGHAN WALL 700 Series 900 Series 1700 Series 1900 Series 2700 Series 2900 Series

product data legend

al	Aluminum.
asb	Asbestos.
bd	Board
be-stl	Baked enamel, porcelain, or enameled steel.
car	Carpet.
exp-psr	Expanded polystyrene.
fbgls	Fiberglass.
gyp	Gypsum.
hc	Honeycomb
hd	Hard.
ins	Insulation.
met	Metal.
nyl	Nylon.
pa	Paint.
pf	Paper fiber.
pl	Plastic.
plywd	Plywood.
psf	Polystyrofoam.
pt	Particle.
sh	Sheet.
v	Veneer.
vn1	Vinyl.
wd	Wood.

FIRE PROTECTION TESTS

Fire resistance in hours as specified by NFPA No. 251.

Flame spread in numbers relating to the standard, select grade red-oak flooring = 100 tested in accordance with NFPA No. 255.

Smoke development in optical density or light absorption tested in accordance with NFPA No. 255.

ACOUSTICAL TESTS

Sound Transmission Classification (STC) in db as determined by test outlined in ASTM E90-61T.

3:20 Data Summary 21

subsystem product data: partitions

1a

	GENERAL INFORMATION						MATERIALS				
	Prefabricated Panels	Load Bearing	Integrated With Electric	Integrated With HVAC	Integrated With Plumbing	Demontable	Portable	Operable	FINISH	WEARING SURFACE	CORE
Adanlock Jamestown Corp.	●	●	●	●	●	●	●		be		pf-hc
Advanced Equipment Corp.	●	●	●	●	●	●	●				
Asonic Operable Walls	●	●	●	●	●	●	●	●	met, wd, pl,	met, pl,	fbgls, gyp, met
Type 12 Portable Wall	●	●	●	●	●	●	●	●	met, wd, pl,	met, wd, pl,	pf-hc
Airwall Division of Richard-Wilcox Mfg. Co.	●	●	●	●	●	●	●	●	wd, pt-bd, wd-v	car, vnl-sh	pf-hc, fbgls-hc
Alliance Wall Corp.	●	●	●	●	●	●	●	●	be-stl		gyp, hd-bd, asb
Bellaire Products Inc.	●	●	●	●	●	●	●	●	al, plywd	al, plywd	pf, psf,
The Brewster Corp.	●	●	●	●	●	●	●	●	vnl-sh, nyl,	pt-bd	wd
Donn Products, Inc.	●	●	●	●	●	●	●	●			
Vanguard	●	●	●	●	●	●	●	●	pa, vnl-sh,	pa, vnl-sh,	gyp-bd
Unitized	●	●	●	●	●	●	●	●	be-stl, vnl-sh,	be-stl, vnl-sh,	gyp-bd
Crusader	●	●	●	●	●	●	●	●	be-stl, vnl-sh,	be-stl, vnl-sh,	gyp-bd
Flangeklamp of California	●	●	●	●	●	●	●	●			
Glen O'Brien Moveable Partition Co., Inc.	●	●	●	●	●	●	●	●	al, vnl-sh,	hd-bd, gyp-bd,	exp-psr, fbgls-bat,
H. L. Birum Corp.	●	●	●	●	●	●	●	●	al	ash	ins

● Preferred
○ Alternate

subsystem product data: partitions

2a

	HORIZONTAL LIVE LOAD	DIMENSIONS										
		WIDTH			HEIGHT			THICKNESS				
		MIN	MAX	INCR	MIN	MAX	INCR	MIN	MAX	MIN	MAX	INCR
	LESS THAN 5 PSF	6"	6' or 4'	6"	39"	68" / 18"	*	13/4"	13/4"	13/4"	13/4"	
Adanlock Jamestown Corp.	5 PSF OR MORE											
Advanced Equipment Corp.												
Asonic Operable Walls		12"	5'-0"	12"	7'-0"	30'-0"	1"	2 1/4"	3"	3"	3"	1/8"
Type 12 Portable Wall		6"	5'-0"	1"	12'-0"	12'-0"	6"	3 1/4"	3 1/4"	3 1/4"	3 1/4"	
Airwall Division of Richard-Wilcox Mfg. Co.		14"	47 1/2"	2"	8'-0"	17'-0"	6"	15/8"	2 1/2"	2 1/2"	2 1/2"	1/8"
Alliance Wall Corp.		2'-0"	5'-0"	6"	2'-0"	12'-0"		3/8"	4"	4"	4"	1/8"
Bellaire Products Inc.		6"	4'-0"	6"	4'-0"	30'-0"	1'-0"	13/4"	6"	6"	6"	1"
The Brewster Corp.		3'-0"	8'-0"	1'-0"	4'-0"	7'-0"	1'-0"	2"	3 1/2"	3 1/2"	3 1/2"	
Donn Products, Inc.												
Vanguard		2'-0"	4'-0"	1"	8'-0"	10'-0"	1"	3"	3 1/4"	3 1/4"	3 1/4"	
Unitized		2'-0"	2'-6"	1"	8'-0"	10'-0"	1"	3"	3"	3"	3"	1"
Crusader		6"	3'-0"	1"	6"	144"	1"	3"	6"	6"	6"	
Flangeklamp of California												
Glen O'Brien Moveable Partition Co., Inc.		0"	4'-1"		3'-6"	24'-0"		13/4"	23/4"	23/4"	23/4"	
H. L. Birum Corp.		0"	4'-0"	4'-0"	0"	12'-0"	12'-0"	19/16"	2"	2"	2"	

subsystem product data: partitions

3a

PLANNING MODULE	RELOCATABILITY RATE		FIRE PROTECTION																	
	lin. ft./ manhour	MOVED BY	FIRE RESISTANCE		FLAME SPREAD		SMOKE DEVELOPMENT													
			RATING	TEST	RATING	TEST	RATING	TEST												
	HORIZONTAL	VERTICAL																		
Adanlock Jamestown Corp.			10	Partition manufacturer	5		5		0											
Advanced Equipment Corp.				Skilled craftsman																
Asonic Operable Walls	12"	6"		Owner's Maint. staff																
Type 12 Portable Wall			60																	
Airwall Division of Richard-Wilcox Mfg. Co.	2"	2"	40		13		10-15		5											
Alliance Wall Corp.					0		0		0											
Bellaire Products Inc.							0-30		0-30											
The Brewster Corp.			60		*		*		*											
Donn Products, Inc.																				
Vanguard	*	*	5		1hr															
Unitized	30"	*	30-40		1hr		class A		class A											
Crusader	30"	*	3		1-2hrs		class A		class A											
Flangeklamp of California	4'	12"	10		1hr		1hr		1hr											
Glen O'Brien Moveable Partition Co., Inc.	N/A	N/A	1-3		class A															
H. L. Birum Corp.																				

* Varies
 Preferred
 Alternate
 Conducted by outside agency
 Conducted in-house
 Planned or desired
 Not planned
 3:20 Data Summary 24

subsystem product data: partitions

4a

	DOOR FRAMES				DOOR TYPES				ACOUSTICS								
	Wood	Steel	Aluminum	Plastic	Other	Wood Hollow Core	Hollow Metal	Wood Solid Core	Class B Fire Door	Class C Fire Door	PARTY WALL		WALL WITH DOOR		NON-PARTY WALL		
											RATING	TEST	RATING	TEST	RATING	TEST	RATING
Adanlock Jamestown Corp.	●					●						36	(STC)	22			
Advanced Equipment Corp.												46	■	41	■	38	■
Asonic Operable Walls													◇				◇
Type 12 Portable Wall		●				●						38-44	■				
Airwall Division of Richard-Wilcox Mfg. Co.	●		●			●											
Alliance Wall Corp.	●																
Bellaire Products Inc.	●		●			●								30	■		
The Brewster Corp.												*					
Donn Products, Inc.																	
Vanguard	●																
Unitized	●																
Crusader	●											50	■	37	■	34-38	■
Flangeklamp of California	●											48	■	48	■	36-42	■
Glen O'Brien Moveable Partition Co., Inc.	●											40	■		◇	36-50	■
H. L. Birum Corp.	●															36	■

* Varies
 ● Preferred
 ○ Alternate
 ■ Conducted by outside agency
 □ Conducted in-house
 ◇ Planned or desired
 ◇ Not planned

subsystem product data: partitions

1b

	GENERAL INFORMATION						MATERIALS				
	Prefabricated Panels	Load Bearing	Integrated With Electric	Integrated With HVAC	Integrated With Plumbing	Demontable	Portable	Operable	FINISH	WEARING SURFACE	CORE
Rough Manufacturing Corp.											
Hufcor - Accordion	●							●	PVC	PVC	pt-bd, stl,
Hufcor - Unispan for Accordion	●							●	be-stl, PVC	be-stl, PVC	
Hufcor - Operable	●							●	PVC, stl	PVC, stl	gyp, pf-batts
Hufcor - Unispan for Operable	●	●						●	be-stl, PVC,	be-stl, PVC	
Hufcor - Portable	●	●	●	●			●		PVC	PVC	hc
Hufcor - Semi-portable	●	●	●	●			●		PVC	PVC	hc
Keene Corp.											
Kwik Wall Division	●							●	pl-v, vnl	al	hd-bd, wd,
Precast Concrete Co., Inc.	●	●							concrete	concrete	concrete, ins
Rockaway Metal Products Corp.	●							●	be-stl	be-stl	fbgls-ins & hc
Saturn Mfg. Corp.	●							●	pl-v, vnl-sh,		hc, psf,
Unistrut Corp.								●	*	*	*
United States Gypsum Co.											
USG Demountable Partition								●	gyp-bd, plaster	pa, vnl-WC	stl, gyp
Ultrawall Moveable Partition								●	gyp-bd, plaster	pa, vnl-WC	stl, gyp
Vaughan Interior Wall, Inc.	●	●	●	●	●	●	●	●	pl, vnl-sh,	gyp-bd, al,	gyp-bd

* Varies Preferred Alternate
3:20 Data Summary 26

subsystem product data: partitions

2b

	HORIZONTAL LIVE LOAD	DIMENSIONS																	
		WIDTH			HEIGHT			THICKNESS											
		MIN	MAX	INCR	MIN	MAX	INCR	MIN	MAX	INCR									
Hough Manufacturing Corp.																			
Hufcor - Accordion	●		30'-0"	6"		14'-0"	1/2"		1 1/2"										
Hufcor - Unispan for Accordion	●		40'-0"	1/2"		19'-0"	1/2"		1/2"										
Hufcor - Operable		2'-6"	4'-0"		7'-0"	24'-3"				4'-4"	4"								
Hufcor - Unispan for Operable	●		35'-0"			14'-0"													
Hufcor - Portable	●	1'-10"	5'-0"		7'-0"	12'-3"													
Hufcor - Semi-portable	●		4'-0"			12'-3"					3"		3"						
Keene Corp.	●	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Kwik Wall Division	●		5'-0"			16'-0"					13/4"		3"						
Precast Concrete Co., Inc.			25'-0"			10'-0"							6"						
Rockaway Metal Products Corp.		6"	5'-0"	6"	3'-0"	10'-3"			*		2 3/8"		3"						2 3/8"
Saturn Mfg. Corp.		1'-0"	5'-0"		2'-0"	10'-0"					1 3/4"		13/4"						
Unistrut Corp.	●																		
United States Gypsum Co.																			
USG Demountable Partition	●	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ultrawall Moveable Partition	●	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vaughan Interior Wall, Inc.		2'-0"	3'-0"	1"	3'-0"	14'-0"				1"	2 1/2"		6"						3/4"

* Varies Preferred Alternate
3:20 Data Summary 27

subsystem product data: partitions

3b

Company	PLANNING MODULE		RELOCATABILITY RATE MOVED BY 1 in. ft./ manhour	FIRE PROTECTION										
	HORIZONTAL	VERTICAL		FIRE RESISTANCE	FLAME SPREAD	SMOKE DEVELOPMENT								
	RATING	TEST		RATING	TEST	RATING	TEST							
Hough Manufacturing Corp.														
Hufcor - Accordion			*											
Hufcor - Unispan for Accordion	12"	12"	*										13-51	205-300
Hufcor - Operable	12"	12"	*											
Hufcor - Unispan for Operable	12"	12"	*										*	*
Hufcor - Portable	12"	12"	40'										*	*
Hufcor - Semi-portable	12"	12"	4'										*	*
Keene Corp.														
Keene Corp.														
Kwik Wall Division	48"		*											
Precast Concrete Co., Inc.														
Rockaway Metal Products Corp.	6"	*	25'											
Saturn Mfg. Corp.	4'-5"	*	50'											
Unistrut Corp.														
United States Gypsum Co.														
USG Demountable Partition	*													
Ultradwall Moveable Partition	*													
Vaughan Interior Wall, Inc.	*	*	6											

* Varies Preferred Alternate Conducted by outside agency Conducted in-house Planned or desired Not planned

subsystem product data: partitions

4b

	DOOR FRAMES				DOOR TYPES				ACOUSTICS							
									PARTY WALL		WALL WITH DOOR		NON-PARTY WALL			
	Wood	Steel	Aluminum	Plastic	Other	Wood Hollow Core	Hollow Metal	Wood Solid Core	Class B Fire Door	Class C Fire Door	RATING	TEST	RATING	TEST	RATING	TEST
Hough Manufacturing Corp.																
Hufcor - Accordion																
Hufcor - Unispan for Accordion																
Hufcor - Operable																
Hufcor - Unispan for Operable																
Hufcor - Portable																
Hufcor - Semi-portable																
Keene Corp.																
Kwik Wall Division																
Precast Concrete Co., Inc.																
Rockaway Metal Products Corp.																
Saturn Mfg. Corp.																
Unistrut Corp.																
United States Gypsum Co.																
USG Demountable Partition																
Ultrawall Moveable Partition																
Vaughan Interior Wall, Inc.																

* Varies
 Preferred
 Alternate
 Conducted by outside agency
 Conducted in-house
 Planned or desired
 Not planned

manufacturers of heating, ventilating, and cooling subsystems

MANUFACTURER	CONTACT	PRODUCT
Airtemp Division Chrysler Corporation 1600 Webster St. Dayton, OH 45401	George O. Pringle (513) 461-5100 FTS: (513) 461-4830	No system identified
American Air Filter, Co., Inc. 215 Central Avenue Louisville, KY 40401	Robert C. Braverman (502) 637-0011 FTS: (502) 582-5011	PTAC-AAF Series 16 AAF MARK 13 AAF SC UNIVent AAF MARK 20 AAF ENERCON
Borg-Warner Corporation 1101 17th St. N.W. Washington DC 20015	Forrest L. Bishop (202) 659-2380 FTS: 900+7 Digit Commer.No.	No system identified
Carrier Air Conditioning Co. Carrier Parkway Syracuse, NY 13201	Walter W. Treichler (315) 463-8411 FTS: (315) 473-3350	CARRIER MODULINE SYSTEM
Dunham-Bush, Inc. 711 No. Fayette Street Alexandria, VA 22314	Leroy M. Bissett (703) 549-1373 FTS:900+7 Digit Commer.No.	RMTZ
Lennox Industries Inc. P.O. Box 3340 E. 14th St. Sta. DesMoines, IA 50316	Warren B. Johnson (515) 266-1181 FTS: (515) 284-4000	ROOFTOP MULTIZONE-DMS 4- 185,275,300,360,415,600 ROOFTOP SINGLEZONE-DSSI- 300,360 INDOOR MULTIZONE-DMS2-275 Alli Season Single Package GS3 and CHA3 Complete Line of Residential HVAC Systems

manufacturers of heating, ventilating, and cooling subsystems

MANUFACTURER	CONTACT	PRODUCT
Miller/Picking Corp. Box 130 Johnstown, PA 15907	H. M. Picking III J. Thomas Sobieski (814) 479-4023 FTS: (412) 644-3311	PENTHOUSE
McQuay Division McQuay-Perfex Inc. 13600 Industrial Park Blvd. P.O. Box 1551 Minneapolis, MN 55440	Gary R. Brooks (Normal, IL) (309) 452-2012 FTS: (312) 353-4400	SEASONMASTER/ROOFPAK
The Trane Copany 3600 Pammell Creek Road La Crosse, WI 54650	Ron L. Weldon (608) 782-8000 FTS: (608) 252-5000 Phillip Deakin (703) 525-4015	

**subsystem
product data:**

**heating,
ventilating,
and cooling**

2

	HEATING OUTPUT (MBh)	COOLING OUTPUT (tons)	AIR VOLUME (cfm/unit)	MINIMUM SIZE OF SINGLE ZONE (sq. ft.)	MAXIMUM NUMBER OF ZONES	CONTROL ZONES PER UNIT	UNIT LOCATION
Airtemp Div. of Chrysler Corp.	*	*	*	*	*	*	Roof top
American Air Filter Co., Inc.							Above ceiling
AAF Mark 13	450	32	13,500	100	none	12	Roof top
AAF Mark 20	976	60	20,000*	100	none	20	
AAF EnerCon	81	4.2	1,730	100	none	1	Roof top
PTAC-AAF Series 16	16.5	1.1	400	100	none	1	Roof top
AAF SC UNIVENT	50	4	1,250	100	none	1	Roof top
Borg-Warner Corp.	300	*	*	20	none	*	
Carrier Air Conditioning Co.	0	65	220	100	none	1	Above ceiling
Dunham-Bush, Inc.		10-40	3460-15120			12-16	Roof top
Lennox Industries, Inc.	850	43	18,000	100	none	18	Roof top
McQuay Div., McQuay-Perflex Inc.	1-5,000	2-140	200-50000	*	none	*	Roof top
Miller/Picking Corp.	2000	300	100,000	*	none	*	Roof top
							Other

* Varies
 Preferred
 Alternate

manufacturers of lighting/ceiling subsystems

MANUFACTURER	CONTACT	PRODUCT
Acousti Engineering Co. of Fla. P.O. Box 2147 Jacksonville, FL 32203	W. C. Fleming (904) 353-7365 FTS: (904) 791-2011	ARMSTRONG C SERIES
Armstrong Cork Co. Liberty Street Lancaster, PA 17604	D. H. McNaughton (717) 397-0611 FTS: (717) 394-0681	C-60 SERIES
The Celotex Corporation 1500 N. Dale Mabry Tampa, FL 33622	K. W. Holm (813) 871-4137 M. C. Garland (813) 871-4419 FTS: (813) 228-2211	VARI-TEC 800
Chicago Metallic Corp. 4849 S. Austin Ave. Chicago, IL 60638	Edward G. Sluka (312) 458-5460 FTS: (312) 353-4400	No system identified
Day-Brite Lighting Division Emerson Electric Co. 8100 Florissant St. Louis, MO 63136	A. A. Dunn (314) 553-3069 T. L. Ballman (314) 553-3106 FTS: (314) 622-8100	COMPAC
Donn Products Inc. 1000 Crocker Road Westlake, OH 44145	David Vanosdall Bert Lahn (216) 871-1000 FTS: (216) 522-3131	DONN COORDINATOR
Flangeklamp Industries 1971 Abbott Rd. Buffalo, NY 14218	John R. Moberly Robert Lees (716) 825-6650 FTS: (716) 842-3311	FLANGEKLAMP RIGID-AIR

manufacturers of lighting/ceiling subsystems

MANUFACTURER	CONTACT	PRODUCT
Guth Lighting Division Sola Basic Industries P.O. Box 7079 St. Louis, MO 63103	R. W. Barnes T. Mueller (314) 533-3200 FTS: (314) 622-8100	PROJECT EC
Interior Systems Division Sunbeam Lighting Co., Inc. 2345 Vauxhall Rd. Union, NJ 07083	H. J. Cohan (201) 687-3611 FTS: (201) 645-3000	No system identified
Johns-Manville Corp. Greenwood Plaza Denver, CO 80217	Robert Hughes (Holophane) J. C. Busch (National) (303) 770-1000 FTS: (303) 837-0111	HOLOPHANE CEILING/LIGHTING SYSTEM NATIONAL CEILING/LIGHTING SYSTEM
Lok Ceiling Systems General Electric Co. 801 South Acadia Avenue Fullerton, CA 92634	Hal Kline Ormand Sutter (714) 871-9500 FTS: (213) 688-2000	INTEGRA 'TEE
National Ceiling Johns-Manville Co. 6200 Oakton St. Morton Grove, IL 60053	H. J. Thompson (312) 966-1300 FTS: (312) 353-4400	SERIES 3000
National Gypsum Company 325 Delaware Ave. Buffalo, NY 14226	R. L. Keeler (716) 852-5880 FTS: (716) 842-3311	No system identified

manufacturers of lighting/ceiling subsystems

MANUFACTURER	CONTACT	PRODUCT
The Soundlock Corporation 2004 Breckenridge Dr., N.E. Atlanta, GA 30345	Richard G. Barnett (404) 633-9464 FTS: (404) 526-0111	OMNI 33 SYSTEM SOUNDHTE SYSTEM MINI-COFFER SYSTEM
SYNCON 1717 South 12th Street Milwaukee, WI 53204	Joseph C. White Douglas C. Ryhn (414) 671-1180 FTS: (414) 224-0111	SYNCON
United Lighting/Ceiling Corp. 513 Independent Rd. Oakland, CA 94621	P. W. Pfeiffer (800) 227-0428 (Toll Free)	CYLINDRICELL 5000 AC LIGHT-LOK 5005 AC PRISMA-LOK 5007 AC CUBECELL 6000 AC DIMENSION PLUS 9000 DIMENSION 5 9500

product data legend

al	Aluminum.
asb	Asbestos.
bd	Board
be-stl	Baked enamel, porcelain, or enameled steel.
car	Carpet.
exp-psr	Expanded polystyrene.
fbgls	Fiberglass.
gyp	Gypsum.
hc	Honeycomb
hd	Hard.
ins	Insulation.
met	Metal.
nyl	Nylon.
pa	Paint.
pf	Paper fiber.
pl	Plastic.
plywd	Plywood.
psf	Polystyrofoam.
pt	Particle.
sh	Sheet.
v	Veneer.
vn1	Vinyl.
wd	Wood.

FIRE PROTECTION TESTS

Fire resistance in hours as specified by NFPA No. 251.

Flame spread in numbers relating to the standard, select grade red-oak flooring = 100 tested in accordance with NFPA No. 255.

Smoke development in optical density or light absorption tested in accordance with NFPA No. 255.

ACOUSTICAL TESTS

Sound Transmission Classification (STC) in db as determined by test outlined in ASTM E90-61T.

**subsystem
product data:
lighting/ceiling**

1a

subsystem product data: lighting/ceiling	GENERAL INFORMATION CEILING				GENERAL INFORMATION LIGHTING				CEILING MATERIAL				
	Applied directly to structure	Suspended	Integrated with lighting	Integrated with HVC system	Integrated with partitions	Provides access to services	Incandescent	Fluorescent	Luminous ceiling	Exterior lighting	Safety lighting (fire, exit)	STRUCTURE	FINISH
Acousti Engineering Co.	●	●	●	●	●	●	●	●	●			Aluminum, steel	Anod-al, be-stl
Armstrong Cork Co.		●	●	●	●	●	●					Min-fiber-bd, stl	Paint
The Celotex Corp.		●	●	●	●	●	●	●	●	●		Aluminum, be-stl	Mineral fiber
Chicago Metallic Corp.	●	●	●	●	●	●							Enameled steel
Day-Brite Lighting Div.		●	●	●	●	●	●	●	●	●		Acrylic lens, be-stl	White, *
Donn Products Inc.		●	●	●	●	●	●	●	●			Enameled steel	Black & white
Flangeklamp Ind.		●	●	●	●	●							
Guth Lighting Div.		●	●	●	●	●	●	●	●	●		Cold rolled steel	Acrylic paint
Interior Systems Div. Sunbeam Lighting Co., Inc.							●	●	●	●			
Johns-Manville Corp.							●	●	●	●			
Holophane Ceiling & Lighting		●	●	●	●	●	●	●	●	●		N/A	N/A
National Ceiling & Lighting		●	●	●	●	●	●	●	●	●		Steel, aluminum	
Lok Ceiling Systems		●	●	●	●	●	●	●	●	●		Steel, aluminum	pa, vnl, met, pl-v,
National Ceiling		●	●	●	●	●	●	●	●	●		C.R.S., aluminum	B.W.E., anod.

● Preferred
○ Alternate

**subsystem
product data:
lighting/ceiling**

2a

subsystem product data: lighting/ceiling	DIMENSIONS		SUBDIVISION OF BASIC MODULE	ASSEMBLY TYPE			40W TUBES PER PLANNING MODULE TO MAINTAIN			AIR HANDLING ACCOMMODATIONS				Partition accommodation on planning module line only	Partition accommodation at any location
	PLANNING MODULE			Flat panel	Coffer (3-D)	Luminous ceiling	Other	70 footcandles	100 footcandles	200 footcandles	Air bar	Air handling fixture	Diffuser		
Acousti Engineering Co.	60" X 60"		*	●	●	●	●	1	2	3	●	●	●	●	●
Armstrong Cork Co.	60" X 60", *		*	○	○	○	○	*	*	*	○	○	○	○	○
The Celotex Corp.	60" X 60"		*	●	●	○	○	1.3	2	3	○	○	○	○	○
Chicago Metallic Corp.	24" X 48"		*	○	○	○	○				○	○	○	○	○
Day-Brite Lighting Div.	60" X 60"			●	●	●	●	2	2	4	●	●	●	●	●
Donn Products Inc.	60" X 60"		*	●	●	●	●	1	2	4	●	●	●	●	●
Flangeklamp Ind.	60" X 60"		*	●	●	●	●	N/A	N/A	N/A	●	●	●	●	●
Guth Lighting Div.	60" X 60"		*	○	○	○	○	2	3	4	○	○	○	○	○
Interior Systems Div. Sunbeam Lighting Co., Inc.				●	●	●	●	N/A	N/A	N/A	●	●	●	●	●
Johns-Manville Corp.															
Holophane Ceiling & Lighting	60" X 60"		*					1	2	4					
National Ceiling & Lighting	60" X 60", *		*					1	1	1					
Lok Ceiling Systems	*			●	●	●	●	3	3.5	6	●	●	●	●	●
National Ceiling	60" X 60"		*	○	○	○	○	1.5	2.15	4.3	○	○	○	○	○

* Yes Preferred Alternate
 * Varies Preferred Alternate
 3:20 Data Summary 39

**subsystem
product data:
lighting/ceiling**

3a

ACOUSTICS				FIRE PROTECTION					
CEILING/ FLOOR		CEILING/ ROOF		FIRE RESISTANCE		FLAME SPREAD		SMOKE DEVELOPMENT	
RATING	TEST	RATING	TEST	RATING	TEST	RATING	TEST	RATING	TEST
(STC)	(STC)	(STC)	(STC)						
		43				25		10	
35-39		40-44		to 4hrs		Class25		Class25	
35-39		35-39		1-2hrs		0-25		0-15	
				2hrs		0		0	
41				2hrs					
37		37		2hrs		25		5	
				2hrs		0-25		0	
44									
39				2hrs					
				2hrs					
35-39		35-39		2hrs					

Conducted by outside agency Planned or desired
 Conducted in-house Not planned
 3:20 Data Summary 40

**subsystem
product data:
lighting/ceiling**

2b

subsystem product data: lighting/ceiling	DIMENSIONS		SUBDIVISION OF BASIC MODULE	ASSEMBLY TYPE			40W TUBES PER PLANNING MODULE TO MAINTAIN			AIR HANDLING ACCOMMODATIONS				Partition accommodation on planning module line only	Partition accommodation at any location
	PLANNING MODULE			Flat panel	Coffer (3-D)	Luminous ceiling	Other	70 footcandles	100 footcandles	200 footcandles	Air bar	Air handling fixture	Diffuser		
National Gypsum Co.															
The Soundlock Corp.	60" X 60"	*		●	●						●	●			●
Syncon	60" X 60"	*		●	●						●	●			
United Lighting & Ceiling Corp															
Cylindricell 5000 AC	24" X 24"	*			●		1	2	3		●	●			●
Light-Lok 5005 AC															
Prisma-Lok 5007 AC	24" X 24"	*			●		1	2	3		●	●			●
CubeCell 6000 AC															
Dimension-Plus 9000	24" X 24"	*		●	●		1	2	3		●	●			●
Dimension-5 9500															

* Yes Preferred
 * Varies Alternate
 3:20 Data Summary 42

**subsystem
product data:
lighting/ceiling**

3b

		ACOUSTICS				FIRE PROTECTION																
		CEILING/ FLOOR		CEILING/ ROOF		FIRE RESISTANCE		FLAME SPREAD		SMOKE DEVELOPMENT												
		RATING	TEST	RATING	TEST	RATING	TEST	RATING	TEST	RATING	TEST											
(STC)																						
National Gypsum Co.		40-44	■				■															
The Soundlock Corp.		40	■					15							0							
Syncon																						
United Lighting & Ceiling Corp																						
Cylindriclell 5000 AC										0-70					200							
Light-Lok 5005 AC																						
Prisma-Lok 5007 AC										0-70					200							
Cubececell 6000 AC																						
Dimension-Plus 9000										0-70					200							
Dimension-5 9500																						

Conducted by outside agency Planned or desired
 Conducted in-house Not planned
 3:20 Data Summary 43

manufacturers of electric/electronic distribution subsystems

MANUFACTURER	CONTACT	PRODUCT
Electrical Product Div. Midland-Ross Corp. P. O. Box 1548 Pittsburgh, PA 15233	Robert Beatty James Pavlot (412) 322-2345 FTS: (412) 644-3311	Kindorf Channel
Executone, Inc. 29-10 Thomson Avenue Long Island City, NY 11101	J. Kahn A. Bell (212) 392-4800 FTS: (212) 460-0100	T-900 Keyphone VHF & Low Frequency Pocket Page Complete Sound System Hospital Audio Visual Comm. Nursecom Nursetalk Nursecall Registat Locate/Reply - Intercom 100 series 600 series 700 series 411 series
Granco Steel Product Co. P. O. Box 40526 Houston, TX 77040	R. L. Casten (713) 644-1834 FTS: (713) 226-4011	Cellular Floor
Microreflector Co., Inc. 40 Bayview Avenue Inwood, L.I., NY 11696	Milton Liberman (516) 371-1111 FTS: (212) 460-0100	Compatible Modular System
Monaco Enterprises P. O. Box 14129 Spokane, WA 99214	Eugene A. Monaco Clarence A. Monaco (509) 926-6277 FTS: (509) 456-0111	225 SS711M CA-42 "Echo 500" C-100 CSC-338 FAVAPA-1

manufacturers of electric/electronic distribution subsystems

MANUFACTURER	CONTACT	PRODUCT
Walker/Parkersburg Div. of Textron Inc. P. O. Box 1828 Parkersburg, WV 26101	James E. Croom Charles T. Flackbarth (304) 485-1611 FTS: (304) 422-8551	Walkerduct-Underfloor Duct & Surface Raceway
The Wiremold Co. West Hartford, CT 06110	W. E. Parks (203) 233-6251 FTS: (203) 244-2000	Wiremold Utility Service Columns ODS Wiremold Metal Surface Raceways Plugmold Multioutlet Tele-Power Poles

**subsystem
product data:**

electric/electronic

INCLUDED ●
OPTIONAL ○
YES *

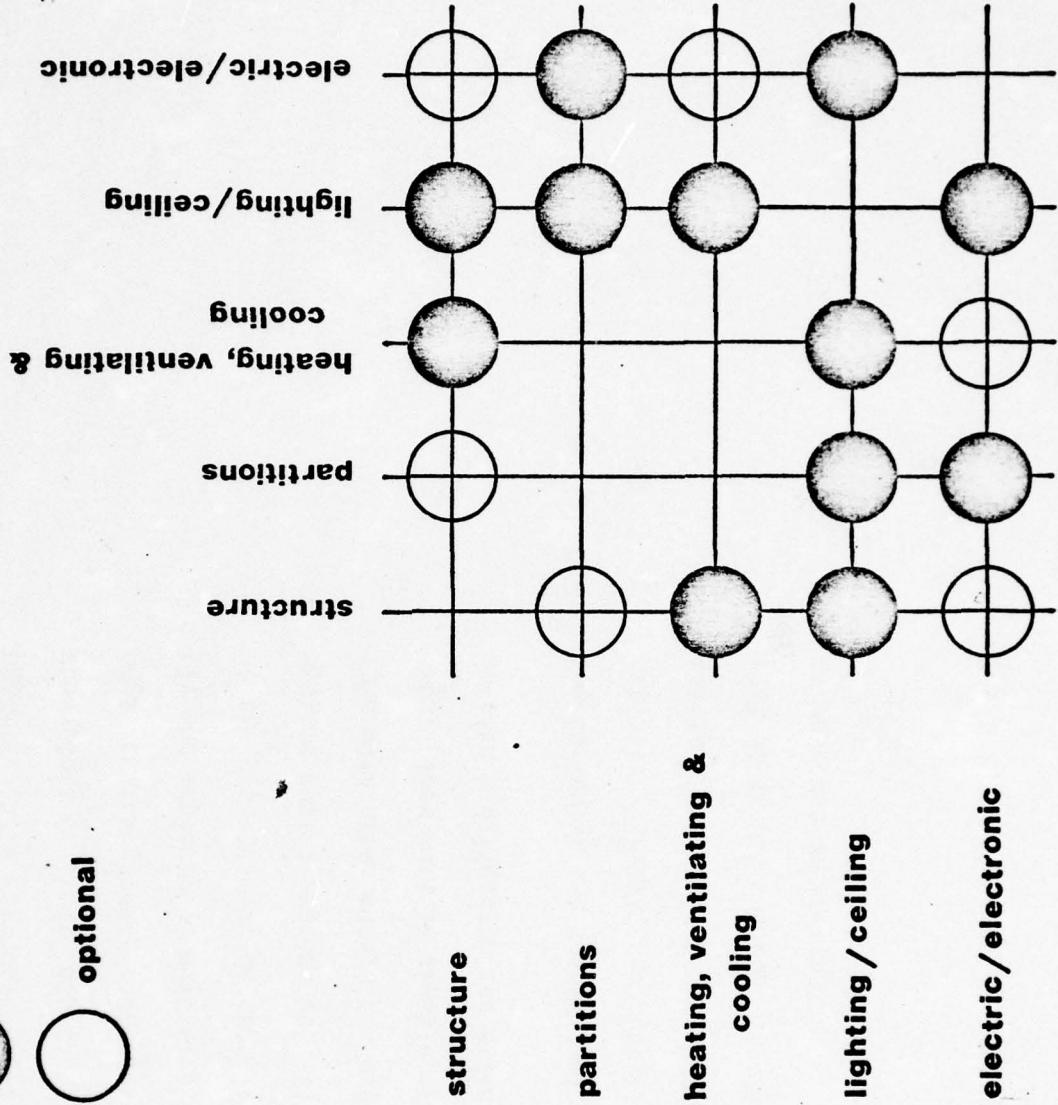
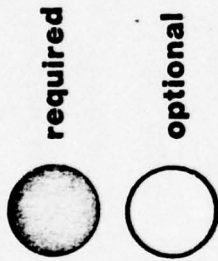
	FUNCTIONAL SYSTEMS										RELOCATABLE BY		
	Audio communications	Clock	Closed circuit TV	TV antenna	Fire detection	Security	PAX emergency telephones	Dial access programs	Power distribution	Other	Manufacturer's personnel	Licensed electricians	Owner's maintenance staff
Electrical Product Div. Midland-Ross Corp.	●							●	●		*	*	
Executone, Inc.	○	○	○	○	○	○	○	○	○				
Granco Steel Product Co.	○	○	○	○	○	○	○	○	○		*	*	
Microlector Co., Inc.	○	○	○	○	○	○	○	○	○	*	*	*	
Monaco Enterprises	○	○	○	○	○	○	○	○	○	*	*	*	
Walker/Parkersburg Div. Textron Inc.	○	○	○	○	○	○	○	○	○		*	*	
The Wiremold Co.	○	○	○	○	○	○	○	○	○		*	*	
ODS Systems	○	○	○	○	○	○	○	○	○		*	*	
Plugmold Multioutlet Systems	○	○	○	○	○	○	○	○	○		*	*	
Tele-Power Poles	○	○	○	○	○	○	○	○	○		*	*	
Metal Surface Raceways	○	○	○	○	○	○	○	○	○		*	*	
Utility Service Columns	○	○	○	○	○	○	○	○	○	*	*	*	

Compatibility:

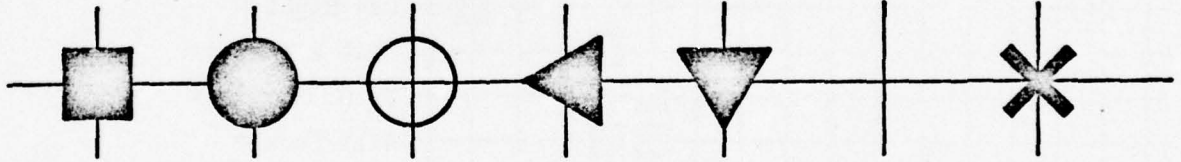
Subsystem fabrication is only one part of the building production process. Site assembly of buildings and replacement of obsolete subsystems or their components are also extremely important. For construction economy and maintenance of the entire building, assembly and replacement must also be industrialized, i.e., those parts of the process must be repetitive and efficiently organized. Subsystems must therefore be designed and manufactured to be compatible with other subsystems used in construction of the same buildings. They must be capable of interfacing in the building without on-site modification and extensive use of handcraft methods.

The following are charts indicating subsystems' interfaces, compatibility levels, and subsystem manufacturers' product compatibility. An asterisk (*) following a manufacturer's name indicates that he is not included in this edition of the catalog due to lack of response or information.

mandatory subsystems interfaces



compatibility legend



Indicates previously used together as obtained from BSIC/EFL Systems Building Data Bank.

Indicates full compatibility claimed by both manufacturers.

Indicates probable compatibility claimed by one or both manufacturers.

Indicates full compatibility claimed by manufacturer listed at the top of the chart but not by the manufacturer listed at the side of the chart.

Indicates full compatibility claimed by manufacturer listed at the side of the chart but not by the manufacturer listed at the top of the chart.

Indicates compatibility not known or data missing.

Indicates products specified incompatible.

**subsystem
compatibility:**

**structure
heating,
ventilating,
and cooling**

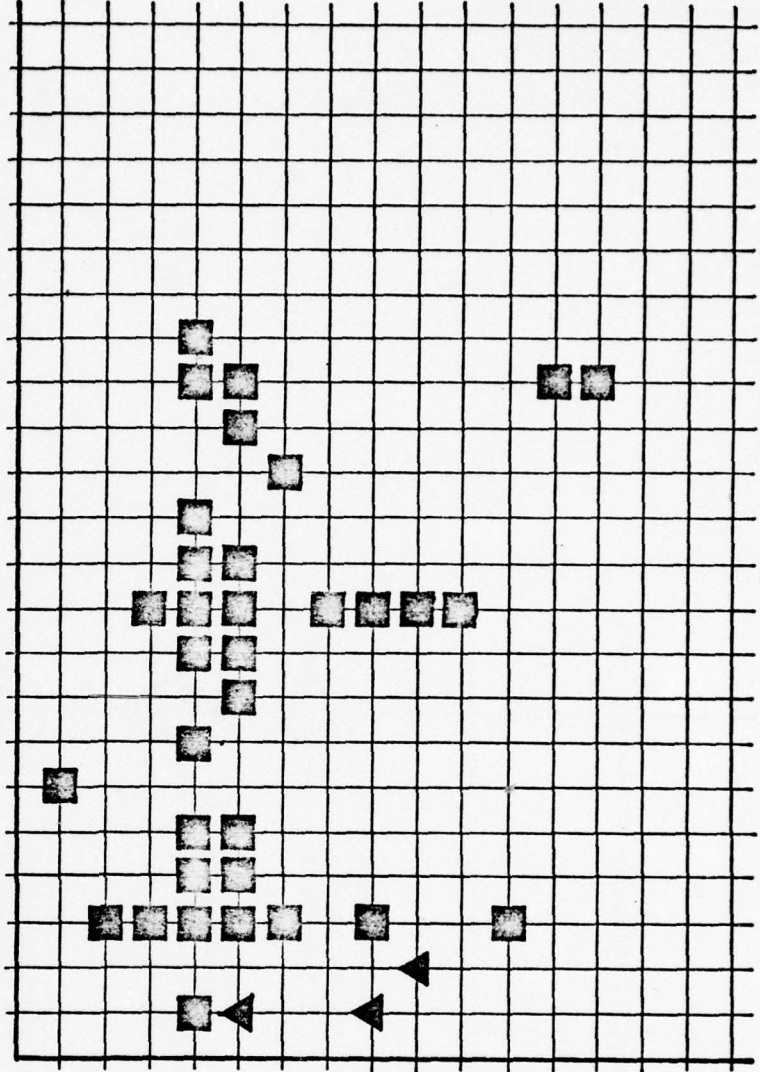
1

structure

- Bethlehem Contracting Co.
- Houdaille-Duval-Wright
- Inland-Ryerson Contracting Co.
- Macomber, Inc.
- Romac Steel Co., Inc.
- Steel Fabricators Inc.
- Anthes-Canron *
- Butler Manufacturing Co. *
- Haven-Busch Co. *
- Le Jeune *
- Marshall Erdman & Assoc. *
- Standard Bldg. Systems *
- Vulcraft *

heating, ventilating, & cooling

- Carrier Air Conditioning Co.
- Dunham-Bush, Inc.
- Lennox Industries, Inc.
- Miller/Picking Corp.
- American Air Filter Co., Inc.
- Day Night *
- Dial A Temp *
- F. W. Harris *
- Hill York *
- ITT Environmental Products Div. *
- Mammoth Div., Lear Siegler Inc. *
- Martin Mechanical *
- Modine Manufacturing Co. *
- Poole & Kent *
- The Trane Co. *
- Acme Industries Inc. *



**subsystem
compatibility:**

**structure
heating,
ventilating,
and cooling**

2

NOTE: Respondent manufacturers
having incomplete or missing
compatibility information.

STRUCTURE

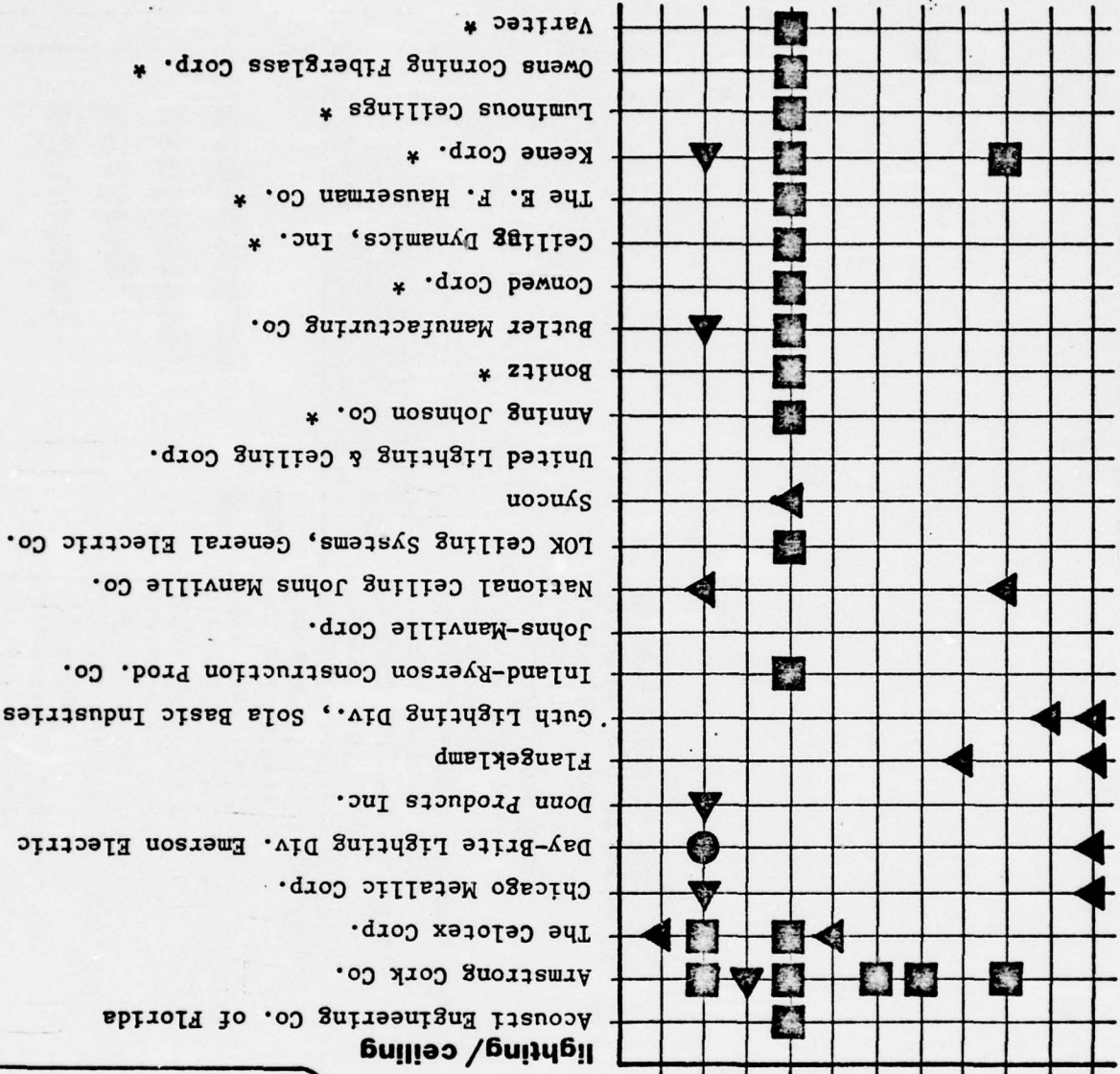
Bellaire Products, Inc.
Canam Hambro Systems, Inc.
C/O/A Corp.
Coronis Building Systems, Inc.
Cuckler Steel Span Co.
Harter Conc. Prod. Inc.
Johns-Manville Corp.
Kirby Building Systems, Inc.
Lone Star Industries
McCaw Industries
Mesco Metal Buildings Corp.
Mitchell Engineering Co.
Pascoe Steel Corp.
Precast Concrete Co., Inc.
Precast Systems, Inc.
Rocky Mountain Prestress, Inc.
Spancrete Co.
Steel & Span Inc.
Structural Foam Inc.
Texas Inc.
Trus Joist Corp.
Unistrut Corp, Moduspan Div
Western Precast, Inc.

HEATING, VENTILATING & COOLING

Airtemp Div., Chrysler Corp.
Borg-Warner Corp.
McQuay Div., McQuay-Perfex Inc.

subsystem compatibility:
heating, ventilating, and cooling
lighting/ceiling 1

- heating, ventilating & cooling
- Airtemp Div., Chrysler Corp.
- Carrier Air Conditioning Co.
- Dunham-Bush, Inc.
- Lennox Industries, Inc.
- McQuay Div, McQuay - Perfex Inc.
- Miller/Picking Corp.
- Acme Industries, Inc. *
- Air Factors *
- American Air Filter Co., Inc. *
- Anemostat *
- Barber-Coleman Co., Env. Systems Div. *



**subsystem
compatibility:**

**heating,
ventilating,
and cooling
lighting/ceiling**

2

heating, ventilating & cooling

- Chicago Metallic Corp. *
- Day Night *
- Dial A Temp *
- Donn Products, Inc. *
- F. W. Harris *
- Hill York *
- ITT Environmental Products Div. *
- Krueger Div., Lear Siegler Inc. *
- LOK Ceiling Systems, G. E. Co. *
- Mammoth Div., Lear Siegler Inc. *
- Marshall Erdman & Assoc. *

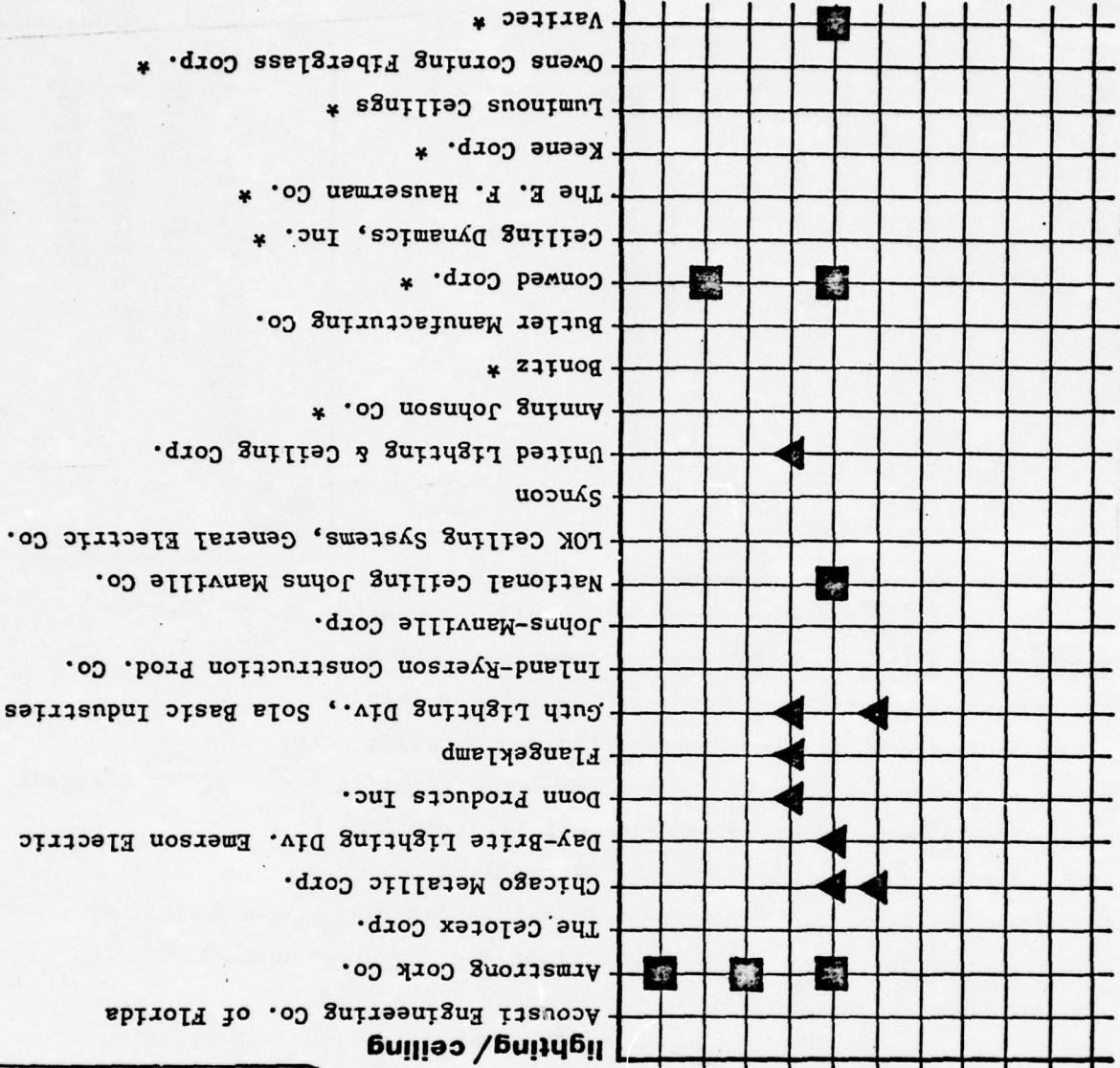


**subsystem
compatibility:
heating,
ventilating,
and cooling
lighting/ceiling**

3

heating, ventilating & cooling

- Martin Mechanical *
- Modine Manufacturing Co. *
- Poole & Kent *
- Titus *
- The Trane Co. *
- Tuttle & Bailey *



**subsystem
compatibility:**

**heating,
ventilating,
and cooling
lighting/ceiling 4**

NOTE: Respondent manufacturers
having incomplete or missing
compatibility information.

HEATING, VENTILATING & COOLING

Borg-Warner Corp.

LIGHTING/CEILING

Interior Systems Div., Sunbeam
Lighting Co., Inc.
National Gypsum Co.
The Soundlock Corp.

**subsystem
compatibility:
lighting/ceiling
structure**

1

- structure**
- Bethlehem Contracting Co.
- Houdaille-Duval-Wright
- Inland-Ryerson Contracting Co.
- Macomber, Inc.
- Romac Steel Co., Inc.
- Butler Manufacturing Co. *
- Haven-Busch Co. *
- Le Jeune *
- Standard Bldg. Systems *
- Syncon *

lighting/ceiling

Acousti Engineering Co. of Florida

Armstrong Cork Co.

The Celotex Corp.

Flangeklamp

Inland-Ryerson Construction Prod. Co. *

National Ceiling Johns Manville Co.

LOK Ceiling Systems, General Electric Co.

Syncon

Anning Johnson Co. *

Bonitz *

Butler Manufacturing Co.

Conved Corp. *

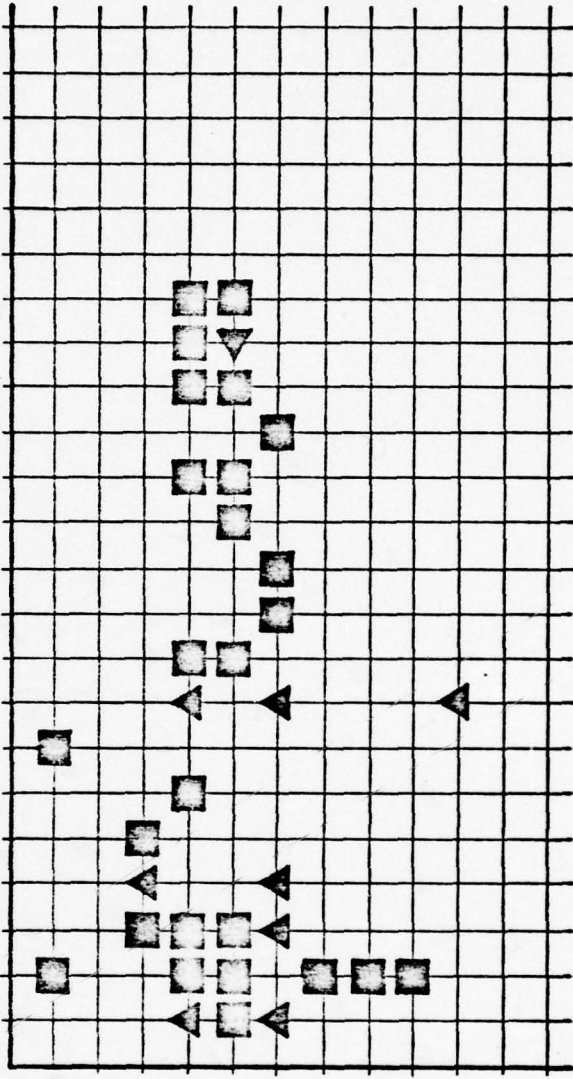
Ceiling Dynamics, Inc. *

The E. F. Hauserman Co. *

Keene Corp. *

Luminous Ceilings *

Owens Corning Fiberglass Corp. *



**subsystem
compatibility:
lighting/ceiling
structure**

2

NOTE: Respondent manufacturers having incomplete or missing compatibility information.

STRUCTURE

Bellaire Products, Inc.
Canam Hambro Systems, Inc.
C/O/A Corp.
Coronis Building Systems, Inc.
Cuckler Steel Span Co.
Harter Conc. Prod. Inc.
Johns-Manville Corp.
Kirby Building Systems, Inc.
Lone Star Industries
McCaw Industries
Mesco Metal Buildings Corp.
Mitchell Engineering Co.
Pascoe Steel Corp.
Precast Concrete Co., Inc.
Precast Systems, Inc.
Rocky Mountain Prestress, Inc.
Spancrete Co.
Steel Fabricators Inc.
Steel & Span Inc.
Structural Foam Inc.
Texas Inc.
Trus Joist Corp.
Unistrut Corp, Moduspan Div
Western Precast, Inc.

LIGHTING/CEILING

Chicago Metallic Corp.
Day-Brite Lighting, Div. Emerson
Electric
Donn Products Inc.
Guth Lighting Div., Sola Basic
Industries
Interior Systems Div., Sunbeam
Lighting Co., Inc.
Johns Manville Corp.
National Gypsum Co.
The Soundlock Corp.
United Lighting & Ceiling Corp.

**subsystem
compatibility:
lighting/ceiling
interior partitions**

1

partitions.

- Adanlock Jamestown Corp.
- Advanced Equipment Corp.
- Donn Products, Inc.
- Flangeklamp of California
- Glenn O'Brien Movable Partition Co., Inc.
- Hough Mfg. Corp.
- Keene Corp.
- Kwik Wall Div., Capitol Wood Works
- Aetna Wall *
- Chicago Metallic Corp. *
- Curtis Partitions Corp. *
- The E. F. Hausermann Co. *

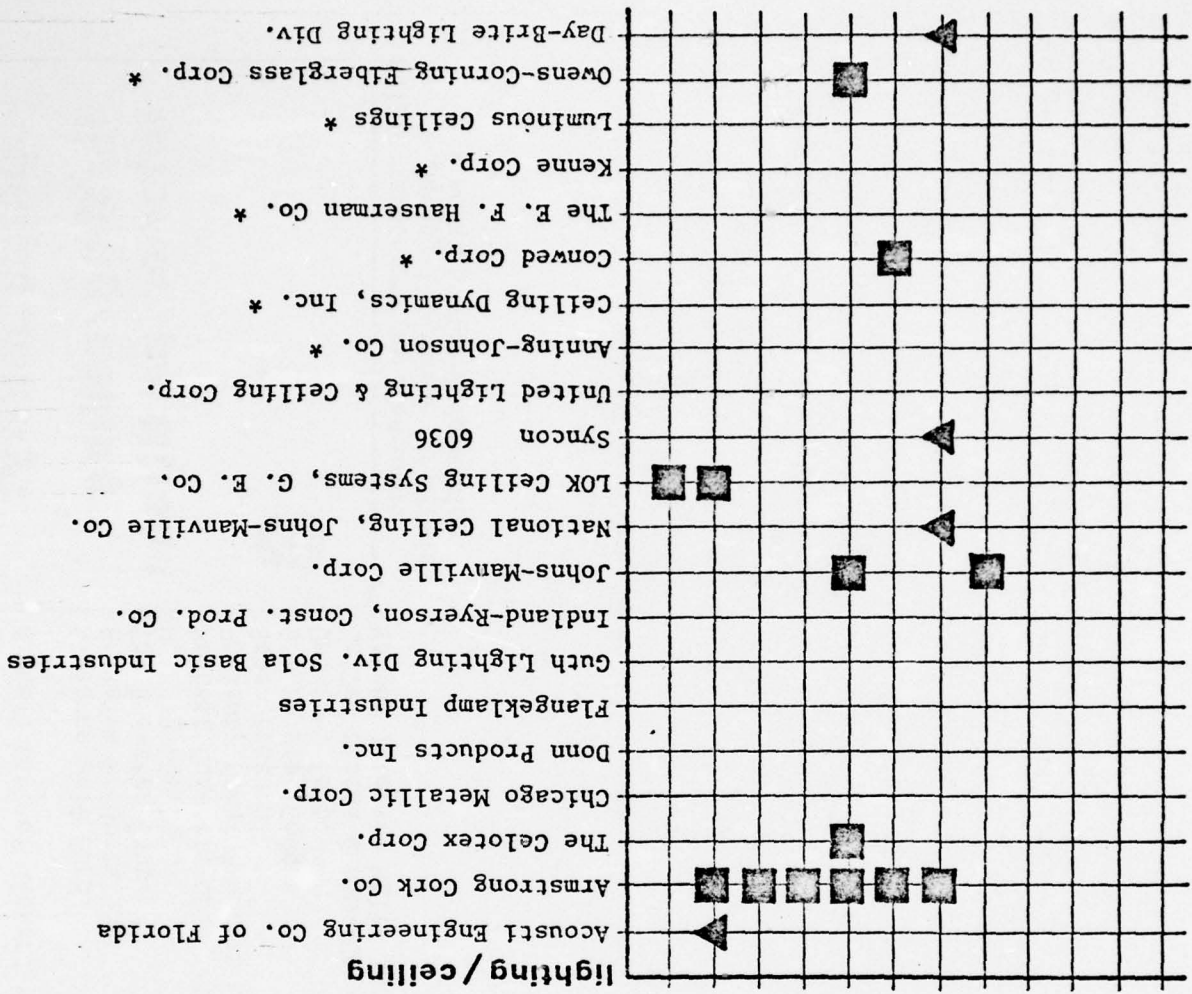


**subsystem
compatibility:
lighting/ceiling
interior partitions**

2

partitions

- Gold Bond Bldg. Prod. *
- Kaiser Gypsum Co. *
- Malone Products Corp. *
- Mecco Chalk Board *
- Modernfold *
- Penn Metal Products *
- Virginia Metal Products Div. Gray Mfg. Co. *
- Westeel - Roscoe *



**subsystem
compatibility:
lighting/ceiling
interior partitions**

3

NOTE: Respondent manufacturers
having incomplete or missing
compatibility information.

INTERIOR PARTITIONS

Airwall Div. of Richard-Wilcox Mfg.
Co.

Alliance Wall Corp.

Bellaire Products Inc.

The Brewster Corp.

H. L. Birum Corp.

Precast Concrete Co., Inc.

Rockaway Metal Products Corp.

Roper Eastern

Saturn Mfg. Corp.

Unistrut Corp.

United States Gypsum Co.

Vaughn Interior Walls Inc.

LIGHTING/CEILING

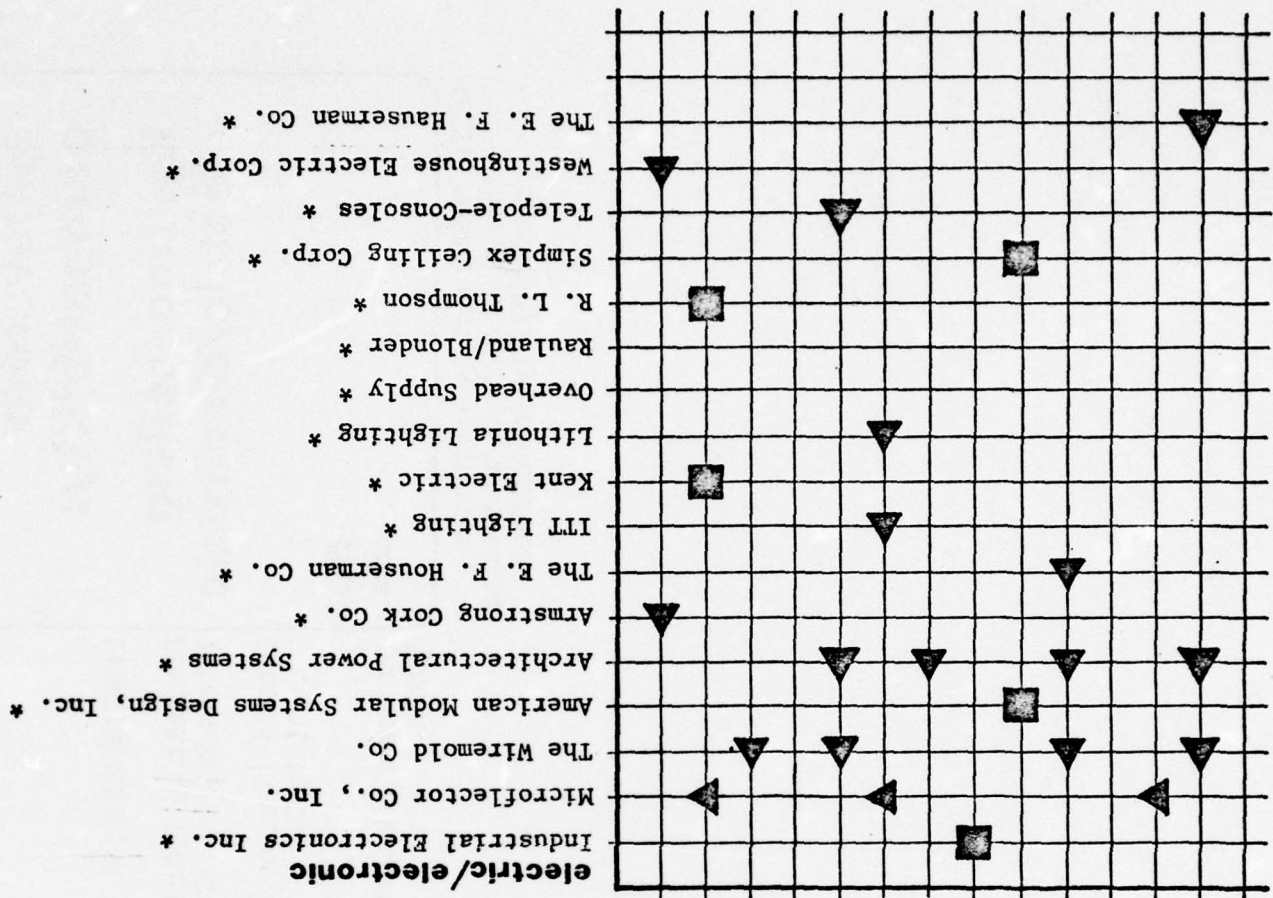
Interior Systems Div., Sunbeam
Lighting Co.

The Soundlock Corp.

**subsystem
compatibility:
lighting/ceiling
electric/electronic**



- lighting / ceiling**
 Acousti Engineering Co. of Florida
 Armstrong Cork Co.
 The Celotex Corp.
 Chicago Metallic Corp.
 Day-Brite Lighting Div. Emerson Electric
 Donn Products Inc.
 Guth Lighting Div. Sola Basic Industries
 Johns-Manville Corp.
 LOK Ceiling Systems, G. E. Co.
 United Lighting & Ceiling Corp.
 Conwed Corp. *
 Owens-Corning Fiberglass Corp. *
 National Ceiling, Johns-Manville Co.



**subsystem
compatibility:
lighting/ceiling
electric/electronic**

2

NOTE: Respondent manufacturers
having incomplete or missing
compatibility information.

LIGHTING/CEILING

FlangeKlamp Industries
Inland-Ryerson, Const. Prod. Co.
Interior Systems Div., Sunbeam
Lighting Co.

The SoundLock Corp.
Syncon

ELECTRIC/ELECTRONIC

Electrical Products Div., Midland
Ross Corp.
Execstone, Inc.
Granco Steel Products Co.
Monaco Enterprises
Walker/Parkersburg

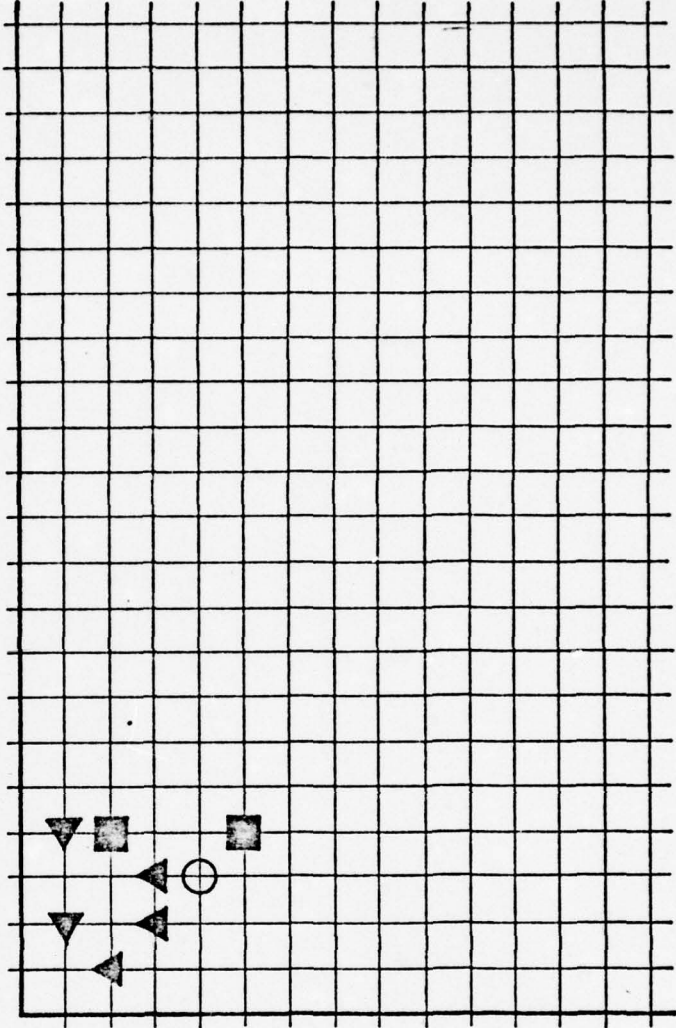
**subsystem
compatibility:
electric/electronic
interior partitions**

1

- electric / electronic**
- Microlector Co., Inc.
- American Modular Systems Design, Inc. *
- Architectural Power Systems *
- Engineers Collaborative *
- Kent Electric *

interior partitions

- Advanced Equipment Corp.
- Hough Mfg. Corp.
- Kwik Wall Div., Capitol Wood Works
- The E. F. Hausermann Co. *



**subsystem
compatibility:
electric/electronic
interior partitions**

2

NOTE: Respondent manufacturers
having incomplete or missing
compatibility information.

ELECTRIC/ELECTRONIC

Electrical Products Div., Midland
Ross Corp.
Exectone, Inc.
Granco Steel Products Co.
Industrial Electronics Inc.
Monaco Enterprises
Walker/Parkersburg
The Wiremold Co.

INTERIOR PARTITIONS

Adanlock Jamestown Corp.
Airwall Div. of Richard-Wilcox Mfg.
Co.
Alliance Wall Corp.
Bellaire Products Inc.
The Brewster Corp.
Donn Products, Inc.
Flangeklamp of California
Glenn Obrien Movable Partition Co.,
Inc.
H. L. Birum Corp.
Keene Corp.
Precast Concrete Co., Inc.
Rockaway Metal Products Corp.
Roper Eastern
Saturn Mfg. Corp.
Unistrut Corp.
United States Gypsum Co.
Vaughn Interior Walls Inc.

appendix A

INSTRUCTION SHEET

for completing this questionnaire.

- Use a pen or type your answers.
- For questions requiring a yes/no answer place an X in the appropriate box. For other questions place an X in an applicable box.
- TECHNICAL QUESTIONS**
Questions of a technical nature are written on a gray background. Answer gray questions only if the information is readily available to you.
- SEVERAL DIFFERENT PRODUCTS**
If you manufacture or supply several subsystems with different characteristics, fill out one page of the questionnaire for each subsystem that you wish to be considered. Additional pages can be provided by CERL (call collect 217-352-6511) or you may duplicate them yourself.
- MATERIALS**
A list of building materials is provided below for your use in answering questions entitled "Materials." If your product is made of a material not listed here, enter the name of the material you use. There is room to enter 2 materials for each element.

MASONRY

Brick
Concrete
Sintered brick
Refr. concrete
Terrazzo
Gravel
Gypsum board
Plaster
Terra-cotta

METALS

Struct. steel
Stainless stl.
Aluminum
Anodized alum.
Copper
Wrought iron
Cast iron
Enameled stl.
Enameled C.I.

WOOD

Douglas fir
South pine
West. hemlock
Oak
Fir plywood
Redwood ply.
Particle board
Hardboard
Mahog. veneer
Hardwood van.
Cedar shingle
Cedar shakes

PLASTICS/MISC.

P.V.C.
Fiberglass
Vinyl sheet
Urethane foam
Rigid fiberglass
Fiberglass batts
Cellulose batts
Poured asphalt
Asphalt shingles
Rolled asphalt
Wall paper
Vinyl paper
Porcelain
Paint

6. PERFORMANCE RATINGS AND TESTS

- Several questions ask you to indicate how your product has been tested. The choice of which box to check is explained below.

... conducted by outside agency	if	your subsystem has been tested by independent testing agency such as U.L., NBS, or ASTM, OR if your product is of a conventional construction for which standard test results are known
... conducted in-house	if	you have conducted formal performance tests within your own organization, OR the manufacturers of the subsystem that you buy has conducted similar tests.
... planned or desired	if	you desire to have your product tested or plan to have it tested
... not planned	if	testing is not required or applicable or not economically feasible at this time

b. Fire Protection Tests

Fire resistance. Answer in hours of fire resistance as specified by NFPA No. 251.
Flame spread. Answer in numbers relating to the standard, select grade red-oak flooring = 100 tested in accordance with NFPA No. 255.

Smoke developed. Answer in optical density or light absorption tested in accordance with NFPA No. 255.

c. Acoustical Tests

STC = answer will be the Sound Transmission Classification in db as determined by test outlined in ASTM E90-61T.

d. Thermal Test

Conductivity ("U") U-Values are in BTU/hour/sq ft/degree F, difference at 15 MPH outside wind velocity
If the assembled subsystem has not been tested, but the individual components have been tested or certified and U was calculated, answer the question relating to the testing of the components.

MANUFACTURER PROFILE

1. Name of individual to contact for more detailed information:

name	address	city	state	phone
a. Procurement				
b. Technical				

OMB 49-RO412	OFFICE USE ONLY Question No. <u>204</u> Study No. <u>204</u>
A	

2. SERVICES

Indicate what activities your firm engages in: (Check all that apply.)

a. Design of complete building systems	8
b. Manufacture of complete building systems	9
c. Site erection of complete building systems	10
d. Design of building components	11
e. Manufacture of building components	12
f. Installation of building components	13
g. Construction management	14
h. Sales of building system to erector	15
i. Site work	16
j. General contracting	17

3. DELIVERY

a. Is there a maximum economic distance between your headquarters or production facility and the job site?
no limit miles 18-21

b. What are the zip codes of your headquarters or production facilities from which the distance above is critical?
(if more than 5 attach additional codes.)
22-26
27-31
32-36
37-41
42-46

c. Is your product completely developed and available now?
YES, NO 47

4. PRODUCTS

Indicate which of the following your firm supplies, designs or installs (Check all that apply.)

as part of a complete system	provided as pre fabricated and sold separately	provided as non systems work	not supplied
a. Foundations			48 51
b. Structural system			52 55
c. Exterior walls			56 59
d. Roofing system			60 63
e. Partitions			64 67
f. H.V.A.C.			68 71
g. Plumbing system			72 75
h. Electrical system			76 78 / BK
i. Lighting system			79 80 / 01
j. Ceiling system			81 84 / DUP
			5 8
			9-12
			13-16

5. PROCUREMENT

What is the preferred method of selling your product to the government? (Check all that apply.)

a. Directly	17
b. Through any building developer	18
c. Through a franchised dealer	19
d. Through another manufacturer of building materials or supplies	20
e. Catalog	21
f. Other (Specify)	22

6. BUILDING TYPE (Check all that apply.)

a. Permanent	k. Single family detached
b. Relocatable	l. Town house
c. Temporary	m. High rise apartment
d. Classroom	n. Duplex
e. Maintenance	o. Mobile home
f. Laboratory	p. Dormitory
g. Medical	q. Hotel/Motel
h. Warehouse	r. Dining hall
i. Office	s. Retail sales
j. Gymnasium	t. Chapel
u. Other (Specify)	
v. Other (Specify)	

7. CODES & STANDARDS

Indicate the effect of the following codes or standards on the use of your product. (Check all that apply.)

a. BOCA Building Code	45
b. Uniform Building Code	46
c. National Building Code	47
d. Southern Building Code	48
e. U.L. Codes	49
f. National Electrical Code	50
g. National Plumbing Code	51
h. A/FPA Fire Code	52
i. DDD Manual of Construction	53
permits use	
Prohibits use	
unknown or N/A	

EXPERIENCE

1. What was your volume of business last year in industrial buildings?

\$ _____

54-58

2. Have your building products been employed in buildings qualified for FHA or VA insurance?

Yes () No ()

59

US Army _____
US Air Force _____
U.S. Navy/MC _____
H.U.D. _____

G.S.A. _____
Other Federal _____

3. Have your building products or services been employed in any facilities for: (Check all that apply.)

60-65

OMB 49-RO412

B

OFFICE USE ONLY
Question No. _____
Study No. 204

4. PROJECTS

Please complete blocks a-j describing the ten most recent projects using your products. (Note: Include only projects completed or under construction.)

<p>a. Project title _____ Gross area (sq ft) _____ Location zip code _____ Owner _____ Owner's address _____ City _____ State _____ Zip code _____</p>	<p>f. Project title _____ Gross area (sq ft) _____ Location zip code _____ Owner _____ Owner's address _____ City _____ State _____ Zip code _____</p>
<p>b. Project title _____ Gross area (sq ft) _____ Location zip code _____ Owner _____ Owner's address _____ City _____ State _____ Zip code _____</p>	<p>g. Project title _____ Gross area (sq ft) _____ Location zip code _____ Owner _____ Owner's address _____ City _____ State _____ Zip code _____</p>
<p>c. Project title _____ Gross area (sq ft) _____ Location zip code _____ Owner _____ Owner's address _____ City _____ State _____ Zip code _____</p>	<p>h. Project title _____ Gross area (sq ft) _____ Location zip code _____ Owner _____ Owner's address _____ City _____ State _____ Zip code _____</p>
<p>d. Project title _____ Gross area (sq ft) _____ Location zip code _____ Owner _____ Owner's address _____ City _____ State _____ Zip code _____</p>	<p>i. Project title _____ Gross area (sq ft) _____ Location zip code _____ Owner _____ Owner's address _____ City _____ State _____ Zip code _____</p>
<p>e. Project title _____ Gross area (sq ft) _____ Location zip code _____ Owner _____ Owner's address _____ City _____ State _____ Zip code _____</p>	<p>j. Project title _____ Gross area (sq ft) _____ Location zip code _____ Owner _____ Owner's address _____ City _____ State _____ Zip code _____</p>

STRUCTURE

OFFICE USE ONLY

Question No. 204
Study No. _____

OMB
49-RO412



1. Indicate STRUCTURAL TYPES provided. (Check only one; fill out duplicate sheet for other types.)

66

3 dimensional box structural panel frame and infill other (specify) _____

2. DIMENSIONS

Dimension	Maximum		Optimum		Minimum	
	feet	in.	feet	in.	feet	in.
a. Primary span						
b. Secondary span						
c. Floor to floor height						
d. Floor to ceiling						
e. Cantilever						
f. Planning module (smallest increment)						
g. Clear area		sq ft		sq ft		sq ft
h. Gross area		sq ft		sq ft		sq ft
i. Roof pitch		in 12 ft		in 12 ft		in 12 ft
j. Total height		stories		stories		stories

67-76 77-78/BK
79, 80/02 1-4DUP
5-9

10-21

22-33

34-45

46-57

58-69

70-78 79, 80/03
1-4 DUP

5-13

14-16

17-22

3. MATERIALS

Structural Member	Material (See list on instruction sheet.)
a. Column	
b. Bearing walls	
c. Floor	
d. Roof	

23-26

27-30

31-34

35-38

4. FOUNDATIONS

(Check all that apply.)

What foundation types are appropriate?	
a. Concrete spread footing	
b. Caissons or piles	
c. Poured concrete walls	
d. Concrete block walls	
e. Piers and grade beams	

39

40

41

42

43

44

5. LOADING

LIVE LOAD	Maximum pounds per sq ft	Δ = span/240		Δ = span/350	
		pounds per sq ft		pounds per sq ft	
a. Floor*					
b. Roof					
c. Wind load					
d. Suitable for attributable zone		0	1	2	3

Method of resisting lateral forces: (Check all that apply.)

a. Moment frame	
b. Shear walls	
c. Cross bearing walls	
d. Other (specify)	

45-53

54-62

63-70

71

72

73

74

75

76-78/BK
79, 80/04
1-4 DUP

6. FIRE PROTECTION*

Structural Member	Performance tests... (check one)			
	resistance in hours	conducted by outside agency	conducted in house	planned or desired
a. Column				
b. Bearing wall				
c. Floor/roof				

5-7

8-10

11-13

*Performance ratings and tests are explained on the instruction sheet.

STRUCTURE

1. SUBSYSTEM NAME/ MODEL _____

2. GENERAL INFORMATION

a. Mechanical access - the largest duct capable of passing through the . . .

primary members: rect. _____, round _____
 secondary members: rect. _____, round _____

20-25
26-31

b. Does your structure have a vertical planning module increment?
 yes no

32

c. Exterior wall Yes No Opt.
 is a part of your subsystem and acts as a
 supportive structural element.
 is a part of your subsystem but provides
 support for the structure.
 can be supplied with the structural
 subsystem.

33
34
35
36 b

3. SUBSYSTEM IMPLEMENTATION

Indicate the usual responsibilities of the participants for a typical project (Check all that apply)

- a. Prepare layouts
- b. Manufacture/fabricate
- c. Purchases
- d. Site assembly & installation

37-42
43-46
47-51
52-55

Owner	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A/E	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manufacturer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Mfr.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contractor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. COMPATIBILITY

A compatible interface between two subsystems must not require on site modification.

Identify products with which your structural system is compatible

name of manufacturer	product name / model	used together	Detailed Compatible	Anticipate Compatibility
Lighting Ceiling				
HVAC				
Exterior Wall				
Electric (optional)				

OMB
49-RO412

N

OFFICE USE ONLY
Question No. 204
Study No. _____

INTERIOR PARTITIONS

OMB
49-RO412

OFFICE USE ONLY
Question No. 204
Study No. 204

E

1. GENERAL INFORMATION

(Check 'Yes' or 'No')	Yes	No
a. Prefabricated panels?		
b. Load bearing?		
c. Integrated with electrical system?		
d. Integrated with HVAC system?		
e. Integrated with plumbing system?		
f. Demountable?		
g. Portable?		
h. Operable?		

2. MATERIALS

Element	See list on instruction sheet
a. Finish	
b. Wearing surface	
c. Core	

3. STRUCTURAL

a. Horizontal live load	Less than 5 psf
	5 psf or more

4. DIMENSIONS

Module dimensions for prefabricated panels			
N.A. <input type="checkbox"/>	Minimum	Maximum	Increment
Dimension	Feet	in.	Feet
a. Width			
b. Height			
c. Thickness			

5. OPENINGS

a. Door frames may be: (Check all that apply.)

Wood Aluminum 71-75
 Steel Plastic 76-78/8K
 79-80/6
 14 DUP
 8-9

b. Door types available:

Other (specify): _____

Wood Hollow Core Wood Solid Core
 Class B Fire Door Class C Fire Door

6. FIRE PROTECTION*

ratings	Performance tests ... (check one)		
	conducted by outside agency	conducted in-house	planned or desired
a. Fire tests/french			not planned
b. Flame spread			
c. Smoke developed			

7. ACOUSTICS*

STC rating	Performance tests ... (check one)		
	conducted by outside agency	conducted in-house	planned or desired
a. Party wall			not planned
b. Wall with floor			
c. Non-party wall			

*Performance ratings and tests are explained on the instruction sheet.

H.V.A.C.

OMB
49-RO412

OFFICE USE ONLY
Question No. 204
Study No. 204

1. GENERAL INFORMATION

(Check "Yes" or "No")

	Yes	No
a. Integrated with ceiling system?		
b. Individually controlled zones?		
c. Heating & cooling in one distribution system?		
d. Self contained units?		
e. Terminal units?		
f. Constant volume?		
g. Variable volume?		
h. Zones (individually controlled)?		
i. Can you provide operating cost information?		

3. ZONES

If your system provides individually controlled zones . . .

a. Minimum size of single zone _____ sq. ft. **43, 45**

b. Maximum number of zones _____ **46, 47**

4. ACOUSTICS*

Using ASTM E 90 tests

Noise Class	Yes	No

Actually Tested _____ **48, 49**

5. ENERGY CONVERSION

(heating) (Check all that apply.)

a. Forced air	
b. Hot water	
c. Steam	
d. Electric radiation	
e. Other (specify) _____	

51
52
53
54
55

2. ENERGY SOURCE

(Check all that apply.)

	A	C
a. Electricity		
b. Natural gas		
c. Oil		
d. Coal		
e. L.P. gas		
f. Other (specify) _____		

37
38
39
40
41
42

PLUMBING

6. GENERAL INFORMATION

(Check "Yes" or "No")

	Yes	No
a. Prefabricated plumbing wall?		
b. Prefabricated "wet module"?		

56
57

7. WET MODULES

If you supply a "wet module" does it include . . . (Check all that apply.)

a. Bathroom	
b. Kitchen	
c. Laundry	
d. H.V.A.C.	
e. Storage	
f. Electrical distribution	

58
59
60
61
62
63

8. MATERIALS

(see list on instruction sheet)

a. Waste pipe	
b. Vent pipe	
c. Hot water pipe	
d. Gas pipe	
e. Water closet	
f. Lavatory	
g. Shower	
h. Tub	
i. Urinal	
j. Laundry sink	

64 **67**
68 **71**
72 **75**
76 **78** **BK**
79 **80**
1 **4** **DUPLICATE**
5 **8**
9 **12**
13 **16**
17 **20**
21 **24**
25 **28**
29 **32**
33

*Performance ratings and tests are explained on the instruction sheet.

CEILING

OMB
49-RO412

OFFICE USE ONLY
Question No. 204
Study No. 204

1. GENERAL INFORMATION

(Check all that apply.)

a. Applied directly to the structure	33
b. Suspended	34
c. Integrated with lighting system	35
d. Integrated with HVAC system	36
e. Integrated with partition system	37
f. Provides access to concealed services	38

2. MATERIALS

(see list on instruction sheet)

a. Structure	39-42
b. Finish	43-46

3. ACCUSTICS*

Performance tests... (check one)

a. Ceiling/floor	47-49
b. Ceiling/truss	50-52

4. DIMENSIONS

Planning Module

Basic _____ in. X _____ in.

Subdivisions of the basic module
_____ in. X _____ in. and/or _____ in. X _____ in.

5. FIRE PROTECTION*

Performance tests... (check one)

a. Fire resistance	71-73
b. Flame spread	74-76
c. Smoke developed	77-78 BK 79-80/08
d. Will ceiling accommodate a sprinkler system?	81-87

yes no

*Performance ratings and tests are explained on the instruction sheet.

LIGHTING

6. GENERAL INFORMATION

(Check all that apply.)

a. Incandescent	9
b. Fluorescent	10
c. Luminous ceiling	11
d. Exterior lighting	12
e. Safety lighting (fire, exit)	13

7. LIGHTING LEVELS

lighting level _____

Enter the number of 40-watt fluorescent tubes per basic planning module (see 4 above).

a. 70 f.c.	14, 15
b. 100 f.c.	16, 17
c. 200 f.c.	18, 19

ELECTRIC/ELECTRONIC

OMB 49-RO412 R	OFFICE USE ONLY
	Question No. <u>204</u> Study No.

1. SUBSYSTEM NAME/MODEL _____

2. GENERAL INFORMATION

a. Functional systems which have been included in your electric/electronic subsystems:

	Yes	No	Opt
Audio communications			
Clock			
Closed circuit TV			
TV antenna			
Fire detection			
Security			
PAX emergency telephones			
Dial access programs			
Power distribution			
Others _____			

b. For subsystems with relocatable service columns, who can move the units? (Check all that apply.)

Manufacturer's personnel	<input type="checkbox"/>
Licensed electricians	<input type="checkbox"/>
Owner's maint. staff	<input type="checkbox"/>

3. SUBSYSTEM IMPLEMENTATION

Indicate the usual responsibilities of the participants for a typical project (Check all that apply.)

	Owner	A-E	Manufacturer	Other Mfr.	Contractor	Other
a. Prepare layouts	<input checked="" type="checkbox"/>					
b. Manufacture/fabricate						
c. Purchase						
d. Site assembly & installation						

18-23
24-27
28-32
33-36
37-78/BK
79, 80/11

4. PLANNING CRITERIA

What must an architect/engineer know about your subsystem to accommodate it in his building design?

5. COMPATIBILITY

A compatible interface between two subsystems must not require on-site modification.

	Identify products with which your electric/electronic system is compatible	name of manufacturer	product name/model	Previously used together		
				Detailed	Compatible	Anticipate
Lighting/Ceiling						
Partitions						

a-12

appendix B

b-1

manufacturers of structural subsystems

NOTE: Listing of nonrespondent manufacturers or those with insufficient data to be included in this edition.

Airfloor Co. of California, Inc. 13729 E. Rosecrans Avenue Santa Fe Springs, CA 906070	Eastern Prestressed Concrete Corp. 3030 Unionville Road Hatfield, PA 19440	O'Malley Lumber Co. 5307 W. Missouri Glendale, AZ 85301
Algoma Steel Corp. Ltd. Sault Ste. Marie Ontario, Canada	Federal Cement Products, Inc. 24 Marble St. Hammond, IN 46320	Republic Steel Corp. 1315 Albert Street Youngstown, OH 44595
Arizona Prestress Concrete Co. P.O. Box 20685 2629 S. 21st Street Phoenix, AZ 85036	Francon Limitee C.P. 2000 Rosemont Montreal 405, Quebec, Canada	R. W. Sidley P.O. Box 2986 Ashtabula, OH 44004
Bethlehem Steel Corp. 701 E. Third St. Bethlehem, PA 18016	Gulf Steel 4156 Park St. Petersburg, FL 33733	Sanford Truss, Inc. 951 South West 12th Ave. P.O. Box 1177 Pompano Beach, FL 33061
Blakeslee Midwest P.O. Box 460 111 5th Ave. Rochelle, IL 61068	Haven-Busch Company 3443 Chicago Drive, S. W. Grandville, MI 49418	SoCar Inc. 217 West Rice Street Continental, OH 45831
Bock Industries, Inc. 2704 S. Nappanee St. Elkhart, IN 46514	International Steel Fabricators, Inc. P.O. Box 40446 Houston, TX 77040	Soule Steel Co. P.O. Box 3510 Rincon Annex 1750 Army Street San Francisco, CA 94119
Butler Manufacturing Co. P.O. Box 917 Kansas City, MO 64141	L. L. Le Jeune Co., Inc. 118 W. 60th Minneapolis, MN 55409	Span Industries TXI Structural Products Inc. P.O. Box 400 Arlington, TX 76010
Componoform, Inc. Address not known	Metal Deck Division Epic Metals Corp. Eleven Talbot Ave. Rankin, PA 15104	Standard Building Systems U.S. Route 15 Point of Rocks, MD 21777
Dominion Bridge Co. Limited P.O. Box 280 Montreal 101, Quebec, Canada	Midwest Lumber & Millwork 9945 Hickman DesMoines, IA 50322	

manufacturers of structural subsystems

NOTE: Listing of nonrespondent manufacturers or those with insufficient data to be included in this edition.

Star Manufacturing Co.
8000 S. Interstate
P.O. Box 94910
Oklahoma City, OK 73109

Steel Fabricators Co.
1252 J. Spruce Street
Cleveland, OH 44113

Stresscon Industries, Inc.
3501 Sinclair Lane
Baltimore, MD 21213

Syncon
1717 South 12th St.
Milwaukee, WI 53204

manufacturers of interior partitions subsystems

NOTE: Listing of nonrespondent manufacturers or those with insufficient data to be included in this edition.

Acousti Engineering Co. of Florida P.O. Box 2147 Jacksonville, FL 32201	The E. F. Hauserman Company 5711 Grant Avenue Cleveland, OH 44105	Kaiser Gypsum Company, Inc. Kaiser Center 300 Lakeside Drive Oakland, CA 94604
American Sanitary Partition Corp. 37-03 21st Street Long Island City, NY 11101	EMCO, Inc. 1400 Spruce Kansas City, MO 64127	Keene Corporation Interior Systems Division Route 206 Center Princeton, NJ 08540
Anning-Johnson Company 3000 North 29th Street Hollywood, FL 33020	Fairhurst Industries, Inc. 117 Gazza Blvd. Farmingdale, NY 11735	Malone Products Corporation Address not known
Arizona Prestress Concrete Co. P.O. Box 20685 2629 S. 21st Street Phoenix, AZ 85036	Gold Bond Bldg. Prod. National Gypsum Company 325 Delaware Avenue Buffalo, NY 14202	MARLITE Division of Masonite Corp. Dover, OH 44622
Bellaire Products Inc. Drawer C Tallevast, FL 33588	H & B Enterprise Corp. P.O. Box 307 1150 Southard Street Trenton, NJ 08602	Masonite Corporation 29 North Wacker Drive Chicago, IL 60606
Blakeslee Midwest P.O. Box 460 111 5th Ave. Rochelle, IL 61068	Haws Operable Walls Inc. 12955 Inkster Road Detroit, MI 48239	The Mills Company, Inc. 965 Wayside Road Cleveland, OH 44110
Brunswick Corporation 2605 East Kilgore Road Kalamazoo, MI 49001	HOFCOR Div. of Hough Manufacturing Co. Janesville, WI 53545	Milwaukee Metal Stamping Corp. 800 S. 72nd Street Milwaukee, WI 53214
Curtis Partition Corp. 590 Belleville Tpke. Kearny, NJ 07032	Holcomb & Hoke Mfg. Co., Inc. 1545 Calhoun Street P.O. Box 1965 Indianapolis, IN 46206	Modernfold P.O. Box 310 New Castle, IN 47362
Don Myers and Associates, Inc. 3256 N.W. 24th Street Road Miami, FL 33142		National Folding Wall Corp. P.O. Box 174 Old Bridge, NJ 08857

manufacturers of interior partitions subsystems

NOTE: Listing of nonrespondent manufacturers or those with insufficient data to be included in this edition.

New Castle Products, Inc. 46552
 New Carlisle, IN
 Div. of Gray Manufacturing Co.
 Orange, VA 22960

O'Malley Lumber Co.
 5307 W. Missouri
 Glendale, AZ 85301
 W. E. Neal Slate Co.
 7975 Wallace Road
 Eden Prairie, MN 55343

Panelfold
 10700 Northwest 36th Ave.
 Miami, FL 33167
 Westinghouse Electric Corp.
 Arch. Systems Dept.
 4300 36th Street, S.E.
 Grand Rapids, MI 49508

Papsco, Inc.
 814 San Alesco Ave.
 Sunnyvale, CA 94086
 Wimer-Stubbs Associates, Inc.
 Address not known

Roper Eastern
 9325 Snowden River Pkwy.
 Columbia, MD 21046
 Won-Door Corporation
 3215 S. 8th West
 Salt Lake City, UT 84119

Tenneco Chemicals, Inc.
 Building Products Department
 1430 E. Davis St.
 Arlington Heights, IL 60005
 Workwall Moveable Partitions
 Division of The Marmon Gp.
 P.O. Box 130
 Bronson, MI 49028

Torjensen Inc.
 209-25th Street
 Brooklyn, NY 11232

United States Plywood
 Division of U.S.Plywood-
 Champion Papers, Inc.
 777 Third Ave.
 New York, NY 10017

The Vecta Group Inc.
 2605 E. Kilgore Rd.
 Kalamazoo, MI 49003

manufacturers of heating, ventilating, and cooling subsystems

NOTE: Listing of nonrespondent manufacturers or those with insufficient data to be included in this edition.

Acme Industries, Inc. 600 North Mechanic Street Jackson, MI 49202	General Electric Central Air Cond. Product Dept. Appliance Park Louisville, KY 40225	Singer Co. Climate Control Products 62 Columbus St. Auburn, NY 13021
American-Standard P.O. Box 2003 New Brunswick, NJ 08903	H. K. Porter Company, Inc. Electrical Division Porter Building Pittsburgh, PA 15219	The Coleman Co. Mobile Home Division Wichita, KS 67201
Barber-Colman Co. Environmental Systems Division 1300 Rock St. Rockford, IL 61101	ITT Environmental Products Div. State Road and Rhawn Street Philadelphia, PA 19136	Westinghouse Electric Corp. Air Conditioning Division P.O. Box 510 Staunton, VA 24401
Blakeslee Midwest P.O. Box 460 111 5th Ave. Rochelle, IL 61068	L. S. Pawkett & Co. P.O. Box 12077 San Antonio, TX 78212	Worthington Air Cond. Co. East Orange, NJ 07017
Bryant A. C. Co. 7310 W. Morris Street Indianapolis, IN 46231	Mammoth Division Lear Siegler, Inc. 13120-B Country Road 6 Minneapolis, MN 55427	Wright Air Conditioning 8539 Troost Kansas City, MO 64131
Chromolox Comfort Conditioning Div. Emerson Electric Co. 8100 W. Florissant Ave. St. Louis, MO 63136	Modine Manufacturing Co. Holland, OH 43528	
Day & Night Mfg. Co. 855 Anaheim-Puente Road City of Industry, CA 91747	Mueller Climatrol Corp. Milwaukee, WI 53215	
Fedders Corporation Central Air Conditioning & Heating Edison, NJ 08817	RAYWALL Division of Tennessee Plastics, Inc. P.O. Box T, Carroll Reece Branch Johnson City, TN 37601	
	Schemenauer Mfg. Co. Holland, OH 43528	

manufacturers of lighting/ceiling subsystems

NOTE: Listing of nonrespondent manufacturers or those with insufficient data to be included in this edition.

<p>Alcan Bldg. Prod. Jacobus Avenue S. Kearny, NJ 07032</p> <p>Alpro Acoustics Div. of Struct. Sys. Corp. P.O. Box 30460 New Orleans, LA 70190</p> <p>Anning-Johnson Company 1959 Anson Dr. Melrose Park, IL 60160</p> <p>Anning-Johnson Company 3000 North 29th Court Hollywood, FL 33020</p> <p>Butler Manufacturing Company P.O. Box 917 Kansas City, MO 64141</p> <p>Canadian Johns-Manville 565 Lakeshore Road, E. Port Credit, Ontario Canada</p> <p>Ceiling Dynamics, Inc. 1845 Belcroft South El Monte, CA 91733</p> <p>Conwed Corporation 2200 Highcrest Road St. Paul, MN 55101</p> <p>The E. F. Hauserman Co. 5711 Grant Avenue Cleveland, OH 44105</p>	<p>Hastings Aluminum Products National Aluminum, a Unit of National Steel Corporation Hastings, MI 49058</p> <p>Howmet Corporation Southern Extrusions Division P.O. Box 40 Magnolia, AR 71753</p> <p>Inland-Ryerson Construction Product Co. P.O. Box 393 Milwaukee, WI 53201</p> <p>K. E. Gordon Manufacturing, Inc. Slack Industrial Park P.O. Box 60051 Shreveport, LA 71106</p> <p>Keene Corporation Interior Products & Systems Div. U.S. 1 (Princeton Commerce Center) Princeton, NJ 08540</p> <p>Lightron of Cornwall Cornwall-On-Hudson, NY 12520</p> <p>Limelight Systems, Inc. 590 Southwest Twelfth Avenue Pompano Beach, FL 33061</p> <p>Litecraft/Luminous Ceilings P.O. Box 22601 1500 N. Dale Mabry Highway, Tampa, FL 33622</p>	<p>Luminous Ceilings, Inc. Address not known</p> <p>National Ceiling Systems Corp. 6643 West Howard St. Niles, IL 60648</p> <p>Owens-Corning Fiberglas Corp. Interior Products & Systems Div. Fiberglas Tower Toledo, OH 43659</p> <p>Simplex Ceiling Corp. 663 Fifth Avenue New York, NY 10022</p> <p>Simpson Timber Company 2000 Washington Bldg. Seattle, WA 98101</p> <p>United States Gypsum Co. 101 South Wacker Drive Chicago, IL 60606</p> <p>Westinghouse Electric Corp. P.O. Box 4808 Atlanta, GA 30302</p> <p>W. J. Haertel Division of Leslie-Locke Building Products Co. 11550 West King Street Franklin Park, IL 60131</p>
--	--	--

manufacturers of electric/electronic distribution subsystems

NOTE: Listing of nonrespondent manufacturers or those with insufficient data to be included in this edition.

American Modular Systems Design, Inc. Westinghouse Electric Corp.
Address not known Low Voltage Distribution Equipment
Division

Arizona Prestress Concrete Co. 1565 S. Vandeventer Ave.
P.O. Box 20685 St. Louis, MO 63110
2629 S. 21st Street
Phoenix, AZ 85036

Bedard-Girard Ltd.
117 Lagachetiere Street West
Montreal, Quebec, Canada

Blakeslee Midwest
P.O. Box 460
111 5th Ave. Rochelle, IL 61068

Electro-Line, Inc.
118 S. Terry Street
Dayton, OH 45403

Electro-Link Systems, Ltd.
Address not known

Incor Instrumentation, Inc.
29 Newton Road
Planville, NY 11803

Industrial Electronics Inc.
1275 Bloomfield Avenue
Fairfield, NJ 07006

references

- Boice, John R., *A History & Evaluation of School Construction Systems Development Project* (BSIC/EFL, Menlo Park, California, 1971).
- Building Procurement: Proceedings of a Workshop, IF Occasional Paper Number 1* (IF TEAM & Construction Engineering Research Laboratory [CERL], December 1974).
- Building Systems Planning Manual*, Building Systems Information Clearinghouse, Special Report Number Three (BSIC/EFL, Menlo Park, California, 1971).
- Burns, Joshua A., *Documentation for BSIC/EFL Systems Building Data Bank* (Educational Facilities Laboratories, Menlo Park, California, April 8, 1975).
- Carroll, Michael G., *Procuring Today's Building Technology*, Special Report D-72, Vol I/ADA031000, Vol II/ADA030520 (CERL, 1976).
- Cleland, Wallace B., *New Tactics for Building: Experience/Analysis/Recommendations from the Detroit Public Schools Construction System Program* (Detroit Public Schools, Office of School Housing, Detroit, Michigan, January 1975).
- Csizmadia, Tibor D., *Effective Use of Systems Building Technology: Open Systems Catalog--Vol I, Open Systems Guide*, Special Report D-73 (CERL, 1976).
- Griffin, C. W., *Systems: An Approach to School Construction* (EFL, New York, New York, 1971).
- Industrialization Forum, Building: Systems Construction Analysis Research*, Vol. 5, Number 1-2 (IF, 1975).
- K/M Associates: A Case Study in Systems Building, Building Systems Information Clearinghouse*, Research Report Number One (John R. Boice and Joshua A. Burns, Systems Division, School Planning Laboratory, School of Education, Stanford, California, 1970).

Listing of Schools Constructed With a Building System, Building Systems Information Clearinghouse, Special Report Number 2, (Education Facilities Laboratories, Menlo Park, California, April 7, 1975)

Manufacturers Compatibility Study, Building Systems Information Clearinghouse, Special Report Number One (John R. Boice & Josh Burns, Systems Division, School Planning Laboratory, School of Education, Stanford California, 1969).

Manufacturers Compatibility Study, Building Systems Information Clearinghouse, Special Report Number One (John R. Boice & Josh Burns, Systems Division, School Planning Laboratory, School of Education, Stanford, California, 1970).

Manufacturers Compatibility Study, Third Edition, Building Systems Information Clearinghouse, Special Report Number One (BSIC/EFL, Menlo Park, California, September 1971).

Promotion of the Development and Use of the Subsystem Concept of Building Construction, Building Research Advisory Board-Federal Construction Council, Technical Report Number 62 (National Academy of Sciences, Washington D. C., 1972).

Schneider, Richard L., Effective Use of Systems Building Technology: Open Systems Catalog--Vol II, Prototype Performance Specifications, Special Report D-73 (CERL, 1976).

The Role of Hardware Information in Using Industrialized Building Products in Military Construction (Center for Architectural Research, School of Architecture, Rensselaer Polytechnic Institute, Troy, New York, January 1975).

SCSD: the Project & the Schools (EFL, New York, New York, 1967).

The Use of Subsystems in Building Construction, for BRAB and Federal Construction Council, volumes 1 and 2 (Marvin E. Goody, John M. Clancy & Associates, Inc. with Dublin-Mindell-Bloome Associates, P.C., 197-).