CATALOGUE OF HOUSE BUILDING CONSTRUCTION SYSTEMS

CENTRAL MORTGAGE AND HOUSING CORPORATION
CATALOGUE
OF HOUSE
BUILDING
CONSTRUCTION
SYSTEMS
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COMPiled AND PRINTED BY CENTRAL MORTGAGE AND HOUSING CORPORATION
HEAD OFFICE, OTTAWA, CANADA—1960
PREFACE

The catalogue of building systems illustrates all the known construction methods of single family dwellings, which have been published or illustrated throughout the world. It is the first time such a comprehensive subject has been included in one book.

It was made possible by breaking the large numbers of construction systems down to basic types. This permitted a method of classification which reduced the catalogue to a workable size.

The catalogue includes sufficient data to illustrate the various systems of construction, gives country of origin and provides the source reference for a more detailed study.

To thoroughly explain and illustrate most basic examples "Case Sheets" are used. These consist of isometric drawings showing critical points of construction with explanatory technical data.

Since this is a catalogue of Small House Construction Systems, under the terms of reference, a small house is defined as a single family dwelling, a semi-detached house, a row house, or similar residential construction having not more than two floors, excluding the basement or semi-basement.

Construction System, for definitive reasons, is the manner of constructing the whole or dominant part of the house (i.e. foundation, floors, wall or roofs). For technical classification purposes the determining factor has been first, the type of external wall construction and second, the roof and floor construction.
DESCRIPTION OF CLASSIFICATION TECHNIQUE

The catalogue is divided into two indices

The first index sets out the types of construction which are classified by structural method, or where this is not clear, by method of assembly. In judging the type of structure it has been the external wall primarily, and secondly the roof and floor which have determined how the system should be categorized. In marginal cases systems have been mentioned under more than one category. Within each category the traditional forms have been given first, the proprietary examples follow in alphabetical order. The major systems are illustrated by case sheets which form a typical cross section of construction methods. The case sheets are arranged alphabetically within each applicable classification and are found at the conclusion of each system.

The second index is an alphabetical list of manufacturers, by country - cross referenced by structural method and by reference sheet number.

The order of the classification of the first index is as follows:

<table>
<thead>
<tr>
<th>WOOD SYSTEMS</th>
<th>ABBREVIATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood Framed House</td>
<td>WFH</td>
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<tr>
<td>Balloon Frame</td>
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<tr>
<td>Platform Frame</td>
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<tr>
<td>Frame Bents (Portal Frame)</td>
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<tr>
<td>Post and Beam</td>
<td></td>
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<tr>
<td>Special Systems</td>
<td></td>
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<tr>
<td>Stressed Skin Panels</td>
<td>WSSP</td>
</tr>
<tr>
<td>Normal Panels</td>
<td></td>
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<tr>
<td>Trailer Type</td>
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<tr>
<td>Plank and Log</td>
<td>WPL</td>
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<tr>
<td>Plank Frame</td>
<td></td>
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<tr>
<td>Horizontal Log</td>
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<tr>
<td>Special Systems</td>
<td></td>
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<tr>
<td>Vertical Log</td>
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</tbody>
</table>

CONCRETE AND MASONRY SYSTEMS

Concrete and Masonry Panels CP
<table>
<thead>
<tr>
<th>Section</th>
<th>Code</th>
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<tbody>
<tr>
<td><strong>Concrete and Masonry Panels (cont'd)</strong></td>
<td>CP</td>
</tr>
<tr>
<td>Concrete Panels</td>
<td></td>
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<tr>
<td>Brick Panels</td>
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<tr>
<td>Lightweight Concrete Panels</td>
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<tr>
<td>Hollow Panels</td>
<td></td>
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<td>Special Systems</td>
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<tr>
<td><strong>Concrete and Masonry Units</strong></td>
<td>CU</td>
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<tr>
<td>Normal Units, Concrete</td>
<td></td>
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<tr>
<td>Normal Units, Lightweight Concrete</td>
<td></td>
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<tr>
<td>Hollow Cavity Wall Units</td>
<td></td>
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<tr>
<td>Solid Brick Walls</td>
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<tr>
<td><strong>Concrete Post and Beam</strong></td>
<td>CPB</td>
</tr>
<tr>
<td><strong>Sandwich Walls (cast in situ-concrete)</strong></td>
<td>CS</td>
</tr>
<tr>
<td><strong>Monolithic Construction</strong></td>
<td>CM</td>
</tr>
<tr>
<td>Solid Concrete</td>
<td></td>
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<tr>
<td>Cavity Wall Monolithic Concrete</td>
<td></td>
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<tr>
<td>Monolithic Integrally Insulated Concrete</td>
<td></td>
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<tr>
<td>Mud Or Earth Walling</td>
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<tr>
<td><strong>Structural Sandwich and Plastic Systems</strong></td>
<td>S</td>
</tr>
<tr>
<td><strong>METAL SYSTEMS</strong></td>
<td></td>
</tr>
<tr>
<td>Metal Stud Frames</td>
<td>MSF</td>
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<tr>
<td>Non Panelized Systems</td>
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<tr>
<td>Panelized Systems</td>
<td></td>
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<tr>
<td>Special Systems</td>
<td></td>
</tr>
<tr>
<td>Metal Post and Beam Frames</td>
<td>MPB</td>
</tr>
<tr>
<td><strong>Metal Panels</strong></td>
<td></td>
</tr>
<tr>
<td><strong>TENSILE AND COMPRESSIONAL SYSTEMS</strong></td>
<td>T</td>
</tr>
</tbody>
</table>
Case Sheets are arranged alphabetically at the end of the applicable systems.

Each case sheet gives the following information:

On the front:

A scale isometric illustration of a corner of a typical building employing the system, and diagram showing a unit of the system, a typical unit joint and a typical view of a completed building in which the system is used.

On the right hand edge of the sheet is a visual cross reference tab referring to construction types (see first index).

On the back:

NAME OF SYSTEM

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder. (1) Where non-traditional or proprietary, name of originating manufacturer or sponsor is given first. Canadian manufacturers when they exist are given in addition to foreign.

Date and Place of Origin. (2) Where traditional, this may be impossible to give.

Materials Used. (3) Material listed is that of which the system is mainly constructed.

Description. (4) This is intended to be complementary to the drawing, and where known, includes physical properties.

Development. (5) Canadian development is noted first.

Comment. (6) This note is only meant to augment the facts and is not an official observation.

References. (7) Only major references are given. Where none are given the sponsor's information is the reference.
# Reference Guide

<table>
<thead>
<tr>
<th>Wooden Framed House #1</th>
<th>WFH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stressed Skin Panel #2</td>
<td>WSSP</td>
</tr>
<tr>
<td>Plank and Log Frame #3</td>
<td>WPL</td>
</tr>
<tr>
<td>Concrete and Masonry Panel #4</td>
<td>CP</td>
</tr>
<tr>
<td>Concrete and Masonry Units #5</td>
<td>CU</td>
</tr>
<tr>
<td>Concrete Post and Beam #6</td>
<td>CPB</td>
</tr>
<tr>
<td>Concrete Sandwich Construction #7</td>
<td>CS</td>
</tr>
<tr>
<td>Concrete Monolithic #8</td>
<td>CM</td>
</tr>
<tr>
<td>Structural Sandwich and Plastic Systems #9</td>
<td>S</td>
</tr>
<tr>
<td>Metal Stud Frames #10</td>
<td>MSF</td>
</tr>
<tr>
<td>Metal Post and Beam Frames #11</td>
<td>MPB</td>
</tr>
<tr>
<td>Metal Panel #12</td>
<td>MP</td>
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<tr>
<td>Tensile Systems #13</td>
<td>T</td>
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## LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Name</th>
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<tbody>
<tr>
<td>B.M.S.</td>
<td>Building Materials and Structures, National Bureau of Standards, Washington, U.S.A.</td>
</tr>
<tr>
<td>C.M.H.C.</td>
<td>Central Mortgage and Housing Corporation, Ottawa, Canada.</td>
</tr>
<tr>
<td>F.H.A.</td>
<td>Federal Housing Administration, Washington, U.S.A.</td>
</tr>
<tr>
<td>M.I.T.</td>
<td>Massachusetts Institute of Technology, Cambridge, Massachusetts, U.S.A.</td>
</tr>
<tr>
<td>N.C.M.A.</td>
<td>National Concrete Masonry Association, Chicago, U.S.A.</td>
</tr>
<tr>
<td>N.H.A.</td>
<td>National Housing Administration, U.S.A.</td>
</tr>
<tr>
<td>P.W.B.S.</td>
<td>Post War Building Study (H. M. S. O.), U.K.</td>
</tr>
<tr>
<td>P.H.M.I.</td>
<td>Prefabricated Homes Manufacturers Institute, U.S.A.</td>
</tr>
</tbody>
</table>
WOOD FRAMED HOUSE
WOOD FRAMED HOUSE

Sub-Classification
Balloon Frame
Platform Frame
Frame Bents (Portal Frame)
Post and Beam
Special Systems

Case Sheets
Balloon Frame
Swedish Balloon Frame
Braced Frame
Platform Frame
Brick Veneered Frame
Intercon
Spooner House
Stud Frame Panel
Swedish Stud Frame Panel
Triple Cavity Panels (Thermobau)
T.V.A. House Type II
Bent Frame
1 1/2 Storey Truss
Pierce Bent Frame
Volks-kabin
Japanese House
Core
Ratio Structures
Dachhaus
### Balloon Frame

<table>
<thead>
<tr>
<th>Type of Construction</th>
<th>Reference Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional form of construction 1950.</td>
<td>Wood Frame House Construction.</td>
</tr>
<tr>
<td>Two Storey close stud frame. Studs continuous through both storeys.</td>
<td>U.S. Dept. of Agriculture</td>
</tr>
<tr>
<td></td>
<td>&quot;Architectural Graphic Standards&quot;, Ramsay &amp; Sleeper.</td>
</tr>
</tbody>
</table>

### SWEDISH BALLOON FRAME

| Semi traditional form of construction introduced from the United States. | Kungliga, Bostadstyrelsen, Stockholm. |

### Platform Frame

### BRACED FRAME (OLD) North America


### BRACED FRAME (MODERN) North America


### PLATFORM FRAME (WESTERN) United States

WOOD FRAMED HOUSE (Platform Frame cont'd)  WFH

PLATFORM FRAME
(WESTERN FRAME) with
(BRICK VENEER)

Platform Frame Prefabricators

ABC CONSTRUCTION CORPORATION (Bauer)
5235 Winthrop Avenue,
Indianapolis, Indiana, U.S.A.  Conventional stud frame panels. Sheathed wood frame units for walls. Wood frame units for partitions, wood trusses for ceiling and roof framing.

ADMIRAL HOMES INCORPORATED
149 Water Street,
West Newton,
Pennsylvania, U.S.A.  Conventional prefabricated structure.

ALADDIN HOMES
163 Hunter Street,
Peterborough, Ont., Canada.
also
Aladdin Company,
Bay City,
Michigan, U.S.A.  Pre-cut conventional frame construction.

ALLEGHANY HOMES CORPORATION
Box 36,
Homer, New York, U.S.A.  Plywood & wood frame units for floors, walls, partitions, ceiling and roof.


Admiral Homes Inc., 149 Water Street, West Newton, Pennsylvania, U.S.A.

Aladdin Homes,
163 Hunter Street, Peterborough, Ontario, Canada.
also
Aladdin Company, Bay City, Michigan, U.S.A.

WOOD FRAMED HOUSE (Platform Frame Prefabricators cont'd)  WFH

**AMBLER ASBESTOS**  
Keasby & Mattison Co.,  
Ambler, Pennsylvania,  
U.S.A.  
Wood stud frame panels 4' x 12' clad with asbestos board and sheathing, bolted together.  
M. O. W. Survey of Prefabrication.  

**AMERICAN FABRICATORS INCORPORATED**  
Bluff Pine, Arkansas,  
U.S.A.  
Stud frame panel.  
American Fabricators Inc., Bluff Pine, Arkansas, U.S.A.

**AMERICAN HOUSES INCORPORATED**  
165 West 46th Street,  
New York, N.Y.,  
U.S.A.  
1,500 housing units in U.S. (defence) 1950.  
Wood frame panels 4' 0" wide and storey high. Studs at 16" centers. Remainder pre-cut Quilt insulation.  
"Architectural Record", June 1943.  
M. O. W. Survey of Prefabrication.

**ANCHORAGE HOMES INCORPORATED**  
Westfield, Massachusetts,  
U.S.A.  
Federal Housing Administration, 1946.

**A.H. ANDERSON LIMITED**  
(A.75 System)  
66 Victoria Street,  
London, S.W.1,  
England.  
Wood stud panel system of varying sizes mainly used for Public & Commercial Building.  

**ATKINSON LUMBER & MANUFACTURING COMPANY**  
Midwest Station,  
Oklahoma City,  
Oklahoma, U.S.A.  
Plywood & wood frame units for walls & floors. Open frame partitions. Pre-cut rafters or shop assembled roof trusses. Finish is field applied.  
G.B. Oklahoma City.
WOOD FRAMED HOUSE (Platform Frame Prefabricators cont'd) WFH

AUTOREX BUILDING SYSTEM
(Bau-Export)
615 West Pender Street,
Vancouver 2, B.C.,
Canada.
1954. German system tentatively imported to Canada.
4' x 8' wood stud frame panel.
Purlined roof. Trusses at 4' centers.

Autorex Building System,
(Bau-Export)
615 West Pender Street,
Vancouver 2, B.C.,
Canada.

BAKER LUMBER & SUPPLY COMPANY
P.O. Box 1536,
Port Neches,
Texas, U.S.A.
Normal. Panel under 4' wide.

Baker Lumber & Supply Company,
P.O. Box 1536,
Port Neches,
Texas, U.S.A.

BARDEN & ROBESON CORPORATION, The
Middleport, New York,
U.S.A.
Plywood & wood frame units for walls, partitions, floor, ceiling & roof.

S.B. Buffalo Dist. of Col.

B-D HOMES COMPANY
Martin City,
Missouri, U.S.A.
Conventional wood frame construction. Sectionalized.

F.H.A. Bulletin 1/13/51.

BEST HOMES INCORPORATED
628 West Lake Street,
Peoria, Illinois,
U.S.A.
Conventional stud frame.


BETONA PRE-CUT BUILDING
Betona, Box 89,
Zaandam, Holland.
Pre-cut wood frame. Whole house assembly.

"Acceptable Building Materials",
C.M.H.C. 1953.

BETTER LIVING INCORPORATED
(Solar House)
2 North Indiana St.,
Oklahoma, U.S.A.
Conventional stud panel for roofs, floors and walls.

Better Living Inc.,
2 North Indiana St.,
Oklahoma, U.S.A.
<table>
<thead>
<tr>
<th>Company</th>
<th>Location</th>
<th>Description</th>
<th>Reference</th>
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</thead>
<tbody>
<tr>
<td>BOSCHULT ENGINEERED HOMES</td>
<td>Fremont, Nebraska, U.S.A.</td>
<td>Wood frame units with plywood sheathing and interior finish.</td>
<td>F. H. A. Bulletin 1/16/55.</td>
</tr>
<tr>
<td>BRAD INDUSTRIES</td>
<td>Montreal, Quebec, Canada.</td>
<td>*Wood framed panel (2&quot; x 4&quot; studs at 16&quot; o.c.) Panels are of varying sizes. 3' 4&quot; module.</td>
<td>&quot;Acceptable Building Materials&quot;, C. M. H. C. 1955.</td>
</tr>
<tr>
<td>CARDINAL HOMES</td>
<td>Toronto, Ontario, Canada.</td>
<td>*Essentially a conventional stud frame house with dry-wall interior finish. Prefabricated in wall sections.</td>
<td>Cardinal Homes, 57 Bloor Street W., Toronto, Ontario, Canada. also Halliday, Canadian Prefab. Incorporated, Quebec, Canada.</td>
</tr>
<tr>
<td>Company</td>
<td>Type and Features</td>
<td>Sources</td>
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<td>Century Construction, 701-294 Portage Ave., Winnipeg, Manitoba, Canada.</td>
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<td>M.O.W. Survey of Prefabrication.</td>
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<tr>
<td>Christopher &amp; Ummack A.G.</td>
<td>Developed since 1882.</td>
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<td></td>
<td>For barracks, housing etc.</td>
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<td></td>
<td>Large quantities used.</td>
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<td></td>
<td>T. &amp; G. jointing 1 m. frame panel units. Double cavity exterior &amp; interior wall-board sheathing &amp; wall-board.</td>
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<tr>
<td>City Lumber Co.</td>
<td>Panelized platform frame.</td>
<td>City Lumber Co., 75 3rd Street, Bridgeport 1, Connecticut, U.S.A.</td>
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<td></td>
<td>Wood trusses for roof &amp; ceiling.</td>
<td>SE-188.</td>
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<td>H.M.A. 1957.</td>
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<tr>
<td>Company Name</td>
<td>Description</td>
<td>Location</td>
<td>Notes</td>
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<tr>
<td>COOPER CORPORATION</td>
<td>Complete wood frame houses constructed at a central plant and transported whole to the site.</td>
<td>Gary, Indiana, U.S.A.</td>
<td>F.H.A. Bulletin 1/19/54.</td>
</tr>
<tr>
<td>COWIESON HOUSE</td>
<td>500 prefabricated houses in Scotland in inter-war period. Timber frame clad with steel fibreboard internally. U=0.33.</td>
<td>Scotland</td>
<td>Post War Building Study No. 1.</td>
</tr>
</tbody>
</table>
WOOD FRAMED HOUSE (Platform Frame Prefabricators cont'd)  WFH

CROSS WALL &  
PANEL HOUSE  
Canterbury County  
Council,  
Highworth, R.D.C.  
Wilts, England.  

*Erick Chick Builder.  
Powell & Moya Architects.  
Numerous other English  
sources. Party walls in brick,  
exterior walls in wood frame  
panel units tied with tension  
wire. Row House Construction  
only.

"Prefabrication",  
Sept. 1954.  
"Architect's Journal",  
Nov. 22nd, 1951.

CRUDENS "SCOTIA"  
Musselburgh,  
Midlothian, Scotland.  

3'6" module for internal and  
exterior partitions.  
Diagonal boarding on 2 way  
battens. Trussed roof.

Crudens "Scotia",  
Musselburgh,  
Midlothian, Scotland.

DOWNES PATTERSON  
CORPORATION  
Stonington, Connecticut,  
U.S.A.

Wood frame units for walls,  
partitions, ceiling & roof.

F.H.A. Bulletin  
G.B. SE-97.

DWELL-ETTE SOUTH-  
WEST INCORPORATED  
St. Joseph's Missouri,  
U.S.A.

Wood frame units complete  
with floors, walls and ceilings  
in large sections.  
Interior finish shop applied.  
Exterior finish field applied.

F.H.A. Bulletin  
12/7/51.

EMPIRE HOMES  
INCORPORATED  
Louisville 11,  
Kentucky, U.S.A.

Wood frame wall units plywood  
sheathing exterior face, ply-  
wood or gypsum wall-board,  
interior face. Partitions wood  
frame & plywood units or  
laminated gypsum wall-board  
units. Wood frame trusses,  
for roof, roof & ceiling.

F.H.A. Bulletin  
1/27/55.  
G.B. SE-191.

ENTERLOCKING  
Long-Bell Lumber Sales,  
Corporation,  
U.S.A.

Pre-cut lumber. A normal  
platform frame wood con-  
struction except for jointing  
method.

"American Architect  
& Architecture",  
September 1936.  
"The Evolving House,  
III, Rational Design",  
(Bemis).
WOOD FRAMED HOUSE (Platform Frame Prefabricators cont'd)  

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Location</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
</table>

HALLIDAY CO. LTD., 551 Maple Ave., Burlington, Ont., Canada.  

Major prefabrication and pre-assembly of components of a traditional form of construction 2" x 4" at 16" o.c.  

Halliday Co. Ltd., 551 Maple Ave., Burlington, Ont., Canada.
WOOD FRAMED HOUSE (Platform Frame Prefabricators cont'd)  WFH

HARNISCHFEGE
CORPORATION
Port Washington,
Wisconsin, U.S.A.

Wood frame units for exterior walls, partitions, floor, ceiling & roof. Covering materials. Plywood or wall-board.

HIRSH-KUPFER
Hirsh-Kupfer and
Messingwerke Finow,
Hamburg, Germany.


HODGSON
E. F. Hodgson Company
Dover, Massachusetts,
U.S.A.

Panel 2" x 3" studs at 12" centers faced with cedar siding externally, fibreboard, battened internally in 6' wide x storey height panels. Roof and floor units similar. A conventional stud frame panel. Production continuous since 1892.

HOME BUILDING
CORPORATION
303 North Park,
Sedalia, Miss.,
U.S.A.

Plywood or hardboard on wood frame units for walls, partitions, floor, ceiling and roof.

HOMEOLA
CORPORATION
9 South Clinton St.,
Chicago 6, Illinois,
U.S.A.

Plywood faced panels. Conventional. Steel frame. 8' x 0" by 4' x 0" panels.

HOUSEMART
INCORPORATED
18320 Lanken Avenue,
Cleveland, Ohio,
U.S.A.

Wood frame units for walls and partitions. Pre-cut framing for all other elements of house.

F. H. A. Bulletin
8/2/50.
G. E. SE-147.
"American Business"
October, 1949.

M. O. W. Survey of Prefabrication.

The Evolving House,
III, Rational Design,
(Bemis).

F. H. A. Bulletin
4/16/54.
G. B. SE-180.

"Sales Management"
November 1946.
U. S. National Bureau of Standards.
"American Builder & Building Age,"
May, 1947.
"Architectural Forum,"
November, 1946.

F. H. A. Bulletin
4/17/50.
G. B. SE-141.
"American Builder & Building Age,"
April, 1948.
WOOD FRAMED HOUSE (Platform Frame Prefabricators cont'd) WFH

**HOUSTON READY CUT HOUSE COMPANY**  
Houston, Texas, U.S.A.  
1917.  
Wood stud panels. Windows & doors included in panels. Siding insulation.  
4' 0" x 8' 0". Conventional.

**IBO**  
Various Swedish firms, such as Aktiebolaget Industriebostader (IBO), with aid from the municipal or national government.  
1920.  
Wood stud frame panel boarded internally and externally. Insulation filled, (sawdust). Traditional floor and roof construction.

**ILLINOIS LUMBER MANUFACTURING COMPANY**  
Cairo, Illinois, U.S.A.  
Wood frame units for walls.  
Pre-cut framing & sheathing sub-flooring & finish surface materials finished.

**INDEPENDENT LUMBER COMPANY**  
19620 Nottingham Road, Cleveland, Ohio, U.S.A.  
Wood frame units for walls & partitions plywood sheathing shop applied on wall units, wood trusses, for roof & ceiling framing.

**INLAND HOMES CORPORATION**  
501 South College St., Piqua, Ohio, U.S.A.  
Wood frame units for walls & partitions. Fibreboard sheathing & double coursed shingles. Shop applied or other exterior finish field applied wood trusses for roof & ceiling framing.

**M.O.W. Survey of Prefabrication**

The Evolving House, III, Rational Design, (Bemis.)


G.E. SE-142.


G.B. SE-192.


G.B. SE-182.
### WOOD FRAMED HOUSE (Platform Frame Prefabricators cont'd)

**INTERCON BUILDING SYSTEM**  
1809 Royal Bank Building,  
Toronto, Ontario, Canada.  
1 1/2 storey whole house package. 4' 0" x 1' 8" horizontal panel. Laminated small sections. 1 prototype at Ajax. Out of business.

**JARINO HOUSES**  
Roden, Holland, Exported to Canada.  
One house built in Swift Current, Saskatchewan. 4' 0" panel with 2 cavities filled with insulating wool. Siding outside.

**KAISER HOMES**  
Los Angeles, California, U.S.A.  
Wood stud panels of conventional type. Whole house prefabricated.

**KELSAN HOMES INCORPORATED**  
Box 154, Illiopolis, Illinois, U.S.A.  
Conventional.

**KEYLOCK**  
Robert Building Industries Limited  
Indio House, Bovey Tracey, Devon, U.K.  
4' 0" x 8' 0" panels, 1" glass wool lined internally with hard board.

**KIEWITT, G.R.**  
Webster Groves., Missouri, U.S.A.  
Plywood on wood frame units for walls & partitions.

C.M.H.C. file.

Jarino Houses, Roden, Holland.


Kelsan Homes Inc., Box 154, Illiopolis, Illinois, U.S.A.

"Prefabrication" October 1955.

WOOD FRAMED HOUSE (Platform Frame Prefabricators cont'd) WFH

KNIVSTA
1920. Various Swedish firms, such as Aktiebolaget Industribostader (IBO). Wood stud frame panel, boarded internally and externally. Insulation filled (sawdust). Traditional floor and roof construction.


KNOX CORPORATION
Thomson, Georgia, U.S.A.
Plywood & upson board on wood frame units for walls, partitions, floor, ceiling & roof.

G.E. SE-100.
"Modern Industry" June 1951.

LAKEVIEW PANEL
HOMES
374 Fraser Street, North Bay, Ontario, Canada.
Framed panel with 2" x 4" stud at 16" o.c. Vapour barrier and sheathing. C.M.H.C. accepted 1955.


LEIXLIP UNIT
HOUSES
Barney Heron Limited, Leixlip, Kildare, Eire, Ireland.
Architect Michael Scott. 4' 1" module. Timber units of 1" pine, 4" cavity, fibreboard, inner lining.

Barney Heron Limited, Leixlip, Kildare, Eire, Ireland.

PREFABRICATED
BUILDINGS CO. LTD.
630 10th Street, East, Saskatoon, Saskatchewan, Canada.
Prefabricated Buildings.

Prefabricated Buildings Co. Ltd., 630 10th Street, East, Saskatoon, Saskatchewan, Canada.

LUMBER FABRICATORS
INCORPORATED
728 Fisher Building, Detroit, Michigan, U.S.A.
Wood frame units for walls and partitions.

WOOD FRAMED HOUSE (Platform Frame Prefabricators cont'd)  WFH

LU-RE-CO PANEL
(Ramon Harrell)
Small Homes Council,
University of Illinois,
U.S.A.
Studs on 24" o.c. ranchwall exterior. 4' 8" panels, walls.
Conventional.
"American Builder &
Building Age,"
"Lumber Merchant,"
July 1957.

MACO STRUCTURES
Riverside, California,
U.S.A.
Wood frame & plywood units
for walls & partitions.
F.H.A. Bulletin
3/22/51.

MAISON DEMONTABLE
Societe Armoricaine.
D'Importation des Bois Du
Nord.
1938.
1" wide x storey height.
Wood frame panels.
Insulation filled.
t. & g. joint.
M. O. W. Survey of
Prefabrication.

MARYLAND MODERN
HOUSING CORPORATION
Baltimore, Maryland,
U.S.A.
Wood frame units for walls,
partitions, roof trusses,
plywood wall sheathing.
F.H.A. Bulletin
6/14/48.
G.B. SE-94.

MAY HOMES & SUPPLIES
1326 North Harlan
Avenue,
Evansville, Indiana,
U.S.A.
Wood frame units with shop
applied sheathing & interior
covering materials for walls &
partitions, wood trusses for
ceiling & roof framing.
F.H.A. Bulletin
5/26/54.

MERRIMAN PORTABLE
HOME
Lethbridge Body Works,
Lethbridge, Alberta,
Canada.
Balloon frame construction
on steel runners on post
foundation raised above
ground. Post foundation,
construction otherwise
normal.
Lethbridge Body Works,
Lethbridge, Alberta,
Canada.
WOOD FRAMED HOUSE (Platform Frame Prefabricators cont'd) WFH

MIDWEST HOMES INCORPORATED
Mansfield, Ohio, U.S.A.
Wood frames units for walls, partitions, floors. Pre-cut ceiling joists & roof rafters.
G.B. SE-166.

MOBILHOME CORPORATION OF AMERICA
Bakersfield, California, U.S.A.
Stud framing 2" x 4" at 16" o.c. Whole house shipped as one piece. Shop fabricated complete house.

MODERN HOME MANUFACTURING CORPORATION
Biwabik, Minnesota, U.S.A.
Wood frame house shop fabricated complete in one unit for transportation to site.

McALPINE
Studding clad with steel sheeting. Brick veneer added. Internal wall-board lining.

NATIONAL HOMES CORPORATION
By-Pass 5, Lafayette, Indiana, U.S.A.
Plywood faced wood frame units for walls, partitions, ceilings, etc.
F.H.A. Bulletin 9/8/54
Dept. of Commerce Washington.
"Prefabricated Homes Manufacturing Institute."

NERDRUM HOUSES
See Pre-Cut Solid Timber House.
WOOD FRAMED HOUSE (Platform Frame Prefabricators cont’d)

NEWCASTLE
Frame panels 4' 0" wide, storey high.

NEW CENTURY HOMES CORPORATION
P.O. Box 825, Lafayette, Indiana, U.S.A.
Wood stud frame.

NEW FRAME WALL CONSTRUCTION
630 10th Street, Saskatoon, Sask., Canada.
Whole house construction. 4' 0" module used.
Conventional. Panelized.

OPEN HOUSE CONSTRUCTION
Conventional pre-cut stud walling with whole house open plan, ceiling joists (roof truss) spanning from external wall to external wall. 4' 0" module.
Housing Research Paper No. 29.

PAGE & HILL HOMES INCORPORATED
Shakopee, Minnesota, U.S.A.
Wood frame units with various exterior & interior covering materials for walls, partitions, floor, ceiling and roof. Also trusses for ceiling & roof framing.

PANEL BUILDING HOMES
113 Ferguson Avenue, Hamilton, Ontario, Canada.
Wall panels, trussed rafters.

PEASE WOODWORK COMPANY
Cincinnati, Ohio, U.S.A.
Plywood & wood frame units for walls, partitions, floor & ceiling.
WOOD FRAMED HOUSE (Platform Frame Prefabricators cont'd) WFH

PEERLESS HOUSING COMPANY
300 4th Avenue,
New York 10, New York,
U.S.A.
also
213 Laurier Avenue West,
Ottawa, Ontario,
Canada.

Some houses in Gander,
Newfoundland.
2" x 4" at 16" o.c.
Traditional wood pre-cut housing.
Formerly made panels.
Pre-cut sections put together by builder after drawings.

Peerless Housing Company,
300 4th Avenue,
New York 10, New York, U.S.A.
also
213 Laurier Avenue West,
Ottawa, Ontario,
Canada.

PEMBERTON LUMBER & MILLWORK CORPORATION
270 41st Street,
Brooklyn 32, New York,
U.S.A.

Conventional wood frame panels.

Pemberton Lumber & Millwork Corporation,
270 41st Street,
Brooklyn 32, New York,
U.S.A.

PERREN
J. Perren,
Bookham, Surrey,
England.

1 bungalow at Bookham.
Wood frame panel.

J. Perren,
Bookham, Surrey,
England.

P.H.C.
P.H.C. Housing Corporation,
Jackson, Miss.,
U.S.A.

8' 4" x 5' 0" panel with dual studding. 2-1" x 4" at 1' 8" o.c. to which is attached plywood siding by means of metal clips.

D. B. R.
693.002.224.
691.11
B. M. S. 90

POPE & COTTLE OR PREBILT
Pope & Cottle Company,
now reformed as the PREBILT COMPANY, U.S.A.

1921.
There are 200 houses manufactured monthly.
Timber frame at 16" centres.
Insulation board and cedar siding externally. Wallboard internally. Floors and roofs conventional house delivered in 6' sections.

M. O. W. Survey of Prefabrication.
Architectural Forum, Bemis,
February 1942 and April 1943.
WOOD FRAMED HOUSE (Platform Frame Prefabricators cont'd)  WFH

PRECISION BILT HOMES INCORPORATED
Sky Ranch Airport, Route 9, Denver, Colorado, U.S.A.

Wood frame houses shop fabricated in large sections complete with floors, walls, ceilings & roof.

F.H.A. Bulletin 6/19/52.

PRECISION BUILT J.R. BUILDING SYSTEM
Homasote Company, Trenton 3, New Jersey, U.S.A.
also
P.O. Box 20, Station N., Montreal, Quebec, Canada.

Conventional with room size, pre-cut, platform frame. House erected to promote fibreboard, similar to Lu-Re-Co.


PRE-CUT SOLID TIMBER HOUSE

Houses at Pointe Claire, Kingston, Whitby & Mattawa, Ontario. Horizontal external siding 2 1/2" on vertical 2" x 2" studs at 2' 0" o.c. Trussed.


PREFABRICATED BUILDINGS LIMITED
J. Lorman, 630 10th St., Saskatoon, Saskatchewan, Canada.

1954. 4' 0" module 8' 0" wide panel storey high. Horizontal studs at 23" o.c. including windows. Plywood faced in overlapping horizontal sections.

J. Lorman, 630 10th Street, Saskatoon, Saskatchewan, Canada.

PROGRESSIVE HOMES CORPORATION
Detroit, Michigan, U.S.A.

Stud frame panel.

Progressive Homes Corporation, Detroit, Michigan, U.S.A.
WOOD FRAMED HOUSE (Platform Frame Prefabricators cont’d)  WFH

PUUTALO OY
Mannerheimintie 9B,
Helsinki, Finland.

*Types 1361 & 250.
Skelton of construction,
beam posts.
Infill wood frame panel,
trussed roof.
Delivered in panels.
4' 0" module.
Whole house system.

RASCH
Bodo Rasch Architect,
Stuttgart, Germany.

Wood stud frame panels,
1.05 m. wide x storey high.
Asbestos cement facing sheets
fixed to 2 x 4 studs.
Insulation between. Cover
strip over bitumen joint.

RICHMOND HOMES INCORPORATED
North West L and
Sheridan Streets,
Richmond, Indiana,
U.S.A.

Wood frame wall units with
fibreboard sheathing & various
exterior wall finish materials
& upson board interior covering.
Upson board on wood frame
partitions, trusses for ceiling
& roof framing.

SANFORD INCORPORATED
803 North West 7th Ave.,
Fort Lauderdale,
Florida, U.S.A.

Wood truss units with special
connector plates for ceiling
& roof framing.

SCOTTWOOD FACTORY HOMES (HURON)
David Ellis,
13 Chaterhouse Street,
London E.C.1,
England.

Panelized construction.

Puutalo Oy.
Mannerheimintie 9B,
Helsinki, Finland.

M. O. W. Survey of Prefabrication.
Baugilde 1931.
p. 209.

G. B. SE-1161.

F. H. A. Bulletin 7/13/55.
G. B. SE-194.

David Ellis,
13 Chaterhouse Street,
London E.C.1,
England.
WOOD FRAMED HOUSE (Platform Frame Prefabricators cont'd) WFH

SECO
Uni-Seco Structures Limited,
6 Woods Mews,
Park Lane W.1,
England.
1940. Timber frame, asbestos cement sheathed panel 3' wide and storey high. Floors and roofs plywood box panels. Splined joined. Large volume of temporary wartime housing and post-war housing.

SECCO
Uni-Seco Structures
Limited,
6 Woods Mews,
Park Lane W.1,
England.
1940. Timber frame, asbestos cement sheathed panel 3' wide and storey high. Floors and roofs plywood box panels. Splined joined. Large volume of temporary wartime housing and post-war housing.

SECCO
Uni-Seco Structures
Limited,
6 Woods Mews,
Park Lane W.1,
England.
1940. Timber frame, asbestos cement sheathed panel 3' wide and storey high. Floors and roofs plywood box panels. Splined joined. Large volume of temporary wartime housing and post-war housing.

SECTIONAL TIMBER STRUCTURES IN GREAT BRITAIN
Boulton & Paul Limited,
Norwich, England.
2 1/2" x 2" stud frame up to 8' wide by storey height. Exterior facing shiplap interior 1/2" wall-board. Windows and doors included in panels.

SECTIONIT
Vandyke Brothers,
Punchbowl,
New South Wales,
Australia.
1943. Timber panel units 3' wide x 9'. Fibreboard faced both sides. Precast concrete foundation posts.

SEMICO INCORPORATED
Seney, Michigan,
U.S.A.
Wood board two & three ply units for walls, partitions, floor & roof.

SESAM
1920. Various Swedish firms, such as Aktiebolaget Industribo傍der (IBO) with aid from the municipal or national government. Wood stud frame panel. Boarded internally and externally. Insulation filled (sawdust). Traditional floor and roof construction.


M. O. W. Survey of Prefabrication.


WOOD FRAMED HOUSE (Platform Frame Prefabricators cont'd) WFH

**SHARP HOMES INCORPORATED**
116 East Pasadena Ave.,
Flint 5, Michigan,
U.S.A.

Wood frame units for exterior walls, partitions, floor, ceiling & roof. Interior covering materials & exterior sheathing shop applied.


**SILVERTEX HOUSE**
Alexander Silvertex Products,
265 Eglington Ave. East,
Imperial Bank Building,
Toronto, Ontario,
Canada.

Whole house design using 4' x 8' panel and studs at 24" o.c. "W" roof trusses.

Alexander Silvertex Products,
265 Eglington Ave.,
East,
Imperial Bank Building,
Toronto, Ontario,
Canada.

**SIMMS EXTENDIBLE HOUSE**
W.J. Simms Co. Limited,
England.

12' 0" x 8' 0" panels. Load bearing. Timber. Plywood cladding exterior, plaster board internally. Glass silk insulation. Trussed roof.

"Prefabrication", November 1953.

**SOUTHERN MILL AND MANUFACTURING COMPANY**
Tulsa, Oklahoma,
U.S.A.

Wood frame units for walls, partitions, ceiling & roof.

G.B. SE-98.

**SOUTHWEST AMERICAN HOUSES INCORPORATED**
Box 16,
Houston, Texas,
U.S.A.

Wood frame units for walls, partitions & floors and wood roof trusses.


**SPOONER HOUSE**
J.L. Spooner Limited,
Hull, England.

Wood frame panels varying widths up to 11' 0".
Clad with galvanized steel.
Backed by fibreboard, wood floor, steel roof truss.
U=0.25.

Post War Building Study No. 25.
"Prefabricated Homes" by B.H. Cox,
Paul Ekk Publisher.
<table>
<thead>
<tr>
<th>Wood Framed House (Platform Frame Prefabricators cont'd)</th>
<th>WFH</th>
</tr>
</thead>
</table>

**STADENS (STOCKHOLM STADS)**
Stockholm, Sweden.

1920. Various Swedish firms, such as Aktiebolaget Industribostad (IBO) with the aid from the municipal or national government.
Stockholm City Council, Sweden. Wood stud frame panel, boarded internally and externally. Insulation filled (sawdust). Traditional floor and roof construction.

**STEX HOUSE**


**STRUCTURAL WINDOW WALL PANELS**
Engineered Buildings Limited, 504 5th Street, South East, Calgary, Alberta, Canada.

1955. A semi-traditional form of wood stud frame panel.

**STUD FRAME PANEL**

WOOD FRAMED HOUSE (Platform Frame Prefabricators cont'd) WFH

SWEDISH PREFABRICATED HOUSE
Forenade Trahusfab

SWEDISH STUD FRAME PANEL
Amals Saguertes A/B.

TAPPAN UNIT
Robert Tappan, Architect, New York, N.Y., U.S.A.

MYTON LIMITED
Newland, Hull, England, formerly TARRAN INDUSTRIES LIMITED.

TECHBUILT INCORPORATED
55 Brattle Street, Cambridge, Massachusetts, U.S.A.

TEXAS HOUSING COMPANY
9001 Denton Drive, Dallas, Texas, U.S.A.

2' 0" module frame panel. U=0.47. Whole house system. Forenade Trahusfab U.P.A., Sveavagen 28–30, Stockholm, Sweden,


1939-44. Concrete poured between plywood studs on building paper assembled on site. 1' 4" module. Bitumen joint. See Myton (CP).

Plywood & wood frame units for walls, floors ceiling & roof. Built-up floor girders & pre-cut roof beams.

Wood frame units for walls, partitions & floors. Sheathing shop applied. Interior & exterior finish shop or field applied. Roof trusses or pre-cut joists 7 rafters for ceiling & roof framing.
<table>
<thead>
<tr>
<th>Company</th>
<th>Locations</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>THERMOBAU, G.M.B.H.,</td>
<td>Spiegelgasse 21, Vienna 1, Austria, also Planex Associates, Montreal, Quebec, Canada.</td>
<td>Many units built in Holland, Scotland, Australia, Denmark, etc. Trussed roof. Frame panel of 2 types – Herkalith lined inside and out – 3 air cavities separated by insulated paper &amp; thermofoil. Dowel joints.</td>
</tr>
<tr>
<td>THORNS HUTTING</td>
<td>Brampton Road, Bexleyheath, Kent, England.</td>
<td>Wall panel. 5 whole house units. 6' 0&quot; module.</td>
</tr>
<tr>
<td>THYER MANUFACTURING COMPANY</td>
<td>8257 Wayne Street, Toledo, Ohio, U.S.A.</td>
<td>Wood frame units for walls &amp; partitions, sheathing and siding shop applied. Wood trusses for ceiling &amp; roof framing.</td>
</tr>
<tr>
<td>TRU-BILT CORPORATION</td>
<td>P.O. Box 127, Buechel, Kentucky, U.S.A.</td>
<td>Conventional pre-cut platform frame construction.</td>
</tr>
<tr>
<td>TURKO WALL PANEL</td>
<td>6754 Levesque Blvd., St. Francois de Sale, Quebec, Canada.</td>
<td>Wall, roof &amp; floor panels. 7' 8&quot; x 2' 8&quot;.</td>
</tr>
</tbody>
</table>
WOOD FRAMED HOUSE (Platform Frame Prefabricators cont'd) WFH

T.V.A. DEMOUNTABLE
DEFENCE HOUSE
TYPE II
Tennessee Valley Authority,
Knoxville, Tennessee, U.S.A.

2" x 3" timber studs, framed into 22" x 7' 6" house sections complete with finishes and equipment.
Houses built 15-60 miles from factory. Several hundreds for T.V.A.

M.O.W. Survey of Prefabrication.
T.V.A. Publications.

TWO FOUR ONE FLOOR SYSTEM
Douglas Fir Plywood Association, U.S.A.

Heavy plywood floor system.

Douglas Fir Plywood Association, U.S.A.

UNI-SECO STRUCTURES LIMITED

1945.
Widespread use for temporary housing and hutting in England. A wood stud frame faced with asbestos externally.


UNIT FRAME
U.S.A.

1938.
Conventional wood frame panels 6' wide by storey height. Studs 6" x 5/8". Panels joined by spline and bolt.

M.O.W. Survey of Prefabrication.
WOOD: Sept. 1938.

UNIVERSAL HOMES
725 North Grand Avenue, Amarillo, Texas, U.S.A.

Complete wood frame houses constructed at Central Plant & transported to the site.


V.D.L. HOUSE
Van der Leeuw, Los Angeles, California, U.S.A.

Richard Neutra Architect, Pre-1936.
Stud frame panel faced with wall-board internally and lath and plaster externally.

American Arch. & Architecture, Sept. 1936.
<table>
<thead>
<tr>
<th>Company</th>
<th>Description</th>
<th>Date/Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>WERNOWALL UNITED</td>
<td>Straw filled wood panels, load bearing and insulating. 4' 0&quot; x up to 23' 6&quot; high. 3&quot; units level with 1/2 plaster board. U=0.35. Sound reduction 36 decibels.</td>
<td>&quot;Prefabrication&quot;: September 1954.</td>
</tr>
<tr>
<td>WILLISWAY SYSTEM</td>
<td>Prefabricated wood panels, walls, floors and roofs.</td>
<td>Homeola Corporation, 9 South Clinton Street, Chicago, Illinois, U.S.A.</td>
</tr>
</tbody>
</table>
## WOOD FRAMED HOUSE

### Portal Frame Bents

<table>
<thead>
<tr>
<th>BENT CONSTRUCTION</th>
<th>Description</th>
<th>References</th>
</tr>
</thead>
</table>

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<thead>
<tr>
<th>F.W.A. BENT FRAME</th>
<th>Bents fabricated on ground and raised at 3' 0&quot; centers. Cladding etc. conventional.</th>
<th>M.O.W. Survey of Prefabrication.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>ONE AND A HALF STOREY TRUSS</th>
<th>Trussed bent designed to allow typical 1 1/2 storey accommodation.</th>
<th>&quot;House &amp; Home&quot;, September 1952. Small Homes Council.</th>
</tr>
</thead>
</table>

| (PORTAL FRAME BENT)        |                                                                   |                                                                            |
| John B. Pierce Foundation, |                                                                   |                                                                            |
| Raritan, New Jersey, U.S.A. |                                                                   |                                                                            |

<table>
<thead>
<tr>
<th>THREE HINGED ARCH CONSTRUCTION</th>
<th>A three pin truss spanning the whole house width at 8' 0&quot; centers.</th>
<th>Housing Research Paper 33, H.H.F.A.</th>
</tr>
</thead>
</table>
WOOD FRAME HOUSE (Portal Frame Bents cont'd)

TRUSSED BENTS
Small Homes Council, University of Illinois, Urbana, Illinois, U.S.A.
Bents at 8' 0" centers with supports set 6' 0" in from outside curtain wall and imbedded in concrete slab.

VOLKS-KABIN
Consists of continuous Bent frames 6' apart - covered with 2 x 6 planking on walls & roof.
Core House Corp. 44 Brattle St., Cambridge, Mass.

Portal Frame Bents Prefabricators

BARRETT CONSTRUCTION COMPANY
918 Harrison Street, San Francisco, California, U.S.A.
Laminated wood rigid frame. Bents and plywood frame units for walls, partitions, floors, ceiling and roof.

CALIFORNIA CABIN Production Line Structures of Los Angeles, California, U.S.A.
Widespread use in California and Arizona. Module 4' 0" x 16' 0". Portal frame, panel, infill, mass production, capable of adaptation.

HOME BUILDING CORPORATION
303 North Park, Sedalia, Missouri, U.S.A.
F.H.A. Bulletin 11/19/51.
WOOD FRAMED HOUSE (Portal Frame Bents Prefabricators cont’d)  WFH

OVERSEER HOUSE
Booth and Company,

PROUVE HOUSE
P. Jeanneret and Jean Prouve,

RODELHAUS
Dr. J. W. Ludowici,
Jockgrim/Rheinpfalz,
Germany. Roof is erected first on bents at 10' 0" centers. Spanning 14' 0" width of house. Infill panels prefabricated or in situ as desired. Interior panels of 1" pressed fibreboard. Dr. J. W. Ludowici, Jockgrim/Rheinpfalz, Germany.

Post and Beam

F.W.A. SKELTON FRAME
Federal Works Agency,
Washington, D.C.,

JAPANESE TRADITIONAL HOUSE
WOOD FRAMED HOUSE (Post and Beam cont'd)

LINTEL AND SPANDREL GIRDER SYSTEM
Pierce Foundation, Raritan, New Jersey, U.S.A.

Posts at 12' 0" centers connected by Lintel and Spandrel girders of plywood box construction.

Pierce Foundation, Raritan, New Jersey, U.S.A.

Post and Beam Prefabricators

Post and Beam Prefabbers

ASBESTOSFOAM
NORTHERN UNIT
1548 Queensway, Toronto 14, Ontario, Canada.

Post and beam infill. Wood frame 4" x 4" on 4' 0" center. Styrofoam core faced with asbestos. 1 house built at Frobisher Bay.

N.R.C. D.B.R. Brian Dickens.

CELOTEX CORPORATION
120 South LaSalle St., Chicago, Illinois, U.S.A.

Post and panel wood frame, cemesto-board for walls, loadbearing partitions, roofs pitched or flat. May have cemesto-board sheathing; structural framework on exterior of the wall.

G.B. SE-86.

CLIFF-MAY/CHRIS CHOATE
815 Moraga Drive, Los Angeles 49, California, U.S.A.

Wood frame post and beam with wood frame units for walls & partitions. Shop applied vertical board & battens on exterior units.

F.H.A. Bulletin 7/16/54.
G.B. SE-184.

CORE HOUSE CORPORATION
E.A. Cuetara, 44 Brattle Street, Cambridge, Massachusetts, U.S.A. (Successor to Techbilt Inc.)

Quarter beam type of roof truss. Wall divided into panels. Roof beams supported on posts in gable walls.

E.A. Cuetara, 44 Brattle Street, Cambridge, Mass., U.S.A.
WOOD FRAMED HOUSE (Post and Beam Prefabricators cont'd)

DOANE
Doane Agricultural Services Incorporated, St. Louis, Missouri, U.S.A.
Bents at 8' 0" centers imbedded in concrete pads. Bent frames are longitudinal in exterior walls.

MARTIN HOUSE
Glenn Martin, Middle River, Maryland, U.S.A.
Based on J. B. Pierce House except for 1 3/4" celotex sandwich panel, asbestos cement faced and bitumar impregnated. Panels 4' 0" x 12' 0" between timber. Post and beam frame.

MINIMAL
Le Corbusier & Jeanneret, Architects, France.

MULTI FLEX
8960 Scott Road, R. R. No. 9, New Vancouver, British Columbia, Canada.
4' 0" x 8' 0". Prefabrication panels and factory cut materials 4" x 4" pilasters between. Discontinued production in 1955.

NATIONAL HOMES INCORPORATED
Lafayette, Indiana, U.S.A.
A number of sandwich panel constructions, essentially a curtain wall or post and beam construction. Made up into panels 4' 0" x 8' 0". Cores: paper honeycomb polystyrene, glass fibre, facing in asbestos cement.

Housing Research Paper 33, H.H.F.A.
Multi Flex, 8960 Scott Road, R. R. No. 9, New Vancouver, British Columbia, Canada.
"House & Home", December 1957.
WOOD FRAMED HOUSE (Post and Beam Prefabricators cont'd)

RATIO STRUCTURES
Ratio Structures,
Designers,
P. L. Weiner,
J. L. Serf,
Paul Schultz,
New York,
U. S. A.

Timber post and beam at 10' centers. Concrete foundation piers. Standardized curved roof units 3' 4" x 8' 0" plywood covered spanning 20-32'. Panels include windows and end doors. Panels of plywood faced insulation frame.

SALZGITTER HOUSE
Canadian Homes
Company Limited,
Edmonton, Alberta,
Canada.

German system whole house frame. Non-loadbearing panels of asbestos cast, sandwiching 40 m. m. of Tronal. U(metric) = 0.20 Kcal/m2/hoC. Steel wall and roof frame.

TECHBUILT
INCORPORATED
55 Brattle Street,
Cambridge,
Massachusetts, U. S. A.

See Acorn House under Structural Sandwich and Plastic Systems.

WEIR
G. J. Weir Limited,
Engineers,
Glasgow, Scotland,
also
Great Britain.

Jas. Miller, Architect,
Cardonald Housing Corporation. 1924.
Timber studs at 4' 6" centres, infilled by wood frame panel faced with hardwood. Studs consist of 3-4' x 2" flitched with steel plates. One thousand five hundred built in South Scotland. U = 27. Cavity divided by paper barrier.

WFH

Canadian Homes Company Limited, Edmonton, Alberta, Canada.


WOOD FRAMED HOUSE (Post and Beam Prefabricators cont'd)

YOUTZ UNIT HOUSE
Professor Brigham, University of Michigan, U.S.A.

Post and beam frame and interchangeable.
Non-loadbearing panels.
Each unit 8' 0" wide x 16' 0" long x 8' 0" high with 4 corner posts.
Units to be bolted together.
Wood stressed skin roof panels.
Walls 2 1/8" thick sandwich and frame.
Plywood and celotex.

"Architectural Record", July 1945.

Special Systems

BAHARECKE

A system of bamboo studding and lath and mud, plastered both sides and used in the Tropics of Central America.

Mr. Anatole A. Solow, Division of Housing & Planning, Pan American Union, Washington 6, D.C.

TRUSSED WALLS

*Semi traditional.
Whole wall units trussed to take point roof loads at approximately 8' 0" centers.

"Practical Builder", March 1949.

Special Systems

Prefabricators

BUILD-FAST PRODUCTS
1132 3rd Avenue, Prince George, British Columbia, Canada.

2' 0" x 4' 0" x 6" wood aggregate concrete block, between 2" x 6" studs.
Sheet aluminum finish over interior face.

Build-Fast Products, 1132 3rd Avenue, Prince George, British Columbia, Canada.
WOOD FRAMED HOUSE (Special Systems cont'd)

**DACHAUS (ROOF HOUSE)**
Dr. J.W. Ludowici, Jockgrim/Rheinpfalz, Germany.

The roof of close spaced rafters, pyramidal (51° slope).
1st stage of house is contained within roof which is subsequentially raised to make way for second stage underneath.

**LE RICOLAIS**
Robert LeRicolais, Engineer, France.

A 3 dimensional system using a tetrahedron as a basic unit.
Similar to Lamella system.
Used in France for farm and commercial buildings employing a flat or slightly pitched roof.

**WOHR**
Gebruder Wohr Ironworks, Unterkochen, Wurtemburg, Germany.

Wood frame faced externally with steel sheathing, internally with vertical t. & g. boarding.
Rigid insulation in cavity. 1 m. module. Some houses built.

Small Homes Council Semester, Spring 1951.
M. O. W. Survey of Prefabrication.
H. Spiegel, Der Stahlhausbau, Bauingenieur, Heft 30, 1926.
Roof covering and construction may vary considerably (from close spaced rafters to trusses, insulated or uninsulated).

- rafters nailed to ceiling joists and toenailed to double top plate.
- siding, backed with waterproof paper (breathing type)
- diagonal board sheathing.
- insulation.
- vapour barrier.
- firestops at floor levels.
- 1" x 6" bearer.
- floor joists nailed to studs.
- studs at 16" centres continuous in upper and lower floors.
- double studs (with 2" spacer blocks) at corner.
- studs toenailed to sill.
- sill bolted to foundation wall.

The basement wall and foundation is shown as being typical in Canada.

Scale of feet
12 0 1 2 3

balloon frame
BALLOON FRAME CONSTRUCTION

1. Traditional in North America.

2. Chicago about 1850.

3. Wood.

4. Essentially a two storey construction. Exterior wall studs are continuous through both floors from sill plate to top wall plate, and are nailed to floor joists. Exterior and interior finishes may vary. (Brick, Veneer, Wood siding, etc.). U=.087 (With 2" mineral wood).

5. Widespread use in North America until the mid 1930's when it declined with the growing predominance of the single storey house.

6. Generally accepted.

Whole House Assembly

Trusses at 30' centres.

Pantiles on battens.

3/4" Roof decking.

3/4" Cavity.

1/2" Fibre board.

Loose insulation.

1/2" Porous fibre board.

4" x 2" Roof trusses at 30' centres.

3/4" T. and G. boarding.

1/8" Hardboard, painted.

6" x 2" Joists at 30' centres.

Paper moisture barrier.

Paper vapour barrier.

Loose insulation.

Paper vapour barrier.

3/4" T. and G. boarding.

2" x 5" Sill plate.

Loose insulation.

Moisture barrier.

1" T. and G. flooring.

3/4" T. and G. boarding.

2" x 2" Cove.

2" Rigid insulation.

Concrete foundation wall.

Ground Floor and Foundation

Swedish Balloon Frame

December, 1958.
**SWEDISH BALLOON FRAME**

| Traditional, Non-Traditional, Manufacturer, Sponsor or Builder. | 1. Traditional (but only recently). |
| Date and Place of Origin. | 2. A twentieth century Scandinavian development of the American balloon frame. |
| Materials Used. | 3. Wood. |
| Description. | 4. Studs, joists and trusses are nailed together horizontally in the form of a frame, then raised as one piece. Maximum frame centres are 30". A later variation has 24" centres for wall studs and floor joists, and a roof truss at every other frame (i.e. 48" centres). Exterior finish is invariably of wood siding. Insulation can also be rigid. Houses are two storeys in height, the second storey being in the roof. |
| Development to Date. | 5. Recently introduced to Sweden by the Royal Housing Commission (Kungliga Bostadsstyrelsen). |
| Comment. | 6. - |
roof finish varies according to local customs and conditions

building paper

sheathing

roof rafters @ 16" o.c.

3/4" sheathing
die

ceiling joists @ 16" o.c.

2 - 2" x 4" plate

plasterboard

horizontal wood siding

building paper

3/4" diagonal sheathing

2" x 4" stud @ 16" o.c.

2" x 4" diagonal brace

4" x 6" flush girt
diagonal sub-flooring

4" x 6" drop girt

floor joists

baseboard

finished floor

building paper

rough floor

3/4" diagonal rough sheathing

Scale of feet

12 0 1 2 3
BRACED FRAME

Traditional, Non-Traditional Manufacturer, Sponsor or Builder.

1. Traditional.

Date and Place of Origin.


Materials Used.

3. Wood.

Description.

4. U=.087 (with 2" mineral wool).

Development to Date.

5. Traditionally used throughout North America until superseded by Balloon and Platform Frames in late 19th century.

Comment.

6. This system, like all wood frame systems, has been used in conjunction with a wide variety of finishing and filling materials.

References.

WHOLE HOUSE ASSEMBLY

3/4" Sheathing - water-proof paper and asphaltic shingles.
Rafter nailed to ceiling joists and toe nailed to double top plates.
Batt insulation.
Double top plates.
Ceiling joists.
Double studs with 2" spaced blocks at corners.
2" Insulation.
Studs at 16" c.c.
Siding.
Diagonal board sheathing.
Plaster board.
Plate at floor level placed on diagonal floor boarding.
Cross bridging.
Floor joists.
Plaster board ceiling.
Vapour barrier.
Moisture barrier between siding and diagonal board.
Plate at floor level.
Floor finish on diagonal boarding.
Sill bolted to foundation wall.
Concrete foundation.

Scale of feet

December, 1958.
**PLATFORM FRAME (or WESTERN FRAME)**

<table>
<thead>
<tr>
<th>Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.</th>
<th>1. Traditional in Northern America.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date and Place of Origin.</td>
<td>2. North America from 19th. century.</td>
</tr>
<tr>
<td>Materials Used.</td>
<td>3. Wood.</td>
</tr>
<tr>
<td>Description.</td>
<td>4. A system of wood framing suitable for one to three floors. Finishes and insulation vary. Exterior finish is often a brick &quot;veneer&quot;, 1&quot; away from timber frame and connected by iron ties at 16&quot; centres, (see alternative sheet). U=0.10 (or according to insulation and finishes).</td>
</tr>
<tr>
<td>Development to Date.</td>
<td>5. Widespread use throughout North America.</td>
</tr>
<tr>
<td>Comment.</td>
<td>6. -</td>
</tr>
</tbody>
</table>
Roof construction may vary according to customs and conditions.

- Wood plate
- Asphalt shingles
- 3/4" sheathing and waterproof paper
- Diagonal board sheathing
- 4" brick outer skin
- Roof rafters nailed to ceiling joists and toenailed to double plate
- Ceiling joists
- Top double plate
- Batt insulation with vapour barrier
- Plywood eaves soffit
- Eaves fascia
- Gutter
- Plaster board ceiling
- Studs @ 16" o.c.
- Diagonal board sheathing
- 1" space as moisture barrier
- Asphalt breathing type paper
- Batt insulation with vapour barrier
- Plaster board
- Floor finish on diagonal boarding
- Floor joists
- Cross bridging
- Plaster board ceiling
- Plate at floor level
- Sill bolted to foundation wall
- Concrete foundation

**brick veneered frame**

December, 1958.
BRICK VENEERED FRAME

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.

1. Traditional.

Date and Place of Origin.


Materials Used.


Description.

4. $U = \cdot 10 \text{ BTU/Sq. Ft.}/\text{Degree F.}$
   Difference in Temperature.

Development to Date.

5. Widespread use through North America.

Comment.

6. Brick veneer can be used in conjunction with any other wood frame construction.

References.

GROUND FLOOR AND FOUNDATION

December, 1958.
**INTERCON**

**Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.**

1. Non-Traditional. Integrated Constructions Limited,

**Date and Place of Origin.**

2. U.K. Recent.

**Materials Used.**

3. Wood.

**Description.**

4. $U = 0.10$.

**Development to Date.**

5. -

**Comment.**

6. -

**References.**

SPOONER HOUSE

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.
1. Non-Traditional.

Date and Place of Origin.

Materials Used.

Description.
4. Ground floor external walls consist of a brick internal skin with wood internal panels. First floor external walls consist of wood frame panels clad in galvanized steel.

Development to Date.
5. 1 Prototype house at Holderness High Road, Hull, U.K.

Comment.
6. -

References.
7. Post War Building Study Number 25 "Prefabricated Homes" by B.M. Cox (publisher Paul Elek).
Panels usually butt jointed and nailed or bolted.

Roof and ceiling joists are conventional but can also be trussed or made up into panels similar to wall panels.

Roof and ceiling supported on double 2" x 6" header screwed to panel.

Siding, backed with breathing type water-proof paper. (Brick, masonry, stucco on lath and other facings are also used).

4'0" x 8'0" stud frame panel units (consisting of 2" x 4" studs and 3/4" sheathing) bearing directly onto floor and toe nailed.

16" quilt insulation is integral in prefabricated panel or stapled to interior face of studs afterwards.

Interior finish applied after panel erection.

Floor finish.

Plywood sub floor and joists sometimes framed up into panels.

Sill bolted to foundation.

Basement wall and foundation are shown as being typical for Canadian housing.

Scale of feet

12 0 1 2 3

February, 1958.
## STUD FRAME PANEL

<table>
<thead>
<tr>
<th>Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.</th>
<th>1. Non-Traditional.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This, and similar systems, are used by many American prefabricators. This particular design has been developed by the Small Homes Council and sponsored by the Lumber Dealers Research Council, and is franchised by the latter under the name of Lu-Re-Co.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date and Place of Origin.</th>
<th>2. Stud frame panels have been generally used in America since 1800. This design was developed in 1954.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Materials Used.</th>
<th>3. Wood.</th>
</tr>
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</table>

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<thead>
<tr>
<th>Description.</th>
<th>4. Structure is essentially the same as the traditional Platform frame, but panelised for prefabrication purposes. Interior and exterior finishes are applied after erection of panels. Panels can be raised singly or in whole wall sections. Roofs and floors can also be panelised. Studs, within the panels can be horizontal (i) or vertical (ii). Exterior finishes can be siding, brick veneer, etc.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Development to Date.</th>
<th>5. World wide, but especially used by prefabricators in America.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Comment.</th>
<th>6. -</th>
</tr>
</thead>
</table>

|-------------|--------------------------------------------------|
Roof finish may vary; if tiles, double lathing is applied.

- Mineral surfaced roofing felt.
- 1" T. and G. roofing boards.
- 2"x6" Rafter at 24" centres.
- 1"x6" Fascia.

- Insulating paper.
- Gusset boarding.
- 1" Vent board.
- 2"x4" Ceiling frame.
- 2"x4" top plate.
- 2"x3" Frame.
- Insulating paper.
- 3/4" T. and G. ceiling boards.
- 1/8" Hard fibre boarding.
- 2"x6" Ceiling joists at 4" centres.
- 2"x3" Vertical frames.

- 1" 1/2" Vertical weather boards.
- Insulating paper.
- 2" Rockwool insulation.
- 3/4" T. and G. inside boards.
- 1/2" Porous fibre board lining.
- 1 1/4"x4" - 5" T. and G. flooring boards.
- 5/8"x3" Skirting.
- 2"x3" Frame.
- 1"x1" Batten.
- 2"x6" sill plate.
- Asphalted paper insulation.
- Concrete foundation wall.
- 2"x5" - 9" Joists at 16" centres.
- 3/4" Sub flooring.

**Scale of feet**

12 0 1 2 3

---

**swedish stud frame panel**

May, 1958.
SWEEDISH STUD FRAME PANEL

| Traditional, Non-Traditional, Manufacturer, Sponsor or Builder. | 1. Non-Traditional. Similar to systems of construction used by other Swedish prefabricated house manufacturers. |
| Date and Place of Origin. | 2. Sweden, recent. |
| Materials Used. | 3. Wood. |
| Description. | 4. Panels are held together by top and sill plates. \( U=0.063 \) (external wall panels). |
| Development to Date. | 5. Worldwide export distribution. |
| Comment. | 6. Whole house is prefabricated including kitchen fitments, etc. |
WHOLE HOUSE ASSEMBLY

WALL UNIT JUNCTION

UNIT OF CONSTRUCTION

Roof covering.
Roof boarding.
Roof rafters.
Studs to gable end.
Ceiling joists.
1" Heraklith slabs.
1/2" Ceiling plaster finish.
Battens.
Corner posts.
7/8" External T. and G. vertical boarding.
Damp proof felt.
Thermo foil.
Air space.
1" Heraklith slabs.
1/2" Internal plaster finish.
Battens.
Flooring.
Floor joists.
Plate.
Stud vertical spaced for wall units at 4'0" wide.
Concrete.
Hardcore.

GROUND FLOOR AND FOUNDATION

triple cavity panels

Scale of feet

December, 1958.
TRIPLE CAVITY PANELS

1. Non-Traditional, but common to a number of prefabrication companies in Central Europe.


3. Wood.

4. $U=0.08$

5. Used frequently in Europe and tropics.


7. Thermobau, G.M.B.H.
   Spiegelgasse 21
   Vienna 1, Austria
   also
   Planex Associates
   Montreal, Quebec, Canada.
This typical panel is available in different sizes.

UNIT OF CONSTRUCTION

- canvas roofing
- cover slip
- 3/4" x 4 7/8" fascia board
- ceiling guide nailed and glued to roof panels
- glued strip
- 1/4" plywood rib web
- 1/4" plywood
- 1/4" plywood
- 2 1/4" wall panel
- timber shoe mould
- floor panels nailed to floor guides
- linoleum floor covering
- 1/2" plywood
- 1/4" masonite nailed to 2" x 8" floor panel
- glued blocks
- 3/4" plywood rib web
- 1/2" plywood
- elevated timber frame foundation platform
- cross bracing

GROUND FLOOR AND FOUNDATION

t.v.a. house type 2

December, 1958.
T.V.A. HOUSE TYPE II

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.

1. Non-Traditional. Tennessee Valley Authority, Knoxville, Tenn. U.S.A.

Date and Place of Origin.


Materials Used.

3. Wood.

Description.

4. House is prefabricated in two sections and transported to site.

Development to Date.

5. Several thousand houses for T.V.A. and U.S. Corps of Engineers.

Comment.

6. -

References.

BENT FRAME

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.

Date and Place of Origin.

Materials Used.

Description.

Development to Date.

Comment.

References.

1. Semi-Traditional.

2. U.S.A.

3. Wood.

4. Consists of a series of structural frames or ribs called bents, spaced approximately 4 ft. apart acting as post and beam. Filling in between the bents is non-bearing and skins are applied to stiffen the structure.

5. A general system of construction not used extensively.

6. -

7. "Fabricating Houses From Component Parts" by Norman Cherner, published by Reinhold.
Truss is designed for a dead load of 250 lbs. per sq. ft. (wet snow load).

- plywood gusset.
- 2" x 4" collar.
- ring connector.
- 2" x 6" rafters.
- 2" x 4" hanger nailed to rafters and ceiling joists.
- 2" x 8" ceiling joists.
- ring connector.
- 2" x 4" hanger.
- 2-2" x 4" wall plate.
- except where ring connectors are indicated all joints are nailed.
- 2-2" x 4" wall columns @ 2'0" o.c.
- concrete slab on grade.

Scale of feet

UNIT OF CONSTRUCTION

1½ storey truss

December, 1958.
ONE AND ONE HALF STOREY TRUSS

Traditional,  
Non-Traditional,  
Manufacturer,  
Sponsor or  
Builder.

1. Design available for use by anyone.

Date and  
Place of  
Origin.


Materials  
Used.

3. Wood.

Description.  

4. Design is for truss only - any form of infill or finish material may be used that is suitable.

Development  
to Date.

5. Widely published, extent of use not known.

Comment.  

6. -

References.  

7. Small Homes Council,  
University of Illinois, U.S.,  
"House and Home", September 1952, p. 110.
WHOLE HOUSE ASSEMBLY

UNIT OF CONSTRUCTION

- Asphalt strip shingles over No. 15 felt over 1/2" plywood sheathing panels.
- 2" x 4" end nailer.
- 3" vents @ 12" o.c. screened.
- 3/8" plywood gusset plates bolted and glued.
- Ceiling panel.
- 2" blanket insulation.
- Pre-fab wood trusses @ 8'0" o.c.
- Vapour barrier.

WOOD CORNER BOARDS.
- Corner post.
- Panel frame.
- 3/4" cove mold.
- 3/8" plywood.
- 1/4" plywood.
- Panel frame.
- Column.
- Insulation.
- Skirting.
- 1" rough floor.
- 2-2" x 8"s.
- 1" fin. floor.
- 2" x 8" plate.
- 8" wall.
- 2" x 8"s @ 16" o.c.
- 1/2" cem. pl. and mastic.
- 4" conc. fl.
- 4" cinders.
- Footing.

GROUND FLOOR AND FOUNDATION

Scale of feet
12
0 1 2 3

pierce bent frame
December, 1958.
PIERCE BENT FRAME

1. Non-Traditional.

2. Unknown. Found in many parts of the world in various forms.

3. Wood.

4. The basic elements of the system and as shown are a bent frame at 8'0" centres with roof and wall panels spawning between.

5. Numerous houses have been built on this principle throughout the world.

6. This type of construction is found in conjunction with varying forms of roof and wall finish and foundation construction.

WHOLE HOUSE ASSEMBLY

UNIT OF CONSTRUCTION

WHOLE HOUSE ASSEMBLY

ROOF

Asphalt shingle roof
roof insulation
roof planking (2" x 6")
floor planking (2" x 6")
concrete block pier
floor finish
bolted
wall planking (2" x 6")
prefab bent roof beams
prefab floor beams
masonry ground slab
earth

GROUND FLOOR AND FOUNDATION

Scale of feet
December, 1958.

volks-kabin
VOLKS-KABIN

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.

1. Non-Traditional.
   Edward A. Cuetara, Architect,
   Core House Corporation,
   44 Brattle Street,
   Cambridge, Mass.

Date and Place of Origin.


Materials Used.

3. Wood.

Description.

4. 2" t. and g. plank and insulation as required.

Development to Date.

5. -

Comment.

6. Structural package delivered to site with erection instructions.

References.

7. Sponsors' literature.
JAPANESE TRADITIONAL HOUSE

Traditional, 1. Traditional in Japan.
Non-Traditional,
Manufacturer,
Sponsor or
Builder.

Date and 2. Japan 17th Century.
Place of
Origin.

Materials 3. Wood.
Used.

Description. 4. Rafters and ceiling joists
are at 1'6" centres. Floor
joists at 3'0" centres. Wall
posts at 6'0" centres. All
joints are generally housed
and without any form of nails
or metal connection. Buildings
are designed to allow as much
through-draught as possible.
Strength of construction is low
due to weak jointing. Fire
resistance is low.

Development 5. Widespread in Japan.
to Date.

Comment. 6. Most significant feature is the
universal use of the module in
the spacing of structural members.

References. 7. The Japanese House and Garden,
by Tetsuro Yoshida,
(publisher Praeger, N.Y.).
WHOLE HOUSE ASSEMBLY

ROOF

1 5/8" x 3 5/8" fascia board.
caulking.
2" t. and g. matched planks.
4" x 6" plate beam.
2" x 4" plate.
4" x 12" bevelled beam.
4" x 6" corner post.
corner panel.
panel frame.
4" x 4" posts at 6'6" centres.
plaster on plaster board.
clapboarding.
panels framed with 2" x 4" studs
at 16" centres.
2" x 4" plate.
4" x 6" sill.
4" concrete slab.
moisture barrier.
floor covering.
insulation.
foundations.

GROUND FLOOR AND FOUNDATION

Scale of feet

December, 1958.
CORE HOUSE

1. Core House Corporation, 44 Brattle Street, Cambridge, Massachusetts, U.S.


3. Wood.

4. 2\" + T. and G. plank walling.

5. -

6. House is built in two stages: (1) Exterior shell with utility core. (2) Remaining interior walls and finish.

7. Sponsor.
- 3/8" plywood (3'4" x 8'0" - assembled with staggered joints)
- 1 1/4" x 4" cross rib
- 2 - 1 1/2" x 8"
- hole for ceiling panel hooks
- 2 - 1 3/16" plywood gusset plates
- 3" x 4" brackets between gussets
- split ring bolt and washers
- 3" x 6" tie beam

insulation

exterior curtain wall (8'0" high x 10'0" long)

wood truss post

-----------------------------------------

foundation

wood truss post base

Scale of feet

12 0 1 2 3

ratio structures

December, 1958.
<table>
<thead>
<tr>
<th>RATIO STRUCTURES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.</strong></td>
</tr>
<tr>
<td><strong>Date and Place of Origin.</strong></td>
</tr>
<tr>
<td><strong>Materials Used.</strong></td>
</tr>
<tr>
<td>3. Wood.</td>
</tr>
<tr>
<td><strong>Description.</strong></td>
</tr>
<tr>
<td>4. -</td>
</tr>
<tr>
<td><strong>Development to Date.</strong></td>
</tr>
<tr>
<td>5. 160 temporary dwellings in Sidney, N.Y. for F.H.A.</td>
</tr>
<tr>
<td><strong>Comment.</strong></td>
</tr>
<tr>
<td>6. This is a patented design which can be used by others.</td>
</tr>
<tr>
<td><strong>References.</strong></td>
</tr>
</tbody>
</table>
Stage I - Big pre-fab units quickly assembled on foundations on the site next to the place selected for the future ground floor and cellar.

Stage II - The family lives in the roof house until funds are available to build the cellar and ground floor.

Stage III - When ground floor is erected the roof house is hoisted by a truck-mounted crane and placed and secured on top of finished ground floor. Construction of roof house is of 2" x 4" and 2" x 6" nailed to form a space frame. Walls and ceiling finish - gyproc lath and plaster. Insulation - rockwool. Floor finish - linoleum on wood floor.
STRESSED SKIN PANEL
STRESSED SKIN PANEL

Sub-Classification
Normal Panels
Trailer Type

Case Sheets
General Panel
Jicwood House
Stressed Skin Panel
T.V.A. House Type I
WOOD STRESSED SKIN PANEL

Normal Panel

ADMIRAL HOMES
Admiral Homes Incorporated, West Newton, Pennsylvania, U.S.A.


500 houses in 1947.

AMERICAN FABRICATORS INCORPORATED
Louisville 2, Kentucky, U.S.A.

Stressed skin, 3' 0" x 8' 0" plywood panels. Glued and nailed. F.H.A. approved.

American Fabricators Incorporated, Louisville 2, Kentucky, U.S.A.

ARCTIC HUT MK. #3
Canadian Army

Wood stressed skin, plywood faced both sides. Recessed t. & g. with rubber grommet and dowel groove. Aluminum roof and floor joints.

Arctic Hut Mk. #3 Canadian Army.

ARCTIC SHELTER

See Arctic Shelter under Structural Sandwich and Plastic Systems #9.

AS A HOUSE
Amals Sagverks A/B, Amal, Sweden, also Planex Associates, Descelles Boulevard, Montreal, Quebec, Canada.

4' 0" x 8' 0" standard wood stud panel. 2" x 3" studs at 16" centers. 1" t. & g. at 24" o.c.

Amals Sagverks A/B, Amal, Sweden, also Planex Associates, Descelles Boulevard, Montreal, Quebec, Canada.

C.M.H.C. accepted 1953.
WOOD STRESSED SKIN PANEL Normal Panel (cont'd)

BLUECHEL COMPANY J.H.,
23rd Floor Smith Tower,
Seattle, Washington,
U.S.A.

Stressed skin plywood and wood frame,
Units for walls and partitions.


BRITISH POWER BOAT COMPANY
Hythe, Hants,
England.

Scottwood House.

British Power Boat Company,
Hythe, Hants,
England.

CANADIAN PREFABRICATION INCORPORATED
128 Boulevard Orleans,
Giffard, Quebec,
Canada.
(Willisway-Homeola Agency).

Pre-cut stressed skin panels 4'0" wide storey height. Standard construction. Package house.

Canadian Prefabrication Incorporated,
128 Boulevard Orleans,
Giffard, Quebec,
Canada.
(Willisway-Homeola Agency).

CLEMENTS HOUSE
Clements Corporation,
Southport, Connecticut,
U.S.A.

Metal clad plywood panels cemented to wood studs for floors, walls, partitions.
Roof conventional.

F.H.A. Preliminary Acceptance.

CLEMENTS MODULAR PANELS

See Clements Modular Panels under MP

DARROW COMPANY INCORPORATED J.R.
Polo, Illinois,
U.S.A.

Plywood nailed & glued on wood frame for walls and partitions.

F.H.A. Bulletin 9/17/47.

DEPARTMENT OF NATIONAL DEFENCE

General purpose prefabricated hut.

Department of National Defence,
Ottawa, Canada.
WOOD STRESSED SKIN PANEL  Normal Panel (cont'd) WSSP

DRI-BUILT
Douglas Fir Plywood Association,
Washington, D.C.,
U.S.A.
1936.
Stressed skin panel faced with 1/4" plywood on 2" x 4" vertical studs at 16" centers. 4' x 8'.

"Architectural Forum",
February, 1942.
BMS 30 (1939).
M.O.W. Survey of Prefabrication.

DOUGLAS FIR PLYWOOD ASSOCIATION
Washington, D.C.
U.S.A.
1936.
Dri Built House.

Douglas Fir Plywood Association,
Washington, D.C.,
U.S.A.

EASTERN WOODWORKERS HOUSE
Eastern Woodworkers Limited,
Brother Street,
New Glasgow,
Nova Scotia,
Canada.
Stressed skin plywood faced panels, bolted laterally with 2" x 4" studs at 14" centers. Wall, roof and floor panelized 4'0" module.

"Acceptable Building Materials", C.M.H.C.
Ottawa.

E.J.M.A. BUILDING SYSTEM
Carter & Finn, Architects,
Surrey, England.
also
James Gibson,
Toronto, Ontario,
Canada.
1 house erected in Burlington, Ontario.
Insulated wall panel.
Plywood bonded to frame.
Interesting bolted panel joints.

EJMA Building System,
Carter & Finn,
Architects,
Surrey, England.
also
James Gibson,
Toronto, Ontario,
Canada.

FLUSH PANEL CONSTRUCTION
F.H.A. Resettlement Administration.
Stressed skin horizontal panels. Housing at Greenbelt, Maryland.

"Architectural Review",
1938.

FOREST PRODUCTS LABORATORY
Forest Products Laboratory, Madison, Wisconsin,
U.S.A.
Stressed skin panel house. 8'0" x 4'0" panel.
Panel wood stressed skin panel faced with plywood in between post and beam construction.

"American Architect & Architecture",
September, 1936.
U.S. Dept. of Agriculture.
<table>
<thead>
<tr>
<th>Company</th>
<th>Location</th>
<th>Year</th>
<th>Panel Type and Dimensions</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fort Wayne Demountable U.S.A.</td>
<td></td>
<td>1939</td>
<td>4&quot; x 8&quot; stressed skin plywood box beam panels, bolted together. Butt jointed in mastic. 1 house per day with semi skilled labour. A slum clearance scheme.</td>
<td></td>
</tr>
<tr>
<td>Franco House</td>
<td>Portland 13, Oregon, U.S.A.</td>
<td></td>
<td>Stressed skin plywood panels 8' 0&quot; x storey height.</td>
<td>Franco House, 734 North East 55th Avenue, Portland 13, Oregon, U.S.A.</td>
</tr>
<tr>
<td>Glenwal Building System</td>
<td>4 Kresge Building, 227 West 7th Avenue, Calgary, Alberta, Canada.</td>
<td></td>
<td>Stressed skin plywood panel. 4' 0&quot; x 8' 0&quot; for walls. 4' 0&quot; x 12' 0&quot; or 16' 0&quot; for roofs. One storey construction. Formerly Sylva-Wall Panels, Vancouver.</td>
<td>&quot;Acceptable Building Materials&quot;, C.M.H.C. Ottawa.</td>
</tr>
<tr>
<td>Company</td>
<td>Description</td>
<td>Reference</td>
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<td>------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>GUNNISON HOMES</td>
<td>1947. Stressed skin plywood panel. 4' 0&quot; x 8' 0&quot;, 2&quot; x 3&quot; studs. Panels for floors, roofs and walls.</td>
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<td></td>
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<tr>
<td></td>
<td>HARNISCHFEGGER CORPORATION</td>
<td>&quot;Iron Age&quot;, April 1962 and January 1952.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stressed skin plywood panel. 2&quot; x 3&quot; studs at 16&quot; centers.</td>
<td>&quot;Steel&quot;, April 1952.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Box 3282 Station F., Atlanta, Georgia, U.S.A.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>HORSLEY STRUCTURES</td>
<td>6360 North East Simpson St., 1 storey stress skin panel for wall, roof and floor. Plywood faced.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Company</td>
<td>Description</td>
<td>Location</td>
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<td>------------------------------------------------------------------------------</td>
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<tr>
<td><strong>WOOD STRESSED SKIN PANEL (Normal Panel cont'd)</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HULLAH PANELS</strong></td>
<td>Hullah Corporation Limited, 1297 Marine Drive, North Vancouver, British Columbia, Canada.</td>
<td>Hullah Corporation Limited, 1297 Marine Drive, North Vancouver, British Columbia, Canada.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4' 0&quot; x 8' 0&quot; panel. 1/4&quot; plywood faced, on 2&quot; x 4&quot; studs at 15&quot; centers. Post introduced at panel junction. Many houses in Vancouver and Kitimat.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HUT, PREFABRICATED, GENERAL PURPOSE</strong></td>
<td>D.N.D. Ottawa, Ontario, Canada.</td>
<td>D.N.D. Ottawa, Ontario, Canada.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Used by army. Erectors unskilled. 84' 0&quot; by 20' 0&quot; x 10' 0&quot; high at eaves. 12' 0&quot; module. 2&quot; glass wool in walls. 3&quot; roof. Wood and plywood. 1 storey. Built up plywood floor and roof beams.</td>
<td></td>
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<tr>
<td></td>
<td>Plywood stressed skin expanded rubber core with facing 1&quot; plywood.</td>
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</tr>
<tr>
<td><strong>K.D. HOMES</strong></td>
<td>Arthur Langdon, Box 1251, Postal Station B., Ottawa, Ontario, Canada.</td>
<td>Arthur Langdon, Box 1251, Postal Station B., Ottawa, Ontario, Canada.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Introduced from England. Stressed skin plywood panel.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Stressed skin plywood panels with batt insulation built in. F.H.A. preliminary acceptance.</td>
<td></td>
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</tr>
</tbody>
</table>
WOOD STRESSED SKIN PANEL (Normal Panel cont’d)  WSSP

MAGICHOMES
Gunnison Housing Corporation, New Albany, Indiana, U.S.A.
also
U.S. Steel Corporation, 71 Broadway, New York, N.Y., U.S.A.

1935.
Plywood stressed skin panels with rockwool insulation, wool spline joints, load-bearing.

M. O. W. Survey of Prefabrication.

MEDWAY BUILDING AND SUPPLIES LIMITED
England.

1935.
Plyskin.


MODULAR STRUCTURES
Modular Structures Incorporated,
Tacoma, Washington, U.S.A.

Considerable number of houses around Tacoma from 1947. Wood stressed skin panels. 4' 0" x 8' 0" and 32" wide panels.


MODULOK
Modulok Incorporated,
San Francisco, California, U.S.A.
also
Portland Oregon, U.S.A.

Hospital. 1 storey for United States Navy. Wood frame panel. 2 layers asbestos cement. Panels loadbearing. Trussed roof.

"Western Construction News", October 1943.

NATIONAL HOMES
National Homes Corporation,
Lafayette, Indiana, U.S.A.

Wood stressed skin panel construction.

National Homes Corporation, Lafayette, Indiana, U.S.A.

NEW CENTURY HOMES INCORPORATED
P.O. Box 825, Lafayette, Indiana, U.S.A.

Plywood glued and nailed on wood frame for walls, partitions, ceilings and roof.

G.B. SE-170.
WOOD STRESSED SKIN PANEL (Normal Panel cont'd)  

PALACE CORPORATION  
U.S.A.  
Folding unit of stressed skin construction.  

"Prefabrication of Houses" (by Kelly).

PANEL PREFABRICATION  
Greenall Brothers Limited, 2690 Beresford Street, South Burnaby, Vancouver, British Columbia, Canada.  
Similar to Hullah Construction. 1 storey construction wood stressed skin panels. 1 to 1 1/2 storey construction.  


PANELBILT SYSTEMS  
Stressed skin floor, roof and wall panels.  


PLYSKIN  
Plywood bonded to timber frame. 6' 0" module.  

"Prefabrication", November 1953.

PREFABRICATION ENGINEERING COMPANY  
See Franco House under WSSP.

SCOTT LUMBER COMPANY, THE  
Wheeling, West Virginia, U.S.A.  
Plywood or fibreboard glued, nailed on wood frame for walls, partitions, floors, ceilings and roof.  


SCOTTWOOD HOUSE  
Stressed skin frame panel. 9' high x 24' 0" long x 3 1/2" thick. Filled with wood wool batts. Plywood faced. Loadbearing brick cross wall.  

<table>
<thead>
<tr>
<th>Company</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEPHENSON BUILDINGS</td>
<td>Stressed skin plywood faced buildings, unit 6' 0&quot; x 8' 0&quot; high. U = 0.16. Painted ready for use.</td>
</tr>
<tr>
<td>STOUT HOUSES INCORPORATED</td>
<td>Precision built houses. Hutments for Arctic use. Interlocking joints.</td>
</tr>
<tr>
<td>STRESSED SKIN PANEL U.S.A.</td>
<td>Wood stressed skin plywood faced stud framed panels generally 4' 0&quot; x 8' 0&quot;.</td>
</tr>
<tr>
<td>SYLVIA WALL PANEL</td>
<td>Also Steel-Fabrication by Richmond Furniture Company. 1 storey, stressed skin panel. Module = 4' 0&quot;. U = .134. Wall, floor partition and roof panelized. 2 faces plywood on glasswood, reflection, insulation.</td>
</tr>
<tr>
<td>TECHBUILT INCORPORATED</td>
<td>House erected at Weston, Mass. Ground floor sunk to basement. Level. 4' 0&quot; module 8' 0&quot; major module.</td>
</tr>
</tbody>
</table>


"House & Home", February 1954.
WOOD STRESSED SKIN PANEL (Normal Panel con'td)

TOWER CONSTRUCTION
St. Jerome, Canada.
Director, George Jacobson.

Hutting for Mid-Canada Defence Line.
General purpose hut totally prefabricated from army stock.
Normal 2" x 4" panels at 16" centers.
Plywood stressed skin panel, jointing details using rubber grommets and intermediate studs. Filled with fibreglass insulation. Harbotite exterior finish.

VICTORY HOUSE
J. B. Pierce Foundation, Raritan, New Jersey, U.S.A.

An emergency whole-house unit. Circular in section.
Bent pulp board and plywood.

WITTNER
Leon H. Wittner, U.S.A.

1942.
Stressed skin plywood construction; two identical frames with skins sandwiching a sheet of plywood. Horizontal members also used.

SMITH & HILL HOUSE
Smith & Hill Builders, Chicago, Illinois, U.S.A.

1,200 houses 1946.
Wood stressed skin panel with tongued and grooved edge locking device.

WICKES INCORPORATED
Camden, New Jersey, U.S.A.

1947.
A whole house production.
Significant mainly for use of solar heat and for layout.
Wall panels are stressed skin units, glazed and louvred.
Unique flat roof construction with 2 air spaces, one still, the other flowing.

"Architectural Forum", April 1943.
Housing Research Paper No. 33.
WOOD STRESSED SKIN PANEL

Trailer Type

HAUL-AWAY HOMES
Haul-Away Homes
Incorporated,
Portland, Oregon,
U.S.A.

1941.
3 roomed house designed to
be trucked as a whole.
40' 0" x 10' 0".
Whole house acts as box
girder, to be carried on
two trailers.

SANFORD MODU PANEL
Sanford Incorporated,
Avon Lake, Ohio,
U.S.A.

Forerunner of stressed skin
panel construction, first
built in Texas. Post and
beam frame. Panels filled
with 2" of expanded mica.
Dowel joints. Number of
houses built in Cleveland,
Ohio.

T.V.A. TRAILER
TYPE I
Tennessee Valley
Authority,
Knoxville, Tennessee,
U.S.A.

Original contracts by
Schultz Trailers Inc. &
Covered Wagon Corporation,
U.S. 1939.
Stressed skin plywood panels
on 2" framing complete with
all finishes, made up into two
sections each 22' x 7' 10" x
8' 1" high and shopped. A
single storey trailer house.
Post foundation. Over 100
built. Stressed skin panels
for floor and roof. Normal
stud for panels and walls.

M.O.W. Survey of
Prefabriication.
Sanford Incorporated,
Avon Lake, Ohio,
U.S.A.

M.O.W. Survey of
Prefabriication.
T.V.A. Publications
(available M.O.W.)
record, February
1943.
WHOLE HOUSE ASSEMBLY

WALL UNIT JUNCTION

UNIT OF CONSTRUCTION
- wood connection at roof panel and gable roof truss
- roof covering
- wood battens
- roof panel similar to wall panel
- wood cover strip at panel connection
- insulation in ceiling panel
- wooden wedges to secure two connecting panels
- fibreboard
- plasterboard ceiling
- wood cover strip at panel connection
- vertical wood siding
- vertical wood siding
- t and g floor boarding
- plywood sub-floor
- wood floor joists
- wood beams to support floor panels
- concrete foundation

GROUND FLOOR AND FOUNDATION

December, 1958.
1. Non-Traditional.
General Panel Corporation,
Burbank, California and New York, N.Y.


3. Wood

4. A panelized system of construction based on a 3'4" cubic module and whose main proprietary feature is the universal metal joint.

5. Considerable production planned since 1947 but there is no present production.

6. It is claimed that the panel can be used equally for walls, floors and ceilings.

7. New Pencil Points,
April, 1943.
WHOLE HOUSE ASSEMBLY

WALL UNIT JUNCTION

UNIT OF CONSTRUCTION
- Pressed steel gutter
- roof covering (2 layers bituminous felt)
- timber boxed beams @ 4'0" o.c.
- laminated insert
- metal angle
- plywood
- roof covering (2 layers bituminous felt)
- pelmet
- sliding window
- lam. insert
- expanded core
- lam. insert
- plywood
- soft wood
- joist (@ 4'0" o.c.)
- hardwood
- reinforced concrete girder
- surface concrete
- earth

GROUND FLOOR AND FOUNDATION

jicwood house
December, 1958.
## JICWOOD HOUSE

1. Non-Traditional.  
   Jicwood Limited,  
   Weybridge,  
   Surrey, England.

2. U.K.

3. Wood.

4. A bent wood stressed skin sandwich panelised house, with 8'0" x 4'0" maximum sections used for floors, walls and roof.

5. No longer in operation.

6. -

7. "House Out of Factory",  
   John Gloog and Grey Wornum,  
   O.N.W.I.N. Limited.  
   George Allen, Publisher, 1946.
Five ply roofing felt.
metal flashing.
2"x6" cant strip.
metal flashing.
1 5/8'' x 5 3/8'' header between floor joists.
5 ply 5/8'' plywood.
3 ply 3/8'' plywood.
insulation.
roof panel members 1 5/8'' x 5 3/8''.
holding strips.
moisture barrier.
insulation.
prefabricated panel:
3 ply 3/8'' plywood exterior
3 ply 1/4'' plywood interior glued and nailed together to
3/4'' x 2 3/8'' studs (pressure by nailing).
wood wall plate.
flashings.
5/8'' 5 ply plywood flooring.
2x6 framing in 4'x12' floor panel.
insulation.

foundation as directed by local conditions.

stressed skin panel
December, 1958.
## STRESSED SKIN PANEL

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Traditional,</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Non-Traditional,</strong></td>
<td>A method of wood construction used by many small house prefabricators especially in the U.S.</td>
</tr>
<tr>
<td><strong>Manufacturer,</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Sponsor or Builder.</strong></td>
<td></td>
</tr>
</tbody>
</table>

2. Forest Products Laboratory, Madison, Wisconsin, U.S. 1935.

3. Wood.

4. U-0.10 (with 2" rockwool).

5. Widespread in North America since 1935.

6. This type of panel is used in many proprietary house construction systems.

7. Pamphlet "No. D1165", Forest Products Laboratory, Madison 5, Wisconsin, U.S.
WALL UNIT JUNCTION

WHOLE HOUSE ASSEMBLY

Roof split along ridge one-half lying on the other when lowered

gable end panel held in place by lag bolts
ceiling joists
finished ceiling
fascia bd.
eaves soffit
roof hinged so it can be lowered
meshing pin inserted in studs of adjoining sections for alignment

exterior panel joint covered with wood strip
interior panel joint covered with metal clip
finished flooring
timber floor frame
sections held together by bolts through adjoining members of roof, ceiling and floor frames
this part of frame cantilevered from foundation posts
8" x 4" concrete beam
floor joists
floor frames bolted together using metal angles
built in wheel assembly in floor frame
1" pipe rail
masonry pier

GROUND FLOOR AND FOUNDATION

t.v.a. house type I

December, 1958.
## T.V.A. HOUSE TYPE I

| Traditional, Non-Traditional, Manufacturer, Sponsor or Builder. | 1. Non-Traditional.  
Tennessee Valley Authority, Knoxville, Tenn., U.S.A. |
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Date and Place of Origin.</td>
<td>2. U.S.A., 1941.</td>
</tr>
<tr>
<td>Materials Used.</td>
<td>3. Wood.</td>
</tr>
<tr>
<td>Description.</td>
<td>4. Prefabricated in two sections and assembled on site.</td>
</tr>
<tr>
<td>Development to Date.</td>
<td>5. 750 to 800 houses.</td>
</tr>
<tr>
<td>Comment.</td>
<td>6.</td>
</tr>
</tbody>
</table>
| References. | 7. M.O.W. Survey of Prefabrication,  
H.M. Stationery Office,  
Architectural Record, February, 1947. |
PLANK AND LOG FRAME
# PLANK AND LOG FRAME

<table>
<thead>
<tr>
<th>Sub-Classification</th>
<th>Plank Frame</th>
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<tr>
<td></td>
<td>Horizontal Log</td>
</tr>
<tr>
<td></td>
<td>Special Systems</td>
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<td></td>
<td>Vertical Log</td>
</tr>
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<table>
<thead>
<tr>
<th>Case Sheets</th>
<th>Superior Home</th>
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<tbody>
<tr>
<td></td>
<td>Plank Construction</td>
</tr>
<tr>
<td></td>
<td>Quebec Plank Frame</td>
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<td>Norwegian Plank Frame</td>
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<td></td>
<td>Vertical Plank</td>
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<td>Wudnhous</td>
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<td>Elementhus</td>
</tr>
</tbody>
</table>
PLANK AND LOG FRAME

Plank and Frame

ADIRONDACK LOG CABINS
INTEGRATED
126 East 45th Street,
New York 17, N.Y.,
U.S.A.

BRAUN CEDAR CABINS
Braun Lumber
Corporation,
Detroit, Michigan,
U.S.A.

BROWNLEE SECTIONAL
LOG CABINS
Brownlee Company,
Detroit 18, Michigan,
U.S.A.

LOXSTAVE
British Columbia,
Canada.

PRE-CUT SOLID
TIMBER CONSTRUCTION
Kingston Limited,
Hull, England.

SUPERIOR
Superior Buildings
Company,
Minnesota, U.S.A.

Plank and Frame

ADIRONDACK LOG CABINS
INTEGRATED
126 East 45th Street,
New York 17, N.Y.,
U.S.A.

BRAUN CEDAR CABINS
Braun Lumber
Corporation,
Detroit, Michigan,
U.S.A.

BROWNLEE SECTIONAL
LOG CABINS
Brownlee Company,
Detroit 18, Michigan,
U.S.A.

LOXSTAVE
British Columbia,
Canada.

PRE-CUT SOLID
TIMBER CONSTRUCTION
Kingston Limited,
Hull, England.

SUPERIOR
Superior Buildings
Company,
Minnesota, U.S.A.

Vertical interlocking logs, sitting on floor platform and having connecting plate at top. Made up in panels 1' 0", 2' 0" and 4' 0" wide and storey high.

Plank walling backed by wood frame.

2" pre-cut t. & g. horizontal siding on 2" x 3" studs - rockwool insulation. Bolted vertically through siding.

1931.
Pre-cut lumber, t. & g. plank loadbearing siding backed by shallow studs which hold together siding. Many houses in Northwestern United States.

Adirondack Log Cabins Incorporated,
126 East 45th Street,
New York 17, N.Y.,
U.S.A.

Braun Lumber Corporation,
Detroit, Michigan,
U.S.A.

Brownlee Company,
Detroit 18, Michigan,
U.S.A.

Loxstave,
British Columbia,
Canada.

Kingston Limited,
Hull, England.

PLANK AND LOG FRAME

Horizontal Log

AIR LOCK LOG CONSTRUCTION
Canada.

ALBERTA CEDAR HOMES
7308 8th Avenue West,
Calgary, Alberta,
Canada.

APEX WOOD PRODUCTS INCORPORATED
602 Umatilla Street,
Denver, Colorado,
U.S.A.

BERGER LUMBER COMPANY
Erskine, Minnesota,
U.S.A.

BERGER LOG CONSTRUCTION
Erskine, Minnesota,
U.S.A.

BEST FACTORY BUILT HOMES INCORPORATED
W.G.
630 West Lake Street,
Peoria, Illinois,
U.S.A.

Log construction.

Same as Pioneer Homes.

Log construction out of 3" x 6" (horizontal).

Solid walls of wood 4" x 4" timbers. No finishes required.

Walls, partitions, floors and roofs, roof construction of individual 4 x 4 inch timber.

Exterior walls horizontal pre-cut logs. 2 houses built in Winnipeg under N.H.A. loan.

Wood frame units for walls, partitions, ceiling and roof with plywood or other wall-board covering or wood trusses for ceiling and roof framing.

Air Lock Construction Canada.


F. H. A. Bulletin 1/14/49.

G. B. SE-177.
PLANK AND LOG FRAME (Horizontal Log cont'd)

BOHLEN KONSTRUKTION
Germany.
German traditional.
Also Scandinavian (Plankhus).
2" or 3" t. & g. planks, load-bearing with corner posts.
Bohlen Konstruktion, Germany.

CEDAR-LOG HOUSE
Similar to Pan Abode.

GROVE-BERGER LUMBER
COMPANY
29 West Loucks Street,
Sheridan, Wyoming, U.S.A.
Double t. & g. horizontal timber walls and partitions.
F.H.A. Bulletin 1/11/54.
G. B. SE-176.

LOG CONSTRUCTION
Air-Lock Log
Construction Company
Limited,
80 King Street West,
Toronto, Ontario,
Canada.
System of wall construction on log-cabin principle gives insufficient heat resistance.
Air-Lock Log Construction Company Limited,
80 King Street West,
Toronto, Ontario,
Canada.

LUMBER DEALERS
RESEARCH COUNCIL
Ring Building,
18th and M. Streets,
N.W.,
Washington, D.C.,
U.S.A.
Wood frame units with plywood or fibreboard sheathing for walls, trusses for roof and ceiling framing.
G. B. SE-183.
"American Builder & Building Age",

PALISADE CONSTRUCTION
U.S.A.
A system of horizontal plank frame construction, tongued and grooved.
B.M.S. 37, National Bureau of Standards,
U.S. Housing Research Paper 33,
H.H. F.A.

PAN ABODE
CONSTRUCTION
8585 Fraser Street,
Vancouver 15,
British Columbia,
Canada.
Log construction (plank construction) for whole house roof holds construction down.
In wide use in Canada.
(Also N. Canada) 4" log - U.16.
Pan Abode Const.,
8585 Fraser Street,
Vancouver 15,
British Columbia,
Canada.
PLANK AND LOG FRAME (Horizontal Log cont'd)

PIONEER HOMES BUILDING
SYSTEM
235 Victoria Drive,
Vancouver 6,
British Columbia,
Canada.

Same as Alta-Cedar Homes. Plank frame of 3" x 6" logs.
Laid horizontal. Roof conventional.


PLANKHUS
(Scandinavian)

See also Bohlen Konstruktion.

Norwegian State Building Research Institute, Oslo.

PLANK CONSTRUCTION GENERAL

A traditional form of plank construction used in Europe and North America.

The Log Cabin Myth Shurtleff,
Harvard Univ. Press, 1937.

QUEBEC PLANK FRAME

Traditional using 3" planks with inch veneer facing - widely used in Quebec.

WARD CABIN COMPANY
Presque Isle,
Maine,
U.S.A.

Milled and pre-cut logs for walls, partitions, floors, ceiling and roof.

F. H. A. Bulletin 4/16/54.
G. B. SE-179.

Vertical Log

BAILEY-PORTER CONSTRUCTION COMPANY INCORPORATED
Lafayette, Indiana, U.S.A.

Vertical plank wall construction.


BELLAIRE LOG CABIN MANUFACTURING COMPANY
Bellaire, Michigan, U.S.A.

Pre-cut milled half-logs. Placed vertically for exterior walls.

PLANK AND LOG FRAME (Vertical Log cont'd)

BRAUN CEDAR CABINS
Detroit 3, Michigan, U.S.A.
Vertical log wall construction.

BRITISH COLUMBIA
COAST WOODS TRADE EXTENSION
Canada.
Cedar (solid construction).

CANADIANA HOUSE
Vertical tongued and grooved cedar boarding 3/4" insulated blanket.
3/4" cedar internal panelling Cedar Roof Decking.
1 house built.

CEDAR-REDWOOD HOMES
2426 116th North East, Bellevue Avenue, Washington, D.C. U.S.A.
8" vertical tongued and grooved boarding.

CEDAR (SOLID CONSTRUCTION)
British Columbia Woods Trade Extension Bureau, Canada.
2" t. & g. vertical plank frame aluminum foil vapour insulation barrier.
2" x 2" studding. 1/4" ply. Roof and floor similar.
U = .133.

CHAMBERS CREEK LUMBER COMPANY INCORPORATED
6402 South Tacoma Way, Tacoma 9, Washington, U.S.A.
Vertical tongued and grooved.
**PLANK AND LOG FRAME (Vertical Log cont'd)***

<table>
<thead>
<tr>
<th>Company</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HIGHLAND CONSTRUCTION</strong></td>
<td>Mr. E. L. Poole, Vice-President, Highland Construction Corporation Limited,</td>
</tr>
<tr>
<td></td>
<td>27 Cornelius Parkway, Toronto, Ontario, Canada.</td>
</tr>
<tr>
<td></td>
<td>Vertical log construction.</td>
</tr>
<tr>
<td></td>
<td>Whole house. 6&quot; solid timber throughout.</td>
</tr>
<tr>
<td><strong>LOXIDE</strong></td>
<td>Loxide Structures, Tacoma, Washington, U.S.A.</td>
</tr>
<tr>
<td></td>
<td>U.S. West Coast and Alaska, 1947. Plank frame construction,</td>
</tr>
<tr>
<td></td>
<td>with lapped vertical planks.</td>
</tr>
<tr>
<td>**NATIONAL LOG CONSTRUCTION COMPANY</td>
<td>Hollow round horizontal logs or half-round vertical studs.</td>
</tr>
<tr>
<td>OF MONTANA</td>
<td>Log joists and trusses.</td>
</tr>
<tr>
<td><strong>NORWEGIAN PLANK FRAME</strong></td>
<td>Traditional in Scandinavia. Vertical plank framing and interior and</td>
</tr>
<tr>
<td></td>
<td>exterior finish.</td>
</tr>
<tr>
<td><strong>SCANO</strong></td>
<td>Erected in Scotland 1938.</td>
</tr>
<tr>
<td>Swedish Co-Operative Society,</td>
<td>Vertical 2&quot; t. &amp; g. planking, wall-board interior lathing.</td>
</tr>
<tr>
<td>Scottish Sponsors,</td>
<td>Floor and roof conventional.</td>
</tr>
<tr>
<td>Scanhouse Limited,</td>
<td>Considerable Swedish production and 200 houses in Scotland.</td>
</tr>
<tr>
<td>Sweden.</td>
<td>Two storey construction.</td>
</tr>
<tr>
<td><strong>SOLID CEDAR CONSTRUCTION</strong></td>
<td>Post and beam system with 2&quot; vertical wood panel infill.</td>
</tr>
<tr>
<td>British Columbia,</td>
<td></td>
</tr>
<tr>
<td>Manufacturers Association,</td>
<td></td>
</tr>
<tr>
<td>Vancouver,</td>
<td></td>
</tr>
<tr>
<td>British Columbia,</td>
<td></td>
</tr>
<tr>
<td>Canada.</td>
<td></td>
</tr>
</tbody>
</table>
PLANK AND LOG FRAME (Vertical Log cont'd)  

SOLID CEDAR  
Solid Cedar Homes  
Limited, subsidiary  
of Tarran Industries  
Limited,  
Hull, England.  
1938.  
T & G. plank vertical 2 1/4" thick panels 2' and 4' x storey high. 7/4" batten internally supporting plaster board. 600 houses in Scotland before the war.  

VERTICAL PLANK WALL  
Phair Avenue,  
Courtice, Ontario,  
Canada.  
Plank frame - 2" vertical planks (exterior) bolted to horizontal planks. 1 storey construction.  

WUDNI-IOUS  
Housing Company,  
(A Bemis Product)  
U.S.A.  
1935.  
2' wide x storey high panels of low grade t. & g. vertical 2" timber. Boarded externally. One building erected.  

WOOD MASONRY  
Traditional. Found occasionally in Quebec.  
Short lengths of logs placed in mortar to form a loadbearing wall and stuccoed and plastered.

Special Units  

ELEMENTHUS  
AB Bostadsforsknin,  
Stockholm, Sweden.  
First production 1952.  
Module = 4" (10 cm).  
Floor wall and ceiling unit 8" x 8" x storey height.  
Completed prefabrication of all interior fittings.  
AB Bostadsforsknin,  
Stockholm, Sweden.

B.F. SYSTEM  
See Elementhus. (Case Sheet)
WHOLE HOUSE ASSEMBLY

- Roofing
- sheathing
- wood rafters
- 2" x 4" bevelled siding
- ceiling joists
- rafters and joists fixed to siding
- eaves soffit
- eaves fascia board
- insulation
- gypsum board ceiling finish
- gypsum board wall finish
- corner post
- siding end joint
- wood stripping keyed to siding
- 2" x 4" bevelled wood siding
- wall plate
- wood base board
- finished wood floor
- sub floor
- metal flashing
- water proofing
- concrete basement or foundation wall

GROUND FLOOR AND FOUNDATION

- plate anchored to foundation

Scale of feet

superior home

December, 1958.
SUPERIOR HOME

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.

1. Non-Traditional.
   Superior Buildings Company, Minnesota, U.S.A.

Date and Place of Origin.


Materials Used.

3. Wood.

Description.

4. A single storey log construction.

Development to Date.

5. Many houses in North Western U.S.A.

Comment.

6. This form of construction is only suitable for single storey construction.

References.

1. Traditional.
Log construction of a similar form has been traditional in North America and Northern Europe for many years. There are many patented forms of this construction.

2. Scandinavia.

3. Wood.

4. One storey construction. Plan size and shape of building is not limited except by maximum length of lumber which controls the unbroken length of walls.
   \[ U=0.16 \text{ (for 4" logs)}, U=0.20 \text{ (for 3" logs)}. \]

5. See (1) and (2).

6. -

Roof finish may vary according to materials available

-building paper
-asphalt shingle roof covering
-1" boarding
-2" x 6" roof rafters at 16" centres
-gutter
-fascia board
-soffit board
-2" x 4" ceiling joists
-plaster board
-skirting board
-1" t. and g. boarding
-3/4" diagonal boarded sub floor
-2" x 12" plank infill
-2" x 12" joists at 16" centres
-plaster board
-planks directly under joists is framed into vertical planks at corners and openings
-1" diagonal sheathing
-2" x 12" horizontal planks but jointed
-2" x 2" furring at 16" centres
-plaster board
-2" x 12" continuous header
-1" t. and g. boarding
-2" x 4" wood wall plate
-building paper
-2" x 12" joists
-concrete

-scale of feet

-ground floor and foundation

quebec plank frame

December, 1958.
QUEBEC PLANK FRAME CONSTRUCTION

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.

1. Traditional.

Date and Place of Origin.

2. Quebec 19th century onward.

Materials Used.

3. Wood planks.

Description.

4. The vertical planks are erected first and floor and roof bearing planks are framed into them. These plank frames are then infilled with planks laid on edge with mastic jointing. The construction is then faced outside with brick veneer, siding or stucco. Insulation is applied inside between battens fixed to planks, which in turn support interior finish. This form of construction can be faced on the outside with brick veneer, siding, asphalt, etc. The wood roof construction may vary in form and finish.

Development to Date.

5. Widespread use in Province of Quebec for many years.

Comment.

6. Used mainly in two storey construction.

References.

7. -
Pantiles.
Battens.
Building paper.
Boarding.
Purlines.
Gable end T. and G. boarding.
Plank siding.
T. and G. boarding.
Clay and Shavings.
5" x 5" Posts.
2 1/2" x 3" x 4"-8" Double T. and G. planks.
T. and G. boarding.
1" x 1/2" Strips.
1 1/4" T. and G. Flooring.
5" x 5" Plate.
Filler beam.
5" x 5" Plate.
1" x 1 1/2" Batten.
Floor joist.
1" x 6" Vertical planks.
5" x 5" Plate.
Filler beam.
5" x 5" Plate.
Clay and shavings.
Concrete base.
Floor joists.
1" x 1 1/2" Batten.
NORWEGIAN PLANK FRAME

1. Traditional in Scandinavia.

2. Scandinavia.

3. Wood.

4. Vertical plank framing and exterior finish.


6. These details are traditionally Norwegian but are similar to those found in other parts of Scandinavia.

7. Husbygging,
   Prof. J. Holmgren,
   Aschehougs Forlag, Oslo.
4 ply tar and gravel roofing
2" x 4" wood framing
2" x 4" struts with batt insulation between channel plate
caulking strip over channel strip
3" T. and G. cedar plank with heavy textured paint interior
3 x 3 corner post
2" x 2" furring
reflective foil insulation
plywood interior finish
skirting bead
floor covering
plinth board
2" x 6" wood plate
end sealer
3/4" wood sub floor
3" cedar plank T. and G.

note - floor spans 10' clear concrete foundations

vertical plank
December, 1958.
VERTICAL PLANK CONSTRUCTION

1. Traditional.
   A similar form of construction is employed by a number of lumber manufacturers in Canada and Northern United States.

2. Recent in Canada and Northern United States.

3. Wood.

4. Typically a one storey construction. Can be erected with or without interior finish according to degree of insulation required. For external walls: U-0.133 for 2" cedar plus aluminum foil. U-0.238 for 3" cedar ( uninsulated).


6. -

7. British Columbia Lumber Manufacturers Association, 550 Burrard Street, Vancouver 1, B.C.
Roof finish may vary, according to local conditions.

- Roof rafters
- 2" wide panel made up of 1 1/2" x 1 1/2" tongued and grooved strips
- Any exterior finish
- Builder paper
- Panel aligners
- 2" wide panels
- Wood girt
- Ceiling joists
- Corner post
- Any interior finish
- 2" wide panels
- Any exterior finish
- Building paper
- Space for insulation
- Panel aligner
- Wood girt
- Floor joists
- Conc. foundation forms made by using burlap
- Top of grade

---

Scale of feet

<table>
<thead>
<tr>
<th>12</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
</table>

Wudnhaus
December, 1958.
WUDNHOUS

1. Non-Traditional.
   Housing Co. (Bemis)
   Boston, U.S.A.


3. Wood.

4. System is designed to utilize lumber normally unsuitable for structural purposes. Any type of roof and wall finish may be used.

5. One building erected, 1935.

6. -

7. "The Evolving House III"
Pantiles shown as being typical of Swedish practice.
Wood boarding - asphalt impregnated paper insulation to top surface.
Wood purlins.
Wood purlin supports at designed centres.
Wood fascia board.
8" x 8" units similar to wall units.
3/4" Three layer cross laminated wood panels glued with water resistant resin glue.
1/8" Hard fibre board webs.
Strips of insulated elastic material e.g. corrugated, multilayer asphalt paper.
Wood dowel locking units to head member.
Special corner unit.
Compressed wood shavings and sawdust.
3/4" Three layer cross laminated wood panels glued with water resistant resin glue.
8" x 8" wall panels - tongued and grooved together and locked by dowels to continuous head and sill members.
Kraft paper wall lining applied after erection.
Wood dowel locking units to sill.
Continuous galvanized sheet-metal base moulding.
Continuous wood sill.
8" x 8" Floor beams nailed together to make continuous beam floor - construction exactly similar to wall and roof units.
Concrete foundation walls and basement floor in traditional manner.
1. Non-Traditional.
   A/B Bostadsforskning,
   Sveavagen 108,
   Stockholm, Sweden.


4. Basic module: 8". Units act structurally as box beams, or columns held together with head and sill plate, and joined under pressure. Dowels tie all unit joints.
   U=0.072 (8" exterior wall and floor units).

5. 3,000 houses in Sweden.

6. Package as delivered includes all equipment and finishes above basement or slab.

7. Sponsors information.
CONCRETE AND MASONRY PANEL
CONCRETE AND MASONRY PANEL

Sub-Classifications
- Concrete Panels
- Brick Panels
- Lightweight Concrete Panels
- Hollow Panels
- Special Systems

Case Sheets
- Myton
- Brick Panel
- Crowe House
- Modern Crete
- Smith's Building System
- Wates House
## Concrete Panel

<table>
<thead>
<tr>
<th>Company</th>
<th>Location</th>
<th>Projects/Features</th>
<th>Additional Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>BJORNSTAD-MARTIN HOUSE</td>
<td>Montreal, Quebec, Canada.</td>
<td>Row houses in Montreal. Vertical concrete block - 4' 0&quot; x 8' 0&quot;. Loadbearing units joined on tarred hemp and bolted together. Rockwool and Gyproc.</td>
<td>Bjornstad-Martín House, Montreal, Quebec, Canada.</td>
</tr>
</tbody>
</table>
MASONRY PANEL (Concrete Panel cont'd)

BROAD MEAD
Broad Mead Products Limited, Maidstone, Kent, England.

BYRNE
Barry Byrne, Architect, New York, N.Y., U.S.A.

CARROLL TRI PLY COMPANY
Chicago, Illinois, U.S.A.

CONNECTICUT

LES CONSTRUCTIONS CERAMIQUES
France.

Broad Mead Products Limited, Maidstone, Kent, England.

Precast concrete units, steel frame roof, asbestos cement cladding.


Pre - 1935.
6" reinforced cinder concrete walls faced in art, stone cast in situ horizontally and raised. Several hundred houses in Mid-West United States.

1935.
Large precast reinforced concrete panels 18' 0" x storey high. Hollow units with built in services. Finished product like American Colonial Cottage.

Ceramic gravel aggregate panels, can be cut, sawn. Cast with ready made ducts.


"Prefabication", September 1954.
**ECONOCRETE SYSTEM**
Whaley Construction Company, 
Long Beach, California, U.S.A.

Use of large precast concrete slabs for small houses.

Whaley Construction Company, 
Long Beach, California, U.S.A.

**EKEBY**
Upsala-Ekeby, 
A.B. Erebyuk, Sweden.

Tile faced concrete wall units whole section.

Byggnast 1957.

**HANSEN CONSTEELAIR**

See Hansen Consteelair under MSF.

**HENSSEN HOUSES**
Schaesberg, 
Holland.

Prefabricated concrete units made at site. 13" wide storey high outside "U" shaped units inner and outer units, interlock. Total wall 8".


**HOMOCRETE BUILDING SYSTEM**
Huron Concrete Limited, 
Seafort, Ontario, Canada.

4 houses built up to November 1950 in South Western Ontario. 8' 0" length x various widths. Concrete panel. Water resist, coating insulation. U (with 1/2" insulation board) = 0.24.


**HURON CONCRETE PRODUCTS LTD.**
Seafort, Ontario, Canada.

See Homocrete under CP.

Huron Concrete Products Ltd., Seafort, Ontario, Canada.
MYTON
Myton Limited,
Newland, Hull,
England.
Precast concrete external
channel shaped wall units
13" x storey high jointed by
metal dowels and caulked.
See Tarran House.
Myton Limited,
Newland, Hull,
England.

NÁBOHUS
Hanz-Acker-Holst,
Ostermalmag 76,
Stockholm, Sweden.
Mainly for apartment blocks.
Loadbearing concrete units.
Hanz-Acker-Holst,
Ostermalmag 76,
Stockholm, Sweden.

OSTBERGA
EXPERIMENTHUS
H.S.B. Flemington 41,
Stockholm, Sweden.
3'0" module. Storey high
loadbearing concrete block
internally, wood frame panel
asbestos faced externally.
3 storey apartment con-
struction.
H.S.B. Stockholm.

PRECAST CONCRETE
WALL PANEL
Panel Construction Co.,
Limited,
1800 Fradet Street,
Drummondville, Quebec,
Canada.
The R.C. Loadbearing panels.
24" x 9'0" bolted into wood
studs.
"Acceptable Building
Materials",
C. M. H. C. Ottawa,
1955.

SIMPSON CRAFT
John T. Simpson,
Newark, New Jersey,
U.S.A.
1917 on.
Precast reinforced concrete
wall panels 40" wide x storey
height. In situ poured studs.
Completely reinforced concrete
structure.
Fifty houses in St. Johns,
Nfld., Pennsylvania, New
York.
M. O. W. Survey of
Prefabrication.
Portland Cement
Association Report,
(Bemis).
Record: July 1939.
MASONRY PANEL (Concrete Panel cont'd)

STENT HOUSE
Stent Precast Concrete Limited, London S.W. 1, England.
Precast Tee units, storey high tied by concrete units at floor levels. Steel roof trussed.

TARRAN HOUSE
(Newland Number 16) 169 Clough Road, Hull, England. (Myton Limited)
1944.
Reinforced concrete units in timber frame. 1' 4" x storey height. Joints caulked. A whole house system also used for schools etc.

TONKIN OR AUSTRALIAN PRECAST CONCRETE
Slum Clearance Scheme, Housing Commission of The Government of Victoria, Australia.
1938.
3" concrete wall slabs up to 42' long x storey height, cast horizontally and then lifted. No finishing or insulation. Some bungalows erected.

UNIT
Unit Construction Co. & Standardized Construction Corporation, U.S.A.
1921.
Very large reinforced concrete units cast in horizontal moulds, transported by railway. Two large scale projects Youngstown and Long Island. Long Island project under Atterbury's direction.

UNITED NATIONS HOUSING PROJECT
Parkway Village, Flushing, New Jersey, U.S.A.
Cast slab construction lifted by vacuum lift and crane. Coffer ed on underside.

WALLIS
See Wallis under WSP.

Reference:
"Concrete Building", February 1942.
MASONRY PANEL (Concrete Panel cont'd)

WILSON HOUSE
England.

Metal framed concrete panel between corner posts of precast dense concrete. Concrete roof slab, open web floor joints.


VACUUM CONCRETE INCORPORATED
Philadelphia, Pennsylvania, U.S.A.

See Billner under CP.

Vacuum Concrete Incorporated, Philadelphia, Pennsylvania, U.S.A.

Brick Panel

BIGONTINA METHOD OF CONSTRUCTION
Milan, Italy.

Non-standard - custom designed. Industrialized prefabrication of concrete wall section with all services cast in Hollow Terracotta Blocks in forms used mainly in blocks of flats.


BRICK PANEL HOUSE
Structural Clay Products Foundation

Precast reinforced brick panels 1' 0" x 8' 0" high. Structural only. Loadbearing and tied together with steel angle, roof mounted immediately on top.

"House and Home", December 1957.

BROUGHTON COMPANY
Kansas City, Missouri, U.S.A.


M. O. W. Survey of Prefabrication.
<table>
<thead>
<tr>
<th>Company</th>
<th>Details</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbia Vacuum</td>
<td>Horizontally preformed brick walls and barrel vaulted roofs lifted into position by vacuum suction lifter and crane. Roofs and walls only 2 1/2&quot;. Cast in piles of 8 (eight).</td>
<td>&quot;Prefabrication&quot;, February 1954.</td>
</tr>
<tr>
<td>Structural Clay Products Foundation U.S.A.</td>
<td>See Brick Panel House under CP.</td>
<td></td>
</tr>
<tr>
<td>Lightweight Concrete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Enterprises</td>
<td>See Prefac under CP.</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>Year</td>
<td>Notes</td>
</tr>
<tr>
<td>---------------------------</td>
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<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>GLASGOW CORPORATION HOUSE</td>
<td>1944</td>
<td>Precast slab house. Precast foamed slag slabs. 1 1/4 tons 2 leaves outer walls. Precast hollow floor and roof slabs.</td>
</tr>
<tr>
<td>HENKE BUILDING SYSTEM</td>
<td>1956</td>
<td>Ribbed slab on grade house with built in ducts. Walls of Zonolite Panels.</td>
</tr>
<tr>
<td>INSULITE SYSTEM</td>
<td></td>
<td>Foam slag aggregate slabs insulated. 5&quot; x 1' 6&quot; x 8' 0&quot; storey high, loadbearing. U = 0.21 Uninsulated.</td>
</tr>
<tr>
<td>MAY (PRAUNHEIM)</td>
<td></td>
<td>Solid precast pumice slabs up to 3m. long x 1.20m. high.</td>
</tr>
<tr>
<td>MODERN-CRETE BUILDING SYSTEM</td>
<td></td>
<td>Concrete slab may be sawed or nailed. 16&quot; wide x 2&quot; x 8' 0&quot; high. U shaped reinforced and backed by lath and plaster on framing. U = 0.14. 2,000 houses in Michigan, 200 in Montreal.</td>
</tr>
</tbody>
</table>
OVERSEAS PREFABRICATED STRUCTURES
See Vermiculite under CP.

PREFAC CONCRETE WALL SLABS
Community Enterprises,
610 St. James West,
Montreal, Quebec,
Canada.
Pozzalana concrete panels,
2" or 6" x 8' 8" x 16".
U = 0.14.

PREFACTO
Commander Burney,
Burney Unit System,
1924.
Precast concrete light-
weight panels (U), lined
internally. Floor units
similar. 6 houses at
Grayford, Kent.
(Similar to Siporex).

SIPOREX
See Siporex under CU.

SMITH'S BUILDING SYSTEM
British Steel Construction,
207 Queensway,
Toronto 1, Ontario,
Canada.
Foam slag concrete slabs
6' 0" wide x 2' 0" high x
8" faced with terracotta
briquettes. Units made
on site. Open web steel
beams of floor and roof.
U = 0.20.
Precast concrete floor
units.

VERMICULITE HOUSES
Overseas Prefabricated Structures,
29 Bury St.,
St. James, London
S.W.1, England.
2" thick vermiculite
concrete skins separated
by cavity.
Columns at 5' 0" centres.
Stressed skin panel roof.

"Acceptable Building Materials",
C. M. H. C. Ottawa,
1954.

M. O. W. Survey of Prefabrication.
(Bemis),
"Architectural Record",
August, 1935.
"American Architect",
September, 1936.

"Acceptable Building Materials",
C. M. H. C. Ottawa,
1957.

"Prefabrications",
September 1954.
Hollow Panels

ATTERBURY
Russell Sage Foundation and Grosvenor Atterbury, U.S.A.

1921. Houses at Forest Hill, New York, N.Y., U.S.A.
Gypsum and cinder concrete hollow wall units storey high x 6' 0" to 8' 0" wide.
Crane handling required, expensive.

M.O.W. Survey of Prefabrication.

BLACKBORROW SYSTEM

2 prototype erected at Thurrock.
Hollow concrete wall units 11' 4" x 8' 5".
Outer skin dense concrete.
Windows etc. cast in.
Inner skin foamed slag.
M.O.W. approved.
Built on site or in factory.


BRYANT SYSTEM
(Concrete Houses)
G. Bryant & Son, Birmingham, England.

Reinforced concrete cavity walls lined internally with foam slag concrete.
Prototype erected at Birmingham, England.


DYKE, HENRY
(Clothed Concrete Const. Ltd.).

Precast brick and lightweight concrete cavity panels in 10' 0" x 3' 0" high x 10 1/2" thick.

M.O.W. Survey of Prefabrication.
HAYES ECONOCRETE
Hayes Economic Concrete Corporation, Thermocrete Houses Inc., Hollywood, California, U.S.A.

1939. Large precast hollow concrete slabs about 20’ 0” square x 2 1/2”/5”/2 1/2”. A large amount of construction.

LAKEOLITH
Simon Lake and Connecticut Lakeolith Corporation, Connecticut, U.S.A.

1918. Precast unit. Large wall and floor sections precast in factory, 2’ module, maximum size 30’. Units cast horizontally as hollow walls with expanded metal on each face with crossed ribs at 2’ centres, broken laterally by wood slip. Floor construction similar. Number of houses erected.

SIMPLIFIED BRICKWORK COMPANY

See Dyke under CP.

WATES HOUSES
1258 London Road, Norbury S. W. 16, England.

Reinforced concrete vertical slabs 7’ 6” x 2’ 0”. 3’ 0” or 4’ 0” hollow with joints filled with concrete to form in situ frame. Double internal lining. Timber floor and roof structure.

M.O.W. Survey of Prefabrication.


WHOLE HOUSE ASSEMBLY

ROOF

1 1/2" x 3/4" softwood battens.
1 1/2" x 3" roof rafters.
4" x 3" wall plate.
1 1/2" x 3" ceiling joists.

precast concrete panels with metal connections.
skirting board.

precast concrete course and bolt connections.

wood joists with metal shoe and cleat fixings.

3/8" plaster baseboard and cotton scrim cloth with 1/8" skimming coat.

3/8" plasterboard and 1/8" skim finish hook bolts.

precast concrete course and bolt connections.

WOOD JOISTS WITH METAL SHOE AND CLEAT FIXINGS.

GROUNDFLOOR AND FOUNDATION

UNIT OF CONSTRUCTION

WALL UNIT JUNCTION

2" batt insulation fixed to wood frame.

1/2" x 3/4" ceiling joists.

WHOLE HOUSE ASSEMBLY

GROUND FLOOR AND FOUNDATION

myton
December, 1958.
MYTON HOUSE

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.

1. Non-Traditional.
   Myton Limited, Newland, Hull.
   (formerly Tarran Limited).

Date and Place of Origin.

2. U.K. 1944.

Materials Used.

3. Concrete units.

Description.

4. U=0.20.
   Load bearing construction is of concrete. Internal plasterboard lining on timber frame, bolted to concrete chimneys in brick.

Development to Date.

5. Considerable use claimed in U.K.

Comment.

6. Units can be used in conjunction with any suitable floor or roofing system.

References.

## BRICK PANEL

| Traditional, Non-Traditional, Manufacturer, Sponsor or Builder. | 1. Proprietary. Structural Clay Products Foundation U.S. |
| Date and Place of Origin. | 2. U.S. 1957. |
| Materials Used. Description. | 3. Brick. |
| Development to Date. | 5. - |
| Comment. | 6. Experimental to date (Dec. 1957). |
| References. | 7. "House and Home" December 1957 p. 130. |

4. Patent part of system includes only brick panels which are held together by perforated steel sections.
<table>
<thead>
<tr>
<th>CROWE HOUSE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Traditional,</strong></td>
</tr>
<tr>
<td><strong>Non-Traditional,</strong></td>
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<tr>
<td><strong>Manufacturer,</strong></td>
</tr>
<tr>
<td><strong>Sponsor or</strong></td>
</tr>
</tbody>
</table>

| **Date and Place of Origin.** | 2. California, U.S.A. |
|  | Pre-1936. |

| **Materials Used.** | 3. Steel and Aerated or Cellular concrete. |

| **Description.** | 4. Steel Panel-Frames are filled in two layers sandwiching a waterproof membrane. They are placed 6" apart and concrete is poured into the joint. Joint spaces used for pipes and conduits. |

| **Development to Date.** | 5. Test assembly of wall panels only. |

| **Comment.** | 6. - |

roof construction may vary according to custom and conditions

- 2' x 4' wall plate
- stransteel channel
- 2' precast concrete slabs
- reflective insulation
- precast concrete corner slab
- lath and plaster on 1'' x 2'' furring at 16'' centres

- finished floor on building paper
- subfloor
- joists
- stransteel channel
- parging
- precast joist blocks
- infill blocks
- foundation wall

Scale of feet

modern crete
December, 1958.
Modern Crete Inc., 1517 W. 3rd Avenue, Flint, Michigan. Rocwall Limited, 16 Renfrew Avenue, Westmount, Quebec.


3. Lightweight concrete using expanded slag or shale with mesh reinforcing.

4. Roof, floor and foundation may vary according to custom and conditions. U=0.155 (ext. wall panel using reflective insulation as shown).

5. 2,000 houses in Michigan, U.S.A.

6. The panels are capable of being nailed or sawn.

WHOLE HOUSE ASSEMBLY

- Half round cast iron gutter.
- Vertical gable filling.
- Tiles on battens on roofing felt.
- Roof rafters.
- Wood cocking strip.
- Battens.
- Wood fascia and soffit boarding.
- Wood wall plate.
- Plaster skim on plaster board.
- 1 1/2" brickette facing.
- 6" foam slag concrete slabs.
- Plaster.
- Mild steel dogs at joint intersections.
- Wood skirting.
- Tongued and grooved flooring.
- Floor joists.
- Plaster skim on plaster board.
- 8" foam slag concrete slabs.
- Plaster.
- Skirting board.
- Tiled floor finish.
- Damp proof membrane.
- Concrete foundations.
- Hardcore filling.

UPPER FLOOR

- 8" foam slag concrete slabs.
- Plaster.
- Skirting board.
- Tiled floor finish.
- Damp proof membrane.
- Concrete foundations.
- Hardcore filling.

GROUND FLOOR AND FOUNDATION

Smiths Building System

December, 1958.
## SMITH'S BUILDING SYSTEM

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Description.</td>
<td>3. Brick faced precast foamed slag panels.</td>
</tr>
<tr>
<td>4. U = 0.20 (external wall panels plastered internally). A special Gantry Crane, straddling the house, is used to assemble panels.</td>
<td></td>
</tr>
<tr>
<td>Development to Date.</td>
<td>5. Several thousand houses in U.K. None in Canada.</td>
</tr>
<tr>
<td>Comment.</td>
<td>6. -</td>
</tr>
<tr>
<td>References.</td>
<td>7. Sponsors reference.</td>
</tr>
</tbody>
</table>
concrete tiles.
- felt.
- tiling battens.
- fascia board.
- wall plate.
- precast reinforced concrete eaves course.
- roof truss.
- precast reinforced concrete wall panel.
- plasterboard ceiling.
- plaster.
- wood base.
- wood floor.
- floor joists.
- continuity reinforcement at joints.
- plate fixed to plugs in wall panels.
- precast reinforced concrete string course.
- breeze block lining.
- building paper.
- pitch mastic flooring.
- top of ground.
- damp proof membrane.
- concrete floor.
- concrete foundation.

Scale of feet

December, 1958.

Wates House
WATES HOUSE

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.

1. Non-Traditional.
   Sponsor: Wates Limited.

Date and Place of Origin.


Material Used.

3. Concrete.

Description.

4. $U = 0.3$ (external walls).
   A temporary scaffolding is erected within external walls. Structure of wall is of precast dense reinforced concrete panels while joints are concrete filled. Interior lining of plastered breeze blocks added in situ.

Development to Date.

5. -

Comment.

6. -

References.

7. "Post War Building Study No. 25".
CONCRETE AND MASONRY UNITS
## CONCRETE AND MASONRY UNITS

<table>
<thead>
<tr>
<th>Sub-Classifications</th>
<th>Case Sheets</th>
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</thead>
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<tr>
<td>Normal Units, Concrete</td>
<td>Dextone System</td>
</tr>
<tr>
<td>Normal Units, Lightweight Concrete</td>
<td>Bellroth</td>
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<tr>
<td>Hollow Cavity Wall Units</td>
<td>Interlocking Block</td>
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<tr>
<td>Solid Brick Walls</td>
<td>Durisol Blocks</td>
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<tr>
<td></td>
<td>Siporex</td>
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<tr>
<td></td>
<td>Ytong</td>
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<tr>
<td></td>
<td>Brick Cavity Wall</td>
</tr>
<tr>
<td></td>
<td>Wilson Cavity Blocks</td>
</tr>
<tr>
<td></td>
<td>Solid Brick</td>
</tr>
</tbody>
</table>
MASSORY UNIT

Concrete Units, Normal

BURTON
Fort Worth, Texas, U.S.A.
Pre-1935.
H-Section vertical units
8" x 8" x 8' 6" high.
Corners and tie beams cast
in situ.

CALVER (Newman
Monoblock)
Perry & Company,
Liverpool, England.
20 houses at Liverpool
1921.
Reinforced concrete piers
and concrete slabs at 2' 8"
centers.

CHESHAM & COMPANY
See Master Method under CU.

CLUGSTON CAWOOD LTD.
Lincoln, England.
Prototypes near Minhead
Somerset, hollow framed
slag, concrete blocks
rendered externally.

CONCRETE HOUSE
Portland Cement Assoc.,
U.S.A.
Precast unit. Precast concrete
hollow blocks 8" high laid up
as masonry. Rendered inter-
ally. Reinforced concrete
precast joists and floor slabs.
One house at Chicago
Exhibition 1934.

DEXTONE SELF-
CENTERING WALL
SYSTEM
The Dextone Company,
New Haven, Connecticut,
U.S.A.
Precast concrete channel
shaped units. Interior facing
fixed to wood nailers. Precast
concrete floor slabs and joists.
16", 32" and 48" unit lengths.

M. O. W. Survey of
Prefabrication.

Clugston Cawood Ltd.,
Lincoln, England.

"The Evolving House
III, Rational Design",
(Bemis).

"American Architect
& Architecture",
September 1936.
<table>
<thead>
<tr>
<th>Company</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOX BLOCK ROOF AND FLOOR SYSTEM</td>
<td>Structural - non insulating. Hollow. Concrete blocks tied with steel rods.</td>
</tr>
<tr>
<td>Fraser, Michigan, U.S.A.</td>
<td>Dox Block Roof and Floor System, Fraser, Michigan, U.S.A.</td>
</tr>
<tr>
<td>HESMONT CONCRETE LIMITED</td>
<td>Units. Prestressed, precast concrete slabs and channels, wall, floor and roof slabs.</td>
</tr>
<tr>
<td>K.I.S.O. BOUW ELEMENTEN</td>
<td>Concrete interlocking block. Special lintel blocks. Normal walls: 4 3/4&quot; x 10&quot;, 14 1/2&quot;.</td>
</tr>
<tr>
<td>KNAPP SYSTEM</td>
<td>Interlocking horizontal concrete slab. 3' 4&quot; x 2' 0&quot; x 1&quot; thick. Whitewashed, loadbearing.</td>
</tr>
<tr>
<td>LARZELERE</td>
<td>See Larzelere under CS.</td>
</tr>
<tr>
<td>MASTER METHOD</td>
<td>1926. Reinforced concrete Tee units, 1 1/2&quot; x storey height, with girts at floor levels in situ.</td>
</tr>
<tr>
<td>MATTHEWS, A.C.</td>
<td>See Matthews, A.C. under CPB.</td>
</tr>
</tbody>
</table>
MASONRY UNIT (Concrete Units, Normal cont’d)

NEEDHAM
The Needham Concrete House Company, U.S.A.

1921.
Precast unit. Channel shaped, precast reinforced concrete slabs 16” wide x 6” storey height, erected back to back. Interlocking to form hollow cavity wall. Reinforced concrete girts at floor levels. Finishes rendered. Some houses in Houston, Texas, U.S.A.

PERRY & COMPANY
Liverpool, England.

See Calver House under CU.

STENHUS

Traditional concrete block construction to Sweden as rationalized by Government Housing Authority.

STEVENSON
Frontier Construction Company Limited, Fort Erie, Ontario, Canada.

Precast reinforced concrete units. 2’ 6” wide x storey height. 15” centers. Top and bottom girts. Slotted edges. One house only.

WEEKS
Charles R. Weeks, Contractor, 5422 Polk Avenue, Houston, Texas, U.S.A.

Pre-1935.
MASONRY UNIT (Concrete Units, Normal cont'd)

WEBB
R. C. Webb, c/o H. E. Legendre, Old Campus, Baton Rouge, Louisiana, U.S.A.

Pre-1935.
Precast reinforced blocks of T-section 24" high x 32" long with 2 vertical ribs, cast monolithically. Lath and plaster internally. A few houses at Old Campus, 1920.

"The Evolving House III, Rational Design". (Bemis).
M. O. W. Survey of Prefabrication.

Lightweight Normal Blocks

BELLROCK
200 Westminster Bridge Road, London S.E. 1, England. also Messrs. Muttart Enterprises, P.O. Box 310, Edmonton, Alberta, Canada. also Messrs. Atlantic Gypsum Limited, 1470 Peel Street, Montreal, Quebec, Canada.

2 layers plasterboard with honeycomb core. Waterproofed. Panels 2' 0" x 1' 0" to 10' 0" high. $U = 0.14$.


DURISOL CONSTRUCTION
200 Glendale Avenue, Hamilton, Ontario.

Wood cement slabs of standard 4" thickness used as curtain wall construction or as formwork in concrete sandwich construction. Plaster and Stucco $U = 0.15$. Standard 4" panel.


INTERLOCKING BLOCKS
N. V. Kiso, P.O. Box 74, Dortrecht, Holland.

Built of units 12.64" x 7.35".

Interlocking Blocks, N. V. Kiso, P.O. Box 74, Dortrecht, Holland.
## MASONRY UNIT (Lightweight Normal Blocks cont’d)

### MICROPORITE

See Microporite under MPB.

### NORSK YTONG

Oslo, Norway,  
(oven-injeniere Fjellstab).

System of lightweight concrete blocks, special mortar joint.  
1 m. x 15 cm. x 25 cm. thick.  
Norsk Ytong,  
Oslo, Norway,  
(oven-injeniere Fjellstab).

### ROCKWOOD

Rockwood Gypsum Lumber Corporation  
New York, N.Y.,  
U.S.A.

1925 on.  
Hollow precast gypsum units  
6" x 6" or 8" x 8" storey height,  
flooring units similar.  
Plastered internally and externally.  
Considerable development around St. Louis 1939.  
M. O. W. Survey of Prefabrication.  
"American Architect",  
September 1936.  
"Architectural Record",  
July 1939.  
"Architectural Forum",  
December 1935.

### SIPOREX

Internationella  
Siporex A/B  
Box 3188,  
Stockholm 2, Sweden.  
also  
Siporex Limited,  
6165 Sherbrooke, West,  
Montreal, Quebec,  
Canada.

1920.  
Loadbearing, insulating concrete, lightweight and autoclaved.  
Siporex Internationella  
Siporex A/B  
Box 3188,  
Stockholm 2, Sweden.

### STOCKADE

See Stockade under CPB.

### TEE STONE

Joseph Winston,  
Tee Stone Corporation,  
New York, N.Y.,  
U.S.A.

Pre-1935.  
Precast concrete units (T-Section).  
16" x 1 1/4" thick storey high, R.C. girts at head and sill.  
Exterior stucco. Similar floor unit.  
Seven houses in Long Island, N.Y., U.S.A.  
1920.  
M. O. W. Survey of Prefabrication.  
Portland Cement Association Report  
"Architectural Forum",  
February 1943.
MASONRY UNIT (Lightweight Normal Blocks cont'd)

TEXTILE BLOCKS
Frank Lloyd Wright, Architect, Taliesin, Wisconsin, U.S.A.

Lightweight patterned, concrete blocks laid with cavity between and reinforcement in hollow joints. Used frequently in Wright's buildings.

YTONG
Alberta Ytong Manufacturing Company, Limited, 940 8th Avenue, Calgary, Alberta, Canada. Also Sweden.

Precast autoclaved concrete blocks 12" x 8" x 2" to 14". Lintels up to 8' 0" long.

Cavity Walls

ALCON TWIN WALL
J. Fehr, 4517 West 4th Avenue, Vancouver, British Columbia, Canada.

A cavity wall of concrete block.

BRICK CAVITY WALL
England.

English traditional. Two skins brick work, separated by cavity, and tied.

CAVITY WALL CONSTRUCTION
Canada.

Similar to English type.

M. O. W. Survey of Prefabrication.
Bemis, Lloyd Wright's Books: H & B Rasch, Wie Bauen.


Alcon Twin Wall, J. Fehr, 4517 West 4th Avenue, Vancouver, British Columbia, Canada.

"Building Construction MacKay" (Longmans, Green).
"Building Construction Mitchell" (Batsford).
MASSONRY UNIT (Cavity Walls cont'd)

CHANNELLO
Precast channel shaped concrete slabs for interior and exterior cavity wall skins. 2' 0" module. Floor slabs rest on inverted Tee beams.

KNAPP
Knapp America Inc., Los Angeles, California, U.S.A.
Originated in South Africa 1931. Hollow wall system of concrete unit construction using wood studs at vertical joints at 20" centers.

POHLMANN EMERGENCY HOUSING
A. C. Pohlmann, Wandsbek, Hamburg, Germany,
Light timber frame outer walls:
Concrete slab (4 cm)
Inner wall:
Concrete slab (2 cm)
3 cavities separated by paper.
Roof framing in timber plus concrete slabs.

ROSS PIN BLOCK
Robert Kennedy, 1025 13th Ave. West, Vancouver, British Columbia.
A cavity wall construction based on concrete units 2" x 6" high x 6", 8", 10", 16" 2" cavity. Significant part is use of bent pins connecting & bonding inner and outer skins.
None built as yet, experimental 1958.

M. O. W. Survey of Prefabrication.
Pohlmann Emergency Housing, A. C. Pohlmann, Wandsbek, Hamburg, Germany.
Ross Pin Block, Robert Kennedy, 1025 13th Ave. West, Vancouver, British Columbia.
MASONRY UNIT (Cavity Walls cont'd)

SIMPLIFIED BRICKWORK
Simplified Brickwork
Construction Ltd.,
London W. 1,
England.
(Clothed Concrete
Const. Ltd.).

1934.
Factory made cavity wall
units, outer leaf brick,
inner leaf foamed slag,
2" cavity.
Houses at West Molesey,
Dublin and Blackpool.

WILSON CAVITY BLOCKS
302 Drumoyne Road,
Glasgow S.W.,
Scotland.

Cavity wall 2 leaves
dense concrete with
galvanized steel ties.

WRIGHT (MILLARD
HOUSE)
Frank Lloyd Wright,
Pasadena, California,
U.S.A.

1923.
Concrete formed in situ;
and precast unit. Precast
concrete units reinforced
at joints forming a cavity
wall.
One house built.

"Architectural Forum",
February 1943.
"The Evolving House
III, Rational Design",
(Bemis).

S.C.R. BRICK
U.S.A.
also
Canada.

A semi traditional form
of hollow brick construction.
Normal brick units 2" x 5 1/2"
x 11 1/2".

"Architectural
Graphic Standards",
(Wiley).
Structural Clay
Products Institute.

BRICK SOLID
WALLING
England.

English traditional
construction U = 0.43 (8").

Brick Solid Walling,
England.
Whole House Assembly

Unit of Construction

Roof covering tile or slate
3/4" x 1" battens
Layer of felt
2" x 5" roof rafters
1" x 6" fascia
3" x 4" wall plate
Soffit boarding
2" x 4" ceiling joists
Plaster on plasterboard
Metal wall ties
Brick veneer 4"
4" "bellrock" panel
Metal tie
Skirting board
Moisture barrier
Cement fillet
Concrete floor slab
Concrete foundations

Scale of feet

December, 1958.
BELLROCK

1. Non-Traditional.
   Bellrock Gypsum industries Ltd.,
   200 Westminster Bridge Road,

   Atlantic Gypsum Ltd.,
   1470 Peel Street,
   Montreal, P.Q.

2. England.


4. U-0.60 across panel only.


6. Manufacturer claims Bellrock to be load bearing for one storey structures.

7. Sponsors' literature.
ROOF
•...
.
GROUND FLOOR AND FOUNDATION

UNIT OF CONSTRUCTION

Dextone precast cap
flashing
cant strip
dextone lightweight precast slabs
dextone precast conc. joists 8" 10" 12" deep
finished ceiling
dextone precast wall unit
finished floor
base board
furring strips
wood nailers
1 1/8" x 1 1/8" steel strap bolted to stirrups
wall finish
corner unit
dextone precast wall units
floor finish
dextone precast lightweight slabs
1 1/8" x 1 1/8" steel strap bolted to stirrups
top of grade
dextone precast conc. joists 8" 10" 12" deep
conc. foundation

dextone system
December, 1958.

Scale of feet
12 0 1 2 3
DEXTONE SELF CENTERING WALL

1. Non-Traditional.
   Dextone Company,
   New Haven, Connecticut,
   U.S.A.


3. Concrete.

4. -

5. -

6. -

7. American Architect
   Sept. 1936, p. 36.
UNIT OF CONSTRUCTION

Note - Roof construction may vary according to local conditions

- roof tiles
- sloping block for cable end
- roof rafter
- gutter
- sheathing
- eaves fascia
- eaves soffit
- wall plate
- ceiling joists
- ceiling finish
- corner block

- wall finish
- skirting
- finished floor
- sub floor
- floor joists
- waterproofing

bottom course of blocks set on mortar bed

Scale of feet

interlocking block

December, 1958.
INTERLOCKING BLOCK

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.

1. Non-Traditional. N.V. Kiso, P.O. Box 74, Dordrecht, Holland.

Date and Place of Origin.


Materials Used.

3. Concrete.

Description.

4. Strength is sufficient for two-storey construction.

Development to Date.

5. Regular production in Holland since 1953.

Comment.

6. Approved and tested by Rationalised House Building Foundation, Rotterdam, Holland.

References.

7. Sponsor's Information.
WHOLE HOUSE ASSEMBLY

ROOF

- Built up roofing
- 2 - 3/16" bars - handling reinf.
- 5" ardox nail @ 20' o.c.
- durisol roof deck
- 1/4" rod @ 40' o.c.
- 2 - 3/8" reinf. rods cont. around building
- hi-bond reinf. rods embedded in concrete
- stucco
- standard type block
- 3/8" rod @ 40' o.c.
- 1 1/2" insulation
- 2" conc. topping
- 2 - 3/8" reinf. rods cont. around buildings
- reinforced type block
- durisol floor plank
- 6 x 6 wire mesh 6 or 8 gauge
- 3/8" rod @ 40' o.c.
- plaster
- 1 1/2" insulation
- 2" concrete topping
- 6" x 6" wire mesh 6 or 8 gauge
- damp course

UPPER FLOOR

GROUND FLOOR AND FOUNDATION

durisol blocks

December, 1958.
## DURISOL BLOCK FORMS

<table>
<thead>
<tr>
<th>Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.</th>
<th>1. Non-Traditional. Durisol Materials Limited, Mitchell, Ontario. Distributed in Canada by Durisol Sales Limited, 200 Glendale Avenue, Hamilton, Ontario, as of 1959. Other Durisol companies in Switzerland, England, Austria, Belgium, Canada, United States, Denmark, Spain, France, Holland, Japan and Yugoslavia.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date and Place of Origin.</td>
<td>2. Switzerland, Zurich, prior to 1939.</td>
</tr>
<tr>
<td>Materials Used.</td>
<td>3. Mineralized Wood Shavings bonded together with standard portland cement.</td>
</tr>
<tr>
<td>Description.</td>
<td>4. The Durisol Block Form method of construction is in reality an insulated left-in-place form for a poured-in-place concrete wall and is laid up dry (no mortar in the joints) as the top and bottom surfaces of these units are machined parallel and then filled with standard concrete as the wall is laid or formed up. Interior and exterior surfaces of this insulating form provide a base for the direct application of stucco and plaster finishes. The through-the-wall U factor (insulating) of this type of construction, using 8&quot; thickness is 0.115 and provides fire rating of 5 hrs.</td>
</tr>
<tr>
<td>Comment.</td>
<td>5. Used for all types of construction, throughout the world, since World War II, using various combinations of Durisol (mineralized wood shavings and cement).</td>
</tr>
<tr>
<td>References.</td>
<td>6. -</td>
</tr>
<tr>
<td>Development to Date.</td>
<td>7. Sponsors' literature.</td>
</tr>
</tbody>
</table>
Cement grout in joints.

Water and vapour membrane directly over Siporex reinforced roof slab.

Cement grout in joints.

Mortar bed.

Metal flashing.

Wooden fascia nailed to Siporex, or similar detail.

Lightweight concrete fill.

Galvanised metal dowel.

Siporex wall slab jointed in mortar.

Stucco rendered or masonry painted outside; plastered, painted or otherwise lined inside allowing exterior face to breathe.

Wooden flooring on battens or similar finish.

Reinforced Siporex floor slab.

Wall slab projects 1\" over concrete foundation to obviate standing water.

Information from sponsors.

Scale of feet

12 0 1 2 3

siporex
February, 1958.
SIPOREX

1. Internationella Siporex A/B,
   Box 3188, Stockholm 2.
   Siporex Ltd., 5165 Sherbrooke St. W.,
   Montreal, Quebec.

2. Sweden, around 1920.

3. Siporex - precast autoclaved
   cellular lightweight concrete.

4. Siporex is a load bearing, insulating
   concrete precast in slabs or blocks.
   This sheet shows only one method of
   construction, suitable only for one
   storey buildings.
   K(U)=0.81 BTU/sq. ft./in./hr./°F.
   Fire rating and noise reduction co­
   efficient for 4" partition plastered
   both sides - 2 hours, and 42 decibels
   respectively.
   Weights: roof and wall slabs - 31 lbs.
   cu. ft.
   Floor slabs 37 or 44 lbs. cu. ft.

5. Widespread use in Scandinavia,
   some houses in E. Canada.

6. The manufacturer claims that Siporex
   is a highly surface active material and
   therefore requires no interior vapour
   barrier; protection against weather is
   however necessary.

7. Sponsor's information.
UNIT OF CONSTRUCTION

The roof construction shown can be varied according to custom and conditions.

- 2" x 6" wood wall plate.
- grout.
- wool insulation.
- roof rafters.
- lintel.
- insulation board.
- 3/4" plaster.
- stucco.
- 'Ytong' blocks.
- joint reinforcing every second course.
- plaster.
- skirting board.
- floor finish.
- 2" 'Ytong' header.
- 6" 'Ytong' fill between joists.
- no. 2 metal clips every 2nd joist or 36".
- 2" x 8" floor joists.
- plaster.
- parging.
- sub floor.
- finish flooring.
- damp proofing membrane.
- metal clips.
- 3" 'Ytong'.
- 3/8" reinforcing rods.
- 2" x 8" joists @ 16" centres.

December, 1958.
YTONG

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.

1. Non-Traditional.
   Internationella Ytong,
   Djorwellsgaten 12, Stockholm, Sweden.
   Alberta Ytong Manufacturing Co. Limited,
   1026 6th Avenue, N.W. Calgary, Alberta.

Date and Place of Origin.

2. Sweden 1930.

Materials Used.


Description.

4. U=0.12 (8" external block, 41 lbs. per cu. ft. stuccoed and plastered).
   Only the material itself is proprietary.

Development to Date.

5. Widely used in Scandinavia.
   Also in U.K., Germany, Belgium, Poland and Israel. Mainly used for industrial, commercial, and some housing work in Western Canada.

Comment.

6. This sheet shows one possible way of using Ytong.
   Other ways include cavity wall and monolithic concrete construction.

References.

7. Sponsors reference.
Roof and ceiling covering and construction vary considerably and are not an integral part of the system.

Rafters and ceiling joists bear on wall plate which in turn bears on both wall skins.

Cavity closed at the top.

Two skins brickwork tied by twisted ties.

Floor joists bearing on inner skin of wall only.

Ground floor joists bearing on wall plate on sleeper wall.

Damp proof course

Lower part of cavity filled with fine conc.

Sub floor slab on crushed stone bearing on subsoil and separated from wall structure.

Strip foundation, crawl space and site slab are shown as being typical of English brick cavity wall construction.

Scale of feet

12 0 1 2 3

brick cavity wall

February, 1958.
BRICK CAVITY WALL

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.

Date and Place of Origin.

Materials Used.

Description. 1. Traditional in U.K.

2. Used for many years in U.K.


4. Roofs are uniformly carried on both skins. Floors are carried on inner skin. Inner skin can be of other masonry material such as lightweight concrete, hollow clay block. Cavities are sometimes not ventilated and sometimes are insulation filled. U=0.34, BTU/sq. ft./hr./°F. for an unventilated cavity wall. Fire rating 2 1/2 hours, (for this specific example).

5. Widespread use in U.K. especially since Second World War.

Comment. 6. There are many variations on this system of which this is only one.


WILSON CAVITY BLOCKS

1. Non-Traditional.
   Wilson Terrazzo Manufacturing Company Limited,
   302 Drumoyne Road,
   Glasgow S.W.1, Scotland.

2. Scotland 1946.

3. Concrete.

4. U-0.30 (exterior wall with plasterboard.
   Interior lining).

5. Over 7,000 houses erected in Scotland,
   1946 to 1952.

6. Unit only is proprietary. It can be used
   in conjunction with a variety of different
   forms of roof and floor construction.

7. -
WHOLE HOUSE ASSEMBLY

roof shingles
7/8" sheathing
roof rafters
8" brick wall
gutter
eaves fascia
wood plate bolted to wall
2" x 6" ceiling joists
insulating lath and plaster ceiling
1" x 2" strapping
plaster on insulating plaster base
wood baseboard
3/4" hardwood flooring
3/4" wood sub-floor diagonally laid
2" x 2" bridging
wood floor joists - 4" bearing on walls and fire cut
lath and plaster ceiling
plaster on insulating plaster base
1" x 2" strapping
wood baseboard
1/2" hardwood flooring
3/4" wood sub-floor diagonally laid
2" x 2" bridging
top of ground
floor joists - 4" bearing on wall
basement wall
waterproofing

Scale of feet:
12 0 1 2 3

solid brick
December, 1958.
SOLID BRICK

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.

Date and Place of Origin.

Materials Used.

Description.

Development to Date.

Comment.

References.

1. Traditional.
2. Traditional wherever there has been brick.
4. 8" brickwork U=0.43.
5. World-wide spread.
6. Used with various forms of roof and floor construction.
   "Principles of Modern Building", Vol. 1, R. Fitzmaurice, H.M.S.O.
CONCRETE POST AND BEAM
## CONCRETE POST AND BEAM

**Case Sheets**

- Ayrshire House
- Boats Beaucrete Concrete House
- Boot Pier and Panel House
- Cornish Unit
- Duo-Slab House I
- Duo-Slab House II
- Earley System
- Kreuzhous
- Orlit House
- Rackle System
- Rockwood House
- Stockade House
- Swan House
- Winget House
CONCRETE POST AND BEAM

AIREY

ARSHIRE COUNTY COUNCIL

BANKS
See Banks under CM.

BEAMY-STYLE

BOOT BEAUCRETE
CONCRETE HOUSE
CONCRETE POST AND BEAM

BOOT PIER AND PANEL
H. Boot & Sons Limited, Sheffield, England.

CIJECEOL (KEELAND HOUSE)
New Concrete Processes, 600 Hamilton Street, Vancouver, British Columbia, Canada.

CLOTHED CONCRETE CONSTRUCTION LIMITED

CONCRETE GRID FORM
Lloyd Wright, U.S.A.

CONNECTICUT PRECAST HOUSE
The Connecticut Building Corporation, Greenwich, Connecticut, U.S.A.

CPB
Boot Pier and Panel, H. Boot & Sons Limited, Sheffield, England.

New Concrete Processes, 600 Hamilton Street, Vancouver, British Columbia, Canada.

See also Intrusion Prepakt.
Lightweight concrete as used in a special panel and beam system used in Keeland House.

See Dyke System.

Concrete formed in situ; and precast unit. Precast hollow concrete units, concrete filled and reinforced lined internally and metal lath and plaster external rendering similar. Floors of similar construction with reinforced concrete slabs over.

Precast hollow reinforced concrete wall units 6" up to 18' 0" x storey height. Roof and floor construction similar.

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<td>faced with lath and plaster</td>
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<td>and crossed braced.</td>
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<td>Conventional flooring.</td>
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<td>Studs 16&quot; centers.</td>
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<td><strong>DONALDSON</strong></td>
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<td>poured in situ on expanded</td>
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<td>metal. Wood forms are</td>
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<td>form hollow walling, and</td>
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<td>rough buck for windows</td>
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<td>and doors.</td>
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<td>Rendered internally and</td>
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CONCRETE POST AND BEAM

DUO SLAB HOUSE I
Sir Edwin Airey, 1922.
Eldon House, Cavity walls of precast
Leeds, England, clinker concrete slabs
between concrete piers,

Sir Edwin Airey, at 4' 0" centers.
Eldon House,

DUO SLAB HOUSES II
William Airey & Sons Limited, 1922.
Eldon House, Precast concrete studs at
Leeds, England. 18" centers. Precast con-

M. O. W. Survey of crete 2" facing slabs. A dry
Prefabrication. construction lined with plaster
board, conventional roof and

DYKE SYSTEM
Clothed Concrete Prototype at Stoke on Trent
Construction Limited, reinforced concrete frame
London W. 1, England. and precast concrete panel

"House out of cladding.

Timber frame roof.

Earley System
Washington, D. C. III, Rational Design",
U.S.A. (Bemis).

Earley System M. O. W. Survey of
John J. Earley, Prefabrication.
Washington, D. C.
U.S.A.

"American Architect
& Architecture",
1936.

GYPCRETE
John Mowlem, 1915.
England. Timber forms erected first
Similar to Bellrock Panels. into which is poured rein-
John Mowlem, forced concrete. Exterior
England.

M. O. W. Survey of
Prefabrication.

M. O. W. Survey of
Prefabrication.

M. O. W. Survey of
Prefabrication.

M. O. W. Survey of
Prefabrication.
CONCRETE POST AND BEAM

HAHN
Hahn Concrete Lumber System, Decatur, Illinois, U.S.A.
Concrete formed in situ; and precast unit. Precast slabs forming permanent shuttering for poured concrete reinforced studs at 30" centers. Slabs 12" high x 30" long x 2". Exterior finish stucco, interior plaster. Flooring conventional. Structure tied at roof and floor levels by wood binders.
A number of houses in Illinois, U.S.A.

HARDY
1920.
Precast storey high posts and panels jointed for two storey work, cavity continuous through posts.

HARTLEY
II. C. Hartley Fireproof Construction Company, Los Angeles, California, U.S.A.
2 skins precast concrete slabs 9" high x 3' 0" long x 1 1/2" and posts poured between.
Number of buildings mostly commercial.

HOOK-ON SLAB
E. May, Architect, Nairobi, Kenya.
Reinforced concrete 2 pin parabolic frame at 3' 0" centers. Reinforced concrete slabs hook on to frame. No insulation. Rapid dry construction, only for tropical use.

INSYBA
Bahnhofstrasse 72, Zurich 23, Switzerland.
2 floor house.
Precast post at 4' 2" centers.
Horizontal precast panels 4' 2", in style of platform frame.

M. O. W. Survey of Prefabrication.

M. O. W. Survey of Prefabrication.

M. O. W. Survey of Prefabrication.


Insyba
Bahnhofstrasse 72, Zurich 23, Switzerland.
CONCRETE POST AND BEAM

KENT
Several houses near London. Precast unit. Precast reinforced columns and slabs with bolt couplings cast into columns. Rendered internally and externally.

KREUZHAUS
(CROSS)
Dr. J. W. Ludowici, Jockgrim, Rheinpfalz, Germany.
House designed mainly for use in areas liable to earthquakes. Has crosswalk of solid concrete in cross-like plan, and four corner posts or r.c. Ceiling in earthquake areas if r.c. slab otherwise conventional. Exterior wall panels of insulation material plus facing.

KRUMHARDT
Eric Krumhardt, 3912 Barber Avenue, South Burnaby, Vancouver, British Columbia, Canada.
4' 0" module. Concrete post and beam concrete infill panel. Insulation panel added inside.

LAKEOLITH
See Lakeolith under CP.

LOCKWOOD
Ernest H. Lockwood, Pasadena, California, U.S.A.
1930. Precast unit. Precast slabs 12" x 36" wide x 1 1/2" forming shuttering to poured concrete studs. Girt beams and corner columns also poured in situ. Floor and roof construction and interior finishes conventional. A number of houses in Pasadena.

CPB

Dr. J. W. Ludowici, Jockgrim, Rheinpfalz, Germany.

CONCRETE POST AND BEAM

LOVERING POCHIN
COMPANY LIMITED
Cornwall,
England.

See Cornish Unit.

Lovering Pochin
Company Limited,
Cornwall,
England.

MacGIRLING HOUSE
Girling's Ferronconcrete
Company,
London W. C. 1,
England.

Hollow precast concrete block
walls with cast stone facing
and clinker concrete backing.
Panels 4' 0" x 2' 0".

Girling's Ferronconcrete Company,
London W. C. 1,
England.

MacGREGOR HOUSE
J. E. M. MacGregor,
London W. 6,
England.

Built up reinforced concrete
columns and brick panel
filling. Conventional timber
roof, prototype flats, at
Horsham.

J. E. M. MacGregor,
London W. 6,
England.

MAKECO
Mathews and Keenan,
England.

1938.
Pre cast concrete Tee panels.
Concrete poured at joints.

M. O. W. Survey of
Prefabrication.

MATTHEWS, A. C.
Architect,
Australia.

1920.
Precast Tee shaped concrete
slabs, 24" x 12" x 1 1/2"
concrete studs poured be-
tween slabs at 2' 0" centers.
A number built in Australia.

"Concrete and
Constructional
Engineering",
October 1924.
M. O. W. Survey of
Prefabrication.

MORELL
E. H. Bradley & Sons,
Swindon, Wilts,
England.

Reinforced concrete precast
frame walls, floor and roof,
concrete block cavity walls,
externally: fluted concrete
panels.

E. H. Bradley & Sons,
Swindon, Wilts,
England.

MOWLEM
Mowlem, John.

See Gypcrete.
NEW CONCRETE PROCESSES LIMITED  See Cheecol.

OLMSTED
A. H. Olmsted,
Rye, New York,
U.S.A.

1930. Concrete formed in situ, and precast unit. Reinforced precast concrete studs at 16" centers acting as the dividers between insulating board forms in front of which is poured concrete in situ. Rendered externally, wall-board lined internally. Floor of T beam reinforced concrete poured in situ construction with ceiling lining and floor boards over. Four dwellings at Rye and a few others elsewhere.

ORLIT HOUSE
Coinbuck-By-Pass,
Colnbrook,
Slough, Bucks,
England.

1948. Precast reinforced concrete columns and beams at 12' 0" centers. Concrete slabs in two leaves, 4' 0" long. Columns erected first and then concrete cavity wall. Inner skin of foamed slag.

PARKIURST
L. M. Parkhurst,
U.S.A.


RACKLE SYSTEM
George Rackle & Sons Company,
Cleveland, Ohio,
U.S.A.

Precast concrete internal and external wall slabs and studs with poured concrete girts and corner columns. Precast reinforced concrete floor joists and slabs.


"Prefabrication in Building", (Richard Sheppard).
"House Out of Factory", p. 50.


CONCRETE POST AND BEAM

REEMA
Reed and Mallik,
Salisbury, Wilts,
England.
Hollow precast concrete storey high, panels with reinforced concrete posts and beams poured between. Plastered and stuccoed.
"Architects Journal",
May 1954.

ROCKBILD
350 Fifth Avenue,
New York 1, N.Y.,
U.S.A.
Built in Ruhr and Alaska. An insulating concrete made up into wall elements with hollowed edges at joints to form formwork in which to pour concrete thus forming a reinforced concrete post and lintel, frame around panels.
Rockbild,
350 Fifth Avenue,
New York 1, N.Y.,
U.S.A.

ROCKWOOD GYPSUM HOUSE
Rockwood Gypsum Lumber Corporation,
New York, N.Y.,
U.S.A.
Precast gypsum vertical wall sections approximately 6" x 6" with poured reinforced concrete posts at regular intervals in gypsum sections. Reinforced concrete Tee beam hollow terracotta formed floor slab.
"American Architect & Architecture",
September 1936.

SACO PANEL
Sachau Marine Construction.
Humber Bay,
Toronto, Ontario
Canada.
Concrete precast panels which are also formwork for reinforced concrete post and beam construction. Vertical 16" x 6" x 8' 2" panels. Reinforced load-bearing concrete. Out of business.
Sachau Marine Construction,
Humber Bay,
Toronto, Ontario,
Canada.

SAWYER
F. McM Sawyer
Architect,
U.S.A.
1935.
Reinforced concrete planks spaced apart with r.c. spacers. Units 6" high x 32" long x 1 1/4".
6" cavity. Concrete poured between spacers and facing.
M. O. W. Survey of Prefabrication.
"Architectural Forum",
February 1943.
CONCRETE POST AND BEAM

SWAN
Frank S. Swan,
Swan House Incorporated,
Bell Building,
Chicago, Illinois,
U.S.A.

Precast concrete pier and panel, 4' centers. Monolithic floor and foundation poured in situ. Some houses in Illinois.

T. BEAM CONSTRUCTION
457 Union Street,
Aberdeen, Scotland,
also
J.A. Angel & Sons Co.,
108 Gallery Square,
Montreal, Quebec,
Canada.

Precast concrete Tee sections on 10" horizontal module and 10 1/2" vertical module filled with concrete. U = 0.184. (Including air space and fibreglass). 94 houses built in Scotland up to 1952.

TRAYLOR DEWEY GUNITE
Traylor-Dewey Contracting Company,
Allentown, Pennsylvania,
U.S.A.

Pre-1935. Timber frame used as permanent shuttering into which is poured reinforced concrete, r.c. studs at 3' 10" centers. Faced with cement rendering on metal (expanded). Interior plastered. A few houses in Pennsylvania.

UNDERDOWN HOUSE
Underdown Houses Limited,
Norwich, England.

Concrete blocks forming formwork and cavity wall. Poured piers at 4' 0" centers. Rendered internally and externally. Wood floor.

UNDERDOWN WEYMOUTH
CROWELL
Donald Underdown,
2104 East 15th Street,
Los Angeles, California,
U.S.A.

Precast concrete units in situ piers, 3' module. Units 12" x 36" x 1 1/2". In situ girts at head and sill. Stuccoed and plastered. One house at Glendale, California, U.S.A.

CPB

M. O. W. Survey of Prefabrication.
"American Arch."
Sept. 1936.

M. O. W. Survey of Prefabrication.
"American Architect",
September 1936.
"Architectural Forum",
December 1935.

Pamphlet H2F
Central Office of Information,
CONCRETE POST AND BEAM

UNITROY HOUSES

Lightweight concrete units as forms and a poured reinforced concrete post and beam system posts at 2' 10" centers.
U = 0.15 (ground floor) 0.20 (walls) 0.13.
2 storey construction

WALLER
The Waller Housing Corporation, Poole Corporation, England.

1920.
Precast piers at 3' 8" centers.
double panels of coke breeze concrete 8' high x 2' wide.
Exterior painted, interior plastered. Housing estate at Poole, Dorset.

WEBB

See Webb under CU.

WHITSON-FAIRHURST

See Ayrshire County Council.

WINGET

1924-31.
Double clinker concrete slabs 36" x 9" high x 3" with reinforced concrete piers poured between slabs at 3' intervals.
Remainder of building conventional. Three thousand five hundred built in 1930.
System discontinued.

M.O.W. Survey of Prefabrication.
Cement & Concrete Association Report.
M.O.H. Systems of House Construction approved up to 1920.
Interdepartment Com. on House Construction Report, 1944.
CONCRETE POST AND BEAM

WINTER
E. M. Winter,
15 Jacobus Place.
New York, N. Y.,
U. S. A.
1935-1936.
Steel frame, concrete precast wall units pan shaped. Concrete of blast furnace foamed slag. Steel posts cast in situ at 4' centers. None erected up to 1936.

WOOLAWAY HOUSE
W. Woolaway & Sons Limited,
Bernstaple, Devon,
Taunton, England.
Precast reinforced concrete post and panel. Wood floor and roof construction.

WRIGHT
(Millard House)
See Wright (Millard House) under CU.

M. O. W. Survey of Prefabrication.

W. Woolaway & Sons Limited,
Bernstaple, Devon,
Taunton, England.
CONCRETE POST AND BEAM

SHINDLER GOEHNER SYSTEM
M. B. Acheson Limited
4 Westminster Palace Gardens,
Victoria Street,
London S.W. 1, England.

Inner loadbearing walls of precast concrete.
Other walls poured into gypsum room size forms.

SIMPSON CRAFT
John T. Simpson,
U.S.A.

1915.
Precast unit. Precast concrete studs and panels rendered internally and externally poured girts. Some houses in Eastern United States.

STEILBERG

See Steilberg under MP.

STOCKADE
Stockade Building System Incorporated,
New York, N.Y.,
U.S.A.

1920.
Concrete formed in situ; and precast unit. 4" x 8" x 16" wood fibre blocks made up like masonry. Reinforced concrete poured into holes in units (vertically aligned). Remainder of construction conventional. Many houses built in U.S.A. up until 1935.

STONECRETE WALLING

Precast reinforced concrete posts storey high.
P recast horizontal reinforced concrete panels.
Internal lining of plaster.

M. B. Acheson Limited,
4 Westminster Palace Gardens,
Victoria Street,
London S.W. 1, England.


AYRSHIRE HOUSE

1. Non-Traditional.
   Sponsor: Ayrshire County Council, Scotland (first).


3. Precast concrete.

4. Precast reinforced concrete frame is erected first, then external foamed concrete panels, then interior panels of metal frame, plasterboard facing and glass insulation.
   U=0.14 (external wall).

5. 3,300 houses in Scotland up to 1952.

6. -

BOOT BEAUCRETE

1. Non-Traditional.


4. Frame is erected first, then infill panels. Air is to produce a continuous moisture break between inner and outer external wall faces.

5. 10,000 houses in U.K. in interwar period.

6. System is relatively inflexible.

Roof and floor construction is normal joists and covering.

Precast reinforced concrete piers.

Rendering.

3" precast clinker concrete slabs.

Plaster.

Wood joists.

Plaster ceiling.

Reinforced concrete wall beams.

Precast reinforced concrete two storey piers.

Galvanised iron tie.

Wood joists.

Damp proof course.

Concrete foundation and ground slab.

Wood wallplate.

boot pier and panel house

December, 1958.
BOOT PIER AND PANEL HOUSE

1. Non-Traditional.
   Sponsor: Henry Boot and Sons, Ltd.

2. U.K., 1925.

3. Precast concrete piers, precast clinker concrete units.

4. Two storey construction. Piers are recessed into concrete strip foundation. Slabs are usually laid dry between piers. 2" cavity is continuous. Roof and floor construction normal conventional English wood construction. U-0.26 (External walls only).

5. 8,000 to 9,000 houses built between 1926 and 1930 for several English municipal authorities.

6. All concrete units are manufactured on the site. Piers are handled by crane.

WHOLE HOUSE ASSEMBLY

WALL UNIT JUNCTION

ROOF

UNIT OF CONSTRUCTION

- Roof boarding
- 3" x 2" studding to mansard framing
- 5/8" pitchmastic floor on asphalter’s felt
- 1 1/2" R.C. floor
- 2" x 7" R.C. floor joists
- plasterboard ceiling
- iron dog spacer

UPPER FLOOR

- 1 1/2" R.C. floor
- 5/8" pitchmastic floor on asphalter’s felt
- 7" x 2" R.C. joists
- 2" x 1" batten bolted to floor joists, to carry plasterboard ceiling
- 5/8" pitchmastic floor on asphalter’s felt
- 4" concrete
- hardcore
- 4" filling
- standard tenoned through basestone into concrete foundation

GROUND FLOOR AND FOUNDATION

Scale of feet

-ground level

cornish unit

December, 1958.
CORNISH UNIT

| Traditional, Non-Traditional, Manufacturer, Sponsor or Builder. | 1. Non-Traditional. Selleck Nicholls and Company Limited, (formerly Lovering Pochin) Heath Hill, St. Austell, Cornwall, U.K. |
| Date and Place of Origin. | 2. United Kingdom 1946. |
| Materials Used. | 3. Precast concrete. |
| Description. | 4. A precast concrete pier and panel system, utilizing a mansard roof construction. U=2.1 (external wall construction as shown). |
| Development to Date. | 5. 30,000 dwellings in England since 1946. |
| Comment. | 6. Only the units are proprietary. |
| References. | 7. - |
In situ concrete pier
3'3" x 3" x 8" precast slabs.

In situ concrete pier
3'3" x 3" x 8" precast clinker concrete slabs laid dry.

Roof construction is normal timber joists and covering.

Concrete pier poured in situ.

Rendering.

3'3" x 3" x 8" precast clinker concrete slabs laid dry.

Plaster.

Wood joists.

Wood wallplate bolted to inner skin.

Concrete pier poured in place.

Damp proof course.

Concrete ground floor slab.

Concrete foundation.

duo-slab house

March, 1958.
AIREY DUO SLAB HOUSE

1. Non-Traditional.

2. Liverpool, 1922.

3. Precast clinker concrete slabs, poured posts.

   U=0.24 (External walls).

5. 3,000 to 4,000 houses in the U.K. for several municipal authorities (1922-1924).

6. Remainder of construction is conventional English wood construction.

DUO SLAB II

1. Non-Traditional, Builder and Sponsor: Wm. Airey and Son (Leeds), Ltd.


3. Precast concrete.

4. System simulates the wood stud frame system for the walls. Concrete studs are storey high and dowel jointed. U= 0.21 (walls), firecoating: 1/2 hour.

5. Many modifications and improvements have been made to the system including the incorporation of Pitched and Hipped roofs. More than 25,000 houses have now been completed in almost every county of England and Wales. This system of construction has been adopted by the Netherlands Government and an extensive building programme has been carried out in Holland.


Roof covering and construction may vary according to locality.

- roof sheathing
- shingles
- roof rafters
- gutter
- wall plate
- insulation
- gypsum lath and plaster
- 2" x 4" wood studs
- 4" x 6" reinforced conc. post poured in place
- 2" reinforced precast conc. slab (storey height x 1'-0" to 10'-0" wide)
- 1/2" round rods
- steel mesh reinforcing
- finished floor
- sub floor
- wood joists
- gypsum lath and plaster
- 4" x 6" reinforced conc. post poured in place behind joints in facing slabs
- 2" x 4" wood stud
- finished floor
- top of ground
- concrete foundation
- wood sleepers
- 4" conc. slab
- hardcore

earley system
December, 1958.
EARLEY SYSTEM

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.

1. Non-Traditional.
   John J. Earley,
   Washington, D.C.

Date and Place of Origin.


Materials Used.

3. Concrete.

Description.

4. Exterior slabs may be threaded for bolting to a steel frame. Concrete studs are poured immediately behind joints at 18" centres.

Development to Date.

5. Extensively used in U.S. around 1915.

Comment.

6. -

References.

WHOLE HOUSE ASSEMBLY

ROOF

- Roof rafters
- Eaves fill
- Wall plate
- Concrete ceiling slab
- Stud framed panels
- Asbestos cement external face
- Tempered fibreboard
- Wood fibre rigid insulation
- Reinforced concrete sill
- Sill
- Masonry cross walls
- Masonry wall
- Floor finish
- Skirting
- Screed
- Lightweight concrete
- Concrete slab

GROUND FLOOR AND FOUNDATION

kreuzhaus

December, 1958.
KREUZHAUS

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.

1. Non-Traditional.
   Dr. J.W. Ludowici, Jockgrim/Reinpfalz, Landhaus, Germany.

Date and Place of Origin.

2. Germany, 1957.

Materials Used.

3. Masonry and wood.

Description.

4. The essential feature of this house is the masonry cross wall and concrete slab ceiling and corner posts. Exterior walls and roof are of traditional construction.

Development to Date.

5. Development is as yet unknown.

Comment.

6. -

References.

7. Sponsors literature.
WHOLE HOUSE ASSEMBLY

UNIT OF CONSTRUCTION

- Metal flashing.
- Bituminous felt.
- Eaves slab.
- Foamed slag concrete.
- Reinforced concrete beam.
- Plaster ceiling.
- Reinforced concrete columns in three sections.
- Metal wall tie.
- Dense concrete slab.
- Timber flooring.
- Foamed slag concrete slab.
- Precast reinforced concrete frame.
- Reinforced concrete floor slab.
- Bonding unit.
- Reinforced concrete column.
- Skim coat plaster.
- Steel plate and column bolt connection.
- Base bonding unit.
- Thermal insulation material.
- Jointless flooring.
- Screed.
- Site concrete.
- Hardcore.

Information from Post War Building Study No. 25, Ministry of Works, London.
Reproduced by permission of the Controller of H.M. Stationery Office.

Scale of feet

12 0 1 2 3

December, 1958.
ORLIT HOUSE

1. Non-Traditional.
   Orlit Limited.
   Colnbrook By Pass, Bucks, England.


3. Concrete and foamed slag.

4. Precast reinforced concrete columns, slabs, roof and floor units.
   U-0.27 (walls). Columns are bolted together first then inner and outer cladding is added.


6. -

7. Post War Building Study No. 25,
roofing may vary depending on local conditions

- concrete slab
- precast concrete joists
- ceiling finish
- monolithic concrete beam
- reinforcing rods
- paint or stucco finish
- wall finish
- precast concrete wall studs 32' x 2' x wall thickness
- precast concrete wall slabs 16" x 48" x 1 1/2"
- floor finish
- concrete slab
- precast concrete floor joists
- monolithic concrete beam
- reinforcing rods
- concrete corner column
- metal clamps and dowels
- precast concrete wall studs 32' x 2' x wall thickness
- continuous groove on all sides
- wall finish
- floor finish
- concrete foundation

rackle system

December, 1958.
## RACKLE SYSTEM

<table>
<thead>
<tr>
<th>Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.</th>
<th>1. Non-Traditional. George Rackle and Sons Company, Cleveland, Ohio.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date and Place of Origin.</td>
<td>2. U.S.A. Approximately 1936.</td>
</tr>
<tr>
<td>Materials Used.</td>
<td>3. Precast concrete units</td>
</tr>
<tr>
<td>Description.</td>
<td>4. Precast concrete units, joists and slabs. Wall: Outer and inner rows of precast slab units with precast stud members set at intervals. All edges are grooved. Studs have projecting dowel bars at one end and dowel holes at the opposite end, thus providing a means of doweling superimposed stud sections. Base: Dowels lock the studs to a standard concrete foundation.</td>
</tr>
<tr>
<td>Development to Date.</td>
<td>5. No longer in operation.</td>
</tr>
<tr>
<td>Comment.</td>
<td>6. -</td>
</tr>
</tbody>
</table>
ROCKWOOD HOUSE

1. Non-Traditional.
   Rockwood Gypsum Lumber Corporation, New York, N.Y.


3. Precast hollow gypsum units with reinforcing rods.

4. Wall: Hollow, precast gypsum units extending from floor to ceiling. Exterior walls are load bearing. A tongue and groove method is used for all vertical joints. Where required, steel reinforcing rods may be placed in vertical cells and concrete poured in. Base: Precast gypsum floor units with three rectangular full length cells are laid directly on a foundation. Reinforcing rods are laid in the cut-outs and concrete is poured in and graded over the units to form a rough floor slab. Any floor finish may be used.

5. No longer in operation.

6. -

UNIT OF CONSTRUCTION

Ground Floor and Foundation

- Roof rafters
- Wood plate
- 8" x 32" x 2" girt slabs
- Reinforced concrete girt course
- Plaster ceiling
- Ceiling joists
- 4" x 8" x 16" pressed fibre blocks
- Poured concrete columns @ 8' o.c.
- Metal wire tie clips

- Finished floor
- Sub floor
- 16" x 32" x 2" girt slabs
- Poured concrete girt
- Floor joists
- Top of grade
- Concrete foundation

Stockade House

December, 1958.
STOCKADE HOUSE

1. Non-Traditional.
Stockade Building System, Inc.,
New York, N.Y.


3. Wood fibre blocks and concrete fill.

4. A standard type of wood roof and floor construction is used in conjunction with this type of construction. Exterior is stuccoed, interior plastered.

5. Many houses built in U.S. up to 1935.

6. -

SWAN HOUSE

1. Non-Traditional.
The Swan House, Inc.,
Chicago, Ill.


3. Concrete.

4. Interior finish may vary, no
   exterior finish is required.
   Foundations are conventional.

5. -

6. -

7. American Architect and Architecture,
   September, 1936.
Wood strip shuttering.

In situ reinforced concrete pier.

WALL UNIT JUNCTION

UNIT OF CONSTRUCTION

Roof construction is of normal timber joists and covering.

Hollow precast clinker concrete block, (9" x 9" x 9").

Rendering.

3'0" x 3" x 9" precast clinker concrete slabs.

In situ reinforced concrete pier at 3'0" centres and at jambs of openings.

3" cavity.

Wood joists.

In situ reinforced concrete lintel.

Plaster.

4" deep x 9" wide in situ reinforced concrete beam.

3'0" x 3" x 9" precast clinker concrete slabs.

In situ reinforced concrete pier.

Wood strip shuttering.

Wood joists.

Wood wallplate.

Concrete foundation and ground slab.

Scale of feet

GROUND FLOOR AND FOUNDATION

wooden house

December, 1958.
WINGET HOUSE

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.

1. Non-Traditional.

Date and Place of Origin.


Materials Used.


Description.


Development to Date.

5. 3,000 to 4,000 Houses in U.K. (1928-1931), for several municipal authorities.

Comment.

6. -

References.

CONCRETE SANDWICH CONSTRUCTION
CONCRETE SANDWICH CONSTRUCTION

SANDWICH WALLS—cast in situ—concrete

Case Sheets
SANDWICH POUR-ED & PRECAST, STRUCTURAL

ABERDEEN CORPORATION
HOUSES
See Aberdeen Corporation Houses under CM.

ARMSTRONG-ANDERSON
HOUSE
62 Richmond Street W.,
Toronto 1, Ontario,
Canada.
1947.
2" slabs concrete as formwork to 4" poured concrete. 8"
finish wall thickness.
Conventional roof construction.
$U = 0.15$.
Steel frame.
Houses in Thorncrest Village,
Toronto, Ontario.
See Durisol under CS.

BRITISH ARMY HOUSE
See British Army House under CM.

BRYANT HOUSE
England.
Precast and in situ concrete
cavity wall construction
using steel forms within
situ concrete as interior
formwork.

DURISOL CONSTRUCTION
See Durisol Construction under CU.

FIDLER HOUSE
London County Council,
England.
1926.
2 leaves clinker concrete
slab 2 1/2" thick, used as
permanent forms for 4" in
situ concrete core.

HUNKEMOLLER
Directorate of Housing,
Amsterdam, Holland.
Pre-1925.
Precast hollow concrete
reinforced units 1' 8" wide.

Armstrong-Anderson
House,
62 Richmond Street W.,
Toronto 1, Ontario,
Canada.

"Prefabricated Homes",
(B. H. Cox).
"Architectural
Builder", vol. 183.
1954.

M. O. W. Survey of
Prefabication.
SANDWICH Poured & Precast, Structural

LARZELERE
Orlando, Florida, U.S.A.

Pre-1935.
Vertical concrete units (planks) acting as permanent formwork.

M.O.W. Survey of Prefabrication.

ONTARIO HYDRO
J.R. Davies, 27 Lorindale Ave., Toronto, Ontario, Canada.

Sandwich construction of foamglass, between concrete slabs.

J.R. Davies, 27 Lorindale Ave., Toronto, Ontario, Canada.

UNIVERSAL

1925-1928.
Pressed steel frame of 3 1/2" x 3" studs at 4' centers clad with asbestos cement channels 1' high x 8' wide. Interior panels similar 4' wide, 8' high. Panels formed permanent shuttering for poured concrete, reinforced. One thousand houses erected in southern England mainly.

CONCRETE MONOLITHIC
MONOLITHIC CONSTRUCTION

Sub-Classifications
- Solid Concrete
- Cavity Wall Monolithic Concrete
- Monolithic Integrally Insulated Concrete
- Mud or Earth Walling

Case Sheets
- Aychar
- Easiform House
- Monolithic Concrete
- Neff Airfoam
CONCRETE MONOLITHIC

ABERDEEN CORPORATION
Houses
Aberdeen, Scotland.
Concrete poured. Permanent internal shuttering of insulation material.
Aberdeen Corporation Houses, Aberdeen, Scotland.

AIRFOAM HOUSING
1190 East Broadway Street,
Hewlett, Long Island,
U.S.A.
A shell concrete elliptical section cast on rubber reusable form (inflated).
Not very applicable for housing. Costly.
Airfoam Housing, 1190 East Broadway Street, Hewlett, Long Island, U.S.A.

AUSTRALIAN PLASTER HOUSE
Bernard Evans,
Aychar House,
Warrigal Road,
Moorabbin,
Melbourne, Australia.
Reinforced plaster room has a sized form around which is constructed brick walling and roofing.

AYCHAR
Aychar Pty. Limited,
5 Warrigal Road,
Moorabbin S/20,
MELBOURNE, Australia.
Bernard Evans, Architect-originator. Whole rooms prefabricated in reinforced plaster, with ceiling.
Rooms assembled into house. Roof supported on room units. Brick or otherwise veneered.
Aychar Pty. Limited, 5 Warrigal Road, Moorabbin S/20, Melbourne, Australia.

BANKS
J.S. Banks,
U.S.A.
Concrete formed in situ.
Monolithic concrete. Laid in two skins in situ work.
Precast concrete studs bridging cavities placed in formwork.

BOX FRAME (R.C. HOUSING)
Yorks, Rosenberg and Mardall,
Architects, England.
Reinforced concrete Box Frame construction for row houses.
R.C. Housing, Yorks, Rosenberg and Mardall, Architects, England.
### CONCRETE MONOLITHIC

#### BRITISH ARMY HOUSE

11' 8" x 8' 0" gypsum panels manufactured on site, forming inner skin. No-fines concrete is then poured. Ring beam of dense concrete at 1st floor height. Partitions are of no-fines sandwiched between plaster panels. Twenty units at Meresfield.

---

#### CANADIAN SCHOKBETON
Canadian Schokbeton Ltd., 4450 Cote Des Neiges, Montreal 25, Quebec, Canada.


---

#### CAST RENDERED

8" no-fines concrete, Clinker concrete 1 1/2" external facing poured integrally with structural concrete.

---

#### CONCRETE CAVITY CONSTRUCTION
Kynl Miroslav, Box 33, Station B, Hamilton, Ontario, Canada.

In situ poured concrete cavities construction. Continuous wall poured in 10" lifts. Insulated with non-hygroscopic insulator.

---

#### DURA WALL CONSTRUCTION
J.R. Davies, 27 Lorindale Avenue, Toronto, Ontario, Canada.

5' 4" wide x 8' 0" high panel based on 16" module. (Saco walls which are similar have been accepted).
CONCRETE MONOLITHIC

EASIFORM
John Laing & Son
Limited,
Bunns Lane,
London N.W. 7,
England.

In situ concrete construction with cavity. Using steel forms. Floors cast monolithically with walls. U = 0.26 (Cavity Walling). Outer leaf 3 1/2" natural concrete. 2" cavity. Inner leaf 3 1/2" clinker concrete. Copper wall ties.

EDISON
Edison Cement Corporation,
(Ingersoll System),
U.S.A.

Concrete formed in situ. Whole house poured monolithically.

EDISON T.A.
U.S.A.

1908. Whole house poured in situ. Concrete.

EVANS, BERNARD
5 Warrigal Road,
Moorabbin, S/20,
Australia.

See Aychar under CM.

FELLGREN
C.W. Fellgren,
U.S.A.

Concrete formed in situ. Grooved studs cast into monolithic concrete to form strapping for internal plaster board finish. Wood nailing strips similarly incorporated in poured concrete floor slabs.

FLAGG
Ernest Flagg,
U.S.A.

Concrete formed in situ. Rubble concrete walling poured in situ. Conventional flooring and roofing 3' 9" module used for positioning internal partitions.

John Laing & Son Limited,
Bunns Lane,
London N.W. 7,
England.


IBEC
Ibec Housing Corporation,  
30 Rockefeller Plaza,  
New York, N.Y., U.S.A.  

8" poured in situ concrete walls lifted by crane.  
Floor and roof slabs also cast in situ.  
See Tournelayer.  
Houses at Norfolk, Virginia. (F.H.A. Regional Office).

INGERSOLL
C.H. Ingersoll,  
U.S.A.  

1918.  
Concrete formed in situ.  
Finishes rendered internally and externally.  
Similar to Edison system.  
115 houses in New Jersey.


KNIPE
L.G. Knipe Insulated Concrete System Limited,  
California, U.S.A.  

1925.  
Concrete formed in situ.  
Monolithic concrete poured against gypsum blocks forming T columns, reinforced, rendered internally and externally.  
Some houses erected in California.


KUGELHAUS  
(Round)  
Dr. J.W. Ludowici,  
Jockgrim/Rheinpfalz, Germany.  

Spherical House prefabricated as one unit of monolithic shell concrete, needs no foundation. Outside stuccoed inside insulation. Wood stud frame partitions. Interior finished and furnished, integrally.  
Flown to site by helicopter or floated by the water.

Dr. J.W. Ludowici, Jockgrim/Rheinpfalz, Germany.
CONCRETE MONOLITHIC

LAING J.
Bunns Lane,
London N.W. 7,
England.

See Easiform House (No-Fines), under CM.

LE TOURNEAU HOUSE
Le Tourneau Inc.,
Tococoa, Georgia, U.S.A.
also
W. H. Moorhouse
Monolithic Housing Corporation,
2057 Metcalfe St.,
Montreal, Quebec,
Canada.

5" concrete precast shell
laid by machine.
1 storey only.
U = 0.304.
F.H.A. approved.

Le Tourneau Inc.,
Tococoa, Georgia,
U.S.A.
also
Monolithic Housing Corporation,
2057 Metcalfe St.,
Montreal, Quebec,
Canada.

LURIE

See Lurie under MSF.

MONOLITHIC COARSE AGGREGATE

Exterior walls approx. 8" thick
interior partitions 2" and 4" thick.

Post War Bulletin Study #1,

MONOLITHIC FOAMED SLAG
Foamed Slab Construction and General Engineering Company Limited,
56 Commercial St.,
Dartmouth, Nova Scotia,
Canada.

10" in situ poured.

Foamed Slab Construction and General Engineering Company Limited,
56 Commercial St.,
Dartmouth, Nova Scotia,
Canada.

MONOLITHIC HOLLOW WALL
Monolithic Hollow Wall Company,
California, U.S.A.

1925.
Inventor (Elmer W. Marten).
Concrete formed in situ.
Metal core forms used for forming cavities within monolithic construction (reinforced), flooring and roofing conventional. Extensively used in California.

CONCRETE MONOLITHIC

MORRILL
Milton Dana Morrill, U.S.A.

1908. Concrete formed in situ. Standard metal 24" square moulds. Widespread use up to 1931.


NEFF AIRFOAM HOUSE (Bubble)
Wallace Neff, Architect, U.S.A.

Blown up rubber form circular.


NO-FINES
(BOSWELL HOUSE)


NO-FINES (CONCRETE CLINKER)

Unit Construction Company, Wilson Lovatt & Sons Ltd., Clinker Aggregate. 9" walls rendered both sides, floor and roof of 3" reinforced concrete. U= 0.29.

"Report on Post War Building Study No. 1".

NO-FINES (DURACRETE)
Winston Park Development Ltd., 843 Wilson Avenue, Downsview, Ontario, Canada.


NO-FINES (KRESZE & DEINIGER)
Germany.

Originators of No-Fines concrete Highrise Buildings.

NO-FINES (SSHA)
Scottish Special Housing Association, 15-19 Palmerstone Place, Edinburgh, Scotland. also England.

1940 to 1942. 8" to 1" no-fines concrete poured in situ wall construction up to 12 storeys. U = 0.44 (8" wall). 269 houses built in Scotland up to 1952.

CONCRETE MONOLITHIC.

NO-FINES (WIMPEY)
G. Wimpey,

ON SITE CONCRETE
E. O'Sullivan Limited,
St. Mary Cray, Kent, England.
also
Montreal, Quebec, Canada.

PORETE
Porete Manufacturing Co.,
Newark, New Jersey, U.S.A.

PUIBETON
A. W. Van Der Poll,
(Pollbouw, Hemmstade)
J. Van Egteren,
Enchede, Holland.

R. B. M.
N. V. Rijnlandesche
Betonbouw, Maatchappij,
Delft.
(N. V. Verenigde
Aannersbedrijven, v.h.

RONDAVEL HOUSING
J. F. Will
Kericho Tea Estate,
Lake Victoria,
Kenya.


Concrete formed in situ. Lightweight steel frame at 12' centers imbedded in lightweight concrete (gypsum). One building constructed at Newark, New Jersey.

2 storey construction. Monolithic structure of outer and party-walls poured in situ. K = 1.49 Kcal/sq.m.HoC (outside walls).

Used for up to 5 storey houses. Outer walls are cavity walls, external cavity wall of brickwork, inner cavity wall of lightweight concrete. Party and inner walls consist of prefabricated reinforced lightweight columns with filling.

Round houses 18' diameter, roofs domed. Metal internal screens. 3" concrete shuttered in steel sheets formed in one day.

E. O'Sullivan Limited,
St. Mary Cray, Kent, England.
also
Montreal, Quebec, Canada.


<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Roorkes, India.</td>
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</thead>
<tbody>
<tr>
<td>United States Gypsum Company, U.S.A.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TAVARES HOUSES</th>
<th>Poured concrete (exploded aggregate). Method used for building U.S.A. Navy boats. All services in situ.</th>
<th>Charles Tavares, San Diego, California, U.S.A.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charles Tavares, San Diego, California, U.S.A.</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>THERMOCON</th>
<th>8&quot; thermocon U = 0.155. Whole house poured as one.</th>
<th>Higgins Homes, New Orleans 19, U.S.A.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higgins Homes, New Orleans 19, U.S.A.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UNIVERSAL HOUSING COMPANY LIMITED</th>
<th>1925. Solid reinforced concrete wall faced with asbestos cement thickness 7&quot;. Pressed steel/stanchions 3 1/2&quot; x 2&quot; at 4' 0&quot; centers, clinker aggregate. U = 0.29 (walls). U = 0.43 (ceilings).</th>
<th>Universal Housing Company Limited, England.</th>
</tr>
</thead>
<tbody>
<tr>
<td>England.</td>
<td></td>
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</table>

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</thead>
<tbody>
<tr>
<td>Van Guilder Double Wall Company, U.S.A.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### CONCRETE MONOLITHIC

**WEDBERG**  
Axel C. Wedberg,  
U.S.A.  
1925.  

**WOOD MASONRY**  
See Wood Masonry under WPL (Special).

### Mud or Earth Walls

**MUD WALLING**  
D.S.I.R.  
England.  
Study by W.R. Jaggard for Amesbury Cottages, Wilts, 1921.  
Mud walling from chalk, straw and water rammed into shuttering in 1' 8" lifts. Hyrrib and concrete for floors. Trussed roof. Double boarded roof with air space.

**RAMMED EARTH**  
Cajon  
 Posts and beams of timber filled with rammed earth.  
Neubauer, p.27, Housing & T.C.P.  
1950 Bulletin No. 4. U.N.

**RAMMED EARTH**  
Pise de terre  
Mud rammed between temporary shutters.  
Neubauer, Housing & T.C.P.  
Bulletin No. 4. U.N.

**RAMMED EARTH**  
U.S.A.  
Poured Adobe or mud walling.  
Neubauer p. 27, Housing & T.C.P.  
Bulletin No. 9. U.N.

**RAMMED EARTH**  
England.  
English Cob.  
Stiff mud placed without shuttering.  
Neubauer, Housing & T.C.P.  
Bulletin No. 4. U.N.
# AYCHAR PRECAST ROOMS

**Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.**

1. **Non-Traditional.**  
   Aychar Pty. Ltd.,  
   (originator: Bernard Evans)  
   5 Warrigal Road, Moorabbin,  
   Victoria, Australia.

**Date and Place of Origin.**


**Materials Used.**

   (2" minimum thickness).

**Description.**

4. Room units are cast in steel and concrete moulds at factory.  
   Floor is prepared before delivery of room units. Units are strong enough to carry roof, cladding and own load, only.

**Development to Date.**

5. 25 buildings in Melbourne, Australia.

**Comment.**

6. Suitable only for 1 storey construction.

**References.**

7. Division of Building Research,  
   Commonwealth Scientific and Industrial Research Organization,  
   Melbourne, Australia.
Floor and roof construction may vary according to custom and conditions.

- tile roof felt underlay.
- wood roof rafters.
- wood battens.
- ceiling joists.
- gutter.
- eaves fascia.
- asbestos cement soffit.
- plasterboard ceiling.
- reinforcing.
- 3 1/2" natural aggregate concrete.
- 3 1/2" clinker concrete.
- plaster skimming coat.
- 3/4" t. and g. flooring.
- floor joists.
- plasterboard ceiling.
- twisted copper wall ties.
- reinforcing.
- finish of stone chippings on cement rendering.
- 5/8" mastic asphalt flooring.
- bituminous felt membrane.
- 3 1/2" concrete oversite.
- hardcore.
- concrete foundation.

GROUND FLOOR AND FOUNDATION

easiform house
December, 1958.
**EASIFORM HOUSE**

<table>
<thead>
<tr>
<th><strong>Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.</strong></th>
<th><strong>1. Non-Traditional.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sponsors: J. Laing and Son Limited.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Date and Place of Origin.</strong></th>
<th><strong>2. Southern England about 1928.</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Materials Used.</strong></th>
<th><strong>3. Reinforced concrete externally, clinker concrete internally.</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Description.</strong></th>
<th><strong>4. U-0.29.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Early Easiform houses were built with solid concrete walls, sheet shows a later form using rising shuttering in which both leaves are cast at the same time.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Development to Date.</strong></th>
<th><strong>5. -</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Comment.</strong></th>
<th><strong>6. Boswell House is similar only with both walls in clinker concrete.</strong></th>
</tr>
</thead>
</table>

| - | - |
Roof construction may vary according to customs and conditions.

- Roof shingles
- 7/8" sheathing
- Wood roof rafters
- Wood ceiling joists
- Gutter
- Eaves fascia
- Timber plate bolted to wall
- Plywood eaves soffit
- Plaster ceiling
- 9" walls of poured in situ concrete
- Wood skirting
- Wood floor on grounds
- Dense concrete floor slab
- Cement rendering
- Plaster
- Wood skirting
- Damp proof membrane
- Wood floor on grounds
- Dense concrete slab

Monolithic concrete

December, 1958.
MONOLITHIC CONCRETE

1. Non-Traditional.
   System used by several U.K. firms.
   Also used in Germany.


3. Concrete.

4. Clinker concrete wall plastered both sides has U=0.30. "No-fines concrete" is concrete with no fine aggregate included (i.e. sand, etc.). Clinker whinstone gravel or blast furnace, coarse aggregate is used.

5. Large number of dwellings in U.K. and elsewhere since 1930.

6. This type of construction is used in conjunction with many varying types of roof and floor construction.

Method of construction.
A 24'0" in diameter circular concrete slab is laid on the ground. The form, consisting of a large rubber bag is then placed on the slab, secured at the edge and inflated to form the shape of a hemisphere. Door and window forms are placed in position against the side of the bag. A layer of 1" concrete 'gunite' is sprayed over wire mesh reinforcement followed by a 1" layer of insulation and a 2" layer of concrete sprayed over the insulation. After the concrete has set the balloon form is deflated and window forms removed.

2" concrete.
1" insulation.
1" concrete 'gunite' on wire mesh.
hooks set in concrete slab to secure the edge of the balloon form.
hardcore.
concrete slab.

Scale of feet

Neff Airform
December, 1958.
**NEFF AIRFORM**


3. Concrete.

4. An inflated rubber half-balloon is blown up over a concrete slab on grade. Windows are placed against the form and a concrete and insulation sandwich poured producing a hemispherical shaped house.

5. First developed at Falls Church, Virginia in 1942 and subsequently a variation of this in various parts of the world especially the tropics.

6. -

STRUCTURAL SANDWICH AND PLASTIC SYSTEMS
STRUCTURAL SANDWICH AND PLASTIC SYSTEMS

Case Sheets
Buell House
Monsanto Plastic House
Panelfab
Foamed Plastic Hut
STRUCTURAL SANDWICH AND PLASTIC SYSTEMS

ACORN HOUSES
(UNFOLDING HOUSE)
Techbuilt Incorporated,
55 Brattle Street,
Cambridge,
Massachusetts, U.S.A.
Foundation: steel on cone piers,
2" sandwich of plywood skins on
paper honeycomb core. Never
achieved mass production.
Several at Concord Mass.
Unfolding package. $U = 0.19$.

"Architectural Journal",
Jan. 5th, 1950.
"Life Magazine",
1948.
"Architectural Record"
May 1950.

ALLANTA Z HOUSE
Societe d'Exploitation
d'L'Habitation Moderne,
France.
Asbestos - cement sheeting
joined to form a box column
reinforced with wool rails.
Grid 2' 0". Asbestos roofing.

"Prefabrication",
April 1954.

ARCTIC SHELTER
United States Army
U.S.A.
 Aluminium structural sandwich
with t. & g. joints and rubber
grommets. 3" x 4' 0" x 8' 0"
Honeycomb core in panels.

"Engineering News
Records",
August 1950.

ARCTIC UNITS
Arctic Units Limited,
Toronto, Ontario,
Canada.
1958.
Northern houses, totally
sandwich built using plywood
skins bonded to styrofoam core.
Inset hook joints with
polyurethane gaskets (Canadian

Arctic Units Limited,
Toronto, Ontario,
Canada.

BUELL
T.H. Buell & Company,
Architects,
Denver, Colorado,
U.S.A.
Unitary. House in sections 10'
x 19' made up in panels 3' wide
by storey height of 1' insulation
(rigid) secured by metal stripping
bolted. Roof and metal joists
and metal decking. Intended to be
produced in same manner as car.

"The Evolving House,
III, Rational Design",
(Bemis).
"American Architect
& Architecture",
September 1936.

CONVAIR HOUSE
Convair Aircraft,
U.S.A.
1940.
A structural aluminum faced
honeycomb core.
Sandwich panel.

Convair Aircraft,
U.S.A.
COPCO HOUSE
Copco Steel & Engineering Company,
14035 Grand River Avenue,
Detroit 27, Michigan,
U.S.A.

DYLITE SANDWICH PANELS
Koppers Incorporated,
Monaca, Pennsylvania,
U.S.A.
1958. Hardboard and plywood skins bonded to foam bead polystyrene ("Dylite"). Panels used as wall, roof and partitions in several Detroit homes.

EAST COAST AIRCRAFT
House
East Coast Aircraft Incorporated,
Mount Vernon, N.Y.,
U.S.A.
Igloo and cylindrical forms of cellulose acetate interior.
Fibreglass exterior.
Divisible into quadrilateral units to be assembled as required.
Standard Hut size 14' 0" diameter.

ELEMENTHUS
See Elementhus under WPL.

FIBREGLASS-STYROFOAM HOUSE
Enu Manufacturing Company,
Flint, Michigan,
U.S.A.
1958. Structural sandwich with fibreglass plastic skins on styrofoam core, low cost 3-bedroom house. No other details.

HASKE LITE
(Styrofoam)
(Bendix House)
Grand Rapids,
Michigan, U.S.A.
Rigid fibreglass facing bonded to core.
See Styrofoam House.

C. M. H. C. HOUSE
House No. 4,
Ajax, Ontario,
Canada.
Experimental foam glass house with glued joints and floating slab.
Erected by C. M. H. C. 1948.

Koppers Incorporated,
Monaca, Pennsylvania,
U.S.A.
East Coast Aircraft Incorporated,
Mount Vernon, N.Y.,
U.S.A.
Enu Manufacturing Company,
Flint, Michigan,
U.S.A.
Haskellite,
Grand Rapids,
Michigan, U.S.A.
D.B.R. Report,
No. 30,
N.R.C. Ottawa.
STRUCTURAL SANDWICH AND PLASTIC SYSTEMS

JICWOOD HOUSE

See Jicwood House under WSSP.

KERR PANEL

A plastic faced panel with wood frame. Loadbearing weight 60 lbs. comp. strength, 20,000 p.s.i. K = .09.

A.H. Kerr & Company Incorporated, 2950 Winona Avenue, Burbank, California, U.S.A.

Used for refrigerators as well as housing.

LAMELLA

A system formerly developed in Germany in 1923. Used in U.S.A. for larger buildings.

F. Hills and Sons, Limited, Norton Road, Stockton-on/Tees, England.

An arch frame composed of many short pieces of wood bolted together in a diamond shape pattern.

LE RICOLAIS

See Le Ricolais under WFH.

M.G.P.

Sandwich loadbearing panels supporting timber frame trusses. Metal studs between panels. Panels of composite plywood insulation board.

Matern, Graff & Paul Architects, U.S.A.

Some defence housing contracts in U.S.A.

1942.

"New Pencil Points", April 1943.

M.O.W. Survey of Prefabrication.

MONSANTO PLASTIC HOUSE

Plastic structural sandwich wall, roof and floor units. Large sections. Experimental house.

Cambridge, Massachusetts, U.S.A.

"Architectural Evolution & Engineering Analysis of A Plastic House of the Future", M.I.T.
<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Address</th>
<th>Year</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAHB RESEARCH HOUSE</td>
<td>NAHB Through Andy Place,</td>
<td>1958</td>
<td>Uses Koppers sandwich panels as above-walls, partitions and roof.</td>
</tr>
<tr>
<td></td>
<td>South Bend, Indiana, U.S.A.</td>
<td></td>
<td>NAHB Through Andy Place, South Bend, Indiana, U.S.A.</td>
</tr>
<tr>
<td>NATIONAL HOMES</td>
<td>NATIONAL HOMES SANDWICH HOUSE</td>
<td>1957</td>
<td>Walls, roof and partition of structural sandwiches using hardboard and aluminum skins on several core materials. Concrete slab on grade floor.</td>
</tr>
<tr>
<td>PORTABILT HOUSES</td>
<td>(Jamesway) Francis Hughes &amp; Associates Limited, 4850 Amiens Street, Montreal North, Quebec, Canada. also 51 James Street, Ottawa, Ontario, Canada.</td>
<td>Laminated wood semi-circular arch roof panels of vinyl fabric 1 1/2&quot; rockwool attached to floor panels. Used by the United States Army. See Francis Hughes (MP).</td>
<td>&quot;The Dynamic North, Book 2&quot;, U.S.A. Navy.</td>
</tr>
</tbody>
</table>
FOAMED PLASTIC HUT
(XF 57-1)
S. Gitterman,
Central Mortgage &
Housing Corporation,
Canada.
Homogeneous foamed plastic
wall, roof and floor panel
construction, bonded in situ,
4' 0" module.
C. M. H. C. File:
110-3-1-2.

STYROFOAM SANDWICH
HOUSES
Dow Chemical Company,
Midland, Michigan,
U.S.A.
1950.
Plywood skins bonded to foam
polystyrene "Styrofoam" core
for wall and roof panels. In-
sulated sandwich spline joints.
Dow Chemical
Company, Midland, Michigan,
U.S.A.

UNINORM
Constructions
Demontables Uninorm,
France.
1938.
Timber frame. 2.52m. wide by
storey high, locked into one
another. Some army buildings
erected.
M. O. W. Survey of
Prefabrication.
"Arch. d'Aujourd'hui", February 1939.

U.S. FOREST PRODUCTS
LAB SANDWICH HOUSE
Madison, Wisconsin,
U.S.A.
1948.
Experimental structural sand-
wich floor, wall, partition and
roof panels. Plywood skins
(alternatively kraft-veneer or
aluminum skins) bonded to paper
honeycomb cores. Sandwich spline
joints.
U.S. Forest Products
Lab., Madison, Wisconsin,
U.S.A.

UTLEY-LINCOLN SYSTEM
INCORPORATED
Utley-Lincoln System
Incorporated,
723 East New Hampshire
Avenue,
Royal Oak, Michigan,
U.S.A.
Metal faced paper honeycomb
core structural sandwich.
Utley-Lincoln System
Incorporated, 723 East New
Hampshire Avenue, Royal Oak, Michigan,
U.S.A.

VINYLITE
Anonymous (Panels
designed to demonstrate
Vinylite, a product of
Carbine & Carbon
Corporation),
U.S.A.
1934.
Plastic panel 8' high x 2' 6" x
2" bolted together. Experimental
only. Joined horizontally to
metal rod passing through
panel. No development
recorded.
"The Evolving House
III, Rational Design", (Bemis).
BUELL HOUSE

1. Non-Traditional.
T.H. Buell and Co.,
Denver, Colo.

2. U.S. Pre-1936.

3. Metal.

4. House is entirely prefabricated in the style of an automobile. Sandwich panels are joined by metal ribs. Whole parcel is delivered in sections measuring 10'-0" x 19'-0" complete with fixtures. Weight is 3 lbs. per cu. ft.

5. -

6. -

7. American Architect and Architecture,
   September, 1936.
   "The Evolving House, III - Rational Design."
WHOLE HOUSE ASSEMBLY

- Hyperbolic paraboloid roof section.
- Sandwich panel.
- Laminated wood perimeter beam.
- Roof bents connected to perimeter beam.
- Reinforced plastic shell.
  (woven roving cloth and polyester resin).
- Floor bents cantilevered from concrete foundation.
- Top shell of floor bents and central section floor sandwich fixed to concrete foundation wall with anchor bolts. Floor sandwich panel.
- Steel channel.
- Angle support for lower section of floor bents.
- Concrete foundation.
- Laminated beam.
- Concrete floor.

MONSANTO PLASTIC HOUSE
December, 1958.

Scale of feet
12 0 1 2 3
**MONSANTO PLASTIC HOUSE**

| Traditional, Non-Traditional, Manufacturer, Sponsor or Builder. | 1. Non-Traditional. Monsanto Chemical Company, 100 Monsanto Avenue, Springfield, 2, Massachusetts, U.S. |
| Date and Place of Origin. | 2. Massachusetts Institute of Technology, 1957 U.S. |
| Materials Used. | 3. Plastics. |
| Description. | 4. Units are made up with a reinforced polyethylene glass fibre skins and a core of polyethylene foam and paper honey combs. The wings of the house act as cantilever beams supported from the central core. |
| Development to Date. | 5. One experimental house built at Springfield, Massachusetts, and subsequently moved to Hollywood, California. |
| Comment. | 6. This project was exploratory rather than an attempt at solving the housing problem. |
Panelfab roof units fixed at eaves by standard panelfab angle ties
panelfab roof cleats
panelfab extruded aluminum fascia
3" panelfab wall unit
.032" aluminum facing
panelfab extruded aluminum standard interlock joint
base channel bolted to foundation
concrete raft foundation

Panelfab (December, 1958)
| Date and Place of Origin. | 2. Florida, 1955. |
| Materials Used. | 3. Phenolic impregnated Kraft honeycomb core with aluminum facing. |
| Description. | 4. Panel joints are designed in such a way as to transmit stresses from one panel to the other thereby obviating any need for foaming. U=0.17 (3" external wall panel). Joint has same U factor. |
| Development to Date. | 5. Manufacturer alleges fair degree of use. |
| Comment. | 6. This system is significant mainly for the jointing detail. Panels can be assembled in a variety of ways and for a variety of purposes. |
| References. | 7. Sponsors’ literature. |
WALL UNIT JUNCTION

UNIT OF CONSTRUCTION

Styrofoam (foam plastic) roof slabs faced with fibre glass polyester.

Styrofoam wall panels + vinyl cloth backed skin both sides

Styrofoam window lintel 10" deep

Vinyl cloth backed "battens"

Panels jointed with urea adhesive "spot set by radio frequency"

6" epoxy bead-foam polystyrene faced with fibre glass epoxy top and bottom

10" sand bed

topsoil and sod

Scale of feet

12 0 1 2 3

foamed plastic hut

December, 1958.
FOAMED PLASTIC HUT

<table>
<thead>
<tr>
<th>Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Research Council, Division of Building Research, Ottawa, Ontario.</td>
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</table>

<table>
<thead>
<tr>
<th>Date and Place of Origin.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Materials Used.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Expanded Polystyrene, Polyester with fibre glass reinforcing.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. The floor panels 12' long x 4' wide x 6&quot; thick had plastic pipe embedded in them. The panels were assembled with an epoxy adhesive over the sand bed. A plastic pipe coupling with wire coiled around it was installed over the pipe ends and fused by the application of 6 volt D.C. after the assembly was completed. The wall and roof panels were assembled with a urea adhesive. Conventional wood window and door assemblies were installed in openings provided for them.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Development to Date.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. One built for experimental purposes.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Comment.</th>
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<tbody>
<tr>
<td>6. -</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>References.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Central Mortgage and Housing Corporation, Ottawa, Ontario.</td>
</tr>
</tbody>
</table>
METAL STUD FRAMES
## METAL STUD FRAMES

<table>
<thead>
<tr>
<th>Sub-Classifications</th>
<th>Non Panelized Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Panelized Systems</td>
</tr>
<tr>
<td></td>
<td>Special Systems</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Case Sheets</th>
<th>Birmingham Steel Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B.I.S.F. Steel Frame A</td>
</tr>
<tr>
<td></td>
<td>B.I.S.F. Steel Frame B</td>
</tr>
<tr>
<td></td>
<td>Harman</td>
</tr>
<tr>
<td></td>
<td>Hills Steel Frame House</td>
</tr>
<tr>
<td></td>
<td>Keyhouse Unibuilt</td>
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<tr>
<td></td>
<td>Lustron</td>
</tr>
<tr>
<td></td>
<td>Maison Phenix</td>
</tr>
<tr>
<td></td>
<td>Braithwaite Unit Frame</td>
</tr>
<tr>
<td></td>
<td>U.S. Steel Home</td>
</tr>
<tr>
<td>METAL STUD FRAME</td>
<td>MSF</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------------------------</td>
<td>-----</td>
</tr>
<tr>
<td><strong>AIROH HOUSE</strong></td>
<td></td>
</tr>
<tr>
<td>Aluminum Company of Canada, 1700 Sun Life Building, Montreal, Quebec, Canada.</td>
<td></td>
</tr>
<tr>
<td><strong>ALFRAME</strong></td>
<td></td>
</tr>
<tr>
<td><strong>ALUMINAIRE</strong></td>
<td></td>
</tr>
<tr>
<td>See Aluminaire under MPB.</td>
<td></td>
</tr>
<tr>
<td><strong>ALUMINUM AIR BORNE PREFAB</strong></td>
<td></td>
</tr>
<tr>
<td>Dodge Cycleweld Division, Chrysler Corporation, U.S.A.</td>
<td></td>
</tr>
<tr>
<td>Whole house. Units 20' 0&quot; x 40' 0&quot; x 8' 0&quot;. Weight 9,253 pounds.</td>
<td>&quot;Light Metal Age&quot;, February 1950.</td>
</tr>
<tr>
<td><strong>ALUMINUM FRAME STRUCTURES</strong></td>
<td></td>
</tr>
<tr>
<td>Whole house construction, aluminum frame.</td>
<td></td>
</tr>
<tr>
<td><strong>ARCON HOUSE</strong></td>
<td></td>
</tr>
<tr>
<td>Wartime Temporary House, England.</td>
<td></td>
</tr>
</tbody>
</table>
METAL STUD FRAME

ARCY CORPORATION
Pittsburgh, Pennsylvania, U.S.A.
1936. Pressed steel units. Precast gypsum planks up to 6' 0" wide. 18" module.

ATHOLL
Metal frame-skyscraper. Steel T studs supporting steel plates outside and wood frame plasterboard inside. 2 storeys. U = 0.33.

BARTNING
Otto Bartning, Berlin, Germany.
Pre-1933. 1 meter spaced framing. Standard panel of storey height. Panels 2 1/4" cork faced with steel.

BAR-Z-GUNITE
Soule Steel Corporation, Los Angeles, California, U.S.A.
Pre-1935. Open web steel studs at 24" center faced inside and out by 1 1/2" gunite on expanded metal.

BATES
Walter Bates Steel Corporation, U.S.A.
Metal frame-close spaced. Steel angle studs supporting stucco and plaster interior, exterior facings. Floors of concrete on corrugated steel sheets on open web joints. Roof structure similar.

M.O.W. Survey of Prefabrication.


M.O.W. Survey of Prefabrication.

M.O.W. Survey of Prefabrication.

"The Evolving House III, Rational Design" (Bemis).
**METAL STUD FRAME**

<table>
<thead>
<tr>
<th><strong>BENDER STEEL HOUSE</strong></th>
<th><strong>BERLOY</strong></th>
<th><strong>BIRMINGHAM CORPORATION HOUSE</strong></th>
<th><strong>B.I.S.F. STEEL HOUSE</strong> (Type A)</th>
<th><strong>B.I.S.F. STEEL HOUSE</strong> (Types B &amp; C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bender Body Company,</td>
<td>The Berger Manufacturing Company,</td>
<td>City Engineer, Architects,</td>
<td>Steel frame with brick and</td>
<td>Steel frame with steel siding and</td>
</tr>
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</tbody>
</table>
**METAL STUD FRAME**

<table>
<thead>
<tr>
<th>Company</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BOHLER STAHLBAU</strong></td>
<td>Berlin, Germany. Pre-1933. Steel frame at 4' 0&quot; centers. Precast cinder infill block.</td>
<td>M.O.W. Survey of Prefabrication.</td>
</tr>
<tr>
<td><strong>BRISTOL ALUMINUM PREFAB</strong></td>
<td>England. Intention to build one house in Montreal, Quebec. U = less than 0.15.</td>
<td>Bristol Aluminum Prefab., England.</td>
</tr>
</tbody>
</table>
**METAL STUD FRAME**

**CORKANSTELE**
Corkanstele Inc.,
(Division of Cork Insulation Company Incorporated),
U.S.A.

Pre-1936.
Some houses on Long Island.
Metal frame close-spaced.
Steel frame at 2' centers.
3" cork slabs between studs rendered internally and externally. Open web joisted flooring with concrete slabs over and ribbed lath and plaster ceilings.

**CONVENTRY HOUSE**
Architect: D. E. Gibson,
City of Coventry, England.

2 storey tubular frame lined internally with wood framed, wood wool panels. Lower exterior finish: 1 1/2" concrete. Upper exterior finish: asbestos cement.

**CRANWELL**
Cranwell Syndicate Limited,
London W.1, England.

Steel frame "King" hollow terracotta clad. Plaster blocks internally, pitched roof.

**CROWE HOUSE CONSTRUCTION**
See Crowe House under CP

**CUSSINS**
Cussins Limited,
Newcastle-on-Tyne, England.

1946.
Steel frame (Kariscol).
Exterior face of brick panels. Interior finish of insulation board and plaster.

**DEXION**
England.

Slotted steel angle frame, used for tropical housing Burma, Greece, West Indies.

**MSF**

"American Architect & Architecture",
September 1936.
"The Evolving House III, Rational Design",
(Bemis).


"Architectural Forum",
September 1947.

"Prefabication",
September 1954.
<table>
<thead>
<tr>
<th>Company</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOX METAL PRODUCTS CORPORATION</td>
<td>Aluminum frame and siding. F.H.A. approved.</td>
<td>Fox Metal Products Corporation, 1620 Blake Street, Denver 2, Colorado, U.S.A.</td>
</tr>
<tr>
<td>HAESLER</td>
<td>1930. Steel frame, wood wool insulation, brick veneer. 0.85 m. module. 95 houses at Celle.</td>
<td>&quot;Baugilde 1930&quot;. M.O.W. Survey of Prefabrication.</td>
</tr>
<tr>
<td>HANSEN CONSTEELAIR</td>
<td>1935. Steel frame at 24&quot; centers. Concrete cast round steel frame in horizontal position, then raised. Widths up to 20' 0&quot;. See also Carroll Tri Ply under CP.</td>
<td>M.O.W. Survey of Prefabrication.</td>
</tr>
</tbody>
</table>
METAL STUD FRAME

DUSSELDORFER STAHLHAUS

1926. Light welded steel frame, sheet shell panels. Whole walls lifted at a time. 3' 4" module stud spacing.

DYMAXION

See Dymaxion under MP.

"E" FRAME HOUSING COMPANY
Newton, Massachusetts, U.S.A.

Metal frame-close spaced; and panel. A Bemis design. Channel studs at 2' centers, supporting precast slab. Lined internally with plasterboard. Roofing: metal corrugated decking and concrete fill. A few houses.


FERRO-ENAMEL
Ferro-Envelope Corporation, Residence of Dudley-Clawson, Cleveland, Ohio, U.S.A.


FIELD
Howe & Lescaze, Architects, New York, N.Y., U.S.A.


METAL STUD FRAME

HARMAN CORPORATION
Broad & Chestnut Streets, Philadelphia 10,
Pennsylvania, U.S.A.

Steel frame and siding. F.H.A. accepted 1947.
Whole house based on car-body assembly. Metal
panels stiffened by metal studs at 3' 9" on centers.
Interior lining and batt insulation supported on
horizontal strapping.

HARMAN HOMES
W.H. Harman,
Wilmington, Delaware, U.S.A.

Light metal frame and metal panels.

HARMAN HOMES
Lindsay Structures (Canada) Limited,
64 Quebec Avenue, Toronto, Ontario, Canada.
also Wilmington 99, Delaware, U.S.A.

F.H.A. approved.
Steel frame and siding.

HARUNDALE HOMES
Glen Burnie, Maryland, U.S.A.

1,200 units built. Steel frame. Studs at 2' 0"
centers, nailable. Outer face 1" glass, fibre, paper
wire reinforcement, stucco. Inner face: paper vapour
barrier and plaster.

HEKA
Ways & Freytag,
Frankfurt-am-Main,
Germany.

Pre-1928.
Steel stud frame at 1.2m. to 1.5m. centers.
Precast concrete slabs between. 2 housing projects.

"Architectural Forum",
January 1947.

W.H. Harman,
Wilmington, Delaware, U.S.A.

"Engineering News Record",
June 12th, 1947.


M.O.W. Survey of Prefabrication.
<table>
<thead>
<tr>
<th>METAL STUD FRAME</th>
<th>MSF</th>
</tr>
</thead>
<tbody>
<tr>
<td>HILL</td>
<td>Steel frame.</td>
</tr>
<tr>
<td>HITCHINS</td>
<td>Frame of composite wood and steel stanchions. Other members of flat, cold rolled steel sections. Precast concrete cladding.</td>
</tr>
<tr>
<td>HOWARD J AND COMPANY LIMITED</td>
<td>United Kingdom.</td>
</tr>
<tr>
<td>INSULATED STEEL FRAMES</td>
<td>1936.</td>
</tr>
<tr>
<td>Insulated Steel Frames Inc., Amerston, New York, U.S.A.</td>
<td>4&quot; x 2&quot; x 18 g. steel channels in pairs at 2' 0&quot; centers, faced with wall-board and brick veneer.</td>
</tr>
<tr>
<td>INSUL STEEL CONSTRUCTION</td>
<td>Steel studs. Metal faced 2&quot; celotex panels. Open webbed steel floor frame.</td>
</tr>
<tr>
<td>J. &amp; L. JUNIOR</td>
<td>1926 to 1927.</td>
</tr>
<tr>
<td>Jones and Laughlin Steel Corporation, U.S.A.</td>
<td>Small I beams used very much in housing.</td>
</tr>
<tr>
<td>JULLIEN</td>
<td>1938.</td>
</tr>
<tr>
<td></td>
<td>M.O.W. Survey of Prefabrication.</td>
</tr>
<tr>
<td></td>
<td>M.O.W. Survey of Prefabrication.</td>
</tr>
<tr>
<td>Company</td>
<td>Year</td>
</tr>
<tr>
<td>----------------------</td>
<td>------</td>
</tr>
<tr>
<td>KASTNER A/G MUCHE-</td>
<td>1927.</td>
</tr>
<tr>
<td>PAULICK</td>
<td></td>
</tr>
<tr>
<td>K.D. HOMES LIMITED</td>
<td>4' 0&quot; modular wall panel. Light steel roof truss.</td>
</tr>
<tr>
<td>6 Chandos Street,</td>
<td></td>
</tr>
<tr>
<td>London W. 1, England.</td>
<td></td>
</tr>
<tr>
<td>KEYHOUSE UNIBUILT</td>
<td>Light steel braced frame sections 10' 0&quot; x 4' 0&quot;, 1/4&quot; asbestos cement trays, filled with wood wool, linings of plasterboard. Ruberoid roof. U = 0.16 (wall, 0.21 (roof), 0.25 (floor). Some war housing.</td>
</tr>
<tr>
<td>HOUSE</td>
<td></td>
</tr>
<tr>
<td>Gyproc Products</td>
<td></td>
</tr>
<tr>
<td>Limited, J. Sankey</td>
<td></td>
</tr>
<tr>
<td>&amp; Sons, J.</td>
<td></td>
</tr>
<tr>
<td>Brockhouse &amp;</td>
<td></td>
</tr>
<tr>
<td>Company Ltd.,</td>
<td></td>
</tr>
<tr>
<td>England.</td>
<td></td>
</tr>
<tr>
<td>LAFFERTY</td>
<td>1922.</td>
</tr>
<tr>
<td>LEA</td>
<td>1932.</td>
</tr>
<tr>
<td>(Bell-Livett)</td>
<td></td>
</tr>
<tr>
<td>England.</td>
<td></td>
</tr>
</tbody>
</table>
METAL STUD FRAME

LURIE
Metal Lath Manufacturers' Association, Chicago, Illinois, U.S.A.

1935.
Metal frame-skyscraper; metal frame-close spaced. Structural steel frame, storey height at 12' centers. Secondary horizontal members at 32" centers, and vertical members at 16" centers to which metal lath is attached, and stuccoed and backstuccoed. Interior skin of metal lath and plaster attached to primary vertical members. An attempt to avoid non-use of plaster in prefabrication buildings.

LUSTRON
Lustron Corporation, Columbus, Ohio, U.S.A.

1947.
Steel frame enamel steel panels. Production stopped in 1950. F.H.A. approved and financed.

MacFARLANE
Walter MacFarlane & Company, Glasgow, Scotland.

1926.
Cast iron studs and plates at 3' 7 1/2" centers. Single storey, rough cast exterior finish. Historic interest.

MSF
M.O.W. Survey of Prefabrication.

"Prefabication of Houses", (Kelly).
"Business Week", April & October 1948, October 1949.
"Fortune", Nov. 1949.
"Iron Age", April and June 1949.
METAL STUD FRAME

MAISON METALLIQUE
GRAMES
Pierre Vago, Architect, France.
1934. Tubular steel frame and panel insulation 38\" x 38\".

MAISON PHENIX
10 Rue Pergolese, Paris 16e, France.
Steel I columns at 1 m. centers, roof trusses at 2 or 4 m. lined internally with hollow 7 cm. plaster masonry blocks standing on site slab and 4 cm. x 40 cm. x 1 m. high. Concrete slabs externally and tied to steel frame and standing on concrete sill. Wood purlins. Tile covering.

MACOTTA CONSTRUCTION
83 Main Street South, Weston, Ontario, Canada.
also Macotta Corporation, 1640 East Hancock, Detroit, Michigan, U.S.A.
4\" steel studs (open web) at 24\" centers faced externally with procelain enamel, faced 1/2\" concrete slabs. No insulation.

MCKAY ENGINEERING COMPANY
Cleveland, Ohio, U.S.A.
Pre-1928. Steel frame. Close space studs, usually at 4\' 0\" centers. Various forms of cladding.

M.O.W. Survey of Prefabrication.

### METAL STUD FRAME

<table>
<thead>
<tr>
<th>MESSERSCHMIDT SYSTEM</th>
<th>1931. Steel frame with cross bracing and double panels of lightweight concrete filled with rockwool.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Jaffrey, Gulf Trading Company, 67 Yonge Street, Toronto, Ontario, Canada. also Dr. Willy Messerschmidt, Fertigungsgesellschaft Neue Technik mbH., Germany.</td>
<td>Mr. Jaffrey, Gulf Trading Company, 67 Yonge Street, Toronto, Ontario, Canada. also Dr. Willy Messerschmidt, Fertigungsgesellschaft Neue Technik mbH., Germany.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MEYER OTTENS</th>
<th>1931. Steel frame, asbestos, sheathing, wood wool slab, insulation 4' 0&quot; module.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>MOTOHOMES</th>
<th>Steel studs at 4' 0&quot; centers. Sandwich panels of 2&quot; insulation, faced with asbestos board.</th>
</tr>
</thead>
</table>

<table>
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<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(Dexheimer) C.H. Dexheimer &amp; Sons, Toledo, Ohio, U.S.A.</td>
<td>M.O.W. Survey of Prefabrication.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NOVELLE SYSTEM OF CONSTRUCTION</th>
<th>Steel studs at 2' 0&quot; centers with 3 layers of asbestos board. Flooring of steel joists at 2' 0&quot; centers covered with steel panels.</th>
</tr>
</thead>
</table>
METAL STUD FRAME

NU-WAY BUILDINGS  
(KENWAY HOME)  
620 Adelaide Street,  
London, Ontario,  
Canada.

Wood frame assembly part  
pre-cut part prefab. Shipped  
in whole house sections,  
conventional construction.  
Restricted to London area.  
1951.

PANELHOME  
CONSTRUCTION  
Polynorm Companies,  
Bunschoten, Holland.

Steel frame (light) with  
columns at 2' 0" centers  
roof trussed. Inner and  
outer panels are clipped  
between columns of clip-  
on cover strips. Outer  
panel is of asbestos cement,  
the inner is of aluminum  
foil backed hardboard.

PHEMALOID  
Haskelite Manufacturing  
Company,  
Chicago, Illinois,  
U.S.A.

1935.  
Pressed steel frame, resin  
bonded plywood sheeting.  
Joints caulked. Insulation  
in cavity. On site erection.  
A few built, 2' - 3' module.

PHENIX HOUSE  
Soc. des Maisons  
Phenix,  
19 Rue Francois 1,  
Paris 8, France.

1945.  
Steel frame. Concrete  
t. & g. slabs 1m. x 4dm. x  
4cm. thick. Erection in 1  
day. Several thousands  
since 1945.

MSF

"Canadian Building  
News", 1957.  
"Canadian Builder",  
October 1953.

Polynorm Companies,  
Bunschoten, Holland.

M. O. W. Survey of  
Prefabrication.  
A.I.S.C.  
"American Architect",  
September 1936.  
"Architectural  
Forum",  
December 1935.  
"Architectural Record",  
February 1937.

"Prefabrication",  
September 1954.
METAL STUD FRAME

PHOENIX
Phoenix Baugesellschaft GmbH, Berlin, Germany.

PHOENIX HOUSE
England.
Tubular steel frames and wood rails.

PIERCE HOMES
J. B. Pierce Foundation, Raritan, New Jersey, U.S.A.
1940.
Horizontal panels to form beams between columns. Non structural panels in wood.

PORCELAIN STEEL
Porcelain Steel Buildings, Inc., Columbus, Ohio, U.S.A.
1928.
Porcelain enamelled steel sheathing on in situ pressed steel studs at 4' centers. Storey height panels. Insulation between steel faces. Much commercial work some domestic.

PORTABILT
Francis Hughes & Associates Inc., 4850 Amiens Street, Montreal, Quebec, Canada.
See Portabilt under S.

PORTAL HOUSE (M.O.W.)
Ministry of Works Emergency Factory Made House. Metal frame, steel sheet on wood battens outside, plywood inside, insulated with aluminum foil. $U = 0.33$.

MSF


"Architectural Forum", May 1940.

"Architectural Record", August 1935.


"Prefabrikation of Buildings", (Richard Sheppard).
<table>
<thead>
<tr>
<th><strong>METAL STUD FRAME</strong></th>
<th><strong>MSF</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nils Poulson,</td>
<td></td>
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<tr>
<td>Hecla Iron Works,</td>
<td></td>
</tr>
<tr>
<td>New York, N.Y., U.S.A.</td>
<td></td>
</tr>
<tr>
<td><strong>PRESWELD FRAME</strong></td>
<td></td>
</tr>
<tr>
<td>Hills Patent Glazing</td>
<td>1943. Rolled steel welded lattice frame studs at 3' centers. Brick external veneer 3&quot; foamed slag blocks internal, plastered. Two storey structure.</td>
</tr>
<tr>
<td>Company Limited,</td>
<td></td>
</tr>
<tr>
<td>Albion Road,</td>
<td></td>
</tr>
<tr>
<td>West Bromwich,</td>
<td></td>
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<tr>
<td>Staffordshire, England.</td>
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<tr>
<td><strong>RELIANCE HOUSE</strong></td>
<td></td>
</tr>
<tr>
<td>Reliance Homes Inc.,</td>
<td>Whole house prefabricated in one piece. Metal stud frame, insulation lined, faced with wall-board and aluminum. Houses delivered in seven sections.</td>
</tr>
<tr>
<td>207 Oak Street,</td>
<td></td>
</tr>
<tr>
<td>Marion, Ohio, U.S.A.</td>
<td></td>
</tr>
<tr>
<td><strong>REYNOLDS</strong></td>
<td>1935. Studs (metal sheathed and filled with nailing composition) at 1' 4&quot; to 2' centers. A prefabricated but custom-made system. Brick veneer externally, plaster on metal lathing internally.</td>
</tr>
<tr>
<td>Reynolds Corporation,</td>
<td></td>
</tr>
<tr>
<td>New York, N.Y., U.S.A.</td>
<td></td>
</tr>
<tr>
<td><strong>RILEY CONSTRUCTIONAL SYSTEMS</strong></td>
<td>Cold, rolled steel sections. Aluminum cladding on glass quilt on wood frame. Plasterboard internally.</td>
</tr>
</tbody>
</table>
### METAL STUD FRAME

<table>
<thead>
<tr>
<th>Company</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SHIPSTON HOUSE</strong></td>
<td>Blackburn (Dumbarton) Limited, Castle Road, Dumbarton, Scotland. 81 houses up to 1958 in Ceylon for Admiralty &amp; Italian Air Force. Widespread aluminum frame with wood studs at 18&quot; o.c. 3' 0&quot; module (width of facing panel). Faced in horizontal corrugated sheets aluminum.</td>
</tr>
<tr>
<td><strong>SOULESTEEL COMPANY</strong></td>
<td>See Unibilt under MSF.</td>
</tr>
</tbody>
</table>
**METAL STUD FRAME**

**SPRYCRETE**

CONSTRUCTION

Mr. H. P. Falls,  
Box 31,  
Semiahmoo P.O.,  
White Rock,  
British Columbia,  
Canada.

Steel studding, concrete  
sprayed on wire mesh with  
cardboard fillers.  
Strapped internally.

"Acceptable Building  
Materials",  
C. M. H. C. Ottawa.  
1956.

**STEANE**

J. & A. Steane,  
Bournemouth, Hantz,  
England.

Steel frame, concrete and  
clay tile panels, plywood  
lining.

J. & A. Steane,  
Bournemouth, Hantz,  
England.

**STEEL-BILT**

Steel-Bilt Homes  
Incorporated,  
House designed by  
Myron T. Hill, Architect,  
Cleveland, Ohio,  
U.S.A.

1933.  
Metal frame-Skyscraper.  
Steel frame at 3' centers,  
brick veneer, lightweight  
concrete blocks internally.  
Steel framed flooring.  
One house built.

"The Evolving House  
III, Rational Design",  
(Bemis).

**STEEL FAB HOUSE**

Richmond Furniture  
Company Limited,  
Vancouver,  
British Columbia,  
Canada.

Steel studs at 4' 0" centers.  
Exterior infill panels  
wood and rockwool, traditional  
form.

Richmond Furniture  
Company Limited,  
Vancouver,  
British Columbia,  
Canada.

**STEEL FRAME**

Steel Frame House  
Company,  
Pittsburgh, Pennsylvania,  
U.S.A.

1925.  
Metal frame-close spaced.  
Studs at 16" - 24" centers.  
Consist of 1" x 4" holed angles  
to which is fixed stucco  
insulation and internal wall-board.  
Roofs and floors on  
metal joists. Many houses  
built.

"The Evolving House  
III, Rational Design",  
(Bemis).
METAL STUD FRAME

STEEL FRAME HOUSE
Steel Frame Housing Company, subsidiary of McClintic Marshall Corporation, Leetsdale, Pennsylvania, U.S.A.

Pressed steel stud frame, 2' centers. Normal cladding. Many houses built.


STEEL HOUSE
Steel Housing Corporation, 134 La Salle Street, Chicago, Illinois, U.S.A.

Pressed steel stud at 2' centers. 2" rigid insulation panels between. 1 1/2" cavity filled with mineral wool.


STRAN STEEL
Stran Steel Incorporated, Detroit, Michigan, U.S.A. subsidiary of Great Lakes Steel Corporation, in turn a unit of National Steel Corporation, D. Dell & Rowland, Architects.

Pressed steel frame channel section facing material fixed by wood-metal nails. Framing welded on site.


STRUCTO HOUSE
Structo Incorporated, Kansas City, Missouri, U.S.A.

1935. Rolled steel I-Section frame work and steel panels externally welded. Rockwool insulation between joists and columns. A few built in Kansas City.


STUART & SONS
Glasgow, Scotland.

Steel frame clad with brick and foamed clay concrete. Prototypes at Glasgow.
<table>
<thead>
<tr>
<th>METAL STUD FRAME</th>
<th>MSF</th>
</tr>
</thead>
</table>

**SUPALITE HOUSE**  
Maycrete Limited,  
England.  
Aluminum alloy frame on 2' 0" module. Timber infill panels.  
Asbestos cement cladding.  
Insulation board internally.  
Aluminum alloy trusses at 4' 1" centers.  
Concrete Raft. Whole house packaged in three parts  
42' 0" x 26' 0" x 13 tons.  
"Prefabrication",  
November 1953.

**TAPPAN FRAME**  
Robert Tappan,  
New York, N.Y.,  
U.S.A.  
1927.  
Several buildings on Long Island. Metal frame-Skyscraper.  
Metal stud frames at 4' centers lined inside, lath and plaster.  
Outside lath and plaster lining and brick veneer Steel frame floor and roof construction.  
"The Evolving House III, Rational Design",  
(Bemis).

**THERMOS**  
Hans Pholmann,  
Engineer,  
Hamburg, Germany.  
1927-33.  
Steel frame with insulation panels of paperboard membranes in wood frame. External cladding of precast pumice, gypsum planks internally. Several houses.  
Average module 4'.  
M. O. W. Survey of Prefabrication.  
Hans Spiegel, Der Stahlhausbau.  
H & B Rasch, Wie Bauen.

**TRUSTEEL CONSTRUCTION**  
Trusteel Construction,  
46 Yonge Street,  
Toronto, Ontario,  
Canada.  
Whole house construction,  
steel frame.  
"Acceptable Building Materials",  
C. M. H. C. Ottawa,  
1956.

**UNIT PANEL CONSTRUCTION SYSTEM HOUSE**  
See Unit Panel Construction System House under MP.
## METAL STUD FRAME

<table>
<thead>
<tr>
<th>Company</th>
<th>Year</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
</table>
**METAL STUD FRAME**

**VULKAN**
Deutsche Schiffs &
Maschinenbau A.G.,
Vulkan Works,
Hamburg, Germany.

1927. Experimental houses built. Steel frame, steel sheeting. Lightweight insulation, internally plastered.

**WENTINK HOUSE**
Jan Kiupers,
Nunspeet, Holland.

Many built in Australia. Steel frame and insulating panel 1 3/16" surfaced with 3/16" asbestos. Corrugated asbestos cement roofing.

**WINTER HOUSE**
E. M. Winter,
New York, N. Y.,
U. S. A.

Concrete Tee units 2" thick by 4' 0" wide x 9' 6" between steel studs, at 4' 0" centers cast in situ and backed by wall-board internally.

**WOHR (2)**
Gebruder Wohr Ironworks,
Unterkochen,
Wurttemburg, Germany.

1926. Some houses built. Rolled steel frame at 1m. centers. Wood panel holding rigid insulation between steel studs. Gypsum slabs internally. Steel panel externally.

**Panelized**

**AMERICAN MOTOHOMES**
American Houses Inc.,
U. S. A.

Panel. 2 1/2" square steel channel studs at 4' centers. Infill panels 4' by storey high of cementitious produce (Minropak) steel reinforced. Floor slabs of same materials. Floor supported on open web girders, supported on wall studs. Large number built.

**MSF**

M. O. W. Survey of Prefabrication.
H. Spiegel Der Stahlhausbau.

Jan Kiupers,
Nunspeet, Holland.


M. O. W. Survey of Prefabrication.
H. Spiegel Der Stahlhausbau,
Bauingenieur,
Heft 30, 1926.

<table>
<thead>
<tr>
<th><strong>METAL STUD FRAME (Panelized cont'd)</strong></th>
<th><strong>MSF</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BRAINTWAITE UNIT</strong></td>
<td>Braithwaite &amp; Company Limited, England.</td>
</tr>
<tr>
<td><strong>FRAMED HOUSE</strong></td>
<td>Steel frame, 2 storey 3' 2&quot; wide, ladder-like panels, steel floors. Cladding: brick or other materials. Internal lining: fibreboard, etc.</td>
</tr>
<tr>
<td><strong>BUELL HOUSE</strong></td>
<td>&quot;American Architect &amp; Architecture&quot;.</td>
</tr>
<tr>
<td>T.H. Buell &amp; Company, Architects,</td>
<td>Wall panel of 1&quot; of insulation faced with metal both sides, 3' 0&quot; wide, joined with metal ribs.</td>
</tr>
<tr>
<td>Denver, Colorado, U.S.A.</td>
<td></td>
</tr>
<tr>
<td><strong>COMMENTRY-OISSEL</strong></td>
<td>M. O. W. Survey of Prefabrication.</td>
</tr>
<tr>
<td>Societe et Forges de Commentry-Oissel,</td>
<td>Steel angle frame made up into 3' 4&quot; x storey height panels with gypsum infill. Single storey structure. Plastered and stuccoed. One house built.</td>
</tr>
<tr>
<td>Paris, France.</td>
<td>1929.</td>
</tr>
<tr>
<td>Kennecott Copper Corp., New York, N.Y.,</td>
<td>Roof and wall panels 2' 8&quot; x storey height of sheet copper backed by 1/2&quot; insulation. Metal stud frame carrying internal and external panel facings. Open web steel floor carried by stud frame.</td>
</tr>
<tr>
<td>U.S.A.</td>
<td>1954.</td>
</tr>
<tr>
<td><strong>CRUDENS</strong></td>
<td>&quot;Arch. Journal&quot;, 1954.</td>
</tr>
<tr>
<td>Crudens Limited, Musselburgh, Midlothian, Scotland.</td>
<td>Steel frame plywood panel 8,388 houses in Scotland in 1952. Also Tropical houses.</td>
</tr>
<tr>
<td>METAL STUD FRAME (Panelized cont'd)</td>
<td>MSF</td>
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</tr>
<tr>
<td><strong>FABRIHOME WALL PANELS</strong></td>
<td></td>
</tr>
<tr>
<td>Johnson Metal Products Company,</td>
<td></td>
</tr>
<tr>
<td>Erie, Pennsylvania, U.S.A.</td>
<td></td>
</tr>
<tr>
<td>1935.</td>
<td></td>
</tr>
<tr>
<td>Sheet steel vertical panels 8' 0&quot; x 4'0&quot; channel studs at 1' 4&quot; centers horizontally, faced with 3/8&quot; plywood outside, gypsum board inside. 2&quot; rockwool, 44 houses at Rochester, New York.</td>
<td>Johnson Metal Products Company, Erie, Pennsylvania, U.S.A.</td>
</tr>
<tr>
<td><strong>FERROCON CORPORATION HOUSE</strong></td>
<td></td>
</tr>
<tr>
<td>Ferrocon Corporation, Philadelphia, Pennsylvania, U.S.A.</td>
<td></td>
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<tr>
<td>1935.</td>
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</tr>
<tr>
<td>Metal stud framed panels faced internally and externally with expanded metal to take plaster or stucco. Floor panels similar. Panels 1' 0&quot; to 2' 0&quot; x storey height, assembled on site into whole wall sections and raised. Similar to Fillod System.</td>
<td>&quot;American Architect &amp; Architecture&quot;, September 1936, M.O.W. Survey of Prefabrication.</td>
</tr>
<tr>
<td><strong>GENERAL HOUSES INCORPORATED</strong></td>
<td></td>
</tr>
<tr>
<td>Chicago, Illinois, U.S.A.</td>
<td></td>
</tr>
<tr>
<td>1932.</td>
<td></td>
</tr>
<tr>
<td>Panels 4' 0&quot; x storey high steel framed. Bolted together on wood studs.</td>
<td>M.O.W. Survey of Prefabrication.</td>
</tr>
<tr>
<td><strong>HARNISCHFEGER (Pre-Fab)</strong></td>
<td></td>
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<tr>
<td>Harnischfeger Corporation, Milwaukee, Wisconsin, U.S.A.</td>
<td></td>
</tr>
<tr>
<td>1938.</td>
<td></td>
</tr>
<tr>
<td>Steel frame panels welded, 3' 4&quot; x 8' 0&quot; high. 3 vertical steel channel studs welded. Faced with insulation board. Wall, roof and floor panels are similar. 133 houses built in 1938.</td>
<td>Harnischfeger Corporation, Milwaukee, Wisconsin, U.S.A.</td>
</tr>
<tr>
<td><strong>HAWKSLEY HOUSE</strong></td>
<td></td>
</tr>
<tr>
<td>1938.</td>
<td></td>
</tr>
</tbody>
</table>
METAL STUD FRAME (Panelized cont'd)

PLATE GIRDER
HOUSING COMPANY (A Bemis Product).
One experimental building.
Steel framed panels 2' wide, bolted together through wood studs serving as grounds for external and internal faces.
Girths at floor level.
Floors framed in steel.

PRE-FAB HOMES
Harnischfeger Corporation, Milwaukee, Wisconsin, U.S.A.
1936. 1,500 houses built up to 1945.
Steel stud frame panel 20" or 40" wide x 9' 5'' high, two intermediate studs.
Floor and roof panels similar.
Insulated externally with two sheets wall-board 1/2'' apart.

ROSTONE
Rostone Incorporated, Lafayette, Indiana West, U.S.A.
W. Scholer, Architect.
U.S.A. 1933. Light steel frame. 4' module. Precast concrete slabs 4' wide x 18'' high x 2'' (3/4'' inner leaf) bolted to frame.
Two houses built.

SPACE-O-MATIC
U.S. Steel Homes, Frick Building, Pittsburgh, Pennsylvania, U.S.A.
See U.S. Steel Homes.
This name given to various systems of steel frame panels produced since 1938.
METAL STUD FRAME (Panelized cont'd)

STAHLHAUSBAU OR OBERHUTTEN HAUS
Deutsche Stahlhausbau - Gesellschaft,
a subsidiary of the Vereinigte Oberschlesische Huttenwerke
Aktiengesellschaft
Upper Silesia, Germany.

1928. Metal frame-Skyscraper; and panel. Steel framed panels faced in steel sheets joined through wood spaces. Insulation filled. Storey height x 2m. wide panels. Large number erected in Germany. Roofing traditional. One storey structure.

UNIBUILT


UNIT PANEL
H. Keller, Engineer for Bitting Incorporated, 20 Exchange Place, New York, N.Y., U.S.A.

1935. Rectangular tube steel frame 3' x storey height. Bolted together on site.

U.S.S. PANELBILT
Tennessee Coal, Iron & Railroad Company, Birmingham, Alabama, U.S.A.

4' 0" x 8' 0" high sheet steel horizontal stud frame at 1' 4" centers with galvanized steel siding. 1" insulation on interior face, clipped to frame. U = 0.26.

MSF

U.S. Dept. of Commerce, "Special Circular No. 705", June 1, 1928.


Tennessee Coal, Iron & Railroad Company, Birmingham, Alabama, U.S.A.
METAL STUD FRAME (Panelized cont'd)

U.S. STEEL HOMES
Frick Building,
Pittsburgh, Pennsylvania,
U.S.A.
1938-1958.
4' 0" x 8' 0"
loadbearing steel
frame panels, plywood exterior
face, gypsum board interior
face, insulation filled.
Also called Space-O-Matic and
Steel Style.

BUCKWYN CONSTRUCTIONS
LIMITED
Twyford, Berkshire,
England.
Widespread use in U.K.
from 1950.
Metal portal frame at 8' 0"
centers. Siding insulation
and internal finish fixed to
horizontal rails, fixed to turn
to portal frames.

NISSEN-PETREN
LIMITED
England.
1926. About 20 houses in
England. Semi circular truss
from ground level blocked out
with purlins.
Walling of cavity construction.
Two 3" clinker slabs. Other­
wise conventional.

VOGEL & NOOT HOSZFELD
Vogel & Noot Company,
Vienna, Austria,
Prof. Josef Hoffmann,
Architect,
also
Sesam-Stahl-Siedlungsbau
D.R.P.
System Hoszfeld, Austria.
1928. Houses at Vienna.
Steel studs exposed. Heraklith
insulation. 1.25m. module.

F. H. A. Bulletin
SE-206.

Buckwyn Construction
Limited,
Twyford, Berkshire,
England.

Nissen-Petren Limited,
England.

M. O. W. Survey of
Prefabrication.
H. Spiegel, Der
Stahlhausbau.
Roof tiles.
Welded light steel truss.
Breeze slabs to form battens.
Ceiling board.
Metal eaves Sheeting.
3\" Foamed slag concrete connected to stancheons by steel clips.
Plaster finish.
Cavity.
Brick facing connected to stancheons by steel clips.
Skirting.
7'0\" x 3'0\" Floor panels of 3/4\" T. and G. boarding, framed and battened.
Welded light steel frame at 3'0\" centres bolted to foundation slab.
Ceiling board overlaid with cabor quilt.
Welded light steel joists bolted to frames.
Tile floor.
Damp proof course.
Concrete slab.

Scale of feet

birmingham steel frame

December, 1958.
BIRMINGHAM CORPORATION HOUSE

| Traditional, Non-Traditional, Manufacturer, Sponsor or Builder. | 1. Non-Traditional. Birmingham Corporation, England. |
| Date and Place of Origin. | 2. Birmingham, 1946. |
| Materials Used. | 3. Welded lattice steel frame, and brick and foamed slag. |
| Description. | 4. Steel frame erected first to provide roof and floor to facilitate erection of wall panels. U=0.24 (walls). |
| Development to Date. | 5. - |
| Comment. | 6. - |
Whole House Assembly

Wall Unit Junction
- Protected metal sheeting
- Steel eaves sheeting
- Fiber board
- Plaster on ribbed expanded metal
- Bituminous felt
- 2" x 4" r.s. channel
- Steel roof truss
- Trough sheeting
- Fiber board
- Cavity
- 2" breeze or foamed slag
- Steel skirting
- 2" screed on ribbed expanded metal

Roof
- Plaster on ribbed expanded metal
- Steel joist
- Steel angle
- Metal drip
- 4 1/2" brickwork
- Vertical slate d.p.c.
- Felt membrane
- 2" screed
- Brickwork

Upper Floor

Ground Floor and Foundation

b.i.s.f. steel frame a
December, 1958.
B.I.S.F. STEEL FRAME "A"

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder. 1. Non-Traditional. Sponsor and Builder: British Iron and Steel Federation. Architect: Frederick Gibberd.

Date and Place of Origin. 2. Northolt, Middlesex, England 1946.

Materials Used. 3. Steel (hot rolled).

Description. 4. U=0.23 (walls). Steel Frame and Roof Trusses erected on site. Prefabricated cladding and insulation panels added. Rolled steel floor joists supported in interior by channel beam on tubular posts.

Development to Date. 5. -


B.I.S.F. STEEL FRAME "B"

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.


Date and Place of Origin.


Materials Used.

3. Light gauge steel strip (cold formed).

Description.

4. U=0.27 (walls). Welded steel frames and trusses are erected on site, cladding and insulation added.

Development to Date.

5. -

Comment.

6. -

References.

<table>
<thead>
<tr>
<th>Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.</th>
<th>1. Non-Traditional. W.H. Harman Corporation, Philadelphia.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date and Place of Origin.</td>
<td>2. U.S.A. 1947.</td>
</tr>
<tr>
<td>Materials Used. Description.</td>
<td>3. Pressed Steel.</td>
</tr>
<tr>
<td>Development to Date.</td>
<td>4. This is a reinforced metal panel system of construction deriving its source from the automobile industry. The house is prefabricated as a whole and shipped to site for assembly.</td>
</tr>
<tr>
<td>Comment.</td>
<td>5. -</td>
</tr>
<tr>
<td>References.</td>
<td>6. -</td>
</tr>
</tbody>
</table>
GROUND FLOOR AND FOUNDATION

UNIT OF CONSTRUCTION

WALL UNIT JUNCTION

WHOLE HOUSE ASSEMBLY

bitumastic felt
Hills presweld roof trusses
Hills reinforced concrete
scalloped roofing tiles
asbestos cement gutter
wood fascia
ceiling of precast gypsum plaster slabs
glass quilt
2" precast reinforced concrete blocks
asbestos cement soffit
1/2" fibreboard
internal cladding wood and steel units faced with fibreboard
2" precast reinforced concrete slabs
floor covering of prefabricated wood units approx. 12'-0" long x 3'-0" wide
ceiling of wood and steel units faced with fibreboard
felt strip
Hills presweld floor beam
plasterboard
dampproof membrane
floor slab
floor covering
hardcore filling
masonry foundation

Scale of feet

December, 1958.

hills concrete clad house
HILLS CONCRETE CLAD HOUSE

1. Non-Traditional.
   Hills Patent Glazing Company, Ltd.,
   Tottenham Court Road,


3. Steel frame and concrete cladding.

4. According to insulation provided.

5. Experimental house at Northolt,
   Middlesex, England.

6. -

7. "House Out of Factory"
   John Gloog and Grey Wornum
WHOLE HOUSE ASSEMBLY

- Parapet.
- Bituminous layer roofing.
- 1/4" asbestos finish.
- Gypsum lining.
- Wood joist.
- Metal clip.
- Metal frame.
- Metal picture rail.
- Plasterboard ceiling.
- 4'0" x 2'0" aerated concrete slabs covered with lino.
- Metal skirting.
- Metal frame.
- Plasterboard.

---

ROOF

- Reinforced concrete sill.
- Ground floor 4'0" x 2'0" aerated.
- Concrete slab covered with lino.
- Metal plate.
- Damp proof membrane.
- Wood bearer.
- Brick foundation wall.
- Concrete footing.

---

UPPER FLOOR

- Ground floor and foundation.

Scale of feet: 12 0 1 2 3

keyhouse unibuilt

December, 1958.
KEYHOUSE UNIBUILT

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.

1. Non-Traditional.
   Sponsor: Gyproc Products, Brockhouse and Co. Limited, J. Sankey and Sons Limited.

Date and Place of Origin.


Materials Used.

3. Cold rolled strip welded steel frames.

Description.

4. A two storey construction.
   Frames, facings and insulation are clipped on in situ.
   Floors supported on 20 in. girders. Cladding joints mastic caulked.

Development to Date.

5. -

Comment.


References.

7. "Post War Building Study No. 23",
Porcelain enamel roof panel and gutter.

Porcelain enamel ventilated eaves panel.

Steel roof truss.

3" insulation supported by upper bottom chord with aluminum upper surface.

Porcelain enamel ceiling supported by lower bottom chord.

Porcelain enamel interior panel 2'0" x 8'0".

Vertical Wall studs at 2'0" centres welded to top and bottom spacers to form panels 8'0" wide.

Diagonal bar reinforcement.

Bottom spacer bolted to foundation.

8" concrete wall foundation.

1" Rubatex insulation.

Concrete floor slab.


Scale of feet

12 0 1 2 3

Lustron
February, 1958.
1. Non-Traditional.
   Lustron Corporation,
   Columbus, Ohio.
   affiliate: Chicago Vitreous Enamel
   Product Company.


3. Steel and Porcelain Enamel.

4. Delivered as a whole house unit
   made in the factory, complete
   except for foundation and floors,
   electrical conduit and pipe. Wall
   and roof frames and trusses are
   delivered ready welded.

5. 2,000 houses produced, 1947 to 1950.

6. Production was stopped in 1950 due
   to financial difficulties.

7. "Prefabrication of Houses" p. 224
   by Burnham Kelly, publ. John Wiley
   Fortune, Nov. 1949.
   Business Week, 25 Feb. 1950,
   21 July 1951.
WHOLE HOUSE ASSEMBLY

UNIT OF CONSTRUCTION

- Zinc gutter.
- 1 1/2" x 1 1/2", battens x rafters.
- tile roof covering.
- wall plate resting on metal angle.
- gusset plate.
- fibrous cement coves.
- steel roof truss 6 2 or 4 m. centres.
- rockwool insulation.
- ceiling board.
- steel column.
- plaster slab 7 cm x 40 cm x 60 cm
- concrete slab 4 cm x 40 cm x 1 m hooked to studs.
- skirting board.
- cement fillet with vent hole.
- ruberoid.
- screed.
- concrete slab.
- dry filling.

maison phenix
December, 1958.
MAISON PHENIX

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.

1. Non-Traditional.
   Soc. des Maisons Phenix,
   10 Rue Pergolese,
   Paris (16e) France.

Date and Place of Origin.

2. France 1945.

Materials Used.

3. Steel frame, steel windows and plaster slabs.

Description.

4. -

Development to Date.

5. 5,000 houses in France.

Comment.

6. -

References.

WHOLE HOUSE ASSEMBLY

WALL UNIT JUNCTION

UNIT OF CONSTRUCTION

Precast concrete roof slabs 3'2" square.
Curb bolted to steel frame.
Reeded asbestos cement cladding 3'0" x storey high.
Steel frame panel.
Fibre board strip.
Steel channel.
Aluminum foil.
Ceiling board.
Metal clip.
Prefabricated wood flooring units 3'2" square.
Wood fillet.
Slag or rockwool quilt.
Metal picture rail.
Fibre board strip.
Wall board.
Flooring.
Air cavity.
Building paper.
Brick facing.
Damp proof course.
Concrete slab.
Loose fill.

Scale of feet

braithwaite unit frame

December, 1958.
BRAITHWAITE UNIT FRAME

Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.

1. Non-Traditional.
   Braithwaite and Co., Ltd., Engineers.

Date and Place of Origin.


Materials Used.

3. Cold rolled strip steel (frames only).

Description.

4. Two storey steel units, 3'2" or 6'4" wide erected first on concrete foundation. Facing and insulation added after.
   U-0.26 (external wall panels, except at joints). 1/2 hour maximum fire resistance.

Development to Date.

5. -

Comment.

6. -

References.

WHOLE HOUSE ASSEMBLY

1/2" plywood.

WALL UNIT JUNCTION

gable wall metal siding.

UNIT OF CONSTRUCTION

wire screen.

1/2" bolt.

timber truss.

split ring between joist and rafter
and connected with a 1/2" bolt.

3" insulation.

timber corner post.

truss anchor clip.

header beam.

gypsum board ceiling.

ROOF

3/8" plywood sheathing.

intermediate vertical 1 1/8" x 2 1/8".

gypsum board ceiling.

timber corner post.

1/2" foil backed gypsum.

2" wool insulation.

floor finish.

gypsum board ceiling.

plywood cover strip.

1" thick insulation.

GROUND FLOOR AND FOUNDATION

bottom horizontal member 1 1/8" x 2 1/8".

1 3/4" x 3 3/4" shoe anchored to
foundation.

concrete foundation.

u.s. steel home

December, 1958.
UNITED STATES STEEL HOMES

1. Non-Traditional.
   U.S. Steel Homes,
   Frick Building,
   Pittsburg, Pennsylvania.

2. United States 1938.

3. Steel plywood and gypsum board.

4. -

5. Considerable number of houses in U.S.

6. Suitable only for one storey structures.

METAL POST AND BEAM FRAMES
METAL POST AND BEAM FRAMES

Case Sheets  Heavy Steel Frame and Brick
              Howard Steel Frame
<table>
<thead>
<tr>
<th>Company</th>
<th>Project Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATHERTON</td>
<td>1920. 24 houses in Macclesfield. 3&quot; x 1 1/2&quot; steel frame, at 4' 6&quot; centers. Outer and inner skin 2&quot; concrete slab 1' 6&quot; wide. Dry construction.</td>
<td>M. O. W. Survey of Prefabrication.</td>
</tr>
<tr>
<td>BRAUNE &amp; ROTH</td>
<td>1926. Developed at Leipzig &amp; Berlin, Germany. Frame of rolled steel channels at 2m. centers. Exterior sheeting 3 or 4 mm. steel sheets.</td>
<td>Der Stahlhausbau, H. Spiegel, M. O. W. Survey of Prefabrication.</td>
</tr>
<tr>
<td>COLORADO FUEL &amp; IRON COMPANY</td>
<td>Rolled steel frame 4&quot;, and at 4' 0&quot; centers. 3/4&quot; gypsum both faces. Windows fitted directly to steel frame.</td>
<td>M. O. W. Survey of Prefabrication.</td>
</tr>
</tbody>
</table>
METAL POST AND BEAM

CONNELL
J. N. Connell,
Coatbridge, Scotland.

Light steel frame. Precast concrete units 6' 2" wide x storey height. Walls lined with plasterboard.
Steel frame roof and asbestos cement cladding.

CONSTRUCTIONS ISOHERMES
R. DeCourt,
Paris, France.

Metal lath and plaster on rolled steel frame, mainly for large buildings.

CONSTRUCTIONS SEMI METALLIQUE DU FORGES DE STRASBOURG

See Constructions Semi Metallique Du Forges De Strasbourg under MP.

CRANE HOUSE
Alderman Crane,
Designer,
Bottlingham, England.

1926.
Metal frame at 6' 0" centers.
5" horizontal concrete pre-cast slabs between frames.
U = 0.32 (external wall).

DENIS POULTON HOUSE
Architect,
England.

Heavy Steel Frame & brick.
1937. 28 houses built.
Steel frame, brick outer skin, anhydrite blocks internally.
Roof and floor conventional.
U = 0.30.

DENNIS WILD
James Wild & Company Housing Limited,
England.

Rolled steel joists frame and patent cradle roof truss.
Conventional brick wall.
U = 0.30.

J. N. Connell,
Coatbridge, Scotland.

M. O. W. Survey of Prefabrication.

Constructions Semi Metallique Du Forges De Strasbourg.

Alderman Crane,
Designer,
Bottlingham, England.

Denis Poulton House Architect,
England.

James Wild & Company Housing Limited,
England.
METAL POST AND BEAM

DORLONCO HOUSE

1920 to 1928. 10,000 homes built in England.
Light steel frame.
Exterior cladding: cement rendered on metal lath.
Internally: 2" clinker slab plastered.
Floors in reinforced concrete. U = 0.30.

FOSTER
T.J. Foster, New York, N.Y., U.S.A.

1932.
Open rolled steel post and beam frame. Outer infill panel of concrete on wire mesh, inner skin gypsum.

GENERAL HOUSES INCORPORATED
Chicago, Illinois, U.S.A.

1935.
Single storey framed structures. 3' 0" x storey high panels filled with asbestos clad insulation.

GOTHIC ARCH. PREFAB METAL BUILDING (Northern Type), G.J. & B. Manufacturing Company, Houston, Texas, U.S.A.

Steel trusses at 4' 0" centers. 20' 0" x 18' 0" x 10' 0" high. Corrugated steel cladding and corrugated plastic windows. Accepted for U.S. Navy.

GROPIUS
Walter Gropius, Architect, Stuttgart, Germany.

Metal frame-skyscraper.
Rolled steel frame at 3' 6" centers. 3" pressed cork sheet curtain walling covered with asbestos board. Interior lining of wall-board.
# Metal Post and Beam

**Homeola Corporation**  
9 South Clinton Street,  
Chicago 6, Illinois,  
U.S.A.  

Plywood faced panels.  
Conventional.  
Steel frame.  
8' 0" x 4' 0" panels.  

**Howard Steel Frame House**  
J. Howard & Company Limited,  
F. Gibberd, Architect,  
England.  

Steel frame, asbestos cement externally. Wall divided into series of beams. Floor, composite prefabricated wood and steel beams. Compare with Pierce House.  
1 prototype at Datchet.  

**Kocher & Frey**  
New York, N.Y.,  
U.S.A.  

See Low-Cost Farmhouse under MPB.  

**Low-Cost Farmhouse**  
A. Lawrence Kocher,  
Albert Frey,  
New York, N.Y.,  
U.S.A.  

1934.  
Panel. 4 1/2" diameter steel corner columns on concrete piles connected by 10" steel girts. Armco box type units floor structure. Curtain wall panels of insulating board steel clad 1 1/2" thick, 3' module. Proposal made for US Committee on Farmhouse Design.  

**MPB**  
"Sales Management", November 1946.  
Bureau of Standards, F.H.A.  
M.O.W. Survey of Prefabrication.  

METAL POST AND BEAM

McKAY
McKay Engineering Company, Cleveland, Ohio, U.S.A.


MICROPORITE
John B. Pierce Foundation, Raritan, New Jersey, U.S.A.


NELSON HOUSE
Nelson & Chadwick, Architects, U.S.A.

1958. Experimental, none built. 12' 0" x 12' 0" x 12' 0" modular space unit on posts with translucent roof. Foundation on piers. Aluminum 4 way posts. "Architectural Record", December 1957.

NEW GEORGIAN


PORETE
See Porete under CM.
METAL POST AND BEAM

SORIANO HOUSE
Raphael S. Soriano, Los Angeles, California, U.S.A.

1 house at Bel Air.
Posts at 10' 0" centers.
Steel deck spans between beams at 10' 0" centers.


SUSPENSION STEEL
Suspension Steel Concrete Company, Illinois, U.S.A.

A few buildings erected around 1910.
Metal frame—close spaced.
Tubular steel frame around which wire is wrapped to which is fixed expanded metal lathing which is plastered.


TAPPAN FRAME
Robert Tappan, Architect, New York, N.Y., U.S.A.

1927.
Rolled steel frame at 4' centers. Orthodox construction for remainder.

M.O.W. Survey of Prefabrication.
"American Arch.", November 1927 & March 1934.
H. Spiegel, Der Stahlhausbau.
"Iron Age", August 1931.

TOREBODA
See Toreboda under WFH.

TORKRET
Torkret GmbH, Berlin, Germany.

Some experimental buildings.
Steel frame, lightweight concrete slabs rendered externally and internally.
Frames at 6-8' centers.

M.O.W. Survey of Prefabrication.
H. Spiegel, Der Stahlhausbau.
"Baugilde", 1929.
METAL POST AND BEAM

WAGNER
Albert Wagner, Contractor, Ludwigshagen, Rhein, Germany.


WEEK END HOUSE
Guerin & Herbulot, Architects, France.

1938. Timber frame panels between studs at 0.667m. spacing. Panels are storey height and include windows. Plywood lined after erection. Panels are stiffened by steel chain passing horizontally through panels. Boarding externally hardboard internally.

WINTER

See Winter under CPB.
Roof construction is normal joists with covering.

Wood rafters.

7" x 3 1/2" x 15 lb. steel beam.

Wood ceiling joists.

4" x 4" x 5/16" steel angle column.

Brick outer skin.

4" x 3" x 3/8" steel tee column.

Wood joists bearing on steel beams.

5" x 2 1/2" x 9 lb. steel beam.

3" anhydrite blocks.

Plaster finish.

Damp proof course.

Concrete ground slab.

Information from Post War Building Study No. 1.
( Denis Poulton House).

scale of feet 12 0 1 2 3

heavy steel frame and brick

December, 1958.
### HEAVY STEEL FRAME AND BRICK

<table>
<thead>
<tr>
<th>Traditional, Non-Traditional, Manufacturer, Sponsor or Builder.</th>
<th>1. Non-Traditional.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This example: Denis Poulton (designer) U.K.</td>
</tr>
<tr>
<td></td>
<td>Similar examples: Denis Wild Houses by James Wild and Co., (housing), Ltd. and Stuart and Sons, Glasgow. U.K.</td>
</tr>
</tbody>
</table>

| Date and Place of Origin. | 2. U.K. 1936. |

| Materials Used. | 3. Heavy Rolled Steel and Brick. |

| Description | 4. Frame members are British standard rolled steel joists at 10'0" to 12'0" centres with light intermediate angles, all intersections being bolted. For this particular example U=0.34 (external walls). |

| Development to Date. | 5. About 10,000 houses in U.K. from 1928 to 1937 (this and similar examples) for various municipal authorities. |

| Comment. | 6. The Denis Wild House, of which about 9,000 were erected in the U.K. around 1928, is similar except for a heavier steel frame. |

**HOWARD STEEL FRAMED HOUSE**

| Traditional, Non-Traditional, Manufacturer, Sponsor or Builder. | 1. Non-Traditional. Sponsor and Builder: John Howard and Company Limited. |
| Date and Place of Origin. | 2. Dachet, Buckinghamshire, England. |
| Materials Used. | 3. Steelframe, foamed slag. |
| Description. | 4. $U=0.29$ (min. in panels). Fire rating under 1/2 hour. A post and beam type of steel frame. Columns at 8'0" to 12'0" centres. Space below and above windows acts as floor bearing beam. Cladding is generally of asbestos cement. Fixed in advance to the frame work. Internal lining is prefabricated in storey high units. |
| Development to Date. | 5. - |
| Comment. | 6. - |
METAL PANEL
METAL PANEL

Case Sheet        Armco Steelox
METAL PANEL

ABC HOUSE (Turin House)
Astengo, Bianco & Ceratto, Originators,
Turin, Italy.

Light-gauge metal panels 4' 1" wide for walls, roofs and floors. Panels can be made up in any combination and include windows. Linings and facings are applied on site.

ALUMINUM CONSTRUCTION INCORPORATED
276 St. James Street,
Montreal, Quebec,
Canada.

Aluminum wall panels fixed to extend steel frame. Houses: "Universal", "International", "Laurentian".

AMERICAN COTTAGE
American Houses
Incorporated,
New York, N. Y.,
U.S.A.

1935.
2' 0" wide pressed sheet metal framed panels, plywood faced, mineral wool insulated. Storey high. Window and door units 3' 0" wide, floor and ceiling units same.

ARMCO
American Rolling Mill Company through,
Insulated Steel Inc.,
Cleveland, Ohio,
U.S.A.

Panel. Steel channel shaped panel, interlocking. Finishes added. Floor of box section units. Many buildings erected. 16" wide x 1 or 2 storey height. Floor sections welded to wall sections. Vitreous enamel siding.

ARMCO STEELOX
Armco Drainage &
Metal Products of Canada Limited,
Guelph, Ontario,
Canada.
also
Steel Buildings Inc.,
Middleton, Ohio,
U.S.A.
also
Steelox Company,
Chicago, Illinois, U.S.A.

Metal panel system, interlocking joints. Insulated internally.

MP

"Architectural Forum",
November 1947.

Aluminum Construction Incorporated,
276 St. James Street,
Montreal, Quebec,
Canada.

M. O. W. Survey of Prefabrication.

"American Architect & Architecture",
September 1936.

"The Evolving House III, Rational Design",
(Bemis).

M. O. W. Survey of Prefabrication.

B. M. S. 12,
"Architectural Record",
September 1936, & July 1939.

"Architectural Forum",
December 1935.
METAL PANEL

BEHLEN
Behlen Manufacturing Company,
Columbus, Nebraska, U.S.A.

Corrugated steel roof and wall sheets used without framing. Proved inadequate under United States navy tests.

UNIT PANEL
CONSTRUCTION
Bitting Incorporated,
New York, N.Y., U.S.A.

Bitting Incorporated,
New York, N.Y., U.S.A.

BLOC TECHNIS
Louvrol Montbard,
Aulnoye, France.

Pressed sheet metal panels 70 cm. wide. House portable as one unit. Exhibited at Arts Menageres Paris, France.

BOEHLER
Alfred Schmidt,
Architect,
Vienna, Austria.

Panel. Steel panels forming interior finish lined externally with insulation stuccoed. Floors and roof conventional. 2,500 houses built in Germany.

BOOTH & COMPANY
34 St. James Street,
London S.W.1,
England.
also
Canada.

Portabilt House.
Unibuilt House.

Francis Hughes & Associates.

BRISTOL AEROPLANE COMPANY
England.

Shell Aluminum structure.

"Architects Journal"
May 1954.

BUELL HOUSE

See Buell House under MSF.
METAL PANEL

BUTLER MANUFACTURING COMPANY
13th & Western Avenue,
Kansas City, Missouri,
U.S.A.

Aluminum wall panels,
2' 0" wide furled on the
inside to take insulation
and lining. Roof of metal
rafters. Ceiling suspended
from rafters.

"American Building
& Building Age",
November 1946.
"Architectural
Forum",
1947.

CENTRAL FARM EQUIPMENT BUILDING
Marseilles, Illinois,
U.S.A.

20' 0" x 48' 0" semi-
circular steel corrugated
sheet sections bolted.
Not accepted by United
States Navy.

Technical memo
M-041.

CLEMENTS MODULAR PANELS
Hill-Clark-Francis Limited,
57 Bloor Street West,
Toronto, Ontario.
Canada.

Metal faced insulated
stressed skin panels
connected by rods with
metal slip in joint.
U = 0.095.
Panels 2' 0" x 8' 0" x
4" thick.

Hill-Clark-Francis Limited,
57 Bloor Street West,
Toronto, Ontario.
Canada.

COLUMBIAN HOMES
Columbia Steel Tank Company,
Kansas City, Missouri,
U.S.A.

1931.
Pressed steel U panels at
12" centers faced internal-
ly with insulation board.
Exterior painted and
sanded.

"Survey of Prefabri-
cation", 1945.
"American Record",
April 1933.

CONSTRUCTIONS MULTICELLULAIRES
Soc. des Construction Multicellulaires,
Paris, France.

1938.
Several buildings erected
in France.
Vertical welded steel sheet
corrugated box units 1' 8"
module.

M. O. W. Survey of Prefabri-
cation.
# Metal Panel

| **CONSTRUCTIONS SEMI METALLIQUE DU FORGES DE STRASBORG** | **1935.** | **M. O. W. Survey of Prefabrication.**  
Soc. des Forges de Strasbourg, Paris, France.  
Rolled steel frame at approx. 10' 0" centers. Steel panels 0.40 meters wide x 2.84 meters high. Lined internally with 15 cm. pumice block plastered. |
| --- | --- | --- |
| **FILLOD HOUSE** | **Interlocking steel panels on 3 dm. module. Insulation board lining ventilated cavity. U = 0.9 inverted pitch roof has variant, with glass wool insulation for tropical use.**  
France. |
| **FRANCIS HUGHES & ASSOCIATES** | **1948.** | **"Prefabrication", September 1954.**  
4850 Amiens Street, Montreal, Quebec, Canada.  
also  
Portabuilt House.  
Unibuilt House.  
14' 4" minimum di. 2' 6" wide.  
Standard panels with hardboard linings. Sheet steel panels bolted together to form walls and roof. Production limited mainly to housing. Tropics.  
Francis Hughes & Associates, 4850 Amiens Street, Montreal, Quebec, Canada.  
also  
| **GENERAL HOMES INC.** | **Aluminum alloy panels for walls and roof. F.H.A. approved. 1/2" fibreboard faced with aluminum skin on both sides.**  
General Homes Inc., 83 South High Street, Columbus, Ohio, U.S.A.  
| **GENERAL HOUSES** | **Panel. Steel panels lined internally with wood studs between panels. Steel panel lining internally. Number of houses built in mid-west.**  
General Houses Inc., U.S.A. |
METAL PANEL

GLOBE WERNICKE
Butler Buildings Inc.,
U.S.A.
Aluminum House,
some built in Davenport,
Iowa. See "Scot Bilt",
der under MP.

HARMAN
See Harman under MSF.

HIGGINS INDUSTRIES
INCORPORATED
New Orleans, Louisiana,
U.S.A.
Enamelled steel panels
filled with concrete and
connected by patent steel
connectors.

HOBART BROTHERS
COMPANY
Illinois,
U.S.A.
1938.
18 gauge double steel welded
wall panels 4' 0" wide x
9' 0" x 3". 2 storey whole
house. Welded monolithically.

JULLIEN
See Jullien under MSF.

KINGSTRAND
Alcan Aluminum
Company of Canada,
804 Dominion Square
Bldg.,
Montreal, Quebec,
also
Coseley Engineering
(Canada) Limited,
5165 Sherbrooke St. West,
Montreal, Quebec,
Canada.
Trapezoidal corrugated
aluminum panels. Frameless.
Developed for tropics (Native
Housing).
Small portable package.

MP

Butler Buildings Inc.,
U.S.A.

Higgins Industries
Incorporated,
New Orleans,
Louisiana, U.S.A.

M.O.W. Survey of
Prefabrication.

Alcan Aluminum
Company of Canada,
804 Dominion Square
Bldg.,
Montreal, Quebec,
also
Coseley Engineering
(Canada) Limited,
5165 Sherbrooke St. West,
Montreal, Quebec,
Canada.
# Metal Panel

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<th><strong>Kletzin</strong></th>
<th><strong>Dr. Ludwig Kletzin, Berlin, Germany.</strong></th>
<th><strong>Steel structural wall panels 1.22 m x 2.75 m x 80 kg.</strong> 1/16&quot; steel panels and angles enclosing 3 layers of corrugated plasterboard.</th>
<th><strong>M. O. W. Survey of Prefabrication.</strong></th>
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<td><strong>Kunze</strong></td>
<td><strong>G. Kunze, Junr, Berlin, Germany.</strong></td>
<td><strong>Pressed steel tray panel 3' 4&quot; x storey high backed with insulation material. Inner lining of rough buck screwed to interior of panels. Wall 3 1/2&quot; thick.</strong></td>
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<td><strong>Lindsay House</strong></td>
<td><strong>Samuel R. Lindsay, Oakland, California, U.S.A.</strong></td>
<td><strong>Metal panels lined internally with wall-board and filled with insulation, bolted together. Floor and ceiling panels similar. Roof and ceiling similar also.</strong></td>
<td><strong>&quot;American Architect &amp; Architecture&quot;, September 1936.</strong></td>
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| **Mahon** | **Mahon, R. C. Corporation, Detroit, Michigan, U.S.A.** | **1933.**  
Steel panels bolted through asbestos gasket. | **M. O. W. Survey of Prefabrication.** |
| **Maison Calorifugee Francaise** | **Societe des Forges de Strasborg, Paris, France.** | **3' 0" x storey high metal panels one storey. Insulated.** | **M. O. W. Survey of Prefabrication.** |
METAL PANEL

METAL HOMES COMPANY
4041 Gordwin Avenue,
Los Angeles 26,
California,
U.S.A.

16 g. steel panels, wood furring.

MU STEEL
Herman Mugler,
Lynbrook, New York,
U.S.A.

Panel 1' 8" x 8' 0" high in sheet steel.
Lined internally with 1/2" insulation board.
3 houses built in 1940.

NUTTALL HOUSE
England.

Steel panels 2' 0" wide x 8' 0" of 3" steel channel tied by rods. Outer face rendered.
Insulation wood wool and aluminum faced building paper. Tubular steel trusses (roof).

PALMER
Palmer Steel Buildings Incorporated,
Los Angeles,
California,
U.S.A.

1934.

PLATE GIRDER
Housing Company,
(Bemis Industries Incorporated),
Massachusetts,
U.S.A.

1929.
Panel. Sheet steel central web framed in wood, and faced with wall-board internally, and precast concrete wall slabs tied to panels externally. Panels 2" wide x storey height. Several houses erected in Massachusetts.

Metal Homes Company,
4041 Gordwin Avenue,
Los Angeles 26,
California, U.S.A.

Herman Mugler,
Lynbrook, New York,
U.S.A.

"Prefabricated Homes",
(B.H. Cox).

"American Architect & Architecture",
September 1936.
"The Evolving House III, Rational Design",
(Bemis).

"The Evolving House III, Rational Design",
(Bemis).
METAL PANEL

PORCELAIN STEEL
Porcelain Steel
Buildings Company, U.S.A.

1925.

PROUVE HOUSE
Jean Prouve, Paris, France.

Aluminum panels with insulation of fibreboard and aluminum foil. Panels are self supporting.

QUALITY
G & J Weir Limited, Glasgow, Scotland.

Steel panels.
Prototypes at Cathcart, Glasgow, Scotland.

QUONSET CONSTRUCTION SYSTEM
S. P. Miller & Sons, 6999 Cote des Nieges, Montreal, Quebec, also Quebec Steel Structures, Canada.

Standard metal panel butting.
One house erected in East Montreal before 1949.

ROBERTSON
H.H. Robertson Company Incorporated, Pittsburgh, Pennsylvania, U.S.A.

Various sponsors in U.S.A., from about 1933. Robertson's standard keystone corrugated floor, wall and floor decking in panels 12" to 24" x 8' high. Units keyed on site or welded, insulation packed. Plaster faced, wall-board and plaster internally.

MP


"Prefabication", September 1954.


**METAL PANEL**

**SCHEERRER**
Franz Scherrer & Company, Dusseldorf, Germany.

1915. Sheet steel loadbearing panels. Rolled steel frame. 2.84m. high x 1.58m. Filled with torfoleum insulation. Timber frame within panel to take the fixtures.

**SCOT-BILT PRE-FABRICATED SHEET STEEL**
Globe-Wernicke Company, U.S.A.

8' 0" x 16" sheet steel panels. Steel channel panels for roof and floor construction. One house 1940. Insulation according to that provided.

**SECTIONAL UNIT MODULE**
Pierre Blouke & C.M. Goodman, Architects, U.S.A.

1939. Plywood or metal space sections 8' x 8' or 20'. Caravan type construction. Projected only.

**STEELCRAFT INSULATED WALL PANEL**
Rossmoyne, Ohio, U.S.A.

3" panel with fluted steel sheet face, filled with fibreglass. U= 0.15. Standard width 24". Non structural.

**STEEL TEMPORARY BUNGALOW**

METAL PANEL

STEELOX


STEILBERG
Walter T. Steilberg, Architect, Berkeley, California, U.S.A.

Pre-1935. Steel box permanent shuttering 2' wide x 4" thick x storey height. A number of houses in California.

STOUT FOLDING HOUSE
William B. Stout, Stout Houses Inc., U.S.A.

1937. Welded tubular steel frame. Trailer. Aluminum sheathing. Folds up to 18 x 7'. Unfolded by crank mechanism to 12 x 20'.

TELFORD
Braithwaite & Company Engineers Limited, West Bromwich, Staffordshire, England.

1923. Panel. Panel 3' 6" wide x storey height bolted together at flanges and lined inside with asbestos on wood frame. Intermediate lining against steel panels provided in a cavity used as heating duct.

THERMOSTATIC STEEL HOUSE

Steel sheet faced stud wall panel. 1' 0" x 8' 0" 1" slag wool applied inner and outer sheets. A steel and wood mixture. U = 0.12 (wall).
METAL PANEL

THORNCLIFFE


TIPTON GREEN
Lock House No.1, Tipton Green, Staffordshire, England.

Pre-1830, demolished in 1926. 14" wide cast iron plates, bolted together supporting lath and plaster inside. Single storey, one building.

UNIBILT HOUSE

See Portabilt House under MP.

UNIT PANEL CONSTRUCTION SYSTEM HOUSE
H.H. Keller, Engineer, Bitting Incorporated, New York, N.Y., U.S.A.

Metal stud braced panels insulated on outside. Metal panels for roof and floor.

UNIVERSAL
Universal Housing Corp., Zanesville, Ohio, U.S.A.

1933. Pressed steel panels 1' x storey height bolted together. Interior finish, wool board, nailed through steel units. Cavity filled with spun glass, enamel paint exterior. A few built, see Armco.

MP


METAL PANEL

U.S.S. PANELBUILT
OR T.C.I.
Tennessee Coal Iron & Railroad Company, subsidiary of U.S. Steel Corporation, U.S.A.

Pressed steel wall panels 4' wide x storey height. Large production since 1939.


VAN NESS
C.L. Van Ness, Akron, Ohio, U.S.A.

1935.
Light-gauge steel panel and frame construction. Whole house welded in factory and delivered complete. 3' module. Moderate production.


WEIR PARAGON
G. & J. Weir Limited, Engineers, Glasgow, Scotland.

1944.
Pressed steel panels (tray section) 3' 6" wide x storey height, stiffened by vertical channels. Internal lining of plasterboard and glass quilt. Double cavity. One house at Sighthill, Edinburgh.


WHEELING
Wheeling Construction Company, Wheeling, West Virginia, U.S.A.

1933.

METAL PANEL

WIER

See Wier under WFH.

WILSON HOUSE

See Wilson House under CP.

WONDER BUILDING COMPANY
3780 Dickens Street,
Montreal, Quebec,
Canada.

Mainly warehousing 30' 0"
 x 60' 0" in diameter.
Semi circular form,
sectional.

Arch. File 17,
(A.I.A.).
20 g. pressed steel 16" wide roof panel, spanning from wall plate to ridge.

Pressed steel wall plate.

Pressed steel girts on end wall.

Pressed steel angle braces fixed to girt, gussets and ceiling bearers.

Insulation as necessary.

Pressed steel 3' ceiling panels, spanning up to 12' from wall angle to suspended bearers.

Pressed steel 3' wall panels painted.

Interior finish, insulation and rough back screwed to panels.

Concrete slab insulated at edges. (Concrete, vermiculite concrete, vapour barrier, cement, sand and gravel).

Concrete foundation.

Scale of feet

armco steelox

ARMCO STEELOX


3. Pressed Steel.

4. One storey structure only. Structural metal wall, roof and ceiling panels 16" wide braced at ceiling level. Roof ridge supported on ceiling bracing. Painted externally. Internal wall insulation and finish fixed to rough back. U=0.17 (with 2" insulation and 1/2" lath and plaster).


6. The system is used mainly for commercial and industrial buildings where it is important to close in a structure speedily.

TENSILE SYSTEMS
TENSILE SYSTEMS

Case Sheets
TENSILE SYSTEMS

AUTOMOUS HOUSE
R. Buckminster Fuller. U.S.A.

Same structure as Geodesic Dome.

DYMAXION
R. Buckminster Fuller. U.S.A.

Suspension. Metal space frame suspended from central metal mast by tension wire. Walls constructed of double sheets of casein plastic enveloping a vacuum. House delivered as one unit. One house built.


FULLER HOUSE
Buckminster Fuller. U.S.A.

Whole house circular. Aluminum. Tension wires and mast.


GEODESIC DOME
Buckminster Fuller, U.S.A.

Aluminum alloy space frame, 20' 0" to 114' 0" plastic interior facing.


NEUTRA DIATOM
Richard J. Neutra, Architect, Los Angeles, California, U.S.A.

Curtain wall system suspended from central mast curtain wall of 1/2" diatomaceous slabs inside and out, wood strips, mineral wool insulation.

"Arch. & Architecture", September 1936.

WICHITA HOUSE

LIST OF MANUFACTURERS
## INDEX OF MANUFACTURERS

Classified Alphabetically and According to Country of Origin

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