new england

ARCHITECT AND BUILDER

illustrated

HORNBROOK PUBLISHING COMPANY, INC.

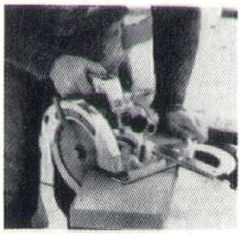
NUMBER FIFTEEN

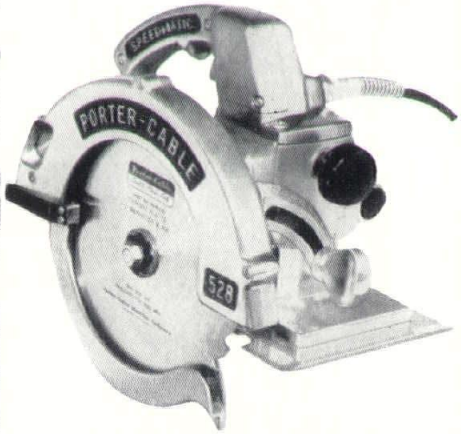
GROSSMAN'S MAKES THIS OFFER
ANY PORTER CABLE TOOL
FREE
IF YOU CAN BUY IT ELSEWHERE

FOR LESS!

FOR EXAMPLE:

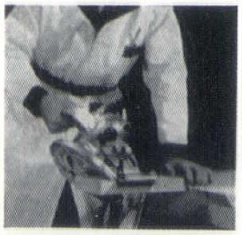
8¼" SAW





$140.00

One of the finest saws in the building industry, Equipped with the KickProof Clutch, telescoping guard, sawdust ejector, gear lubricator, and instant set bevel and depth adjustments. Motor windings are double insulated to provide maximum power, top performance. This saw is designed to stand up under the toughest cutting jobs for many years. See it at Grossman's today . . . ask about 7 day trial offer.



COMPLETE ONE-STOP SERVICE FOR BUILDERS AND CONTRACTORS

25 BRANCHES IN NEW ENGLAND TO SERVE YOU

Grossman's "ONE-STOP" service eliminates costly chasing supplies and production slow-downs. Everything you need is available at Grossman's . . . lumber, doors and windows, finish materials, electrical supplies, plumbing and heating, appliances, built-ins and components built to your requirements.

SPECIAL FINANCING FACILITIES AVAILABLE

Investigate Grossman's special financing arrangements for builders and contractors. Experts in the building industry for 65 years Grossman's has many special financial arrangements not available through ordinary channels. Phone or write Grossman's Contractor Division Today.

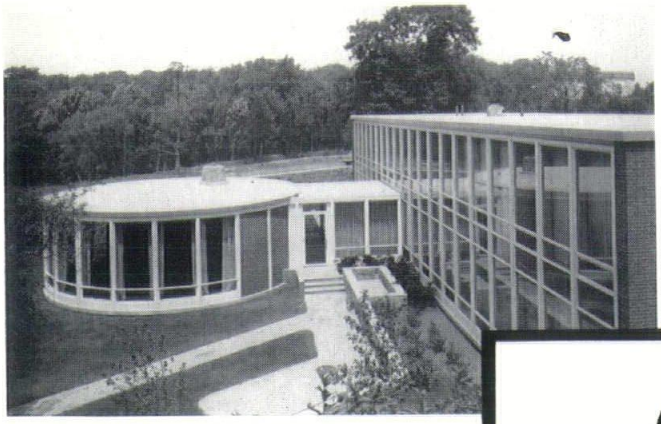
GROSSMAN'S

NEW ENGLAND'S LARGEST BUILDING MATERIAL DEALERS

Large job or small . . . Grossman's will furnish facts and figures and accurate estimates FREE . . . . we'll send a field representative if you wish.

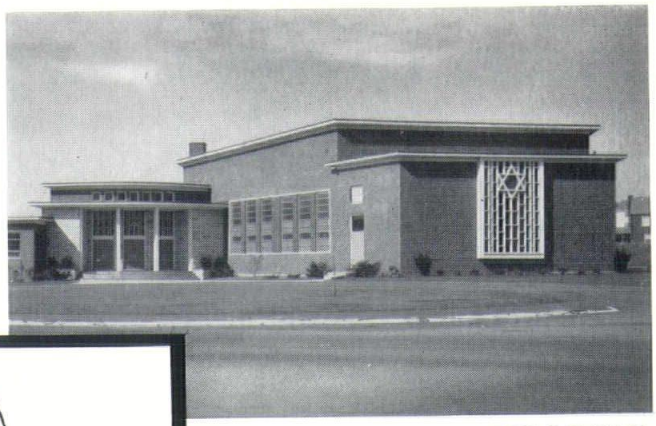
MAIN OFFICE: 130 GRANITE ST., QUINCY, MASS. TEL. PR 3-7100

The DEPTH of a TRADEMARK!



RABB GRADUATE CENTER
BRANDEIS UNIVERSITY
WALTHAM, MASS.

Architects:
HARRISON & ABRAMOVITZ



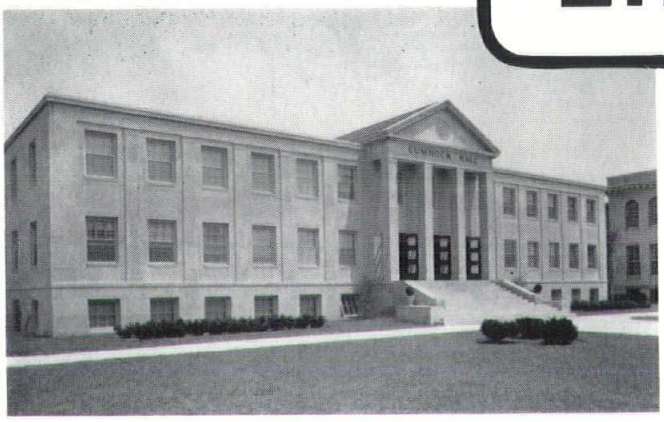
TEMPLE BETH EL
BELMONT, MASS.

Architects:
DAVID J. ABRAHAMS & ASSOCIATES

LILLY

CUMNOCK HALL
LOWELL TECHNOLOGICAL INSTITUTE

Architects:
KROKYN & BROWNE



RECUPERATIVE HOME
JAMAICA PLAIN, MASS.

Architects and Engineers:
LINENTHAL & BECKER

A trademark cannot be two dimensional. It needs more than height and width — it must have *depth*. It requires some valuable intangibles behind it — worthwhile performance, integrity, dependability, experience and the ability to produce. Behind the Lilly trademark there are many tangible accomplishments which attest to that necessary intangible third dimension — *depth*.

Buildings under construction which bear the Lilly sign are a conscientious endeavor to express the fact that Lilly in construction signifies pride in craftsmanship.

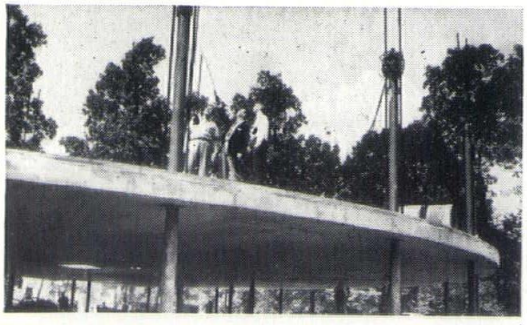
LILLY
CONSTRUCTION COMPANY
BOSTON

PRIDE IN
CRAFTSMANSHIP

LILLY
construction company

BOSTON, MASSACHUSETTS

12-room concrete school in 3 months with unique "lift-slab" method!



Classrooms coming up! *Observing one of the 23 jacks used to lift the roof slab are Gregory Lauer, builder; James McCarron, architect; Dorsey Moss, engineer.*

St. Therese Catholic School, Fort Wayne, Indiana, shows how concrete and new techniques meet the need for accelerated school construction.

Bids were received June 23rd. Construction was under way by July 17th. The ground floor slab was cast in place first. On top of this was cast the second floor slab—and on top of this the roof slab. Lifting of the slabs into position started August 25th.

Hydraulic jacks attached to columns were used to hoist the roof and second floor slabs. Each slab weighed approximately 370 tons and was 150 feet long and 88 feet wide. Lifting rate was two feet an hour. Total school area is 21,560 square feet—12 classrooms, six on each floor.

School opened October 1st. But time was not the only saving. Concrete "lift-slab" technique also meant lower construction costs. Long life and low upkeep will assure minimum annual cost. If your community is considering a new school, write for complete information.

PORTLAND CEMENT ASSOCIATION
20 Providence Street, Boston 16, Massachusetts
A national organization to improve and extend the uses of concrete

the mark of a modern school . . .
CONCRETE

VOLUME TWO • NUMBER FIFTEEN
FEBRUARY - 1960

Table of Contents . . .

new england ARCHITECT **and** BUILDER **illustrated**

ARCHITECTURE and CONSTRUCTION

FEATURE

New England ARCHITECT and BUILDER Illustrated is published monthly by NORBROOK PUBLISHING CO., INC., 215 Stuart St. — Motor Mart Building, Boston, Mass. The cover design and contents of New England Architect and Builder Illustrated are fully protected by copyright, and must not be reproduced in any manner or form. Subscription: 1 year, $5.00; 2 years, $8.00; single copy, $1.00. Foreign subscription rates available. Accepted as controlled circulation publication at Boston, Massachusetts.

The only regional publication designed for the promotional interest of Architects, General Contractors, Sub-Contractors, Builders, Engineers, and all others actively engaged in Building Construction within the (6) New England States.

POSTMASTER: Form #3579 requested to: "new england ARCHITECT and BUILDER illustrated", 215 Stuart St., Boston 16, Massachusetts.

STAFF

PUBLISHERS
Richard P. Zinkowski
Leon Arber

MANAGING EDITOR
Richard Zinkowski

FEATURE EDITOR
M. Patricia Williams

DIRECTOR OF ADVERTISING
Leon Arber

ADVERTISING MANAGER
Charles D. Harrington

ART DIRECTOR
E. Richard Freniere

CIRCULATION
Maureen T. Connolly

STAFF PHOTOGRAPHERS
Richard P. Lewis, Jr.
M. Z. Gerard

PUBLISHERS REPRESENTATIVES
Mid-Atlantic & New York
Whiteman Associates
342 Madison Avenue
New York, New York
YUkon 6-4762

Southeastern
Jack Williams
934 N.W. 53rd St.
Miami 37, Florida
Highland 3-8610, Plaza 1-5308

Contributors are advised to retain a copy of their manuscript and illustrations. Material should be mailed to the Boston Editorial office, and must be accompanied by return postage. Contributions are handled with reasonable care, but the N.E.A.B. assumes no responsibility for their safety. Any acceptable manuscript is subject to whatever adaptations and revisions necessary.

OMISSION

17th Century Delf Tile photograph on the cover of the January Issue should have been credited to the Museum van Oudheden, Rotterdam-

FOR MORE PROFIT PER PROJECT . . .

use stressed skin panels made by CHAMPLIN

Now three men can cover more than 2,200 square feet of roof in three hours. It is easily done with Champlin Stressed Skin Panels. They're especially designed to use in walls, floors and roofs. In walls they save even more time and money, for it's easy to "build-in" the insulation of your choice.

With Champlin components you get the very best, because they're manufactured under the rigid quality control program of Plywood Fabricator Service, Inc.*

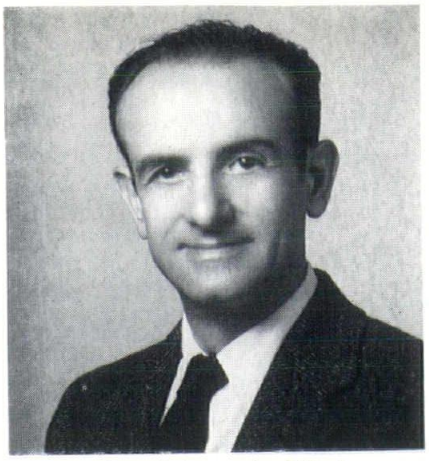
*An affiliate of the Douglas Fir Plywood Association.

Champlin also produces PFS trademarked trusses, box beams, and curved panels.

THE CHAMPLIN COMPANY

COMPONENT DIVISION

45 Bartholomew Ave.
Hartford, Connecticut
JAckson 7-9217



Jan Reiner, Architect

THE HUMAN SIDE OF THE BLUEPRINT

by Jan Reiner

From an architect's point of view four considerations are necessary to design a truly livable home for a family: a working marriage, a real wish for a house, enough money to build the house, and the capacity to appreciate good design.

A Working Marriage

One may wonder what is a "working marriage"? Practically speaking, a working marriage is one that works — that is, where there is enough mutual understanding and enjoyment to withstand the strains of everyday living without lessening the joy of togetherness. This does not mean that a couple has to be blissfully happy to be eligible for the services of an architect because a well-designed home can be a positive force for strengthening a somewhat shaky marriage.

Only in a working marriage can there be the mutual respect which allows differences to be aired and finally resolved. Where such freedom of communication exists the architect may accelerate the process of transforming nebulous dreams and vague aspirations into a realistic building program. Sometimes this is a short process; sometimes it may take several months because the formulation of the building program is combined with a kind of adult education in architecture, if not in actual living. A well-conceived home is a symbol of successful family life. Creative art then becomes part of everyday experience — something which is unlikely to occur in an inharmonious household.

If a marriage is not a "working" one, the architect is faced with two opposing concepts of home which cannot be reconciled easily. He is expected to become a kind of referee in domestic relations. For an architect this is a trying position because he knows that a new house is not likely to patch up a seriously weakened marriage. Even where marital differences are less severe, he is aware that his fee will be earned many times over — if he is able to complete the project at all.

A Real Wish To Own a House

This requirement may seem superfluous indeed, since most people might be expected to want a home. And yet an architect learns that a number of prospective clients who come to talk about homes really do not want a home at all. A variety of reasons may account for this paradox. Some people like city apartment life because it enables them to be in the center of things without worry about perpetual upkeep. They are apt to go to an architect as a reaction to their friends' moving to suburban homes so that they feel they "ought to" make a gesture along the same line. And a gesture it remains.

There are those who realize that they cannot afford the type of house they want. Rather than compromise, they prefer to "dream it out" in a city apartment or rented house. All they do is to visit an architect every three years or so to find that building costs have gone up, so that they will have to stick to their dreams.

For others the reluctance springs from difficulty in formulating their identity (that is, who they are) in order to see themselves as being reflected in one architectural style and belonging to one specific social neighborhood. This is like declaring one's creed publicly. These are the people who will vacillate between a "Colonial" and a "modernistic" house. They are also the ones who collect stock plans by the dozen and usually end up in a speculative house in a real estate development.

To some the idea of owning a house is almost frightening. The man may be concerned about his ability as a handyman; the woman about her skill as a decorator. Both may feel inept as gardeners. For many the prospect of home ownership increases their anxiety about catastrophe — personal and financial — almost as if they thought that for them to have something good is to invite disaster. If their financial status is reasonably sound, these feelings may be recognized as basically unrealistic. They are akin to the haunting misapprehension that one has not locked the door or turned off the gas. If people are able to go ahead in spite of such feelings, they often find that the possession of a good house is a reassurance of their own worth and value.

If there is a positive wish for a home on the part of both husband and wife, many obstacles can be overcome as they, together with their architect, work toward a common goal — a life-and-joy enhancing home. It is only in planning a home that one can, as it were, bring the future into the present, shape it according to one's wishes, and return it to the future. People who see the planning process in this way experience one of the deepest joys of adult life.

Enough Money To Build the House

This requirement may seem unnecessary because one likes to think that grownup people know how far their pocketbooks will stretch. And yet, judging from the reports of mortgage

underwriters, many people are prone to assume larger obligations than sound budgeting would warrant. Planning wisely is more easily said than done because most people do not know what their incomes will be five or ten years from now. This is particularly the case where the young husband is just starting on a professional career. Even when a man goes into employment with a fairly predictable income, as in civil service, the future may still be shrouded in uncertainty. Under these circumstances the couple can do one of three things (especially if they are young and do not know how many children they will have): 1. Play safe and make the house too small; 2. Be too optimistic and saddle themselves with an overburdening debt; 3. Plan an expandable house which can respond to their financial circumstances five or ten years hence.

An expandable house is one which can be built in two or three stages. It may start with a modest basic core, consisting of a living room, kitchen, bath, and two bedrooms. The "expandable" feature is a planning program which will allow the house to grow with the family. If the total expansion is planned at the outset, the anticipated additions may be made later without undue structural complications. Thus extra bedrooms, a dining room, a family room, a vestibule and a screened porch may be added to this basic core to complete the organic unit conceived years ago. However, an architect may have a hard time in selling such a farsighted planning concept to the average family who has been conditioned to see the house as a static unchangeable unit.

It has been said that the total building venture should not exceed 2½ times one's yearly income. However, like all rules of thumb, this one has many "built-in" variables. It does not allow for differences in size and age of family, spending habits, savings and other resources. Thus the rule of thumb may be stretched to 3½ times the yearly income under certain circumstances, while 1½ times may be a safe maximum in others.

It hardly needs to be said that the more the architect knows about the financial status of the client, the more assistance he can give in allocating the money for the land, the construction, the interior decoration, and the landscaping. Yet, some people are reluctant to tell the architect the whole truth because they have the feeling that he will exceed the budget inevitably. However, if there is full understanding and trust between the couple and their architect, such a situation is unlikely to occur.

It should be recognized that no architect can predict to the last penny the total cost of the building venture. Too many unforeseen variables must be reckoned with. There is the possibility that the excavator may encounter a ledge or an underground spring or that costs of some building materials may rise rapidly. Therefore, a financial cushion of 5 to 10% to absorb unforeseen emergencies can make for peace of mind during the period of construction.

The Capacity To Appreciate Good Design

It is beyond the scope of this short article to discuss the principles of design because this would entail a lengthy discussion of the philosophy of art. Suffice it to say that while today more people know about more things, they know less about them. The popular meaning of "modern design" is no exception; it involves novelty, "smartness" and sales appeal. Fashions come and go with amazing (and confusing) rapidity, and most people are left wondering what's coming next. Little wonder, then, that most merchant builders, some magazine editors, and "people in general" decide to play it safe by combining "time-tested" design with latest fashion. Actually this approach is not the only one. It is as possible now to create good design as it has ever been because good design has always been based upon common sense and logic on the part of the designer, the builder, and the consumer. In order to participate in the creation of good design, the prospective home owner need not be an artist, he merely has to strive to free himself from past and present "cliches" in order to see meaning and beauty in a new relationship of space, form, color and function. This, of course, is easier said than done.

The results of incomplete or distorted concepts of design appear in the architect's office in many guises. There is the client to whom the house is a collection of technical details — a sort of air-conditioned sample room displaying ceramic tile, picture windows, and the latest insulation with the highest U factor. Then comes the client who reduces the creative act of planning to one or two prime features like an oversized fireplace or a ping-pong room in the basement. His symbol of a home is that simple!

Another client insists on a two-story house where a one-story house would be a "natural" for his site. And there is always the family who insists upon a specific historic style of architecture in spite of the fact that that style may not lend itself to the kind of living they would really want if they were emotionally free to choose. No wonder, then, that many clients require considerable groundwork on the part of the architect to open a new way of seeing things before they are ready to begin with the actual planning.

Planning means to anticipate and to coordinate. This includes not only the "blueprints" but also many highly specialized items like colors and textures for the interiors, indoor-outdoor illumination, and the foliage and fragrance of the garden. The architect tries to create in his clients a kind of intellectual freedom which will enable them to see the house as an entity which they create from scratch with his guidance. Then they can appreciate a more individual floor plan, and can make a freer selection of building materials, decoration and landscaping. Only then, can they begin to realize that architecture has always been modern because the architect has always tried to use new ways of building to express new ways of living.

* * *

Like all living creatures, we humans harbor nesting drives. These drives energize us to seek a place that we can call our own. In this search some people settle for a ready-made house. Others — with a stronger urge to create their own house — call on the architect to help them to realize their aspirations. It is primarily for these people, that the four basic considerations — the working marriage, the real wish for a house, enough money to build the house, and the capacity to appreciate good design — are the key to the successful creation of a life-and-joy enhancing home.

Palm Beach Lakes

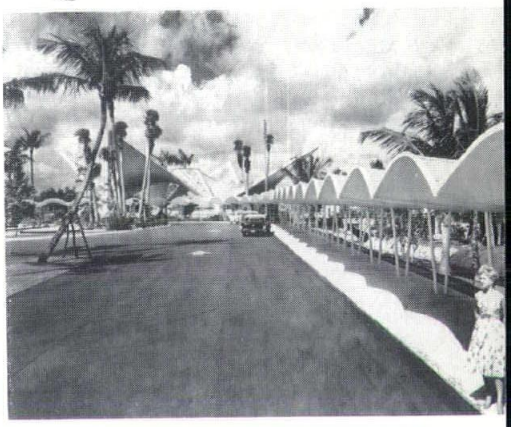
City within a City

A well known New England construction firm has recently been responsible for the newly developed Palm Beach Lakes Section, "A City Within a City" at Palm Beach, Florida.

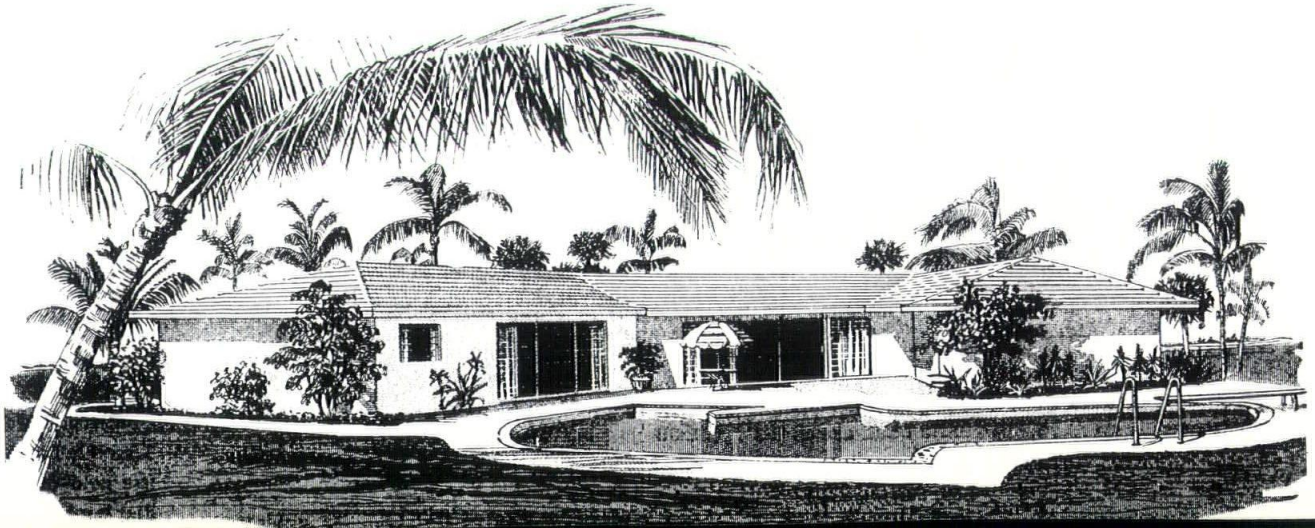
Perini-Westward Developers, Inc., under contract from the City of West Palm Beach, Florida has purchased a 5,000-acre tract of land completely within city limits and are well on the way toward transferring it into a modern community.

Scheduled for completion within six to eight years from its start last year, it will contain 10,000 private homes, 1,000 acres of lakes, Shopping Centers, Apartment and Multiple Units, Commercial Areas, Industrial Parks, Schools and Playgrounds, Police and Fire Departments, Public Parks and Churches.

Headed by Louis Perini and Joseph S. Cairmes, president of Perini-Westward Developers, Inc., the work of dredging, filling and building is progressing ahead of schedule and the photographs on these pages show the type of well designed community living constructed. The range of price for the residential units under construction are from $13,400 to $25,000. Many of the homes have been completed and are ready for occupancy.



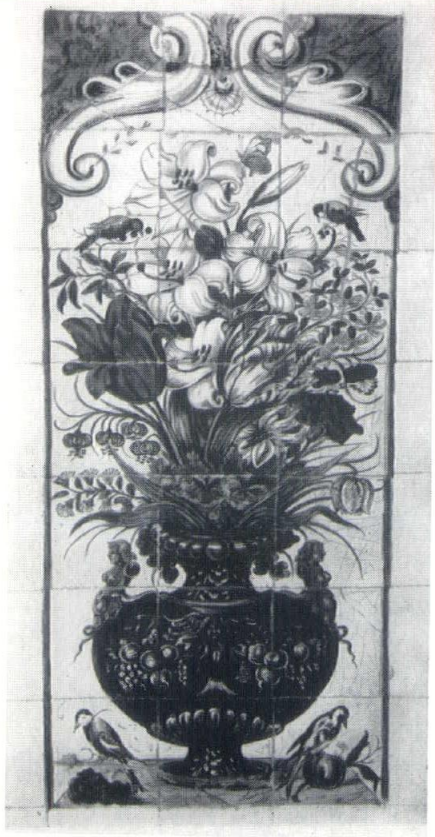
Eye-catching Hyperbolic Paraboloid provides a dramatic keynote for the 12-Acre Exhibit area featuring Palm Beach Lakes model homes and exhibits of products and materials used in their construction.



Courtesy of The Museum van Oudheden, Rotterdam

Allegorical Tile-picture Late 16th Century, "The House of a Thousand Terrors," Colors — blue, yellow, brown, green and purple.

PART II



Courtesy of The Museum van Oudheden, Rotterdam

17th Century polychrome tile picture.

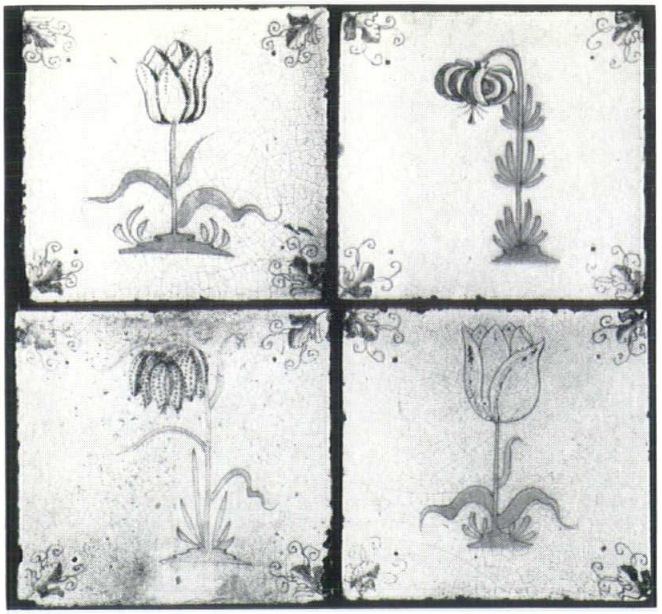
DECORATIVE TILES

Their Contribution to Architecture and Ceramic Art

by E. STANLEY WIRES

Dutch Tiles (English Painted and Printed Tiles)

IN the town of Gubbio, in the hills of Italy, there is a legend about the potter, Giogio Andreoli. When a child of his was stricken with the plague he vowed that if God would spare his child's life he would produce a color on maiolica which by its fame would bring a large increase in income that he would devote to the holy church. The child recovered and, true to his word, Andreoli cast his treasures of pure gold into the melting pot and the famous ruby-colored maiolica ware was the result. Little did he realize that maiolica was to be the prototype of Delft earthenware.



Collection of E. Stanley Wires

Dutch floral designs, 17th Century. Note the unusual corner motif.

Collection of E. Stanley Wires

Flower Vase motif, especially popular during the first quarter of the 17th Century.

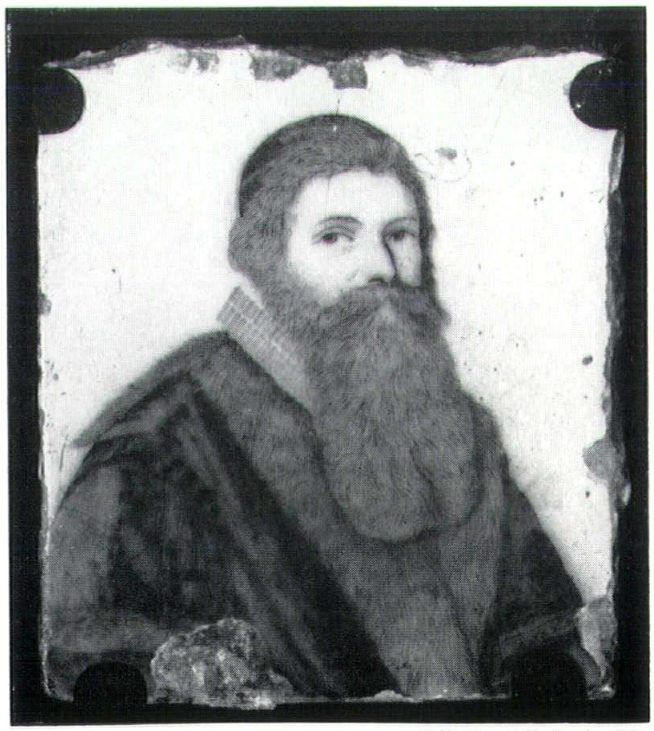
After the Treaty of Breda, 1609 A.D., which ended the war between Spain and the Netherlands, Dutch craftsmen traveled to Italy and Spain and had every opportunity to learn the art of the maiolica potters. At this same time East India merchants were bringing Chinese porcelain to Europe and it was not surprising that the Dutch potters became excited about this mysterious translucent ware. Lacking the fine kaolin clay of porcelain, they substituted a cream-colored body, coated with a white tin glaze, decorated in pure blue or polychrome colors.

Potters from Antwerp founded factories in many Dutch cities, the most important being Delft, a walled and moated city, then used as the home of nobility. The vital struggle with Spain had sharpened the wits of the Dutch people, and with added wealth and trade with the East they were ready to support the work of the potter. Many of the tile picture painters were held in almost equal esteem to that of the great Dutch painters.

At first, tiles and pottery were made in the same factories, but as time went on there were factories for the manufacture of tiles only. Less care was taken in their production and the master painter gradually gave way to the artisan.

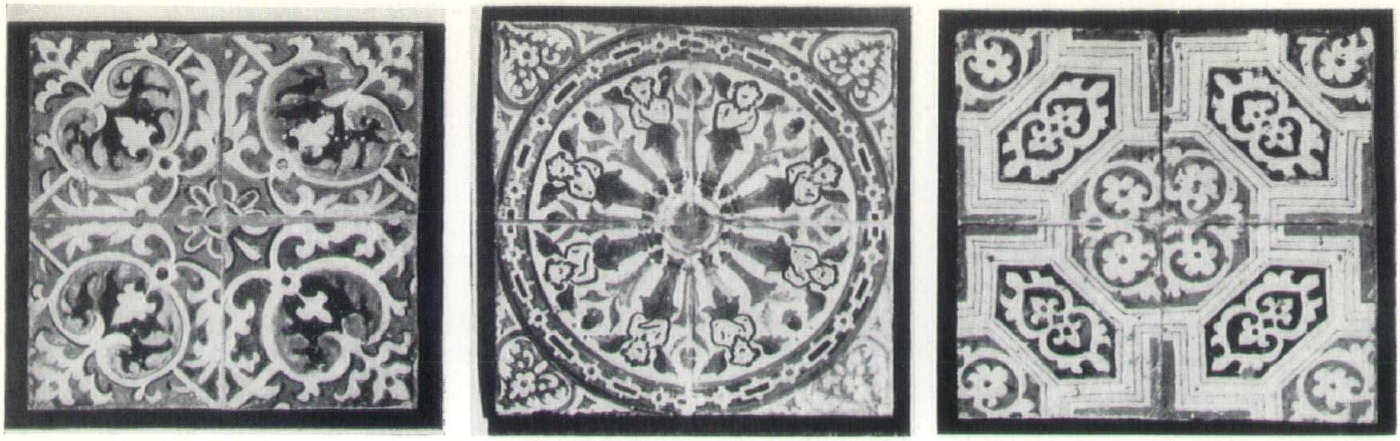
About 1584 A.D., a potter named Herman Pietersz* married Anna Cornelisz of Delft. Later his name appears as the first member of the Guild of St. Luke. This Guild was originally made up of about 700 members and eight crafts — stainers of glass, engravers, potters, weavers of tapestries, sculptors and carvers, scabbard makers, art printers and booksellers, and dealers in painting and engravings. Members had to serve an apprenticeship of six years and were required to pass a rigid examination. The Guild reached its climax in about 1680 A.D., when, out of the Delft population of not more than 24,000, there were 2,000 workers in the 30 potteries. No modern labor union was ever more exacting of its members or more indifferent to the rights of others than was this Guild. The unauthorized setting of a pane of glass made the owner of the house liable to a fine of 12 florins.

** The terminal of the letter "Z" in many Dutch names meant Zoon or son.*



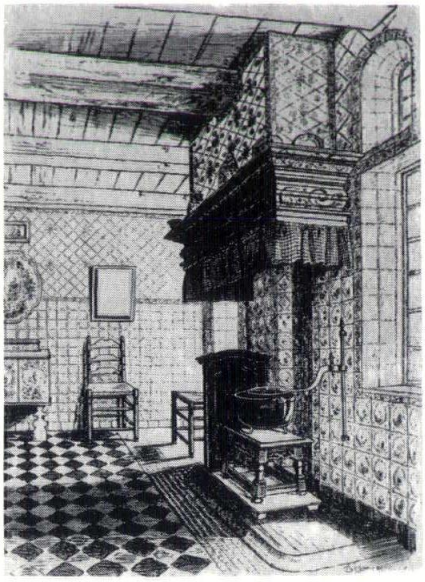
Collection of E. Stanley Wire

Delft Portrait; blue and white Dated 1662.



Courtesy Museum Lambert van Meerten (Delft)

Dutch Polychrome floor tile, dating from late 16th Century.

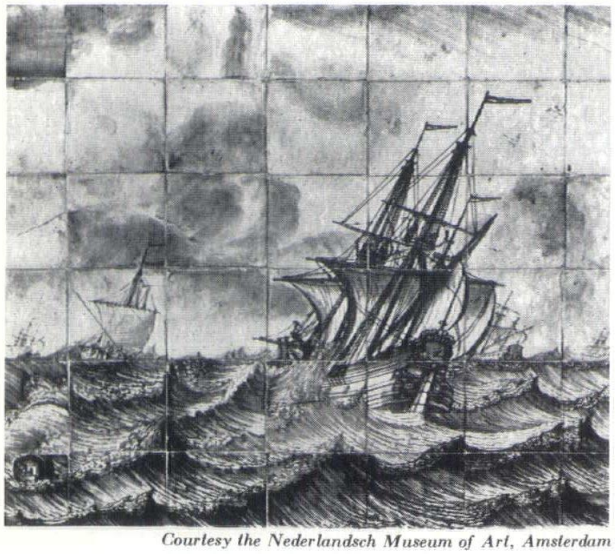


Drawing by Sydney R. Jones

Hinderloopen Room — Frisian Museum, Leeuwarden, Holland.

The earliest floor tiles of the fifteenth century were about seven-eighths of an inch thick, made of a red clay, with overglaze of lead. The transition from lead-glazed floor tiles to tin-enameled wall tiles of the sixteenth century must have been a rather gradual process. Enough patterns have been found of the early enameled tiles to substantiate the influence of Italian and Spanish techniques, possibly through Flemish channels.

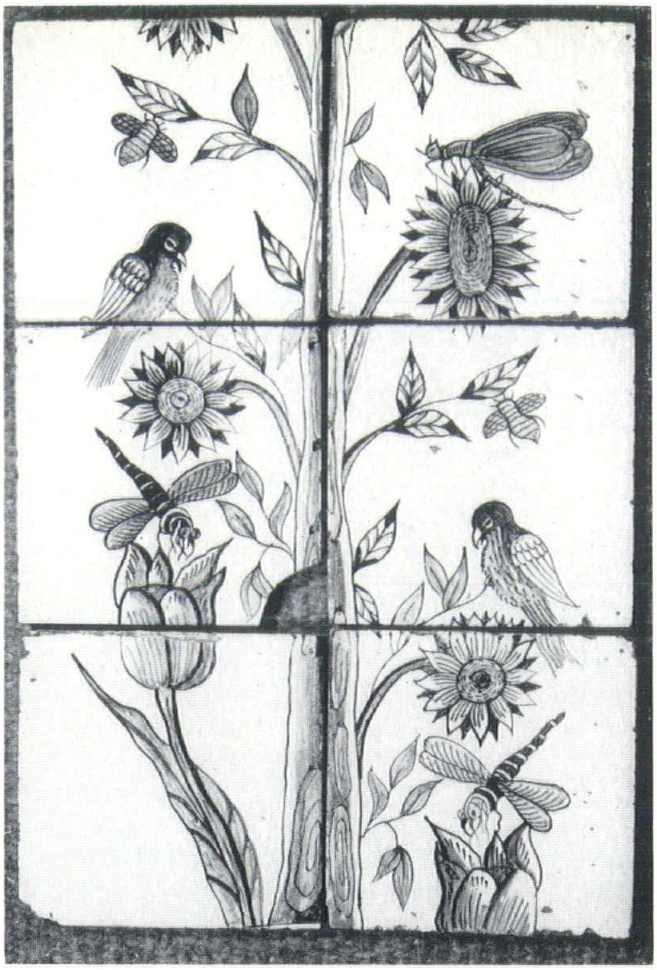
Characteristic of the seventeenth century tiles were designs of oranges, split pomegranates, tulips, grapes, and even vases of flowers and dishes of fruit. Importance was given to the corner motifs but as time went on the stylized fleur-de-lis of some designs dwindled to tiny rosettes. Designs of ships, sea monsters, landscapes, horsemen and royal portraits show the influence of Dutch painting and engraving. The one exception was the primitive attempt to depict Biblical scenes, often conceived in the mind of the tile-painter.



Courtesy the Nederlandsch Museum of Art, Amsterdam

17th Century tile picture, blue and white, shipping on a stormy sea by Cornelis Boumeester.

Typical tile installation in Dutch farmhouse or cottage.

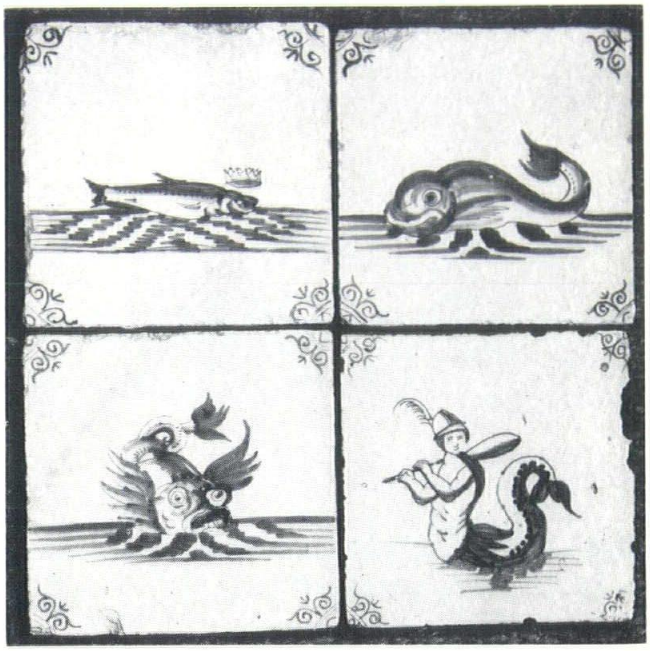


Collection of E. Stanley Wires

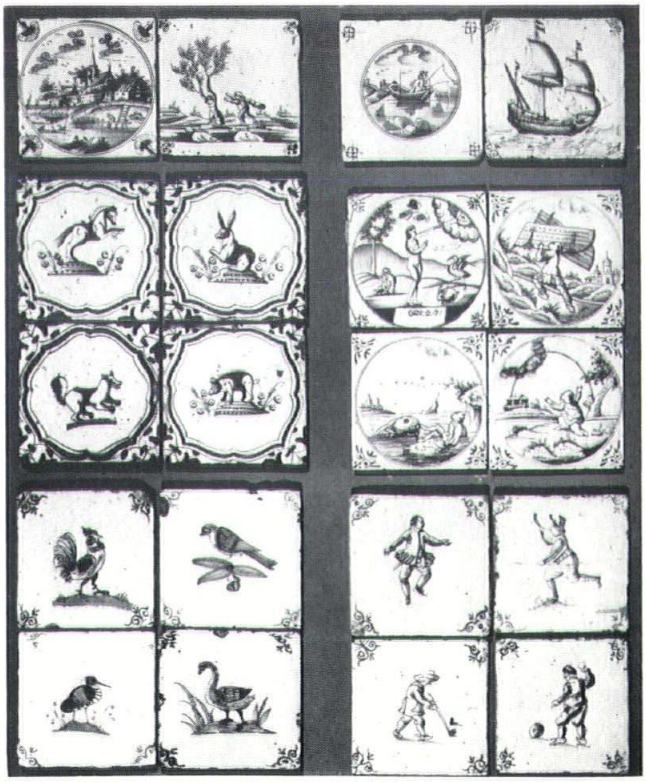
Delftware tile panel, puce on white.

In addition to the single tiles we find beautiful tile-pictures both in the Netherlands and in Belgium. One of the earliest tile-painters of ships was Hendrick Cornelissen Vroom, born in 1566. He traveled to Spain and Italy and learned the art of the maiolica-potters from his fellow craftsmen. One of the most important tile-pictures was a sign taken from a house in Rotterdam, built in 1594. It is called the House of the Thousand Terrors, depicting a lamb standing in the midst of four snarling wild beasts. With this possible exception there is no certainty of the existence of sixteenth century Dutch tile-pictures. In the seventeenth century we associate the tile-painter Cornelis Boumeester with blue and white pictures representing ships at sea and landscapes. Pieter Jansz Aelmis, his son and grandson, covering a period from 1692 to 1799, were all noted painters of tile-pictures which were usually signed.

Dutch tiles were shaped by pressing the clay into a square mould, then transferring it to a wooden board with pegs protruding at the corners to hold the tile in place while the edges were trimmed. This porous body was dipped into a white tin oxide enamel and when air-dried, the design to be painted was applied over this surface by a method called "pouncing." Pin-pricked designs on paper were laid over the tiles and sprinkled with powdered charcoal to form what was called a "ghost" to be filled in by the painter. The tiles then received a thin coating of lead to be fired for the second time. These tiles were usually



Dutch sea animals — 18th Century.



Collection of E. Stanley Wires

Typical five-by-five inch Dutch tiles — 17th, 18th Centuries. Colors polychrome — blue and white, puce and white. Subjects Biblical, mythology and animals.

Collection of E. Stanley Wires

A tile from the summer palace of Czar Peter "the great," located in Narva, Estonia. As a young man Peter lived in the Dutch port of Zaandam.

Collection of E. Stanley Wires

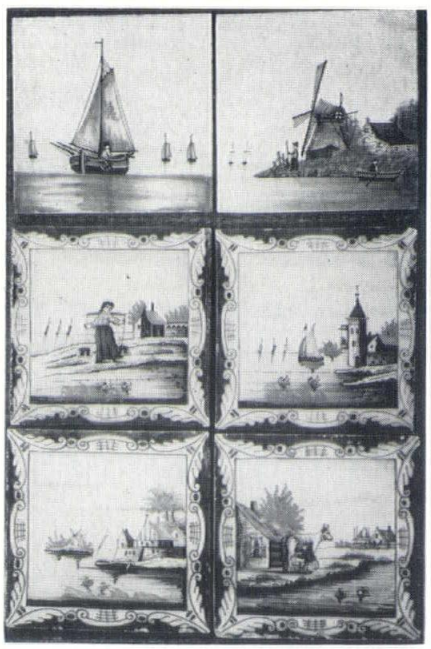
A tile showing the imitation of marble in Holland by running "slips" of different colored clay together.

A tile commemorating the dropping of supplies into Holland during World War II. Collection Smithsonian National Museum.

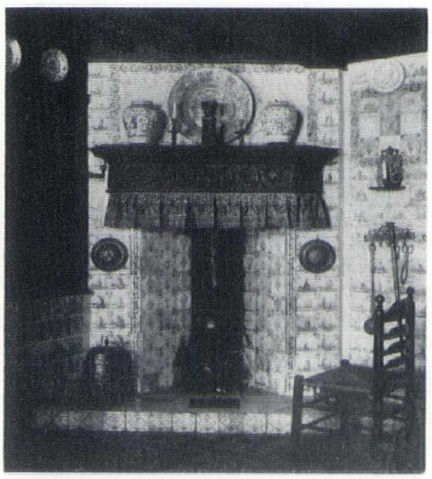
five inches square, the early tiles being five-eighths of an inch thick decreasing to about one-quarter of an inch in the eighteenth century.

Tiles were installed as wainscots, chimney pieces and wall murals. In the homes of the wealthy, it was customary to have a room expressly set apart for the show of Delftware. This room represented both kitchen and dining hall; a tile stove, walls covered with tile, shelves full of dishes, a table set for dinner with a service of every possible article.

It is interesting to note the variety of names taken by the tile factories — the Three Bells, the Porcelain Hatchet, the Golden Flower Pot, the Water Can, the Peacock and the Double Pitcher. The last of these factories, the celebrated Three Bells was sold in 1850, when Delftware had become steadily degraded and fine European ware replaced it.



Polychrome six-by-six inch Delft Tiles, 19th Century.



Dutch Tile Fireplace: Late 18th Century. "Lampoon" Building, Harvard College, Cambridge. Architects: Wheelwright & Haven, Boston; Installation: The Tile Shop of E. Stanley Wires.

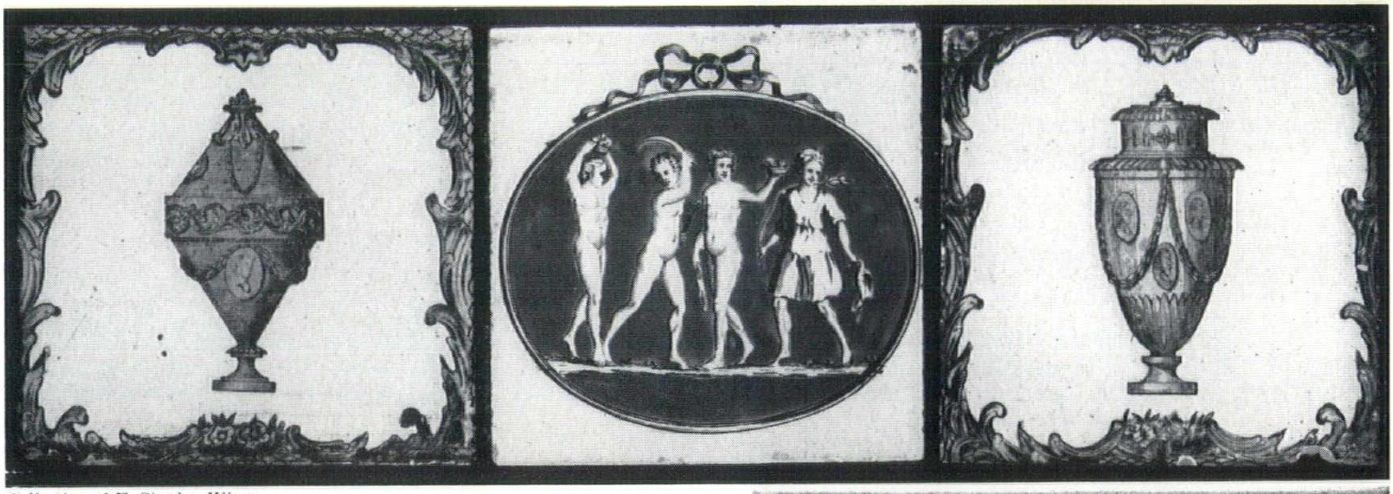
Collection of E. Stanley Wires

English painted tiles — 18th Century.

English Painted and Printed Tiles

During the years that elapsed between the cessation of the early Medieval Tile-work (described in Part I, *New England Architect and Builder* — No. 14) and the seventeenth to eighteenth century revival in the production of English decorative tiles, there is very little information connecting these two periods.

It seems plausible to attribute this revival to the great popularity of Delftware in England and the influence of Oriental Porcelain brought into Europe by the Dutch East India Company.



Collection of E. Stanley Wires

English Liverpool printed tiles — 18th Century. Showing the influence of Josiah Wedgwood.

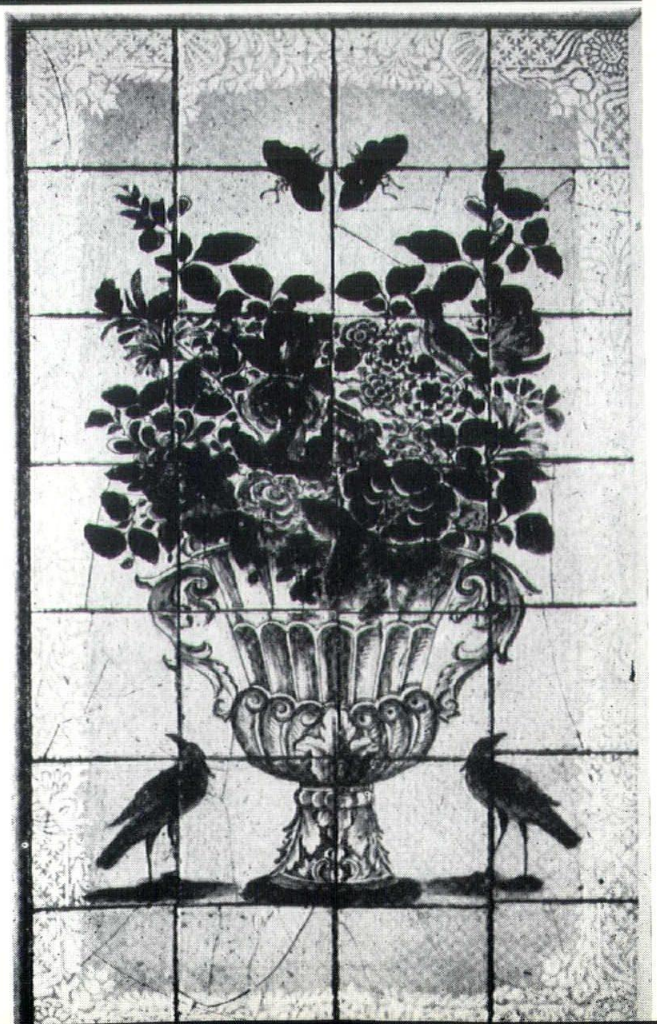
The first Delftware made in England was at Norwich, where the two Flemish potters built a kiln in 1567, to make what they called "galley paving tiles." By 1626 the word paving was dropped, the resulting galley tiles being defined as "glazed wall tile."

This early English maiolica was subject to Dutch influence and the true English Delft tiles were not made until 1671 when Jan Ariens Van Hamme was granted a patent to make tiles and other earthenware after the way practiced in Holland. A pottery was located in Lambeth in 1676 and soon extended to Bristol, Liverpool and parts of Staffordshire.

Tile-pictures, similar to those in Holland, were made in both Lambeth and Bristol and the majority of hand-painted tiles were probably made in Bristol during the early part of the eighteenth century. Later, due to the improvements in transportation certain painted tiles that were sold in Bristol could have been produced in Liverpool.

The names of Thomas and Richard Frank, Thomas Sayer, Joseph Flower, John Bowen, Thomas Shaw and Zachariah Barnes were recognized tile-painters of Bristol and Liverpool. The tile-pictures were not as popular in England as in Holland. They were used as business signs and for the inside jambs of fireplaces; the over-all designs being sea views, landscapes, flowers and birds.

Tiles were commonly used to line wash basin recesses and later for the walls of dairies and shops. The designs were



Courtesy of The Bristol City Art Gallery

Polychrome Delftware Tiles, Circa 1765 — "Bianco-sopra-bianco" Technique.

Collection of E. Stanley Wires

Late 19th Century English tiles — eight-by-eight-inch tiles, Kate Greenaway design; six-by-six-inch tiles, Walter Crane designs.

polychrome birds, with and without borders, animals, contemporary rural scenes and flower motifs. The Bristol painters developed a technique called "bianco-sopra-bianco" (white-on-white) where a border of stylized flowers was painted in white on a blue-grey background.

The English process of making tiles differed from that of the Dutch, in that the designs were applied over a vitrified enamel instead of directly to the biscuit. The English potters used higher temperatures, resulting in a denser body and chamfered the edge of the tiles to facilitate installation.

The application of transfer printed decoration dates from 1753, when a John Delamain, a partner in the Battersea enamel works, recorded a petition stating that he had "purchased the Art of Printing Earthenware with as much Beauty, Strong Impression, and Dispatch as it can be done on paper."

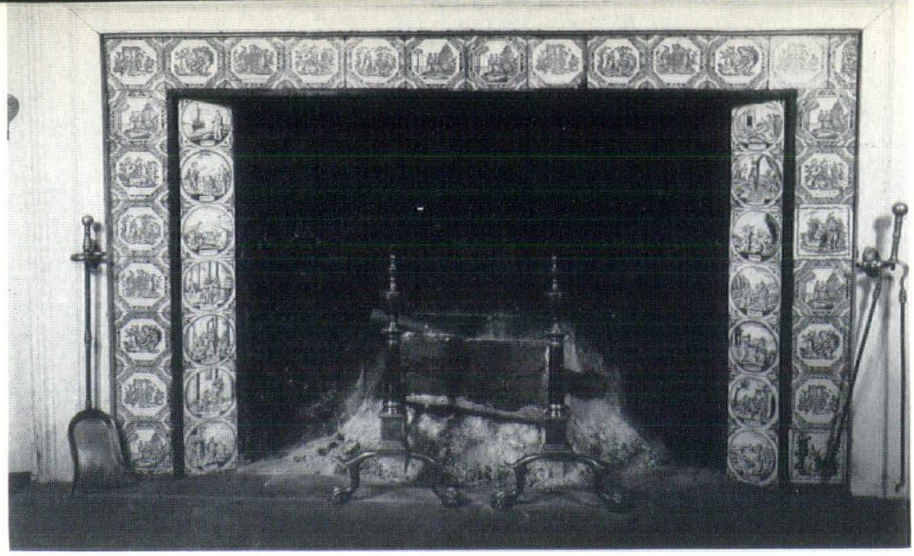
Collection of E. Stanley Wires

English Liverpool Aesop Fable Tiles. Left to right: The Fox and the Monkey, The true leader proves himself by his qualities; The Mischievous Dog, Notoriety is not Fame; The Fox and the Stork, Do not play tricks on your neighbors unless you can stand the same treatment; Mercury and the Woodman, Honesty is the best policy.

About this time Benjamin Franklin wrote to his friend Dr. James Mitchell of London, suggesting the printing of square tiles, from copper plates. His idea was rejected as impracticable by the tile-makers of London and he did nothing more about it. However, most authorities credit John Sadler, an engraver, with producing the first transfer printed tiles. He got his idea from watching children stick waste prints to pieces of broken earthenware. He started experimenting in 1749 but it was not until 1756 that he and his partner Guy Green made an affidavit that within a space of six hours they printed twelve hundred earthenware tiles better and neater than one hundred skillful pot painters could have painted in like space of time.

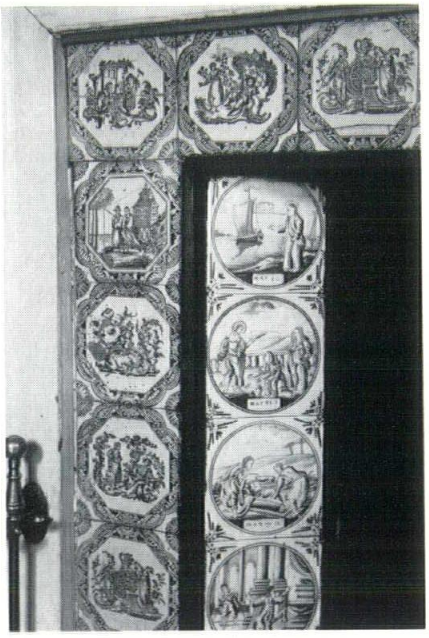
Collection of E. Stanley Wires

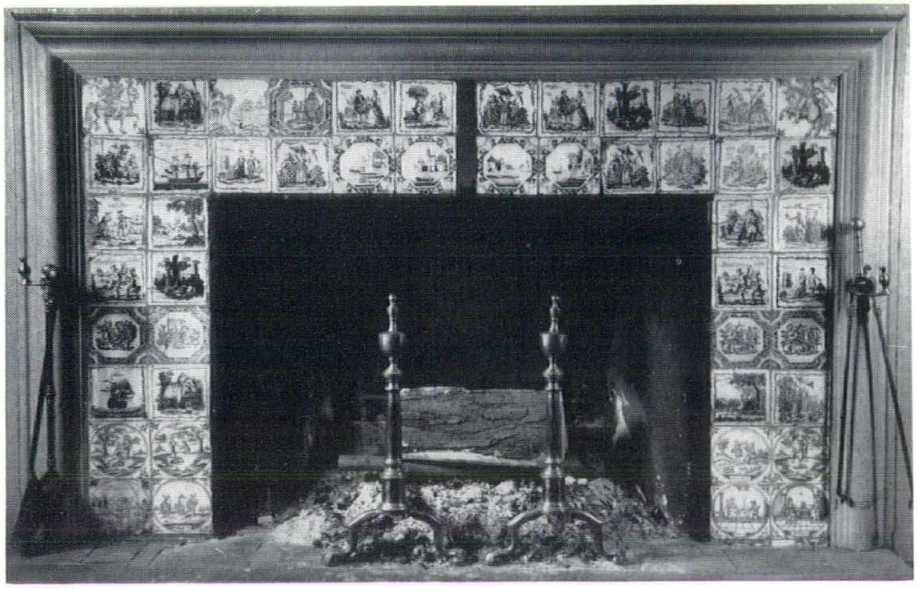
English Liverpool Tiles — 18th Century. Middle left: From Hampton, So. Carolina, built in 1730 by the Rutledge family. Middle right: "The Tithe Pig," for the ten percent tax, the farmer's wife implores the Parson to take the baby in place of the indispensable young porker. Lower left: The tile design that inspired Longfellow's poem "To a Child."



Study Fireplace — Henry Wadsworth Longfellow House, Cambridge, Mass. The facing is rare Sadler Tiles from Woodcuts, 1756–57. Jambs are Dutch Biblical tiles.

Detail of Study Fireplace — Longfellow House.





The Blue Room Fireplace — Henry Wadsworth Longfellow House, Cambridge, Mass. A Liverpool tile in this facing inspired Longfellow to write the following lines in his poem "To a Child."

"The Lady with the gay macaw,
The dancing girl, the grave bashaw
With bearded lip and chin;
And, leaning idly o'er his gate,
Beneath the imperial fan of state,
The Chinese mandarin."

John Sadler's association with Josiah Wedgwood came about through the fact that they both had perfected processes destined to bring pleasure to the common people and by 1761 Sadler undertook the work of decorating Wedgwood creamware. At that time he admitted the printer, Guy Green, to partnership.

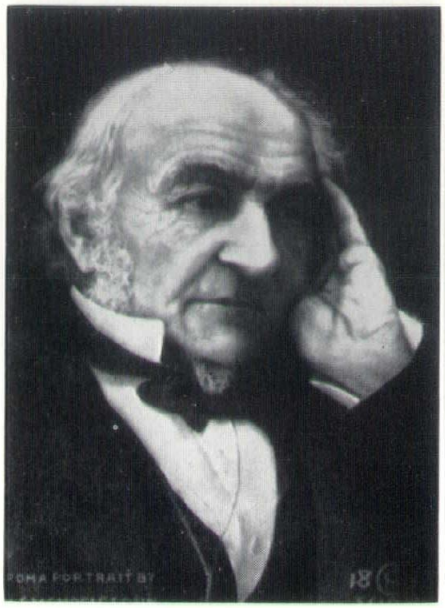
The printing of tiles was divided into four periods: the Woodcuts, 1756–1757; the Sadler period, 1757–1761; the Sadler and Green period, 1761–1770; and the Green period, 1770–1789. Most of the tiles were printed in black and red, but purple, green and blue were used to a limited degree. About two-hundred and fifty designs have been recorded and of these, twenty were signed by Sadler. The subjects cover scenes of gallantry, satire, sports, landscapes, fables and two series of actors and actresses portrayed in their principal stage roles. One of these series, including about forty subjects, was printed between 1777 and 1781 by Richard Abbey, formerly apprenticed to Sadler and Green.

As to the source of the prints from which the copper engravings were made, the author is indebted to his friend, G. E. Bryant of London for the following information: — The early woodcuts are after J. E. Nilson, an Augsburg engraver; the Chinese subjects are after Jean Pillemont (1759); the Aesop's Fables are after Barlow and Croxall (1722); the theatrical tiles are from Bell's Theatre (1776–1778); and various other subjects are from prints by Charles Mosley (1750) and Major and Paul Ferg (1754).

Courtesy of Bostonian Society

Liverpool tiles from fireplace in Governor Hutchinson's Mansion, North Square, Boston, Mass. House dismantled in 1832.

Transfer printed Wedgwood tiles, 1884 — Kate Greenaway designs from "Under the Window."



Collection of E. Stanley Wires

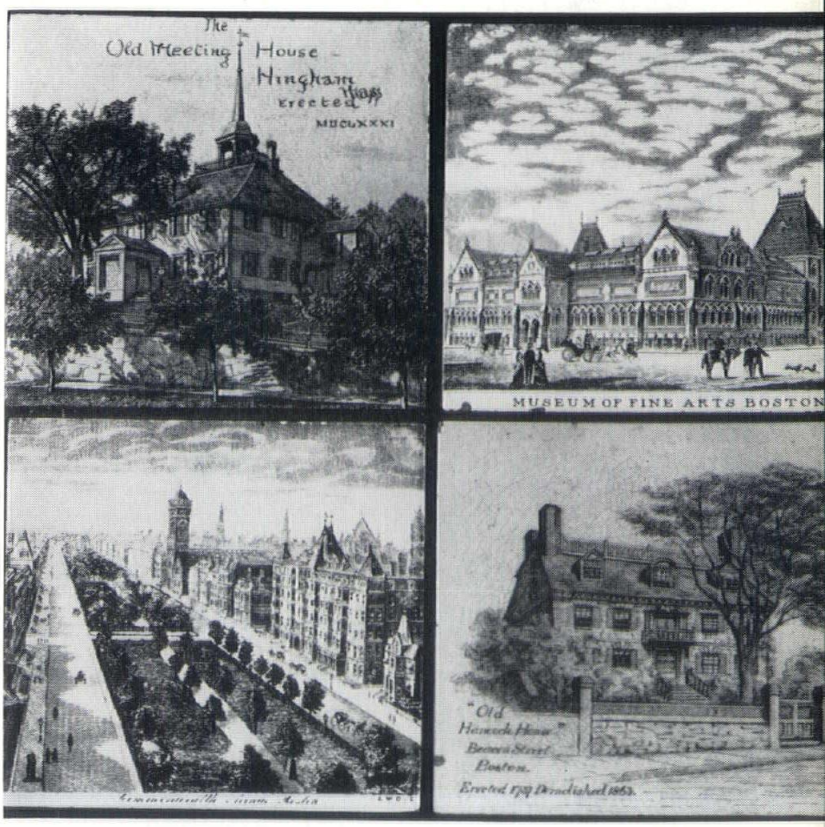
William Ewart Gladstone, 1809–1898 — A British statesman and Prime Minister. Tile made at the Hanley Works of Sherwin and Cotton, from a portrait by H. S. Mendelssohn. Sculptor: Cartledge.

The Liverpool tiles were shipped in large quantities to the American colonies and were used as fireplace facings in colonial homes of the pre-Revolutionary era. Examples of such work may be seen in the Henry Wadsworth Longfellow House in Cambridge, Mass., the Jeremiah Lee House in Marblehead, Mass., and in the Isaac Royall House in Medford, Mass. Tiles in the Old Boston State House, taken from the residence of Governor Hutchinson, are also Liverpool tiles.

The demand for English tiles was so great that noted potters, such as Thomas Whieldon, made landscape and figured tiles by the salt-glaze process, and even Josiah Wedgwood, in the late eighteenth century, executed painted tiles for dairies and summer houses, much in fashion at the time. Mrs. Charles P. Gorely, an authority on the life and work of Josiah Wedgwood, has given the writer information from a letter written by Wedgwood on June 1, 1779, as follows:

"Those tiles are made for the dairy of Sir Henry Harpurs, & the agreement for the price with Sir Henry was, that they should come as cheap, *p square yard,* as the Liverpool plain tiles which are sold at 2/6 P doz, or cheaper if possible. The tiles made at Etruria are 7 inches square, consequently each contains 49 square inches. Those made at Liverpool are only 5 inches. The contents of each 25 square inches; so that one dozn of the former covers nearly as much surface as two dozn of the latter, & have greatly the advantage over them in several respects from being so much larger."

By the nineteenth century, the tile industry entered a commercial stage where quantity production began to be an essential of the business. Typical of the times was the company founded by Thomas Minton at Stoke. By 1836 A.D., Herbert Minton, his son, and two nephews, Michael Hollins and Colin Minton Campbell, became proprietors of the business which soon became a most important factor in the modern tile trade. Mr. Minton was not only a manufacturer of tiles but he was a diligent collector of old tiles, and many of his friends, among the nobility and clergy, collected tiles for him on their travels.



19th Century English tiles — Historical subjects.

About 1840, Richard Prosser of Birmingham invented a press to compress clay dust between metal dies. The Minton Company bought the patent, which is the basis of the present industry.

By using this process the tile makers developed encaustic incised and intaglio pavements, similar in design to old Medieval Tiles.

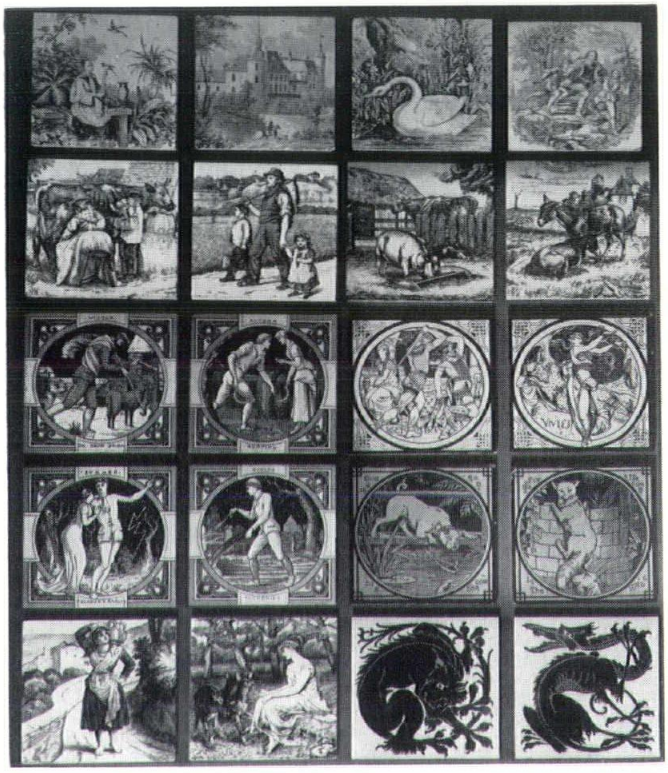
Mr. Minton's encaustic tiles were said to be the greatest step in decorative architecture, which the ceramic art had made in England, and he was recognized as a most spirited and tasteful master in his art.

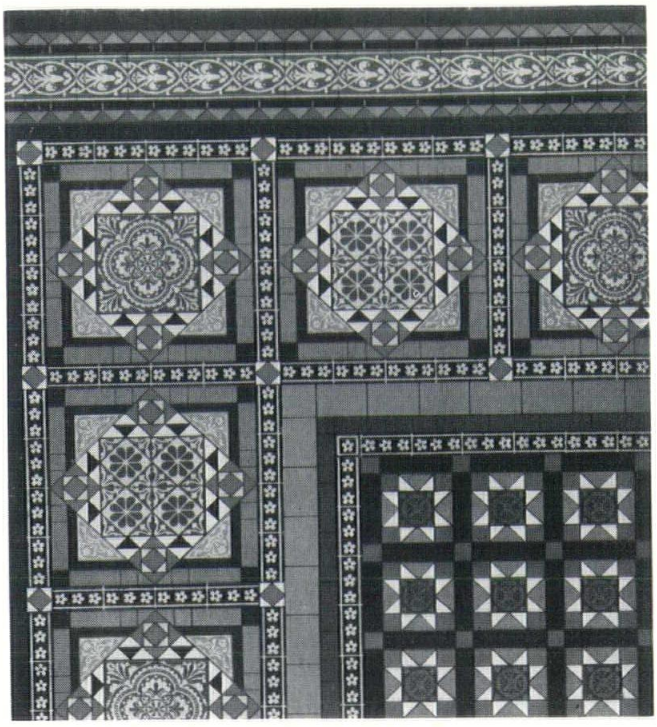
These unglazed tiles were popular in both England and America and today large areas can be seen in the National Capitol in Washington, D. C.

When Herbert Minton died in 1858 his company employed about fifteen hundred people. Some of the best known designers of this period were Harrison Weir, Walter Crane, W. Wise, Moyr Smith, Leon Arnoux, Emile Jeannest and Carrier Belleuse.

Collection of E. Stanley Wires

Typical six-by-six-inch English and German printed tiles — 19th Century. Note: top four tiles German.

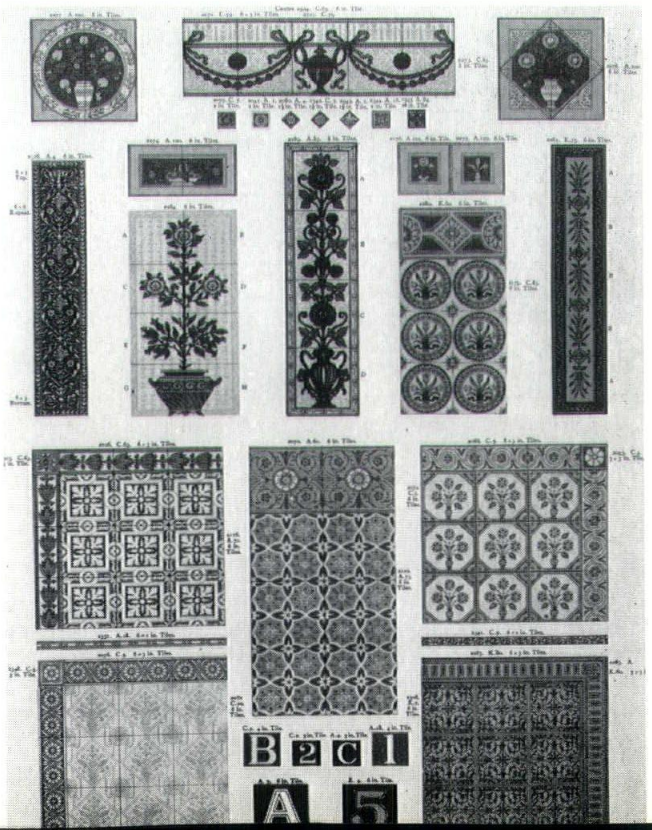




English Encaustic tile pavement — 19th Century.

Other important manufacturers of nineteenth century tiles were the Jackfield Pottery, dating back to 1560 and taken over by Craven, Dunnill & Company; the Benthall Works, Jackfield, of Maw & Co., Ltd., 1850; the Waterloo Pottery of T & R Boote, 1850; the Campbell Brick & Tile Company, 1875, carrying on the work of Robert Minton Taylor; Josiah Wedgwood and Son, Etruria; Henry Doulton & Company, Lambeth; W. Brownfield & Son, Cobridge; Sherwin & Cotton, Hanley and Pilkington's Tile & Pottery Co., Ltd., Manchester.

English Decorated Glazed Wall tiles. For walls, fireplaces, cabinet-work and boxes.



BIBLIOGRAPHY

Lane, Arthur, "*A Guide to the Collection of Tiles,*" Transatlantic, London, 1939

Knowles, W. P., "*Dutch Pottery and Porcelain,*" B. T. Batsford, London, 1913

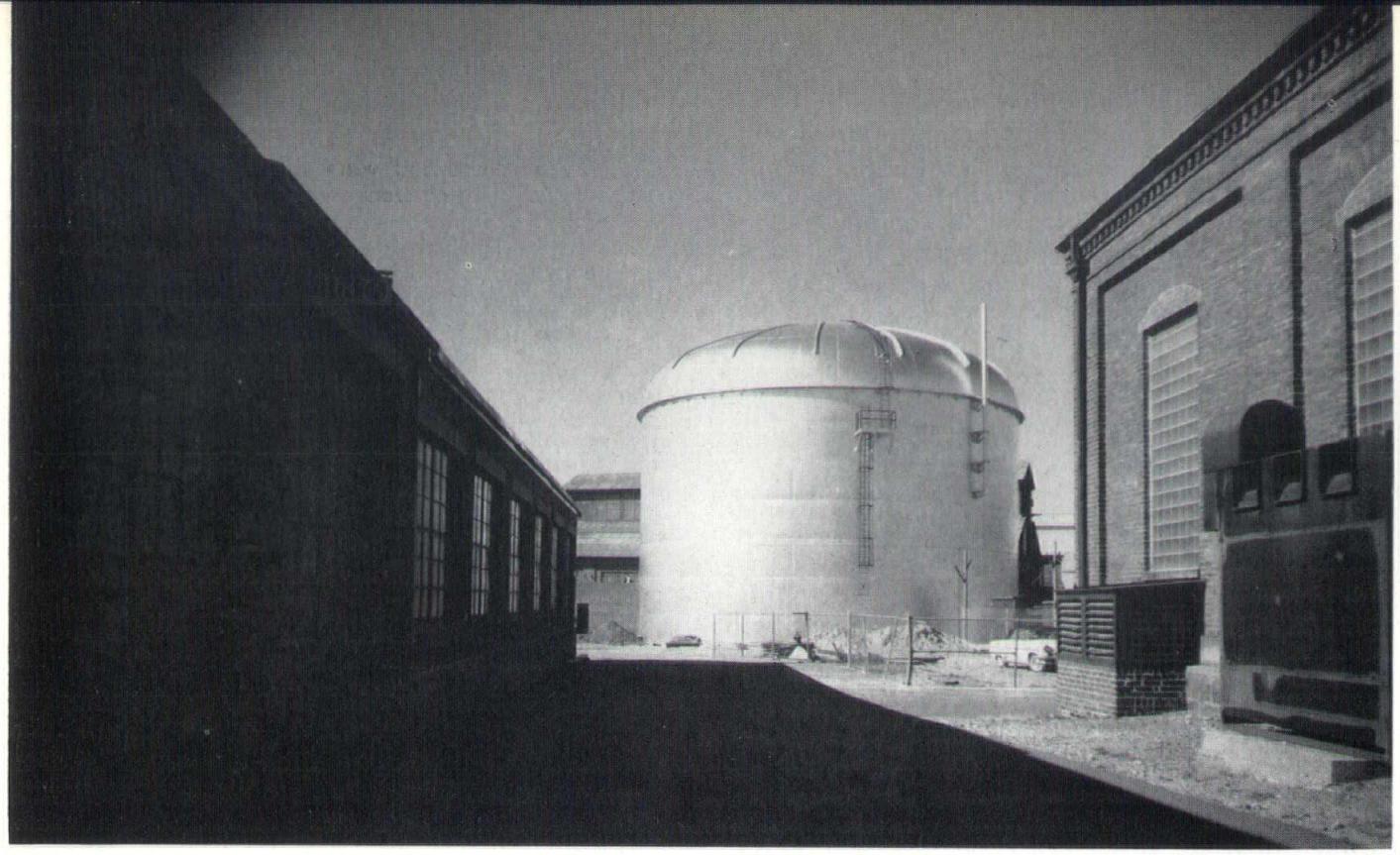
Neurdenburg, Elisabeth, "*Old Dutch Pottery and Tiles,*" Himebaugh and Browne, Inc., New York 1923

Solon, L. M., "*The Art of the Old English Pottery,*" D. Appleton and Company, New York, 1886

Price, E. Stanley, "*John Sadler — A Liverpool Pottery Printer,*" West Kirby, England, 1948; Published by Price, printed by Gould's

Lipski, Louis L., "*An Introduction to Bristol Delftware Tiles,*" the Connoisseur, June 1953

Hughs, G. Bernard, "*English Delftware Tiles,*" Country Life Annual 1956



NEW REACTOR AT WATERTOWN NEARS COMPLETION

A bright and shining new Research Reactor at Watertown Arsenal is now in final stages of completion. Construction work on this facility was started in May 1958 by Vara Construction Inc. of Boston, Massachusetts, general contractor. Since that time the Vara firm along with a top-ranking team of subcontractors have put into place extremely complex and intricate construction valued at about $1,350,000.00.

PROJECT DATA

Owner — Watertown Arsenal, Ordnance Materials Research Office; **Supervision for Owner** — U. S. Corps of Engineers; **Architect-Engineer** — Giffels & Vallet, Detroit, Michigan; **General Contractor** — Vara Construction Inc., Boston, Mass.; **Reactor Subcontractor** — Curtiss-Wright Corp. Research Div., Quehanna, Pa.; **Mechanical** — Arden Engineering Co., Inc., E. Providence, R. I.; **Electrical** — Massachusetts Electric Co., Boston, Mass.; **Steel Containment Vessel and Misc. Metal** — Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.; **High Density Concrete** — Lee Turzillo Co., Brecksville, Ohio; **Painting** — Dale Garbutt Co., Saugus, Mass.; **Acoustic Ceiling Treatment** — Edward Byrnes Co., Boston, Mass.; **Electric Bridge Crane** — Robert Abel Co., Brookline, Mass.

Work now in progress includes the installation by Curtiss-Wright Corporation of the Reactor Assembly, Reactor Control Console and Instrumentation, Beryllium Oxide Reflector Elements, and also the installation of the Aluminum and Boral Beam Tube Assemblies in the Reactor Pool structure.

As soon as these items of work have been completed the Reactor will be ready for installation of the Fuel Elements and the Testing and Operation phases of the contract will begin.

The testing of the reactor will last for 90 days after construction is complete. Reactor operation will be conducted for 84 days after that. During these periods Curtiss-Wright nuclear engineers will calibrate and evaluate the characteristics of the Reactor and will see that it is functioning properly. At the same time they will instruct representatives from the Ordnance Materials Research Office in the operation of the new facility. Representatives of Vara Construction Inc. will remain on the job during these periods also, in order to expedite and coordinate any and all corrections and adjustments required for proper completion and acceptance by the owner.

This will be the first nuclear research reactor designed to meet the needs of the research programs on materials of the U. S. Army Ordnance Corps and will be operated and used by the Ordnance Materials Research Office (OMRO) and its supporting laboratories. OMRO was established in February 1954 and has responsibility for the administration and execution of the Materials Research Program of the Ordnance Corps. Most of the experiments conducted at the reactor will be basic to the more applied studies carried on at the various arsenals of the Ordnance Corps, and will employ primarily the techniques of solid state physics.

The contract is being administered and supervised for OMRO by New England Division, U. S. Army Corps of Engineers.

In the traditional study of materials, the observation and investigation of Macroscopic behavior, such as determinations of tensile strength, corrosion resistance, and bonding strength, are preliminary but necessary to the accumulation of information for engineering applications of materials. However, today there is an increasing use of, and a necessary requirement in materials technology for

researches into molecular and atomic structures of materials, because the macroscopic approach has, in many instances, reached a limit. The need now is for investigations into the prime structures of matter, and it is in this direction that this portion of the work of OMRO is oriented.

Neutrons from the reactor will be used in much the same way as X-rays. However, the neutrons can be used in many instances where X-rays cannot. Some problems which will be studied are:

a. Studies of ferromagnetism, anti-ferromagnetism, and paramagnetism.

b. Studies of vacancies and interstitial atoms and dislocations of atoms in materials and their effects on the physical properties of metals.

c. Studies of grain boundaries in metals and effects of heat treatments on physical properties by use of short-lived radioisotopes not presently obtainable at an Ordnance Corps installation.

Beneficial effects of radiation on metals has already been demonstrated. One such effect has been the ability of radiation, like cold working, to increase hardness and strength of metals.

In order to produce this modern scientific facility the Architect-Engineer, Giffels and Vallet of Detroit, Michigan, have used in their design a wide variety of materials ranging from the ages of History to the Age of Tomorrow . . . from brick, concrete, and steel to boral, magnetite, and beryllium. Fabrication and installation tolerances are in the order of plus or minus 1/64 of an inch in many instances.

The OMRO reactor is based on the design of the Bulk Shielding Facility at the Oak Ridge National Laboratory. The reactor core is where the neutrons are produced from the fissioning or "splitting" of uranium atoms. When a uranium atom is hit by a slow-moving neutron it breaks apart into two new atoms and also releases two or more neutrons. As long as one of these new neutrons hits another uranium atom, a self-sustaining chain reaction can be maintained; that is, as many neutrons are produced as are used up. The reactor core is made up of fuel elements, each of which contain aluminum plates, 3" wide and 24" tall and 0.060" thick. In the middle of each plate is sandwiched a thin layer of aluminum-uranium 235 alloy. Ordinary demineralized water is between the plates to "slow down" the neutrons as they are produced and 930 gallons of water per minute are forced through the elements to remove the heat produced and maintain the temperature at about 100° F. This reactor will initially operate at 1 megawatt.

Penetrating the reactor core are control rods which are made of materials that readily absorb neutrons; thus, by their position, preventing or allowing the chain reaction to continue.

The radiations from the reactor are contained within the octagonal concrete tank (21 foot diameter) which is made up, in part, of high density concrete and is five feet thick. Vertically the radiations are prevented from escaping by twenty-two feet of water.

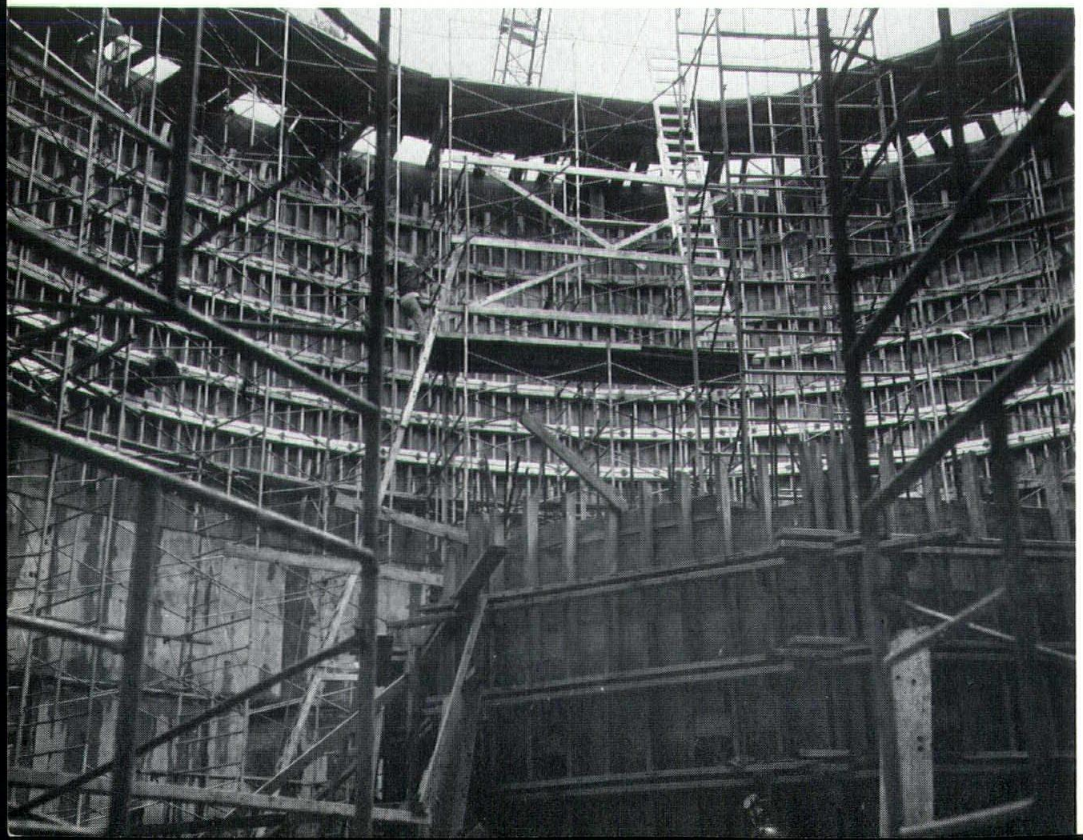
To use the neutrons, tubes penetrating this tank have been provided to allow the radiations to emerge in a controlled manner. Also pneumatic tubes are provided to allow the exposure of samples while the reactor is operating.

All liquids and air leaving the reactor are monitored for radioactivity and none discharged which are above rigid tolerances set up by the U. S. Atomic Energy Commission.

The entire reactor structure is enclosed by a steel plate containment vessel 80 feet in diameter and 67 feet high that looks much like a silver domed water tank. The only access to the interior is through two massive double door steel airlocks. These airlocks are designed to allow access without breaking the airtight seal of the vessel. The entire building may be sealed in an emergency to be gastight with a 2 psi internal pressure.

The steel containment vessel and all miscellaneous structural steel and light iron work was performed by Pittsburgh-Des Moines Steel Co., a nation-wide firm specializing in this type of high quality and precision steel fabrication and erection work.

Behind the steel vessel is a two-foot-thick cylindrical wall of reinforced concrete which insures that no stray radiation



The lattice work of wood in the background are the forms for the high density concrete radiation shield for the octagonal reactor pool structure as seen in the foreground.

leaves the building. The entire structure is built on a four-foot-thick concrete base slab on specially compacted gravel. Reinforced concrete slabs for the Operating Floor are 27 inches thick.

Concrete pours for the base mat and for the 20-foot-high lifts for the wall were specified to be done in one continuous operation. This required the use of three cranes and up to 50 men working in shifts from sun-up to nearly midnight. For these extended pours, concrete was furnished from two sources to insure that there would be no delays in placement. J. H. McNamara and Rosenfeld Washed Sand & Stone Co. delivered from their plants in Brighton and Waltham.

The largest single continuous pour was for the base slab when over 700 C.Y. of concrete were placed over a period of 16 hours.

Due to the unusual construction details for the cylindrical wall, special forming methods, procedures, and form ties were required. These were designed and incorporated in the work by Vara Construction personnel and Richmond Form Ty Co. with the cooperation and assistance of the U. S. Corps of Engineers.

Specifications for the High Density Concrete for the reactor shield called for a density of 275# per cubic foot (as compared to about 150# for normal Concrete). This density was obtained by using an aggregate blend composed of steel punchings (the "holes" punched from steel beams and boiler plate during fabrication operations) and magnetite (a form of iron ore). These materials were washed, screened, steam cleaned, carefully blended and weighed and then placed in the forms dry. A loose grout of cement, magnetite sand, and an intrusion aid was then pumped through pipes down into the form at the bottom until it completely filled the forms and all the voids between the preplaced dry aggregate. The grout pumping operation was a continuous operation. It took 20 hours to fill the shield forms.

The concrete resulting from this method of placement has the required density and also the highest possible degree of homogeneity throughout. Since there are 24 beam tubes 6" in diameter that pass completely through this high density shield to allow experimental access to the reactor core, it was doubly essential that all voids of any kind in the forms be 100% filled to prevent radiation leak. Placement by conventional means no matter how carefully done probably could not have achieved the same results.

The Lee Turzillo Company of Brecksville, Ohio, placed the High Density concrete in forms prepared by Vara Construction Inc.

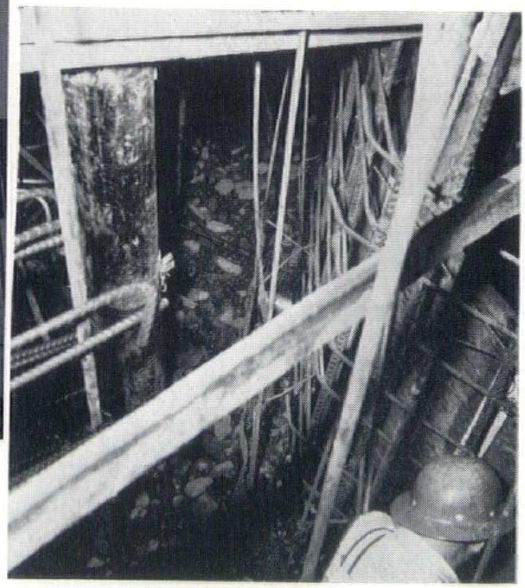
The Mechanical Subcontractor, Arden Engineering Co. of East Providence, Rhode Island, was selected by Vara Construction Inc. to install complete systems for Plumbing, Heating, Ventilating, Air Conditioning, and Steam Distribution. They also installed the complex systems for Process and Service piping and equipment in connection with the Reactor.

Mass. Electric Construction Co. of Boston, was selected to install the complete Electrical Systems. Their subcontract included a unit substation and systems for cathodic protection, lighting, inter-communication, fire alarm and a complete motor control center for the entire facility. They are also completing all wiring connections for Curtiss-Wright Corporation in the installation of the reactor control console and instrumentation.

The Mechanical and Electrical installations have proceeded rapidly and efficiently since the beginning of this project. Constant coordination on the job site has been necessary to eliminate possible conflicts in routing of piping and conduit and placement of the hundreds of items of equipment.

Pictured — the congested working conditions while placing the dry aggregate in the shield forms.

Note the extremely close quarters and clearances that were required for these installations.



HANS KRIEKS, A.I.D.
PRESIDENT AND DIRECTOR OF DESIGN
HANS KRIEKS ASSOCIATES, INCORPORATED

Hans Krieks was born in Amsterdam, the Netherlands. His father was one of the leading interior-architects and furniture designers in this country.

After World War II he was an assistant in his father's office doing residential and commercial interiors, and designing custom-built furniture.

After coming to the United States, Mr. Krieks started to work with a subcontractor of the Aetna Marine Corporation when they were constructing the *USS Constitution* and the *USS Independence* for the American Export Lines. He worked on interiors and specially designed furniture for these ships. Mr. Krieks worked after that in New York and Miami designing interiors and furniture.

In 1957 he became Director of Design of Business Interiors, Boston, Massachusetts, in which capacity he designed many commercial interiors (see attached). In 1959, he started his own design organization, Hans Krieks Associates, Incorporated.

Mr. Krieks is a member of the faculty of the Division of Art, Boston University School of Fine and Applied Arts where he is head of the Department of Interior and Furniture Design.

GOOD DESIGN IS

Good Business

by: **Hans Krieks**

Many times I have encountered the following stereotyped remark — "What do you want with all your talk about Good Design? Educate the public and starve, or make money and design what they want?"

What does the public really want? Does she want the land ruined by suburban communities with houses built without consideration for any basic aesthetic values? Does she want the landscape ruined by bull-dozers, as well as cutting down all trees, because it cuts down the cost of building?

Does she really want the type of car that is presently in her garage?

Does she want only comfort and gadgets?

Does she want all that ugliness she sees around her?

Is she really as indifferent as she seems to be about aesthetic values?

The answer to these series of questions is another question. Can you ask the blind about seeing? How then can you ask the public to see beauty when it has been deprived of it to such an extent?

CONVERSE RUBBER COMPANY,
Malden, Massachusetts

Oil-finished teak walls. Desk solid teak and brushed chrome. All furniture except chair was of special design. Original brick wall was retained and convector heating units used without covers. Sample shoe cabinet shown above heating is suspended on metal brackets.

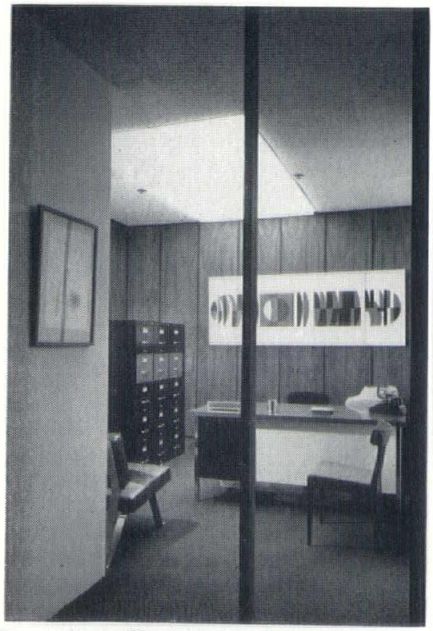
Executive office of David Stone, Vice-President. Desk with metal legs, solid teak in an "L" shape. Walls are of teak also.

The opening remark suggests that there is a connection between creating beauty and starving on one side, and establishing ugliness and making money on the other. This is one of the greatest fallacies of our time. Let us examine some major industries that create products closely related to aesthetic values.

FURNITURE — Right after World War II small companies started to manufacture modern furniture in a primitive way. The only support they had came from some small groups of young, dedicated contemporary architects. Big furniture manufacturers with the support of big capital and the Madison Avenue crowd with their so-called "market research" tried to stop this movement. They also opposed the import of well designed Scandinavian furniture into this country. Small importers without advertising funds and with little money suffered to get this furniture on the market. After fifteen years of hard work both groups (small manufacturers and importers) have succeeded in their work.

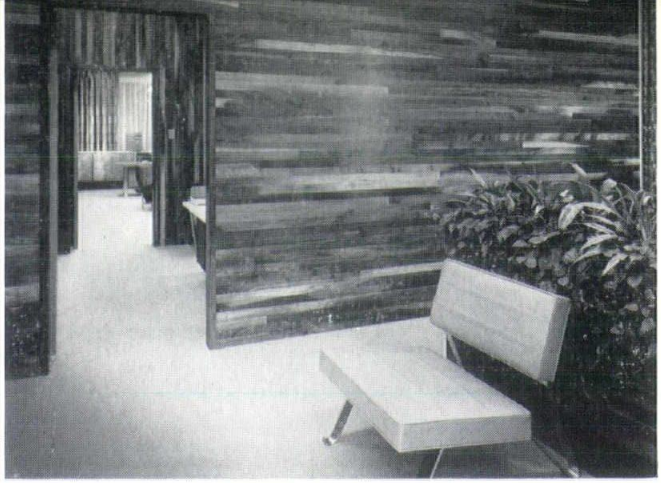
Not only have they grown to substantially sized organizations, but more than that, the big manufacturers have been forced to adopt or copy their designs.

"Swedish Modern" has become an advertising slogan. American made "Scandia" and "Daniel" collections have been created. In the field of furniture manufactured for commercial use the development was even more dramatic. The influence of good contemporary architecture has forced the metal desk and wood furniture manufacturer to produce better designed products. One large desk manufacturer went as far as to buy one of the most eminent design organizations in its entirety to acquire the best design talent and good will possible. Who has made this revolutionary development possible? Nobody but the consumer. Nobody but the public who before had only limited opportunity to see well-designed products.



Reception office view. Metal files are black with the second rack of drawers red. Painting red, black and white. Leather chair a Hans Krieks design.

BUILDING — Examples of good contemporary architecture can be found all over the country, mainly in the field of building for commercial use. Big industries have made it possible for buildings of great beauty to be erected. Their number is too small and their appearance



View of Presidential suite from reception and secretarial office

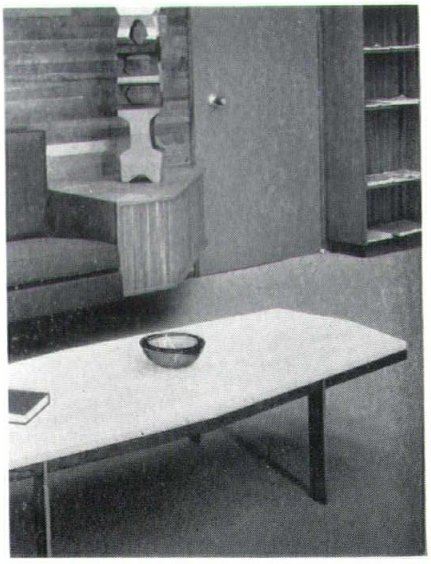
AVCO RESEARCH & ADVANCED DEVELOPMENT CENTER,
Wilmington, Massachusetts
President's office.

We have the richest labor class in the world but in terms of cultural assets they do not get their money's worth. Union leadership has been mainly concerned with material benefits without thinking about cultural needs. They never seriously thought of creating better looking homes.

They failed to create cooperative building societies, as in many West European countries, where good architects were lured to work on better housing communities with them. (An exception to the above statement can be made for the Garment Workers Union which has done some work in this direction.)

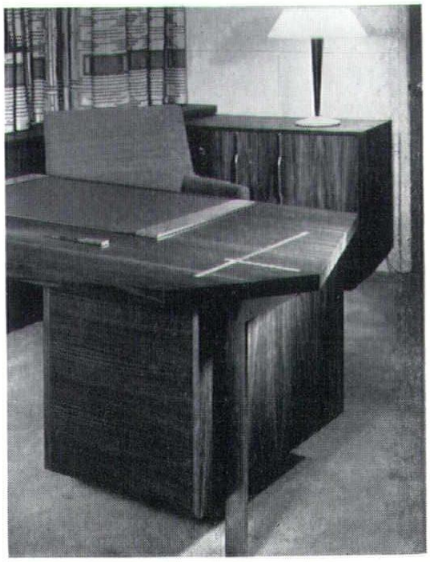
AVCO RESEARCH & DEVELOPMENT CENTER

President's office. Coffee table cherry with brushed aluminum and travetin marble top. Walls solid cherry planks, unselected, random length. Sculpture by Hugh Townly.



spotty. As limited as this development seems, in relation to the total building in this country, percentage-wise, growth from year to year has been gigantic. And here again, only the general public, who is the customer of big industry, has made this revolution possible.

Home and apartment building is lagging far behind. Home developers who operate under the trade-mark "confidence" in their work, do not deserve the right to this axiom. With all the means available they have defaced our countryside with products of shelter without consideration for beauty, in contrast to their advertising slogans. Never have people bought so much and received so little of real value.



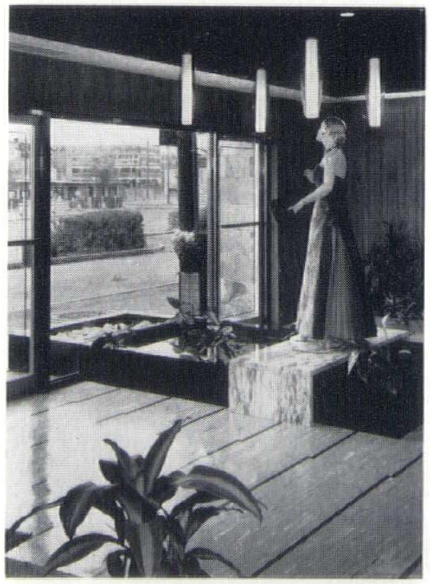
KENNEDY'S, Boston, Massachusetts
Executive desk in the office of Mr. Phil Friedman.

We have never seen the small home-owners work so hard and do so little during their weekends. The "do it yourself" disease is still claiming many victims. Dilettantism is promoted all over. While the paint manufacturer is telling you that you can be your own "Rembrandt" with the number painting kit, the home builder suggests that you can be your own architect by building your own porch.

Since the public has started to work in better designed factories and offices and is getting familiar with these surroundings, they will demand beauty in their homes, too. The home developer had better look at the writing on the wall like the furniture and other industries has done. Here too they will find that Good Design Is Good Business.

ANN STARR, Quincy, Massachusetts
Moveable suspended panels — back of display window. Display platforms are movable and on casters.

View from coat and dress department. Shoe department as seen through store.



In and outside pool near main entrance. Pool is black and white marble. Walls oil-finished teak. Vinyl floor laid in special design.

OTHER INDUSTRIES

We have only mentioned a few typical industries. Space limits us to show many more examples. One more item should be mentioned. Namely the purchase of the controlling UNDERWOOD stock by Olivetti. The Olivetti Corporation has spent millions of dollars to promote art and Good Design. It has been proven that these expenditures have more than paid off. I think that this event has magnified the soundness of the thesis that Good Design Is Good Business.

A big task lies ahead for our leaders in the City, State, and Federal Government, wholesale and retail distribution and manufacturing. They must acknowledge the public demand to see more beauty and better designs. They will profit by it, and contribute greatly to, as our Constitution says, "The pursuit of happiness," of the American people.

PRUDENTIAL PROGRESS

PRUDENTIAL CENTER TODAY is a sprawling (31⅓ acres) site with foundation work on the central section of the project more than half completed. Tops of caissons (see center of photo) jut from earth like miniature steel jungle, plunging some 135 feet below the present grade. A wall of sheet steel isolates the construction area from the rest of the plot, and from the railroad and turnpike easement areas. This coffer-dam arrangement penetrates the ground far enough to seal off water seepage, and makes it possible to excavate without interfering with the existing water level. One hundred and forty-four caissons will support the 52-story Prudential Tower, tallest building in the world outside New York City. Sockets, 15 to 22 feet deep, are drilled out of bedrock beneath each caisson, steel "H" beams are inserted and then concrete is poured into the caisson. All the caissons had been positioned and two completed at time of this aerial photo.

Bulletin DIGEST

AS COMPILED BY M. PATRICIA WILLIAMS, ASSOCIATE EDITOR

MASS. BUILDING CONGRESS

Ribbon cutting ceremony, 7th Opportunity Exhibit and Design Display — January 13, 14, 15, 1960 at the Statler Hilton Hotel, Boston.

Left to right: Lawrence S. Burke, Immediate Past President, *Cleverdon, Varney & Pike;* William Moore, President-elect, *J. P. O'Connell Company;* Eileen F. Donohue, Executive Secretary, *Massachusetts Building Congress;* Jack Prager, Chairman 7th Opportunity Exhibit & Design Display, *M. A. Dyer Company.*

Corps of Engineers and the Associated General Contractors of Massachusetts, Inc. was held at the Commonwealth Country Club in Newton in January, 1960.

AT A JOINT MEETING of the Associated General Contractors of Massachusetts, Inc., and the U. S. Army, Corps of Engineers held recently at the Commonwealth Country Club in Newton, Robert Leventhal (left) of the A.G.C. and Colonel Karl F. Eklund, Deputy Division Engineer, co-chairmen of the meeting, discuss mutual problems.

PICTURED AT THE JOINT MEETING of the U. S. Army, Corps of Engineers and the Associated General Contractors of Massachusetts, Inc. held on January 20th at the Commonwealth Country Club, Newton, are (left to right): General Alden K. Sibley, Division Engineer of the Corps, and Chester E. Bond, President of the A.G.C. of Massachusetts.

Colonel Karl F. Eklund of the Corps of Engineers and Robert Leventhal of Beacon Construction Company of Massachusetts, Inc. served as co-chairmen of this second such meeting — the first was held in October, 1958.

Some of the items on the agenda discussed were: safety, demand and charges for plans and specifications, claims, contract, closeout, shop drawings and approval of materials, change orders and additional work, insurance requirements, bid errors.

Following the dinner, General Alden K. Sibley, Division Engineer, spoke on the "Work Load of the New England Division, Corps of Engineers."

The meeting was attended by 34 representatives of the Corps and 65 general contractor representatives.

STRUCTURAL CLAY PRODUCTS INSTITUTE, NEW ENGLAND REGION

Seated: D. B. Andrews, Bridgewater Brick Company (*Vice President*); Jack Densmore, Densmore Brick Company (*President*); Joseph F. Kane, Michael Kane Brick Company (*Treasurer*). *Standing:* G. Burton Long, New England Brick Company; Henry H. Rose, Donnelly Brick Company; Steve Donnelly, Donnelly Brick Company; Thomas Crane, New England Regional Director (*Secretary*); George N. Tolman, Stiles Corporation (*Director, National Structural Clay Products Institute*).

New England brick manufacturers at a recent meeting of Region 1 of Structural Clay Products Institute at Dedham, Massachusetts, discussed the prospects in the building industry in New England for the coming decade, the amount of construction now under way and in the planning stage, and how it will result in an ever-increasing demand for more and varied types of clay products, and how the manufacturers in this area propose to meet this need. Their plants are working to capacity and many have increased their facilities and installed newer and up-to-the-minute equipment. In this era of urban residential expansion and redevelopment, of industrial expansion in the cities and the suburbs, and of a constantly increasing number of new homes everywhere, there is an almost limitless use of the products of the brick manufacturer, and he stands ready to have these products available to meet the need.

Structural Clay Products Institute in New England, which is sponsored by the brick manufacturers, is ready to assist any architect or builder with literature and professional advice as to the materials best suited for any particular type of construction or any detail of it, and how to make the most effective use of these materials.

MR. REAL ESTATE

At an Annual Press Conference held Feb. 2, 1960, Mr. Martin Cerel, sometimes referred to as "Mr. Real Estate," outlined his ambitious home building program for this year.

The Cerel Organization is shooting for a 4,000 to 5,000 unit goal — a total of approximately $65 million in housing. Cerel developments are to extend into the following areas — Natick, Framingham, Wayland, Sudbury, Franklin, Holliston, Southboro, Marlboro, Chelmsford, Billerica, Burlington, Danvers, Peabody and Stoneham.

To quote Mr. Cerel, "We aim to build homes for families who want to live in the suburbs and enjoy the pride of home ownership."

HANS KRIEKS ASSOCIATES

HANS KRIEKS was recently the recipient of the Annual S. M. Hexter Award for the outstanding interior of the year. He received the First Award. Converse Rubber Company, Malden, Massachusetts was the interior on which the award was based. The prize is a three week trip to Europe.

In Memoriam
Jacob Grossman

Jacob Grossman, 72, Vice-Chairman of the board of directors of L. GROSSMAN & SONS, Inc. died February 13 at his Quincy, Mass., home.

He became Vice-President of the company when his father, Louis Grossman retired in 1928. He was elected Vice-Chairman of the board in 1948.

Throughout the long history of L. Grossman & Sons he was the "roadman," doing most of the travelling necessary to the business.

HOME SHOW

The New England Home Show will present the newest ideas in materials and appliances for the 20th Century home at the Commonwealth Armory in Boston from March 19 to 24.

Sponsored by the Home Builders Association of Greater Boston, non-profit organization of leading builders, architects, and building materials dealers, the Home Show is a showcase of home ideas and products for home-owners in search of improving living comfort.

PART II

Information for this manuscript traveled back and forth across the ocean and I am indebted to Mr. Yindee Changtrakul, Manager of Dumrong Bhanich Saw-Mills, Bangkok, for his help concerning this article. Special thanks go to the Royal Forestry Department of Thailand for the courtesy of contributing the original photos for first publication. No reproduction of this article in whole or in part may be made without written authorization from the author.

WORLD'S MOST BEAUTIFUL WOOD II

By Josef M. Wallner, *President of Hunter & Wallner, Inc.*

Teakwood, the wood that lasts centuries wherever installed, requires a century to grow. It seems strange to think that the work of a middle-aged architect who designs a teakwood floor or wall, has actually started about sixty years before he was born.

A teak-log, machined today, originates from a teak-nut that came from a mother tree at least one hundred years ago. To become a fine specimen of teak, the nut certainly germinated in a well-drained, loamy soil in a moist deciduous forest in Thailand. A few scattered teak trees in a town may have developed into a fine teak forest. It is a common natural phenomenon that an old town ruin or a deserted village vanishes under the leaves of the fast growing teak seedlings. Very hard, persistent, and possessing exceptional coppicing power, teak trees stand a better chance of survival over other trees, even if a forest is run over by one of the annual forest fires.

Teak is a shade tree and is shedding its leaves by January. New leaves appear in April with slight variations depending on locality and climate. Masses of small white flowers cover the trees by about July. Teak forests during their flowering period are quite conspicuous and aerial photos taken during this season are of great benefit in facilitating the identification of teak. A teak tree starts flowering en masse when five to seven years old, though only very few fertile nuts are actually produced.

Even the pace of growth seems to be considerably fast during the first years, followed by a slow-down in later years. It is obvious that soil and climate are the dominating factors. An observation made in Northern Thailand showed that it took a teak tree 85 years to attain seven feet in girth in a well-drained basin deposit, while other teak trees, grown on metamorphic rocks, needed 170 years to attain the same size.

Teak in Thailand can grow to remarkable sizes and exceptional quality comparable to those found in Burma and India. The biggest teak tree ever recorded is still standing in the Huey Nom Dip forest in Thailand, measuring 29½ feet girth at breast height and of 151 feet in total height.

In average, nature has to work one hundred years to mature a teak tree to approximately one hundred feet in total height.

The work of the animal, indispensable helper to man, starts long before a tree matures. Even though the age of elephants is said to be biblical, it may take two generations of elephants in the performance of their work from weeding a young teak tree until the same specimen is ready for

logging. Elephants have been invaluable in teak-working since the earliest days and will long remain indispensable, for no modern machines can suitably replace them in such rough terrain where teak occurs. It is true that elephants themselves, feeding on teak bark and tramping and breaking teak saplings, do some harm in young forests. However, they do much more good to teak regeneration by pulling down and weakening bamboo-clumps, thus favouring the growth of teak seedlings which have been kept down for years under the shade of the bamboos. In addition to natural regeneration, great progress has been made to regenerate teak artificially, employing various nursery methods.

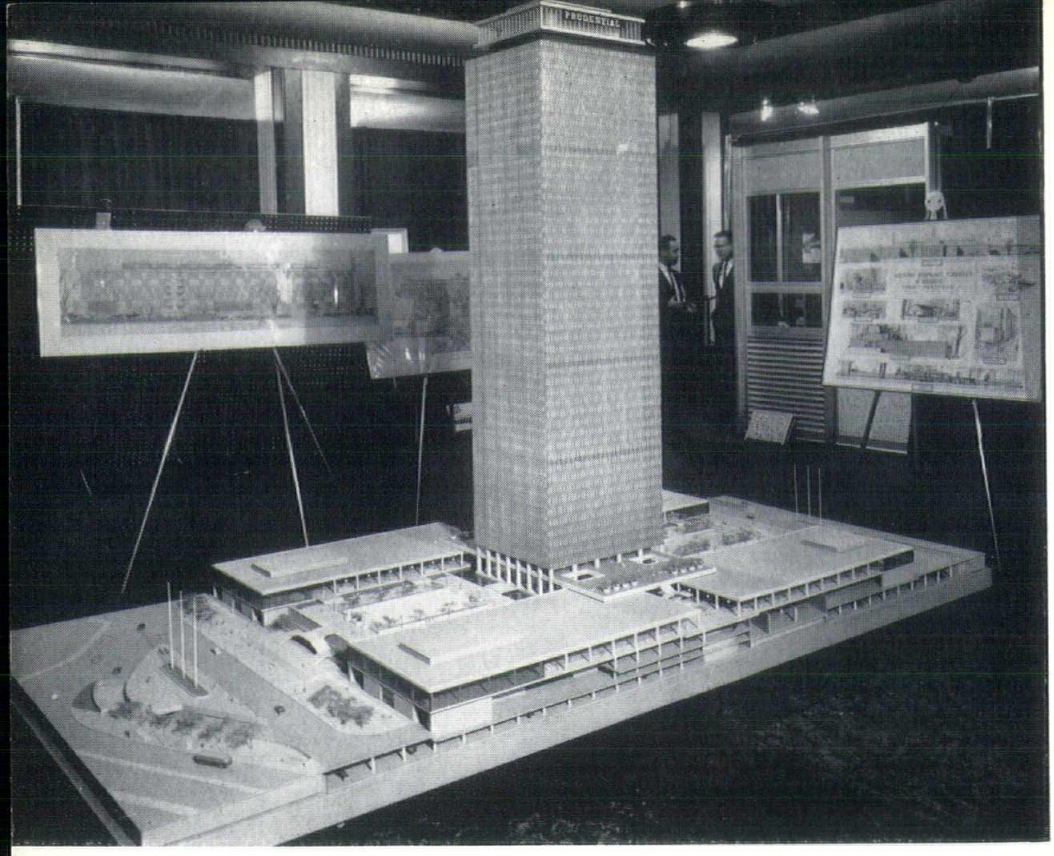
While teak lumber never seems to be attacked by insects, there is considerable damage caused by the so-called beehole-borer by boring holes in living trees. By far the most serious danger to teak has been caused by man. Forest fires, destroying great values of live trees or timber, are mostly caused by man. The criminal law prohibits setting fire to forests and its violation fixed a penalty of life imprisonment; however, there is no efficient control to eliminate forest fires.

As we already know, teakwood as such contains fire-resistant oils but there is no protection for teak trees in a raging forest fire, for fire-resistant does not mean fireproof. It may be interesting to the reader, that the author of this article tested just a few days ago, some pieces of teakwood which had been treated with a fire-resistant method, very effective on other woods. On teakwood, however, this process seemed to flop — the fireproofed teak charred easier than the piece of teakwood which did not have any treatment.

After a teak tree has reached the stage of maturity, which mostly takes a hundred years or more, the specimens ready for cutting are selected and girdled by government officers. This operation is described as cutting round the tree, that the sap may be sufficiently absorbed. One season is actually necessary to pre-dry the tree, but it may take two or even three years until the tree will settle its pre-cut stage.

After teak trees have fallen, they are debarked and cut to shorter lengths of approximately thirty feet, suitable to being hauled away. Here again is the elephant, the indispensable friend and helper to man for help in pushing and hauling logs from their places of origin to the ravines. If an elephant, dragging a log to the nearest stream, feels the terrain is too difficult and rough for him, he shows his displeasure with loud groans and roars. Very often several elephants must be put on one log to move it over a difficult spot. This work of hauling must be completed when the hot weather in March starts. Being rather temperamental animals that can become vicious and uncontrollable in hot seasons, suitable cool and rainy seasons are the only times when elephants are tame and ready to take up their tasks of transporting, piling and pushing logs into the rivers.

(*Continued in next issue*)



THE FUTURE OF DESIGN

An address by Charles Luckman, A. I. A., President, Charles Luckman Associates, before the 39th annual dinner meeting of the Massachusetts Building Congress, Inc., Boston — January 14, 1960

It is both an honor and a challenge to be here speaking before the Massachusetts Building Congress on the subject assigned to me by your officers, 'The Future of Design.'

In discussing this vital and volatile subject, it would be a disservice to you if I permitted myself to be boxed in by any narrow notions of the what-does-it-look-like school to whom the 'image concept' is the beginning and end of all architectural wisdom.

In my view, the only concept of design that has a future is one that is comprehensive enough to bring into focus the entire process of putting up a building. That process must accommodate not only aesthetic appeal, but also the needs of the client, the limits of his budget, the engineering requirements, the legal and tax aspects, and the effect of social and economic influences.

Such a broad view of design makes room for the artistry of self-expression on the one hand, and the competence to meet practical demands on the other. To me, these are inseparable. I cannot understand why they are so often treated as mutually exclusive extremes. Only the two in tandem can provide us with a well-balanced approach to the totality of the building process. Only by means of this approach — this 'total concept' — can we achieve anything which is worthy of being called architecture.

With this 'total concept' in mind, let us take a look at our subject from three vantage points: (1) *Where have we been?* (2) *Where are we now?* (3) *Where are we going?*

This is a good time to raise these questions, and to counsel together on their significance. The new year of 1960 may well mark a turning point for the future of our free society in general, and for the architect and his collaborators, in particular.

The world's statesmen are now facing up to the over-riding necessity of seeking agreements that will rally man's energies for the constructiveness of peace, as an alternative to the destructiveness of nuclear war. With diplomats consulting face-to-face as they prepare for meetings at the summit, 1960 looms as a year of decision.

Necessarily, until we achieve reliable substitutes for military strength, we cannot run the risk of letting our guard down, or relaxing our defense efforts. There is, however, hope in the fact that the same science and technology which fathered ballistic missiles and other space weapons, is now able to provide space vehicles as detection devices for arms inspection and control. It is now altogether realistic and feasible, from the technical standpoint, to police international agreements, once they have been signed.

Does this have any unusual significance for this audience of architects, engineers, contractors, suppliers, labor leaders, financiers and, 'Allah be praised,' clients? It does. All of us here tonight are members of the building team, and we are motivated by the impulse to build. Therefore, any move toward a decent and durable peace has a special meaning to us. Our work in the world would be only an exercise in futility if what we create should be destined for nuclear nothingness.

But given progress toward peace, we can plan for an unprecedented future in responding to three major challenges already upon us: (1) *The population explosion;* (2) *The surge of economic expansion;* (3) *The ever-accelerating rate of change in building needs, materials, tools, and techniques.*

In coping with these challenges, the architect must continuously earn his right to perform as the leader of the building team, if he is not to be relegated to a subordinate role, or lose out altogether. He cannot be complacent about the harsh fact that architects participated in only one-third of the $54 billion of construction in 1959. He obviously needs a new perspective — a three-thirds, three-dimensional perspective.

To gain that perspective, the architect, no matter how preoccupied with practical concerns, must also become something of a philosopher. He must continuously evaluate where his profession was yesterday, in order to see where it is today and where it should be tomorrow. I do not believe that any of us can make this evaluation unless we give more thoughtful attention to the part historically played by architecture in reflecting and interpreting the character of a civilization.

In Egypt, for example, the pyramids and temples derived directly from an absolute despotism based upon mass slavery. As many as fifty thousand lives were sacrificed in the building of King Tut's mausoleum. What the architects of Egypt fashioned with such skill portrays the supremacy of the god-king, and the elaborate preparations for the immortality of his person and his house.

The annals of ancient Egypt were written in stone. Going back four thousand years B.C., the records of work and war and ways of life were inscribed in temple and tomb. They show it all, through thirty dynasties, from the effect of the Nile's overflow on food supply, to the development of clocks and calendars. The architects of Egypt captured the almost changeless pattern of their society, century after century, in basic designs that have endured longer than any other handiwork of man.

Again, in classical Greece, the stones are eloquent. But this time they speak of freedom, not despotism. The columns of the Parthenon declare order, clarity, and harmony as the ideals of a community that exalted the free mind. The very design incorporated the quest for excellence in body and soul. A citizen of Athens could run in the Olympic games — and run for office. He could trade goods as well as ideas. To him sports, politics, business, discourse, learning, and art were natural and interrelated interests — the Golden Mean. Whether Doric, Ionic, or Corinthian, the Orders of Architecture expressed in their perfection of form the balance and unity which a people sought in their personal lives, and for their society. It was no accident that the motto chiselled into the Shrine at Delphi was 'Know Thyself.'

While the Romans drew heavily upon Greek architecture, they transformed dome, arch and vault into massive structures of even greater variety — forums, public baths, colosseums and temples. The 13,000 miles of aqueducts, carrying water to Rome, testified to their great capacity for utilitarian design, just as their resourcefulness was shown in being first to make and use concrete. Roman structures projected boldness, a high sense of organization, brutal strength and the

grandeur of imperial power. From the Palatine to the palaces of Procurators in England and Judea, the Roman's architecture confirmed him in his conviction that, — with his legions and his Lex Romanus, — his practicality in enterprises, large and small, — he stood superior in the world he ruled.

Similarly, Gothic Europe with its walled towns, where church and castle rose at the center, epitomized the quality of feudal society — its manners and mores. Whether baron or serf, knight or monk, pilgrim or peddler, minstrel or merchant, mason or scribe, man of the Middle Ages found life's meaning in obedience to God's will, and the promise of the soul's salvation. Gothic design, applied to churches, sought to lift the hearts of the faithful toward heaven. But on earth, where chivalry mixed with barbarity, the threat of sudden assault and pillage was dramatized in the moats, drawbridges and iron shields at the gates. Tiny windows were barred against arrow and pike. The high ramparts screened the kettles from which hot oil could be poured upon attackers. Encompassed in the planning of the town as a fortress, a self-sufficient community, and a refuge for peasants fleeing from their fields, were the stalls of the market place, the courts of law and love, the halls of the guilds, and the counters of the goldsmiths.

In contrast to the closed society of Gothic Europe, with its rigid hierarchy of class and caste, the free and open society of early America offered every opportunity for experiment and innovation for both civilization and architecture.

However, the American, a new man in a new world, was preoccupied with the heady business of fashioning a new framework for freedom, while conquering a wilderness. He was so concerned with what he should be like that he for a long time neglected what his emerging civilization should look like. His architecture was largely a hand-me-down from English, Dutch, and French models with borrowings from Greek temples for his banks and Gothic churches for his libraries.

This imitativeness resulted in housing such democratic institutions as Congress and State Legislatures in the imperial moulds of the Roman Forum. Carried to the extreme in the lavish copies of chateaux and manor houses built by the 'robber barons,' this imitativeness reached its zenith in the Chicago World's Fair of 1893, a hodgepodge of everything but American architecture.

About the only brightness in the architectural picture was the pioneering being done by such forerunners of the modern as Sullivan and Richardson. They began to push aside the borrowed façades in favor of simpler and cleaner lines that pointed toward today's preference for the functional, the honest and the convenient.

We have come a long way since those eager days of the turn of the century. Some people even think we have come too far, too fast.

Until very recently, at least, Americans, as a people, have been characterized as buoyant, energetic, optimistic, with faith in the inevitability of progress, and self-confidence to the point of braggadocio. In architecture, as elsewhere, we have perhaps tended to confuse bigness with greatness, sheer novelty with improvement. We have taken pride in an individualism sometimes bordering on anarchy.

(Continued on page 32)

(Continued from page 31)

We now are told that our individualism, our whole spirit of independence, are being replaced by the conformity and subservience of the 'organization man.' We are told that our sense of civic and social responsibility is giving way to indifference and escapism. We are told that the American who formerly dared to 'match dimes with destiny' has degenerated into a Caspar Milquetoast, afraid to stick his neck out.

We are told that ours is not only the age of anxiety, but also that our society is soft and decadent — that we are nudging senility before having attained maturity.

Some claim that we have already begun the long, slow slide into the bonepile of dead civilizations.

But I deny the validity of these fluttering fears!

The pessimists who see symptoms of decay in TV scandals, juvenile crime, and the fast buck neurosis, are missing the point. Such events wouldn't make headlines if they were commonplace or even typical.

I do not believe that the descendants of people who had the courage and initiative to leave Europe and cross the Atlantic — and the descendants of people who crossed the plains in Conestoga wagons to open the West — have become so soft so soon. Far from decaying, I see our country standing up to today's testing of its freedoms — pressing on toward the wider realization of the American dream for all men.

We pulled out of a depression with new concepts and mechanisms for managing growth and prosperity. For 30 years we have fought totalitarianism successfully, in hot wars and cold. With our allies, we won World War II against the Axis, and pushed back Communist invaders in Korea. We fought and are still fighting freedom's battles along other fronts, from the Marshall Plan and NATO which saved Europe from Communism, to our present programs of foreign aid and trade, technical and military assistance, and cultural exchanges. These are not the signs of decadence.

Quite the contrary. They suggest that we are on the threshold of mapping out new frontiers, redefining and reaffirming the traditional values of freedom and adapting them to our times. I see us reaching for a new sense of community in which the primacy of the person is realized, not in isolation — but increasingly in concert with others. Young people, especially, seek more than a good living — nothing less than the good life.

Amid all this flux and ferment we can hardly presume to render a final judgment on how architectural design shall reflect and interpret the temper of our times. Our American adventure is still 'unfinished business.' It cannot be summed up for architecture or for any other facet of our national life. Yet it is always useful to take our bearings.

In doing that, we see afresh the diversity of our architecture today. There is not by any means as much difference between the Temple of Vesta and the Lincoln Memorial, as there is between the Washington Monument and the Guggenheim Museum. That diversity, whether good or bad, can be expected to increase.

Just as our politics has achieved a world outlook, we will in our architecture draw evermore upon other countries and cultures for what can be made meaningful to us. We can learn much, for example from Corbusier in France, Nervi in Italy and Cendella in Mexico. We, as a melting-pot people, should be the last to be isolationist and provincial in architecture any more than in our foreign policy.

In charting our course, we can work in a climate of public opinion conditioned to innovation. People are ready for change — not for its own sake but as a way of enriching life. Our education is becoming less and less a mere transfer of facts and experience — more and more a preparation for adapting to change, for learning how to convert knowledge into wisdom. In this respect, I believe that we are now ready to accept the axiom, that, 'knowledge is proud that it knows so much; wisdom is humble that it knows no more.'

Modern management is no longer reluctant to identify itself with the intellectual. Research for example, has now come into its own. Witness the fact that we are now spending $10 billion a year on research compared to $2.5 billion just ten years ago and the prospect is for an annual outlay of $30 billion ten years from now.

Whether or not the cynic is right in saying that 'keeping up with the Russians' has taken the place of 'keeping up with the Joneses,' the fact is that the American people are demanding 'breakthroughs' in all facets of our national life. Before trying to assess what this new national mood, this new search for national purpose, foreshadow in terms of things to come — let us take a look at where we stand today.

We now have in this country investments in structures of all kinds amounting to more than $850 billion, ranging from almost 60,000,000 dwelling units to more than 3,000,000 buildings for industry and commerce — altogether, 270 different types of structures. Since the end of World War II, some $493 billion have been invested in everything from summer cottages and shopping centers to missile installations.

But all that is prologue.

The expansion ahead, just over the next ten years, will call for structures to serve a population of 220 million people in 1970 — a 40 million increase. Our research department believes that the projected growth in the volume of building will bring it to an $85 billion a year level in 1970 as compared with the $62 billion in 1959. That $85 billion a year will comprise an 11 per cent of a Gross National Product estimated at $800 billion a decade hence. During the 1960–1970 period, our analysis indicates that the total anticipated outlay for building can be conservatively put at $650 billion. In the United States this year we will embark upon the greatest building boom the world has ever seen — as part of what will rightfully be called the Stupendous Sixties.

These forecasts suggest that the pie of building budgets may be cut somewhat differently over the next decade as compared to the last. We foresee, for example, a larger percentage allocated to schools and hospitals and proportionately less for public buildings, a bigger slice comparatively for industrial parks, research centers and urban renewal projects than for commercial enterprises.

It is natural to ask, where is all the money coming from to support this building boom? The answer is: from 40 million more people being 40 per cent more productive by 1970, even though the work week will surely decline from 40 to 37 hours. Increased leisure, with income to go with it, spells new demands for buildings from bookstores to boat basins, from bowling alleys to adult education centers.

Looking ahead only half a lifetime to the year 2000, we can foresee a population of at least 350 million people. Moreover, if we are to achieve the 5% economic growth a year required merely to keep pace with Soviet economic expansion, we must reach a Gross National Product — measured in today's dollars — of $3,000 billion. And at the same time, the automated work week will be down to 20 hours, a doubling of today's leisure time. We have to stretch our minds even to grasp remotely the momentous, the incredible impact of such changes upon our civilization and our architecture. Imagine what all this vast added income and added leisure will mean to the design of the future. Imagine what new concepts, products and procedures must be created to meet the demands of such drastic variations in our industrial and commercial patterns — and in the environment for the family, its recreation, its education, its religion.

Certainly, as the architect glimpses the silhouette of this emerging civilization, he can anticipate the greatest challenge and opportunity ever to confront his profession.

Even today we do not have to go beyond what space age science and technology now make feasible, to recognize the size of the architect's challenge, and the scope of his opportunity as he faces up to the radical changes already pending in the future of design.

Some think we are about to trade congestion in streets and highways for congestion in the skyways. But who can doubt that what might be called an 'Aero-auto-boat' would transform our whole system of transportation. All travel, whether from house to office or for the longer weekend, would require a whole new range of concepts in the building of airports, highways and marinas. For the architect this could well symbolize a greater revolution in the building industry than was wrought by the Model-T Ford.

Furthermore, the space age clears the way to new sources and applications of energy, to communication satellites for worldwide telecasting, and for open sky surveillance to maintain international peace and security. The architect is going to be involved in all of this — in space, as well as on our own planet, forcing him to recognize and cope with the greatest demands ever made upon his profession.

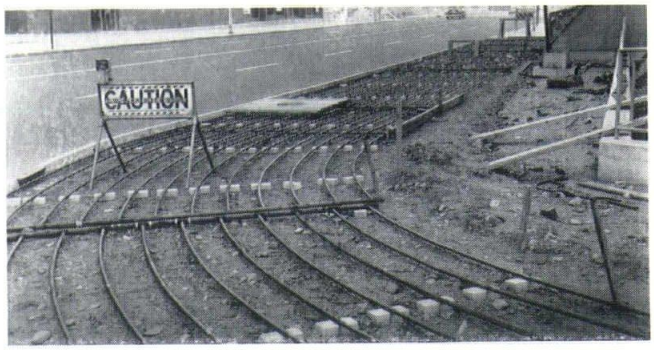
That's where we are going — and sooner than we think.

The immediate future calls, more than ever before, for architects who understand that architecture is for people. There is less room than ever before to accommodate art for the architect's sake. Design must be approached in the totality of its aims; as a venture in creative problem-solving with recognition that, while design is important, it is only one phase among many in the process of building.

(Continued on page 36)

SNOW AND ICE FREE WALKS

Three sidewalks skirting the $12 million Southern New England Telephone Company's new General Office Building in New Haven, Conn., have been equipped with an automatic snow melting system to keep pavement clear of ice and snow.



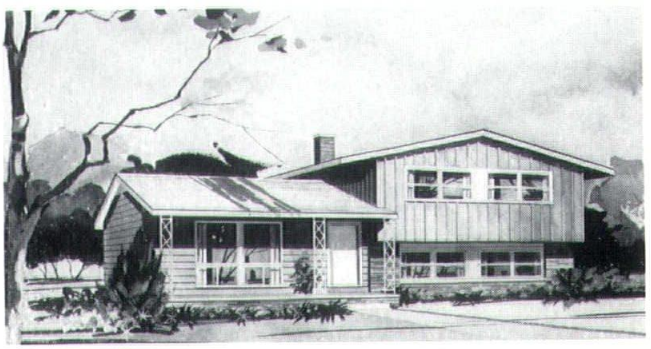
Covering an area of 9,100 square feet, including entrances to the building, the ¾-inch diameter snow-melting grids were laid on 12-inch centers, then enclosed in four inches of concrete — three inches above pipe and one inch below. The system was hydrostatically tested six hours under 125 pounds of pressure. In operation, it will convey a mixture of ethylene glycol and hot water.

The engineering firm of Meyer, Strong & Jones, New York City, specified wrought iron pipe because of the corrosion resistance of the metal. Douglas Orr, New Haven, Conn., was the architect. The plumbing and heating contractor was C. N. Flagg, Meriden, Conn.

Wrought iron pipe was also used in this new office building for steam condensate return lines, and the exhaust system for the auxiliary emergency generator.

A. M. Byers Company, Pittsburgh, furnished the wrought iron pipe.

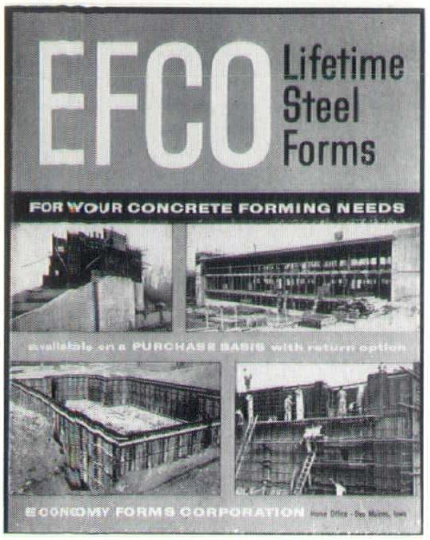
REYNOLDS METALS



Biggest of the models in the "Independence Line" of aluminum clad homes to be offered by Lu-Re-Co Lumber Dealers and their builder customers for 1960 is this Valley Forge model. This split-level has 1765 square feet of living area, with three bedrooms and 1½ baths on the upper level. The lower level has an additional bath and space for either two more bedrooms or a recreation room, plus utility room. The home features some 18 products of Reynolds aluminum, including siding, soffit, windows and rain carrying equipment, and is built on the Lu-Re-Co system of component construction.

LITERATURE

NEW FORMING CATALOG FOR CONCRETE CONSTRUCTION



A new 12-page catalog describes latest design of EFCO Lifetime Steel Forms for concrete construction. Illustrates simple design that saves time, labor and materials. Shows how forms are easily locked together with just a twist of a clamp.

Catalog also pictures various form setups for curved walls, tapped walls, tunnels, columns, corbels and offsets as well as simple walls. Give complete specifications for these forms, available on a purchase basis with return option. List and pictures, accessories, supplies and tools.

For catalog, address: Economy Forms Corp., Box 128–AH, Highland Park Station, Des Moines, Iowa.

NELSON CRIBBING

Nelson Precast Concrete Company, Inc., announced the availability of the "Nelson Cribbing" catalogue. The brochure has been compiled to assist architects and engineers in the design of retaining walls made up of cribbing units. *To obtain the brochure write to: Nelson Precast Concrete Company, Inc., 25 Haywood Street, Braintree 84, Mass.*

NEW COLORED ALUMINUM ROOF COATING

Now you can coat metal, asphalt, masonry, or stucco roofs and siding with a thick, reflective, impermeable, permanently colorful finish. King Division of the Wilbur & Williams Company, Inc. of Norwood, Massachusetts, has introduced a new "paint it on" roof coating that insulates, resurfaces, and redecorates all in one application. Available in 6 eye-appealing cool shades. RE–3 contains a heavy proportion of metallic aluminum flake which leafs on the surface to form a continuous reflective barrier over the asphalt or asbestos fibrated mastic. Formulated scientifically to render the best protection possible, RE–3 will extend the life of a roof or siding 5 to 7 years at a fraction of the cost of a new roof. King's RE-3 can be brushed or sprayed on giving new color and protection to the "fifth side of the house."

Comprehensive testing has proven that RE–3 provides up to 30 degrees F. temperature reduction under severest applications, and its heavy fibrous coating will prevent (and stop existing) leaks. In addition, RE–3 will reduce winter heat loss while it beautifies the surface. *For data on this product write to King Division, The Wilbur & Williams Company, Inc., 650 Pleasant Street, Norwood, Massachusetts.*

(Continued from page 33)

The architect, therefore, has to be a combination of planner, artist, engineer, businessman, administrator and sociologist. He should be as skilled in controlling budgets and methods as in communicating the conceptual. He is up against the difficult task in interpreting to 1960 clients the ramifications of the 1970 environment.

He will have to emphasize planning in all of its aspects as never before. This goes for the building itself, as well as the way it is fitted into its setting. For example, today's grotesque and unplanned suburban sprawl must give way to plans for space and grace in cities which reflect the 'humanization in architecture.'

Surely we are not to be judged, or judge ourselves, merely by our capacity to use brick and mortar, glass and steel. Rather, our use of materials, like the use of our skills, should be measured only by the yardstick of human needs and aspirations. Unless these are served, a building, no matter how beautiful, will deny the importance of the human being by failing to consider that buildings are for people — and must therefore be planned, designed and built to embody the visual and aesthetic values of the human scale.

While I will have nothing to do with a project which is deficient in fine design, I do insist that fine design alone does not suffice either today or tomorrow. For the decision to build is fundamentally a carefully weighed business decision. The architect, therefore, has the many-sided responsibility of planning a structure that will be economically viable, will be a credit to the owners and to the community, and will be a fusion of beauty with utility.

To carry out this total responsibility, the architect must see clearly the connection between a tight money market and the need for accurate calculations of building costs. He must be able to make dependable budgets and stay within them, not only for the sake of his client, but to maintain his own reputation, and to avoid personal bankruptcy. A growing number of legal decisions are holding the architect to account for having the contract bids come within the original budget specified by the client — even in cases where such commitments to do so were purely verbal. Other recent court decisions have upheld the right of the owner to refuse to pay the architect's fee as a forfeiture for his failure to design, plan and engineer a building within the agreed-upon budget. Moreover, many municipal and county authorities are now writing into agreements a strict compliance with cost estimates and requiring the architect to re-do the final working drawings, at his own expense, if the bid price is higher than the budget. All of this underscores the need to do a big job of air conditioning our minds — to blow away the cobwebs of encrusted habits.

One way to help do this would be for the American Institute of Architects to reactivate and intensify a share-the-knowledge program about building costs. Much as the medical profession systematically shares knowledge on disease control, so our profession years ago should have initiated a pool-the-knowledge program on cost control. If we had done so, I venture to suggest that we would not now be losing out on two-thirds of the nation's construction program.

In our own organization, for example, we find that the benefits of our share-the-knowledge program go far beyond cost control data. Our three divisions of planning, architecture and engineering are constantly exchanging facts, figures and ideas. This makes it possible to achieve a cross-fertilization of minds and disciplines.

In all of our activities we are learning — to an ever-increasing extent — that the architect cannot be regarded solely as a specialist. He is, rather, a combination of special abilities which make him a 'generalist,' capable of co-ordinating the work of many specialists.

This does not suggest that the architect must be a universal genius, equally at home in all fields of knowledge. But this does mean that the word "architect" is a parent word. The architect, therefore, must appreciate and understand the vast variety of disciplines and activities that go into the development of a building program. Otherwise, he is not entitled to be leader of the team.

Let me take a moment to illustrate the importance of team effort, and the opportunity of the architect to act as team leader, by drawing upon our experience in planning the Prudential Center, now under construction here in Boston. The scope and complexity of this $100 million project are implicit in the fact that it will be the world's largest integrated business, civic and residential development — a city within a city. One of the many to have been publicized, one of the few to be built!

In designing for the 'human scale' we have been able to achieve a 'freedom of space' atmosphere — what I like to describe as the 'humanization of architecture.'

We have done this by assigning 75 per cent of a 31½ acre area to landscaping, reflecting pools, statuary, terraces, walkways, patios and sculpture gardens. Only the remaining 25 per cent is used to accommodate the buildings themselves. The 52-story Prudential Tower is the focal point, surrounded by six 25-story apartments, seven commercial buildings for banks, shops and restaurants, a 25-story hotel, and the city of Boston's locally planned and developed Municipal Auditorium and Convention Hall. Just to give you an indication of the size and scope of the Center, I might mention that it will require 50,000 tons of structural steel, 200,000 cubic yards of concrete, 500,000 square feet of curtain walls, and 1,000,000 square feet of cellular steel decking.

In this tremendous complex, the larger buildings for the Center have to be anchored into bedrock approximately 170 feet below ground. Also, the main tracks of the Boston-Albany Railroad and the easement for the proposed 6-lane Massachusetts Turnpike run diagonally across the entire site beneath the Plaza level.

So you can see at once why the master planning for such a project would have been impossible without consummate engineering skills of virtually every type. The engineers — whether structural, mechanical, electrical, foundation, water, soil or sound — had to solve such problems as vibration, noise control, traffic, and the trickiness of water tables. Our teammates in these areas contributed immeasurably to the final solution.

The master planning would have been equally impossible to achieve without the research and analysis of the realty consultants, who found the ways to help us properly blend aesthetics and economics.

Similarly, planning for the human scale could not have been accomplished without the collaboration of landscape designers, sculptors, and painters.

Thus, with the assistance and guidance of the construction, real estate, legal, and public relations departments of Prudential — and the complete co-operation of your city officials and department heads — this architect-led team effort is resulting in an aesthetic, functional and economically sound project — which all of us believe will mean much to the future growth and prosperity of Boston.

The wide range of architectural requirements I have just touched upon raises this question: how many architects are being properly educated to qualify as master planners, as architectural leaders of the team effort?

Everyone agrees on the crucial importance of proper education for the architect. Everyone agrees that our formal learning and apprenticeship procedures leave much to be desired. But on what to do about it there is wide disagreement. A recent inquiry, addressed by the *Architectural Record*, to deans of the Association of Collegiate Schools of Architecture, brought forth almost as many different views as there were replies.

The editor of that publication commented, and I quote: 'It is abundantly clear that architectural deans — or some of them — are deeply concerned about the role of the architect in our present society and his total competence in a time of scientific orientation. Many answered with obvious feeling and at great length. Some were just as clearly unmoved.' Unquote.

As to my own view, I suggest that no plan for improving formal education makes sense unless it rests upon the premise that the life of the architect is one long pursuit of learning. I do not mean merely learning from daily experience. I mean systematic study to broaden continuously the base of his knowledge and to sharpen his insight.

So I should like first of all to propose that we intensify and multiply refresher courses, seminars and institutes to enable the practitioner to grow in capability. He needs this regular return to the academic climate to invigorate his thinking and to help keep him abreast of new findings, both sociological and technological.

Second, the period for formal education should be extended. I favor the idea of eight years of training beyond high school, as advocated in last month's issue of the *Journal of the American Institute of Architects*. This should include four years of liberal education with a major in architecture, leading to a bachelor's degree, followed by two years of internship in an architectural office. Such a program should culminate in a two-year master's degree in architecture — and automatic registration to practice. I believe that this must be done if architecture is to prosper or even survive, as a learned profession.

Third, I would recommend that architects, as cultural agents, as civic leaders, as members of their professional groups, press for improvement of the quality of educa-

(Continued from page 37)

tion in college and university. Let us act vigorously to increase the supply of superior teachers. Let us also make ourselves available for part-time teaching assignments, so that the practical and theoretical can be fused as much as possible.

Fourth, I urge the wider and better utilization of business leaders as visiting lecturers in architectural schools. This is a practical way to stimulate fresh thinking and generate broader vision.

Fifth, I call upon architects, engineers, contractors, suppliers, labor leaders and educators to unite in a new co-operative effort to encourage youth with aptitude to prepare for careers in building. I would hope that your organization, the Massachusetts Building Congress, might sponsor a 'pilot' career incentive program in the schools of this state — a program which could set the pace and pattern for a national careers-in-building approach to youth. The challenge I have described can only be met with trained talent. Our job is to seek it out and support it.

Finally, may I submit for consideration by our profession a new kind of Fellowship Program for architects. It should provide for the more mature architect, whose five or ten years of practice have shown genuine promise, an opportunity to supplement his experience with a year of further academic study. During that time, he would receive a generous grant similar to the financial support furnished by the Nieman Fellowships for journalism at Harvard University.

These Fellowships in architecture would bring together a group of exceptionally gifted practitioners for a year of mutual stimulation and advanced or special studies. My own hope would be that the recipients of such Fellowships would concentrate upon the social sciences and the humanities, as much as upon the physical sciences and mathematics.

It seems to me that this would point the education of the architect toward the development of the whole man and equip him to perform more effectively his wide-ranging leadership functions. By this means he can also help translate into reality Aristotle's dictum that, 'The wealth of any nation lies in the capacity of its people to be educated.'

What I have been saying in essence is this: The future of design rests with the architect whose capabilities go beyond design alone — the kind of architect who is fully conscious of his historic role in reflecting and interpreting the character of his civilization — an architect who sees building as a total process serving the purposes of both beauty and utility — an architect who perceives that his responsibility and opportunity in rising to the changes and challenges of our time have reached a new order of magnitude — an architect who is therefore ready to work for the kind of academic education and practical experience that will prepare him for fulfilling his role among the creators and interpreters of our civilization.

May I conclude by offering five precepts which might serve as a starting point in developing a contemporary credo for the American Architect:

1. We will be tithers of our time, giving 10 per cent of our years to active participation in community affairs, whether civic, cultural, or charitable — local, regional or national.

2. We will seek the mutually beneficial balance of interests between the client and the community by combining planning ability with aesthetic sensibility.

3. We will make a life-long quest for knowledge an act of faith in architecture as a learned profession capable of giving form and meaning to the ideas and ideals of our civilization.

4. We will strive to qualify ourselves as leaders of the team by being sympathetic to, and knowledgeable of, all the disciplines which are required for the total concept in architecture.

5. We will nurture in our profession a deep and mature concern for human beings by heeding the aspirations of all people who want to work in concert, walk in dignity, and live in freedom.

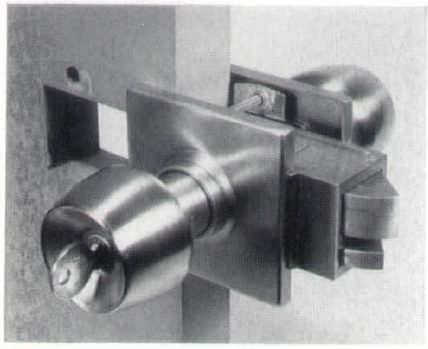
In acting upon such a credo, the architect must be willing to accept the penalties, as well as the privileges, of leadership.

This is, indeed, a small price to pay for the opportunity of being a participant in the design of our emerging civilization — in the design of our American future.

NEW PRODUCTS

D. H. ESKIN COMPANY

The D. H. Eskin Co. of Boston announces the introduction of the new Yale Mono Lock for quality buildings.



This fine factory assembled lock requires only a simple notch of the door for installation. It is available in brass, bronze, aluminum and the new stainless steel finishes in a variety of knob and lever handle designs. It is available in all of the standard lock functions.

Some exclusive features of the Yale Mono Lock are 2-¾″ backset, concealed rose screws, and a vertical keyway in the knob.

Contact the D. H. Eskin Co. at 1255 Tremont St., Boston 20, Mass., phone HI 2-8700 for further details.

REYNOLDS METALS CO.

How can the shear strength of a driven aluminum rivet be determined? What is the best hole size for a hot-driven aluminum alloy rivet?

These and many other aspects of riveting aluminum parts are explained in a new technical booklet, "Riveting Aluminum," just published by Reynolds Metals Company.

The 52-page book covers use of conventional and special rivets and explains design and fabrication of riveted joints. Tables in the book list weights and dimensions of aluminum rivets, recommended rivet lengths, mechanical properties of wrought aluminum alloys, and other data.

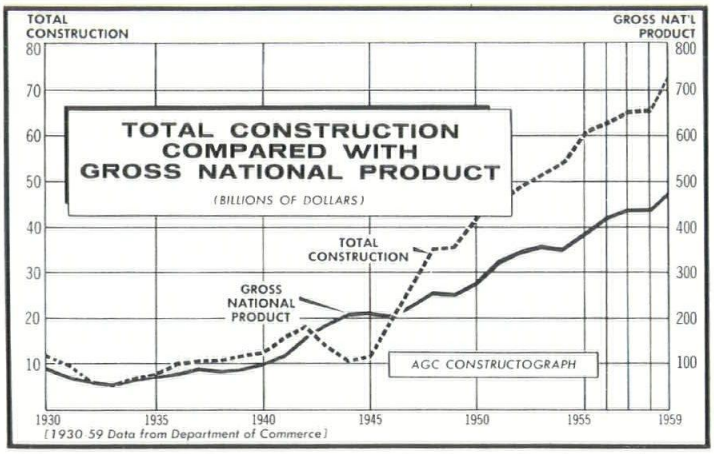
The booklet is available on letterhead request from Reynolds Metals Company, Dept. PRD-23, Richmond 18, Virginia.

CONSTRUCTION VOLUME TOTALS $73 BILLION IN 1959 FOR NEW RECORD; MAY REACH $76 BILLION IN 1960

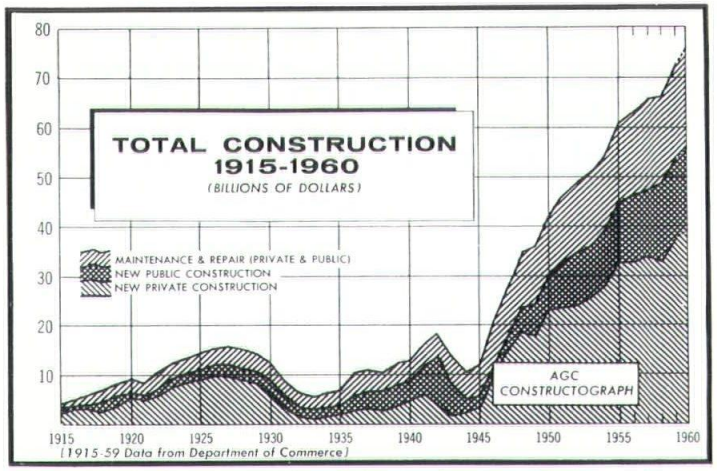
Construction volume in 1959 registered its greatest annual increase in 10 years, climbing to a total of $73 billion, and prospects are bright for another record-breaking year in 1960, the Associated General Contractors of America stated in its annual year-end review and outlook statement.

The 1959 total, consisting of $54 billion in new construction put in place and an estimated $19 billion in maintenance and repair operations, was sparked by a sharp increase in residential volume and moderate rises in most other major types of construction.

Thus construction, as the nation's largest production activity, broke dollar volume records for the 14th successive year, continuing to account for more than 15 per cent of the gross national product, and for some 15 per cent of total employment, directly and indirectly.



The increase of almost 10 per cent in the total volume of construction in 1959 over 1958 was greater than the estimated rise in the gross national product, thus continuing the expansion of the construction industry's share of the country's total output.



Construction in 1959 continued the steady expansion it has shown during the postwar years, setting its 14th consecutive annual record with increases of more than 10 per cent in the dollar volume of new construction and more than 7 per cent in maintenance and repair work.

A total of more than $76 billion is forecast for 1960, depending on the outcome of the steel strike and other factors, made up of $56.1 billion in new construction and about $20 billion in maintenance and repair. The figures do not include work in the new States of Alaska and Hawaii, nor overseas construction performed by the American government and private enterprises.

The AGC, representing 7,100 leading construction firms of all types throughout the country which perform the majority of contract construction, based its outlook on studies of official governmental figures and information from authoritative private sources. Basic assumptions are that costs will not rise appreciably, materials will be plentiful, no prolonged work stoppages will occur in basic industries, and that investment in construction will not be seriously retarded in the increasing competition for capital in the tight money market.

1959 Growth Exceeds Expectations

Construction volume in 1959 increased 10 per cent over the 1958 total for the largest year-to-year rise since 1950, considerably exceeding most forecasts made at the beginning of the year.

Private construction, propelled by a spectacular spurt in residential activity, rose 13 per cent to $37.8 billion, reversing a four-year trend when private construction as a whole had about leveled off. Residential building, running ahead of 1958 by more than 30 per cent in the summer months, rounded out the year at $22.2 billion for an overall increase of 23 per cent.

Nonresidential private building remained near the 1958 level at $8.6 billion, with rises in commercial, religious, and social and recreational construction offsetting a continued decline in industrial building.

Private industrial building continued to reflect effects of the 1958 recession, as well as the steel strike, dropping 18 per cent to about $2 billion, but a recovery was in sight by year's end.

Public utilities, a mainstay in private construction, remained stable at the high level of $5.1 billion.

Public construction rose 5 per cent to $16.2 billion in 1959, with most major categories sharing in the increase.

Highway construction, the largest single category of public works increased 5 per cent to $5.8 billion, although its momentum was slowed by the crisis in financing the long-range federal-aid program.

Other state and local public works, such as sewer and water facilities, hospitals, public service enterprises and administrative buildings, showed moderate increases. Educational building, however, declined 7 per cent to $2.7 billion in the face of a continuing shortage of classrooms.

In the programs financed principally by the federal government, military construction increased 6 per cent to $1.5 billion, and conservation and development facilities rose 13 per cent to nearly $1.2 billion.

Outlook for 1960

The estimate of more than $56 billion in new construction in 1960 hinges on the basic assumption that the steel strike will not be resumed, and that uninterrupted production will bring structural and other steel types required for construction back into balance by the time activity reaches its seasonal peak.

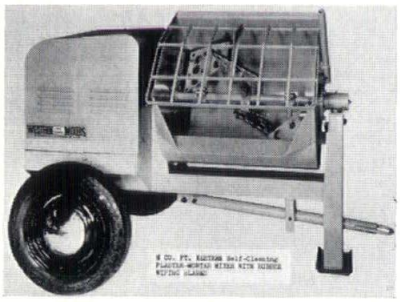
While residential activity dominated the 1959 construction scene, the reverse is expected in 1960, with strong advances in all private nonresidential building more than offsetting a 4 per cent decline in private housing volume.

(Continued on page 42)

FOR SALES • RENTALS • SERVICE OF FINE ENGINEERED PRODUCTS

BIL-JAX SCAFFOLDING

Easy to assemble — Easy to handle — Easy to estimate. Saves time — reduces labor. Wide application . . . construction, maintenance. Aluminum too!

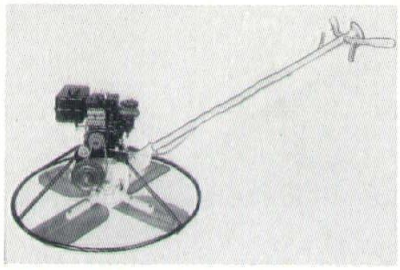


WESTERN MIXERS

Portable, compact, balanced, inexpensive. From 4 cu. ft. to 8 cu. ft. Rubber Blades, fast discharge, self cleaning.

MULKEY PORTABLE CONVEYOR

Handles brick, block, concrete, sand, gravel at low cost. Speedy, simple, portable. Wide application.

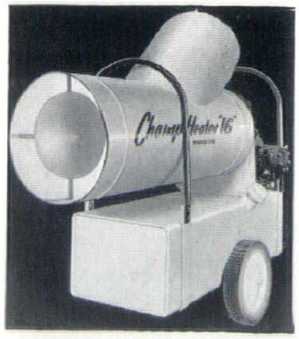


CHAMPION CON-TROW'L

GIVES YOU A FASTER-EASIER OPERATION — PERFORMANCE FEATURES THAT MEAN PROFIT TO YOU!

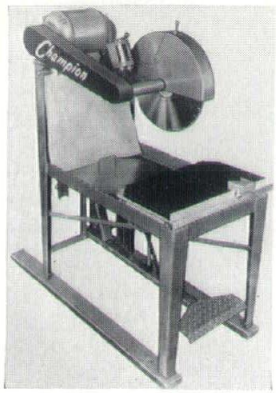
UP TO THREE STORIES HIGH LULL MODEL 77 LIFT-LOADER

30 ft. — a height unequalled by any competitive type equipment. Sends building costs crashing.



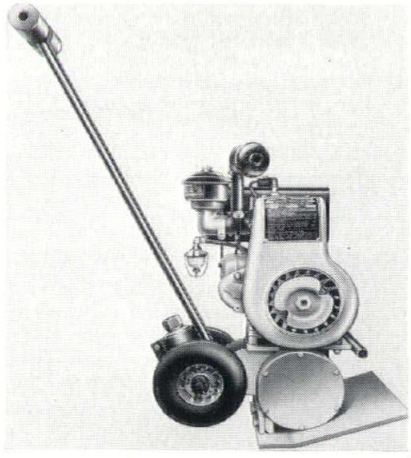
CHAMP-HEATER "16"

GIVES 16 HOURS FUEL CAPACITY.



CHAMPION . . .

FIRST WITH THE LATEST IN MASONRY SAWS AND BLADES.



"JAY" TAMPER

GIVES YOU GREATER PRODUCTION AND GREATER COMPACTION AT A GREATER PROFIT.

PRIME-MOVER MODEL 15-B

Moves all kinds of building materials . . . "anywhere on the job faster, easier and more economical."

LEE EQUIPMENT CORP.

33 ISLAND STREET • BOSTON 19, MASSACHUSETTS

HIghlands 2-4210

Branch Offices and Warehouses

MANCHESTER, NEW HAMPSHIRE
TURNER EXTENSION
NAtional 2-2232

HARTFORD, CONN.
62 LaSALLE ROAD
ADams 3-5750

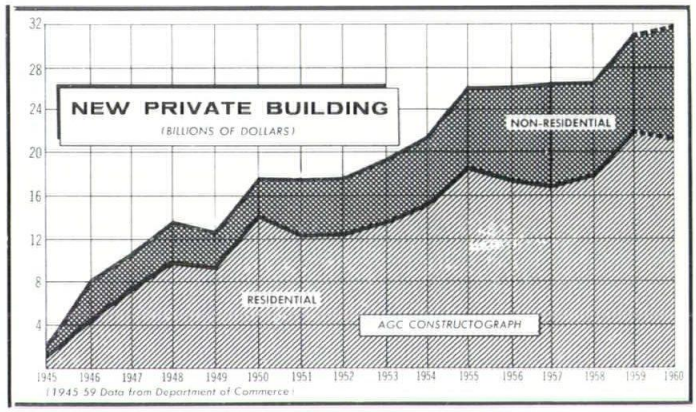
The tightening credit situation, already affecting the residential market, will be the major damper on the volume of construction that could be undertaken in 1960, which might otherwise be even a larger construction year.

The steel strike, which did not have a great effect on work put in place nationally during 1959, will show its impact on construction volume to a more pronounced degree during the first quarter of the year while distribution pipelines are being replenished. However, the industry is at its lowest seasonal ebb at this time of year.

Significant features of the private construction picture in addition to a decline in housing, will be a sharp increase in industrial building, a continuing increase in commercial construction, and a high level of state and local public works. It is believed that a considerable amount of work tentatively scheduled for 1959 is being carried over into 1960 due to steel shortages.

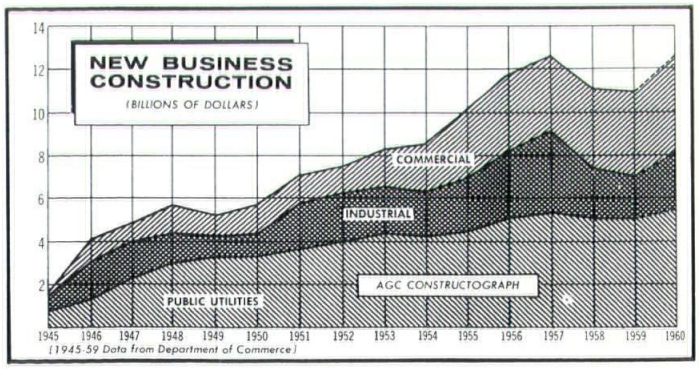
The 1960 outlook by major categories

Residential — A 4 per cent decrease to $21.4 billion in residential building, with about 1,200,000 new units started, compared with an estimated 1,350,000 starts in 1959. Within this category, however, apartment construction will continue to advance.



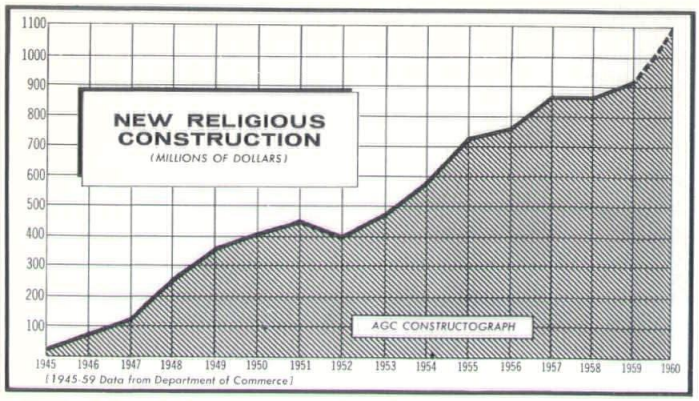
New private construction is expected to continue to expand in dollar volume in 1960, with larger expenditures for nonresidential building activity more than offsetting a drop in residential construction.

Commercial — Should increase more than 15 per cent to about $4.5 billion. An office building boom will be carried over into 1960, and the housing boom of 1959 will exert heavy pressure for suburban stores and other commercial establishments.



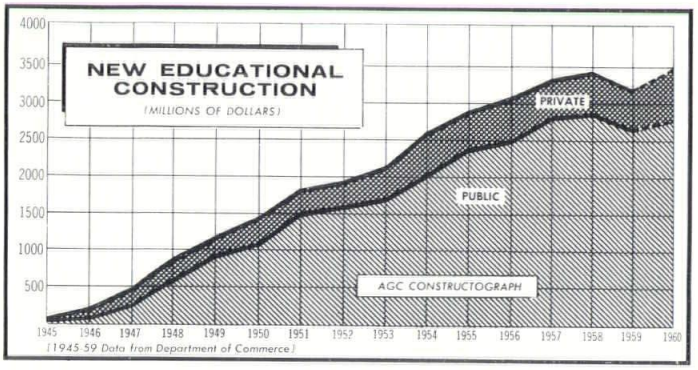
Business construction in 1960 should resume the rising trend which was interrupted two years ago by a sharp decline in private industrial construction, now turning upward again.

Religious structures probably will reach the $1 billion mark in total for the first time.



The building of churches and other religious structures is expected to maintain the steady increase shown in recent years. The volume is likely to exceed $1 billion in 1960.

Industrial building, which declined sharply during the past two years, should expand 30 per cent to more than $2.5 billion as business concerns increase plant and equipment expenditures.



Only a slight increase in new public educational construction is anticipated during the coming year, but private educational building activity is likely to show a higher percentage of gain, though smaller in volume.

Public educational building, which declined in 1959, should experience a mild recovery, reaching $2.8 billion. Construction of public elementary and secondary school classrooms should again exceed 70,000 in the 1959–60 school year, compared with only 68,500 in the current year.

While bond issue proposals for schools and other local public works have been approved at a high rate by voters throughout the country, the tightening money market is presenting difficulties in carrying out the projects.

Public utility facilities should resume an upward climb, possibly reaching $5.5 billion, led by increases in construction by telephone and telegraph companies and the gas industry.

Military construction, with emphasis still shifting toward missile base facilities, should hold close to its 1959 level of nearly $1.5 billion, depending upon budgetary actions of the government. The same holds true for *conservation and development*, which has gradually increased in recent years, totaling $1.2 billion in 1959.

CONTRACTS AWARDED

This resume was compiled with the cooperation of GAINEY'S CONSTRUCTION NEWSLETTER of Boston, Mass., and represents a total of $11,911,423 in building construction contracts awarded during the month of January, 1960.

MASSACHUSETTS

AGAWAM — **$209,289**
National Guard Armory — Comm. of Mass.
Archt: Donald S. Gilman, Springfield
Contr: M. J. Walsh & Sons Inc., Holyoke

AMHERST — **$872,357**
Infirmary Bldg. — Univ. of Mass.
Archt: Thomas A. Kirley, Amherst
Contr: Daniel O'Connell's Sons Inc., Holyoke

BURLINGTON — **$1,779,805**
High School — Burlington
Archt: Clinch, Crimp, Brown & Fisher, Boston
Contr: Vara Constr. Inc., Boston

BRIGHTON — **$150,000**
Merchants National Bank Branch
Archt: Griswold, Boyden, Wylde & Ames, Boston
Contr: George B. H. Macomber Inc., Allston

CHELSEA — **$299,811**
Quigley Memorial Hospital Laboratory Addn.
Archt: Perry, Shaw, Hepburn & Dean, Boston
Contr: Kirkland Constr. Co., Cambridge

CHICOPEE — **$2,500,000**
Suburban Hotel — Schine Enterprises
Archt: Morris, Lapidus, Kornblath, Harle & Liebman, N. Y. C.
Contr: Daniel O'Connell's Sons Inc., Holyoke

DARTMOUTH — **$331,220**
Dartmouth High School Addn.
Archt: Stoner Associates, Boston
Contr: G. W. Carpenter Inc., Fall River

DORCHESTER — **$232,465**
Dorchester Savings Bank Branch
Archt: J. Williams Beal Sons, Granger & Dyer, Boston
Contr: John B. Deary Inc., Roxbury

FRAMINGHAM — **$1,261,630**
Framingham State Teachers College Dormitory, Student Union Bldg. and Dining Hall
Archt: W. Chester Browne & Assoc., Boston
Contr: L. & R. Constr. Co., North Reading

LEOMINSTER — **$199,900**
Elks Home Bldg.
Archt: Doak Martin, Worcester
Contr: Innamorati Bros. Inc., Clinton

LEXINGTON — **$942,233**
Lexington Academy — Grey Nun's Charities
Archt: Maguolo & Quick, Baltimore, Md.
Contr: Walsh Bros., Cambridge

LYNN — **$1,368,150**
Housing For The Elderly
Archt: William W. Drummey, Boston
Contr: Concrete Constr. Co., Everett

MILFORD $334,900
Housing For The Elderly
Archt: Wendell T. Phillips Assoc., Milford
Contr: G. Sabatinelli, Milford

PEABODY $503,630
Housing For The Elderly
Archt: Ray Thibedeau, Hamilton
Contr: Paul Sardella, Roslindale

SOUTH BOSTON $139,347
Office Bldg. — Banquer Realty Trust Co.
Archt: Edgar H. Wood & Assoc., Quincy
Contr: C. C. Sewell Co. Inc., Dorchester

SOUTH DENNIS $393,998
Ezra Baker Elem. School
Archt: Walter M. Gaffney Assoc., Hyannis
Contr: C. A. Batson Co., Brockton

SWAMPSCOTT $415,194
Housing For The Elderly
Archt: John J. Mahoney Assoc., Salem
Contr: Messina Bldrs. Inc., Brockton

WESTFIELD $572,994
Housing For The Elderly
Archt: Caolo Assocs., Springfield
Contr: Fred J. Findlen & Son, Dedham

WEST PITTSFIELD $384,733
Stearns Elem. School
Archt: John H. Fisher, Pittsfield
Contr: Geo. E. Emerson Inc., Pittsfield

WORCESTER $353,170
Assumption College — Gymnasium
Archt: O. E. Nault & Sons, Worcester
Contr: Granger Contrg. Co. Inc., Worcester

NEW HAMPSHIRE

CLAREMONT $253,495
Industrial Bldg. — Claremont Industrial Parks Inc.
Archt & Engr: Anderson Nichols & Co., Concord
Contr: O'Bryan Constr. Co., Brattleboro, Vt.

CONCORD $320,000
Armory — State of New Hampshire
Archt: Irving W. Hersey Assoc., Durham
Contr: Stammell Constr. Co., Cambridge, Mass.

CONNECTICUT

BRANFORD $514,000
Two Grammar Schools
Archt: Lyons & Mather, Bridgeport
Contr: Giodano Constr. Co., Branford

MILFORD $180,335
Pumping Station
Engr: Metcalf & Eddy Inc., Boston
Contr: DeFonce Constr. Co., Bridgeport

NAUGATUCK $251,000
Swimming Pool Addn. to new High School
Archt: Sherwood, Mills & Smith, Stamford
Contr: C. G. Peterson, Naugatuck

NEW CANAAN $686,700
High School Addn.
Archt: Victor Christ - Janer & Lanis, New Canaan
Contr: Gellatly Constr. Co., Bridgeport

OLD GREENWICH $245,373
Fire Station
Archt: Carl J. Jensen, Greenwich
Contr: Atlas Constr. Co., Glenbrook

PLAINFIELD **$803,000**
High School
Archt: Chandler & Palmer, Norwich
Contr: J. S. Nasin Co., Willimantic

STAMFORD **$150,000**
Social Center — St. Benedict's Church
Archt: Edw. B. Bushka, Hartford
Contr: V. Lione Constr. Co., Stamford

THOMASTON **$280,000**
High School Addn.
Archt: Ernest Sibley, West Hartford
Contr: John Cantillon Co., Waterbury

WOLCOTT **$648,000**
Elem. School
Archt: Louis R. Fucito, Waterbury
Contr: A. F. Squillacote Co., Newington

WOODBURY **$750,000**
High School & Elem. School Addn.
Archt: J. Gerald Phelan, Bridgeport
Contr: P. Francini & Co., Derby

RHODE ISLAND

CUMBERLAND **$1,522,831**
High School
Archt: T. Frederick Norton, Cranston
Contr: Donatelli Bldg. Co., North Providence

MIDDLETOWN **$1,684,843**
Jr. and Sr. High School
Archt: MacConnell & Walker, Warwick
Contr: Bacon & McLeish, Middletown

NORTH PROVIDENCE **$396,900**
Elem. School
Archt: Joseph M. Mosher Assoc. Inc., Providence
Contr: M. G. Allen & Assoc. Inc., Warwick

PAWTUCKET **$515,000**
Broadway Elem. School
Archt: Howe & Prout, Providence
Contr: Gilbane Bldg. Co., Providence

PROVIDENCE **$1,500,000**
Doctors' Office Bldg. — Rhode Island Hosp.
Archt: Shepley, Bulfinch, Richardson & Abbott, Boston
Contr: E. Turgeon Constr. Co., Providence

MAINE

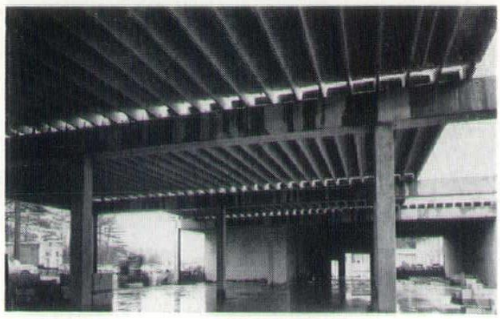
ELLSWORTH **$300,500**
Elem. School
Archt: Krumbhaar & Holt, Ellsworth
Contr: E. L. Shea, Ellsworth

HAMPDEN **$120,000**
Hampden Academy Addn.
Archt: Crowell, Lancaster, Higgins & Webster, Bangor
Contr: Peachey Builders, Augusta

ORONO **$924,458**
Men's Dormitory — Univ. of Maine
Archt: Alonzo J. Harriman, Auburn
Contr: F. W. Cunningham & Sons, Portland

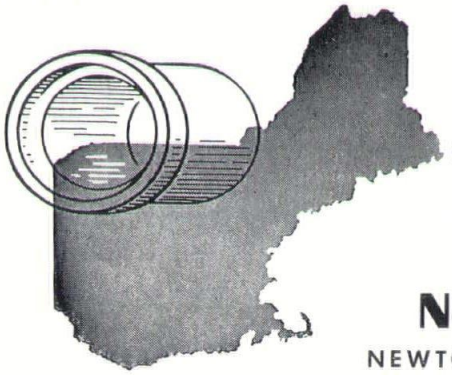
Long Spans . . . call for

PRE-STRESS DOUBLE-T CONCRETE BEAMS



United Shoe Machinery Corp. — B. B. Chemical Company, So. Middleton Plant. Design Engineers: Charles T. Main, Inc., Boston. Erected by Boston Steel Erection, Inc.

Fabricated Double-Tees — N. E. Concrete Pipe Corp.



Serving New England Over Thirty-One Years

PLANTS

DEDHAM PLANT — LAsell 7-4560 SPRINGFIELD PLANT — REpublic 3-4560
NEWTON PLANT — LAsell 7-4560 PROVIDENCE, R. I., PLANT — UNion 1-3818

New England Concrete Pipe Corp.

NEWTON UPPER FALLS • MASSACHUSETTS • LAsell 7-4560

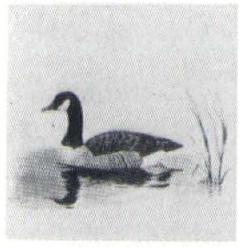
THE ORIGINAL
"HEATHER BROWN"
QUARRY TILES

Used in
New England
for over fifty years.

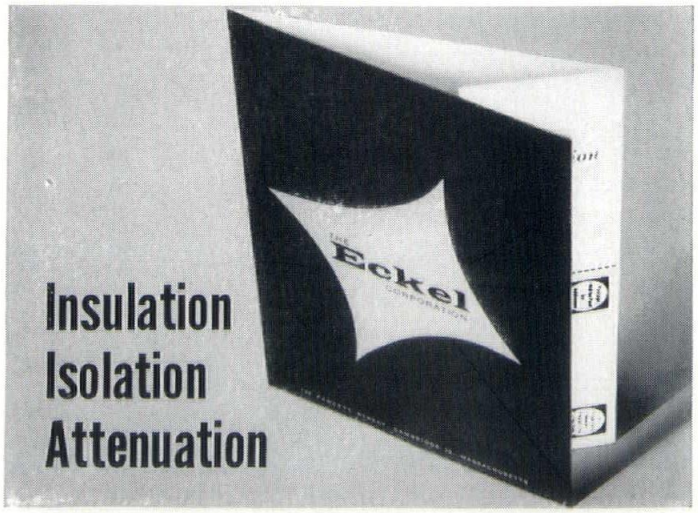
Manufactured by
Dennis Ruabon Limited
Nr Wreyham • North Wales

- **DURABLE**
- **ATTRACTIVE**
- **INEXPENSIVE**

Suitable for domestic, public building and industrial floors which are subject to hard usage.



DISTRIBUTOR
THE TILE SHOP
202 SOUTHAMPTON STREET
BOSTON 18, MASS.
TELEPHONE HIghlands 5-0710



Insulation
Isolation
Attenuation

ECKEL has everything for the control of temperature · noise · vibration · moisture migration

Eckel delivers a double bonus:

1. **finest products:** Owens-Corning, Pittsburgh-Corning, Eagle Picher, Goodrich, Korfund, Philip Carey, etc.
2. **best service:** complete engineering and fabrication service for thermal insulation, sound and vibration control

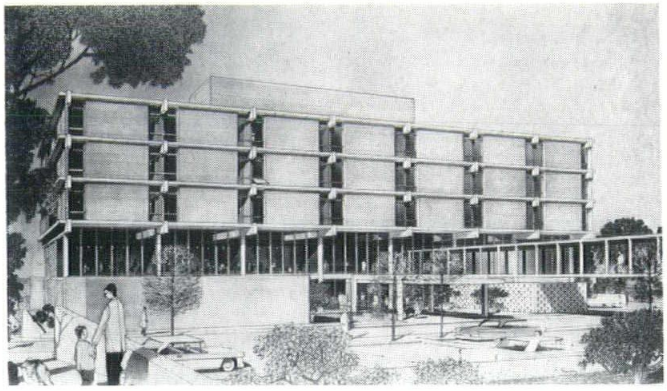
SEND FOR FREE FACTS FOLDER AND SAMPLES — you'll be surprised to see how many ways Eckel can help solve your problem!

THE **Eckel** CORPORATION, 156 FAWCETT STREET
CAMBRIDGE, MASS.-KIRKLAND 7-4744

AWARD WINNING NEW ENGLAND PROJECTS NATIONALLY HONOURED

At its recent Seventh Annual Awards dinner in New York, *Progressive Architecture,* a national magazine honoured three New England projects with citations. The distinguished jury which made the selections from six hundred entries in ten building categories were architects, Ralph Rapson, Department of Architecture, University of Minnesota (designer of the American embassy in Stockholm); Louis I. Kahn (Yale Fine Arts Center); Jose Luis Sert, Dean, Harvard Graduate School of Design; William W. Caudill, of Caudill, Rowlett, Scott & Associates (School Design); and Lyndon Welch, architectural engineer of Eberle Smith Associates. Here is a brief description of these projects.

HEALTH DESIGN AWARD



Design for Somerville Hospital, Somerville, Massachusetts: Paul Schweikher and William Metcalf, Associated Architects, Washington, D. C.

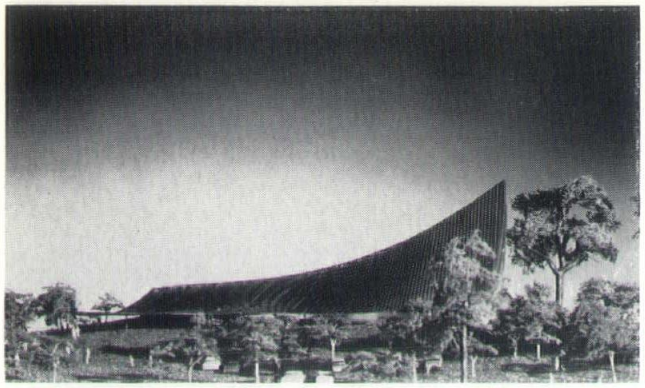
The winning design for the hospital proposes to construct a new 150-bed hospital, to demolish a woodframe hospital built in 1893, and to build a bridge connecting the new hospital with the existing brick addition for use of patients and staff, and to carry utility lines. The existing brick building will be converted to a chronic-care unit and a nursing school.

The new hospital will have six floors and a basement. The main entrance to the building is to be on the second floor; the first floor to contain the 30-bed obstetrical department plus administration and an auditorium. Kitchen and dining facilities, and a chapel are to be on the third floor, which will be the level of the connecting passage to the chronic hospital unit. The fourth, fifth and sixth floors will contain three nursing units of 40 beds each. The structure is designed to accommodate additional nursing units toward an eventual 250-bed hospital.

RELIGIOUS DESIGN AWARD

First Unitarian Church of Fairfield County, Westport, Connecticut: Victor A. Lundy, Architect, Sarasota, Florida.

The First Unitarian Church is to be built in two stages: the ground floor to be completed first, the upper and main floors to be finished and furnished later. Two large roof planes — shaped to form both steeple and sheltering roof for the sanctuary, social hall, and classrooms — follow closely the ridge line of the property. A continuous stained glass skylight consciously and symbolically separates the two roof sections, to give the effect of a steeple of light when seen from the outside.



"The structure," explains the architect, "is something like the hull of a ship turned upside down."

RESIDENTIAL CITATION

Riverview Development Project, Cambridge, Massachusetts: Architect, Edwin T. Steffian and Royston T. Daley, Designer.

The architect's primary concern, in redeveloping two acres on the Charles River for upper-middle-income apartments, was "to create a strong, unified statement on an irregularly-shaped piece of land and under quite stringent zoning requirements," limiting building heights to 65 feet along the street and to 35 feet on the rest of the site. The program required 77 units with a parking space for each.

The apartment buildings—one, seven stories high and the other, a low U-shaped building — form a courtyard on a paved and landscaped platform above street level. The formal central court is the primary community focus. Green areas for quiet recreation form pleasant boundaries for the buildings. Parking level below is screened with pierced walls to conceal cars; on this level, under the high building, are the main entrance lobby, storage, and boiler rooms.

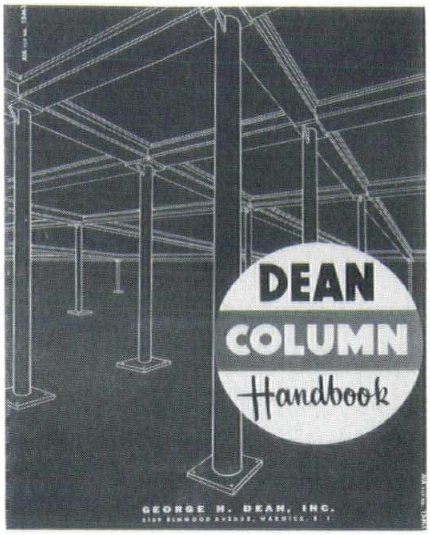
Because the architect wished "to avoid any second-class or leftover apartments either from the standpoint of living convenience and prestige or from a visual point of view," all units have balconies; many in the high building with river views; those in the low building, with views of landscaped open spaces. The exterior is to be red brick with white concrete trim and balconies. Structure is to be reinforced concrete columns and flat two-way slabs on pile foundations.

Associated with Edwin T. Steffian was Marilyn Fraser who made the rendering of the winning design.

NEW LITERATURE & PRODUCT NEWS

GEORGE H. DEAN, INC.

George H. Dean, Inc., Warwick, R. I., manufacturers of Concrete Filled Steel Columns for over thirty years, have just published the 30th Anniversary Edition of the Dean Column Handbook. This new hand-



book contains all data necessary for the design and use of Dean Columns in all types of construction, containing information on square and rectangular columns as well as round, this new publication is the most up-to-date in its field.

For additional information or a copy of the Handbook, write to George H. Dean, Inc., 2109 Elmwood Avenue, Warwick, R. I.

IRON FIREMAN

A new 12-page, illustrated catalog showing the complete line of Iron Fireman commercial and industrial fuel burning and auxiliary equipment has been announced by the company. Particularly helpful is the "Index and Selection Chart" which simplifies selection of appropriate equipment for any application.

This comprehensive catalog covers the entire Iron Fireman commercial-industrial line of oil burners, gas burners, dual-fuel burners for gas and oil, forced draft package units, boiler-burner units, coal stokers, factory wired combustion control panels and the Iron Fireman Selec-Temp steam heating system. One section discusses the selection of fuel or fuels, and types of draft available. The catalog, Form 6260, is available gratis from Iron Fireman Manufacturing Company, 3170 West 106th Street, Cleveland 11, Ohio.

AIDS IN INTERIOR DESIGN

The work of many leading architects and designers is presented in a new brochure on hotel, motel and restaurant interiors, published by United States Plywood Corporation. Illustrated in color, the booklet shows striking installations in many of the country's outstanding establishments.

Lobbies, corridors, dining areas and bedrooms pictured, demonstrate a variety of eye-appealing effects achieved with real wood paneling, ranging from inexpensive Samara to Architectural Grade Teak and Benge.

Included is information on the use of both hardwood paneling and flexible wall coverings in "problem" areas, such as columns, curved walls, too-small lobbies, etc., plus a guide to many Weldwood building products that add to the look of luxury and offer the economy of low maintenance.

For a copy of the brochure on "Motels, Hotels and Restaurants" write to: Nancy Stuart, U.S. Plywood Corp., 55 W. 44th St., New York City 36, N. Y.

PIONEER PLASTICS

A new, full-color, eight-page architects' brochure is being offered by Pioneer Plastics Corporation, Sanford, Maine. The company manufactures Pionite Lifetime Laminates and Glamor-Board plastic-surfaced hardboard.

More than 50 of the newest and most popular Pionite high pressure plastic laminates are shown in an impressive two-page spread. True-to-life woodgrains, the latest pastel colors, and decoratives which feature metallic gold and silver design accents are reproduced with fidelity.

Photographs in authentic color and black-and-white illustrate many effective Pionite and Glamor-Board installations in homes, businesses and industry. Diagrams show basic methods for applying Pionite to horizontal and vertical surfaces.

Complete facts on properties, sizes, and grades of Pionite and Glamor-Board, as well as suggestions for specifications, adhesives and other pertinent information, assist the architect in planning with high-pressure plastic laminates.

Architects, contractors and builders are invited to write for copies of this new brochure. Address the Advertising Department, Pioneer Plastics Corporation, Sanford, Maine.

The brochure also appears in the 1960 edition of Sweet's Architectural File, index number 14a-Pi.

COPPER FLASHING NOW MANUFACTURED WITH IMPRINTED WEIGHT IDENTIFICATION

Copper Armored Sisalkraft, in the 3-oz. weight, is now being produced with over-all imprinting, indicating the weight per square foot of the electro deposit copper. This addition has been made for three important reasons. First, to comply with various government specifications; second, the markings will assist the contractor or applicator in making easy identification of opened rolls of the flashing material; and third, the architect and engineer can quickly check to see that the specified weight of copper flashing is being used on the job.

The continuous printing is spaced crosswise and lengthwise, which completely covers the paper side of the material. American Sisalkraft Corporation, Attleboro, Mass., manufacturer of this flashing and waterproofing product, states that the weight designation will be clearly visible on rolls of any width.

REYNOLDS METALS

What is the cost of anodizing aluminum? Can anodized parts be formed? How much heat can anodic films withstand? Does anodizing change the dimension of a part?

Answers to these and similar questions are found in a new booklet, "Questions and Answers about Anodizing," just published by Reynolds Metals Company.

The booklet is available on letterhead request from Reynolds Metals Company, Dept. PRD-26, Richmond 18, Va.

TECO EXPANDS JOIST HANGER LINE

In an expansion of its joist hanger line, Timber Engineering Company, Washington, D. C., has announced the availability of Teco-U-Grip joist and beam hangers for 3x6 to 3x14 and 4x6 to 4x14 wood members. Included in the new line are hangers for double 2x6 to double 2x14 members which also fit dressed sizes of four-inch glued laminated members. Prior to this Teco has had Teco-U-Grips available only for 2x6 to 2x14 members.

Available in either 16 or 14 gauge galvanized sheet steel, the new larger capacity Teco-U-Grips are manufactured in two basic sizes: type A for 6″, 8″ and 10″ depth members and type B for 10″, 12″ and 14″ depth members. To eliminate any chance of error through leaving choice of nails to the builder, special nails designed to develop maximum shear value are furnished with each carton of hangers. Nails are blunt-pointed to minimize or eliminate splitting.

Compared to old style strap and joist hangers Teco-U-Grips offer the builder up to 50% savings. Part of the economy of the hanger is due to its unique design which utilizes only that metal actually necessary to provide a proper balance between the load capabilities of the hanger itself and the load limitations of the joist or beam with which it is used. From a labor standpoint Teco-U-Grips are not only easily and quickly installed but they also eliminate costly notching, ledger stripping and shimming or special fitting.

A new four-page technical booklet on Teco-U-Grips providing load values and design information is available upon request. All inquiries should be sent to Timber Engineering Company, 1319 18th Street, N.W., Washington 6, D. C.

MASONITE

A new "Guide for Product Designers" has been issued by Masonite Corporation. The 12-page illustrated booklet describes various hardboards, their properties and applications in a wide range of fabrication. Details of various construction methods are shown. Designers may obtain a free copy of the 1960 guide by sending a postcard to the Masonite Service Bureau, Suite 2037, 111 W. Washington St., Chicago 2, Ill.

GRID SYSTEM REINFORCED CONCRETE

The Grid System of reinforced concrete construction is fully described in a new four-page folder available from the originators of Grid System, the Grid Flat Slab Corporation, Boston, Massachusetts. This concrete construction system, utilizing steel Grid domes in two-foot modules, speeds building time and saves material and labor costs over comparable-strength flat slab construction.

The new two-color folder presents concise, clearly illustrated descriptions of the Grid System, the steel Grid domes, formwork and utility layouts, as well as comprehensive typical safe load tables and typical layouts of ceilings and floors utilizing the Grid System construction. Architects, engineers and everyone that works with concrete will find this folder an interesting and informative reference guide to efficient, economical concrete construction. *For copies, write to: Grid Flat Slab Corporation, 761 Dudley Street, Boston 25, Massachusetts.*

NEW HEADQUARTERS

Newly elected president, Randall M. Dubois, announced recently the opening of new headquarters and offices of the Prestressed Concrete Institute at 205 West Wacker Drive, Chicago, Illinois.

The move from Boca Raton, Fla., is designed to provide greater centralization of activity and dissemination of information to this over $300,000,000 industry, Mr. Dubois explained.

"This move," he stated, "brings us in closer touch with our constantly growing membership now encompassing more than 500 members from all sections of the country. In order to provide more effective member service by the Institute,

Chicago was deemed by our directors to be most strategically located for our purposes."

The new headquarters will maintain an up-to-date library for the use of members, engineers, construction experts, architects, trade editors and students. It will also serve as liaison for the exchange of information, research and new methods between members.

The move to Chicago also pointed up, Mr. Dubois said, an expanded public and industry information program by the Institute designed to promote the economic, engineering and architectural advantages in the use of prestressed concrete for all new major construction.

Mr. Dubois, who is also president of the Freyssinet Company, Inc., N. Y., was elected president of the Prestressed Concrete Institute at the 6th Annual Convention in Miami Beach in November. Other officers and directors elected at that time were: vice president, Jacob O. Whitlock, Mid-West Prestressed Concrete Co., Springfield, Ill., and secretary-treasurer, Charles L. Scott, Jr., Southern Prestressed Concrete Co., Inc., Pensacola, Fla.

The Prestressed Concrete Institute is an incorporated, non-profit association of producers of precast and prestressed concrete products; producers of materials and equipment allied to the prestressed concrete industry; and members of the architectural and engineering profession. The Institute's charter calls for the establishment of industry-wide standards of production, quality-control and uniformity as well as the advancement of prestressed concrete acceptance through research grants to investigate new applications and engineering concepts.

ENAMEL COATED ALUMINUM

Aluminum Company of America recently announced the availability of enamel-coated aluminum sheet from the world's widest roller-coating equipment.

The unit, recently installed at the company's huge Alcoa (Tenn.) sheet mill, is producing aluminum alloy sheet with colored enamel finishes in thicknesses of .019 to .051 and in widths up to 60 inches. The maximum width previously available was 42 inches.

The ultramodern facility pretreats and enamels the sheet in a continuous cycle, producing a superior product, costing less than traditional spray-painted sheet.

Alcoa Tone-Cote, as the new product is designated, is available as both a one-side or two-side coated sheet product. A different color may be applied to each side of the sheet, thus increasing the versatility of the customer's stock. Nineteen baked-on shades are available on a variety of alloys and specialty products. Straight vinyl, vinyl-alkyd and the new acrylic enamels are offered as Tone-Cote finishes.

A continuous chemical treatment, applied to the aluminum prior to the enamel application, and a subsequent controlled baking cycle enables Tone-Cote to resist chipping, flaking, peeling, blistering, and cracking. The combination makes the product ideal for adaptation to present forming methods such as bending, brake and roll forming, blanking, crimping, or flattening, without marring the lustrous finish. A special wash coat on the reverse side of all one-side coatings helps prevent scratching and galling and increases tool life on customers' forming equipment.

"Although aluminum needs no painting to maintain its natural resistance to corrosion, many users desire color," says Richard A. Sweet, Alcoa's manager of sheet and plate sales. "Tone-Cote will fill this expanding need for color by manufacturers of such products as awnings, residential and commercial roofing and siding, mobile homes, garage doors, refrigerator cabinets and doors and other appliances, fence panels, and a host of other items."

Alcoa's method for applying Tone-Cote finishes results in a continuous enamel bond at high speed which produces a ripple-free coating. Coiled sheet, fed into one end of the unit, passes through a surface preparation to insure adhesion of the enamel.

It then glides through the roller-coater applicator, which simultaneously finishes both sides of the coil. The final treatment sends the sheet through a controlled battery of baking ovens assuring superior flexibility and adhesion of the Tone-Cote.

For further information on this product, write to 791 Alcoa Building, Aluminum Company of America, Pittsburgh 19, Penna., or contact any Alcoa sales office.

CONSUMER SERVICE CLASSIFIED

Box Numbers % New England ARCHITECT and BUILDER, illustrated, 215 Stuart St., Boston 16, Mass.

Consumer Classified Advertisements are provided for the readers of New England Architect and Builder, Illustrated as a regular monthly service. Rates: $6.00 per column inch.

Copy will be accepted for all position vacancies, new and used equipment, and business opportunities. Situations wanted are at half rate, minimum $3.00. All notices require payment in advance.

Closing date — 10 days prior to publication date. No agency commissions apply. Professional listings — Rates: $6.00 per column inch, minimum 6 insertions per year — payable in advance.

Mechanical, Electrical and Structural Consulting Engineering firm with offices in Massachusetts, Connecticut, Missouri, New York and San Juan desires to merge with firm doing similar work in institutions, commercial and industrial buildings to expand New York City Office to handle rapidly growing practice in Middle Atlantic States.

Would also consider well qualified Engineer with ten years' consulting engineering experience as Associate to manage New York Office. Individual with business, technical and sales ability will be considered for future partnership. Box #1306, c/o *New England Architect and Builder, Illustrated.*

LAND FOR DEVELOPMENT

#1 — 41 acres, Holbrook, zoned industrial; #2 — 23 acres, East Bridgewater, zoned residential; #3 — 300 lots, South of Boston, zoned choice residential; #4 — 20,000 ft., Dorchester-Milton Line, main road, zoned commercial; #5 — 30,000 ft., Brookline, zoned for multiple apartments; #6 — 20,000 ft., Brookline, zoned for multiple apartments; #7 — 58 acres, Canton-Randolph, zoned residential, industrial or commercial; #8 — 6½ acres, Cohasset, zoned residential, includes 17-room house.

Reply to Box 11-13 — N.E. Architect & Builder Illustrated — 215 Stuart St., Boston, Mass.

WANTED TO BUY. All types of building construction and road builders' equipment. Write to Bay State Machinery Co., 739 Boylston Street, Boston, Mass.

CONTRACTORS EQUIPMENT. Excess Heavy Construction Equipment; also Building Contractors' Equipment and Tools — FOR SALE. Call FARINA BROTHERS CO., 429 Watertown Street, Newton, Massachusetts, Tel. LA 7-5447.

You don't need a slide-rule to multiply your profits . . .

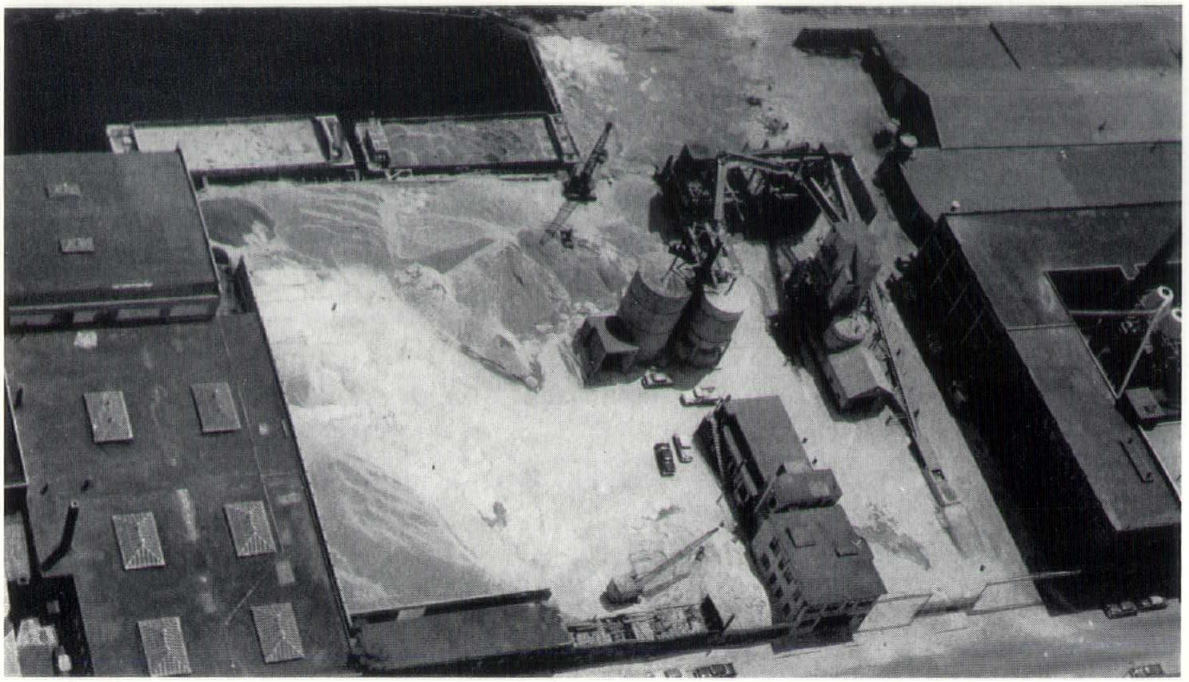
. . . Use low cost Classified Advertising or Professional Listings.

PROFESSIONAL LISTING

Acoustical Contractors

CAMBRIDGE ACOUSTICAL ASSOCIATES
Incorporated
Consultants in engineering and physics
Architectural acoustics — field measurements
noise and vibration control
M. C. Junger, Sc.D. — R. V. Waterhouse, Ph.D.
1278 Massachusetts Avenue
Cambridge 38 Massachusetts
Tel: ELiot 4-8148, EL 4-1848

PLANT CASE HISTORY:



250,000 square feet of great performance

Gentlemen;

For reliable on-schedule service, **BOSTON SAND & GRAVEL CO.** operates seven individual concrete plants at the following locations:

CAMBRIDGE plant servicing the City of Cambridge — Boston proper — Somerville — Medford — Arlington

---

SOUTH BOSTON and **ROSLINDALE** plants servicing the City of Boston and towns to the west of Boston, such as the Newtons — Brookline, etc.

CANTON plant servicing Canton — Milton — Stoughton — Brockton — Sharon — and as far west as Route 9 and Route 128.

EAST BOSTON plant servicing the East Boston area, and north to Revere — Chelsea — Malden.

BURLINGTON plant servicing towns in the Burlington area and north to Wilmington, north and west to Billerica — Bedford — Lincoln and general surrounding area.

QUINCY-BRAINTREE plant servicing Quincy — Braintree — Weymouth — Hingham — Hull — Cohasset — Norwell — Rockland — Hanover — Whitman.

BOSTON SAND & GRAVEL COMPANY

118 FIRST STREET, CAMBRIDGE 41, MASS.

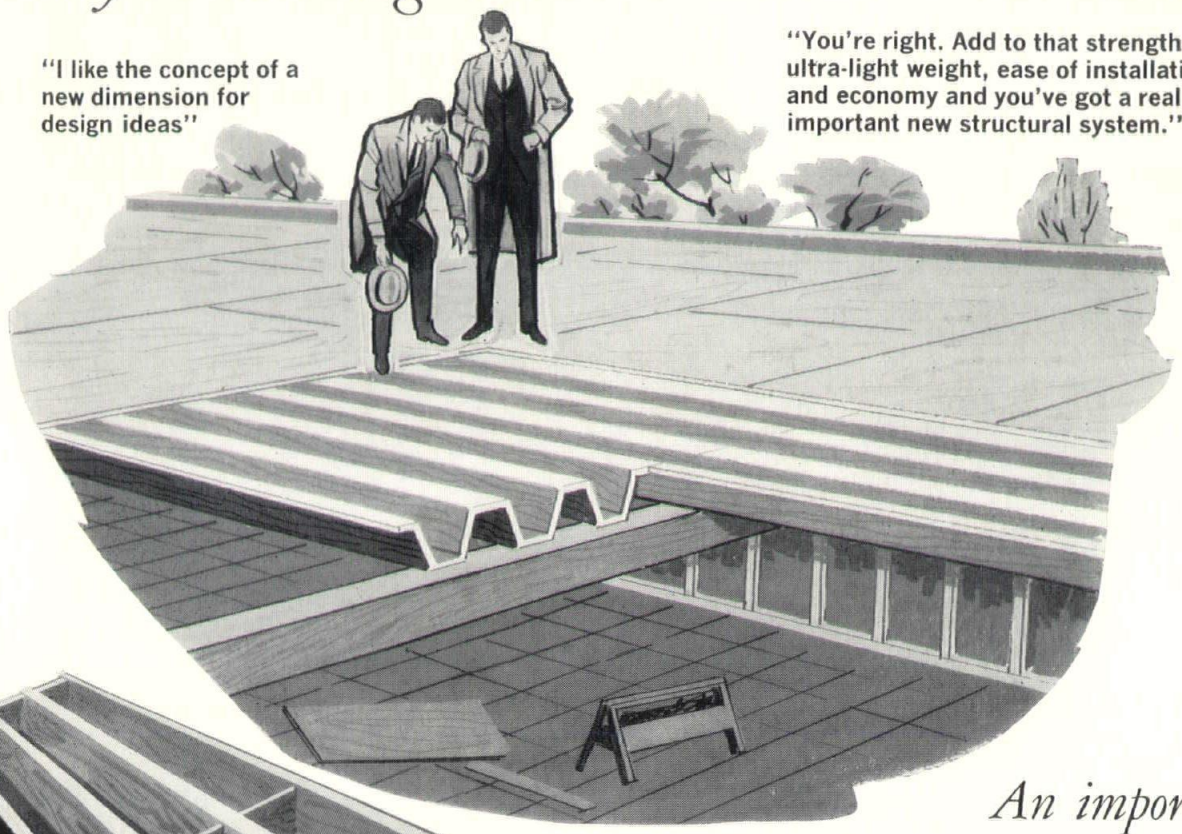
"Okay ! ! ! , Now ! Frank, Now!

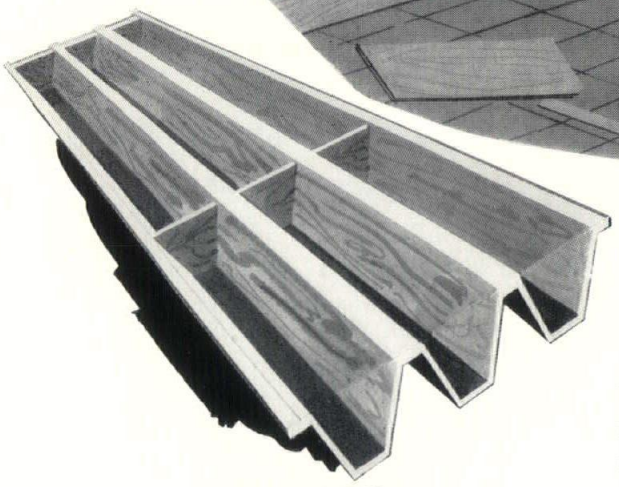
NEA&B ADVERTISERS INDEX

They're talking about TROFDEK®

"I like the concept of a new dimension for design ideas"

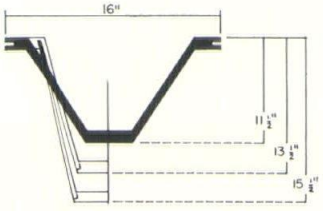
"You're right. Add to that strength ultra-light weight, ease of installation, and economy and you've got a really important new structural system."





TROUGH DEPTHS

Depth of Trough increases according to units span or length. TROFDEK units come in half, one, two, and three trough types.



An important achievement in wood engineering

by WOOD FABRICATORS, Inc.

TROFDEK is the new ultra-light structural system that provides standard units span free up to 45 feet . . . allows unlimited scope for design ideas . . . reduces construction costs . . . gives highest dead load/strength ratio . . . and lends natural striking appearance at no additional cost. Custom engineered TROFDEK supports up to 100 times its own weight of three to four lbs. per square foot and takes only minutes to install hundreds of square feet.

For roof, ceilings, floors and walls specify **TROFDEK!** Standard roofing materials apply directly . . . utilities install and are concealed in the natural trough . . . perfect as reinforced concrete forms . . . highly adaptable in specialized roof designs.

WOOD FABRICATORS, Inc.

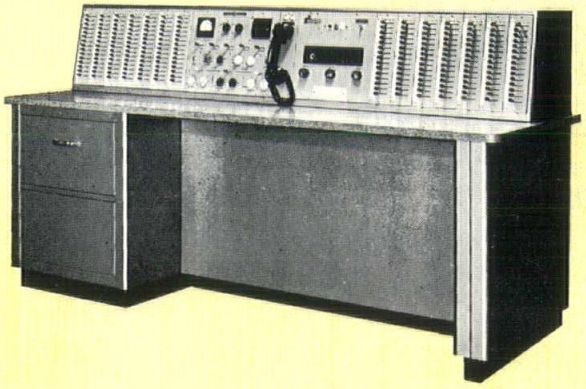
400 PORTLAND STREET, CAMBRIDGE, MASS. · ELiot 4-6000

Quality Manufacturers of: ■ **TROFDEK** ■ **WOOD TRUSSES** ■ **"WOODBARS"** ■ **WOOD BEAMS** ■ **LAMINATED AND STRESSED SKIN PANELS** ■ **MODULAR COMPONENT WALL SYSTEMS**

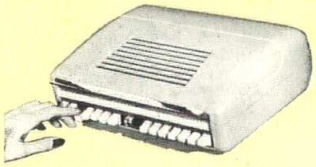
DeMambro

SOUND EQUIPMENT

COMMUNICATION SYSTEMS TO FIT EVERY NEED



SCHOOL SOUND SYSTEMS. Models for schools up to 165 rooms. Two and three channel. Choice of loud speaker or telephone intercom. Radio tuner and phonograph. Optional emergency and disaster signals from any location.



"KEY-MUNNICATOR" — combines many unusual features for rapid communications via push-button intercom. Electronic and transistor models.

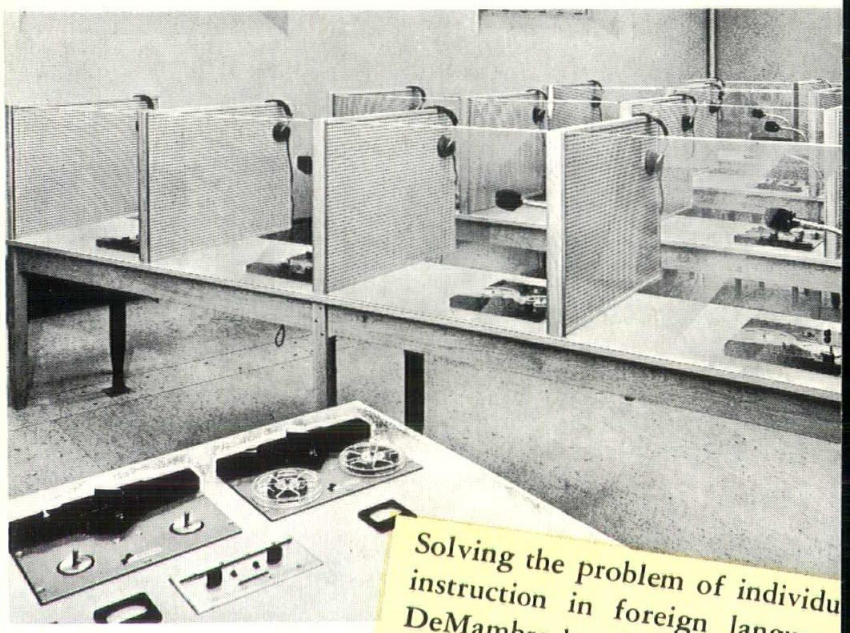
"DIAL-X" Stromberg Carlson — the ultimate in dial telephoning. Conference calls, "Magic Memory", Automatic ringing. Exchanges of varying capacities.

"PAGEMASTER"
Wireless Paging.
A receiver weighing only 7 oz. fits in breast pocket and enables key employees to be paged individually.

CARILLONS. Electronic Carillons and Bells give rich, true tones at a fraction of the cost of cumbersome, heavy bells.

DeMambro Public Address Systems grace hundreds of pulpits in churches all over New England.

Leader in the field of sound and communication equipment in New England, DeMambro sets new standards of quality in churches, schools, colleges, hospitals, offices and manufacturing plants.



Each booth is equipped with a tape recorder.

Solving the problem of individu instruction in foreign language DeMambro has developed

"THE LANGUAGE LAB"

For schools and colleges, this installation uses the tools of electronics to provide individual student teaching facilities in a group setting.

Call or Write

DE MAMBRO SOUND EQUIPMENT CO., In
1095 COMMONWEALTH AVE., BOSTON, MAS
ALgonquin 4-7870

Branches in

WORCESTER, BROCKTON, LAWRENCE, LEOMINSTER, FITCHBURG, SALEM and HYANNIS, MASS. PROVIDENCE, R. I., KEENE and MANCHESTER, N.H.