

# Progressive Architecture

(PENCIL POINTS)

## Newsletter

March 1949

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→ Resolution calling on Economic Advisers to the President to sponsor conference on factors producing high building costs will be introduced at A.I.A. Convention this month.

Other move in this direction is "economy housing" campaign of HHFA. Local meetings in many cities are calling together building industry factors to discuss ways to reduce costs of dwelling units. N. Y. State is sponsoring similar meetings, with cost of school building the stimulus.

→ A.I.A. Convention will also see contest for all offices except treasurer. Wurster, Manley, Belluschi, Thorshov comprise one slate; Walker, Stanton, Gerhardt, Ditchy another.

University of California is choosing new architectural dean. Calif. Council of Architects committee has recommended three names.

→ Availability of copper during 1949 will depend on amount of raw material that comes from abroad. Aluminum production depends on power available at plants.

Prefab news is that Lustron won small Navy contract over "conventional" prefabricators. Mortality in this new industry continues high: Harman Co. is latest to give up. Only six of 32 companies which got RFC loans are still in business. Market and know-how exist; big trouble continues to be distribution.

Steel allocation to prefabricators (59,000 tons to five companies) has, because of this, not been used. Dept. of Commerce has notified all to use allotment or lose it.

→ Experiments on a Detroit highway are testing radiant heating with thermostatic control to improve winter driving. Smaller tries have been successful--as Koch's at Snake Hill, Mass.

Gypsum producers are preparing to market a water-repellent, 1-hour fire-resistive sheeting for exterior sheathing on wood frame.

Frank Lopez has left staff of P/A. Other changes in editorial field: Henry Wright has left "Forum," from which Jimmy Fitch departed some months ago. Rudofsky is no longer editor of "Interiors".

Activity in architects' offices has slowed somewhat in last few months. Many practitioners are turning to public works (such as R.E.A. program, which is extensive)--always a sign that private clients are hesitant. As prices drop in next few months, this situation may change. Only fear is that entrepreneurs may wait for even cheaper costs, which do not seem likely.

→ Manufacturers of building materials foresee more competition in present year. Johns-Manville, among others, has warned its dealers and salesmen that a period of stiff competition is coming, in which consumers will be more particular about what they put into their buildings.

→ Civil service salaries in New York City are not as high as in other places, according to Joint Committee of Architects and Engineers. California salaries are better, for instance, but the best boss in civil service is still the Federal government, judging by the salary standard.





Air Conditioning by Natkin & Co., Houston, Texas.

Yandell, Cowan & Love, Ft. Worth, Tex.—Consulting Engineers

Mr. M. B. Amstater, Vice President of Meachams, Ft. Worth, says, "Of the \$700,000 spent to modernize Meachams, Westinghouse Air Conditioning with PRECIPITRON\* was our most important purchase." There are three solid, economical reasons behind this statement.

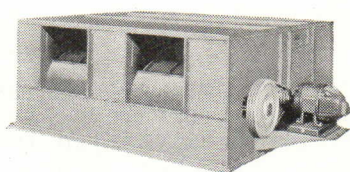
**One.** People like to shop in a crystal-clear, refreshingly cool atmosphere. That means more impulse buying, better business. Better business means protection of new as well as previous business investment.

**Two.** The electronic air cleaning of PRECIPITRON\* keeps dust and smoke from fine interior appointments. Paintwork, draperies, furnishings will stay bright and new-looking for *years*. Thus, PRECIPITRON\* protects *any* modernization investment. And, it also effectively cuts soiled merchandise markdowns.

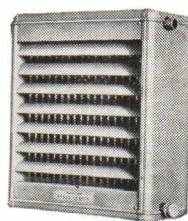
**Three.** Westinghouse Air Conditioning equipment has always been noted for its trouble-free, economical performance. This is exemplified by the Westinghouse hermetically-sealed Air Conditioning Compressor.

In these three ways, Westinghouse Air Conditioning with PRECIPITRON\* protects Meachams investment. Why not check on how this three way protection can be important to you. Call your nearest Westinghouse office or Air Conditioning Distributor. Or, write to Westinghouse Electric Corporation, Sturtevant Division, Hyde Park, Boston 36, Massachusetts.

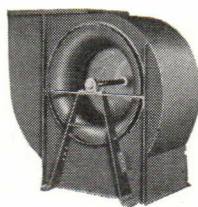
## Westinghouse Sturtevant Division



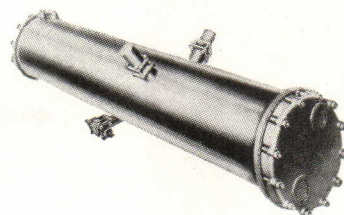
AIR HANDLING UNITS



UNIT HEATERS



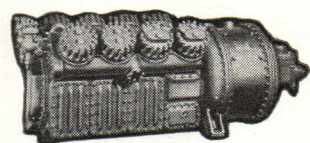
CENTRIFUGAL FANS



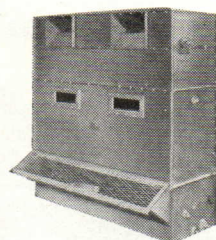
REFRIGERATION CONDENSERS



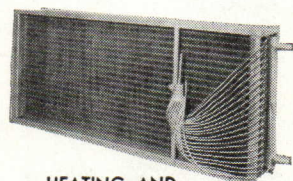
# WESTINGHOUSE AIR CONDITIONING WITH PRECIPITRON\* PROTECTS MEACHAMS \$700,000 MODERNIZATION INVESTMENT



REFRIGERATION COMPRESSORS



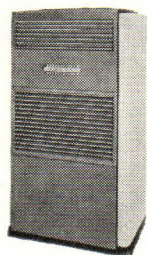
EVAPORATIVE CONDENSERS



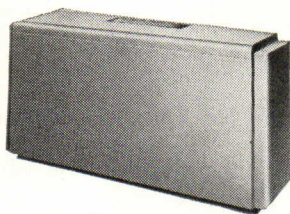
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ROOM AIR CONDITIONER



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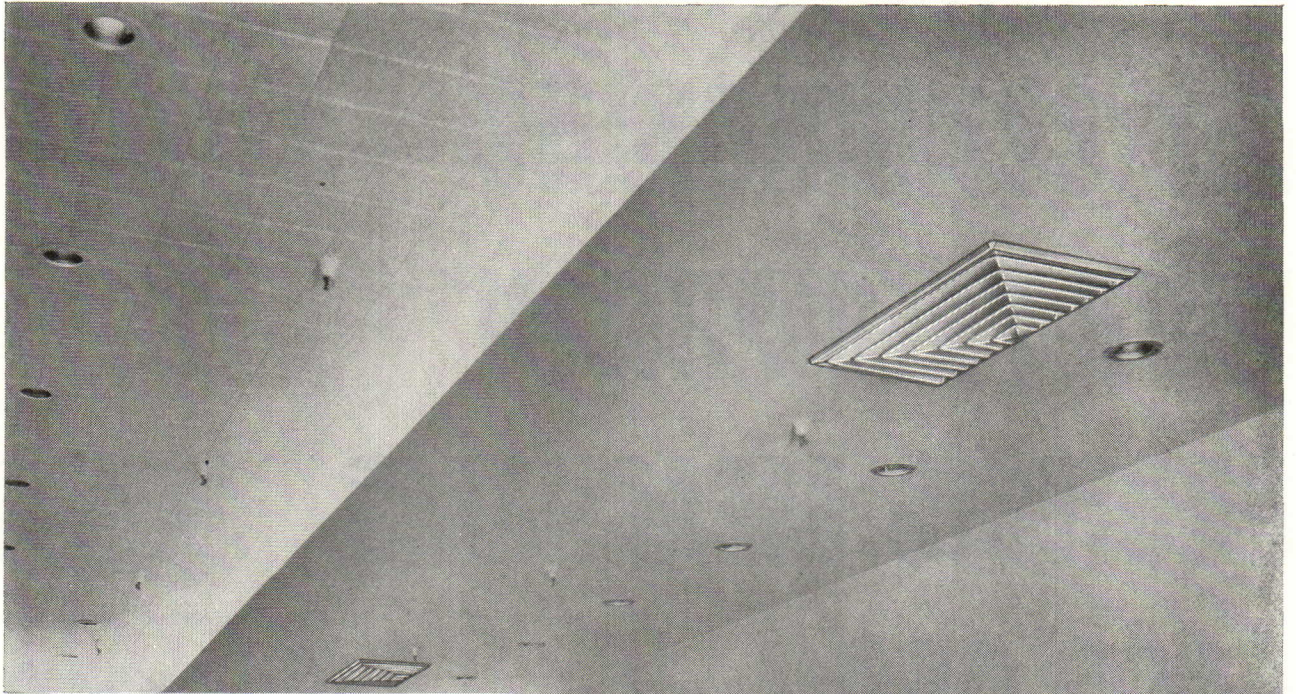


J-80131

\*Reg. U. S. Pat. Off.



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Contractor: Sodemann Heat & Power Co.

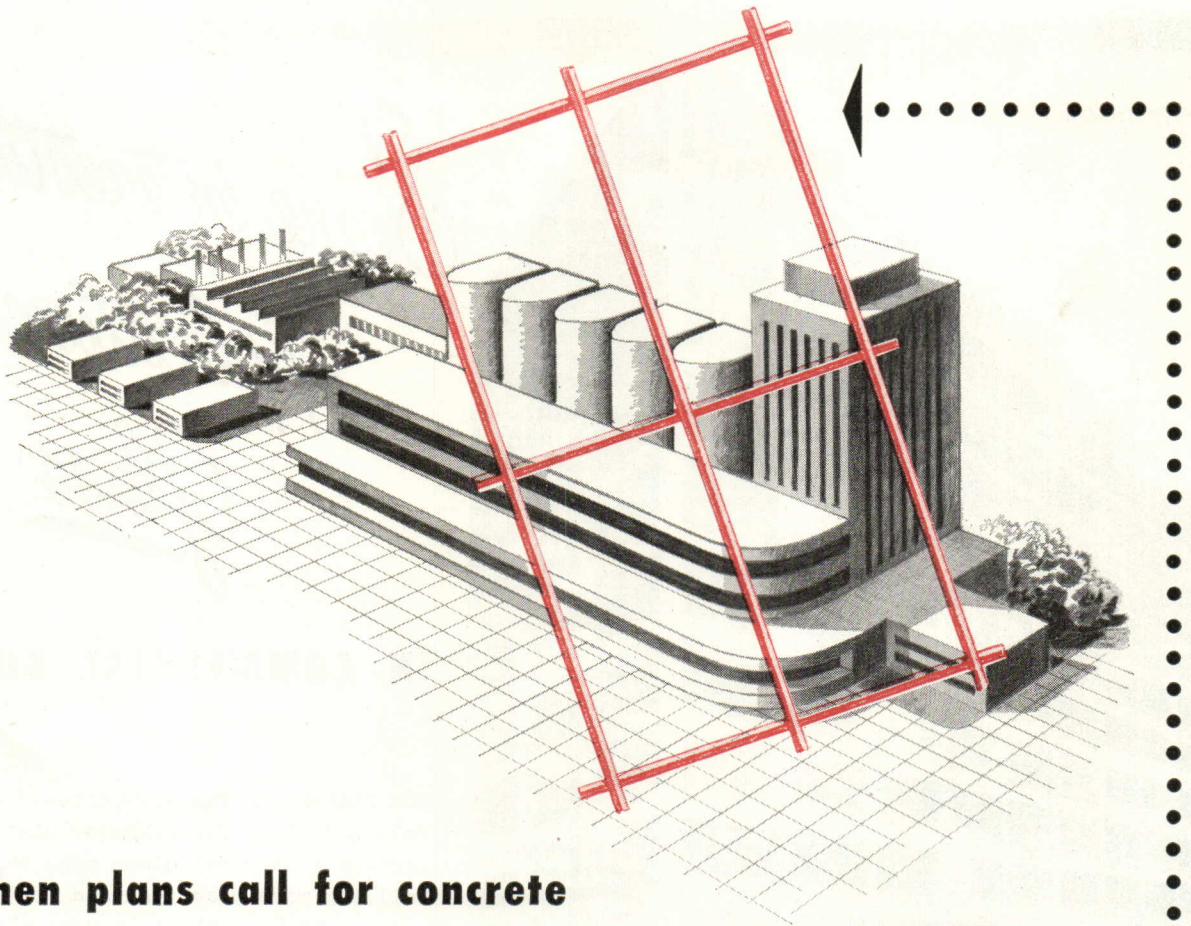
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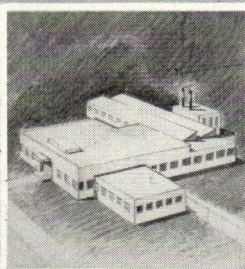
TENNESSEE COAL IRON & RAILROAD, Birmingham  
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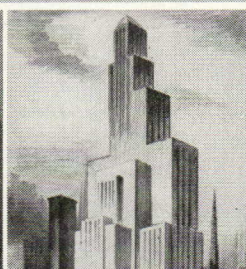
**FACTORIES**



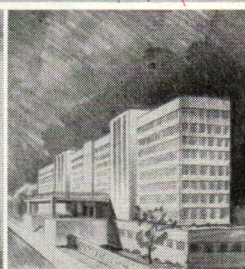
**SMALL HOMES**



**SCHOOLS**

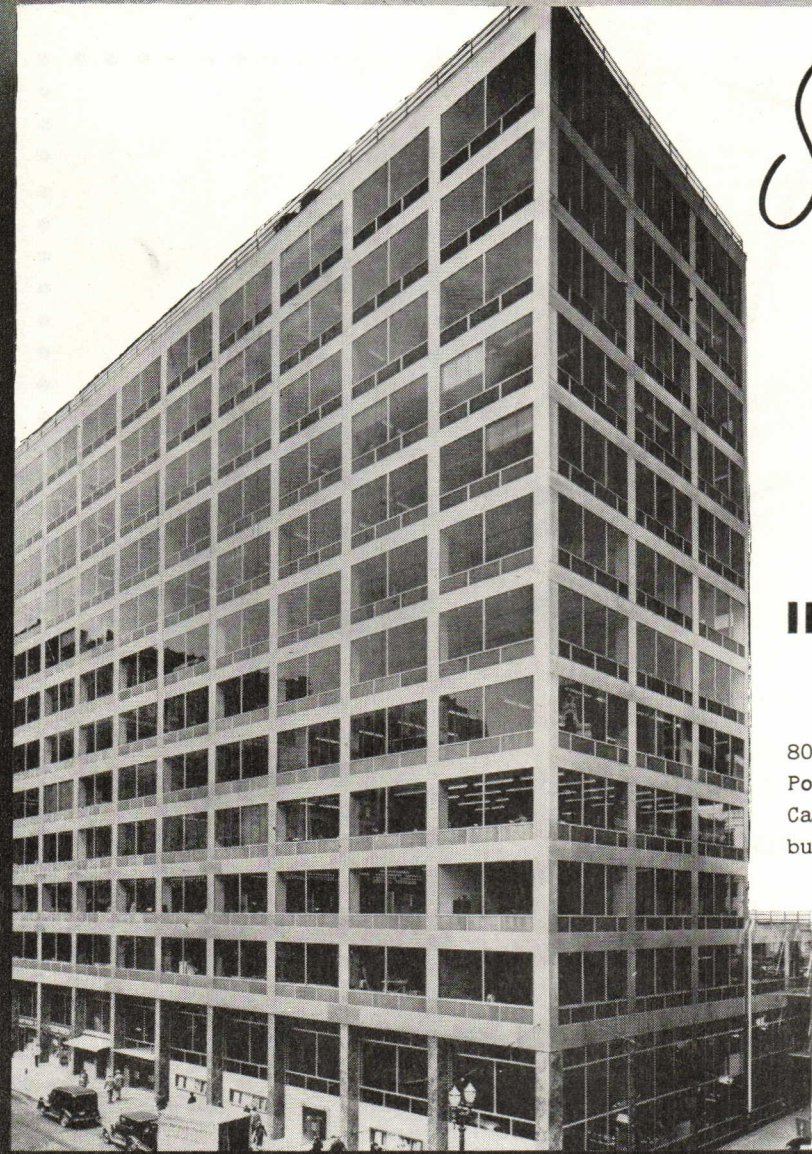


**SKYSCRAPERS**



**HOSPITALS**





*Some interesting  
applications of  
Glass*

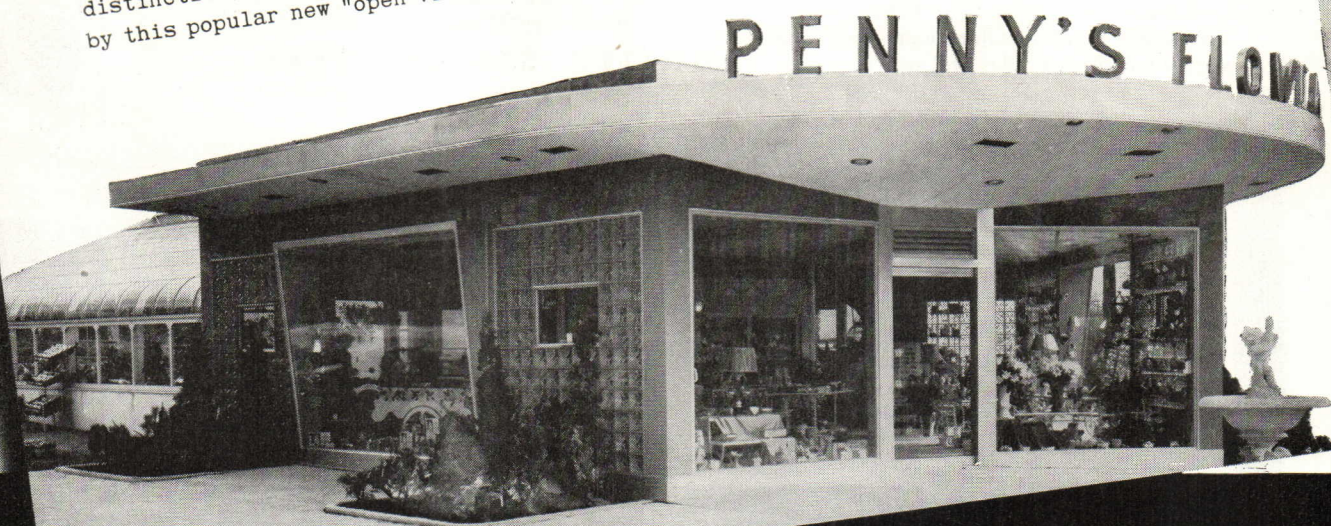
**IN COMMERCIAL BUILDINGS**

800 Pittsburgh Twindow units—Pittsburgh Polished Plate Glass—Solex Glass and Carrara Structural Glass make this modern building more practical and better-looking.

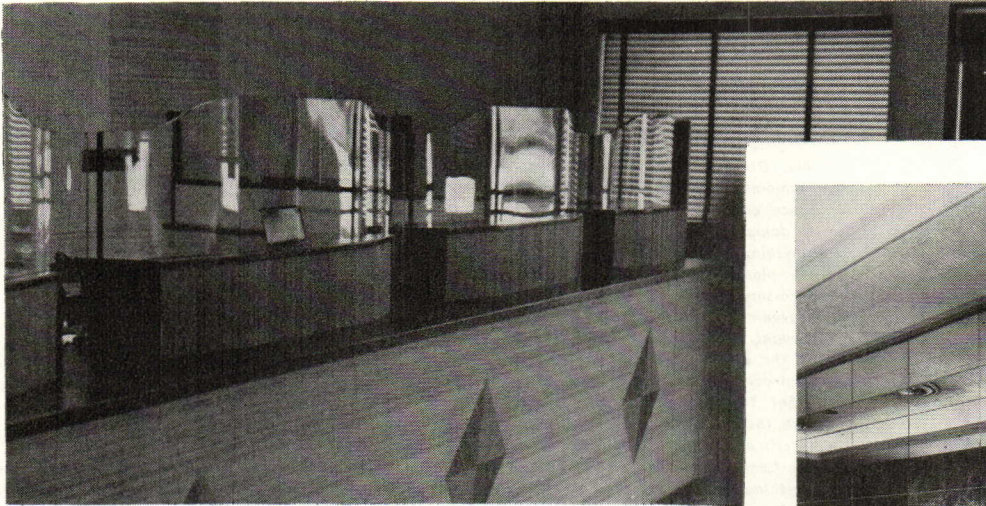
Is there a place in your plans for some of these "Pittsburgh" products?

Architect: Pietro Belluschi,  
Portland, Oregon.

"Open vision" fronts require quality glass products. "Pittsburgh" has a complete line of well-known, job-tested products to help you create fronts that are not only distinctive, but which meet the most exacting demands placed on store front materials by this popular new "open vision" trend. Architect: J. Brinton Young, Roslyn, Pa.



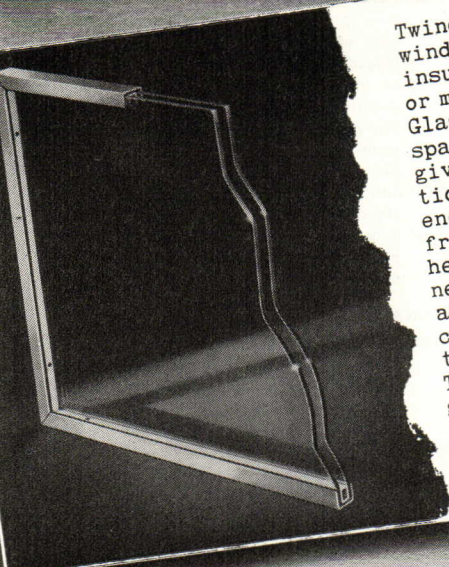




This teller's screen helps to point out the versatility of Pittsburgh Polished Plate Glass. Because this quality glass is flawlessly transparent, possesses maximum surface beauty and is available in various curved shapes, you can use it in just about every application where these characteristics are indicated. Architect: Harold A. Hayden, Bristol, Conn.



Pittsburgh Plate Glass Company has developed an instrument which makes it possible to "read" the exact thickness of a silver film at any point on a mirror. The remarkable instrument thus insures more uniform mirror silvering quality. This development is another practical result of "Pittsburgh's" energetic program to improve the quality and the performance of all "Pittsburgh" products.



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## IT'S A JOKE, SON

Dear Editor: The September issue of the *American Painter and Decorator* rightfully warns painting contractors to beware of the "all-inclusive" painting specification: "Work included: The work required under these specifications includes all labor, materials, tools, equipment, and services necessary for all exterior and interior painting and finishing throughout the buildings, embracing wood, metal or other surfaces as required to make a thorough complete job in every respect, *whether every item is herein specifically mentioned or not.* Where items are not mentioned they shall be finished the same as specified for similar work. The contractor, to avoid all possible confusion, shall examine specifications for all other trades and shall thoroughly familiarize himself with all their provisions regarding painting and finishing and he shall understand that all materials installed throughout the building which necessitate painting or finishing and which are left unfinished by the requirements of other specifications, shall be painted or finished to completion under these specifications."

Conscientious architects and specification writers will condemn this and similar "grandfather" clauses as contrary to fair and equitable practice. The A.I.A. *Suggested Guide to Bidding Procedure* recognizes this under "Section III Specifications" in which is stated, "The specifications should be complete, clear and concise with adequate description of the various clauses of work segregated under the proper sections and headings."

The writer is more than gratified that material from the book *Architectural Practice* by C. H. Cowgill and B. J. Small (Reinhold Publishing Corporation) has proved useful. However, the possibility of serious adoption of the book's only spot of levity strikes terror to our weakened hearts. A sample of the book's purported levity which may have contributed to specification all-inclusiveness follows:

### NOT TOO GENERAL CONDITIONS:

#### 1. INTERPRETATION:

- (a) *The Drawings and Specifications are to be taken together. Anything shown on the Drawings and not mentioned in the Specifications, and anything mentioned in the Specifications and not shown on the Drawings is to be considered as both shown and specified. Anything wanted by the Architect, or any of his friends, or by anybody else, except the Contractor, shall be considered as shown and specified, implied and required, and shall be provided by the Contractor, without expense to anybody but himself.*
- (b) *If the work has been done without expense to the Contractor, the work shall be*

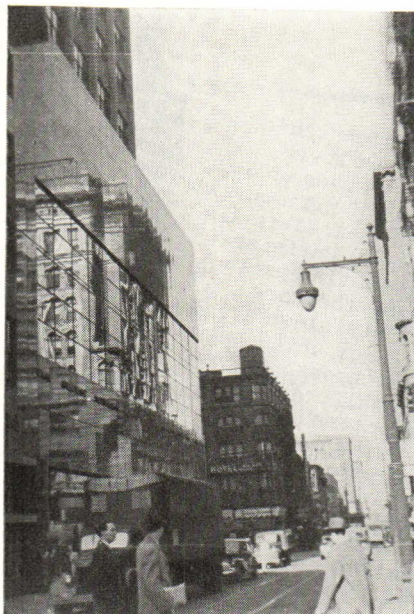
*taken down and done over again until the expense is satisfactory to the Architect.*

#### 2. PLANS:

- (a) *The Drawings are to be considered diagrammatic and are to be allowed only where space conditions make it possible to avoid so doing.*
- (b) *Anything that is forgotten or left out of the plans and specifications but which is necessary and required for the comfort and convenience of the owner, whether he thought of it before or after the execution of the contract, shall be provided by the Contractor to the satisfaction of everybody—but the Contractor—and in full accord with the evident intent and meaning of the specifications, without cost to anybody but the Contractor.*
- (c) *Anything that is right on the Drawings is to be considered right; anything that is wrong shall be discovered by the Contractor, and shall be made right without telling on the Architect or indicating it on the bills.*

#### 3. RULES AND REGULATIONS:

- (a) *The work throughout shall comply with all the rules and regulations, caprices and whims of all City, County, State and National and International Departments, Bureaus and Officials, having or not having jurisdiction.*



STREET SCENE

Dear Editor: Enclosed please find a photograph of the P.S.F.S. Building in Philadelphia, William Lescaze and George Howe, architects. What is more interesting, though, is the seemingly uncanny and prophetic reflection of dirt-catching, hodge-podge traditional forms mirrored in the clean, refreshing mass—as if to suggest that all perpetrators of such reflected rot take heed, compare, and hang their heads in deep shame.

S. WILLIAM COHEN  
Greensboro, N. C.

Readers and Mr. Cohen see also page 60.

#### 4. MATERIAL:

- (a) *All materials shall be of the best of their several kinds, and the Contractor is expected to know and provide the best, irrespective of what is specified in the detail. The Architect reserves the right to change his mind about what is best. Any change necessary to make the work and the material fit to the mind of the Architect, shall be made by the Contractor without extra cost.*

#### 5. PERMITS:

- (a) *The Contractor shall obtain all permits and shall pay all fees, annual dues, assessments, subscriptions to masked balls, organizations, outings and all hat checks.*

#### 6. DAMAGE:

- (a) *Any damage done by the Contractor shall be paid by the Contractor as liquidated damages and not as a penalty.*

#### 7. GUARANTEE:

- (a) *The Contractor shall guarantee, and does hereby guarantee that he will keep in complete and perfect working order, anything that the Architect asks him to attend to, so long as there is more work in sight in the Architect's office.*

#### 8. ARBITER:

- (a) *In case of any dispute arising as to the nature, character, or extent of the work shown, specified or implied, the matter shall be decided by referendum and recall, after which the decisions may be set aside and reversed by the Architect.*

#### 9. PAYMENTS:

- (a) *Payments, if any, shall be made as the work progresses in the amount of 85 per cent of the value of the work done, as judged by the Architect.*
- (b) *In no case shall the judgment of the Architect cover more than enough to cover the payroll every Saturday night. The material man must take the customary chance.*
- (c) *The final payment, if any, shall be made only when everybody is satisfied—except the contractor.*
- (d) *Any evidence of satisfaction on the part of the Contractor shall be considered as just cause for withholding final payment.*

#### 10. FINALLY:

- (a) *The Contractor shall accept and hereby does accept the conditions hereinafter appearing for himself, his ancestors and progenitors, his family, his heirs, executors, and any stranger that is within his gates.*

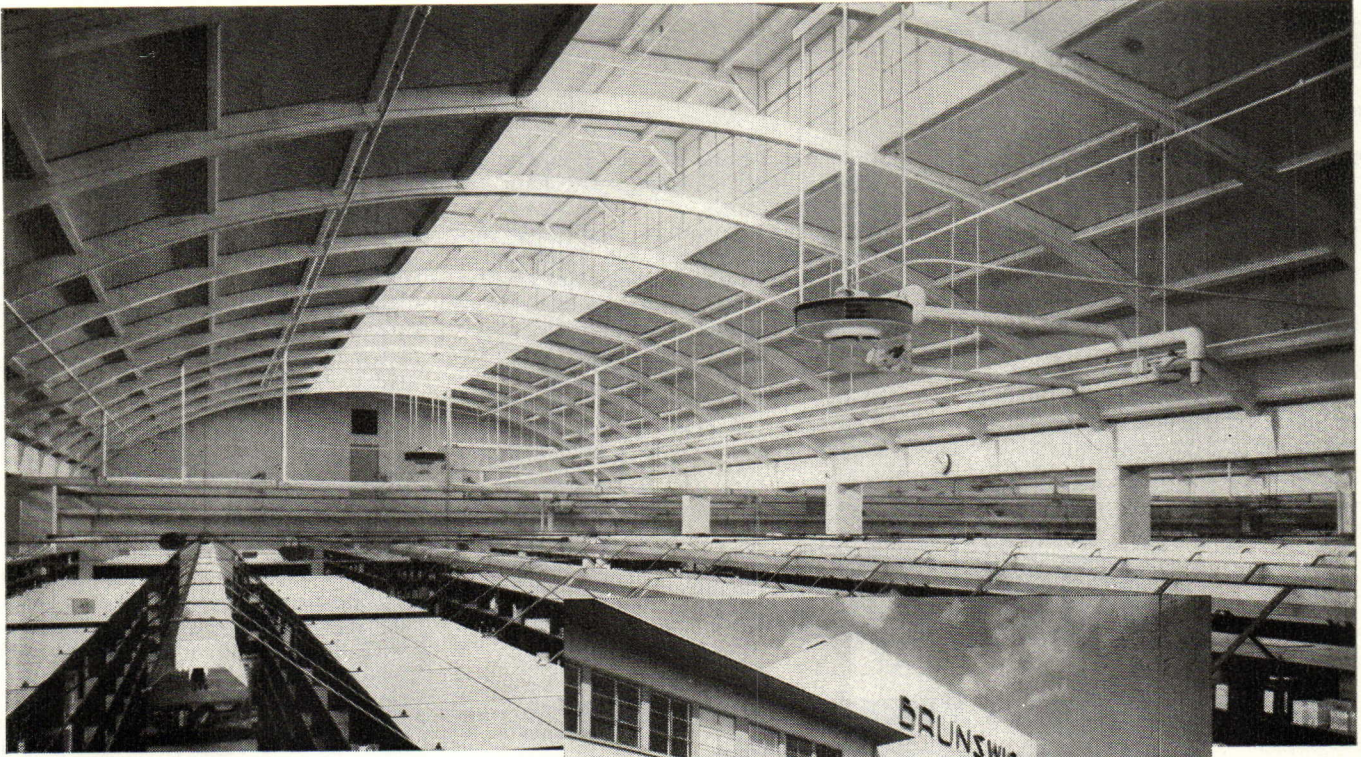
Seriously, it is difficult to understand why specifications should not be clearly drawn. Streamlining, if employed, is a simple device which by its very format almost automatically contributes to clarity. Clear painting specifications are particularly easy to prepare, especially so since most paint manufacturers' brochures are in specification worksheet form. All that is required in these worksheets is the nature of surfaces involved.

Specification writers! Unite! Erase this shameful paint blemish.

BEN JOHN SMALL, Associate  
Alfred Hopkins & Associates  
New York, N. Y.

(Continued on page 10)





128,000 sq. ft. of 1 9/16" Cemesto provides insulation, interior finish, and great strength with light weight — applied as structural roof deck to the curved roof of Brunswick Drug Company's new plant, Los Angeles, California.



Architects:  
Albert C. Martin  
& Associates

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*YOU ARE INVITED* to write us for details on Cemesto applications in which you are interested. In the meantime, you'll find complete specifications on Cemesto in Sweet's file.

THE CELOTEX CORPORATION, CHICAGO 3, ILLINOIS



(Continued from page 8)

**AVOIDED UGLINESS**

*Dear Editor:* The house in Ross, California so well described in your issue of 10/48 is an inspiration, and architect Henry Hill has done a very good job indeed. For one thing, he has avoided the too habitual and ugly chicken coop-shaped design and has not inflicted on our tired eyes, pill boxes on stilts. Instead of not publishing California houses, as one of your readers maintains, let us have more of them; especially from San

Francisco, San Mateo County and Marin County, Piedmont, Berkeley, and other Bay areas.

It seems well to have small dwellings, big enough however for a family of four. Real estate combines are spoiling parts of residential Staten Island with so-called housing developments, which bad practice is congesting neighborhoods, and the number of cute little Period cubby houses are an insult to good taste. If Modern is to prevail, it is sincerely to be hoped that extremes

will be avoided and that at least a little of the refined taste and simple elegance of the Classic can be included in the design.

W. LYNN MCCrackEN  
Staten Island, N. Y.

**YOUTH IN THE A.I.A.**

*Dear Editor:* Some few days ago I read your editorial observations on young and old architects (P.S. in October 1948 P/A). The holiday season and the excitement of taking on this new assignment\* have somewhat held up my correspondence.

In writing you this letter, which is a warm word of approbation, I take the occasion to venture some observations of my own.

Having been engaged for several years in the very real, arduous, and difficult assignment of advancing the architectural profession and of keeping the welfare of the profession consistent with the over-all welfare of the public, I have come to know very well most of the problems incident to the task. The solutions to the problems are arrived at after a good deal of study. I am aware that seldom is a single solution the one and only perfect fit. In this, my concern is not unlike that which confronts the architects in active practice.

My paramount concern and interest is to see to it that the A.I.A. serves as an efficient instrument in benefiting the profession as a whole and individually.

When I first took over a staff job with the Institute (as a member of the board of directors for three years from 1938 to 1941, elected as a result of a radical youth movement in the Middle Atlantic District), I was given no direction and no advice. I was simply informed that the relations of the Institute with the federal government, and with the construction industry, and with the public, were in an unsatisfactory state—and that something had to be done! The success we have achieved is apparent to anyone who takes the trouble to become conversant with and make a fair evaluation of the struggles we have gone through. While the work has been fascinating and stimulating, it has sometimes been frustrating and even exhausting.

The Institute has grown tremendously and is still growing. In the process, it is taking on a rather new complexion. At one time the Institute was a small society governed, ruled, and operated by its board of directors and its committee chairman; with the Octagon House staff acting pretty much in a clerical and bookkeeping capacity. Even in that status, it was a potent and progressive force. The significant contributions of our predecessors in the old days are now often glossed over or ignored.

It is anticipated that the board, acting upon convention-established policies, will lay out the broad operational objectives and policies; but the respon-

(Continued on page 12)

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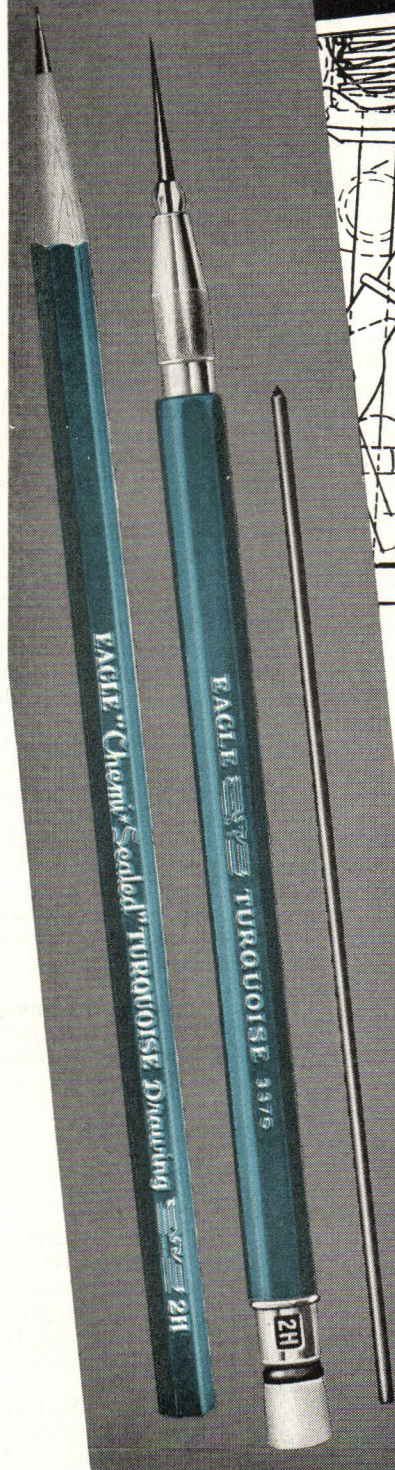
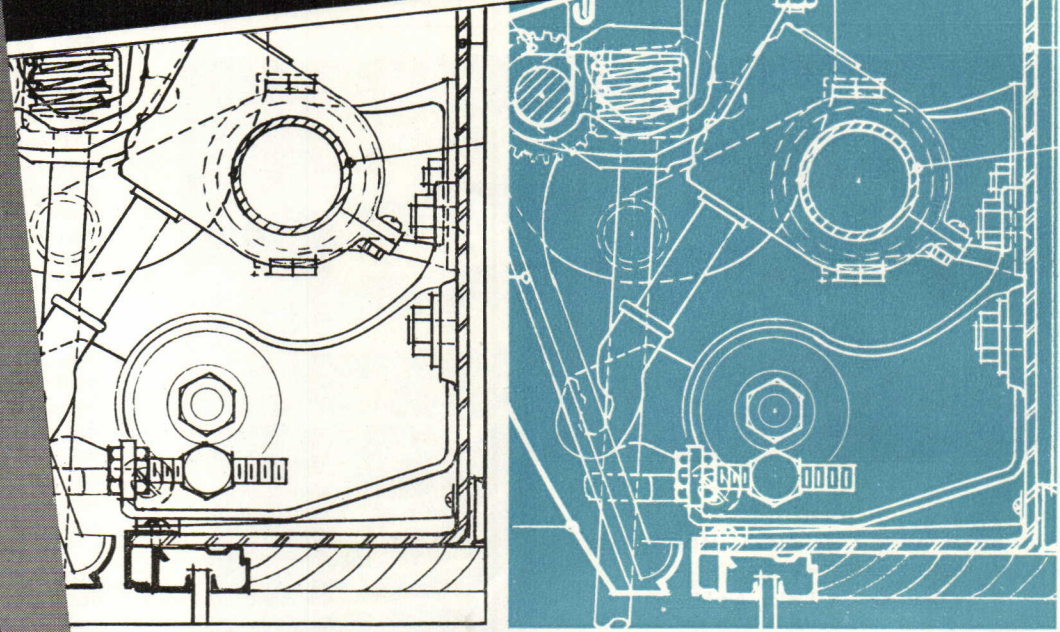
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(Continued from page 10)

sibility of implementing the policies will devolve, to a large extent, upon the staff. Those of us at the Octagon House will have a considerable share in the success or failure of the Institute.

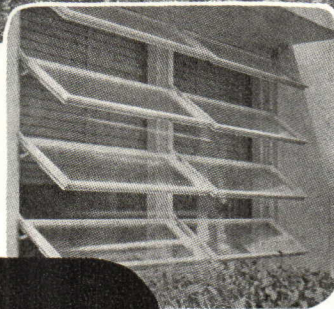
All of this may seem somewhat remote from the immediate tenor of your editorial. I am unburdening myself to you, however, because we need the constructive criticism and support of the younger men. After all, it is they who will have to take on and run the pro-

fession and the Institute in the days to come.

Criticism is always stimulating, but that criticism is of greater worth when it is based on considered evaluation. It is certainly natural for youth to criticize its elders and predecessors. No one indulged in this activity more than I—in fact I still do! But I have recently sensed a tendency to ascribe to the elder generation motives and actions which are largely nonexistent.



BROWARD GENERAL HOSPITAL  
FORT LAUDERDALE, FLORIDA  
Robert G. Jahelka, Architect



## WHERE COMFORT IS IMPERATIVE!

- Keeping patients comfortable in hot weather is a most important problem in hospital operation.

To answer this problem at low cost, Gate City introduced its completely adjustable Awning Window, which provides twice the ventilation of ordinary windows. In addition it scoops in fresh outdoor air...deflects it upward... moves the air mass at the ceiling... cools the room. Ideal, too, for sunporches and solariums. A few easy turns of a small handle

operate the sash without squeaks or slams. Rigidly constructed, these windows cannot rattle or flutter.

For hospitals, schools, churches and other buildings requiring special attention to ventilation, specify Gate City Awning Windows. Their slightly higher cost is a worthwhile investment in comfort.

For further information, see Sweet's, or write to Gate City Sash & Door Co., Dept. A-3, Fort Lauderdale, Florida.

AWNING WINDOWS BY  
**Gate City**

Offices and Factory: Fort Lauderdale, Florida • Export Sales Representative: Frazar & Company, 50 Church Street, New York 7, U.S.A. • Cable Address: Frazar, N. Y. • Agents in principal cities throughout the world.

I am also sometimes alarmed by what appears to me to be a curious lack of initiative on the part of the younger men. To cite an example: we originated and set up a committee of younger architects, the underlying purpose being to get the younger men introduced to federal assignment and the federal agencies acquainted with the younger men. After the kick-off, I was not impressed with the ball-carrying. It seemed to me that a magnificent opportunity had been presented, of which proper advantage had not been taken.

After the A.I.A. had opened the door for youth, no one seemed to want to walk through. This to me was quite surprising, as federal work may some day again become a major factor in our field of endeavor. Incidentally, I am not talking about positions in the federal government, but architectural jobs for the federal government.

Possibly, we had better confine ourselves to maintaining the position and prestige of the profession and let its members strike out on their own. Bright young men will always succeed, because they have initiative and ability; but others will fall by the wayside. Maybe we should not attempt to lead or push youth, but should let it make its own way. I must confess, however, that I still have enough of the youthful and rebellious spirit in me to incite me to carry through the objective of opening up opportunity, insofar as now possible, to all competent architects, regardless of age or previous condition of servitude.

We are operating in a highly complex economy. The Institute includes within its ranks men of every political persuasion and of every degree of liberalism and conservatism. We architects are looked to by the rest of the construction industry, by government, and even by the rest of the economy, for leadership in objective thinking and in the construction and planning and economic fields.

The Institute must bear this in mind continually when it establishes policies, and we must by all means refrain from letting ourselves get bogged down in the minutiae of personal whim. However, I certainly welcome the refreshing views of those like yourself who have the gift of apt expression coupled with judgment.

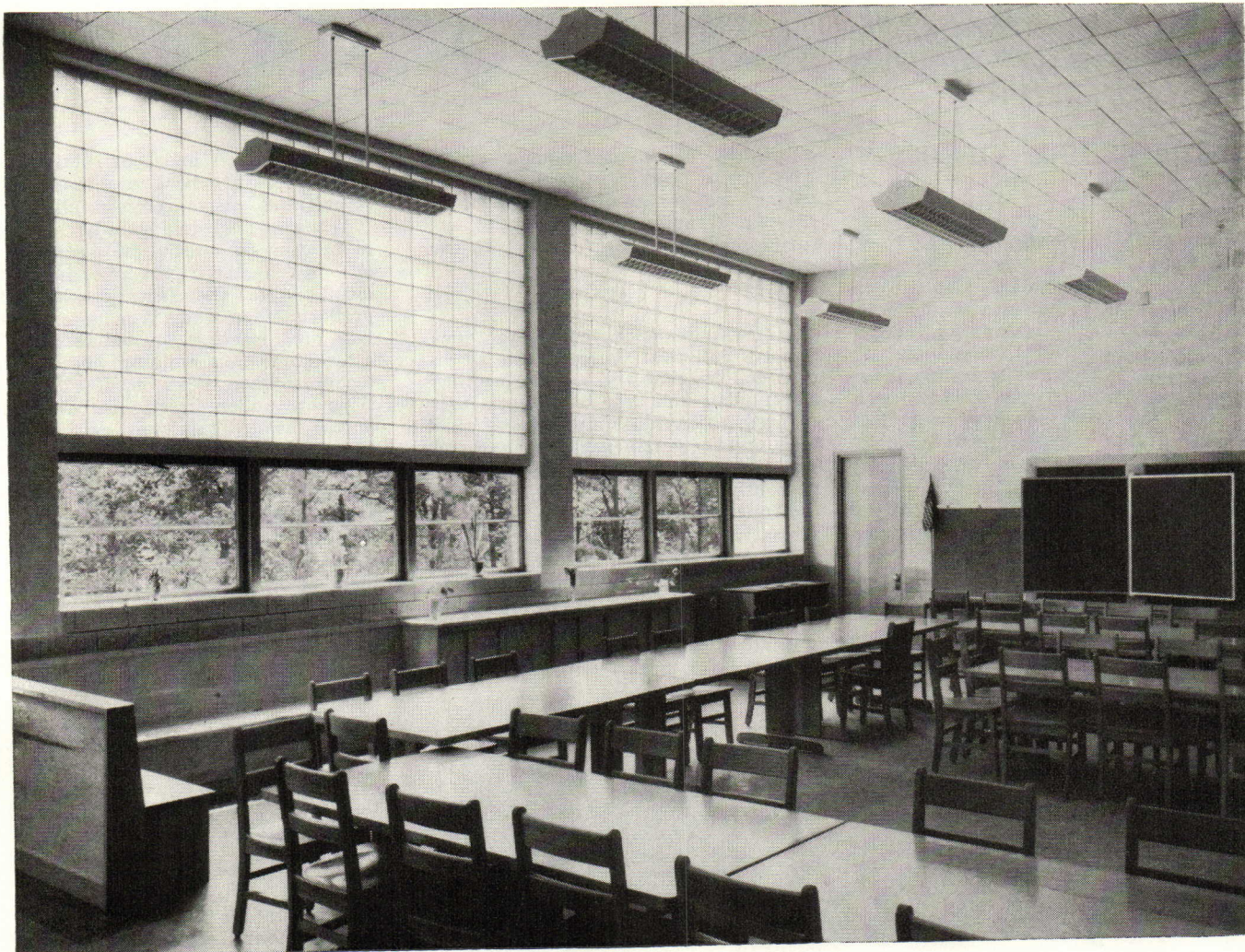
EDMUND R. PURVES,  
\*Executive Director  
American Institute of Architects  
Washington, D. C.

### DETAILS VALUABLE

Dear Editor: The "Selected Details" section of PROGRESSIVE ARCHITECTURE is an especially valuable contribution to the drafting room. To see certain details both in a photograph and in a construction drawing is both interesting and helpful.

W. E. LINCX  
Sims, Cornelius & Schooley  
Columbus 2, Ohio





## Directed light for better sight . . .

. . . in this Southeast-facing classroom of the Landover Hills Elementary School, Landover Hills, Maryland. Architects Paul H. Kea Associates, of Hyattsville, Md., used PC Soft-Lite Prism B Glass Blocks to assure that young eyes would be protected. The all-glass units direct the daylight to a high reflectance ceiling from where it is diffused downward on students' tables throughout the room. Brightness ratio of panels to adjacent surfaces in room, even on the sunniest days, is entirely acceptable. This diffused, clear, daylight helps safeguard students' health and efficiency. PC Glass Blocks effectively reduce harmful glare; keep out dust, grit and dirt. And because of their *hollow* construction they have twice the insulating value of ordinary single-glazing. This means a sizable saving in heating and air-conditioning costs as well as greater indoor comfort in cold weather. When you design, design with PC Glass Blocks—whether for public or commercial buildings; for plants or residences. Meanwhile, send for our free booklet on PC *Functional* Glass Blocks.

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 Without obligation on my part, please  
 send me a FREE copy of your booklet,  
 "Make the Most of Daylight with PC  
*Functional* Glass Blocks."

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# GLASS BLOCKS

*The mark of a modern building*

Distributed by Pittsburgh Plate Glass Company; by W. P. Fuller & Co. on the Pacific Coast, and by Hobbs Glass Ltd. in Canada



## FACTS BEHIND OPINIONS

Among the 52 committees of the New York Chapter, A.I.A., one of the most active is the Technical Committee, which offers the members a steady flow of new, first-hand information about building products and techniques. A series of exceptionally informative luncheon discussions with technical experts as the guest speakers, a series of related field trips to factories and exemplary installations of products under discussion, and in recent weeks a series of seminars for a study group, all have been provided by the sustained efforts of Chairman Lessing W. Williams and heads of several subcommittees.

Growing interest in technical information and the expansion of the committee's program stimulate similar

efforts by other professional groups. The key to success in such an undertaking, we are advised by Harold R. Sleeper, is balanced planning of each series, careful preparation of each program.

The first move each year of the newly formed Technical Committee is to discuss policies that will govern meetings, the number and type of subjects to be covered, the number and type of meetings, and the pertinency of such product and technique information as may be currently available. In order to make the luncheon meetings as generally informative as possible, it has been the policy to invite a professional to outline the subject and then spokesmen for *more than one* manufacturer, in the field being examined, to contribute their specialized information. The evening seminars, for more intensive investiga-

tion of products and construction techniques, also are held to a standard of information above commercialism.

When a field trip can be arranged in relation to a technical discussion, a bus is chartered to take interested members to the factory where the product under study is made or, in the case of a meeting devoted to study of a technique, to a building where such a technique has been used. The field trips are under direction of a subcommittee, headed this year by J. Gordon Carr.

When planning a series of discussion meetings, the program subcommittee, headed this year by Herbert Lippmann, seeks for variety in subjects and also for presentation of the competitive ideas of various manufacturers in each field touched upon. As a safeguard against commercialism, speakers are interviewed before a meeting and briefed on the general, informative level at which discussions are held. For benefit of Chapter members unable to attend the meetings, transcripts of talks, and the resulting question-answer sessions are prepared by a subcommittee, headed this year by C. Herbert Wheeler, and furnished to members on request.

Enthusiasm for the resulting store of technical data suggested a more intensive study of products and techniques, especially for younger members of the Chapter, so the new series of evening seminars was arranged under Subchairman Wheeler's direction. Attendance is limited to 25 who signed for the series. They meet after their office hours to hear and question invited experts. As the sessions, with sandwiches and coffee at hand, continue for hours they are properly described as evening events.

In order that the technical sessions may be attended by all interested members without conflicting in time with other Chapter meetings, these and other committee activities are scheduled on approval by an Activities Committee, headed this year by Vice-President Daniel Schwartzman, who also is keeper of the Chapter Calendar of Activities.

Range and variety of subjects that have been covered since the Technical Committee undertook this program are indicated below:

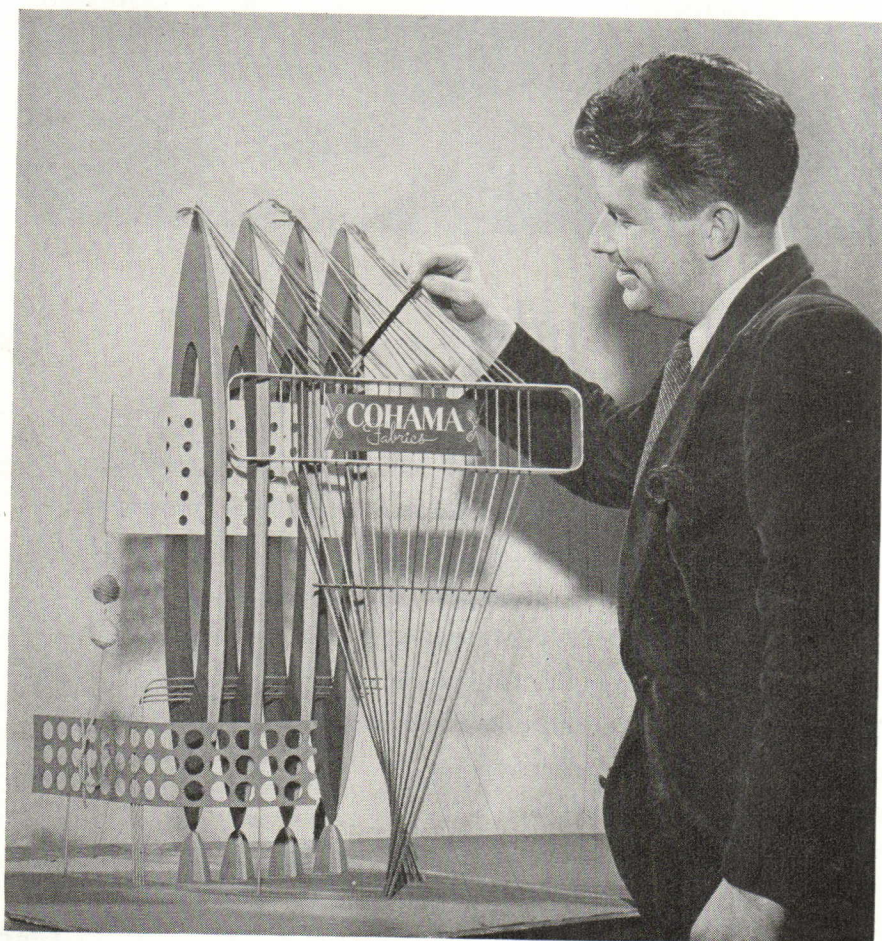
Mechanical Cores Now in Production.  
Problems in the Insulation of Flat Slab Roofs.

Modular Coordination Applied to the Industry House.

Fire Hazards.

Fire Safety in Buildings—Protective Equipment.

(Continued on page 16)



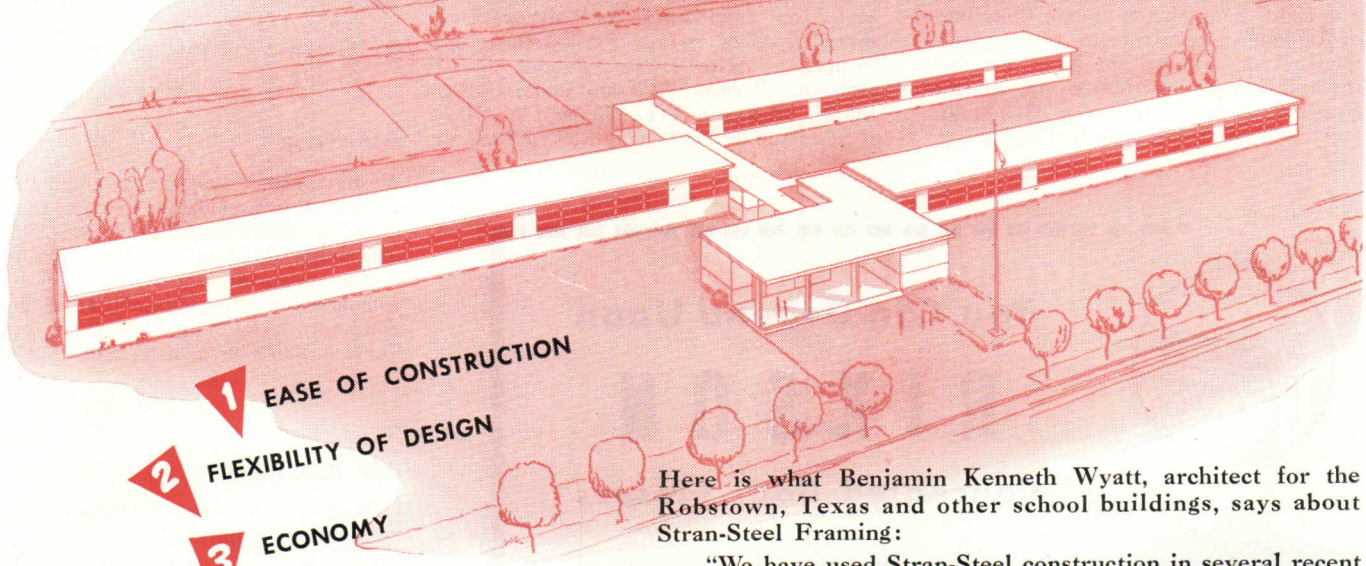
Roadside signs that are eyesores and often block a desirable view are the target of a project in the Painting and Design Department, Carnegie College of Fine Arts, Pittsburgh, Pa., where students propose that advertisers adopt three-dimensional displays such as this one, designed by John P. Fischer, Brentwood, Pa., who is demonstrating an outdoor ad for yarn and wool products.



3

REASONS WHY  
ONE ARCHITECT CHOSE

# STRAN-STEEL FRAMING



- 1 EASE OF CONSTRUCTION
- 2 FLEXIBILITY OF DESIGN
- 3 ECONOMY

Here is what Benjamin Kenneth Wyatt, architect for the Robstown, Texas and other school buildings, says about Stran-Steel Framing:

"We have used Stran-Steel construction in several recent school buildings.

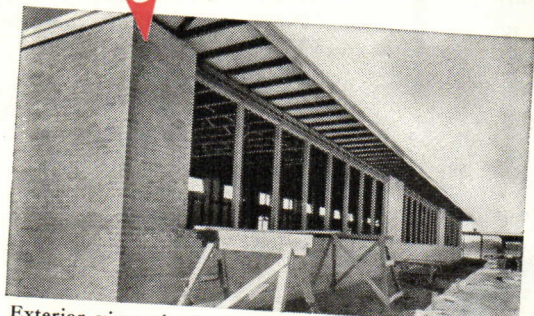
"Besides being most flexible for modern design, providing light cantilevered construction, thin window mullions used with collateral materials, economical suspended furring, Stran-Steel offers great rigidity with speed of erection for greater economy.

"Being able to nail to Stran-Steel framing gives the economy of wood framing for dry wall construction (Knox School) also eliminates furring for metal lath (Robstown Schools) in plaster construction. Fire-safety and long life is of paramount importance in school building construction, and incombustible Stran-Steel framework meets both of these requirements."

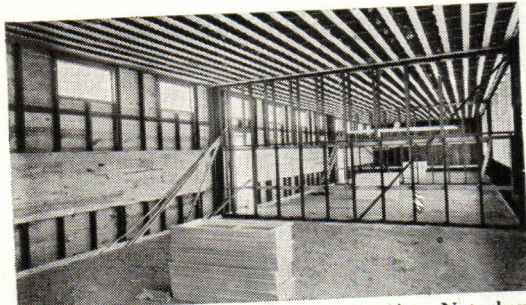
Stran-Steel framing makes it easy to design, easy to build **BETTER BUILDINGS** economically! If you are planning a housing project, a light industrial building or a private home, you can give your buildings a backbone of steel with Stran-Steel framing.

## GREAT LAKES STEEL CORPORATION

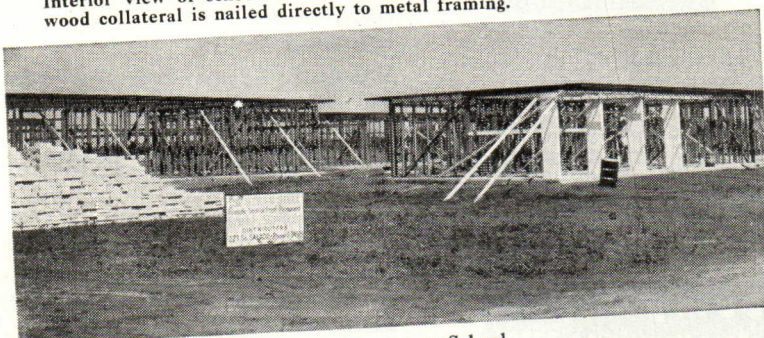
Stran-Steel Division • Dept. 37 • Penobscot Bldg. • Detroit 26, Mich.  
UNIT OF NATIONAL STEEL CORPORATION



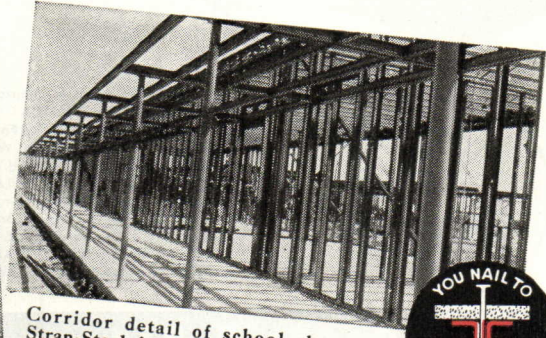
Exterior view of school. Electrical wiring is installed through factory-punched holes in frame members.



Interior view of school under construction. Note how wood collateral is nailed directly to metal framing.



Stran-Steel framing for Robstown Elementary School.



Corridor detail of school showing Stran-Steel framing.



STRAN-STEEL REG. U.S. PAT. OFF.



## Notices

(Continued from page 16)

### SHOW

THE THIRD INTERNATIONAL STORE MODERNIZATION SHOW will be held the week of June 19, at Grand Central Palace, New York, N. Y. The Show will hold a national competition among Chambers of Commerce in America for the best modernized store of the year. Further information is obtainable by writing Store Modernization Show Headquarters, 40 E. 49th St., New York 17, N. Y.

### COMPETITIONS

The *Chicago Tribune* is conducting a BETTER ROOMS COMPETITION, open to everyone, which offers \$25,000 in 145 cash prizes, ranging from \$100 to \$1000 each for furnishing and decorating seven types of rooms. For further information write Better Rooms Competition, *Chicago Tribune*, Room 2319, 435 N. Michigan Ave., Chicago 11, Ill., or see page 17, February 1949 P/A.

The *Beaux-Arts Institute of Design and the Tile Council of America*, jointly sponsoring a National Design Competition for the design of an elementary school and kindergarten building with special attention to the use of clay tile, have announced the following winners. First prize: WILLIAM P. CRAIG, University of Illinois; second prize: CARL R. KOHLER, Pennsylvania State College; third prize: JOAN R. LAM, University of Pennsylvania; fourth prize: ROBERT D. WARNER, University of Illinois.

### STUDYTOUR

A STUDYTOUR TO EUROPE, including trips to London, Milan, Vienna, Czechoslovakia, Poland, Stockholm, and Northern England, from July 6 to September 6, has been announced. Complete information may be obtained from World Studytours, Columbia University Travel Service, 2960 Broadway, New York 27, N. Y.

### NEW ADDRESSES

C. HARVEY CONVERY, architect, 100 Summit Ave., Summit, N. J.

HARRY MILTON GRIFFIN, architect, Municipal Airport Bldg. 1, Daytona Beach, Fla.

JOHN HANCOCK CALLENDER, architect, 280 Madison Ave., New York 16, N. Y.

THE H. K. FERGUSON Co., Ferguson Bldg., E. 11th St. at Walnut, Cleveland 14, Ohio

THOMAS L. SHEPHERD, architect, 7466 Girard Ave., La Jolla, Calif.

### NEW PRACTICES, PARTNERSHIPS

FREDERICK E. WIGEN, ARCHITECT, 132 So. Washington Ave., Saginaw, Mich.

ALLAN A. BERKOWITZ, architect, 2010 Chancellor St., Philadelphia 3, Pa.

WILLIAM SMULL, LEON BROWN (SMULL & BROWN), architects, 1129 Vermont Ave., N.W., Washington 5, D. C.

C. JONES BUEHLER, architect, 910 Crozer Bldg., Philadelphia 2, Pa.

New partners: LAWRENCE S. BELLMAN, MICHAEL B. O'SHEA; BELLMAN, GILLET & RICHARDS, architects and engineers, Toledo, Ohio. Retired from firm: LAWRENCE S. BELLMAN.

MYRON F. NELLE, structural engineer, 707 Cottage Grove Ave., South Bend 16, Ind.

BERNARD KESSLER, architect, Bennington College, Bennington, Vt.

HAROLD A. OBST, architect, 302 So. County Rd., Palm Beach, Fla.

BERTRAM LEE WHINSTON, associated with BENJAMIN H. WHINSTON (BENJAMIN H. WHINSTON & BERTRAM LEE WHINSTON), planning-design, 465 Lexington Ave., New York 17, N. Y.



**You Can Depend Upon**

# RIXSON

**Concealed Door Closers**

Superiority in RIXSON engineering and construction assure the satisfactory functioning of RIXSON concealed door closers even under the most exacting conditions. During half a century of leadership in this field, RIXSON checking floor hinges have never failed mechanically due to the admittance of foreign matter into the sealed hinge housing. *There is no question of RIXSON dependability.*

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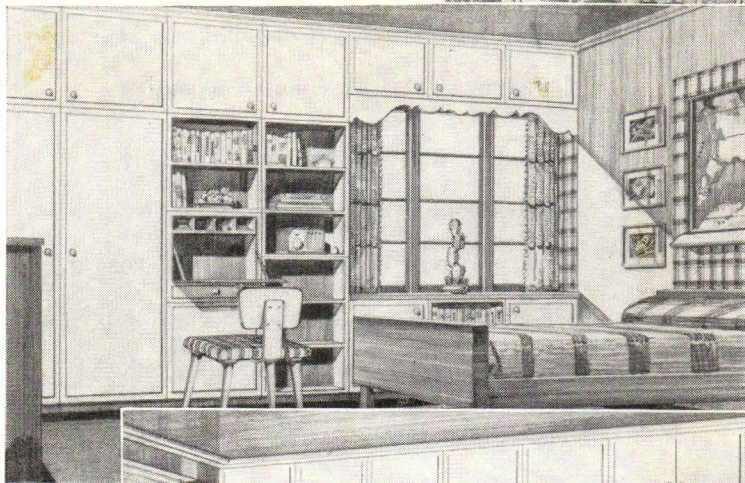
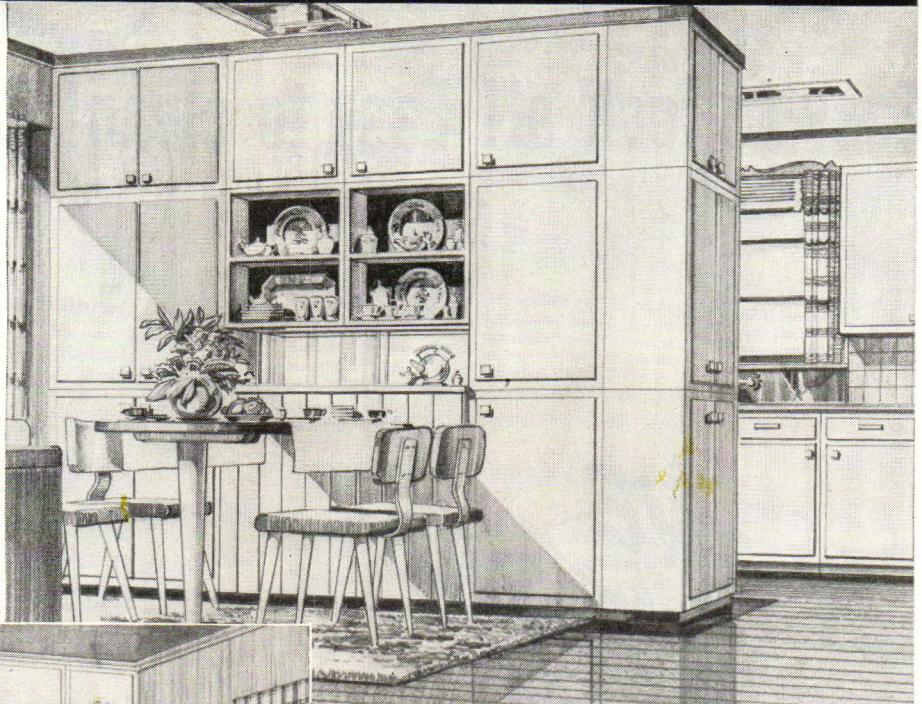
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MAKE DECORATIVE WALLS WITH STORAGE SPACE FOR EVERYTHING

**Hundreds of  
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ASSEMBLIES  
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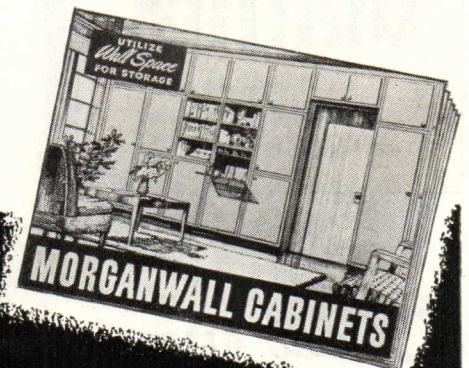
## More Space for Storage with MORGANWALL CABINETS

with structural as well as functional advantages. They fit new construction as well as remodeling jobs. A large selection of sizes and styles makes possible an assembly for any type of room, complete walls or free-standing partitions.

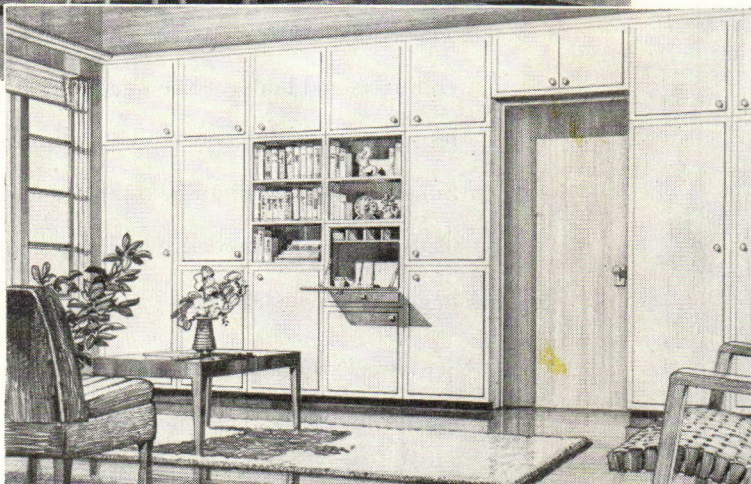


## Write for this Valuable Catalog

showing various combinations, construction details, sizes, and styles of Morganwall Cabinets. The natural wood finish can be stained, waxed, or painted to harmonize with room interiors . . .



They  
Replace  
Interior  
Walls  
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No  
Floor  
Space  
Sacrificed  
•  
Decorative  
Storage  
Space  
Gained



**MORGAN COMPANY** MANUFACTURERS • Oshkosh, Wis.

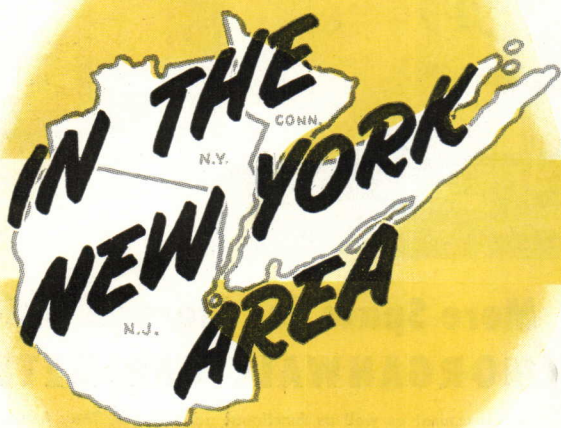
ENTRANCES • DOORS • SASH • TRIM • STAIRWAYS • KITCHEN  
CABINETS • MANTELS • CORNER CASES



Interiors of color-balanced

*Suntile*

Easy to look at! Easy to clean! Easy to keep up!



Suntile installations create "show places" for all these owners in the New York area. Every owner here is proud of his bathroom—or kitchen—or business place. And he will be for years to come!

Suntile—with its color-balanced beauty—has permitted architect or builder to plan harmonious, pleasing color combinations.

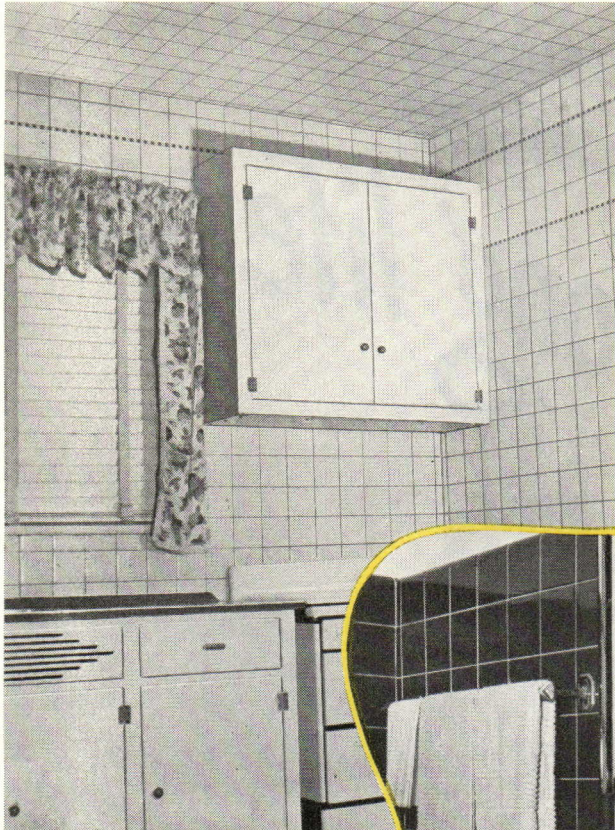
Suntile—with its real clay tile durability—will continue to ease maintenance costs for these owners. So simple to clean with soap and water. So free from chipping, marring or cracking. Never any painting or redecorating!

This is real customer satisfaction, the kind architects and builders like to achieve. It is lasting satisfaction, too, for Authorized Suntile Dealers, carefully trained and selected, have the knowledge and experience to give better installation.

See Sweet's Catalog for complete information about Suntile. The Cambridge Tile Manufacturing Company, Cincinnati 15, Ohio.

*Suntile* OFFERS YOU BOTH — *Better Tile.... Better Installation*

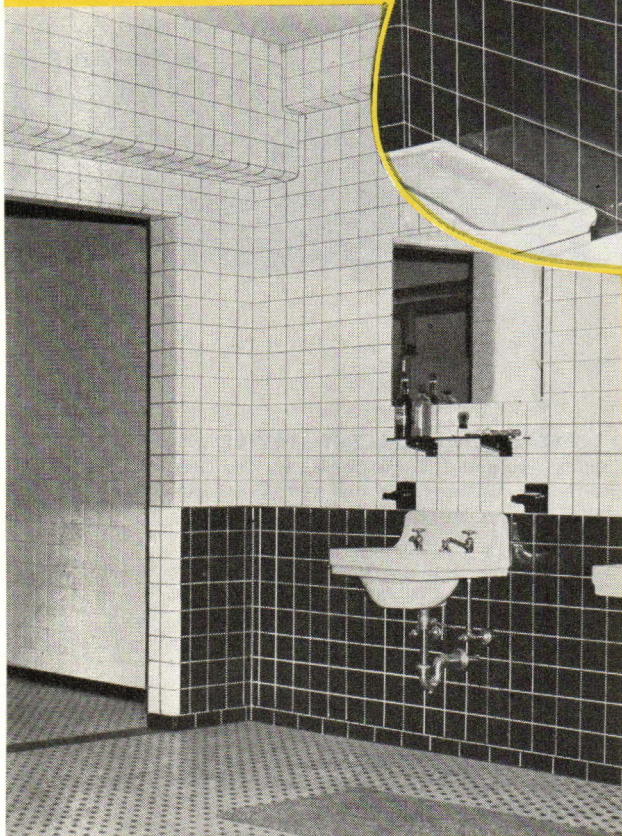
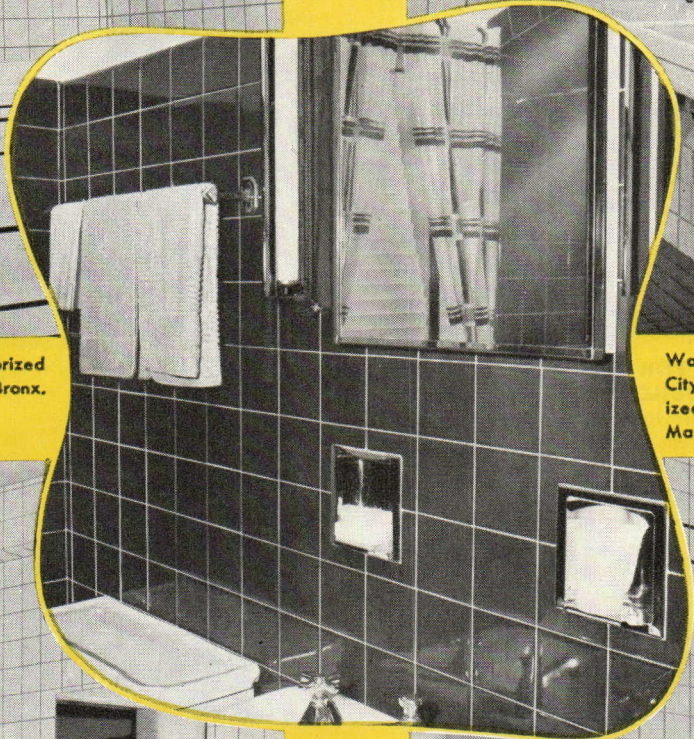




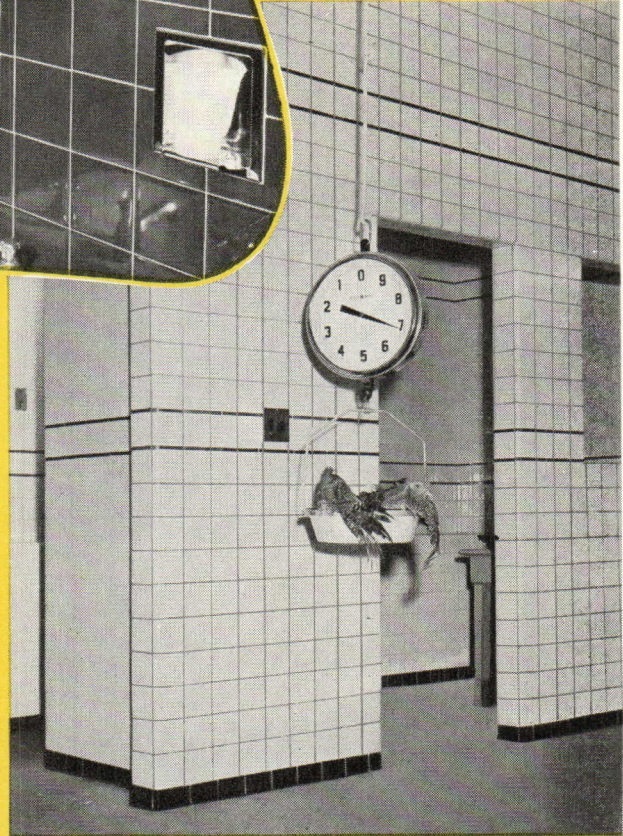
Residence: New York City. Authorized Suntile Dealer: M. Falsa Tile Co., Bronx, New York.



Wash Room: men's club, New York City. Designer: Fred Ebeling. Authorized Suntile Dealer: Liberty Tile & Marble Co., New York City.



Players' Wash Room: Yankee Stadium. Architect: Osborne Eng. Co., Cleveland. Cont.: R. L. Wirtz, Columbus, Ohio. Authorized Suntile Dealer: Port Morris Tile & Terrazzo Corp.



Ninth Avenue Poultry Market: Mt. Vernon, New York. Designer: James DeLazero. Authorized Suntile Dealer: Port Morris Tile and Terrazzo Corporation.

CENTER: Residence, Shrewsbury, N. J. Authorized Suntile Dealer: J. J. Lennen, Rumson, N. J.



**YESTERDAY...AND TODAY...**

# Silence and long life sell

**"BACK IN NOVEMBER 1937** we installed 45 Servel Gas Refrigerators . . . and they are still giving our tenants noiseless, dependable service . . . at continued low cost, too."

**PETERSON-HALVORSEN**  
Managers of 3521-29½ Broadway  
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**"FOR OUR NEW 24-APARTMENT BUILDING** we chose Servel. After observing refrigerator performance for the past ten years, we decided that trouble-free service was the feature we desired most."

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**"AFTER 15 YEARS OF EXCELLENT SERVICE,** my tenants thank me, and I thank Servel for the Gas Refrigerator's low-cost operation and year-after-year dependability."

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Boston Management Corp.  
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Boston, Mass.

**"OUR NEW GAS REFRIGERATORS**—installed a short time ago—have already convinced me that Servel is my best refrigerator investment . . . by far!"

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# apartment owners on Servel



**"WAY BACK IN 1933** we chose Servel for our 56-room apartment house. Thanks to that wise choice, our tenants have enjoyed 16 years of silent, dependable service . . . at very low cost."

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President of the 6930-62nd St. Corp.  
Ridgewood, Long Island, New York



**"JUST ABOUT TWO YEARS AGO** we installed 89 new Servels. What sold me on the Gas Refrigerator? Why, no noise, no wear, low operating cost, and longer life, of course."

MORRIS LAINOFF  
Agent for Kings Tower Realty Co.  
1525 E. 26th Street, Brooklyn, N. Y.

## Noiseless, dependable operation year after year is the reason for the Gas Refrigerator's steady rise in preference

Down through the years, the Servel Gas Refrigerator has been a favorite with apartment owners. From experience they have learned that tenants welcome the silent refrigeration that *only* Servel can give.

Tenants also appreciate the Gas Refrigerator's dependable "always on the job" service. They don't have to worry about mechanical breakdowns which can cause costly food spoilage and annoying interruptions to their daily living routines. And, of course, apartment families are enthusiastic over Servel's many modern conveniences, including the spacious frozen food compartment . . . roomy moist cold, dry cold sections . . . and the over-all big, flexible interior.

### Low Operating Cost . . . Lowest Upkeep

Even after many years of faithful service, Servel operating costs remain remarkably low. You'll also find that repair and replacement bills stay at the minimum. The Gas Refrigerator does not lose efficiency with age because it has no moving parts in its freezing system. There's not a single piston, pump, valve, or compressor to break down, wear out, or get noisy. Only a tiny, silent gas flame is needed to circulate the refrigerant through Servel's different, modern operating system.

See your Sweet's Catalog for full information on the Servel Gas Refrigerator . . . or write to Servel, Inc., Evansville 20, Indiana.



Servel  
The GAS Refrigerator



# Roddiscraft

## Symbol of Quality for over 50 Years

**HARDWOOD PLYWOOD**

**FIR PLYWOOD**

**FORMICA**



**Belt sanded to  
satin smoothness**



**Edges clean  
as a whistle**



**Corners . . .  
precision true**

The knowledge and experience gained through more than fifty years of working with wood is built into Roddiscraft plywood. You can see the difference in faces, edges, corners—it's a quality product.

You know Roddiscraft knows your needs when

you deal with our warehouses. They are service-centers equipped and stocked to meet the needs of customers in each area.

This combination of quality products and service keyed to your needs is a Roddiscraft tradition.

### **Fir Plywood**

Available in both interior and exterior grades. Complete warehouse stocks in standard sizes and thicknesses.

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Kansas City 3, Kan. 35-53 Southwest Blvd.  
L. I. City, N. Y. Review & Greenpoint Ave.  
Los Angeles 11, Calif. . 2860 E. 54th St.  
Louisville 10, Ky. . . 1201-5 S. 15th St.  
Marshfield, Wis. . . 115 S. Palmetto St.  
Milwaukee 8, Wis. . . 4601 W. State St.  
New York 55, N. Y. . . 920 E. 149th St.  
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FOR **LIVING**  
FURNACES, BOILERS, FUELS,  
ASHES, SMOKE, SOOT, GRIME  
NOT WANTED .. NOR NEEDED!

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TOWN** Gets

**READY-MADE HEAT** via **RIC-WIL** Insulated Piping

● Yes, everything's right here for the 32,700 people who are housed in this modern, mid-Manhattan community. That's the way the Metropolitan Life Insurance Company planned it.

57 separate apartment buildings, ten to fifteen stories high, shopping areas, parks, playgrounds, underground garages—everything needed for modern living by 11,255 families—*without an inch of space used in fuel storage or fuel consumption for comfort heating or service water.*

Instead of fuel this modern city takes delivery of the end product it wants—*heat*—in a form that's most convenient for its needs. It thereby minimizes fire hazards. 650 million pounds of steam, produced at the New York Steam Corporation's East River Power Station, is delivered annually to Stuyvesant Town and Peter Cooper Village.

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"Housing America", a Ric-wiL book on mass housing and central heating is free to everyone having a bona fide use for it. Write for Form 4804. Address the Ric-wiL Co., Dept. 199.

**RIC-WIL**

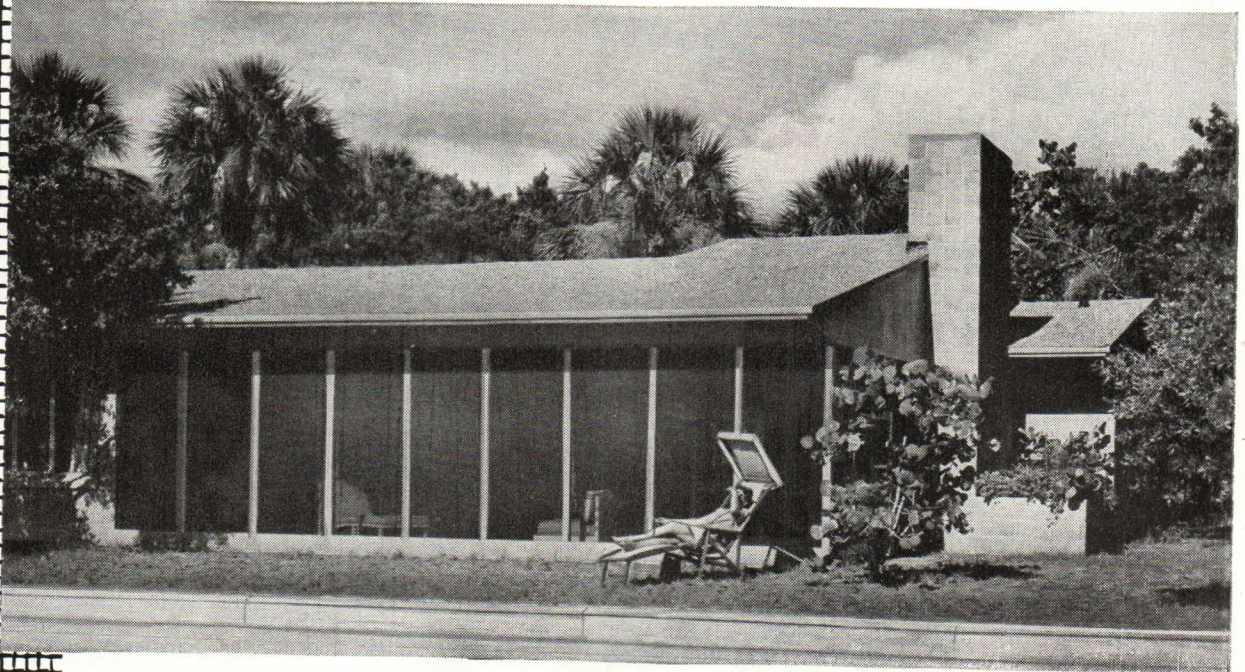
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*“Our experience shows nothing else stands up like this plastic screening.”*

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Sarasota, Florida

## SPECIFICATIONS

### EFFECTS OF ACIDS, ALKALIS AND SOLVENTS

—Essentially none.

**NON-INFLAMMABLE**—Will not support flame . . . is self-extinguishing. Melting point, 340°F.

**WATER ABSORPTION**—Immersion 24 hours, less than 0.1%.

**TENSILE STRENGTH, ULTIMATE** (of filament):  
—Up to 40,000 lbs. per sq. in.

**IMPACT STRENGTH**—Greater than conventional type screening.

**INSTALLATION.** Cut with ordinary scissors. Fold cut edges under 1/2". Tack or staple the screening smoothly and evenly every 1 1/2". Being elastic Lumite will automatically draw itself into a snug, firm fit. For correct methods of machine framing, consult Lumite engineers.

Like thousands of other architects in localities where screening is subjected to severe climatic conditions, Mr. Twitchell has found that LUMITE provides the happy answer to screening problems.

Here is a screening that has absolute immunity to rust, rot, or corrosion. Neither high humidity, salt spray nor acid smoke has any effect on this amazing new plastic material. It cannot support mildew or fungus.

Because LUMITE is rustproof and corrosion-proof it cannot stain paint under windows . . . it need not be painted to prevent rusting.

LUMITE has greater impact strength than conventional screen material . . . it will never sag nor bulge, when properly framed. Punch it. It gives then regains its original shape.

LUMITE saves your clients money—costs little more than the cheapest screen and less than any other quality screening—only 11 1/2-12¢ per square foot—retail.

*Sold through hardware, lumber and building supply dealers and screen manufacturers.*

*For further information, consult Sweet's File or write Dept. P.A.-2.*

## LUMITE DIVISION

Chicopee Manufacturing Corporation  
47 Worth Street, New York 13, N. Y.

\*Registered Trade-mark



# LUMITE

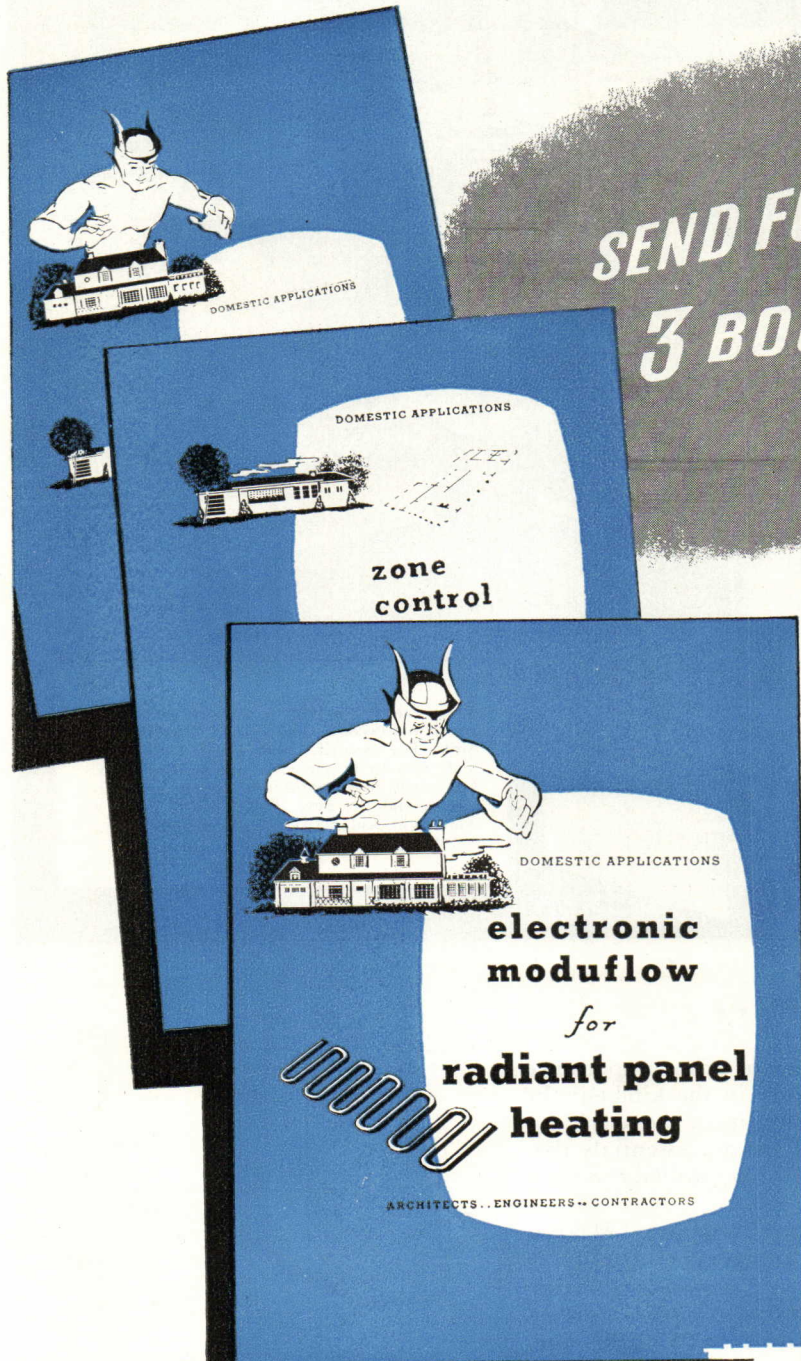
woven of saran



# NOW electronic control for radiant panel heating

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3 BOOKS • FREE.



HONEYWELL Electronic Moduflow is now available. This simple and inexpensive control system, with its sensitivity and extreme dependability is now available for all types of automatic heating systems including radiant panel heating, either floor, wall or ceiling.

The three books pictured are available upon request. They give you factual information about this newest and finest Honeywell control system, in addition to zone and individual room control systems for domestic applications.

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Please send me the 3 free books on Honeywell Electronic Moduflow, Zone Control, and Individual Room Control.

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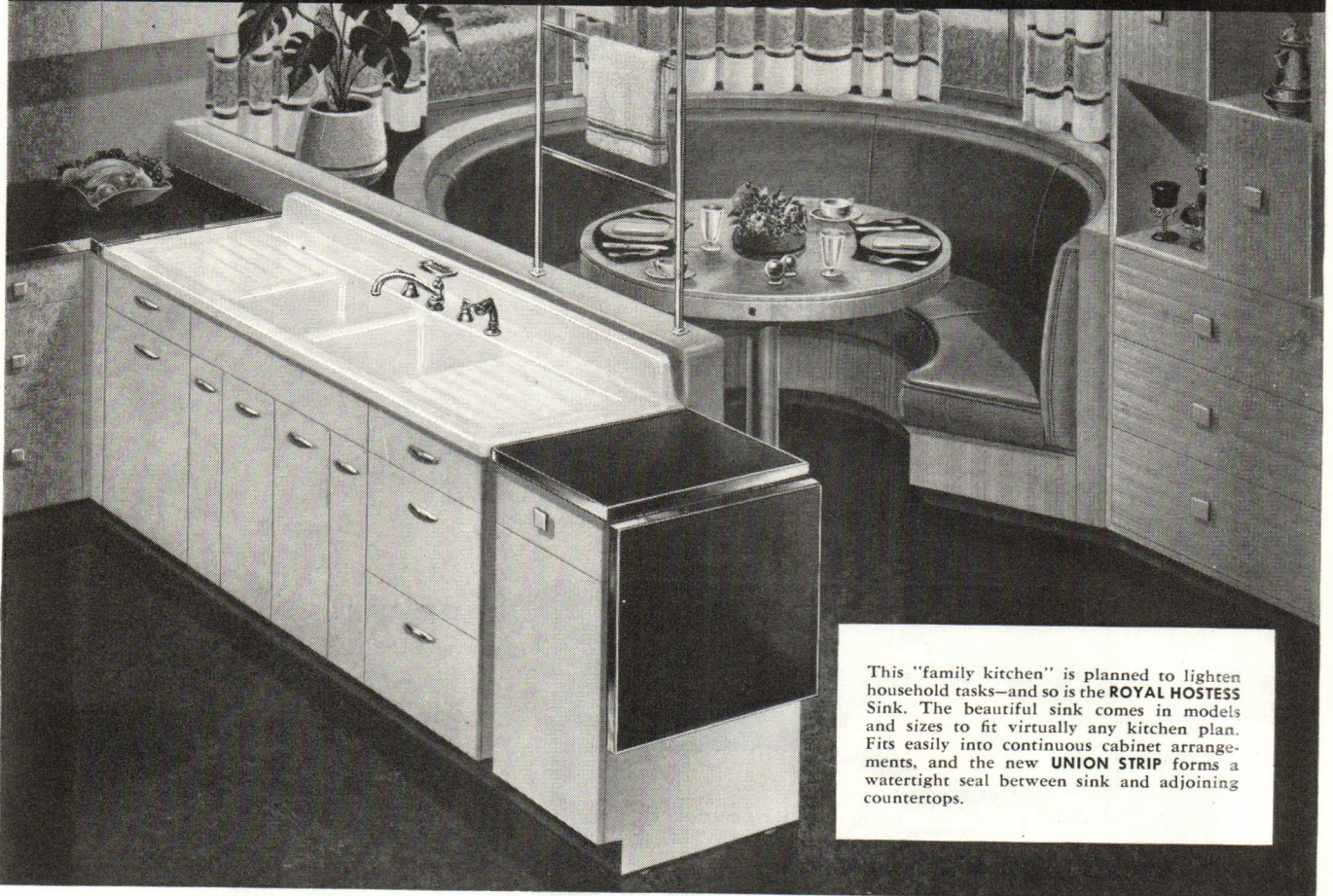
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CONTROL SYSTEMS

73 BRANCHES FROM COAST TO COAST WITH SUBSIDIARY COMPANIES IN: TORONTO • LONDON • STOCKHOLM • AMSTERDAM • BRUSSELS • ZURICH • MEXICO CITY



# AMERICAN-Standard

First in heating . . . first in plumbing



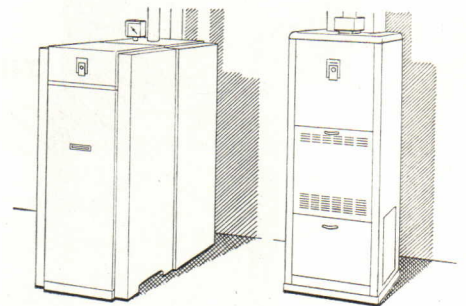
This "family kitchen" is planned to lighten household tasks—and so is the **ROYAL HOSTESS Sink**. The beautiful sink comes in models and sizes to fit virtually any kitchen plan. Fits easily into continuous cabinet arrangements, and the new **UNION STRIP** forms a watertight seal between sink and adjoining countertops.

## Important step in designing a home . . .

Heating equipment and plumbing fixtures are of prime importance in designing a smart home. The modern sink in the kitchen; the comfortable warmth from an efficient heating unit; the sparkling cleanliness of a beautiful bathroom . . . these are essentials that add to the livability of any home. *The better their quality, the more desirable becomes the home.*

How can you be sure of the finest quality? By saying, "Make it American-Standard all the way." American-Standard quality is second to none. Yes . . . and that famous name also assures lasting client satisfaction. For no line enjoys greater public acceptance.

For information about the complete American-Standard line, contact your Heating and Plumbing Contractor. **American Radiator & Standard Sanitary Corporation**, P. O. Box 1226, Pittsburgh 30, Pa.



Two heating units by American-Standard designed for small homes, with or without basements. (Left) the oil fired **ARCOLINER Wet Base Boiler**. (Right) the gas fired **CHIPPEWA Winter Air Conditioner**.

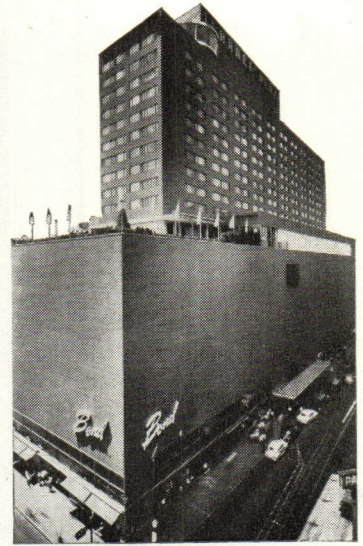
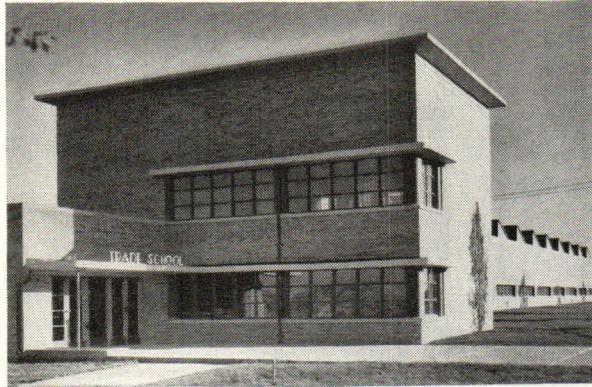
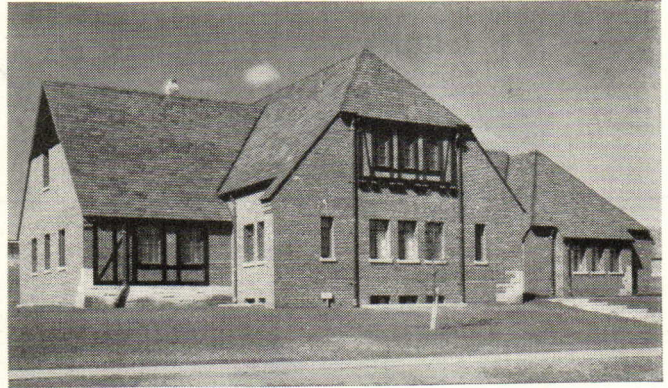


Look for this *Mark of Merit*

*Serving home and industry*

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Whatever the type of building...

Whatever its window requirements...

You can build for distinction and keep costs low by specifying

## FENESTRA

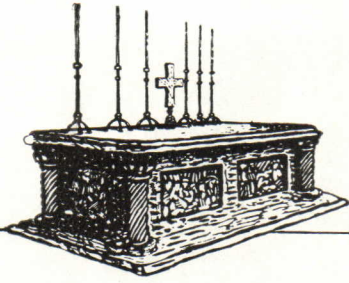
Fenestra\* Fenecraft Windows are made of high-quality casement sections of advanced design—fabricated into 51 different projected windows, 14 casement windows and 36 combination windows. Each good looking, finely made . . . and economical, because Fenestra's standardization plan permits volume production. For full information, see Sweet's Architectural File, section 16a/13, or write Detroit Steel Products Company, Dept. PA-3, 2253 E. Grand Blvd., Detroit 11, Mich.

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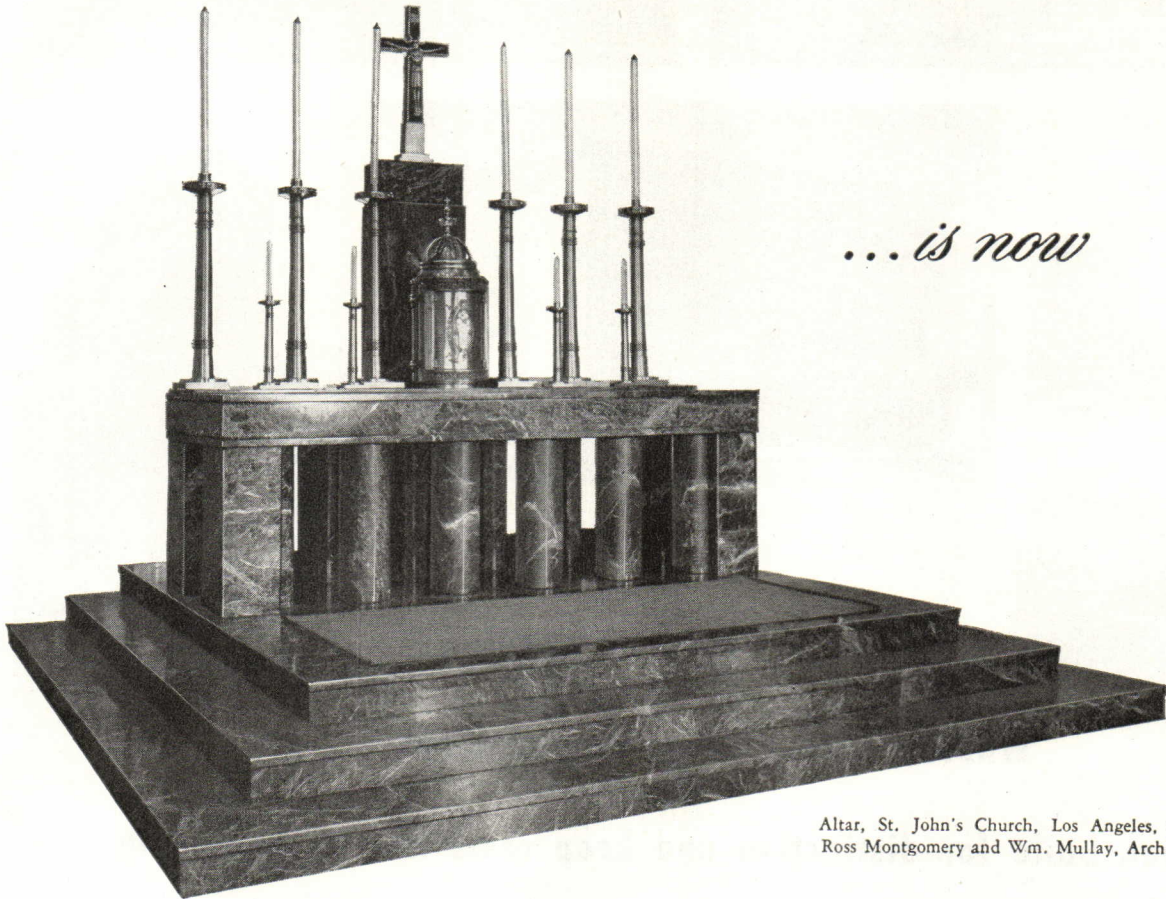
*Fenestra*

FENCRAFT STEEL WINDOWS  
FOR BETTER BUILDINGS





*As it was in the beginning*



*... is now*

Altar, St. John's Church, Los Angeles, Cal.  
Ross Montgomery and Wm. Mullay, Architects

the finest of His Creations to glorify His House.  
MARBLE most nearly expresses the enduring character of faith . . .  
the strength and purpose of its symbol, the church . . .  
the ageless splendor of respectful praise.  
No other material is so completely appropriate;  
none so easy to clean or maintain.

MARBLE is beautiful . . . *and ever shall be*

*Literature available on request:*

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- "Stores Modernize with Marble"*
- "Marble Forecast 1949"*



**Marble Institute  
of America, inc.**

108 FORSTER AVENUE, MOUNT VERNON, N. Y.

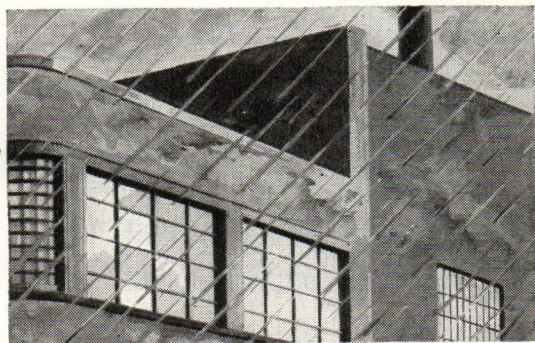


# Call in **SONNEBORN** on these *Tough* Problems!



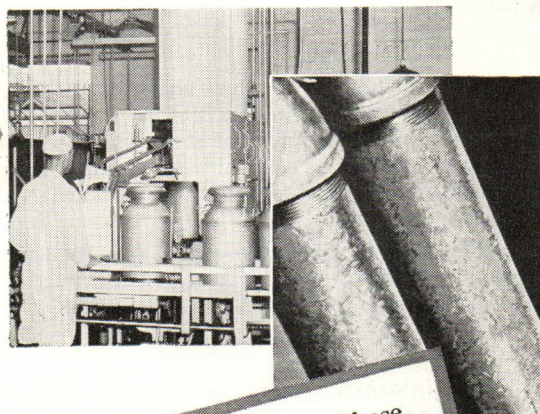
## **TREATMENT OF CONCRETE**

**LAPIDOLITH**-treated floors last where heavy traffic and trucking break down untreated concrete or terrazzo. Makes traffic surface literally hard as granite. Exclusive, penetrating agent carries hardening agent deep into concrete. Application is easy as mopping the floor.



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**HYDROCID**e for excluding water above or below ground, inside or out. There's a Hydrocide for every problem... from a transparent, colorless film that protects masonry walls from rain penetration... to a one-coat mastic as efficient as the conventional 5-ply membrane system.



## **PROTECTIVE PAINTING**

**MARVELWHITE** won't yellow in spite of moisture, heat up to 200°, oil or chemical fumes. Amazingly brilliant white... one coat looks like baked-on enamel.

**S. R. P.** penetrates the scale and bonds to sound metal... stops rust. Better resistance to weather and brine than red lead. Non-toxic. Not affected by fumes or ordinary industrial concentrations of most chemicals.

If you have a tough problem in any of these three fields, call in your Sonneborn Man. Chances are, he has the answers, or can get them for you. If you don't have his name, write us your problem direct.

## **L. SONNEBORN SONS, INC.**

BUILDING PRODUCTS DIVISION

80 EIGHTH AVENUE, NEW YORK 11, N. Y.



# Steel pipe is first choice



## —for vital hospital services

Among the great institutions of mercy there are few that can surpass the renowned Los Angeles County Hospital in beauty and utility. In it, as in many other modern hospitals, everything that promotes the health and comfort and sustains the life of ill humanity, has been incorporated.

Primary and vital in the operation of this hospital is the maze of *steel piping* that transmits water, heat, steam, electricity, chemicals, and compressed air to implement the ministrations of the "men and women in white."

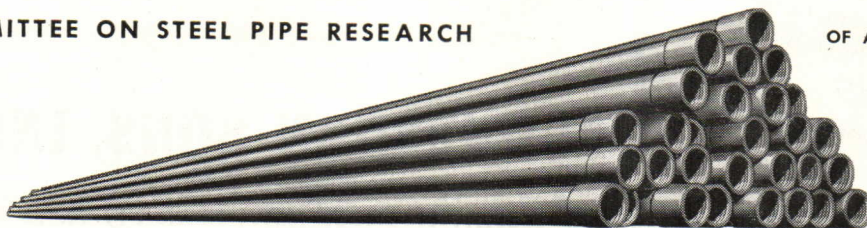
In the selection of materials and equipment for such services . . . where only the most suitable is

good enough . . . it is not surprising that *steel pipe is the first choice!* Architects, engineers, and contractors know, from more than half a century of satisfactory experience, that *steel pipe* combines the qualities of serviceability, durability, adaptability, and economy.

The fact that the overwhelming predominance of pipe used for plumbing and heating purposes is *steel pipe*, proves conclusively that *steel pipe is first choice!*

The interesting story of "Pipe in American Life" sent upon request.

COMMITTEE ON STEEL PIPE RESEARCH



OF AMERICAN IRON AND STEEL INSTITUTE  
350 Fifth Ave., New York, N. Y.



**YOUR CUSTOMERS LOOK FOR**  
*all* **THESE ADVANTAGES OF . . .**

**GENUINE CLAY**  
*tile*

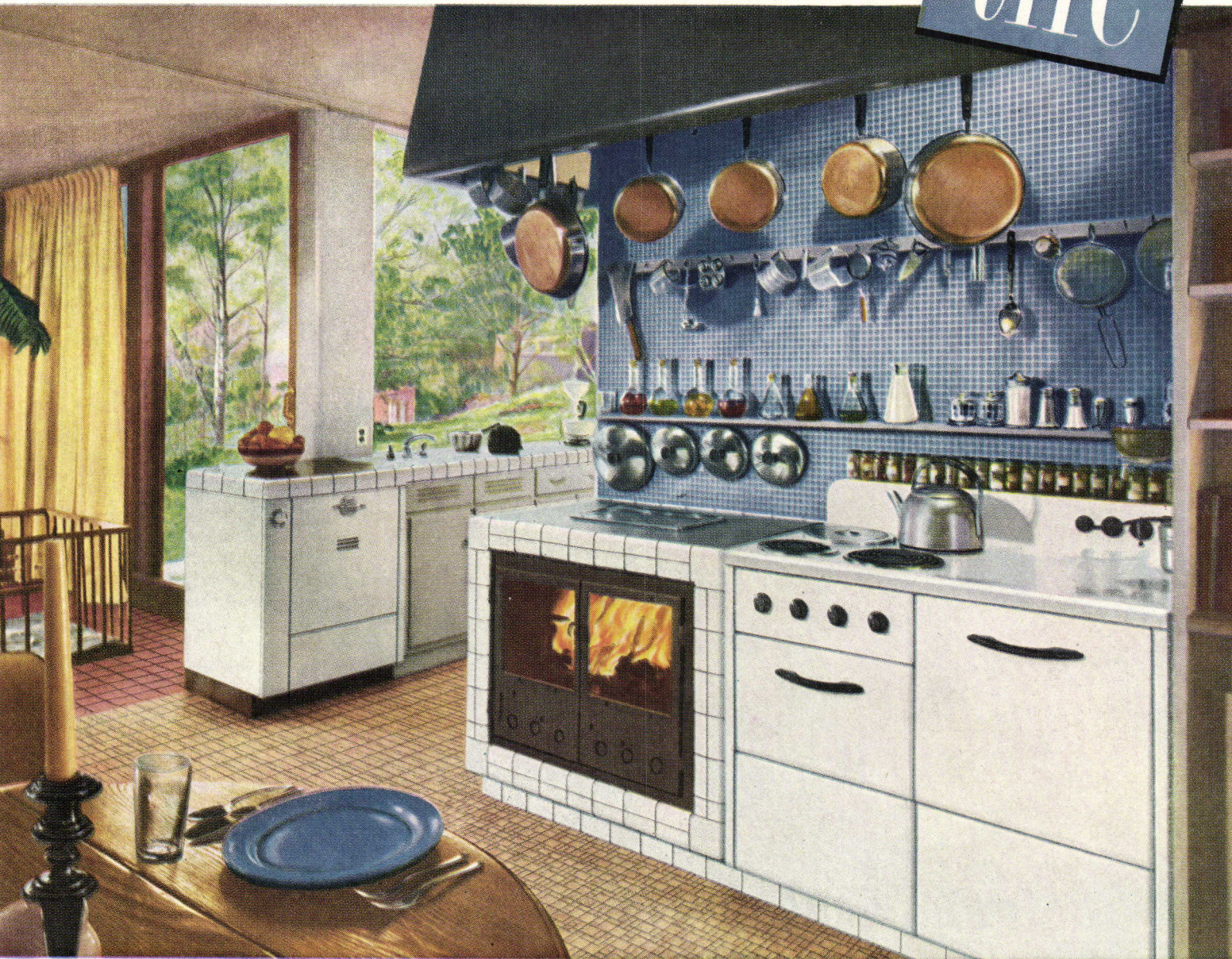


Photo by Ezra Stoller: Pictorial Services.

**Design flexibility** of tile makes possible such imaginative applications as this kitchen. Carl Koch, Architect, designed it for his own home at Snake Hill, Belmont, Massachusetts.

**Sparkling tile colors** can be used in modern arrangements or patterns to enhance any decorative theme. And, you know that colors won't fade or darken because tile's beauty is fired-in for a lifetime of loveliness.

**Easy to clean** and keep clean, tile never needs waxing, polishing or refinishing. Homeowners appreciate, too, the fact that water rolls off without leaving stubborn, streaky blemishes.

The Tile Council of America was formed in January 1945 to provide a central source of information about floor and wall tile, and to sponsor research and development projects designed to increase the usefulness of tile in all types of private and public building.

**Bright and efficient**, clay tile for floors, walls and countertops keeps its fresh, spic-and-span appearance for a lifetime. Exposure to heat or cold, dampness or dryness will not affect clay tile.

**Long term economy** of clay tile means lower end-cost for the homeowner. With no recurring charges for maintenance or replacement, tile is a sure sign of careful, thrifty planning.

For specific information regarding available types, sizes and colors, see *Sweets Architectural or E-C-A File*. THE TILE COUNCIL OF AMERICA, Room 3401: 10 East 40th Street, New York 16, N. Y. Room 433: 727 West Seventh Street, Los Angeles, California.

**PARTICIPATING COMPANIES**—American Encaustic Tiling Company • Architectural Tiling Company, Inc. • Atlantic Tile Manufacturing Company • B. Mifflin Hood Company • Cambridge Tile Manufacturing Company • Carlyle Tile Company • General Tile Corp. • Gladding, McBean & Company • Mosaic Tile Co. • Murray Tile Company, Inc. • National Tile & Manufacturing Company • Olean Tile Company • Pacific Clay Products • Pacific Tile and Porcelain Co. • Pomona Tile Manufacturing Company • Robertson Manufacturing Company • Sparta Ceramic Company • Summitville Face Brick Company • United States Quarry Tile Company

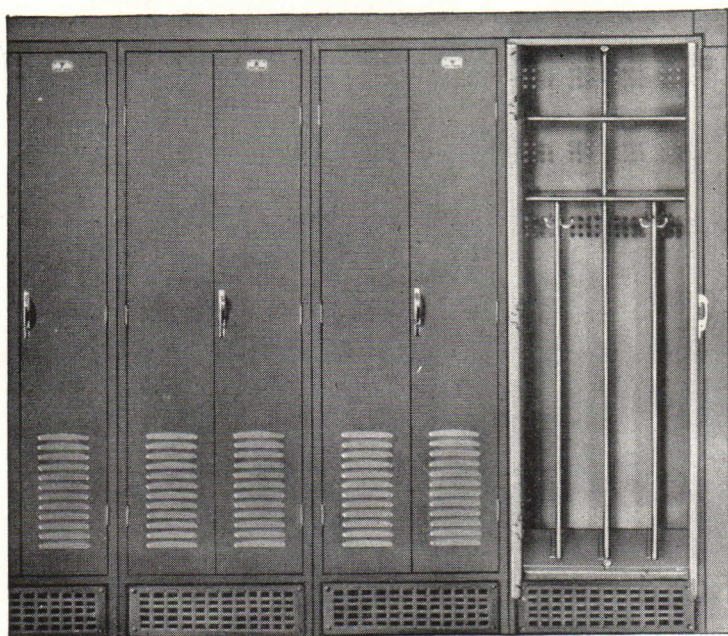
**THE MODERN STYLE IS TILE**



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comes easily with **Steel Wardrobes by Berger**



● Susan gets a thrill from having her own individual space for coats, hats, boots and books. She enjoys using her roomy Berger Wardrobe section. She likes to keep it clean and neat . . . she's *practicing* neatness daily . . . strengthening the good habits which parents and teachers have developed in her. And, every day her efforts are encouraged by attractive, efficient Berger Steel Wardrobes and the neat, uncluttered classroom atmosphere they create.

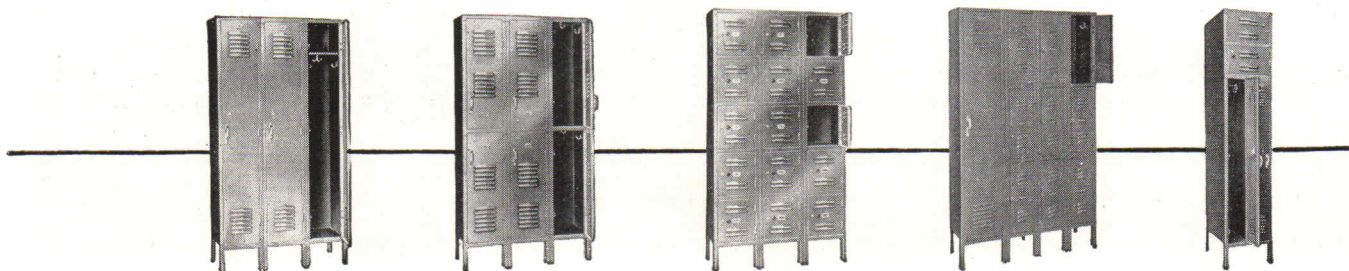
Berger offers school architects and builders the most complete line of steel storage equipment in the industry. Equally important to efficient handling of school storage problems is the complete Berger *service*, which is well qualified to follow through from original planning to tightening of the final bolt. Berger offers factory engineering and factory installation service. Look to Berger, the leader, for the finest in steel school storage equipment. See Sweet's Architectural File for more information and specification data, or write us:

# Berger

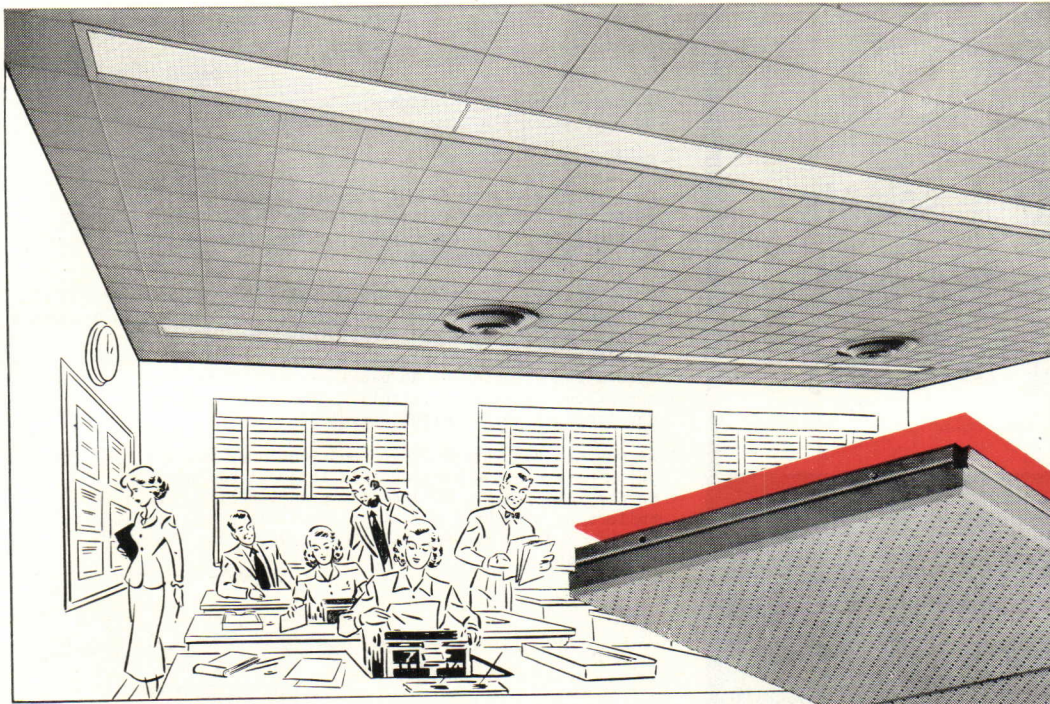


## Manufacturing Division

REPUBLIC STEEL CORPORATION • CANTON 5, OHIO







## ARRESTONE

### For highest acoustical efficiency

ARMSTRONG'S Arrestone is a top-performance acoustical material with an over-all noise-reduction coefficient of .85. In the middle sound frequencies (512 and 1024 cycles), Arrestone absorbs fully 99% of all noise striking its surface. Whenever efficiency is the major factor in selecting a sound-conditioning material, Arrestone meets the requirement fully.

Armstrong's Arrestone is a metal-pan type acoustical material. The metal pan unit is 12" x 24" with a bevel dividing it into two 12" square tiles, each containing 1105 perforations. Inside the pan is a mineral wool pad wrapped in flameproof paper. A metal grid separates the pad from the pan so the entire surface of the pad effectively absorbs sound. Arrestone is officially rated as an incombustible material.

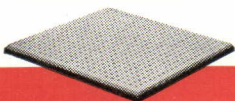
Mechanically suspended from the ceiling on metal runners, Arrestone units can easily be removed for electrical or air-conditioning repairs or for alterations. The metal pans have an all-over finish of white baked-on enamel and are therefore easy to keep clean. Armstrong's Arrestone can be repainted as often as desired with no loss of acoustical efficiency.

Whatever outstanding acoustical feature your plans call for—low cost, fire resistance, efficiency, beauty, or moisture resistance—there's an Armstrong acoustical material that meets the specification exactly. For complete details and specifications, see Sweet's File, Section 11a, or write direct to Armstrong Cork Company, Acoustical Department, 1403 Stevens Street, Lancaster, Pennsylvania.



\*TRAVERTONE IS A TRADE-MARK FOR WHICH REGISTRATION IS PENDING.

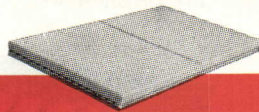
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**CUSHIONTONE®**



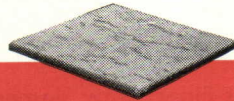
*incombustible*  
**CUSHIONTONE F®**



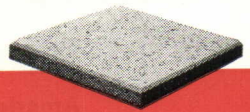
*efficient*  
**ARRESTONE®**



*beautiful*  
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*moisture-resistant*  
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# ARMSTRONG'S ACOUSTICAL MATERIALS

Made by the Makers of Armstrong's Linoleum



December 20, 1948

Kimberly-Clark Corporation  
Neenah, Wisconsin

Gentlemen:

Our experience with Kimsul insulation during the past few years has been most satisfactory. We found it particularly suitable for the Buckner house, a very special project of ours in Carmel, California.

In addition to fulfilling the wishes of our client, we wanted to prove that low-cost homes can be erected in a short period of time and still be attractively designed. We therefore selected Kimsul for its low cost and high insulating efficiency. As usual, it proved to be exceptionally easy to install, and helped to keep construction moving along rapidly.

As you can see, the Buckner house has many unusual features which have created considerable interest all over the country. Naturally, we are very proud of it and hope to build many more houses just as interesting and dramatic in design. And, of course, we'll continue to use Kimsul insulation.

Very truly yours

Jon Konigshofer  
Designer and Builder

# Prominent architect selects KIMSUL\* for low cost, high insulating efficiency

The dramatic new home of  
Mr. and Mrs. Robert Buckner, overlooking  
the Pacific Ocean, near Carmel, California.  
Jon Konigshofer, Designer and Builder.



Designers and builders of every type home across the country are discovering that it pays *more* to insulate with KIMSUL. For KIMSUL offers an exceptional combination of low cost and high insulating efficiency (0.27).

KIMSUL is the only many-layer stitched blanket insulation, and provides an entirely different kind of

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KIMSUL Division • Neenah, Wisconsin

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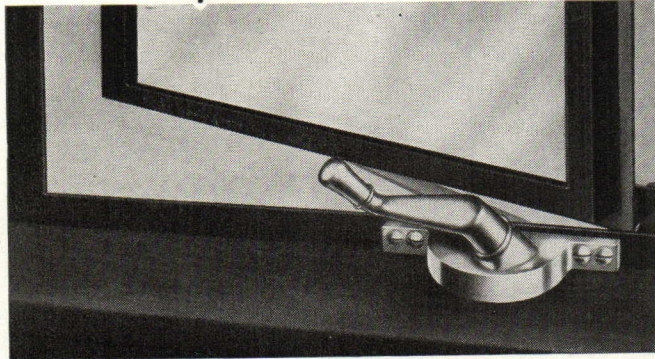
\*T. M. Reg. U. S. & Can. Pat. Off.



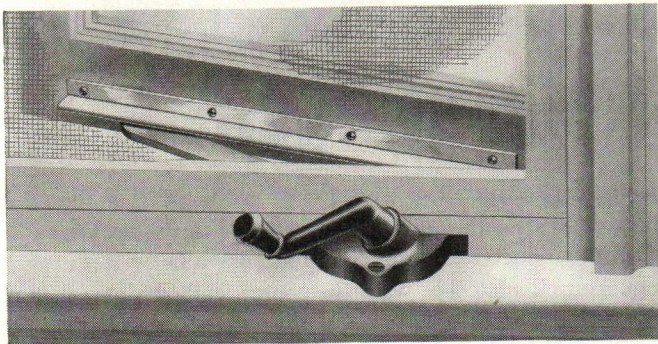
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for both  
METAL  
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CASEMENT  
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*Assured by*  
**GETTY**  
OPERATORS



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See our Catalog  $\frac{17b}{16}$  in  
*Sweet's File, Architectural*

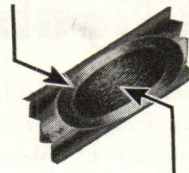
**H. S. GETTY & CO., INC.**  
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Alloy steel core provides strength.

The Copperweld Molten-Welding Process makes the two metals inseparable.

nearly 2 tons. Its thick copper covering—inseparably molten-welded to a strong alloy steel core—permanently protects the tie against the corrosive action of moisture, lime and mortar. Copperweld can't rust—can't weaken.

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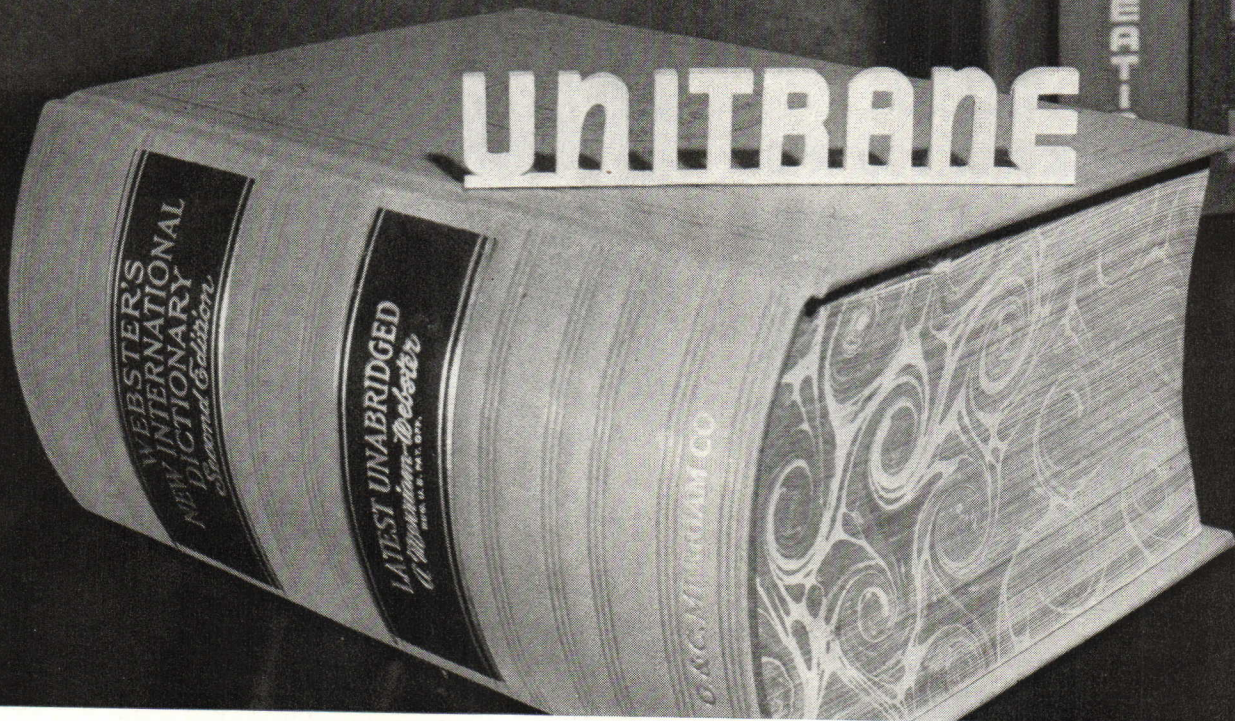
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# TRANE



## Air Conditioning — Unabridged

The new name for air conditioning is UniTrane. It's too new for the dictionary—but it does have one important feature in common with the big Merriam-Webster book: both are complete—*unabridged*.

UniTrane is not merely a new system. It is a new kind of air conditioning. And it deserves a new name: It is a *Unit* system. It is a *Trane* system. It is a *UniTrane* system.

UniTrane air conditioning has individual room temperature control, moisture control, ventilation control. Filtered air. All *without* ducts.

It is designed for big buildings with small rooms. Office buildings. Hotels. Hospitals.

Type MC UniTrane units have *two* circuits in one cabinet. One circuit controls ventilation and moisture. The other circuit controls

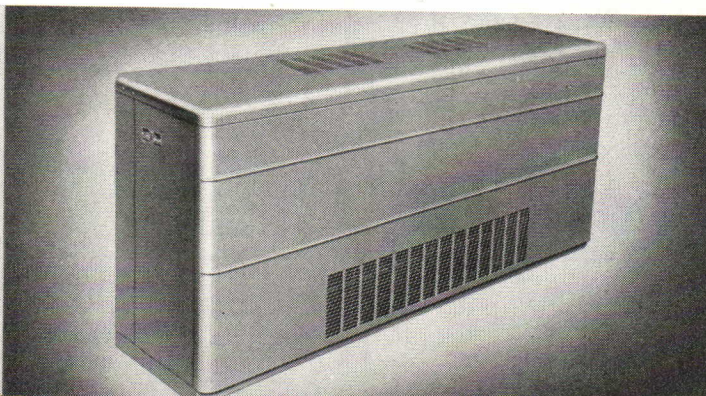
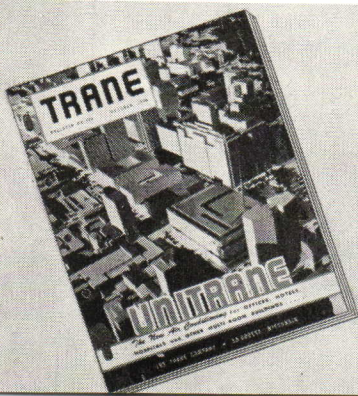
room temperature. The two circuits work together, but they are independently adjustable. There is no other system like it.

And no ducts! Just simple piping, like a hot water heating system. You circulate hot water in winter, chilled water in the summer. It's as simple as that.

Read "Merely a Matter of Air" for non-technical information about UniTrane. See Bulletin DS-420 for professional data. The Trane sales office in your area is ready to tell you many interesting things about UniTrane—Air Conditioning, unabridged.

**THE TRANE COMPANY...LA CROSSE, WISCONSIN**  
Manufacturing Engineers of Heating, Ventilating and Air Conditioning Equipment—Unit Heaters, Convector-radiators, Heating and Cooling Coils, Fans, Compressors Air Conditioners, Unit Ventilators, Special Heat Exchange Equipment, Steam and Hot Water Heating Specialties. IN CANADA, TRANE COMPANY OF CANADA, LTD. TORONTO.

This Type MC UniTrane Room Unit is beautifully styled for underwindow installation in offices, hotels, hospitals, and other multi-room buildings. Each room has its own temperature, moisture, and ventilation control... Data bulletin DS-420 is for architects and engineers... "Merely a Matter of Air" is an interesting non-technical discussion of multi-room air conditioning.





When you specify  
windows bearing  
this seal . . .



. . . you provide  
your clients  
with

# ALUMINUM WINDOWS

*of finest quality!*

**This seal protects you.** It tells you *which* of the many aluminum windows now being manufactured you can specify with complete safety.

It says, in effect: "This window has passed rigid tests by the independent Pittsburgh Testing Laboratory and meets the highest standards for quality materials, sound construction, strong sections, and minimum air infiltration."

**This seal protects your clients.** Having been "quality-approved", these aluminum windows are good-looking, easy-to-operate, never need painting, give years of trouble-free service.

Whether your plans call for double-hung, casement or projected type windows, let the "Quality-Approved" Seal be your guide when specifying. Write for free booklet containing complete specifications and names of manufacturers who can supply you with "Quality-Approved" aluminum windows. Address your request to Dept. P.

*Aluminum Window Manufacturers Association*

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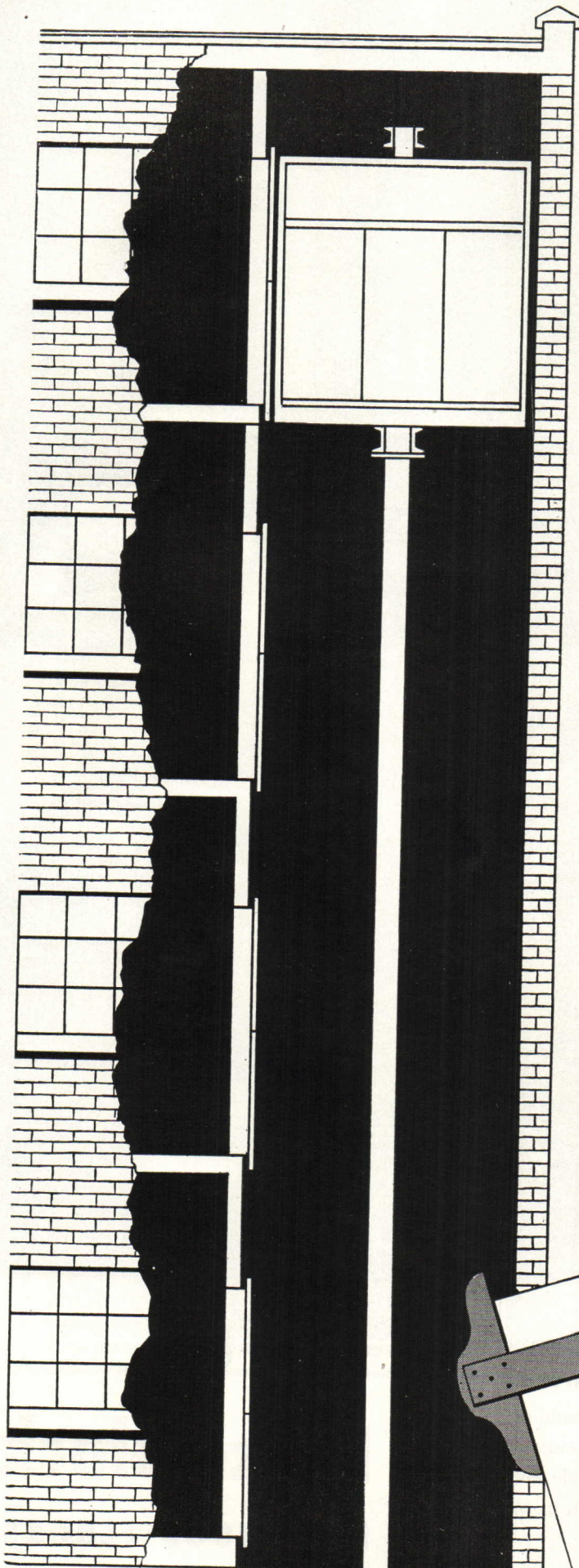
. . . easy to keep clean and beautiful. Installation is simple: laid in mastic over concrete, or nailed over wood subfloor.

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Oilhydraulic Elevator**

It's engineered and built by the oldest and largest maker of oil hydraulic elevators.

No elevator is designed to more rigid specifications or has been tested under more severe service conditions.

The powerful Oilhydraulic jack, precision power unit, and magic Oilhydraulic controller all assure smooth, trouble-free operation.

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 Brand  
 Plastics  
 make the  
 floor!



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YES, let VINYLITE Brand Plastics present their case as the new wonder material for floor coverings—and you be the judge. In brief:

- ★ They have clearer colors—which can be lighter in tone than ever before in resilient flooring.
- ★ They're highly resistant to soaps, cleansers, grease, oil, and to acid and alkali solutions.
- ★ They're resilient—yet outwear other types of floor coverings.
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- ★ They display greater luster when waxed than any other resilient floor covering, yet wax is not necessary because the surface is non-porous and dirt does not penetrate.
- ★ They come in an almost infinite variety of stable colors.
- ★ They provide floor tiles and continuous flooring of utmost wearability and ease of maintenance.

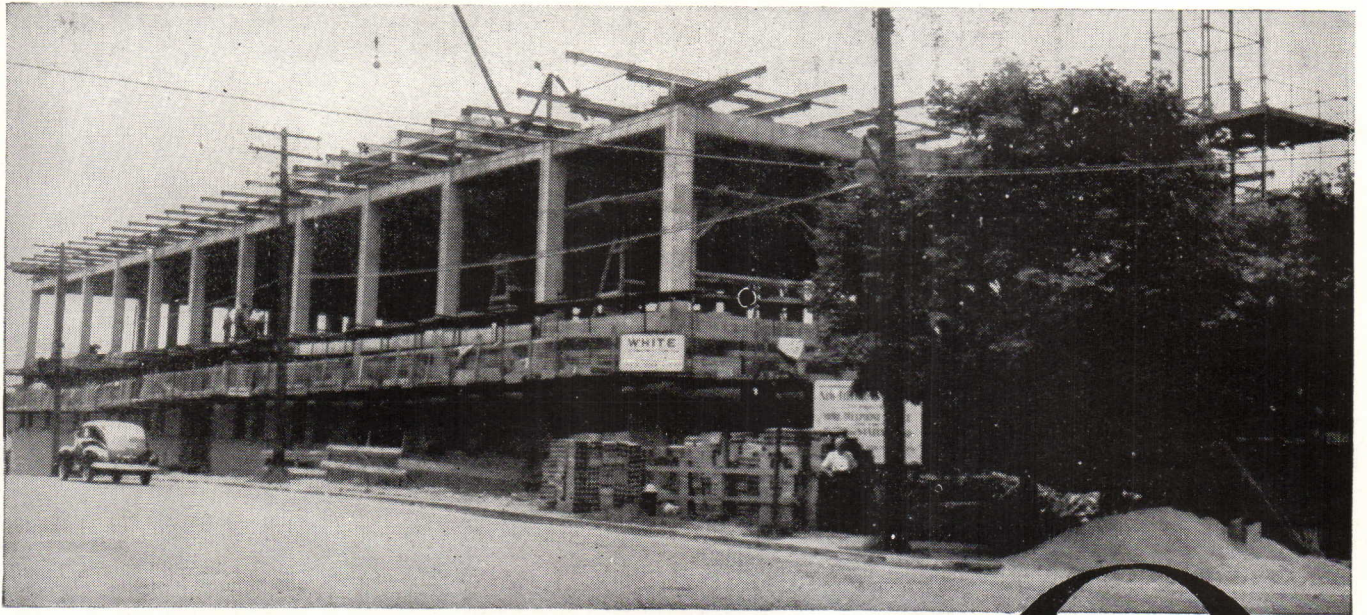
We submit that the case for VINYLITE Brand Plastics rests on a foundation of facts that cannot be matched by any other floor-covering materials. It explains why more and more manufacturers are turning to them, and why more and more architects are recommending them for public buildings and private homes. We'll gladly send you a list of suppliers of floor coverings made with VINYLITE Brand Plastics. Write Dept. ET-58.

**Vinylite**  
 BRAND  
**PLASTICS**



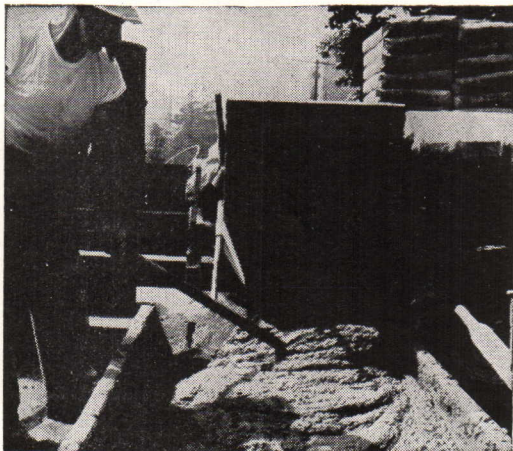
**BAKELITE**  
 CORPORATION





# Quality with a Capital Q

LONE STAR CEMENTS  
FROM SOUP TO NUTS—  
QUALITY ALL THE WAY THROUGH



Telephone Buildings are designed with quality the sole arbiter. This new structure at West New Brighton, Staten Island, N. Y., is a case in point. Working on a schedule which ticked like a well-regulated watch, 'Incor' 24-Hour Cement was used in retaining-wall construction to permit quick back-fill. During cold weather, in frame and floor concrete, 'Incor'\* reduced freezing risk and cut heat-protection costs by better than 50%. In all other concrete, where time was not a factor, Lone Star Cement was used. Matching the quality of the concrete is the brick masonry, in which Lone Star Masonry Cement was used to produce clean, smooth, moisture-proof joints.

Lone Star Cements meet every construction need. Use 'Incor', where dependable high early strength reduces form, time and cold-weather costs... elsewhere, use Lone Star Cement. For mortar, use Lone Star Masonry Cement. Selective use of Lone Star Cements means maximum quality at minimum cost.

\*Reg. U. S. Pat. Off.

NEW YORK TELEPHONE COMPANY BUILDING, Forest Ave. and Hart Blvd., West New Brighton, S. I., N. Y.; WHITE CONSTRUCTION COMPANY, New York—Contractor; VOORHEES, WALKER, FOLEY & SMITH, New York—Architects & Engineers; LONE STAR Cements supplied by BRIGHTON MATERIALS COMPANY, Inc., West New Brighton, S. I., and SPRINGSTEAD COAL CO., Inc., Great Kills, S. I.



## LONE STAR CEMENT CORPORATION

Offices: ALBANY • BETHLEHEM, PA. • BIRMINGHAM • BOSTON • CHICAGO • DALLAS • HOUSTON • INDIANAPOLIS • JACKSON, MISS. • KANSAS CITY, MO. • NEW ORLEANS • NEW YORK • NORFOLK • PHILADELPHIA • ST. LOUIS • WASHINGTON, D. C.

LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST CEMENT PRODUCERS: 15 MODERN MILLS, 27,000,000 BARRELS ANNUAL CAPACITY



ARCHITECTURAL COMPETITION

*U. S. Junior Chamber of Commerce Headquarters  
Tulsa, Oklahoma*

Sponsored by: SERVEL INC., Evansville, Indiana, and  
GENERAL PORTLAND CEMENT COMPANY, Chicago

This national competition is for design of an air-conditioned, fireproof office building to house national headquarters of United States Junior Chamber of Commerce, with special attention to provision of a War Memorial prominently placed to honor Junior Chamber of Commerce heroes of World War II and commemorate the outstanding military record of the members. All concerned hope for advanced thinking in the architectural concept, to express the enthusiasm and patriotism of those who have made this memorial headquarters possible. All concerned are agreed that the project shall result in a living memorial that will be "a civic and patriotic contribution to the

young men of the future"—not solely a monument.

The headquarters building is to be utilitarian. Auditoriums and other seldom-used features are excluded from the program. SERVEL, INC., manufacturer of "Servel All-Year Air-Conditioner" and "Servel Gas Refrigerator," urges competitors to solve convincingly the problems of physical comfort in the Tulsa climate. GENERAL PORTLAND CEMENT COMPANY, manufacturer of plain and of waterproofed "Trinity White Portland Cement," urges the selection of an exterior material that will enhance cleanness of line and beauty, as well as being fireproof.

<b>PRIZES</b>	First Prize .. Architect's commission* to design and build the headquarters building.
	Second Prize ..... \$1,500
	Third Prize ..... \$1,000
	Fourth Prize ..... \$ 500
	20 Honorable Mentions (\$100 each) ..... \$2,000
	10 Special Prizes (\$200 each) ..... \$2,000
	(Five for Best Use of Each Sponsor's Products)
	<b>TOTAL CASH PRIZES \$7,000</b>

<b>JURY OF AWARD</b>	Pietro Belluschi, A.I.A. .... Portland, Oregon
	Karl Fred Kamrath, A.I.A. .... Houston, Texas
	Hugh Stubbins, A.I.A. .. Cambridge, Massachusetts
	J. Robert F. Swanson, A.I.A. .... Bloomfield Hills, Michigan
	Robert Law Weed, A.I.A. .... Miami, Florida

<b>ADVISORS</b>	Jedd Stow Reisner, A.I.A. .... Professional Adviser
	John A. Gilbreath ..... Manager, All-Year Air- Conditioning Division of Servel, Inc.
	Paul F. Keatinge . Manager, White Cement Division, General Portland Cement Company
	Joseph H. Saunders, Jr., A.I.A. .... Vice-President, United States Junior Chamber of Commerce

Considerations of the Jury of Award will be: (1) The architectural merit of the headquarters building, its suitability to the Tulsa region and to the needs of the client; (2) practicability and suitability of construction; (3) use of sponsors' products; (4) legibility of drawing; (5) ease of future expansion of building.

PROGRESSIVE ARCHITECTURE. The Professional Adviser will mail to any competitor not a subscriber to the magazine, names of all the winners.

Winning drawings of the Architectural Competition and the Jury Report will be presented in September 1949 PROGRESSIVE ARCHITECTURE. Names of winners of Prizes and Honorable Mentions will be published in July 1949

\* The owner agrees to pay the successful competitor within 10 days of the judgment, \$2,000 on account, toward his fee for services as architect. The fee to be paid the architect will be six (6) percent of the total cost of the completed building. The owner will pay additional fees for heating, ventilating, and electrical engineers to be selected by the architect with the approval of the owner.



## PROGRAM

# U. S. Junior Chamber of Commerce Headquarters Tulsa, Oklahoma

### ELIGIBILITY OF COMPETITORS (Mandatory)

1. This competition is open to all architects from 21 through 35 years of age as of March 1, 1949, and to designers, draftsmen, and architectural students in the same age group when associated as a designer with an architect of any age. Such an entry shall be submitted as follows:

John Doe, Architect  
Richard Roe, Associate Designer

If a firm or group submits an entry, it shall be represented in this competition by one principal in the prescribed age group and the entry shall be essentially the work of the one designer.

The Committee on Competitions of the American Institute of Architects has ruled that Institute members may enter.

Any competitor may submit more than one design.

No employee of the Reinhold Publishing Corporation, Serval, Inc., or the General Portland Cement Company is eligible.

Members, but not employees, of the United States Junior Chamber of Commerce are eligible to compete.

2. In the event that the First Prize winner is not registered in Oklahoma, this winner may register in that state or associate with an Architect who possesses a license to practice in that state and who is acceptable to the United States Junior Chamber of Commerce. An Association with such a local Architect must be formed for the supervision of the construction phase of the Architect's duties, unless it is shown that satisfactory accomplishment of such work can be arranged without an association.
3. All Prize winners shall be required to submit proof of meeting the age limitations set forth in paragraph 1 (above).

### THE CLIENT

The United States Junior Chamber of Commerce is an organization of young men, ages 21 through 35, consisting of 1722 local groups with a total organization approximating 142,000. There are 45 state organizations in the United States and additional groups in Alaska and Hawaii.

Practically 99 percent of the Jay-Cees' printed matter emanates from national headquarters. Included are stationery, envelopes, project work manuals, brochures, the magazine *Future*, etc. During the year 1947-48 more than 3½ million impressions of printed matter were produced. Aside from the War Memorial requirement, this building will essentially be used to facilitate printing, organization

of printed matter, and distribution to the various local and state chapters.

### DEPARTMENTAL ORGANIZATION

The president of the Junior Chamber of Commerce is provided with an office for such time as he is in Tulsa. (While traveling almost continually he keeps in touch with the Tulsa office.)

The working administrative head is the executive vice-president.

Orders for supplies, releases, etc. are received by the order clerk in the accounting department where an invoice is prepared and sent to the production department. There it is filled, wrapped, and mailed.

The employees in the mailing room are primarily concerned with the shipment of supplies to local branches and with the mailing of general releases.

The material for a general mailing is originated in the administrative department and illustrated by an artist who is on call from the magazine. The material is then sent to the printing shop and then to the mailing room. In mailing, as many as 40 different pieces of literature for one envelope are spread out on a 6' x 20' table. They are gathered by clerks and inserted in folders, then in envelopes, stamped, and mailed. There are about two general mailings a month. (A general mailing weighs approximately one ton and is made up of 10" x 13" envelopes weighing approximately a pound apiece.)

Many items are prepared for resale to member organizations: small booklets, certificates, membership pamphlets, etc. These follow the same production pattern but are stocked in the storage room until sold.

The magazine department prepares the magazine *Future*, which is the monthly publication of the Junior Chamber of Commerce. Art work is done by a staff artist. The magazine is not printed in this building, but the mailing list is prepared by the employees in the mailing list room. To prepare the list, this room houses machines which imprint subscribers' names on a metal plate. From these plates is prepared a paper tape on which all subscribers' names and addresses appear. The tape is then given to a printer outside the office for use in mailing the magazine.

Incoming mail is handled by a mail and file clerk. It is distributed to the accounting department where checks are receipted, and orders sent to the mailing room. Other mail is distributed as received.

Orders for purchases originating in any department are placed by the purchasing agent who is supervised by the chief accountant. The purchasing agent interviews approximately 20 salesmen a week. The mailing list room works in close cooperation with the print shop.



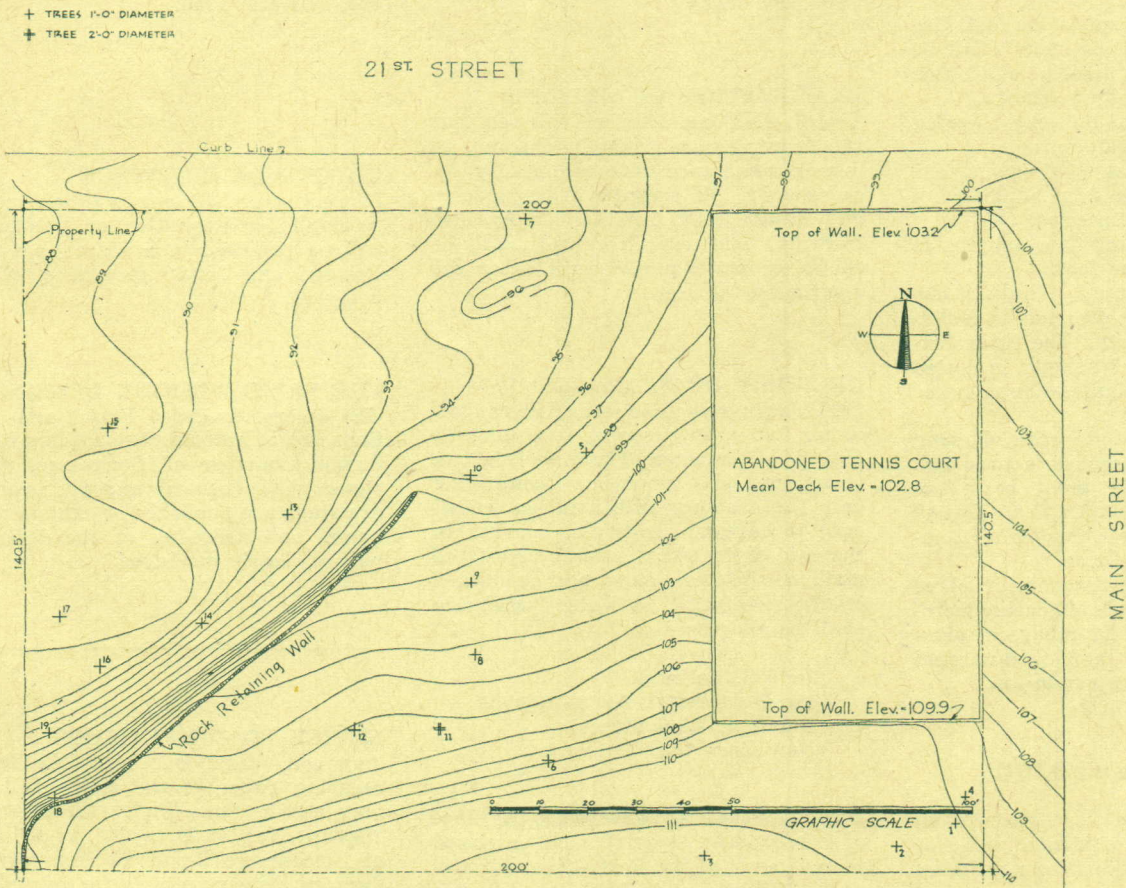
**CITY BUILDING ORDINANCE (Mandatory):**

Property located in a residential zone, but has been rezoned for use as an office building site. The following excerpt from Municipal Building Code applies to this building:

“Set-back of Twenty (20) feet required on Twenty-first Street. Set-back of Four (4) feet required on Main Street. Building not to exceed Forty (40) feet in height, except for towers, spires, or belfry.”

**THE SITE**

The property is a rectangle, 140.5' x 200'. Twenty-first Street is a major street and Main Street is a secondary street. Oak trees and shrubbery at the south property line screen the view effectively in that direction. The view to the west is unimportant and is screened by trees and plants on the adjoining property. The view to the east overlooks well-developed and maintained residential property. The view to the north overlooks Boulder Park and beyond to the skyline of Tulsa. There are no sidewalks on either side of Main Street or Twenty-first Street.



**BUILDING PROGRAM**

	Desired Square Foot Area		Desired Square Foot Area		Desired Square Foot Area
<b>Administration</b>		<b>General Office</b>		<b>Mechanical</b>	
Office for President .....	240	Receptionist .....	200	Equipment .....	600
Executive Conference Room and Library (Broadcast facilities, facilities for showing 16 mm. movies) .....	600	Switchboard Operator .....	100	<b>Miscellaneous</b>	
Office for Executive Vice-President	240	Central Filing .....	400	Lobby, Toilets, Janitor's closets, and any other necessary service rooms .....	optional
Offices for 3 Department Heads (150 sq. ft. each) .....	450	Purchasing Agent .....	150		
Offices for 2 Field Secretaries (100 sq. ft. each) .....	200	Vault .....	100	<b>Future Expansion</b>	
		Janitor .....	150	To care for normal growth of the organization .....	5,000
<b>Magazine</b>		<b>Production</b>			
Office for Editor .....	200	Production Chief .....	150		
Office for Managing Editor .....	150	Printing Shop .....	600		
Space for Editorial Assistant .....	100	Mailing List Room .....	600		
Secretarial Staff of 3 .....	200	Receiving and Mailing			
Space for Artist .....	100	a. Receiving			
		Loading dock for 2 trucks (sq. ft. area optional) .....	150		
		b. Mailing .....	800		
<b>Accounting</b>		<b>Storage</b>			
Office for Chief Accountant .....	150	Warehousing (600 lineal ft. of wall space for adjustable shelving 8'-0" in height and 16" deep) .....	2,000		
Accounting Staff of 6 .....	500				

★ ★ MEMORIAL ★ ★

Wall space of 200 square feet suitable for display of 200 photographs (5" x 7" each) of members who gave their lives in World War II and 2,000 names of local organizations contributing to building fund.



# INSTRUCTIONS TO COMPETITORS

## DRAWINGS (Mandatory)

All required drawings for each design shall be composed on a single sheet of opaque white paper trimmed to exactly 30" x 40". The sheet is to be read with its long dimension vertical and shall contain the following items all in *opaque black ink* (no diluted ink, color, wash, air-brush, or applied transparent shading tissues). All lettering shall be at least  $\frac{1}{8}$ " high.

- (1) Plans at  $\frac{1}{8}$ " equals one foot. Use of each room or space shall be clearly and legibly indicated. (Furniture may be shown.)
- (2) Perspective of building showing two sides. Scale optional.
- (3) Elevations, at  $\frac{1}{8}$ " equals one foot, of two sides of building not shown in perspective.
- (4) Section showing floor heights, at  $\frac{1}{8}$ " equals one foot.
- (5) Plot plan, at  $\frac{1}{64}$ " equals one foot, showing location of building on property. The future expansion shall be shown in dotted line on this plan and on no other drawings.
- (6) Details at optional scale showing use of each sponsor's products.
- (7) Drawing title shall be: PROGRESSIVE ARCHITECTURE-United States Junior Chamber of Commerce Competition.
- (8) Separate line diagram of plans at optional scale indicating method of computing cubage of present building and square foot area of future expansion.

## COMPUTATION OF CUBAGE (Mandatory)

Measurement of enclosed spaces shall be taken from the outside of exterior walls with no deductions for partitions. Completely glassed-in enclosures shall be counted at their full cubage and roofed or screened areas (porches, loggias, etc.) at half full cubage. Heights shall be figured from lowest finished floor level to average height of roof. A dimensioned diagram showing method of arriving at cubage and square foot area of future expansion shall be included. The building may be less than but shall not exceed 134,000 cubic feet (exclusive of the future expansion, which must be 5,000 square feet).

## SPECIAL DATA FROM SPONSORS

As an aid to design and construction, the sponsors have made available the booklets below. Contestants are invited to write to these companies for this free information.

*Equipment Data Book*, showing photographs, dimensions, and application information covering the SERVEL "All-Year Air-Conditioner," Evansville, Indiana .....

SERVEL, INC., Manufacturers of the "All-Year Air-Conditioner" and the "Servel Gas Refrigerator."

## ANONYMITY (Mandatory)

Drawings shall contain no identifying mark. Each drawing shall have securely fastened to the back a plain, opaque, sealed envelope containing an  $8\frac{1}{2}$ " x 11" sheet of paper on which the true name and complete address of the competitor are stated. The envelopes will be opened by the Professional Adviser in the presence of the Jury, only after the awards have been made.

## EXAMINATION OF DESIGNS

The Professional Adviser will see that the drawings are expertly checked, to insure compliance with mandatory requirements. No award will be made to any design that fails to comply. No drawing, whenever received, will be shown or made public until after the awards by the Jury.

## DELIVERY OF DRAWINGS

The drawings shall be securely wrapped, either flat or in a strong tube not less than 3" in diameter. There shall be two wrappings, the inner one (containing only the drawing with attached envelope) to have no identifying marks. In the case of drawings sent by registered mail, competitors must not demand a return receipt. The outer wrapping shall be addressed to:

Jedd S. Reisner  
c/o PROGRESSIVE ARCHITECTURE  
330 West 42nd Street  
New York 18, New York

Drawings shall be delivered to the office of PROGRESSIVE ARCHITECTURE or placed in the hands of the Post Office, Air Express Division of Railway Express Agency, not later than Midnight, Standard Time in area of origin, May 16th, 1949. Drawings will be accepted at any time before the close of the competition and will be insured for \$50.00 each from the hour of their receipt. In order to allow time for checking and transporting of drawings to site of judgment, it will not be possible to accept drawings received by mail or express later than Midnight, Eastern Standard Time, May 26th. Drawings are submitted at the

competitors' risk. Reasonable care will be exercised in their safekeeping and packaging for return.

## JUDGMENT

The Jury of Award will meet at Colorado Springs, Colorado, June 1st, 2nd, 3rd, and 4th, 1949.

## RETURN OF DRAWINGS

Non-premiated drawings which are not reserved for exhibition or publication will be returned in a reasonable time. Postage and \$50.00 insurance will be postpaid.

## THE PRIZE WINNING DESIGNS

The designs awarded Prizes and Mentions are to become the property of the Junior Chamber of Commerce, which agrees that, whenever and wherever any drawings are published or exhibited, the names and addresses of the designers will be clearly displayed.

## NOTICE TO COMPETITORS

Any competitor who has difficulty in securing paper of the size called for, may obtain from PROGRESSIVE ARCHITECTURE, for \$2.50, a 30" x 40" sheet of Strathmore 2-ply, medium-surfaced drawing paper, suitable for ink; and a heavy, 3" diameter, cardboard mailing tube with metal end and metal screw cap. The paper will be shipped, prepaid, in the tube which also will be suitable for remailing the finished design. Make remittance to Jack Carlin and address to:

Mr. Jack Carlin  
PROGRESSIVE ARCHITECTURE  
330 West 42nd Street  
New York 18, New York

*Architectural details, data, and photographs, showing the use of architectural concrete units made with "Trinity White Portland Cement" for the Prudential Building, Los Angeles, Calif.*

*Construction details for uses of terrazzo made with "Trinity White Portland Cement" for floors, shower stalls, stairways and wainscots .....*

GENERAL PORTLAND CEMENT COMPANY  
111 West Monroe Street, Chicago, Illinois,  
Manufacturers of "Trinity White Portland Cement," plain and waterproofed.





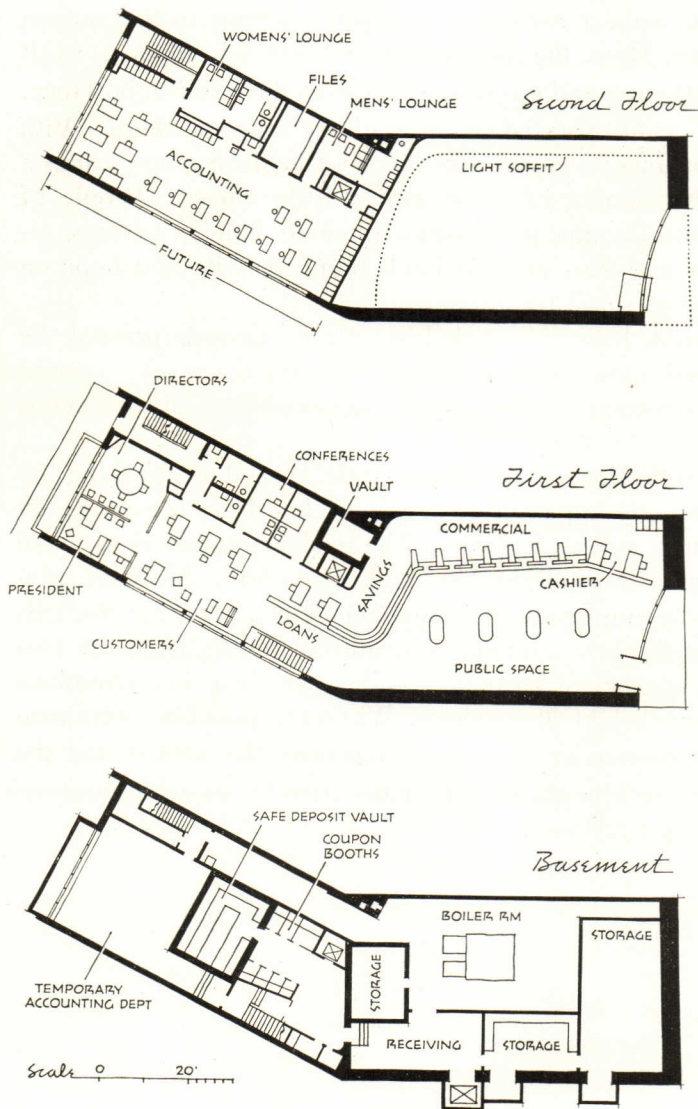
**program:** Modernization and extension of an old, temple-type bank structure.

**site:** Existing corner location, with space at the rear for the new wing.

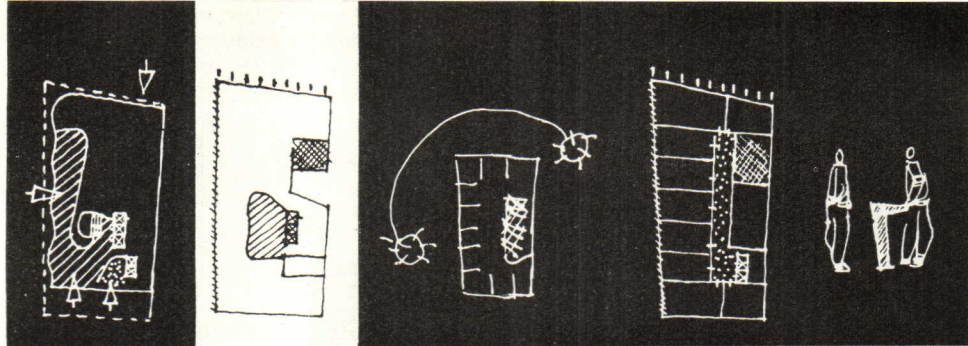
**solution:** Complete re-do of existing front portion of building (actual building front yet to be replaced), with the provision of an almost club-like atmosphere; new rear wing (second floor still to be added) planned as bright, day-lighted customer and work areas.

**main points admired:** The successful transformation from the hands-off approach to the inviting business house; the straightforward plan.

**chief questions:** Are two desks in front of tellers' cages for officers dealing with new customers? (One is, the other is the cashier's desk.) Is there special provision for handling pay-roll checks? (Not a problem in Birmingham; emergencies handled by operating an additional cage.) Aren't officers too far to rear to be seen readily and to exercise control? (No. Opening up this area with a lot of glass and a colorful surround, "we believe, has worked out better than having the officers right off the main lobby . . . The president as well as other officers have an excellent view, and the president's comment is extremely favorable on this point.")







## Bank Buildings

In order to evaluate buildings designed to serve banking, it is necessary—more than with most types of buildings—to look beyond the immediate specific requirements, or even the potentials of contemporary structural method and building products. All these are important ingredients, of course, but the startling New Look that one sees more and more frequently in bank buildings results chiefly from a radical change in the basic concept of the banking function.

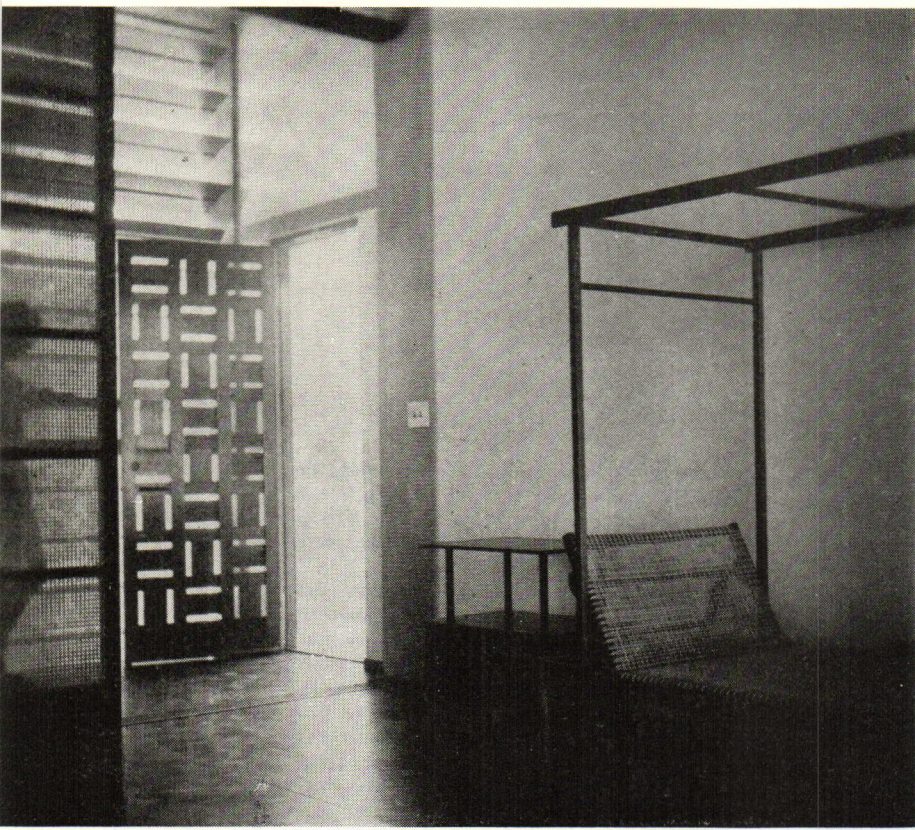
Time was when the solid little building on a Main Street corner was consciously contrived to appear something between a temple to the ancient Gods and an armed fort. Here, the awesome, privileged few found a vault in which to store their treasure and a symbol to support their self-importance. Nor was the “average” man expected or particularly welcome there. With the decrease in vast fortunes, even the likelihood of achieving one, came a parallel increase in the number of those with a little money. People of modest-to-average means became purchasers of small bonds; savings accounts grew in number and size, and the bank found that its best hope on earth lay in the volume of small transactions.

The result? The bank became a very busy place. Crowds pressed the doors. The bank devised numerous new services to serve the many—special checking accounts, Christmas Clubs, small personal-loan departments, etc., etc.

The architectural reflection of this democratic spread of banking facilities becomes increasingly apparent as new bank buildings are built—in those shown, for example, in this Critique. The tendency today is to make a bank as welcoming as a shop (Palo Alto bank, page 56). An open, windowed front is frequently employed (Birmingham, Mich., page 52; Bothell, Wash., page 58). Simple, low counters separate the tellers from the customers. Since a large number of customers is desired, there is a conscious effort to create a warm, bright atmosphere. Wherever possible—commensurate, naturally, with reasonable security provisions—the banker and the customer he is serving are brought into the most friendly possible business relationship, and the most efficient.



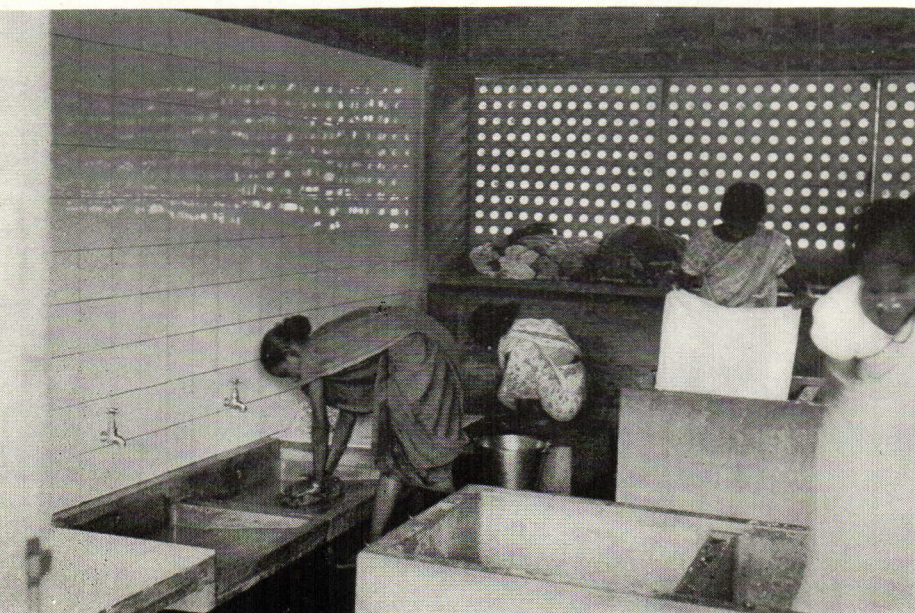
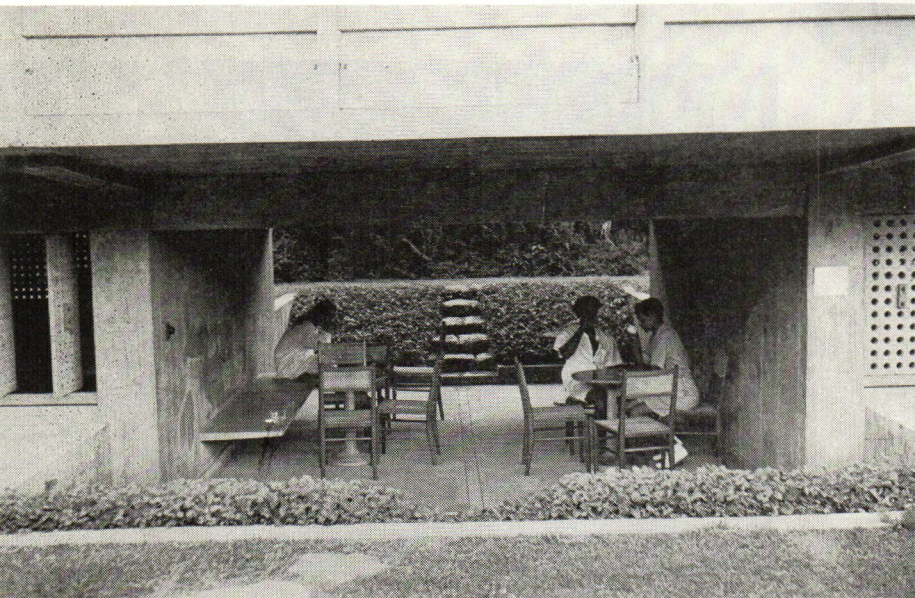
**DORMITORY, PONDICHERY, INDIA**



Top: typical room, looking in toward gallery. The simplicity of the furnishings ensures easy maintenance and eliminates insect nuisance. The highly polished, black stone floors throughout the building are easily cleaned.

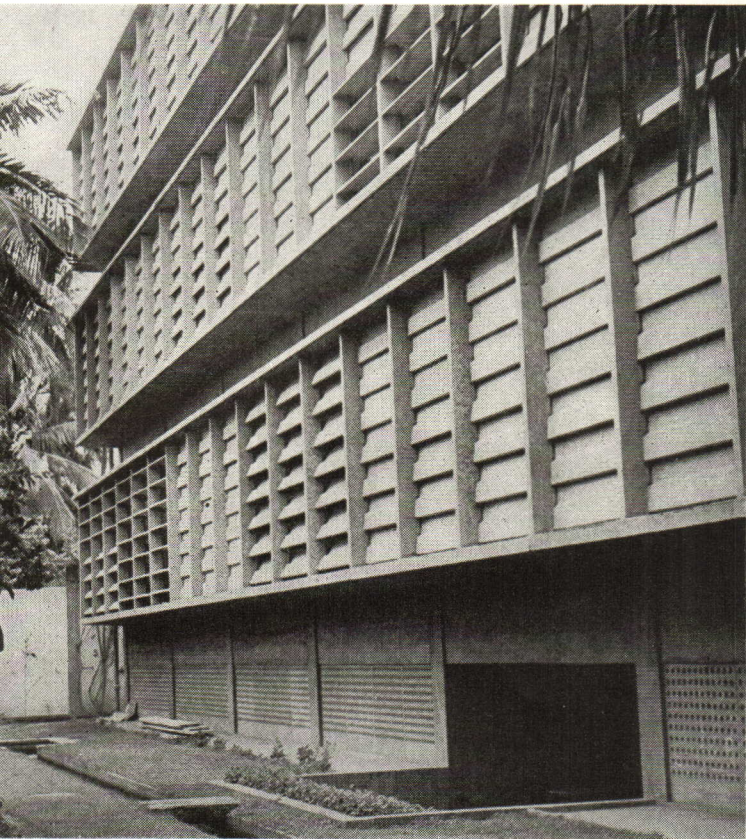
Center: tunnels through the building at garden level provide cool, shaded recreation areas.

Bottom: one of the utility rooms at basement level.



Antonin Raymond: Came to the U. S. in 1910; practiced in New York, then in the Orient. Returned to this country in 1938, making his headquarters at New Hope, Pa. Also maintains a New York City office with L. L. Rado. (See "Perspectives," June and July 1944 Pencil Points.)

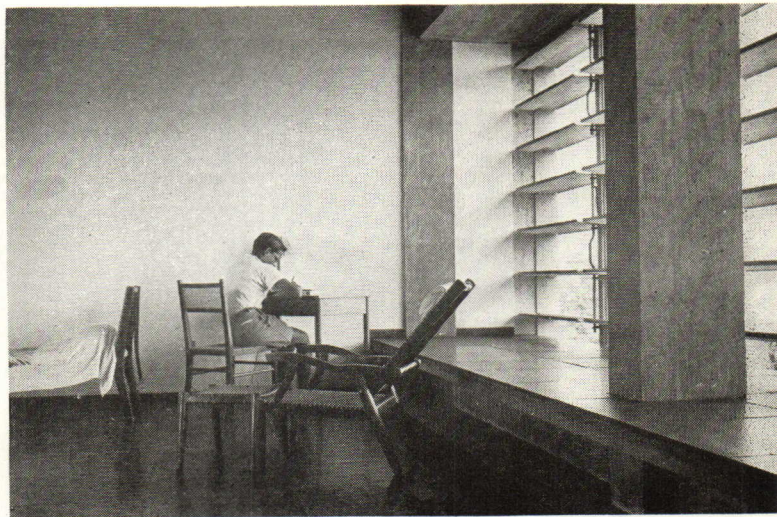
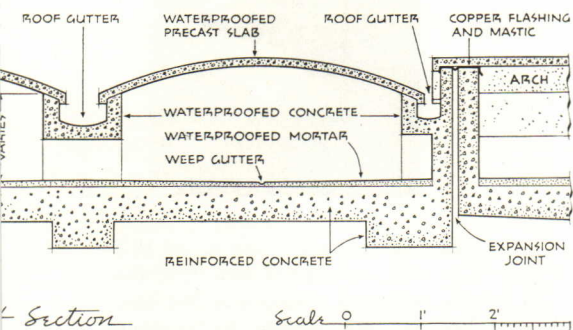
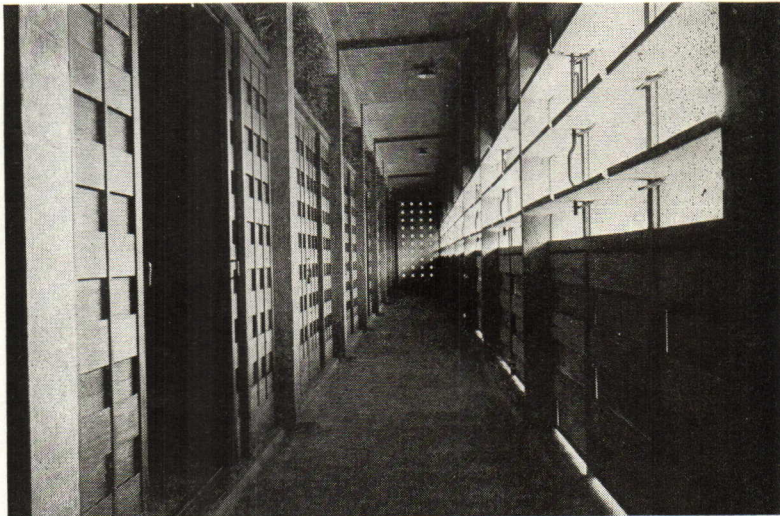




Left: projecting bands of movable louvers along the back of the building return to the building line to form a continuous window ledge on the interior. Cool basement-level tunnels cut through the center of each wing of the building.

Below: gallery and a typical sleeping room. Galleries serve the double function of acting as corridors and creating a deep, insulating area in front of the bedrooms. The door-height sliding panels separating bedrooms from gallery are so constructed as to allow passage of air even when closed. A cool, pleasant place to sit and to sleep in summer is provided by the stone-surfaced window ledge. Floors, also, are paved with black, highly polished stone, butt-jointed.

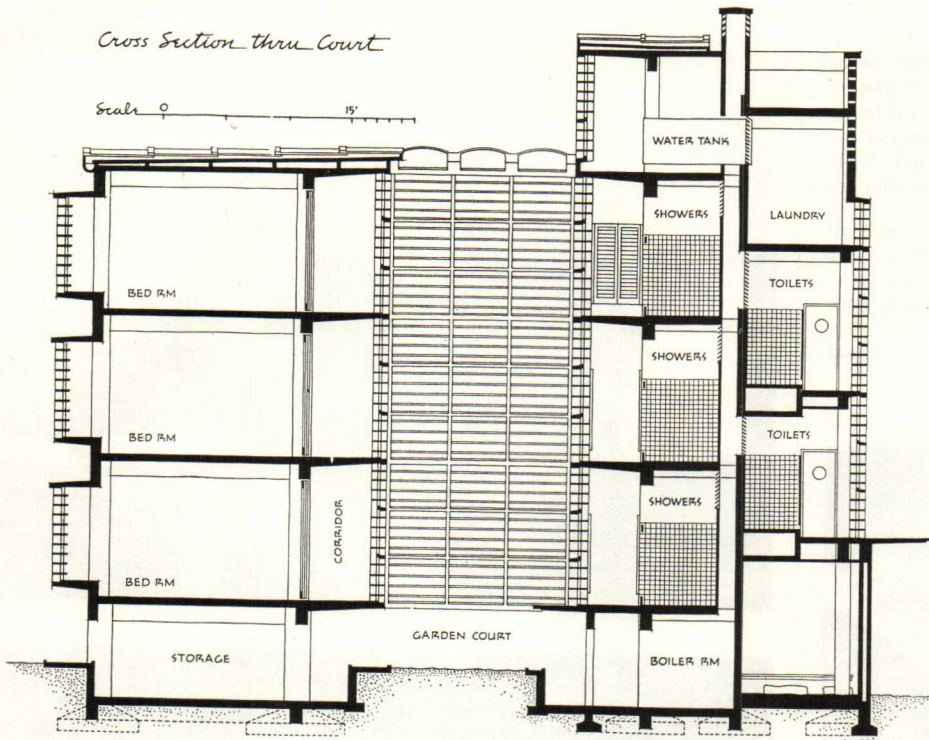
DORMITORY, PONDICHERY, INDIA





*Cross Section thru Court*

Scale 0 15'



Left: A section through the building looks not unlike the detail of a ventilating mechanism. East wing of top floor has four workrooms in place of the eight bedrooms of the floors below.

Below: view along front of west wing. Thin-section, curved, pre-cast concrete slabs, 4' x 6', laid in place like tiles, protect roof insulation and at the same time create ventilation channels. (See detail of roof across page).



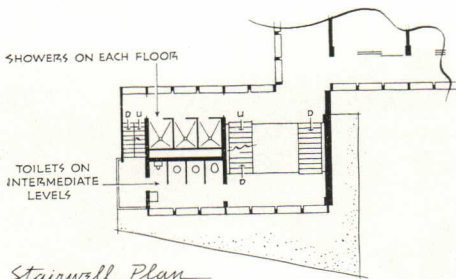
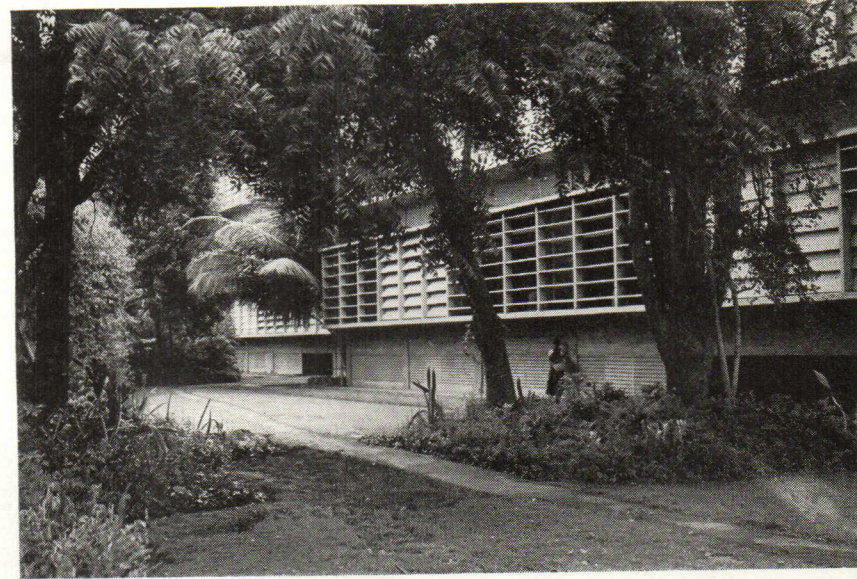
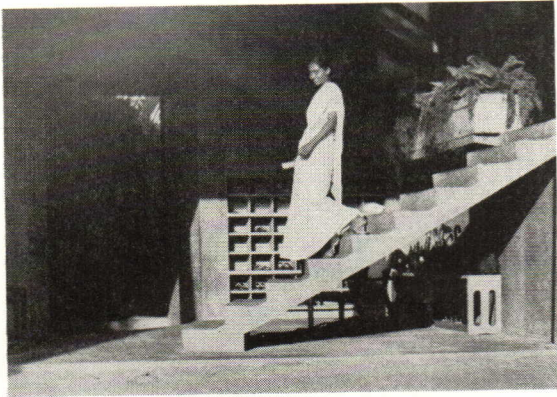


Right: rear views of building. Basement floor, with laundry and other service rooms, is slightly below level of garden. Walls of pierced precast slabs shield interior from sun, allow free passage of air.

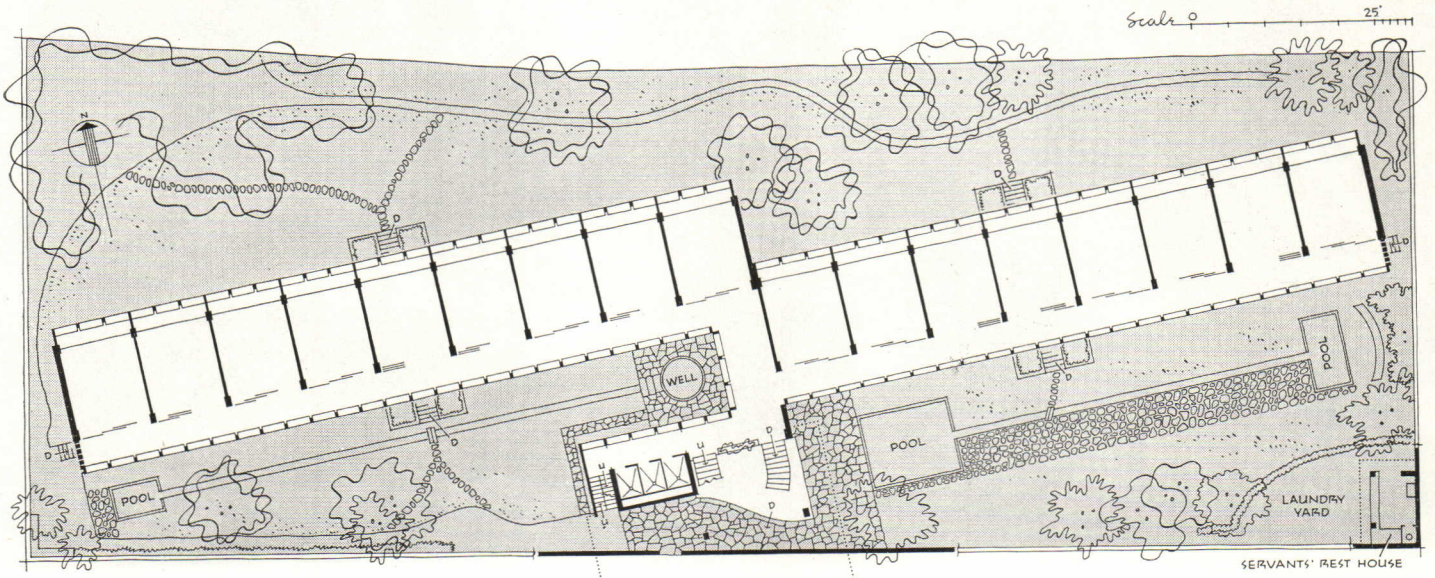
Below: sheltered entrance court. Shoes are left in the rack beside the stair, as one goes barefoot indoors.

Plan of stairwell area shows economical placement of toilet facilities; showers on all three floors, toilets at the two intermediate levels. Laundry and drying room in penthouse.

All photos: Sri Aurobindo Asram.

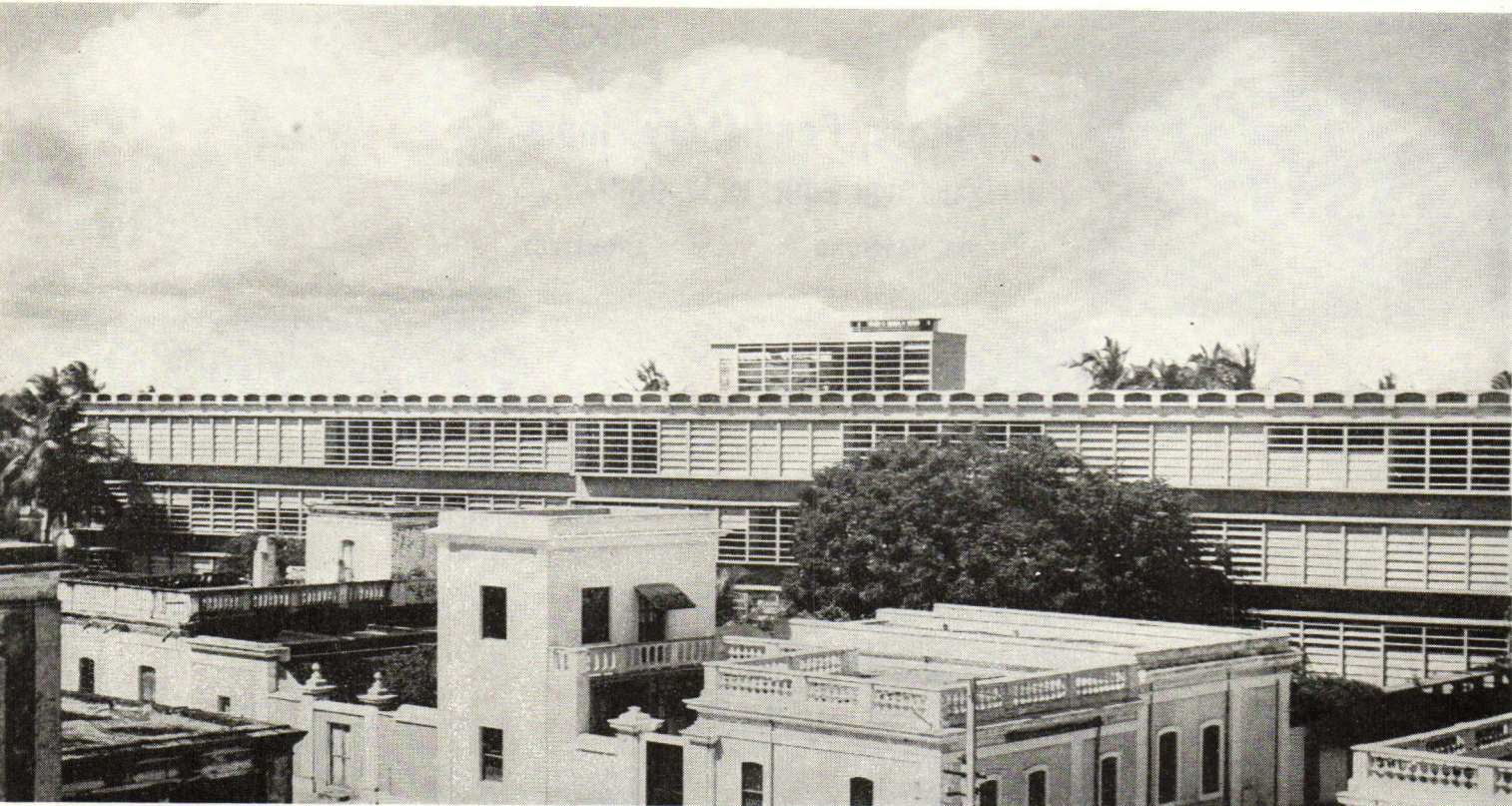


Stairwell Plan



First Floor Plan





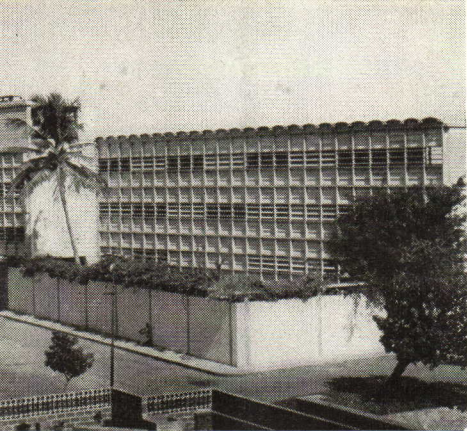
#### DORMITORY, PONDICHERY, INDIA

**program:** Dormitory for disciples of Sri Aurobindo Ghose, one of India's foremost spiritual teachers, which would include living and sleeping accommodation, workrooms, and utility rooms. (Dining facilities are provided elsewhere.) In the design of the building, the main consideration was to offset, without mechanical means, the extremely hot, damp climate of Pondichery.

**site:** A shallow lot bounded on the south and east by streets.

**solution:** The plan of the building is strikingly simple. Its two long, staggered wings are set at an angle on the narrow plot, thereby making the most of rather limited space. Each wing consists of a series of single rooms that are strung out along a south-facing gallery which runs the length of the building. On both north and south sides the entire building surface is equipped with operable, horizontal louvers to afford protection from the sun and the violent winds and rain, while allowing for ventilation; there is no glazing in any portion of the building. Bedrooms are separated from the galleries by sliding panels. High ceilings throughout ensure maximum air circulation. The body of the building is of reinforced concrete, left natural except for native white plaster on the east and west end walls. The simple landscaping of the surrounding garden, with its trees and grass and shallow pools, carries out the effect of coolness that is realized structurally in the building itself. Its rather specialized purpose aside, the dormitory achieves architectural distinction by thorough integration of plan, structure, and final design. The fundamental principles of architecture—simplicity, economy, directness, and closeness to nature—were consciously and consistently observed.



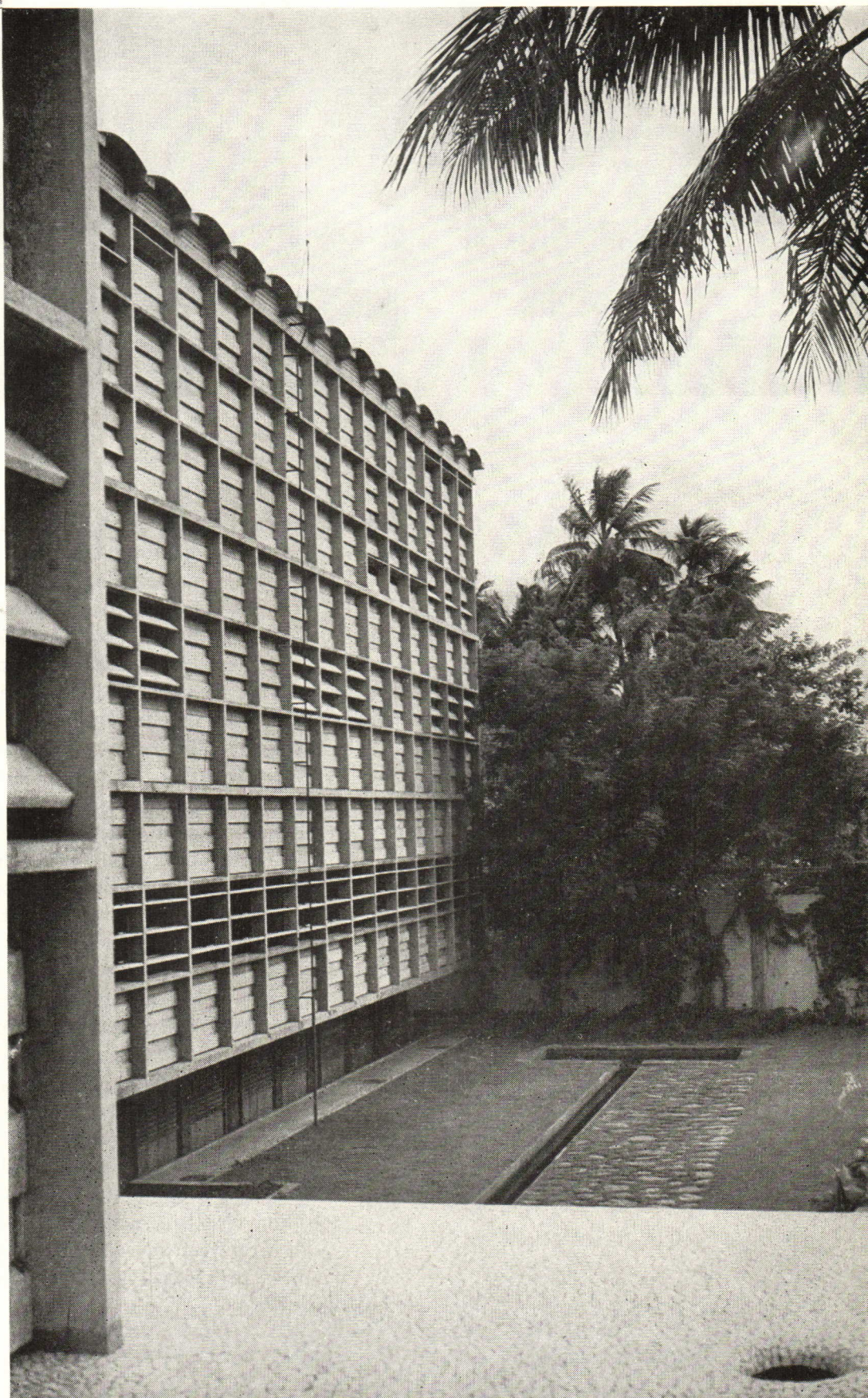


# **Dormitory, Pondichery, India**

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**ARCHITECT**







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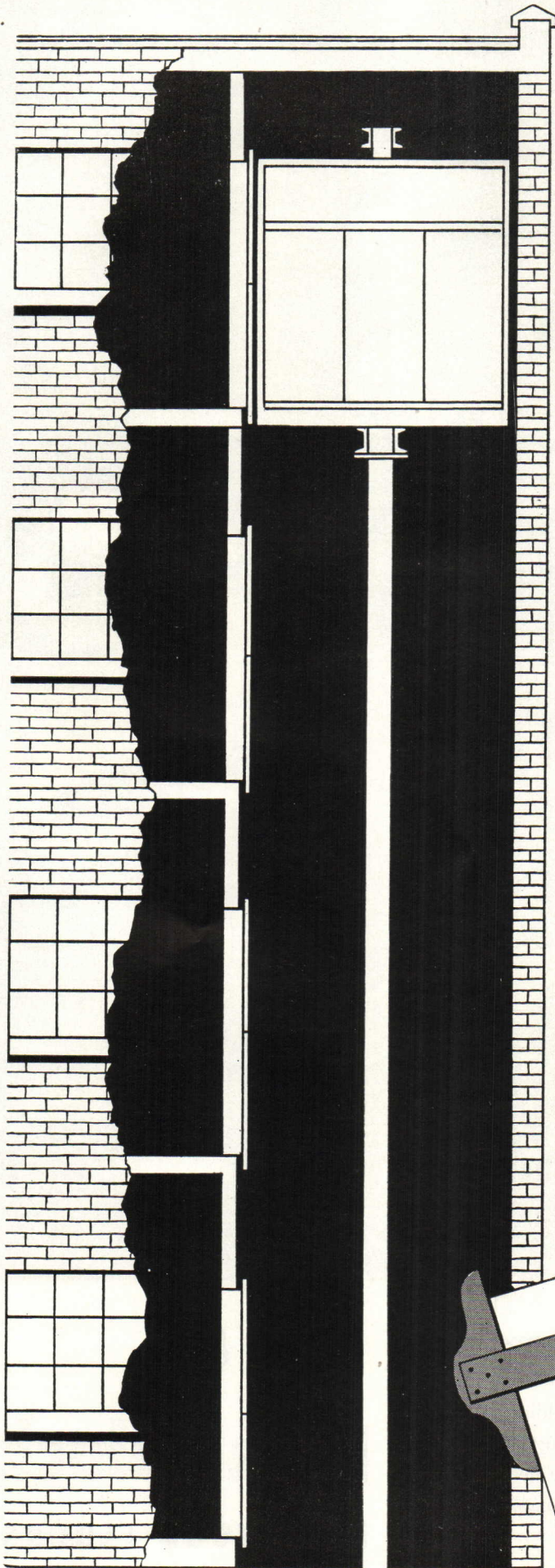
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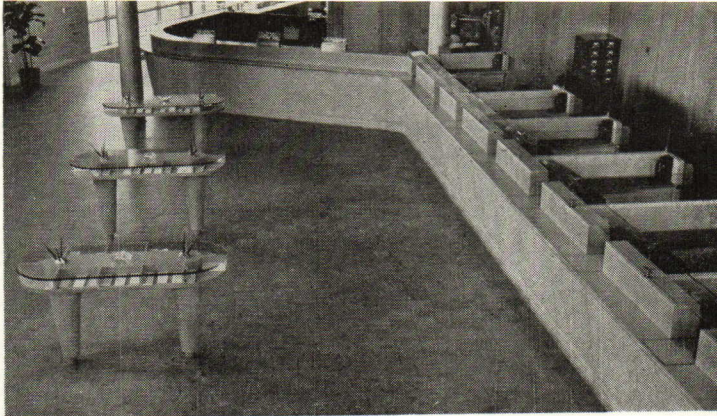
## CRITIQUE: BANK BUILDINGS

Photos across page: left—the original bank; right—as the front will eventually look.

Photo at right: banking floor. The two columns will be removed when the second floor of the new wing is built; floor plans indicate final development.

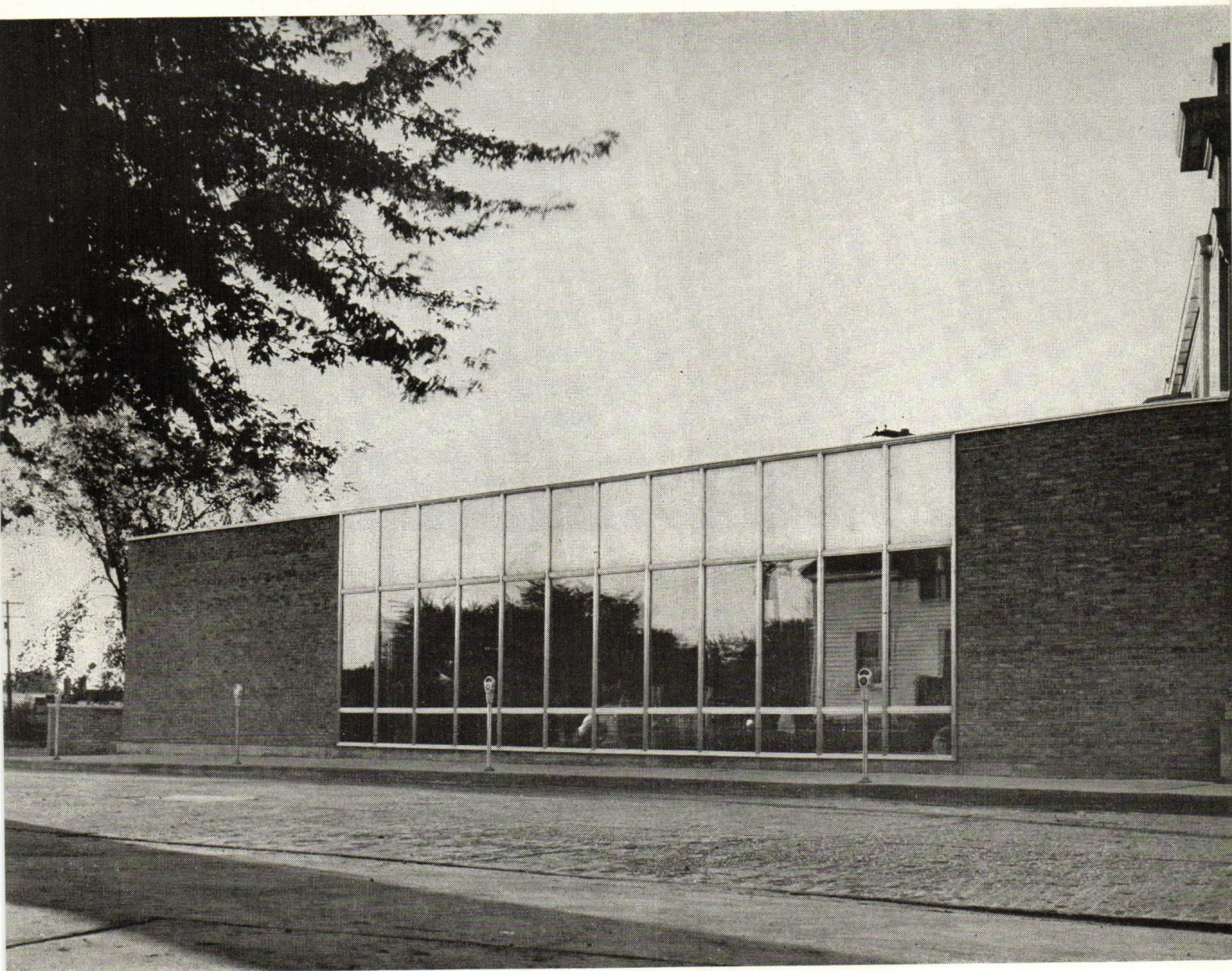
Below: exterior of new wing; upper floor to be added later.

*Photos by Harvey Croze.*



## 1. Birmingham, Michigan

SWANSON ASSOCIATES, ARCHITECTS







#### MATERIALS AND METHODS

**CONSTRUCTION:** **Frame:** reinforced concrete. **Walls:** brick and cinder block (brick exterior surface; inside finished in either plaster or oak paneling). **Floors:** reinforced concrete, surfaced with marble or asphalt tile. **Roof:** reinforced concrete; built-up roofing. **Fenestration:** fixed stainless steel sash; 1" double, insulating glazing. **Insulation:** acoustical: acoustical plaster; thermal: 3" expanded vermiculite. **Partitions:** cinder block and structural, corrugated glass. **Doors:** flush, white oak.

**CRITIQUE: BANK BUILDINGS**





J. Robert F. Swanson: U. of Mich.; year of study and travel in Europe; graduate work under Eliel Saarinen at Ann Arbor; formerly partner of Saarinen-Swanson-Saarinen firm in Bloomfield Hills, Mich. Formed own firm last year.

Photo across page: officers' desks, customers' bay, loan department, and conference rooms at rear of new wing. Interior colors, furnishings, and fabric design by Pipsan Saarinen Swanson.

Photo at right: teller's work space.

Below: left—president's office; center—corrugated glass partition between president's office and conference-directors' room; right—detail of conference-directors' room.

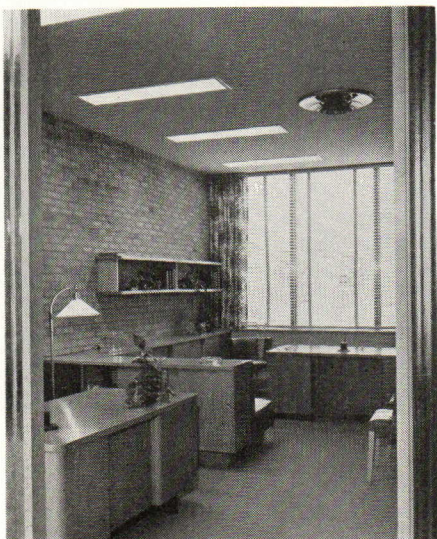
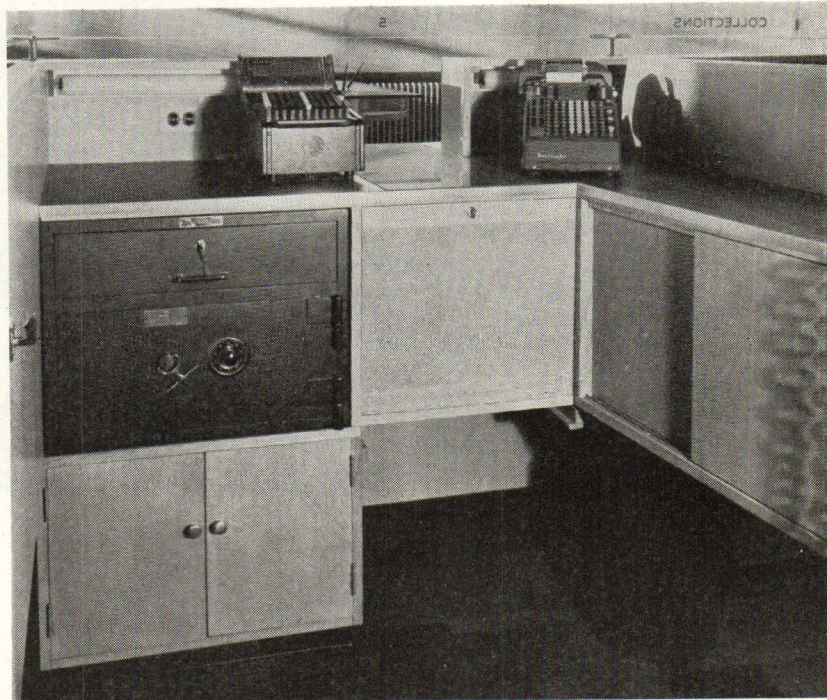






Photo at left: projecting end walls surfaced with Arizona sandstone; stuccoed, concrete front (downlighted at night by flush units in the roof overhang).

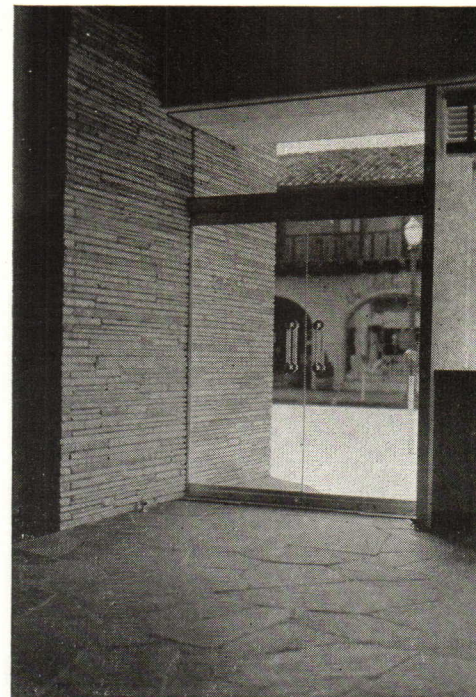
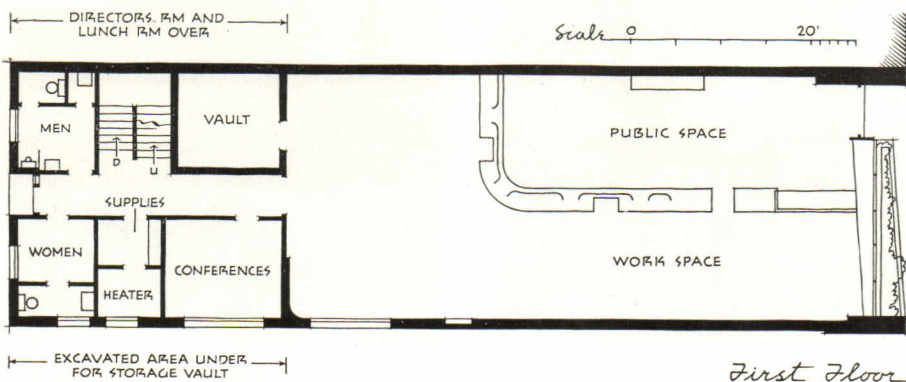
Below: view from interior; sandstone and plywood chosen because of their frequent use in home-building.

Across page: open interior treatment (slate flooring in public areas). The architects report that "the glass block used high on the west wall has been very successful in throwing light up against the ceiling and has obviated the need of shades of any sort."

Photos by Berton Crandall.

## 2. Palo Alto, California

BIRGE M. CLARK, WALTER STROMQUIST, ARCHITECTS





## CRITIQUE: BANK BUILDINGS

Birge M. Clark (left), A.B., Stanford U.; M.Arch., Columbia U. Began practice with his father, A. B. Clark, 1919; own office ever since; Walter Stromquist (right), Trained at U. Cal.; worked with local and San Francisco firms until he became Birge Clark's partner in 1945.



**program:** Office of a mutual building and loan organization in a city of 20,000 population.

**site:** Typical deep, narrow lot in a downtown city location; alley at one side.

**solution:** Rectangular public space at one side up front; business work space, an L-shaped area on two sides of the public space; conference room, vault, etc., at rear; mezzanine: directors' room, lunchroom and storage room; basement vault under rear area.

**main points admired:** Direct, logical plan scheme; well-lighted, open room with minimum barrier between the public and employees; inviting, shop-like open front.

**chief questions:** Is rear door, at end of narrow corridor O.K. as regards security? (Unlike a commercial bank, no large sums of money are kept at the office; main-floor vault is for storage of current records rather than cash.) Since lot adjoins a traffic alley, is there any thought of providing a drive-in teller's window in the side wall? (Yes. The window is already blocked in, in the concrete. Actually, much of the business is done by mail; so this may never be used.)

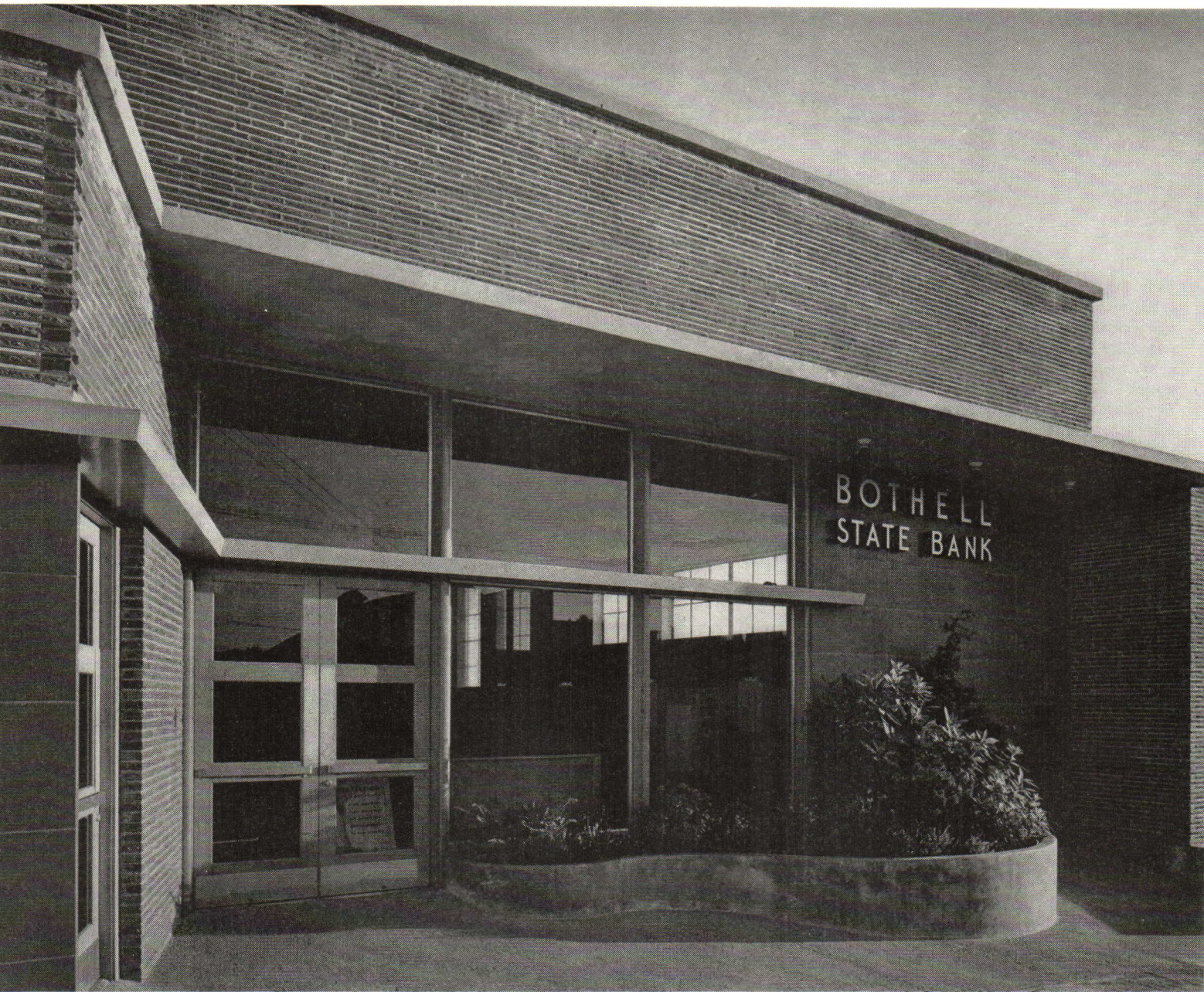
## MATERIALS AND METHODS

**CONSTRUCTION:** Frame, walls, floors, and roof: concrete. Exterior wall surfaces: stucco; Arizona sandstone. Interior: stucco; birch plywood. **Flooring:** slate; rubber tile; asphalt tile; linoleum. **Roofing:** tar and gravel. **Fenestration:** steel sash; plate glass; glass block. **Insulation:** acoustical: plaster; thermal: mineral batt type. **Doors:** flush wood panel; entrance doors: tempered plate glass; metal doors; vault doors. **Counter tops:** marble.

**EQUIPMENT:** Heating: radiant type, copper coils in floor slab. **Electrical:** flush-mounted incandescent units with directional prism lenses.

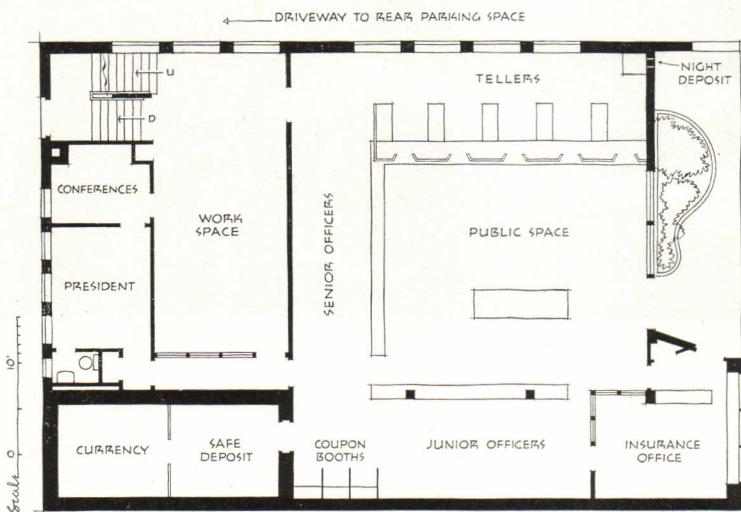






### 3. Bothell, Washington

YOUNG & RICHARDSON, ARCHITECTS AND ENGINEERS



*Floor Plan*

CRITIQUE: BANK BUILDINGS





A. M. Young (left), B.S. Eng., U. of Mich.; past chairman, Seattle City Planning Comm., and Bldg. Code Comm., A.I.A.; A.S.C.E.

Stephen H. Richardson (right), U. of Wash. and M.I.T.; past secretary, Wash. State Chapter, A.I.A. The firm of Young & Richardson was formed in 1940.

Photos of building: Dearborn-Massar.



#### MATERIALS AND METHODS

**CONSTRUCTION:** **Frame:** steel and wood. **Walls:** brick and concrete (exterior surface brick and ceramic veneer; interior: plaster and birch plywood). **Floors:** wood joist and concrete; surfaces: terrazzo, cork and rubber tile. **Roof:** built-up roofing over frame structure. **Fenestration:** steel and aluminum sash; clear and patterned glass. **Insulation:** acoustical ceiling tile. **Doors:** flush birch; vault door.

**EQUIPMENT:** **Heating:** hot-water system; unit ventilators; convectors; automatic controls.

**program:** A bank to serve a prosperous agricultural area; separate space needed for related insurance business.

**site:** Lot between the main street and a secondary highway.

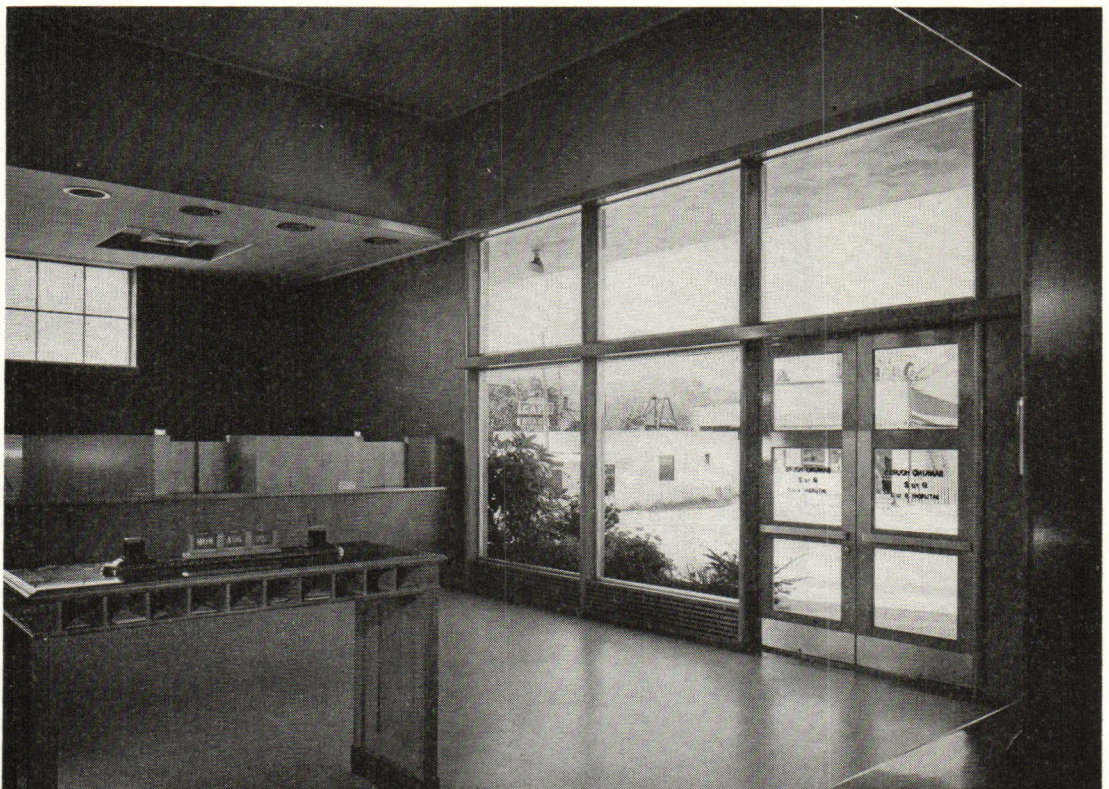
**solution:** Placement of building in front corner of lot, leaving space for through drive on west side (onto which drive-in tellers' windows will be opened later). Insurance company, in projecting block at front. Conventional general plan, with central public space.

**main points admired:**

**chief questions:**

Open-front scheme; workmanlike plan.

Isolated location of president's office? (A program requirement. Present top officer works both here and in general officers' space; finds private office apart invaluable for undisturbed conferences.) Are coupon booths sufficiently private? (Scheme worked out to facilitate supervision; 95 percent of customers do not need complete privacy; those who do, use conference room.)



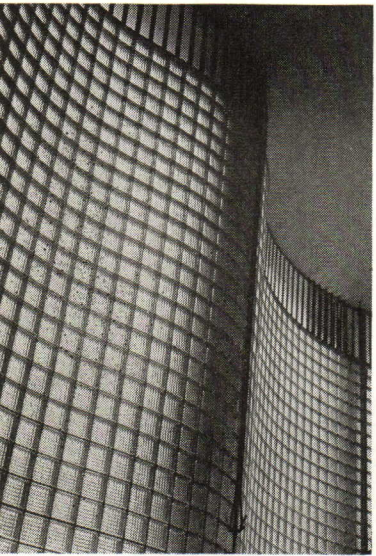
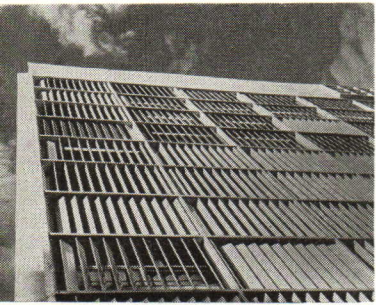


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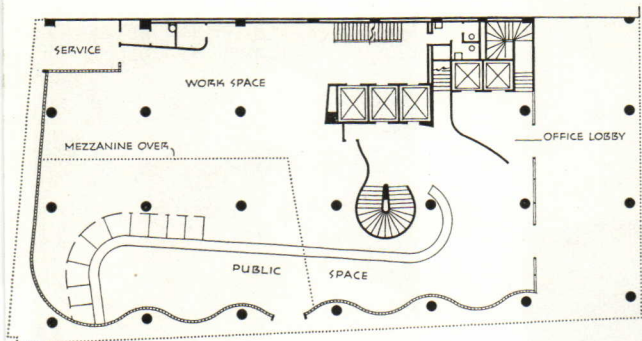
BANK BUILDINGS

## 4. Rio de Janeiro, Brasil

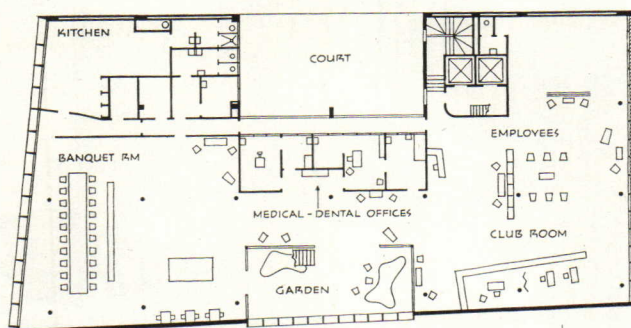
OSCAR NIEMEYER, ARCHITECT



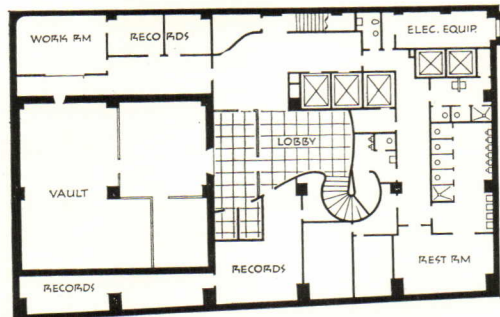




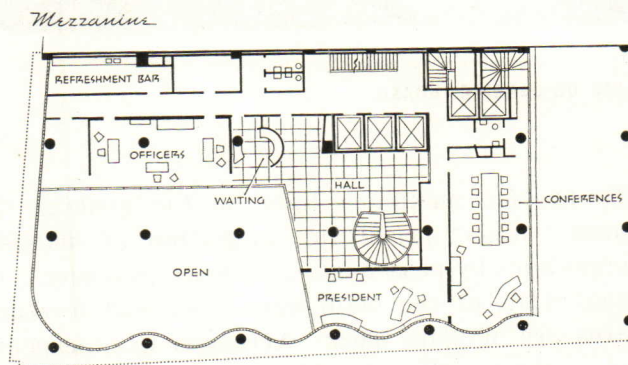
Ground Floor



Top Floor



Basement



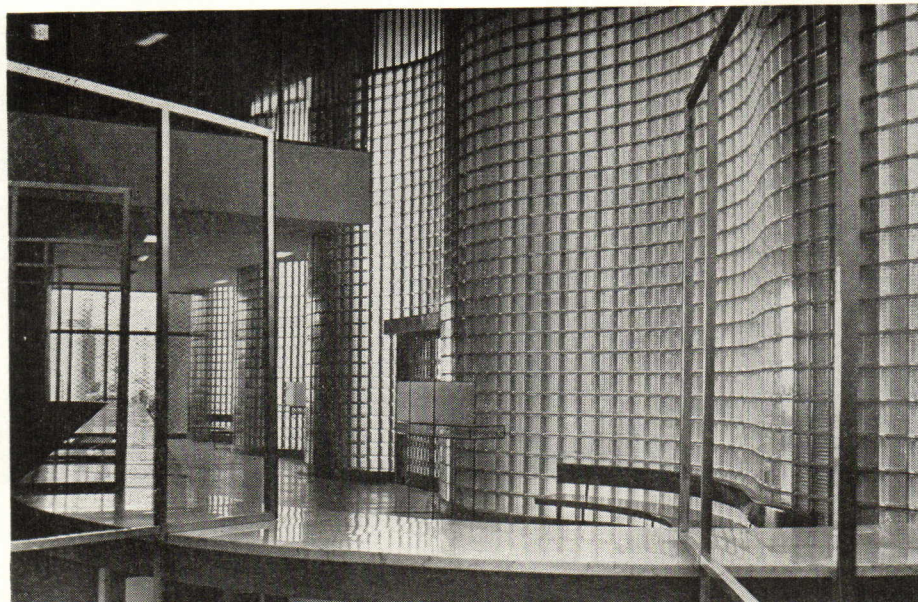
Mezzanine

**program:** Headquarters for the Boavista Bank, to occupy five levels of a commercial building, the other floors of which are for business rental purposes.

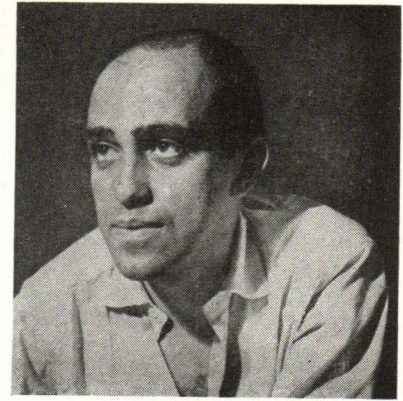
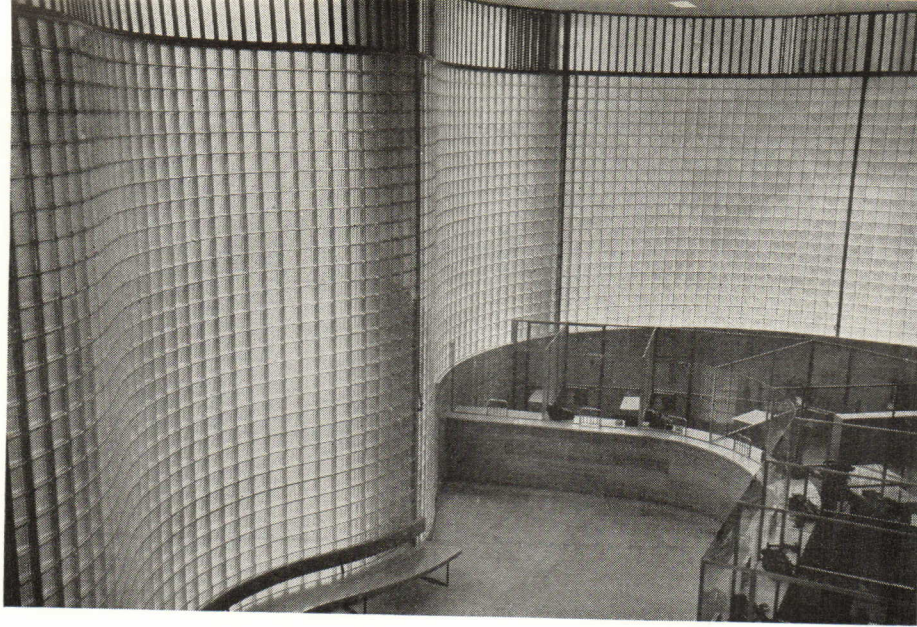
**site:** Busy corner site in the downtown section of the city.

**solution:** Maximum utilization of ground floor and outside light for rental offices on upper floors dictated a scheme where elevators, stairs, and washrooms are grouped along rear wall (broken back on upper floors to provide a light well). Reinforced concrete structure allows treatment of exterior walls as simply curtains. *Brise-soleils* (wood) used on north and west façades.

Photos below: left—banking floor looking toward entrance; right—cantilevered mezzanine.







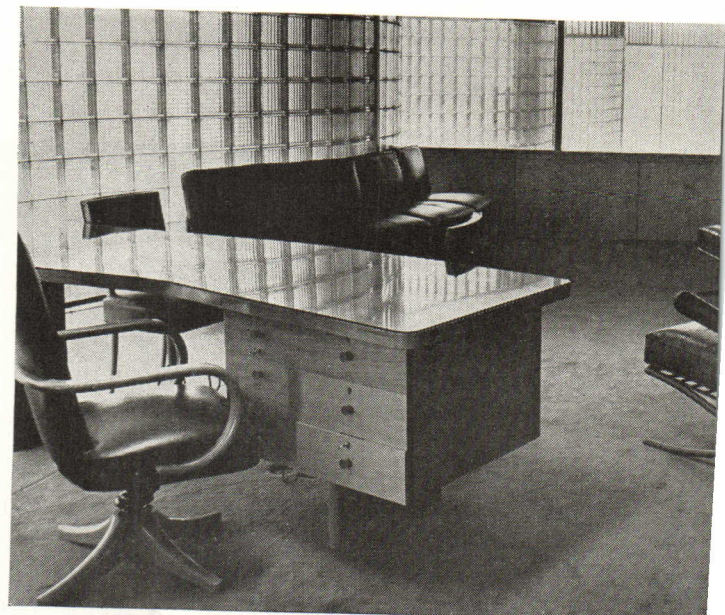
Oscar Niemeyer

**RIO DE JANEIRO, BRASIL**

To provide maximum light on the banking floor area without permitting inspection of details of operations by passersby (a security provision), outside walls of the main bank floor and mezzanine area are of glass block. Arranged in a serpentine plan, these walls leave the structural columns outside the building envelope. The mezzanine walls that overlook the banking floor are fitted with clear-glass panels for clear view of operations on the floor. Like the North American banks shown in this Critique, the Rio bank clearly reflects the basic trend toward lightness and airiness. For employees, the top floor of the building is given over to a clubhouse, including medical and dental offices as well as lounge, classrooms, play hall, barroom, and banquet hall.

Photo at top, left, of page: view from the mezzanine down to banking floor.

Below: left—directors' room; right—president's office, with clear windows at end overlooking the main floor.







# partners

BY THOMAS H. CREIGHTON

Should you have a partner in your practice? What sort of a person should your partner be? How can you divide responsibility and work? These are questions that are plaguing many of the younger people establishing practices for themselves, and also many of the men who have had offices of their own for some time but who are now finding that press of work, the need for research and study, or the difficulty in securing competent employees on a salary basis may indicate the need for partnership.

Surveying architects and engineers as a whole, all over the country, one comes to the conclusion that it is only the unusually strong and gifted person who can carry on a successful practice as the sole principal. There are too many facets to the professional practice—from scouting for new work, through conduct of the office in all its parts, to the contract and construction stages. The many responsibilities incurred are too onerous and require too much specialized knowledge for one man—unless he is both a genius and a work horse—to shoulder them all.

There seem to be three possible answers. One is to hire responsible employees to whom work involving basic decisions can be delegated without too much supervision. This is fine, and it must be done, but employees (especially the more capable ones) leave when more attractive opportunities appear elsewhere, and also they grow to the point where they want practices of their own. While remarkable *esprit de corps* has been developed in some offices, the employee cannot be expected to look on the business with the same loving care as though it were his own.

Another solution increasingly used is the associateship. This way (discussed rather fully in December 1948 P/A) has many advantages and makes it possible to draw into responsible positions men who could not afford, or may not have the qualities for, full partnership. And *still* this does not solve the problem for many practitioners.

The wish to hash over problems on an equal basis with a full partner; the need to go off on an assignment with knowledge that someone of equal stature is remaining in charge; the desire for the privilege of losing oneself in one aspect of the practice while a partner is taking complete, responsible charge of another aspect—these are impelling reasons for very many to keep asking: "Should I have a partner; and what sort of person should he be?"

In the first place, a bit of obvious advice mentioned by almost all who have been queried on this subject yet often overlooked: don't choose a partner just because he's a good friend or because his point of view and his interests seem to parallel yours. Personal compatibility is important, of course, and will be discussed in this article. But beyond that, it would seem wise to be cold, sensible, and practical in the choice. Perhaps not as cold as one engineer who admits that he chose his first partner because he was a good businessman; while the chooser realized that he wasn't and knew in his heart that it wouldn't be a permanent arrangement but a *mariage de convenance* (one gaining business experience, the other gaining professional renown) with a divorce inevitable when benefits had run out. His second partnership was equally cold-blooded, with an engineer expert in a phase of work quite different from



our friend's experience. During this period both partners grew rapidly in professional stature, contacts, and knowledge of various fields. Now this man is practicing by himself, surrounded by an able group of associates, and he looks back on his two partnerships as part of the background of experience which makes it possible for him to superintend all aspects of a busy and varied practice.

So it would seem wise to let your partner both complement and supplement your own abilities. Perhaps you are not a good business-getter; your partner should then probably be an extrovert who likes to meet people and impresses them well. If you are weak on construction knowledge, it would seem wise to choose as partner a man who likes to get out on the job and argue with the builder and his mechanics. If program development is not your forte, a partner who willingly spends hours discussing the client's problems and does research in the specific building type wanted will be most helpful. This is indeed obvious advice, yet all too often one comes across partners who are as alike as peas in a pod, who have joined together because their interests are exactly the same, and the weaknesses of one are reflected in the other.

The foregoing conclusion should not be taken to mean that one's partner's abilities and interests are best one-sided or exclusive. The big advantage of a partnership, many tell us, is in the hours when discussion in the inner office or over the drawing board or on the job begins to pull all the various parts of "design"—the program, the materials, the construction process, the esthetics, the budget, and all the others—into a finished piece of architecture. Then each partner contributes his own special knowledge, but each is interested in the process of integration, and above all in the end product. If you feel strongly about the final appearance of the building while your partner pooh-pooh's everything ex-

cept good workmanship, it isn't a satisfactory arrangement you've entered into.

In the same way, antagonistic or even contrary attitudes toward important concepts do not provide that supplementary contribution that should be sought. Not that it's necessary for both partners to be Republicans, or for both to be Episcopalians. But it doesn't seem to work out well when one man has a high code of professional ethics and the other is willing to be a bit slipshod in this sense. There are few if any instances where a partnership succeeds when one man believes strongly in the need for developing contemporary design and the other is happy doing Gothic churches and Tudor schools.

Personal compatibility cannot be ignored or treated lightly. Where great mutual professional respect exists, personal characteristics that are obnoxious to one or the other can sometimes be overlooked. But we have studied the cases of a number of partnerships that recently have been broken, and we have come to the conclusion that personal differences are the most common cause. In one instance, a partner had an overweening sense of responsibility which often kept him in the office late at night; the other was inclined to look forward to the workday's end and evenings spent in good company and light talk. The first man forgot that the second often picked up work through his social contacts; the second didn't properly appreciate his partner's devotion to the office.

There is another case where a too-boisterous sense of humor on the one hand and a complete lack of humor on the other clashed and caused the breaking up of a good firm. In another case a strong social consciousness on the part of one man, which caused him to devote much of the firm's time to "nonproductive" community activities annoyed his partner, who wanted to count the profits from each hour's work to an extent that caused a break.

**The instances could be multiplied. But let's sum up: A partner can take much of the load off your shoulders, give you responsible division of effort, and supplement your own abilities. But if you decide you need a partner, find a colleague who is:**

1. **Basically compatible;**
2. **Fully responsible, personally and professionally;**
3. **Most able in the things in which you are weak;**
4. **Concerned with the total end product of your practice.**



# TWO SMALL HOSPITALS



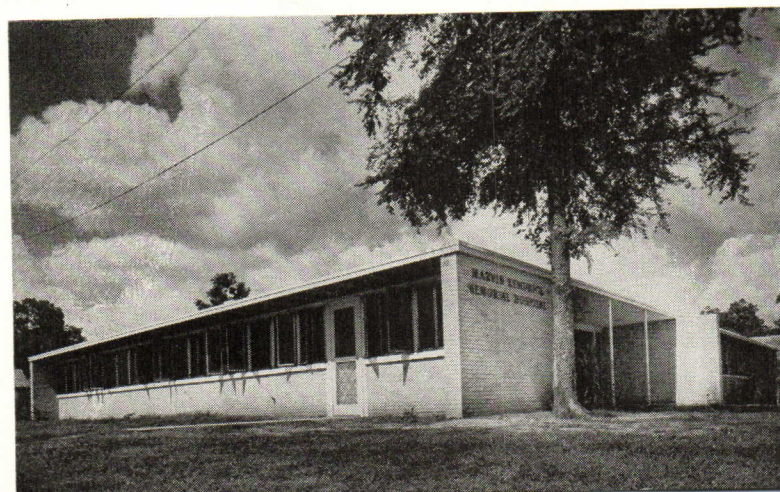
## 1. Luverne, Alabama

SHERLOCK, SMITH & ADAMS, INC., ARCHITECTS AND ENGINEERS

Above: The Kendrick Memorial Hospital provides hospital and clinic facilities for a small town that previously had no local hospital services of any sort.

Below: the picture shows the out-patient wing, at left.

*All photos: Rodney McCay Morgan.*





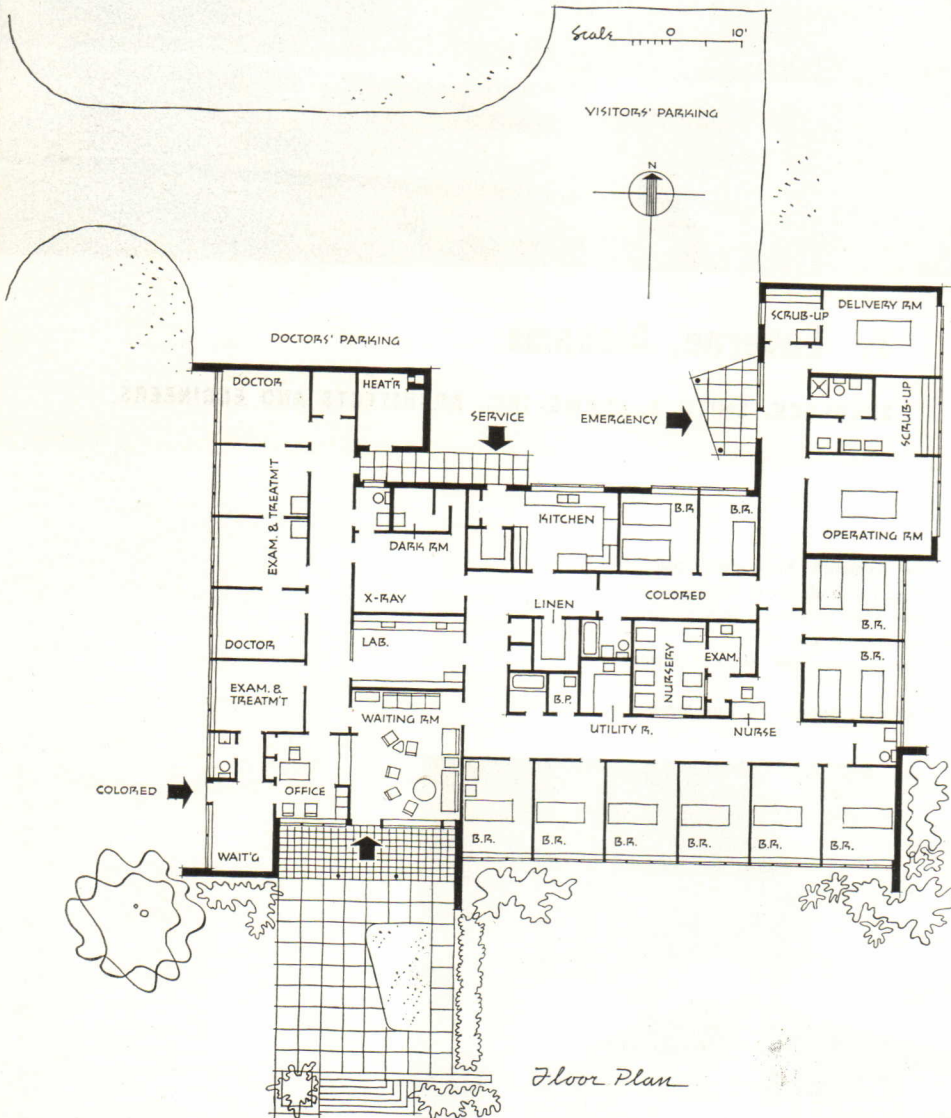


**program:** A 13-bed general hospital and clinic within an economical structure.

**site:** In-town, corner lot, with ample parking space for doctors and service area at the rear.

**solution:** Laboratory and X-ray facilities placed centrally, inside the building envelope (clerestory lighted) between the major elements—the hospital, on the one hand; the out-patient clinic, on the other. Delivery and operating room desirably placed in cul-de-sac at rear corner, adjacent to emergency entrance. In an ideal world, the social onus as well as added expense of segregated provisions for the nonwhite would not exist; with things as they are, the choice was between separate provisions, or none at all.

It is interesting to know that this small, local hospital came into existence because younger doctors were going to towns where they had such facilities to work with. Two young M.D.'s agreed to settle in Luverne if such a health-care facility were provided. So, a group of citizens got together and subscribed for stock of a nonprofit corporation to provide it.



**MATERIALS AND METHODS**

**CONSTRUCTION:** Walls: concrete brick, with clay brick back-up; interior surfaces: plaster or rigid board; plywood. **Floors:** concrete with asphalt tile surface. **Roof:** built-up roofing over wood joists, ventilated at eaves. **Fenestration:** aluminum sash, with heat-absorbent glass on west front. **Insulation:** acoustical: tile in operating, delivery, and labor room and corridors; thermal: reflective (accordion type).

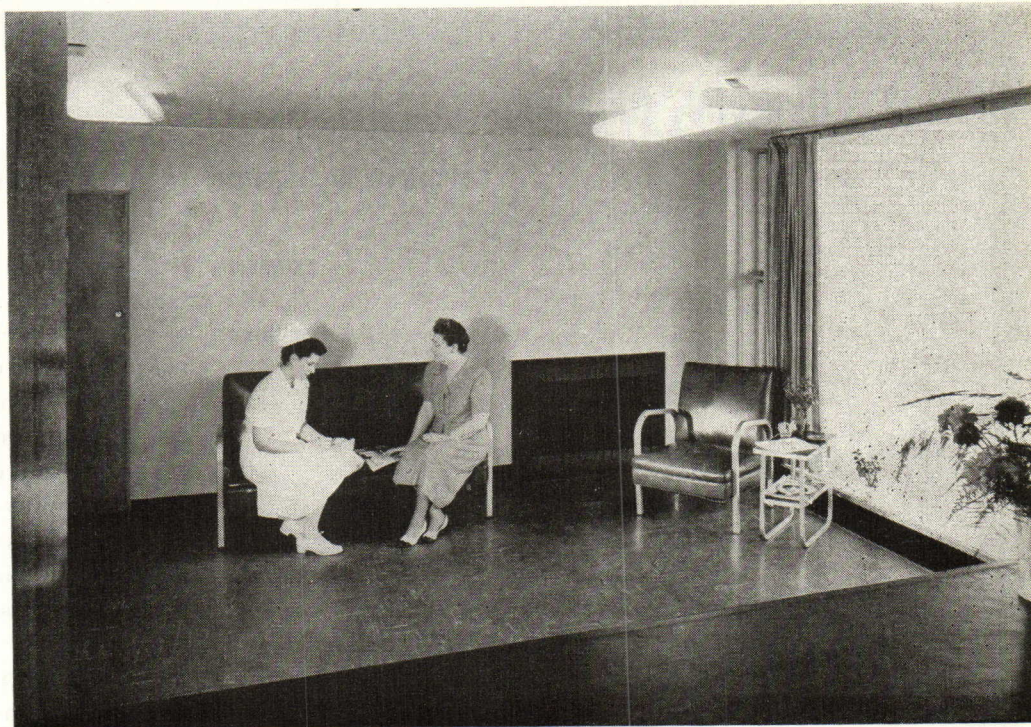
**EQUIPMENT:** Heating: forced hot-water system; oil-fired boilers; automatic controls. **Special equipment:** electric kitchen, X-ray, and other hospital equipment.



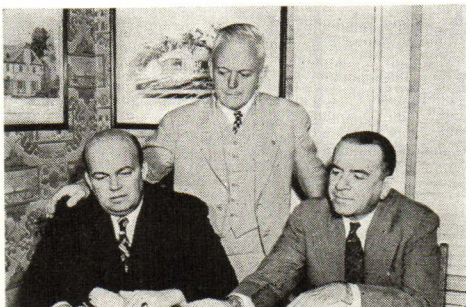


Above: office; gum-plywood walls.  
 Above, right: sky-lighted laboratory, the central control point.  
 Right: reception room.

Commenting on structure, the architects point out: "It was kept as simple as possible, roof load being carried by exterior walls; structural mullions between windows, and by interior partitions. The clerestory lights and ventilates the central core, extending from the nurses' station to the laboratory."



Richard J. Adams (left), Ala. Poly. Inst. Worked in private office, with U. S. Engineers and R.R.A. before establishing own practice (1936) and joining present firm (1946). Moreland Griffith Smith (center), B. Arch., Ala. Poly. Inst.; Diplome Arch., L'Ecole des Beaux Arts, Fontainebleau; M. Arch., M.I.T. Various private offices before starting own practice (1933) and joining present firm (1945). President, Ala. Chapter, A.I.A. Chris. J. Sherlock (right), Georgia School of Tech.; engineering work with numerous State offices, eventually (1939-42) becoming Alabama State Highway director; at present, president of the firm of Sherlock, Smith & Adams, Inc.





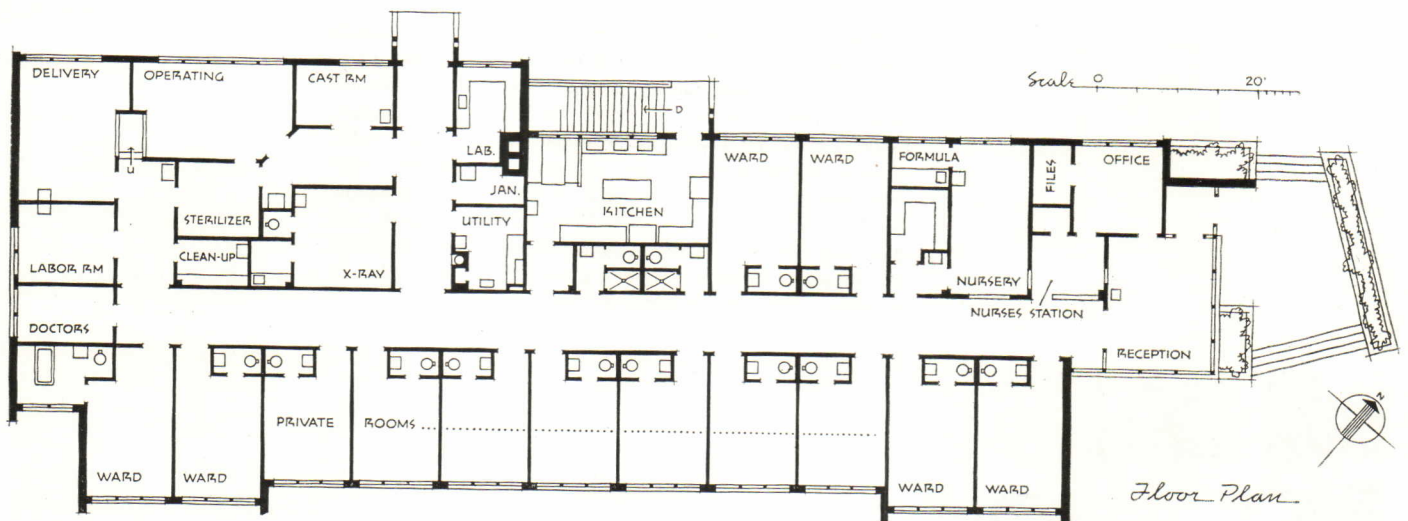


## 2. Okarche, Oklahoma

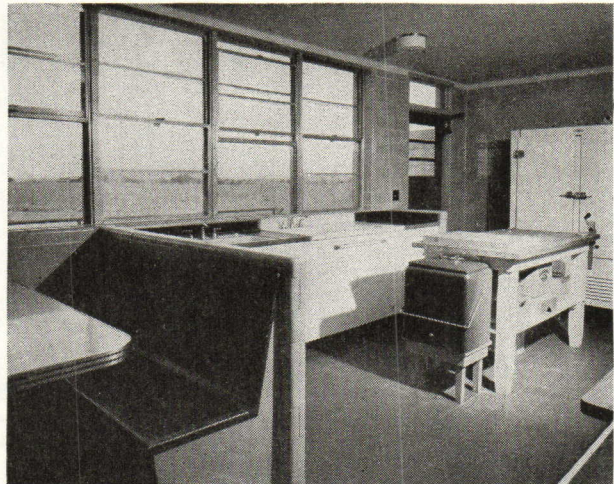
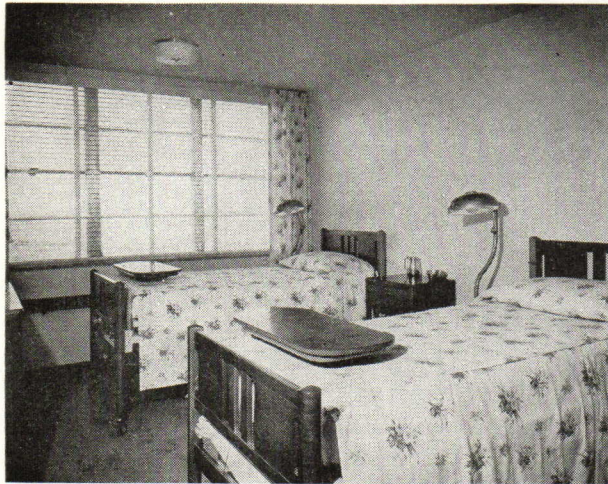
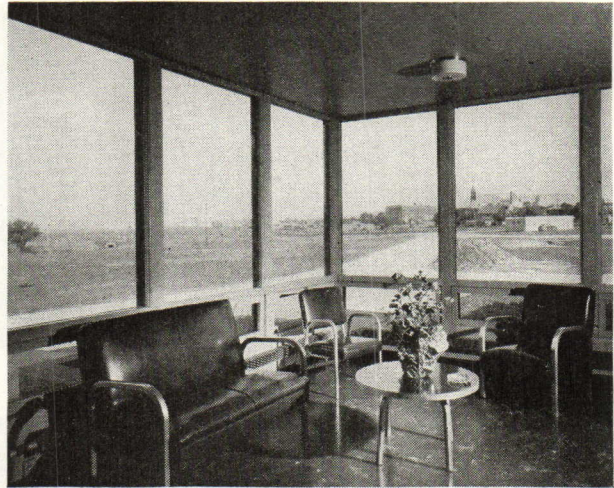
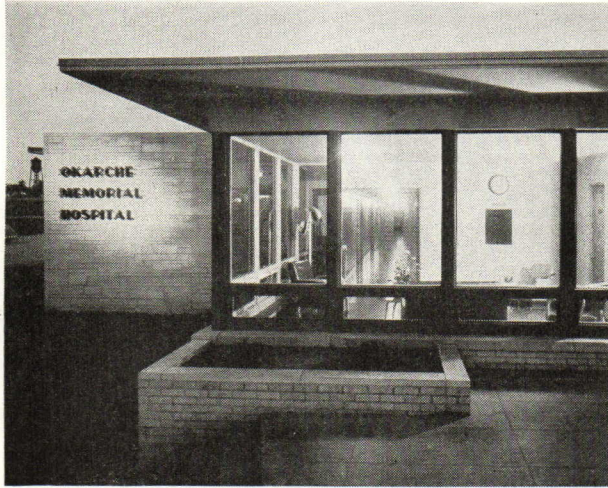
COSTON & FRANKFURT, ARCHITECTS AND ENGINEERS

- program:** A 20-bed general hospital.  
**site:** Open, flat site at edge of Okarche (pop. 500).  
**solution:** Southern exposure for as many patients' rooms as possible (roof overhang to exclude too much summer sunlight). X-ray, utility, and other rooms not requiring outside light grouped within the structure; operating and delivery rooms isolated in one corner; inviting, many-windowed reception room.

This remarkable small hospital, like the preceding one, is strictly a community enterprise. Though Okarche numbers but 500 citizens, the need for hospital facilities to serve the near-by area was indicated. Local groups raised the funds for a nonprofit corporation to build the hospital. Materials were chosen for their durability and ease of maintenance (see Materials and Methods, across page).







Top: left—night view of reception room; right—view of Okarche from reception room.

Bottom: left—typical bedroom, walls surfaced with plastic covering, bedspreads and draperies made by Okarche townswomen; right—the hospital kitchen, walls of glazed tile, quarry tile floor.

Photos: Fred Gund.

## MATERIALS AND METHODS

**CONSTRUCTION: Frame:** steel and reinforced concrete. **Walls:** brick, tile, and cast stone, with interior surfaces of plaster, glazed tile, or plastic wall covering. **Floors:** concrete slab surfaced with asphalt, ceramic, or quarry tile. **Roof:** tar and gravel over 2" reinforced concrete slab above open-web steel joists. **Fenestration:** aluminum sash with double strength B glazing. **Insulation:** acoustical: ceiling tile; thermal: 2" wood-fiber blanket. **Partitions:** 4" clay tile, surfaced with glazed tile. **Doors:** hardwood flush panel.

**EQUIPMENT: Heating:** oil-fired boiler; steam system; convectors. **Electrical:** conduit wiring; incandescent lamps; multi-breaker. **Special equipment:** nurses' call system; operating lamp; special hospital equipment. **Kitchen:** electric range and dishwasher; electric laundry washers, ironers, dryers.

Truett H. Coston (left), B.S., Stephen S. Austin Coll.; B.A. Arch., U. of Texas. Private practice, Lufkin, Texas ('39-'41); with Austin Co. during war; started practice with Frankfurt, '45. W. Wally Frankfurt (right), B.S. Eng., U. of Neb.; Air Conditioning School, N. J. Work with Omaha Utilities District, private air-conditioning concern in Nebraska; Mech. eng., Kribs & Landauer, Dallas; project mech. eng., Austin Co., in charge of design and preparation of plans and specs on several giant war installations.

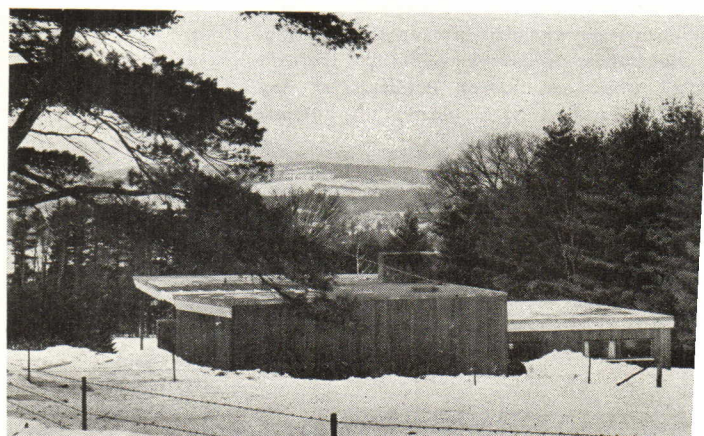




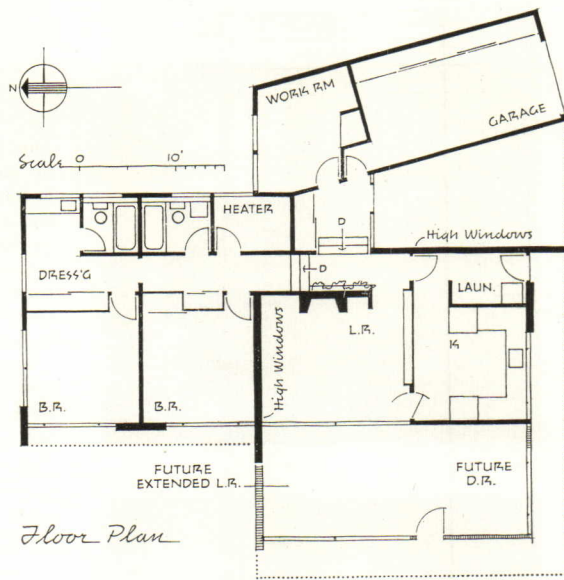


## House, Hanover, New Hampshire

E. H. & M. K. HUNTER, ARCHITECTS







### Honorable Mention in the 1947 P/A Awards

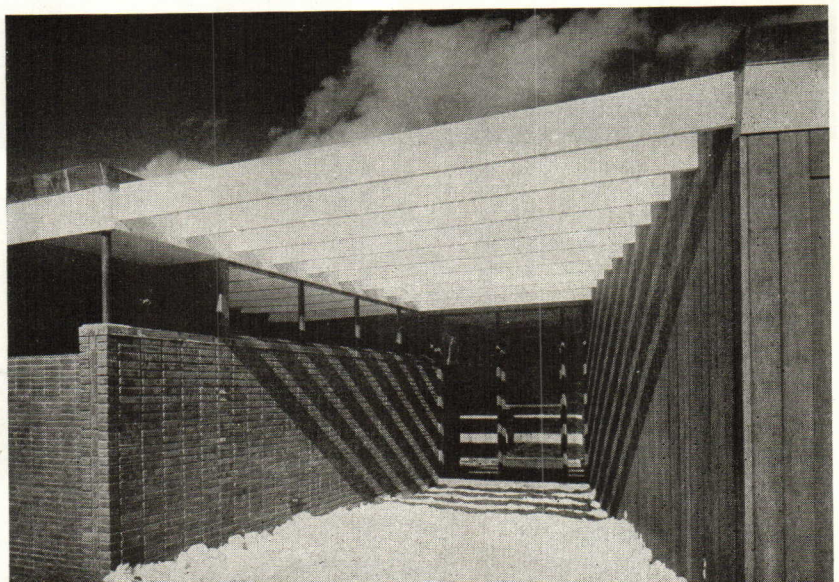
- program:** Two-bedroom, two-bath home for Dartmouth professor and wife. A north-lighted workroom needed since he designs costumes and stage sets for college plays and she designs and weaves prize-winning contemporary rugs and fabrics. House planned for future expansion of living space.
- site:** One-acre, hillside site sloping down to the west, with view of Vermont hills toward the southwest. Street on southeast; unencumbered lot upslope to east; dense pine woods to the north.
- solution:** A one-story plan on a 4-foot module stepping down the slope; garage close to street with level drive (snow problem); expansible scheme facilitated by structural system of light steel framing, with frame walls simply curtain walls (completely salvagable). Light steel beams that support open-web steel joists bear on steel columns or masonry walls. Brick wall elements arranged at right angles for wind bracing; exterior masonry walls, cavity brick construction.

Photos across page: top—huge, western living-room window curtain wall (to be moved outward when expanded scheme is built).

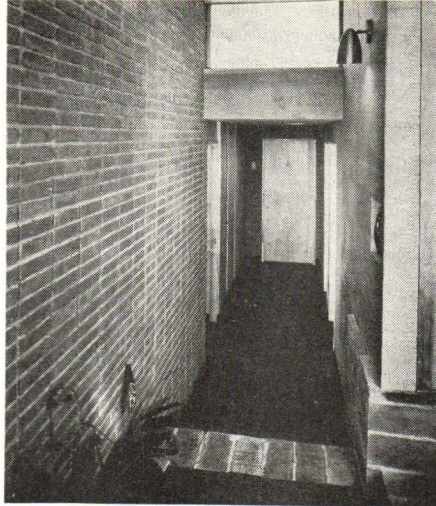
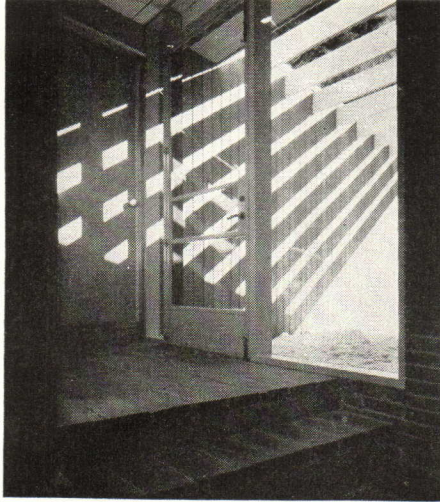
Bottom: left—view from southwest; right—the house steps down the slope of its hillside site.

Photo at right: entrance way, showing pattern of cavity brick wall at left.

Photos by Richard Garrison.



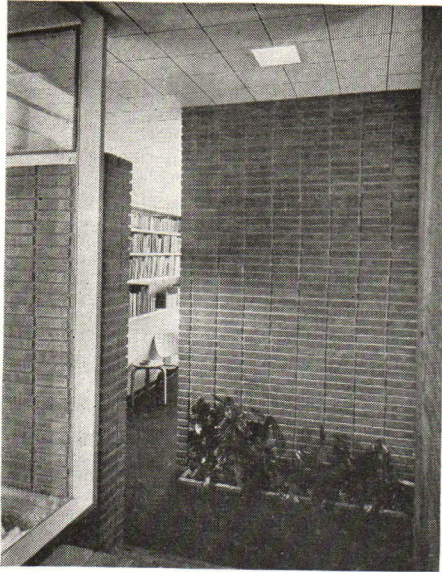




Top: left—front door, note panel door to garage alongside; right—hall of bedroom wing, access to heater room and controls for slab radiant heating on right wall.

Center: left—down steps from entrance foyer to living room; right—living room, looking back toward corner entrance.

Bottom: left—southwest corner of living room, with swinging door to kitchen; right—fireplace-bookcase detail.



Below: north end of living room, showing clerestory above bedroom roof. When house is expanded, window wall at left will be moved 12 feet west, providing that much greater depth in living room and a dining room approximately 12 feet square.





*Roof and Wall Detail*

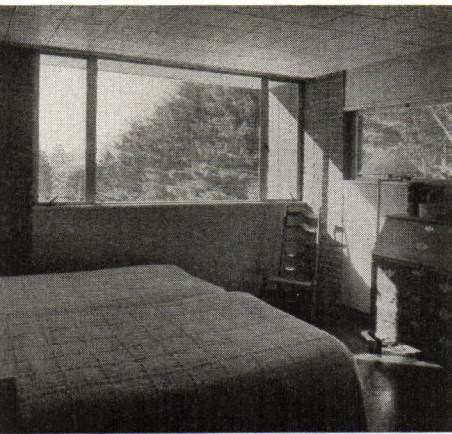
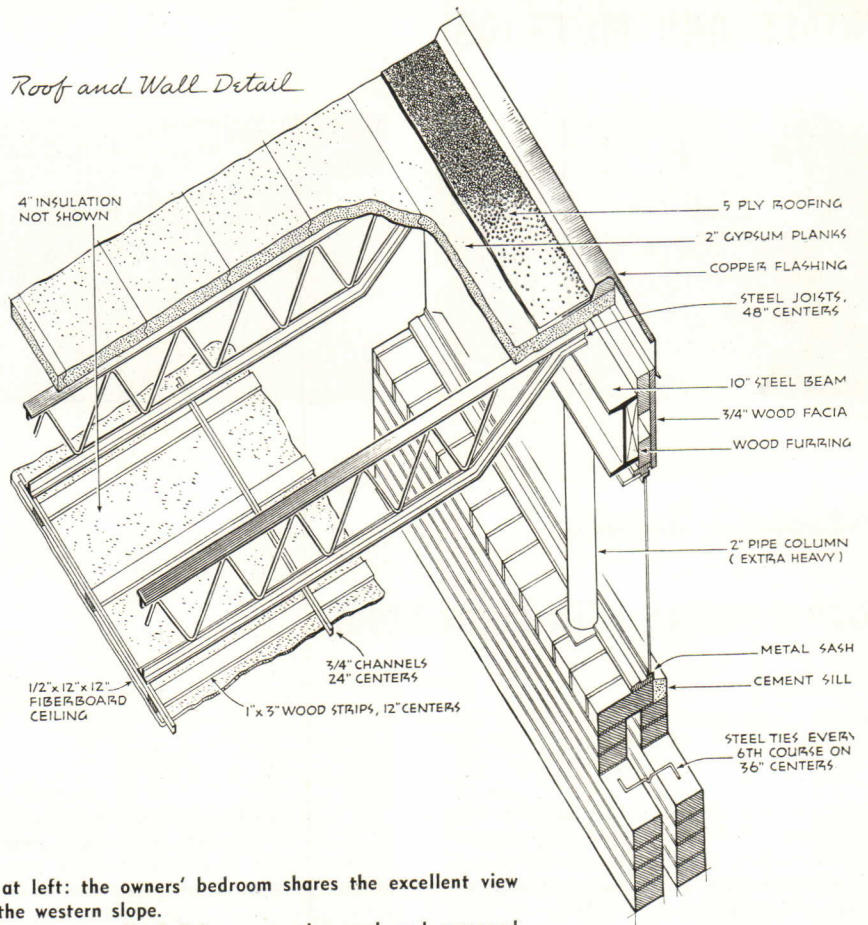


Photo at left: the owners' bedroom shares the excellent view down the western slope.

Below: west wall of living room; louvered and screened ventilator panels beneath the fixed glass windows function by means of in-opening, birch plywood doors.

Isometric above shows the light steel framing system (at no added expense over wood frame construction) which will facilitate future expansion. The roof may be flooded in summer for cooling.

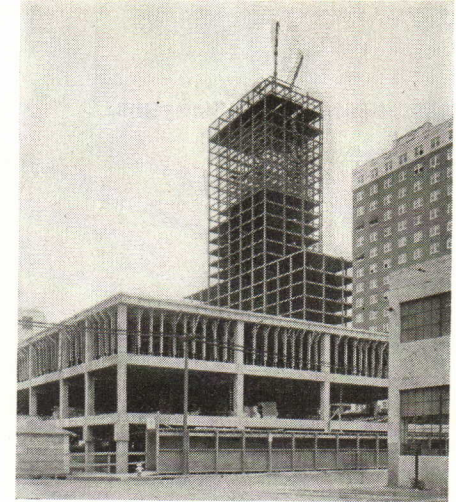
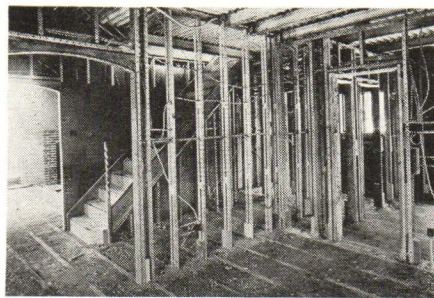
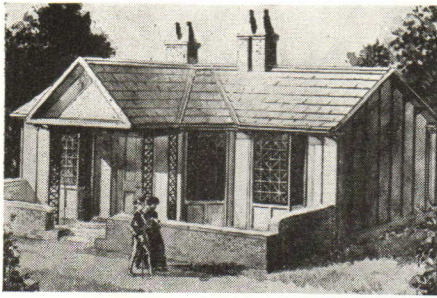
**MATERIALS AND METHODS**

**CONSTRUCTION:** **Frame:** steel, open-web joists; lally columns. **Walls:** cavity brick, nonbearing stud walls and single thickness interior brick walls. Interior surfaces: exposed brick or red-birch plywood. Exterior: brick or cypress boards pre-dipped in shingle stain. **Floors:** concrete slab with asphalt tile surfacing. **Roof:** gypsum plank and built-up roofing over steel structure. **Fenestration:** steel sash. **Insulation:** acoustical tile on ceilings. **Doors:** flush panel wood.

**EQUIPMENT:** **Heating:** oil-fired furnace serving radiant (wrought-iron pipe) system in floor slab; automatic controls. **Electrical:** both incandescent and fluorescent fixtures; circuit breaker.







## Research Report

### Construction with Light Steel

BY B. L. WOOD\*

For the last 50 years or so, steel has been identified in the minds of the public, including architects and builders, as a basic structural material particularly adapted for construction of large bridges and the framework of tall buildings. Hot-rolled steel shapes, identified with the growth of the skyscraper era, made possible buildings with self-supporting frames raised to heights undreamed of before.

Today, steel is appearing in a form which is not new but only recently made popular through economy of quantity production and modern manufacturing methods. Use of light-gage structural sections, made by cold-forming sheet or strip steel (usually 10 to 18 gage in thickness) is broadening and becoming popular with designers. Steel is going modern, adapting itself to the new needs of the times. It is assuming forms more readily adaptable for many uses created in an era of ever expanding building needs and progress.

Cold-formed strip steel has long been used for structural purposes in machinery, equipment, railway rolling stock, automobiles, etc. Now, modern types of cold-formed steel *building* construction are being developed to supplement the heavier hot-rolled shapes and to meet the needs of smaller structures.

It is interesting to note that questions which have greeted this newly popular form of steel had a historical parallel in the reception afforded conventional structural steel shapes in the early 1900's. When the first steel skyscrapers and bridges were built, their strength and permanence were questioned. When the development of the elevator made possible transportation to 10 and then 20 stories above street level, the problems presented were serious, and those who advocated such fantastic structures risked their reputations. Years have proved the soundness of their insistence on steel's strength and enduring quality.

The acceptance of sections formed of flat-rolled steel for building purposes is significant in this generation only with respect to the increased scope of such use. There is nothing new about it; back in Tipton, England, prior to 1790, a building with framing, walls, sash, and door frames all of iron, with an air space serving as insulation, was erected; it is still standing, according to last reports. In 1855 the Bank of the State of New York Building was built of I-shaped members cold-formed from iron sheets 1/16" and 1/8" thick; it was still functioning satisfactorily nearly 50 years later when the building was demolished to make way for a more modern structure. Use of light-gage

steel structural members for building was limited, however, because of their high cost; but about 1910 they began to be employed more extensively. The trend has gained momentum steadily since, starting with the first World War when light steel standard (pre-fabricated) buildings were utilized for warehouses, factories, and similar purposes.

Another handicap to the use of light formed-steel sections for structural purposes was the lack of recognized design standards. Design was necessarily empirical. Today, however, the designer has sound standards to work from, backed up by more than a decade of research and experimentation; more effective use of the metal is now possible, with full assurance of its safe-load capacity.

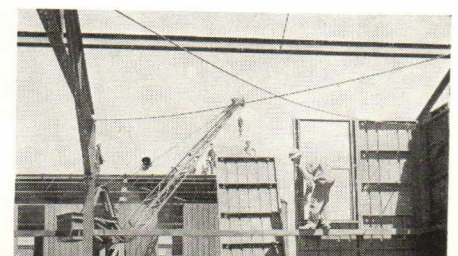
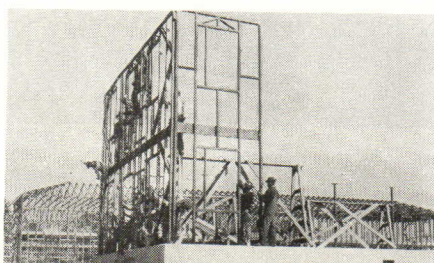
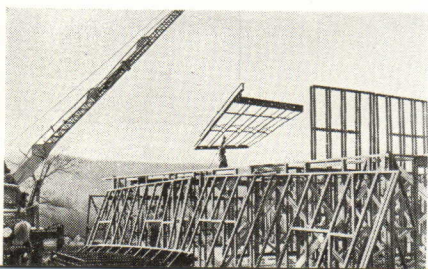
Chance, guesswork, and rule of thumb obviously play no part in the production of the material itself. Steel is made to rigid, explicit formulas; its physical properties and strength are more accurately controlled than those of other materials widely used for structural purposes; its structural qualifications are accurately established. The reassurance which this knowledge provides is now increased by the existence of sound design standards.

Prior to World War II, the develop-

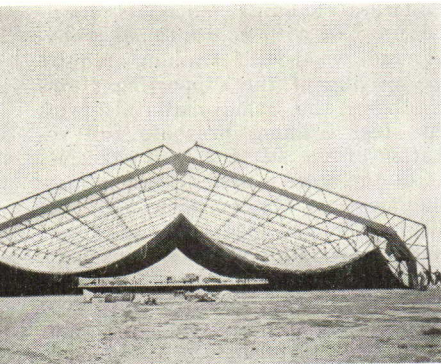
\* Consulting Engineer, American Iron and Steel Institute

Left, erecting pre-assembled units of Stran-Steel framing, McConaughy Terrace Apts., New Haven, Conn.; Douglas Orr, architect. Center, pre-assembled 2-story panels of Truscon light steel elements in U. S. Marine Corps barracks erected

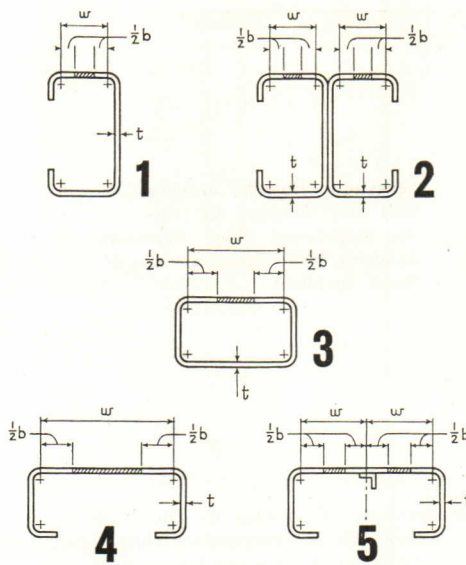
during World War II; panels 8 ft wide, 19 ft high, 3" x 2 1/2" channels, 16-ga, slotted flanges for nailing on insulating sheathing. Below, storehouse built of prefab 26-ga galv. steel panels 4 ft wide, 14 ft high; Butler Mfg. Co.







formed steel floor panels help reduce dead load and, hence, costs. Above, portable steel hangar, 130 ft prefab trusses in sections, designed for transport by plane; canvas roof and ends for temporary bases, light-gage sheets for permanence. Right, typical light steel framing members. Material (shaded) not considered effective in bending.



EFFECTIVE CROSS SECTIONS OF MEMBERS IN BENDING

ment of insulating materials for building purposes broadened the utility and scope of light steel sections. During World War II, however, every pound of steel was conserved for purposes directly related to war. Other materials were substituted, wherever possible, particularly for building construction. Despite these critical needs for conservation, the Army and Navy found that steel *had* to be diverted to light steel building construction because, as had been discovered by the large oil companies, the material could take the severest climatic extremes of exposure and render the tough service required, in operations all over the world. Speed of erection and strength at minimum weight and shipping space became important factors. The Quonset hut became the jeep of housing, for sheltering military personnel and a multiplicity of other uses. Tremendous hangars and huge assembly plants with single buildings covering 30 to 40 acres and extending nearly a mile in length were built of members and panels formed by hot-rolled shapes. Cold-formed steel construction gained broad recognition.

#### Light Steel Enters the Postwar Skyscraper

Since the war designers of large office buildings have turned to light steel

floor panels for speedy, economical construction. The 30-story Mercantile Bank Building in Dallas, the 28-story John Hancock Mutual Life Insurance Building in Boston, the Waterman Building in Atlanta, and others, attest to this postwar trend.

The skyscraper of the future may be expected to increase the use of light-gage steel still further. The structural pattern of a self-supporting steel frame of hot-rolled shapes will probably remain. Advances developed largely during the war will very likely cause welding to be much more extensively used, and designers will be able to take advantage of the rigidity and continuity of framing afforded by welded design to effect appreciable economy.

#### Light Steel Wall Panels

It will prove an easy step from light steel floor panels to exterior wall panel, partition, and ceiling constructions using the same material. Exterior walls offer a challenge to the designer interested in economy. Today, as 100 years ago, walls of our buildings are made up either of unwieldy blocks of stone or of millions of little clay units each carefully buttered and put into place by hand.

Thin metal-clad panels properly insulated, supported by a structural steel

frame, can perform all the functions required of an enclosure wall at least as satisfactorily as today's masonry wall, and in all likelihood much better. Their use will substantially reduce the weight to be supported by the frame and foundation; this will be reflected in substantial reduction of costs.

The economic advantages of metal-clad wall panel construction go even further: by reduction of wall thickness, approximately one-half square foot of rentable space is added per linear foot of wall, with corresponding increase in the income of the building owner.

Our outmoded building code requirements have retarded this development. The delusions from which we have suffered for years in our clumsy efforts to achieve fire safety are now becoming too costly to be tolerated much longer. Most codes require 4-hour masonry exterior walls in buildings of fire-resistive construction, but in those walls they permit openings of unlimited number and size—openings through which fire may spread in two minutes, or in  $\frac{1}{2}$  to  $\frac{3}{4}$  hour if fire windows are used—an infrequent requirement.

You have your choice, 4-hour masonry or 2-minute glass window panes, but the codes prohibit use of panels of 1-hour or 2-hour fire-resistive construction, in spite of the fact that nationally recognized fire protection authorities now concede that outside fire exposures seldom if ever exceed in severity 2 hours of the standard fire test exposure. In locations where unprotected wall openings are permitted, curtain walls of 1-hour incombustible construction could be permitted without increasing the fire risk; where opening protectives are required, 2-hour incombustible panel walls would be adequate.

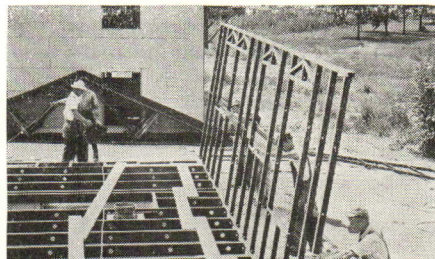
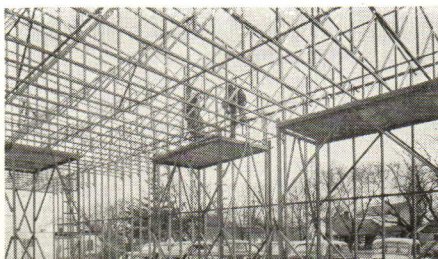
An encouraging note of progress is the recent revision of the New York City Code's requirements to make feasible the use of wall panel construction. Los Angeles and the Uniform Code of the Pacific Coast Building Officials Conference (now used in nearly 500 cities) have both been similarly revised recently.

#### Small Buildings

Equally important developments are under way in dwelling and small store

Below, Unistrut members, bolted light steel of varying gage according to load, frame the Unistrut factory, Wayne, Mich. Center, raising Stran-Steel framed wall assembly for a single-family house. Lower right, Tennessee Coal & Iron Co.

"Panelbuilt" house, Atlanta, Ga.; 14-ga framing, 26-ga galvanized exterior panels; erected by 4 common laborers in 7 days. Upper right, prefab steel stairs, one of a number of items designed to reduce job construction time and costs.







Fenestra's "Holorib" decking (Detroit Steel Products Co.) used on the Mechanical Bldg., Adelphian Academy, Holly, Mich.; Charles W. Nicol, architect.

construction. In most instances these small buildings are being put up about the same way they were 100 years ago—building materials in small units laboriously fitted together by hand, thousands of them, bricks, boards, mortar, nails, to make a structure. True, we are substituting some new materials, such as plywood and plasterboard in larger units, but fundamentally we have made slow progress—they're still put up piece by piece, with many crafts and trades involved, and not-infrequent jurisdictional disputes.

The search is on for new materials which will reduce both the number of pieces to be handled and the number of operations, to be reflected in fewer man-hours, less on-the-site handling, quicker erection, and lower costs. Among the "newer" materials light-gage steel is finding a major postwar role. As proved during the war, strip and sheet steel lend themselves admirably to use in large panels which are light in weight, easily installed, and capable of combining several functions into one.

Thus steel in its lighter forms is beginning to make available to small structures the advantages which heretofore have belonged almost exclusively to larger, monumental buildings. And mass-production techniques are being increasingly applied to turning out light steel units and panels.

The future two-story building on Main Street may, for example, be framed with light-gage steel studs 3 to 4 ft apart, the whole side framing of the building being assembled in jigs and erected as one piece. Or the wall may be of steel panels, each several feet wide, and of length sufficient to reach one or two stories. Floors of this small commercial building may have light steel joists placed 2 ft apart, or of steel panels. Such a panel, providing about 30 sq ft of flooring, can be placed with no more effort than a 3 x 10" piece of lumber.

It is generally practicable to use light steel floor systems on the spans usually encountered in buildings—18 to 20 ft—for live loads up to, say, 125 lb per sq ft. In some instances, they have been found feasible for heavier loads. Obviously, the light weight of the floor system has an increasing advantage as

the number of stories of the building increases. (It is interesting that light, integrated steel framing has a particular advantage for structures in earthquake zones.) For roofs, light steel trusses can support a ribbed steel deck; the entire roof of the building can be assembled and lifted into place in one operation. For exterior finish, conventional materials may be used with steel framing, or attractive panels of porcelain-enameled steel, stainless steel, or colored steel may be used in a variety of combinations which are proving popular for certain commercial uses, such as service stations, shops, etc.

Interior and side walls may be conventionally finished with metal lath and plaster, or may be of steel panel construction, finished to any desired surface or color. The introduction of cellular or pan-shaped panels into wall and floor construction has led to an important functional use: they afford space for pipes and conduits and lend themselves to radiant heating. In radiant heating installations, the steel panel provides a degree of flexibility not obtainable when pipes are embedded in concrete, since it does not take a steel panel as long to heat or cool as is the case with a large concrete mass.

#### Dwellings

Before World War II light steel had taken a prominent place in construction of two- and three-storied garden apartment buildings, some of them housing 200 and 300 families, many with steel-stud-supported brick-veneer exteriors. The one- and two-family dwelling offers still another intriguing opportunity for light steel. One of the principal factors in the speedy postwar construction of new housing in Great Britain has been the availability of steel for construction of one- and two-story semi-detached dwellings on a large scale; nearly 37,000 steel-framed houses have been erected.

Light steel lends itself particularly well to such structures. As progress is made in developing simple methods of attaching collateral building materials, or of applying attractive, inexpensive finishes, the popularity of steel will increase.

Collateral building materials developed for use with conventional wood-stud and wood-joist framing require close spacing of the supporting framing. Using the same materials with light steel framing prevents full realization of the strength and effectiveness of the steel members; but as new techniques and materials develop, this difficulty is disappearing. As fewer members are used at wider spacings, time of erection and cost are reduced. The steel framing and complete roof of a one-story dwelling can be erected in 8 man-days; during the war on one project the erection of the steel framing of 50 five-room houses averaged 2 man-days per house; i.e., 16 man-hours.

A step toward mass production was taken not long ago, when a corporation was organized to produce 30,000 steel houses in a year. A significant part of this development was a two-year contract with labor unions, such as carpenters, electricians, and plumbers, whereby the number of trades involved was reduced from a dozen to three.

#### Fire Safety

Fire losses in American cities have grown to such alarming proportions that there is a disposition on the part of designers to place an ever higher value on fire prevention and fire safety. It is true that every year recently, scientific and commercial developments have introduced fresh fire hazards into our buildings. There is greater likelihood today of a fire starting in any building than ever before. Fire-safety deficiencies are responsible for far greater loss of life in our buildings each year than structural deficiencies. On the other hand, after years of study of fire hazards, it is possible to analyze and evaluate fire risks in buildings with reasonable accuracy. **The severity of the fire hazard varies almost directly with the weight of the combustible content.**

Bureau of Standards' surveys show that in common occupancies—residential, office, institutional, school, and assembly structures—the fuel content of the furnishings, aside from the structure, averages 5 to 10 lb per sq ft of floor area. Measured in terms of the ASTM standard fire test exposure upon which fire ratings are based, this hazard of the furnishings alone represents a fire of severity of ½ to 1 hour. In business occupancies the hazard runs somewhat higher, about 15 lb/sq ft (1½-hour hazard). If the structure itself is combustible, fuel averaging about 10 to 12 lbs per sq ft of floor area is added, increasing the total combustibles to from 15 to 20 lbs, or about three times the hazard represented by the furnishings alone. Since the severity of fire hazard varies directly with the fuel content, every pound of fuel which can be eliminated from a building reduces the fire risk. Hence, even when it is not fire-protected, steel has a very real fire-prevention value.

An incombustible structure eliminates about two-thirds of the fuel from a residential building and reduces the fire



hazard accordingly, provided common sense and discretion are used in selecting materials for interior finish. In fire tests conducted at the Bureau of Standards the furnishings of a residential occupancy were completely consumed in burn-out tests where wood-framed floors were used, whereas, when the framing was incombustible, the fire died for want of fuel after consuming only part of the furnishings, in spite of manipulation of the drafts.

It has cost many years and many dollars to learn that 3- to 4-hour fire protection of the structure is not needed for occupancies and uses which involve less than 1-hour severity of fire hazard, and that little if any added safety is afforded occupants of buildings where the higher requirement is imposed.

With due attention to safe interior finish, greater fire safety can be provided today in an incombustible building of 1- to 2-hour fire resistance rating than in most of yesterday's so-called "fireproof" buildings of concrete and masonry, which received 3- and 4-hour ratings. The details are important—matters such as enclosure of vertical shafts, proper location and protection of exits, use of reasonably safe interior finishing materials and protection of openings. The engineering principles applied to structural safety should be applied to fire safety. Floors and their supports are designed for the loads identified with the use or occupancy of the building; they should be designed also for the severity of fire hazard identified with that occupancy.

More standard ASTM fire tests have probably been made on light steel assemblies than on any other type of construction. The resultant standard ratings have been published by the Bureau of Standards (Report BMS-92) and by the National Board of Fire Underwriters. On many older, conventional types of construction only estimated fire ratings are available.

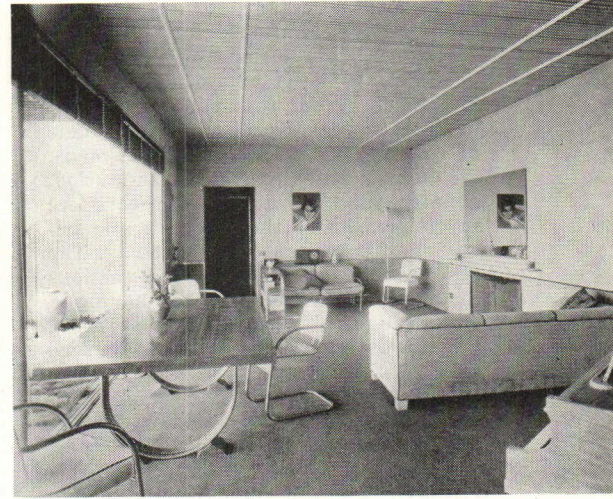
By protecting the underside of a light steel floor assembly with a  $\frac{3}{4}$ " sanded gypsum plaster ceiling, of the usual plaster mix (1 to 2; 1 to 3), applied on metal lath, fire-resistance ratings of from 1 to 2 hours are developed, depending upon whether or not a top slab of concrete 2" thick is installed; those ratings afford reasonable fire safety for residential, office, school, institutional, and assembly occupancies where the average fire hazard is in the order of  $\frac{1}{2}$  to 1-hour severity.

By using a richer mix or greater thickness of sanded gypsum plaster, or by using gypsum-vermiculite plaster, the fire-resistance rating of light steel assemblies can be increased to 3- or 4-hours or more. Vermiculite plaster provides very practicable and economical means of developing effective fire protection; in that kind of plaster, vermiculite is substituted for sand in the mix.

#### Standards to Govern Safe Use of Light-Gage Steel

Although members formed of flat-rolled

Fluted effect of this steel-finished ceiling in a residence comes from Robertson "Q-panel" construction.



iron and steel have been used for structural purposes for a century or more, lack of design data and standards formerly resulted in a corresponding lack of consistency in design practices. Reliance on rules of thumb, and on empirical, meager test data had caused manufacturers of products substantially identical to publish different structural properties and load capacities for these products. Furthermore, no recognized material standards have hitherto existed for the grades of steel suitable for use in forming these structural members.

In order that suitable standards might be established the American Iron and Steel Institute, through its Committee on Building Codes, initiated in 1939 a program of technical investigation and development, which has continued in various phases.

#### 1. Survey of Existing Installations

The Institute engaged the Pittsburgh Testing Laboratory to inspect 50 installations of painted light steel constructions in the United States and to report on their condition, with particular reference to the effectiveness of the shop coat of paint the constructions had received.

The resulting report, "Durability of Lightweight Types of Steel Construction," was published in 1942 by the American Iron and Steel Institute. The survey indicated that the installations generally were in excellent condition, structurally sound and effectively protected by the original shop coat of paint. Today's improved commercial paints might be expected to provide even better protection.

In a series of three bulletins, the University of Michigan later reported findings on a parallel study, which confirmed the conclusions given in the Institute's publication.

#### 2. Material Standards of Strength and Quality

Assurance of the strength of the material used for structural members is a prerequisite of sound design. Since material standards for flat-rolled strip and sheet steel to be used for structural purposes were lacking, the American Iron and Steel Institute put the prob-

lem of establishing such standards before the American Society for Testing Materials. As a result three tentative standards, ASTM A245-T, ASTM A246-T, and ASTM A303-T, were prepared by the Society.

ASTM A245-T covers steel from 2 to 18 U.S. standard gage (0.2499" to .0478" thick); ASTM A246-T covers steel from 18 to 25 U.S. standard gage (.0477" to 0.0225" thick); ASTM A303-T covers "Hot-Rolled Strip of Structural Quality" (.0255" to 0.2299" thick).

Each standard provides tensile requirements for three grades of steel, and bending properties for four grades, the top grade, Grade C, being required to have the same yield point as is required for the conventional heavier structural steel shapes (ASTM — A7 = 33,000 psi). The lower strength grades provide for uses where load-carrying capacities may be moderate or nil, e.g. wall panels, partitions, furniture, shelving, etc.

#### 3. Fire-Resistance Ratings

The Institute has been instrumental in arranging standard fire-resistance tests of various floor, roof, partition and wall assemblies made up of light-gage steel structural elements and of protective, fire-resistant materials. The Institute has made a study also of the severity of fire hazards identified with the various occupancies housed in buildings, as a step toward establishment of appropriately safe standards of performance for building constructions. Such standards should be related to the function to be served and should replace the past practice of specifying dimensions and kinds of material to be used in given types of structures. Publications of the American Iron and Steel Institute on this subject, "Building Code Modernization," (1946) and "Fire Protection Through Modern Building Codes" (1945), have established rational performance standards which have gained wide recognition.

#### 4. Light-Gage Steel Design Specification

The Institute organized a Technical Subcommittee to study engineering literature and develop the additional tech-



nical data necessary for establishing sound design procedure for light-gage structural steel elements. A research program, initiated at Cornell University to carry out this purpose, is now in its 11th year. Tests have been made of nearly 800 structural specimens, including a study of stress distribution, supplemented by extensive theoretical investigations of the strength and behavior of thin structural elements. The research has covered structural sections made up of plane elements having a wide range of width-thickness ratios, but to date has not included curved elements.

The American Iron and Steel Institute published a "Specification for the Design of Light-Gage Steel Structural Members" in 1946, as a result of this research program. The Design Specification now is nationally recognized as a standard.

Briefly, the Design Specification deals with design problems peculiar to wide, thin elements, such as the prevention of local instability or buckling under compression. It establishes procedures for determining safe load-carrying capacities and deflections of beams, panels, and columns made up of both stiffened and unstiffened elements.

While the basic design principles applicable to structural members formed of light-gage steel are the same as those employed for hot-rolled shapes, there are certain refinements of procedure and certain supplementary considerations.

The elements of cold-formed sections frequently are relatively wide and thin. Hence, in the design of such sections it becomes necessary to give attention to preventing local instability or buckling of the wide, thin compression elements which are likely to form a part of those sections.

In the design of thin, wide compression elements it becomes necessary to differentiate between elements stiffened along only one longitudinal edge (designated as **unstiffened**) and those stiffened along both longitudinal edges (designated as **stiffened**).

The **unstiffened** element will develop sudden local buckling at predictable unit compression stresses (often below the yield point of the metal) referred to the properties of the entire section

of which the element is a part. Hence in the design of **unstiffened** compression elements the full section may be utilized but a sharp reduction must be made in allowable unit stresses (related to the width-to-thickness ratio of the element) in order to avoid failure by local buckling.

Behavior under load of compression elements **stiffened** along both edges is, however, quite different. There is no sudden buckling at a critical stress, but a gradual development of buckling waves. That development has the effect of gradually reducing the effective width of the section, causing a redistribution of stress intensity as the load is increased. The unit stress at which this action starts depends upon the width-to-thickness ratio of the compressive element; the higher that ratio, the lower the stress. Failure in such **stiffened** elements does not occur, however, until the maximum stress in the element near the other (stiffening) elements approaches the yield point of the steel. Therefore, in the design of a **stiffened** compression element the structural properties of the section are calculated according to a reduced, or "effective," design width of that element. The reduced width is related to the width-to-thickness ratio of the compressive element and to the intensity of the compressive stress on the element.

The Specification also provides a method for evaluating the lateral bracing effect of wall sheathing materials on studs and columns, giving engineering formulas which have heretofore been lacking.

The necessary formulas and factors for sound design procedure are given in the Design Specification and in the Institute's supplementary publications, "Bulletin V, Steel Regulations" and the "Light-Gage Steel Design Manual."

### 5. Light-Gage Steel Design Manual

The Institute published in January 1949, a "Light-Gage Steel Design Manual." A supplement to the Design Specification, this is intended to assist the designer and to facilitate application of the Specification to ordinary design problems. It includes tabulations of the structural properties of about 230 sections, formed of sheet or strip steel, including zees, also single and double (back-to-back) channels and angles, having both stiffened and unstiffened flanges and legs. Charts, tables, graphs, and examples are given. The Manual should prove useful to the designer of light steel in the same manner as the standard manual, "Steel Construction,"

published by the American Institute of Steel Construction, provides data on heavy hot-rolled structural shapes.

### Public Acceptance

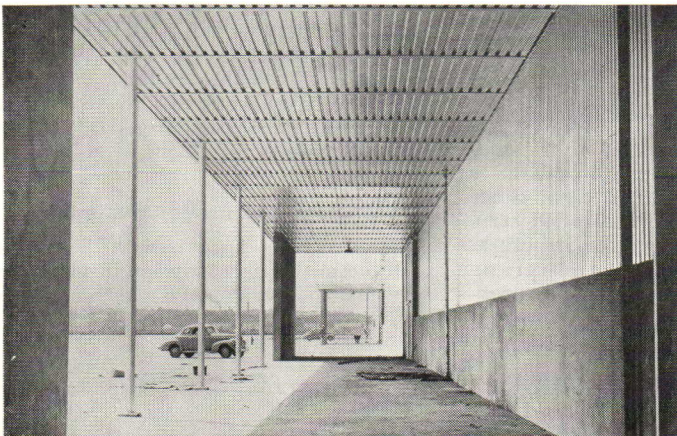
The acceptance accorded light-gage steel as a structural material during recent years is reflected in its widespread specification by architects, builders, and structural engineers throughout the country. The use of formed steel members such as roof deck, floor panels, joists, studs, wall panels, etc., has grown in surprising fashion, in spite of the unprecedented demand since the war for sheet and strip steel for other established uses. Well over 100 companies today are manufacturing members and assemblies formed of light-gage steel. A few offer complete structures.

More than 900 American cities, including New York, Chicago, and Los Angeles, have adopted the Light Steel Design Specification of the American Iron and Steel Institute as a standard of approval and acceptance. Many regional and national organizations concerned with building, such as the National Board of Fire Underwriters, the Pacific Coast Building Officials Conference, the Southern States Building Congress, and the Building Officials Conference of America likewise have given it official approval.

The advantages gained through use of light formed steel sections—speed of erection, economy, strength at minimum weight and shipping space, durability, fire safety, lightning protection, vermin- and termite-proofness, elimination of shrinkage and resulting cracks, ease of maintenance, etc.—all add up to serviceability and permanence. There is every reason to believe that through the combined efforts of architects, engineers, builders, building officials, steel producers, fabricators, and manufacturers, the expanding scope of light formed steel for structural purposes and for allied uses such as prefabricated stairways, clothes closets, cabinets, kitchen and bathroom equipment, etc., will continue.

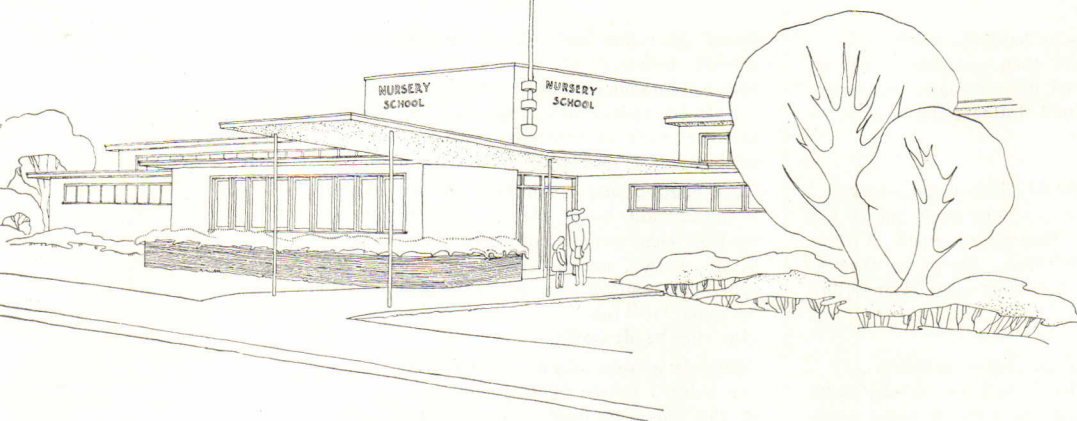
With improvement in methods of attaching collateral finishing materials, and in the quality of protective paints, insulation, and fire-protective materials, light-gage steel may confidently be expected to find increasing use.

Light steel "Q-panels" (H. H. Robertson Co.) form exterior walls and ceilings at an airplane assembly plant built during World War II; Kansas City, Kans.



Porcelain-enameled light steel in an automobile service station; one of many applications common today; Steel Building Division, Globe-Wernicke Co.





## Unit Plan for Nursery Schools

BY CATHERINE LANDRETH<sup>1</sup> AND HOWARD MOISE<sup>2</sup>

A nursery school may have functions other than those directly concerned with the activities of a group of young children. It may serve as a center for student observation, for parent education, for teacher training, or for child study and research.

Whatever the scope of its program, the care and education of a group of young children is necessarily basic to its various undertakings. This basic function has architectural implications. The architect, in planning a nursery school unit, has four major problems: He must create an environment which meets the needs of (1) a group of young children, (2) an educational program for young children, (3) effective teacher supervision, and (4) economy in construction costs. This suggests the development of a basic unit which makes architectural provision for all the children's activities during a nursery school day. Such a unit may be combined with other units. It may also be functionally related to whatever type of administrative center meets the needs of the school program.

The accompanying sketches illustrate one solution of the problems posed by a unit for 30 children.

The problems, which are those of meeting the housing needs of a group of nursery-school children and of effective teacher supervision, are solved as follows:

### 1. THE YOUNG CHILD NEEDS PROVISION FOR:

#### activity

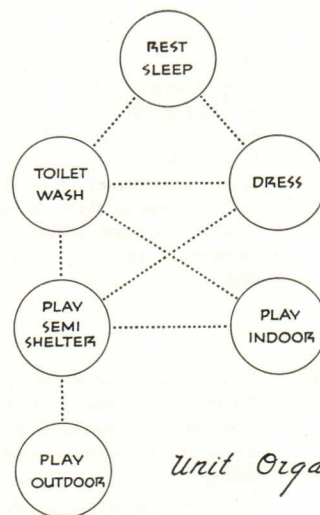
Activity of many different kinds

Young children spend the greater part of their time in large muscle activities. They run, jump, climb, pedal, push, and pull simply for the fun of doing it.

#### safety

Safety in all possible circumstances

As an age group young children are the most frequent victims of accidents in the home. Their lack of motor coordination, their slow reaction time, their lack of experience and hence of judgment make it necessary to eliminate all avoidable hazards from their environment.



Unit Organization

### THE ARCHITECT PROVIDES:

Adequate space for outdoor, semi-shelter, and indoor activities, with direct communication from one to the other

Optimum play space per child is: outdoors, 300 sq ft; indoors and semi-shelter, 50 sq ft.

Maximum year-round use of outdoor facilities is encouraged by a sunny exposure, shelter from prevailing winds, shade from summer sun, a slight ground slope, a permeable, nonabrasive, dust-free ground surface, and adequate paved space for pedal toys.

Safety devices

The outdoor area is completely enclosed by the building and fence. The children's sleep room has an emergency exit leading outdoors. The door leading from the nursery unit to the corridor has a latch five feet from the ground. All window glass within four feet of the ground is shatterproof. Corners of locker and shelving jogs are rounded. The spatial relationship of the indoor, semi-shelter, and outdoor areas insures the teacher the opportunity to oversee all child activities.

<sup>1</sup>Director of the Nursery School, Institute of Child Welfare, University of California  
<sup>2</sup>Architect and Professor of Architecture, University of California



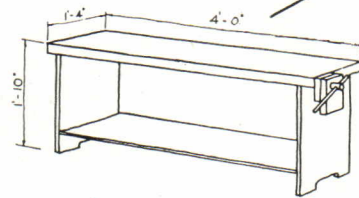
**1. THE YOUNG CHILD NEEDS PROVISION FOR:**

- noise** *Reduction of noise to bearable levels*  
The very nature of their activities tends to make young children noisy companions. Noise, however, excites and fatigues both children and staff members.
- temperature** *A constant, comfortable indoor temperature*  
Young children are not only much nearer the floor than adults; they spend much of their time literally on the floor. Hence for them it is floor-level and near-floor-level temperature that is important.
- light** *Adequate light for all indoor activities*  
While young children's activities hardly come under an adult classification of close work, even a simple operation like fastening a button or putting a puzzle together may make considerable visual demands when the activity is unfamiliar and when the eyes concerned are better adapted for distant than near vision, as is true in early childhood.
- materials** *Using and storing a variety of materials*  
The young child is not a book student.  
He learns from first hand experience with a variety of such manipulative material as blocks, puzzles, carpentry, art, and house play equipment. These require considerable accessible storage space. The child's enjoyment and convenience in using materials is fostered by storage units which are peculiarly suited both to what they have to store and to the child's convenience in using the storage facilities. Because of their extent, storage units are both a structural and a potentially decorative element in the interior design of a nursery unit.
- physical needs** *Taking care of physical needs*  
*Drinking.* The young child is literally a very fluid creature. He needs easy access to drinking water to maintain and replace his body fluids.  
*Toileting and washing.* His bladder capacity and control necessitate frequent trips to the bathroom. For his convenience it should be easily accessible to all his activities. His art and other hand work make frequent washing equally necessary.

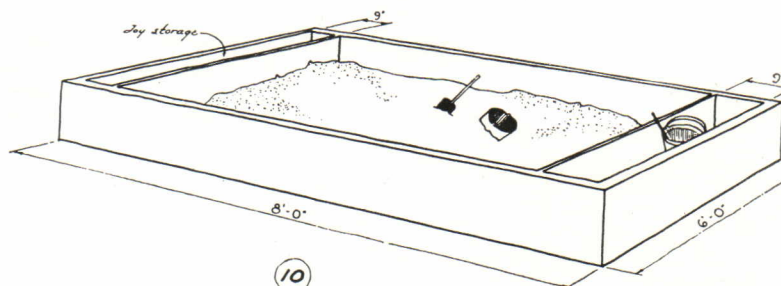
Some of the built-in equipment and storage units that are called for in the outline above, are shown at the right.

**THE ARCHITECT PROVIDES:**

- Sound absorption and selective segregation of activity centers*  
Sound-absorbent materials in the ceiling, walls, and floors reduce noise indoors. The noisier activities such as carpentry take place in the semi-shelter or outdoors.
- Floor heating and elimination of floor drafts*  
Windows that hinge inwards four feet from the floor keep incoming air above the children's heads. A floor heating system keeps floor and near-floor temperatures at comfortable levels. In some localities an air-conditioning system also may be desirable.
- Adequate window space, protection from glare and indirect ceiling lighting*  
In the playroom light enters on three sides. The bathroom has a panel of windows on the north side. The semi-shelter has a panel of windows on the west side. Indoors indirect lighting panels are flush with the ceiling.
- Built-in equipment and storage facilities adapted to stored materials and to child's convenient use*  
*Playroom.* Block shelves (7) adjacent to floor space for their use.  
Record and book rack (8) with shelves for art materials on other side.  
Drying lines (16) in dressing area adjacent to locker storage.  
Staff storage cupboard (5) in work centers.  
*Semi-shelter.* Wood storage under carpentry bench (9).  
Sand toy storage in troughs at ends of sand box (10).  
Easels (12) for finger painting.  
Drying line (16) for finger painting.  
Storage for yard toys under house play center (1).
- Facilities for*  
*Drinking.* Drinking fountains (11) in playroom and semi-shelter.
- Toileting and washing.* The bathroom is centrally located adjacent to dressing, sleep, indoor, semi-shelter, and outdoor play areas. Towel, washcloth, and comb storage space (6) would be unnecessary in a half-day program. Reduction in bathroom area could be balanced by increase in playhouse area.



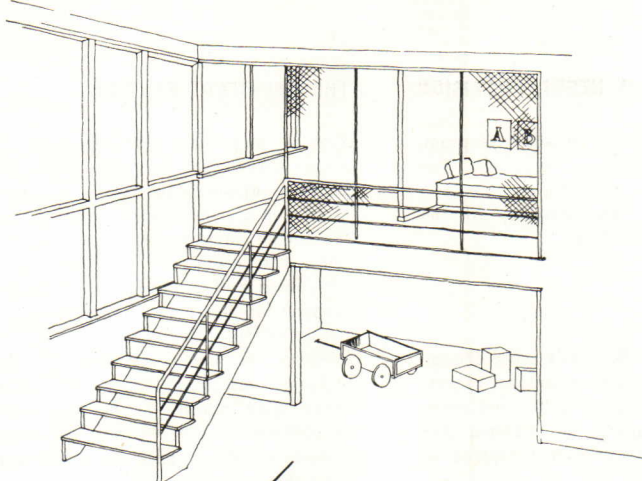
⑨  
*Carpentry Bench*



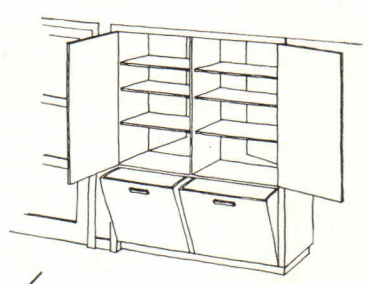
⑩  
*Sandbox*

**MATERIALS AND METHODS  
NURSERY SCHOOLS**

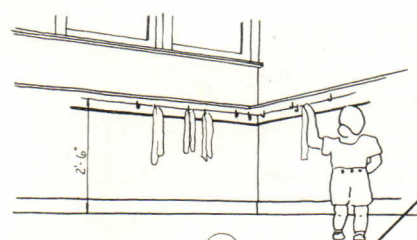




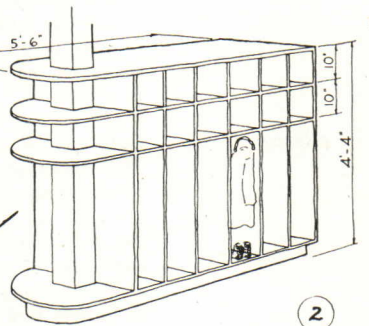
① Playhouse



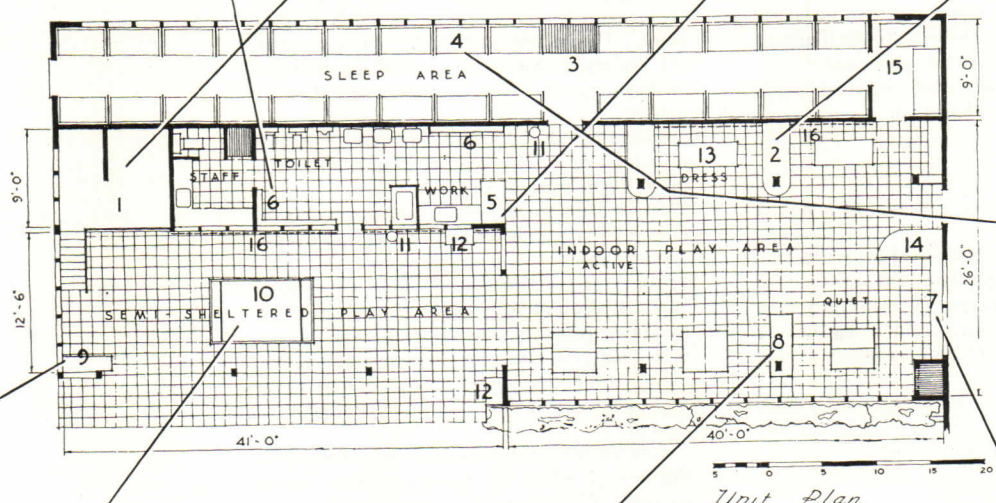
⑤ Staff Storage Cupboard



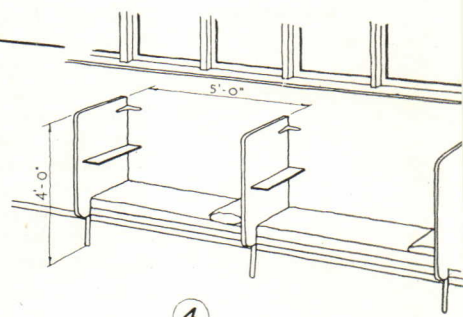
⑥ Shelf with Towel Hooks



② Locker projection

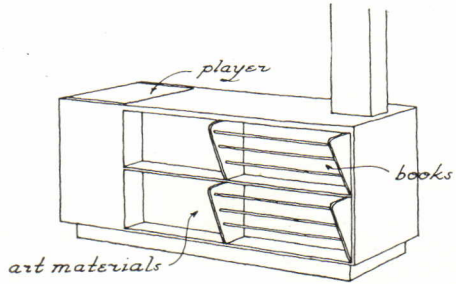
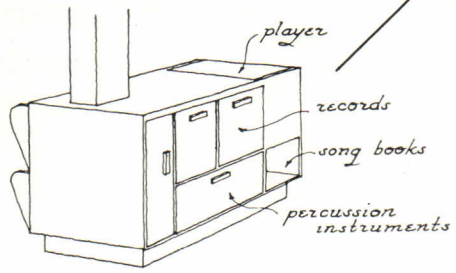


Unit Plan

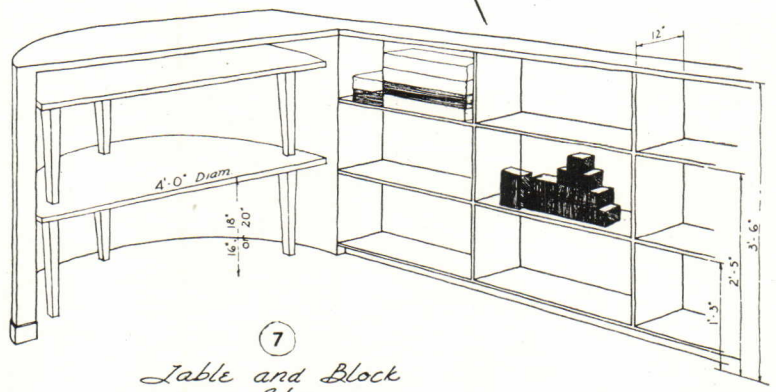


④ Lot Space

OUTDOOR PLAY AREA  
10,000 SQUARE FEET



⑧ Book and Record Cabinet



⑦ Table and Block Storage



**1. THE YOUNG CHILD NEEDS PROVISION FOR:**

*Rest or naps.* Even in a half-day program, vigorous activity calls for a period of rest. The value of the rest or the nap period depends in no small measure on the adequacy of the physical facilities for resting.

*Dressing.* The young child needs some change in his clothing as he goes from indoors to outdoors and from the playroom to the rest room. He needs, therefore, space for dressing and undressing, and for his convenient storage of his clothes.

*Lunching.* Light refreshment in the middle of a half-day program, and a noon meal in a full-day program, are other essential physical needs for which architectural provision must be made.

*Getting off alone or with others in a small space*  
The child's prenatal environment is spatially close fitting. Even at two, three, and four years of age children still seem to enjoy and get a feeling of security from snuggling into small spaces.

Obviously any space looks larger to a little child than to a large adult. An area adequate for the activities of 30 children may well appear uncomfortably vast to a three-year-old.

Space in the nursery unit therefore needs effective, functional subdivision.

privacy

independence

*Developing independence and skill in handling his own affairs*

A physical environment for a young child may be facilitating or frustrating. An environment in which a young child can independently take care of his physical needs and independently embark on a variety of play activities fosters a sense of adequacy.

It contributes in a real sense to the child's social development in helping him to become an independent member of society.

**THE ARCHITECT PROVIDES:**

*Rest or nap.* The sleeping area (75' x 9') allows 24 square feet for each child. The pullman arrangement gives a maximum of privacy in a minimum of space. A shelf above the end of each cot simplifies changing covers when two groups of children use the unit each for a half-day program. A built-in frame support for the cots eliminates cot legs and simplifies floor cleaning.

*Dressing.* Locker projections (2) define the dressing area and contain 30 lockers. The upper shelf allows for holding over articles of clothing should the unit be used by two groups of children each for a half-day. Dressing benches are 6" high.

*Lunching.* The work unit between the bathroom and playroom can be used in a half-day program for preparing and washing up after fruit juice. For an all-day program children eat in the playroom, the food and dishes being brought by food truck from the kitchen.

*Functional subdivision of play area which does not interfere with children's free movement and with teacher supervision*

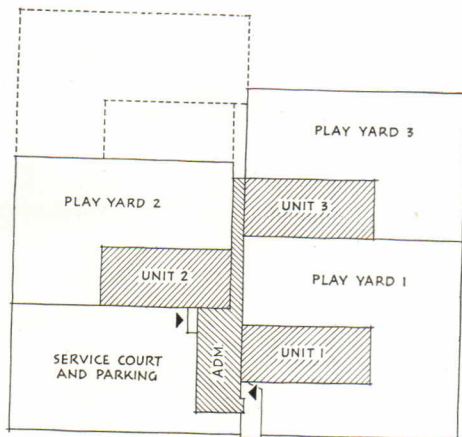
*Indoor play area.* Locker projections both define the dressing area and break it into smaller spaces. A small room (15), with folding cots, opening off the playroom gives a child who seems socially out of sorts a chance to play alone. The record and book rack projection (8) defines a small area for looking at books or listening to music; a larger one for art activities.

*Semi-shelter play area.* A playhouse (9' x 10') at a level four feet from the ground is fronted by a large, mesh-wire screen.

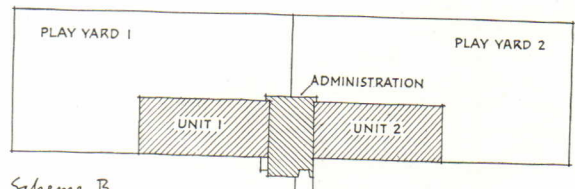
*Playroom, bathroom, and storage fixtures of dimensions suitable for the young child's independent use*

Lockers, drying wires, book rack, and equipment shelves, finger paint board, drinking fountain, yard toy storage, carpentry bench and wood bins, sand toy storage, wash basins, mirror, towel holders, toilet and urinals are at heights convenient for the child's independent use.

Further, all storage fixtures are adjacent to the area in which the stored materials are to be used. The structural arrangement thus suggests the constructive use of the material, and the architectural plan becomes an expression of the educational program.



Scheme A



Scheme B

**MATERIALS AND METHODS**

**NURSERY SCHOOLS**



## 2. EFFECTIVE TEACHER SUPERVISION OF CHILDREN'S ACTIVITIES IS FACILITATED BY:

<b>supervision</b>	<i>Teacher's ability to see what is going on in the entire unit by moving only a few feet</i> All children's activities have potential educational content, hence all profit from teacher supervision and guidance.
<b>reduction of labor</b>	<i>Reduction to a minimum of the manual labor involved in lifting and moving equipment</i> Even under the best conditions nursery-school work is physically demanding because of the amount of bending necessarily involved when adults work in a physical environment adapted for young children.
<b>materials</b>	<i>Preparation within the unit of all art and other materials for children's use</i> The type of educational experiences offered nursery-school children depends to some extent on the ease with which the necessary preparations can be made.
<b>physical needs</b>	<i>Adult toilet and washroom facilities within the unit</i> Work with young children is necessarily somewhat disheveling. Adult toilet and washroom facilities within the unit are not only a health necessity, they are a contribution to teacher morale.

## 3. ASPECTS OF THE NURSERY SCHOOL PROGRAM OTHER THAN THOSE DIRECTLY CONCERNED WITH THE CHILDREN'S ACTIVITIES:

Program activities other than those directly concerned with the children are likely to vary with the purpose and size of the school. For this reason it is practical to make architectural provision for them independent of the nursery unit.

*An all-day program for children of working mothers*

This naturally calls for a kitchen and food storage facilities with an outdoor entrance, and possibly for more extensive isolation facilities.

In addition provision may be needed for any or all of the following:

### *Parent education*

This includes parent-teacher conferences,

parent discussion groups, directed observations by parents, library facilities, and posted information concerning the children's progress and development.

Architectural provisions for parent education are an office for conferences, an observation gallery with a one-way vision screen, a shelf of books, and a bulletin board in the reception area, and adequate chair storage. The children's playroom can be used for evening meetings.

### *Child study and research*

This includes medical examination, anthropometric measurement, mental testing, and observational and experimental studies. Depending on the scope of the research program, separate rooms with observation units may be needed for each of these activities. In schools where there is no organized research program one main office may serve the function of a medical examination room, a conference room,

## THE ARCHITECT PROVIDES:

*Window placement and spatial relationship between dressing, bathroom, play, and rest rooms which makes it possible to see what is going on in the entire unit by moving only a few feet*

The building plan determines, to some extent, the number of staff members required for effective supervision.

*A separate rest room with built-in cots for children's rest and nap periods*

A separate rest room not only makes better rest conditions for young children, it saves teachers the back-breaking job of putting cots up and down, or laying down and picking up sleeping pads, in a playroom. Time spent in manual labor is time lost from child guidance.

*An adult work center adjacent to a staff cupboard (5) opening in both the playroom and the work center*

A teacher in the work center can prepare materials while exercising some supervision over the bathroom and adjacent areas.

*A small powder room for staff members off the children's bathrooms*

The adult extension of the children's bathroom is fitted with toilet, washbowl, closet, dressing table and bench.

and a record room for filing information concerning individual children.

### *Teacher training*

Necessary provisions for a number of student teachers in training are adequate locker and toilet facilities. A conference room may also be necessary for discussing progress and procedures.

A nursery school that is used as a laboratory for high-school or college students requires adequate one-way vision observation galleries. It also requires locker facilities in or off the reception area for storing books and coats.

### *Well-baby center*

College or university nursery schools frequently require facilities for the observation and study of pre-nursery-school age infants and toddlers, and for an educational program for their mothers. The scope of the program determines the physical facilities required.

## INCORPORATING THE UNIT IN A NURSERY SCHOOL PLAN

Scheme A and Scheme B suggest two possible combinations of units for a two- and a three-unit nursery school. The administration unit in each scheme has facilities for serving a noon meal, for medical examination, for anthropometric and psychometric measurements, for temporary isolation in case of sickness, and for the filing of records.

### Half-Day Program:

1. Morning inspection
2. Removing wraps if necessary
3. Free play indoors, in semi-shelter, outdoors
4. Toileting and washing as need arises
5. Midmorning fruit juices served indoors or in semi-shelter
6. Putting away play materials
7. Quiet period, stories and music
8. Rest on cots
9. Picking up belongings when called for by parents

### All-Day Program:

- 1, 2, 3, 4, 5, 6, as at left.
7. Quiet period, stories and music
8. Rest on cots
10. Lunch
2. Removing garments for naps
11. Nap
5. Mid-afternoon fruit juice or milk
3. Free play outdoors
9. Picking up belongings when called for by parents
12. Temporary isolation of a sick child

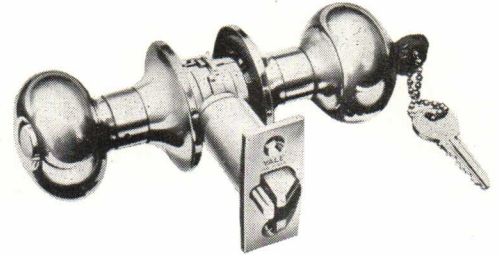




# Products

## Research Advances

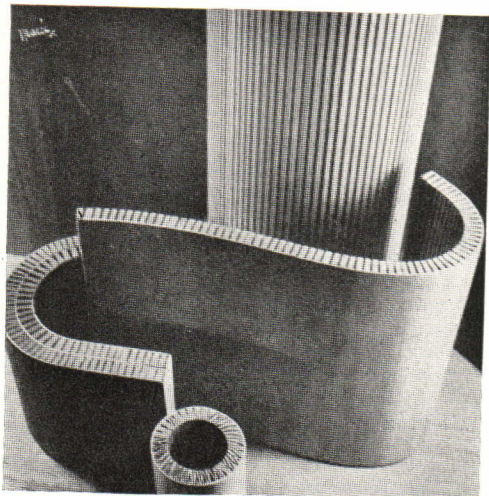
During the past month an encouraging number of news items have come from manufacturers, associations, and institutes in the building field indicating progress in basic research in the behavior of materials and equipment. For example, the National Warm Air Heating and Air Conditioning Assoc. announces a three-part research program at the University of Illinois, with results of various studies to be released soon. In another field, Lehigh University is studying design of reinforced shell-roof structures. The Housing and Home Finance Agency announces results of tests of wood-base flooring materials (one a "parquetry" of fiberboard base inset with hardwood strips; two others, compressed wood-waste materials bonded with phenol resin). Under traffic, heavy-rolling, and indentation tests the wood-waste materials held up well; in abrasion tests, not so well. Structural Clay Products Institute reports on tests at North Carolina State University of a lightweight clay unit formed by mixing clay with sawdust and other combustible materials. Tile units weighing half as much as conventional ones had lower compressive strength but sufficient value for use in nonload-bearing construction. Additional studies by this Institute at the New York State College of Ceramics have led to new methods of mud-brick manufacture which should make production of modular sizes easier.



## Research Results

Fruits of research are beginning to appear in announcements of individual new products. In addition to those listed on the opposite page, the following might be mentioned:

A sprayable coating for finishing monolithic, concrete, brick, or block walls, known as "Scotch-Top" plastic wall covering. Color and texture are provided in a single spraying operation, and the coating resists scuffing, grease, oil, water, and sunlight, according to the producer. Right now it is available only in Chicago and a few other areas; national distribution is planned when skilled applicator crews are trained. Manufacturer is Minnesota Mining and Manufacturing Co. of St. Paul.



Yale & Towne recently announced a new "Heavy Duty Tubular Line" (top illustration) with five basic locksets adaptable to almost any function. They are six-pin tumbler locks, with deadlocking bolts. Big contribution is the simple method of installation (in two holes bored in the door) which reduces installation time to about ten minutes. The cost saving in multiple-unit buildings is obvious.

A flexible wooden sheet material called "Superflex" is being marketed in the United States by Wall Trading Corp. of New York. Manufactured in Holland, it consists of a layer of veneer on which separate narrow laths are glued transversely. Panels are 4 by 8 ft; in three thicknesses—7/16", 19/32", and 25/32". It is available in birch, beech, oak, or mahogany. Panels can be bent to a 360° radius or in an S-curve.



**air and temperature control**

**Hursecal Unit:** new type of heating system does away with coal, fuel oil, chimneys, furnaces, storage tanks, flues; steel radiator unit electrically heated through medium of hermetically sealed oil; thermostatically controlled. 12 models, various heights, designs. Acrow, Inc., 155 Washington St., Newark, N. J.

**Evaporative Condensers:** using air and water spray to cool hot vapor and change it to liquid during normal course of refrigeration or air-conditioning cycle; operate as separate, remotely installed units for evaporative-type compressors without condensers. 8 models, ranging from 2- to 50-ton capacities. Frigidaire Div., General Motors Corp., Dayton 1, Ohio.

**High-Boy Oil Burning Furnace:** vaporizing type, continuous warm-air circulation by means of 3-stage flame controlled by **Mercoïd Thermostat**; 75,000 Btu gross output. J. L. Gillen Co., 204 E. High St., Dowagiac, Mich.

**Palmaire Automatic Humidifier:** portable, for residential and office use; unit disperses 12,000 cu ft of washed air per hr; may be connected for automatic water refilling. Palmer Mfg. Corp., Phoenix, Ariz.

**Commercial Precipitators:** prepared to customer specifications. Two new electric air filters added to current "packaged" line, ready to install. All units guaranteed to remove more than 90% of dust and other air-borne irritants. Trion, Inc., 1000 Island Ave., McKees Rocks, Pa.

**Copper Convectors:** for steam or hot-water heating systems. Cabinet-type units, consisting of copper tube and aluminum fin heating elements; adaptable for either free-standing or semi-recessed installations. United States Radiator Corp., 300 Buhl Bldg., Detroit, Mich.

**Walton Humidifier:** compact, easily installed unit, vaporizing better than 1/2 gal of water per hour; water flow level regulated by automatic float assembly, 60w motor wired in series with humidistat. **Junior Industrial Humidifier:** can be suspended from ceiling or installed on wall bracket; evaporating capacity about 1/2 gal of water per hour. Walton Laboratories, Inc., Irvington, N. J.

**Weather-Chron Regulator:** wired into regular room thermostat circuit for control of night setback of building temperatures; installed outside building. Weather Controls Div., Automatic Devices Co., 53 W. Jackson Blvd., Chicago 4, Ill.

**Industrial Precipitron:** all-aluminum model handles 10% greater air volume than previous units of same size; 17% more dirt-trapping area. Westinghouse Electric Corp., 306 Fourth Ave., Pittsburgh, Pa.

**construction**

**Prespine:** especially processed wood, in panel form, for interior, exterior use: doors, kitchen units, other woodwork. Curtis Companies, Inc., Clinton, Iowa.

**Leatherback All-Purpose Building Paper:** lightweight, asphalt impregnated; for application over subflooring or fill under concrete slab; also used to waterproof structures and as temporary weather cover for field-stored materials. Protective Papers, Inc., Union, Ill.

**Plastered-In Flush-Type Casings:** steel construction, newly designed, with ridge in nailing flange to create tension when casing is nailed in place; no need for special casing clips, application speeded. Used as trim for doors, windows, other wall openings; in addition they act as plaster grounds, protect plaster corners against impact damage. Inland Steel Products Co., P. O. Box 393, Milwaukee 1, Wis.

**Standard Architectural Shapes:** complete line in extruded aluminum include: thresholds, window sills, jambs, moldings, handrails with balusters and finishing shapes, copings, fascia, and gravel stops; available for immediate shipment. Reynolds Metals Co., 2500 S. Third St., Louisville, Ky.

**doors and windows**

**Fenestra Stock Hollow-Metal Entrance Door:** new design in one size only (3' x 7'); in single or double openings, may be hinged right or left to swing in or out. Frames, template hardware supplied. For commercial, industrial use. Detroit Steel Products Co., 2250 E. Grand Blvd., Detroit 11, Mich.

**"Golden" Plate Glass:** resumption of production. Excludes more than 99% ultraviolet rays;

used for store fronts to prevent fading of merchandise, in libraries for protection of valuable documents, and as protective screen in television. Stock sizes run to maximum of 100" x 150". Libbey-Owens-Ford Glass Co., Nicholas Bldg., Toledo 3, Ohio.

**Concealed Closer:** for metal interior doors; closing mechanism entirely concealed within top rail of door; shock absorber included. LCN Closers, Inc., 466 W. Superior St., Chicago, Ill.

**Stanley No. 23 Roller Catch:** for interior doors; permits smooth, silent operation with simple push-pull action; easily installed at any desired location on door. The Stanley Works, New Britain, Conn.

**Visulite Narrow Stile Doors and Jambs:** packaged unit constructed for flexibility in storefront installations; especially constructed jamb adjusts to fit any condition; heavy-gage extruded aluminum units shipped complete with hardware; installation time approximately 2 hours. Martin Katz Corp., 625 Bergen St., Brooklyn 17, N. Y.

**Rolling Door Hanger:** for plywood doors for which no mortising is necessary; bronze construction, phenolite fiber, ball-bearing rollers; simple installation. Metal Products Corp., 807 N. W. 20th St., Miami, Fla.

**Dumb-Waiter Doors:** factory assembled steel units, for use with electric or hand-powered dumb-waiters. Four types. Sedgwick Machine Works, 164 W. 15th St., New York 11, N. Y.

**Awning-Type Wood Window:** mechanism lowers each vent from top as it opens outward, permitting easy cleaning from inside of building; controlled ventilation, draft-free air circulation; bronze weather stripping at top and bottom of sash. Super Vent Co., 905 W. North Ave., Chicago, Ill.

**Aluminum Casement Window:** new interlocking tenoned joint for extra strength and rigidity; corners mechanically joined, no welds used; muntin bars optional. Timm Industries, Inc., 5245 W. San Fernando Rd., Los Angeles 26, Calif.

**Padlock:** solid brass case, stainless steel shackle and springs, 5-pin tumblers; rust proof, weather resistant. Sargent & Co., New Haven, Conn.

**Door Latch:** solid brass, 3 finishes; modern design, oval-shaped knob; locks by merely pushing knob, eliminating push buttons or locking levers. Wright Products, Inc., St. Paul Park, Minn.

**3-Way Cabinet Lock:** new pin tumbler, solid brass lock with rotating cylinder permits lock to be used as drawer lock with bolt moving vertically, or as cupboard and cabinet lock for right- or left-hand doors with bolt moving horizontally. Yale & Towne Mfg. Co., 45 Market St., Stamford, Conn.

**electrical equipment and lighting**

**Silv-A-King Continulite Line:** newly designed, heavy-duty fluorescent fixtures; available with 5" spaced G-E turret lampholders. Bright Light Reflector Co., Fairfield & State Sts., Bridgeport, Conn.

**Spreadlite No. 6630:** recessed incandescent fixture, available in 100, 150, 300w, for indoor or outdoor installation; wide-angle light distribution, for commercial, residential use. Preststeel Co., 800 Bancroft Way, Berkeley, Calif.

**Silv-A-King Slimline Fluorescent Fixture:** one-piece heavy-gage steel channel, finished in gray baked enamel; slide-grip hanger runs full length of unit; **E-Z Lok** device permits quick assembly or disassembly of reflector from hood; high power factor ballasts. Bright Light Reflector Co., Fairfield & State Sts., Bridgeport, Conn.

**Voltage Stabilizer:** new model; hermetically-sealed, frequency-compensation of 15w rating; stainless steel mounting studs. Raytheon Mfg. Co., Waltham, Mass.

**Sentinel:** fluorescent luminaire for single mounting; 4-ft unit using four 40w-lamps, which are replaced through top or from bottom of luminaire by lowering louvers hung from studs; metal parts in metallic satin finish. F. W. Wakefield Brass Co., Vermilion, Ohio.

**finishers and protectors**

**Flamort:** fire retardant, applied by spraying, pressure gun, or dipping, on all kinds of materials such as drapes, upholstery, scenery, rugs,

etc.; also used effectively in flameproofing of wood products. Flamort Chemical Co., 746 Natoma, San Francisco, Calif.

**Gordon's "101":** new sealer preserves natural color of wood under any finish; prevents "bleeding" of sap, pitch, or gum; effective also on porous materials; no sanding required after sealing. Gordon Chemical Products, Inc., 114 N. Western Ave., Los Angeles 4, Calif.

**Alcohol-Resistant Wax:** consisting of water-dispersed Carnauba wax containing no harmful solvents; can be used on any type of flooring material without increasing slipperiness. Huntington Laboratories, Inc., 968 E. Tipton Ave., Huntington, Ind.

**insulation (thermal, acoustic)**

**Fiberglas Acoustical Tile:** lightweight, perforated tile; incombustible, high sound-absorption and thermal insulation properties. Can be cemented to solid backing or mounted on wood or metal furring strips, or on suspended ceilings. Owens-Corning Fiberglas Corp., Nicholas Bldg., Toledo 1, Ohio.

**prefabrication**

**Precision-Built Houses:** again being produced in low and medium price brackets. Each unit constructed from company's plans, available to buyers, or from designs of purchaser's own architect (supervised by Precision-Built technicians). Houses will be marketed through local real estate brokers. Vestar Corp., 49 E. 53rd St., New York, N. Y. (Not produced by Homasote Co., as noted in January 1949 P/A.)

**sanitary equipment, water supply, drainage**

**"Ohio" Bathtub:** steel constructed, with characteristic Crane panel design; wide, flat rim (5 1/2" wide); complete with chromium-plated overrim supply and easily operated Dial-ese controls. Crane Co., 836 S. Michigan Ave., Chicago 5, Ill.

**Easy-Level Floor Drains:** especially designed to make floor level adjustment possible at all times; heavy-duty, dura-coated cast-iron body, and integral seepage pan; frame and grate. 2 models in complete range of sizes. J. A. Zurn Mfg. Co., 1801 Pittsburgh Ave., Erie, Pa.

**specialized equipment**

**Intercom Circuit:** new system makes it possible to answer paged messages from high noise level areas; combines Trumpet-type paging reproducer and two-way staff station for use in intercom or sound systems. Designed for simple mounting on wall or partition. Executone, Inc., 415 Lexington Ave., New York 17, N. Y.

**Californian Family-Sized 40 Gas Ranges:** low-priced models with higher-priced features; temperature-controlled baking oven, waist-high "Broyl Oven," one-piece oven and broiler construction, porcelain enameling inside and out, etc. Western Stove Co., 8536 Hays, Los Angeles, Calif.

**Kodaslide Table Viewer and Projection System:** for miniature photographic transparencies; projects enlarged images on new-type rear projection screen built into viewer; can be used in fully lighted room. Eastman Kodak Co., Rochester, N. Y.

**"Scotch" Edger:** for applying protective edges to blueprints, posters, maps, sheet music, etc.; automatic self-adjustment for different thicknesses of paper up to 1/16". Either 1/2" or 3/8" wide tape available for use with edger. Minnesota Mining & Mfg. Co., 900 Fauquier Ave., St. Paul 6, Minn.

**surfacing materials**

**Decorative Plastic Bricks:** for interiors, available in colors or crystal clear; interlocking flanges on 4 sides for quick assembling. Columbia Protokostite Corp., Carlstadt, N. J.

**Hastings Alumitile:** aluminum wall tile in 14 different colors that will not crack until metal itself is torn; applied to any smooth wall surface with special waterproof mastic; variety of shapes and sizes. Metal Tile Products, Inc., Hastings, Mich.





# Manufacturers' Literature

★ *Editors' Note: Items starred are particularly noteworthy, due to immediate and widespread interest in their contents, to the conciseness and clarity with which information is presented, to announcement of a new, important product, or to some other factor which makes them especially valuable.*

## AIR AND TEMPERATURE CONTROL

★ 1-233. **Factory Made Radiant Heating Coils**, 6-p. illus. folder on radiant-heating system said to provide better heating circulation than sinuous type of radiant-heating coil. Installation data, typical floor and ceiling layouts. Even-Ray Co., Inc.

1-234. **Dust Stop Air Filters (D47-34)**, 8-p. pamphlet describing replacement type for use in heating, ventilating, air-conditioning systems. Description, typical installation details, design data, short form specification, photos. Owens-Corning-Fiberglas Corp.

Two booklets on ram- and screw-type stokers. Design features, general data, ratings and specifications charts. Fredrick Iron & Steel Co.:

1-235. **Frederick Stokers, Ram Type**  
1-236. **Frederick Stokers, Screw Type**

1-237. **Unitrane (Bul. DS-420)**, 32-p. illus. bulletin on ductless air-conditioning system providing accurate temperature and moisture control in multiroom, multistory buildings. Application and installation data, general information, diagrams, technical tables, architectural specifications, roughing-in dimensions. Trane Co.

1-238. **Series R Unit Heaters, AIA 30-d-11 (WN-133)**, 12-p. illus. bulletin on newly designed cabinet-type unit heater for commercial or industrial application where low noise level is essential. Technical data on design and installation, capacities, dimensions, mechanical drawings and charts. Warren Webster & Co.

1-239. **Evaporative Condensers (Bul. C-1100-B28)**, 8-p. illus. bulletin. Description of design and operation, specifications, capacity ratings, dimensions. Worthington Pump & Machinery Corp.

## CONSTRUCTION

★ 3-49. **How to Use Atlas Speed Forms**, 32-p. illus. booklet on steel forms for concrete construction. Specifications, erection and maintenance instructions, form tie dimensions, typical application of accessories, data sheet, photos. Irvington Form & Tank Corp.

3-50. **Trimix (BP3017)**, 6-p. illus. folder on liquid admixture for any type of concrete, mortar, stucco, plaster work.

Advantages, directions on use, photos. Building Products Div., L. Sonneborn Sons, Inc.

★ 3-51. **Architectural Shapes**, portfolio giving full details on standard aluminum architectural shapes. Loose 8½" x 11" data sheets for easy filing. Cross sections in actual size; dimensions, sizes, weights, assembly drawings, index. Reynolds Metals Co.

## DOORS AND WINDOWS

4-167. **Lumite**, 4-p. folder on insect screen cloth; will not rust, corrode, stain, or bulge. Test results, general data. Lumite Div., Chicopee Mfg. Corp.

★ 4-168. **Fenestra Metal Doors (DO-2)**, 16-p. illus. catalog describing new stock hollow-metal entrance door, also various other stock hollow-metal swing and slide doors, frames, locks, hardware. Installation instructions, specifications, types and sizes, index. Detroit Steel Products Co.

4-169. **"Quality-Approved" Aluminum Windows**, 12-p. booklet containing specifications for double-hung, casement, and projected windows. Aluminum Window Mfrs. Ass'n.

4-170. **Glass Exit Door (Reprint from 1947-48 Edition)**, 4-p. folder and 4 loose sheets, on emergency door with automatic releasing device actuated by weight of person; door automatically locks again upon closing. Description, operating data, diagrams, mechanical details. Balch Glass Exit Door Release.

4-171. **Kinnear Rolling Doors, AIA 16-D-13**, 28-p. illus. catalog on service type, fire, RoL-TOP, and hangar steel rolling doors and grilles; also doors for special purposes. Advantages, construction features, operation, descriptions, specifications, photos, index. Kinnear Mfg. Co.

4-172. **Lupton Metal Windows and Doors**, 33-p. illus. catalog. Revisions for 1949, general information, descriptions, photos, drawings, details, sizes and dimensions, specifications. Michael Flynn Mfg. Co.

4-173. **Installation Instructions**, 3 folders giving instructions for installation of canopy-, track-, and double track-type garage doors. Photos, detail drawings, installation diagram. Strand Building Products Co.

4-174. **Orange Metal Doors**, 8-p. illus. booklet on standard-size doors and frames for residential, commercial, and industrial use. General information, construction details, specifications, elevation, cross-section, plan, photos. Snead's products still available in new company. Virginia Metal Products Corp. (Formerly Snead & Co.)

## ELECTRICAL EQUIPMENT AND LIGHTING

★ 5-170. **The New Dramalite**, 4-p. illus. folder describing new commercial fixture of simple, modern design, developed for use of 150w reflector lamp; egg-crate louver gives 45° cut-off. Description, photos of various models. Century Lighting, Inc.

Two 4-p. folders on prefabricated louvered ceiling material providing diffused, glareless, almost shadowless, illumination; can be used with any lighting source. Description, installation and information data, specifications. Federal Electric Co.:

★ 5-171. **Cell-Ceil**  
★ 5-172. **Cell-Ceil Information and Installation Data**

5-173. **Federal Noark**, 8-p. illus. catalog of electrical products: motor controls, multi-breakers, bus ducts, panelboards, safety switches, etc. Descriptions, photos. Federal Electrical Products Co.

★ 5-174. **The Fleur-O-Lier Index System**, 30-p. brochure on index system for specifying lighting performance and rating of fluorescent lighting fixtures. Fixture and service classifications, test and inspection procedures. Fleur-O-Lier Mfrs.

5-175. **Onan Electric Plants (A138A)**, 20-p. illus. booklet describing complete line and special accessories. General data, proper selection. D. W. Onan & Sons, Inc.

## FINISHERS AND PROTECTORS

6-148. **Protecting Your Investment in Wood**, 4-p. illus. bulletin on wood preservative and methods of combating wood decay. Photos, shipping data. Chapman Chemical Co.

6-149. **Library of Colors (R-115)**, 24-p. booklet on color harmony for residential interiors and exteriors. Suggestions, color plates, charts. Devoe & Reynolds Co., Inc.

6-150. **Pecora**, leaflet describing items such as coatings, adhesives and mastics, mortar stains, paints and varnishes, etc. Pecora Paint Co., Inc.

## INSULATION (THERMAL, ACOUSTIC)

Three booklets on various forms of insulation for low-temperature structures, residential, and industrial construction. General, detailed data, refrigeration applications, recommended installation practices, design data, selection of appropriate form, photos. Owens-Corning Fiberglas Corp.:

9-114. **Insulation of Low-Temperature Structures, AIA 37**

9-115. **Building Insulation in Residential Construction, AIA 37-B**



9-116. **Fiberglas Insulations for Industry** (1-44-1-R48)

9-117. **Palco Insulation Wool** (Bul. HM-16), 8-p. illus. bulletin on insulation wool made from redwood bark fiber. Description, advantages, applications. Pacific Lumber Co.

**WATER SUPPLY**

19-344. **Cyclotherm** (Bul. P-1), 6-p. illus. bulletin describing design and operation of automatic steam generator. Diagrammatic sketches of Cyclonic Combustion operating principle, automatic firing sequence, electronic controls, standard ratings and dimensions for both steam and hot-water generators, performance data. Cyclotherm Corp.

19-345. **Worthington Mechanical Seals for Worthite Chemical Pumps** (W-350-B10), 4-p. illus. bulletin on outside assembly type. Features, descriptive diagram, application requirements, types and sizes of pumps for each size of seal. Worthington Pump & Machinery Corp.

19-346. **Roof to Basement**, AIA 29c (48-53), 8-p. illus. catalog on plumbing and drainage products, including closet connections, oil interceptors, bath traps, hydrants, floor and roof drains, back-water valves, cleanouts, swimming pool equipment, etc. Dimensions, capacities, photos. J. A. Zurn Mfg. Co.

**SPECIALIZED EQUIPMENT**

19-347. **Typical Specifications and Typical Wiring Diagrams on Signaling, Communication, and Protective Systems**, 18-p. booklet. For hospitals and institutions. Doctors', nurses' paging systems, fire alarm, intercom telephone systems, night lights, etc. Architects' symbols, index. Auth Electric Co.

Catalog and booklet describing various items of classroom equipment: chalkboards, erasers, duplicators, window shades, bulletin boards, etc. Specifications, ordering directions, index. Beckley-Cardy Co.:

19-348. **Beckley-Cardy Manufacturers** (Cat. 248)

19-349. **For Modern Schools**

19-350. **Bendix Moldings (48B)**, 12-p. illus. folder on embossed and cut wood moldings for use on furniture, radio cabinets, room cornices, façades, etc. Photos, sizes and dimensions. Bendix Mfg. Co.

19-351. **Quality Curtain & Drapery Hardware** (Cat. 14), 46-p. illus. catalog. Descriptions, sizes, dimensions. Gould-Mersereau Co., Inc.

Two folders on bonderized, fluorescent-lighted bathroom cabinets. Features, specifications, accessories, description of bonderizing process. F. H. Lawson Co.:

19-352. **Lawson Bathroom Cabinets** (49F)

19-353. **Bonderizing** (B 49)

19-354. **Food & Beverage Equipment** (Cat. A), 22-p. illus. catalog on equipment for hotels, restaurants, institutions. Descriptions, specifications, general information, index. Lyons-Alpha Products Co., Inc.

19-355. **Chairs That Fold**, leaflet describing magnesium or wood folding chairs of die-cast construction; for commercial and institutional use. Advantages, illustrations. Louis Rastetter & Sons Co.

19-356. **Library Furniture** (Bul. L-10), 8-p. illus. bulletin describing new unit-type line for school, community, industrial use. Photos, diagrams, suggested library plan, typical combinations, sizes and dimensions. John E. Sjostrom Co.

19-357. **Wickwire Rope**, 188-p. illus. catalog on characteristics, uses, care and handling of wire rope. Charts, tables, drawings, photos, three indexes. Wickwire Spencer Steel Div., Colorado Fuel & Iron Corp.

19-358. **Wood-Metal Kitchens**, 4-p. illus. folder giving specifications on custom and package kitchen units. Drawings. Wood Metal Industries, Inc.

**SURFACING MATERIALS**

19-359. **Don't Take Chances**, 6-p. folder on rubber mats and runners, antislip floor plates and stair treads, steel mat-

ting, etc. Descriptions, photos. American Floor Products Co.

19-360. **Face Brick and Tile of Distinction**, AIA 3-F-2, 4-p. illus. folder describing ceramic glazed brick. Color chart. Claycraft Co.

Two booklets on Douglas fir plywood: one, a new commercial standard giving basic grading rules and analysis summarizing principal changes, the other, a factual presentation of fir plywood production, distribution, and use data. Douglas Fir Plywood Ass'n.:

19-361. **Commercial Standard CS45-48 for Douglas Fir Plywood** (8th Edition—supersedes CS45-47)

19-362. **Facts About Douglas Fir Plywood** (48-10)

Folder and kit containing color selector and samples describing lightweight aluminum tile finished in colors permanently baked by infra-red process. Description, application uses, typical specifications. Metal Tile Products, Inc.:

19-363. **Alumitile**

19-364. **Alumitile Color Selector**

**TRAFFIC EQUIPMENT**

20-238. **An Entirely New Concept of Elevating**, AIA 33B (B-721 8450), 14-p. illus. booklet describing Autotronic elevator system giving continuous coordination to group of elevators in face of sudden surges or lulls in traffic. Description of operating principle, charts, advantages. Otis Elevator Co.

(To obtain literature coupon must be used by 5/1/49)

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I should like a copy of each piece of Manufacturers' Literature circled below.

We request students to send their inquiries directly to the manufacturers.

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4-173	4-174	5-170	5-171	5-172	5-173	5-174	5-175
6-148	6-149	6-150	9-114	9-115	9-116	9-117	19-344
19-345	19-346	19-347	19-348	19-349	19-350	19-351	19-352
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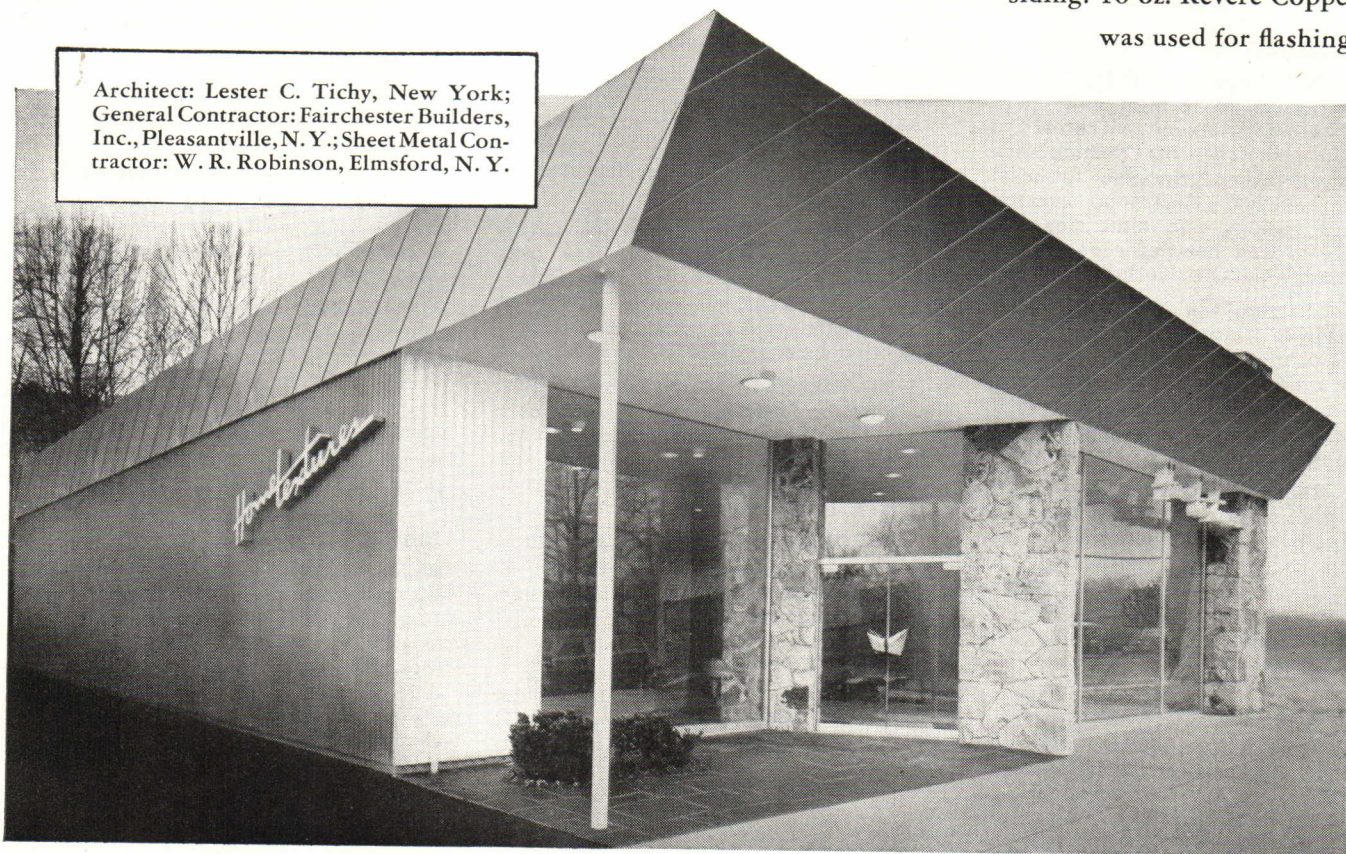
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3-49



# COPPER makes COMMON SENSE for "MODERN"!

Architect: Lester C. Tichy, New York;  
General Contractor: Fairchester Builders,  
Inc., Pleasantville, N. Y.; Sheet Metal Con-  
tractor: W. R. Robinson, Elmsford, N. Y.



Note the facing of Revere 20 oz. cold rolled copper, in sheets approximately 2'x4', which goes around 3 sides of this modern store building. The copper will be allowed to age naturally, and at all stages (particularly after the patina develops) will harmonize with the chocolate brown siding. 16 oz. Revere Copper was used for flashing.

Colorful and lasting beauty is provided by the sheet copper facing around the new Home Textures store in White Plains, New York. In addition, both original cost and maintenance of the copper facing are extremely low.

This new building is another striking proof of the versatility of Revere Sheet Copper—the metal that is equally suitable for modern or traditional architecture . . . for big jobs or small jobs . . . indoors or outdoors. In fact, it makes sense to rely on copper *whenever you want beautiful and lasting sheet metal construction.*

And for the answers to your problems on design or installation of sheet copper, it will pay you to use the new technical data developed by the Revere Research Laboratories. You'll find these data in Revere's booklet, "Copper and Common Sense." This authoritative

manual of sheet copper construction has been widely distributed to architects and sheet metal contractors, and there is probably a copy in your files. Be sure to refer to it as your guide to fine and durable sheet copper construction.

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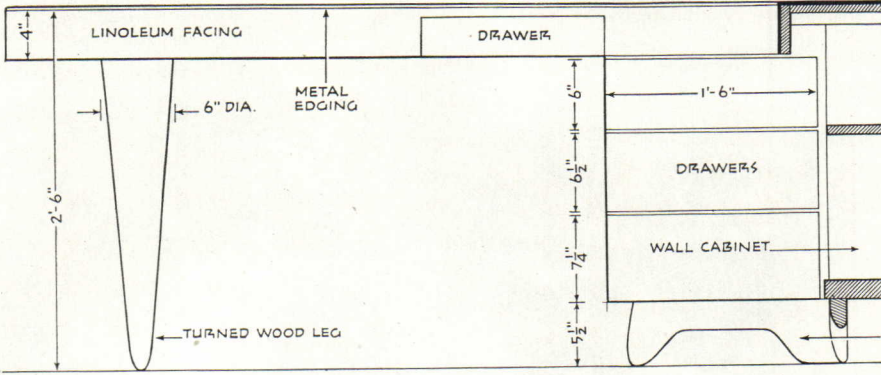
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*Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.; New Bedford, Mass.; Rome, N. Y. — Sales Offices in Principal Cities, Distributors Everywhere.*

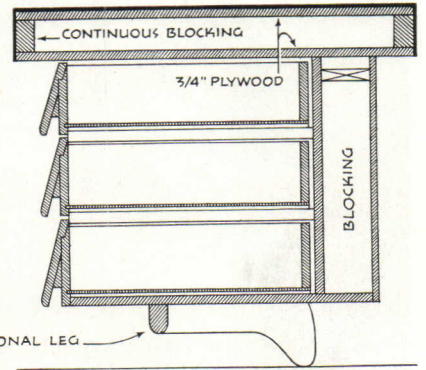




OFFICE: built-in desks

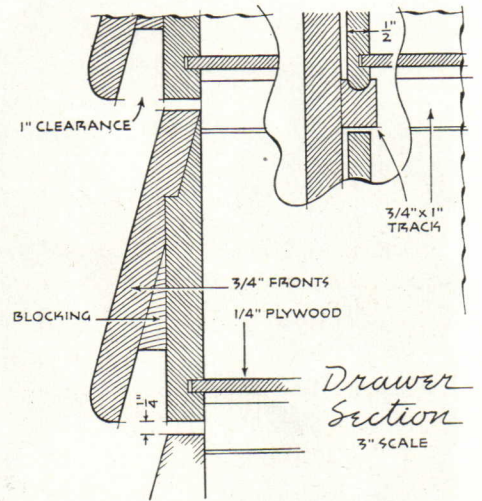
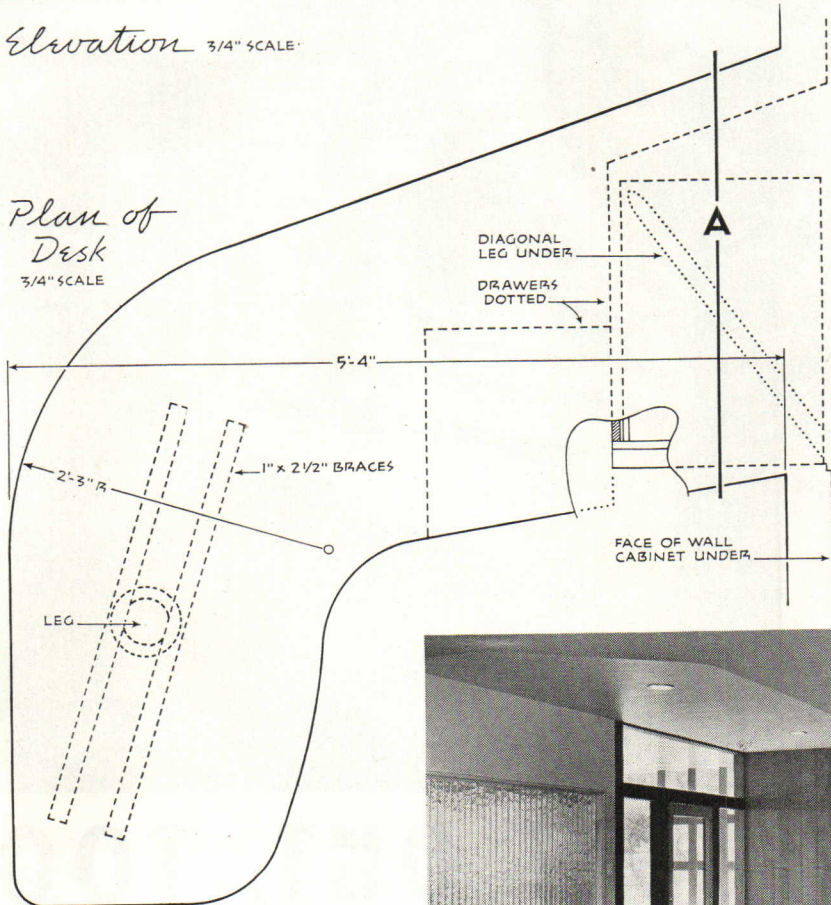


Elevation 3/4" SCALE

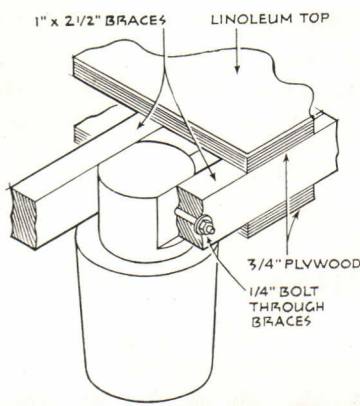


Section A 3/4" SCALE

Plan of Desk 3/4" SCALE



Drawer Section 3" SCALE



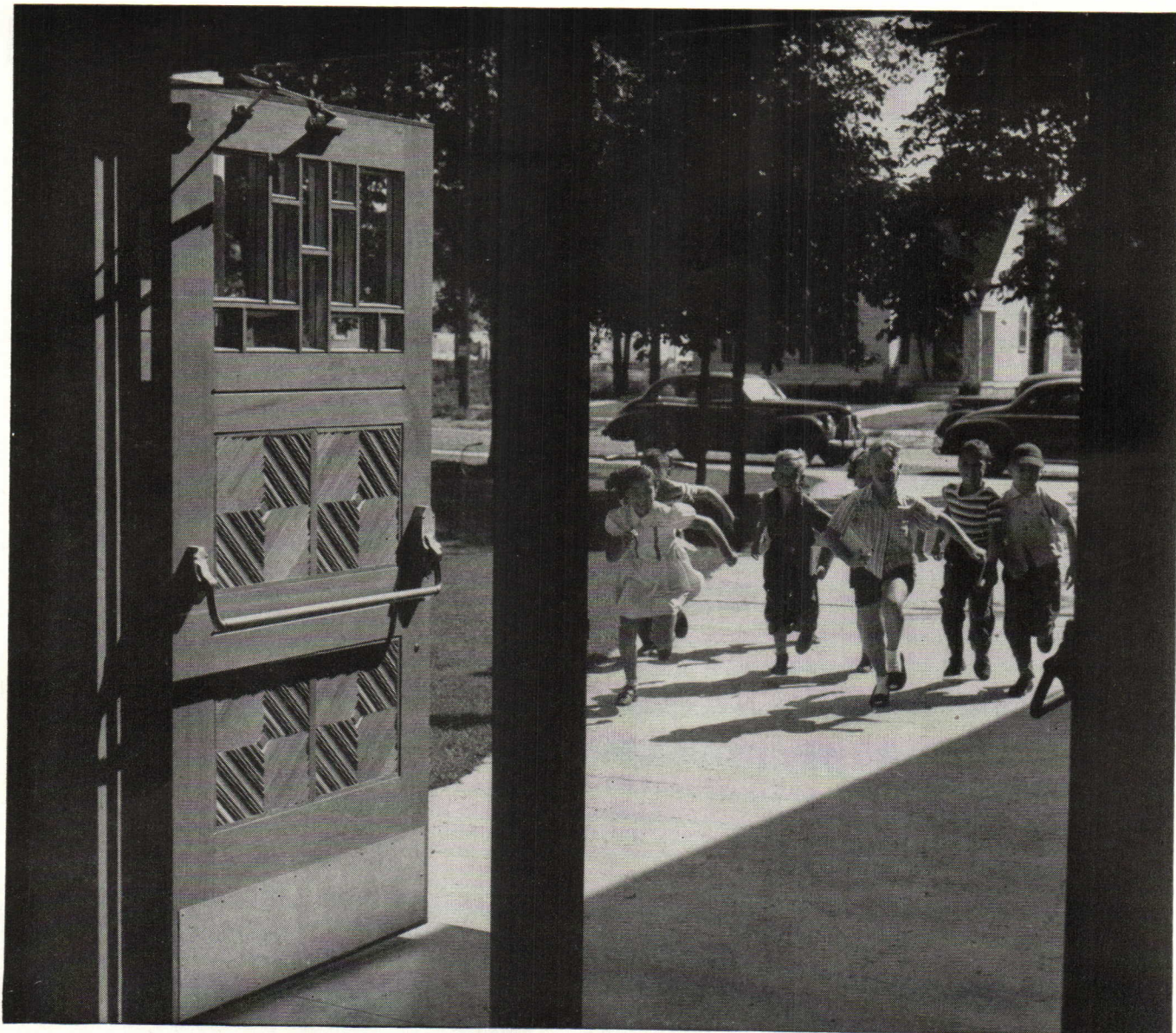
Leg Fastening



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Architects





## THEY GOTTA GET OUT, TOO

The Von Duprin exit devices on these doors assure safe, quick, easy exit . . . at every season of the year, at every minute of the day or night.

Von Duprins are strong, dependable, silky smooth in operation. They take the wear and tear of daily use, and still have abundant reserve strength for the tremendous strains of emergency demands. They do all this for scores of years at a maintenance cost that is practically nil.

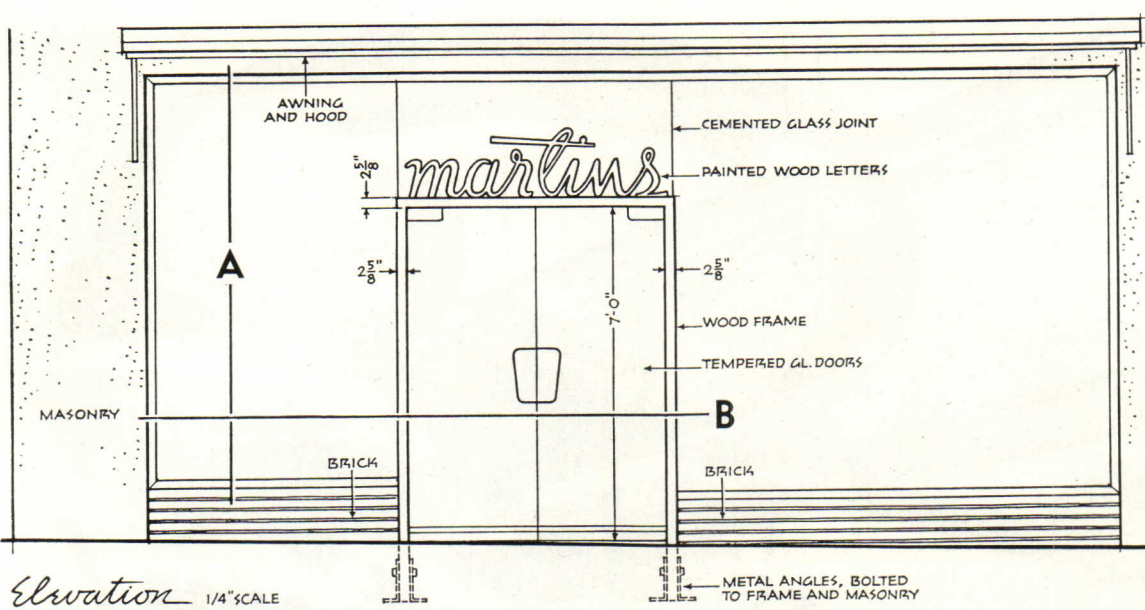
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VONNEGUT HARDWARE CO., INDIANAPOLIS 9, INDIANA**

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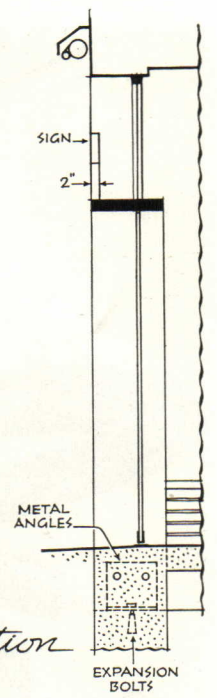
TRADE MARK REG.



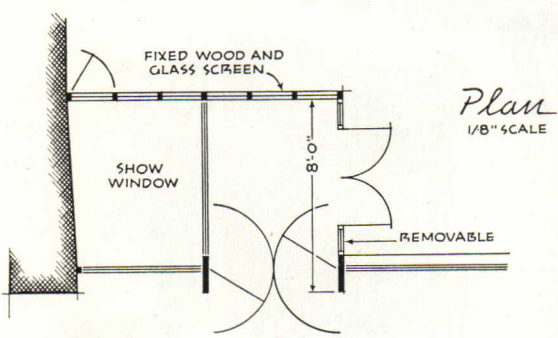
STORE: door frame



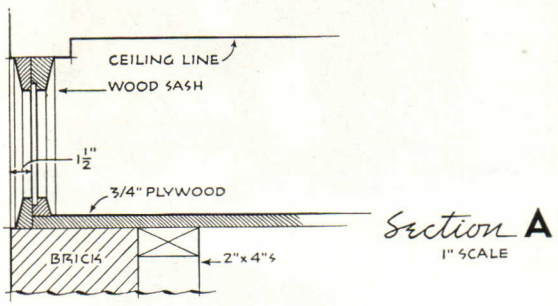
Elevation 1/4" SCALE



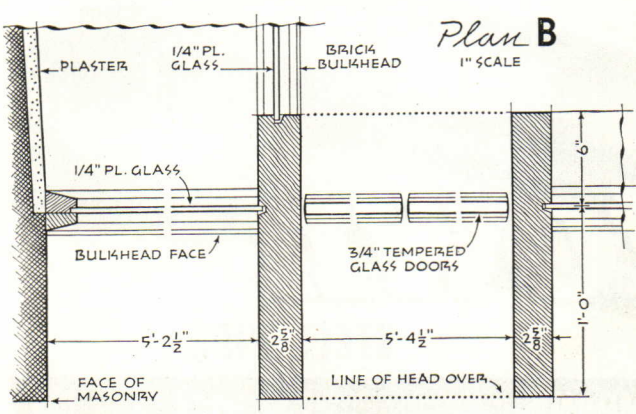
Section



Plan 1/8" SCALE



Section A 1" SCALE



Plan B 1" SCALE

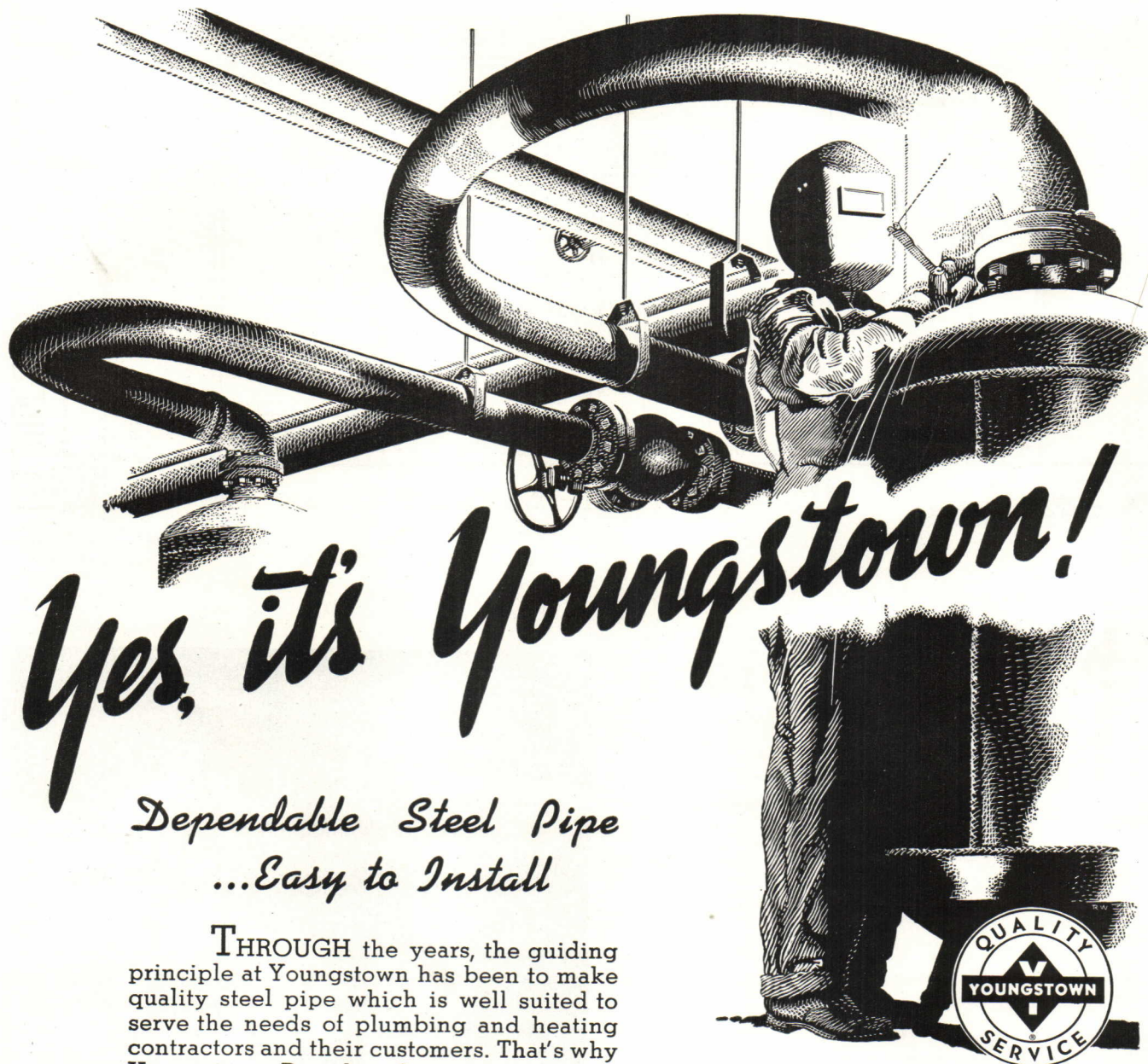


GOTTSCHO-SCHLEISNER

MARTIN'S STORE  
Brooklyn, New York

MORRIS LAPIDUS  
Architect





*Yes, it's Youngstown!*

*Dependable Steel Pipe  
...Easy to Install*

THROUGH the years, the guiding principle at Youngstown has been to make quality steel pipe which is well suited to serve the needs of plumbing and heating contractors and their customers. That's why Youngstown Pipe bends accurately, cuts readily, threads surely, welds easily--properties designed into the product for efficient fabrication, installation and long, satisfactory service.



**STEEL PIPE**

**THE YOUNGSTOWN SHEET AND TUBE COMPANY**

*Manufacturers of Carbon, Alloy and Yolo Steel*

General Offices Youngstown 1, Ohio

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*a Monument...*

## CECO Architectural Projected Windows

In keeping with architectural design, monumental buildings need windows that complement their structural magnificence . . . windows designed architecturally with an eye to good appearance. Ceco's Architectural Projected Window is just such a window. From every angle, here is outstanding beauty . . . complete utility. In Ceco's Architectural Projected Window, the sections are designed for maximum strength—the arrangement of glass lights makes for maximum beauty. Consider these features:

1. The frame section is  $1\frac{3}{8}$ " deep. The ventilator section is  $1\frac{1}{2}$ " deep. The extra  $\frac{1}{8}$ " added to the ventilator depth provides the strength so necessary for proper window performance.
2. The frame and ventilators are welded at all four corners.
3. Standard hardware is solid bronze.
4. Easy to screen . . . a great convenience in public buildings, schools, and commercial and industrial buildings.

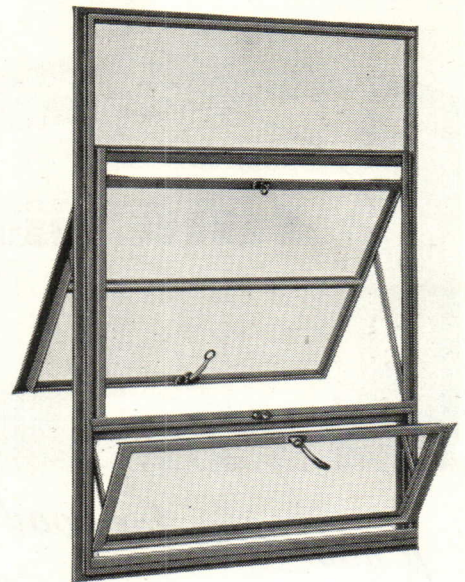
Yes, from every angle, here's a handsome window with every utility. So, specify Ceco Architectural Projected Windows, for no matter what the architectural design, Ceco has the right window for you.

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Ceco Architectural Windows are constructed of hot rolled sections, bonderized and especially designed to provide rigidity and good weathering performance. Suitable for public, commercial and industrial buildings . . . designed to provide weather protection when open . . . adaptable to screening with Ceco standard screens, since each ventilating sash projects on only one side of window.

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## SCHOOL PUBLICATIONS

By JOHN RANNELLS

A number of school magazines which are written and edited for school executives make interesting reading from time to time for designers of school buildings. They include the *American School Board Journal*, *School Executive*, *School Management*, and *Nation's Schools*. A sampling of representative

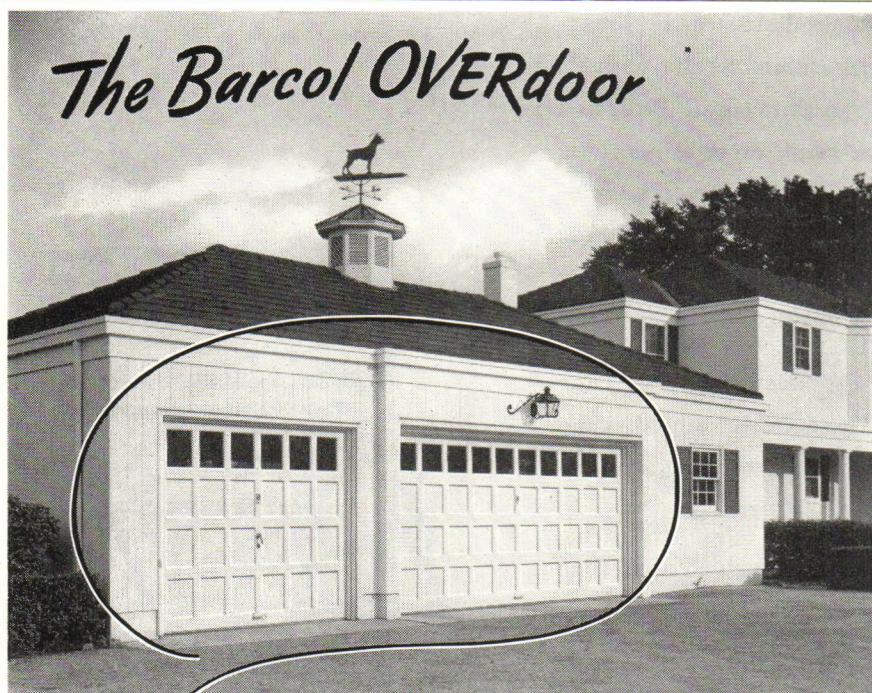
issues in recent months gives a distinct impression of active relationship between the school and its community, and a desire for further advance in planning on the part of the school official.

Construction (and even maintenance) has lagged for many years, so that

most communities are far behind in school facilities. Meanwhile educational programs have changed so that new approaches to school planning are required. The new buildings illustrated in the school journals are quite different from the traditional ones shown a few years ago. It seems apparent that most communities no longer have any use for traditional styles—they want adequate and well-thought-out facilities.

These magazines are not particularly rich in descriptions of school buildings as such (the quality of the designs published often leaves much to be desired), but they do give the architect a background against which to study the school problem. For example, a series on "Educational Planning" in the *School Executive* covered during the last half of 1948 such subjects as The Use of School Grounds, Efficient Utilization of School Buildings, Types of School Organization, The Work of Parent-Teacher Associations. The *Nation's Schools* has a monthly feature called "Schoolhouse Planning" which goes into specific problems, illustrating the discussion with plans and pictures of the buildings being considered.

The January 1949 issue of the *American School Board Journal* is given over to a discussion of school planning problems, from the broad considerations of the relation between city planning and schoolhouse planning to a technical analysis of cold cathode lighting in schools. The attitude which the school magazines are now taking with regard to planning problems might be summarized by a remark in an article in the January 1949 issue of the *Nation's Schools* by Willard B. Spalding, dean of the College of Education at the University of Illinois. "A better school," he says, "is always a different school from the ones we have known."



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**WEATHERTIGHT.** Special roller crank closing action moves the entire door smoothly and evenly against the stop strips in the last few inches of its downward travel, effectively sealing the opening.

**EASY WORKING.** Tailored twin-torsion counterbalancing springs accurately support the weight of the door, so minimum effort is required for raising or lowering. Sticking is eliminated by the fast-freeing effect of the exclusive roller crank closing action.

Barcol OVERdoors assure satisfaction . . . giving long, trouble-free service because they are strongly built, accu-

rately assembled, and carefully installed by factory-trained men.

**ADAPTABLE.** The picture above shows a somewhat unusual installation, in that this garage has both a single width and a double width entrance. It is, however, an excellent illustration of the adaptability of Barcol OVERdoors. Suitable doors can be furnished for any design of building and for any size of opening.

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## BOOKS

### PLANNING STORES THAT PAY

**Organic Design and Layout for Efficient Merchandising.** *Dr. Louis Parnes. Architectural Record, 119 W. 40th St., New York 18, N. Y., 1948. 316 pp., illus. \$15.00*

Every architect interested in store planning is familiar with Parnes' imaginative design for an "intermediate stock floor system." Since its original publication it has been a challenge to everyone

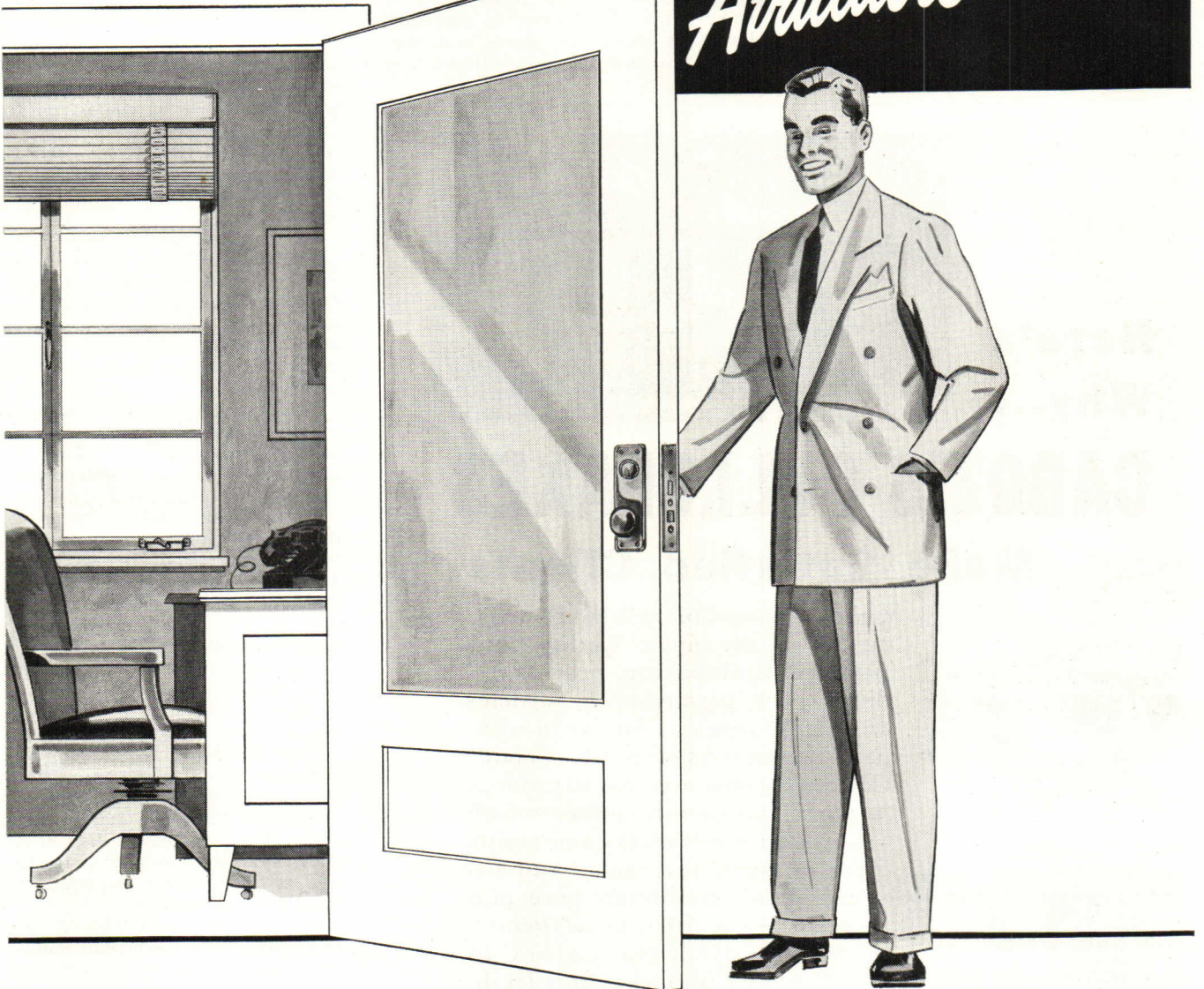
(Continued on page 98)



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\*®

*Fenestra* **STANDARD STOCK METAL  
SWING AND SLIDE DOORS**



## Reviews

(Continued from page 96)

concerned with the planning of a department store structure. A comprehensive presentation of sketches and data on this system sets the trend for this entire book.

In the opening chapter, Parnes introduces the basic factors in the design of department stores: (1) space; (2) customers; (3) merchandise; and (4) personnel. He discusses also the circulation patterns pertaining to each.

The second chapter is devoted to the

significant influence of city planning factors on the store's chances for success, emphasizing the importance of having the store a well-integrated part of the community. There is an interesting and well-illustrated section on the elevated shopping area and the underground arcade system of communication, emphasizing the relationship of shop windows to elevated or depressed streets, arcades, underpasses, and overpasses. Parnes might have included here

an analogy between town planning and the general functioning of a department store as a city within a shell.

In the "Selling Zone" section, the locations and relative sizes of sales departments, circulation aisle densities, and the design of fixture types are thoroughly discussed. More space might have been given to discussion of the general flexibility of fixtures, which is the most important development in present-day store planning. A thorough presentation of cost comparison and the overlapping functions of fixtures also would have been most welcome.

The section devoted to the "Customer's Zone" pertains to all nonselling parts of the store devoted to the comfort and convenience of customers. In addition to the listing of the minor facilities, such as rest rooms, there is a more thorough and well-illustrated discussion of the restaurant and of parking facilities.

It is in the section devoted to the "Merchandise Zone" (where merchandise is received, checked, marked, and distributed to selling departments, sorted and routed for delivery) and in the section on the "Personnel Zone" that Parnes makes his most valuable contribution.

The material on these important nonselling areas of a department store, so much neglected in all of the studies published to date, is thorough and well-organized by departmental functions.

In the next section, Parnes treats the "Show Window" as a "mechanism for converting shoppers into customers." There are some interesting chapters on the psychological factors, as well as the light reflection and glare problems which are so important. Here again Parnes demonstrates his aptitude for practical considerations by devoting a chapter to "Access for Window Trimming."

The chapter on "Circulation and Transportation" contains useful comparisons of the stairway requirements in various American and foreign cities and a thorough presentation of moving stairways and elevator capacities, as well as spiral chutes and conveyor systems for merchandise.

In "Scientific and Theoretical Considerations," Parnes makes many valuable suggestions for surveys and research on store operation and productivity of space, personnel, and real estate. This last chapter, as well as the one on planning considerations of stairways, moving stairways, and elevators, very well might have been placed in the opening portion of the book as part of the general discussion of programing.

With the exception of a paragraph on column spacing and trusses for intermediate stock floor systems and a section on "Interior Lighting," Parnes has wisely refrained from becoming involved in what, because of space limitations, would have had to be superficial discussions of the mechanical and structural systems applicable to store

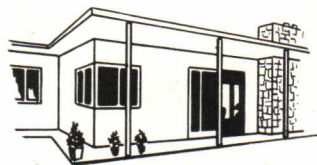
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Why...



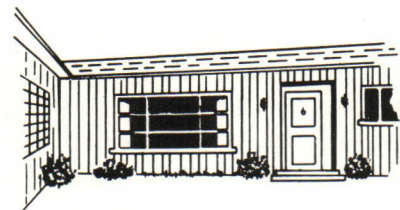
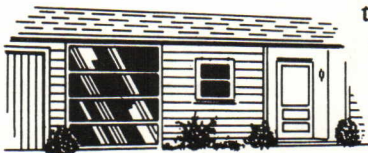
Polhemus & Coffin

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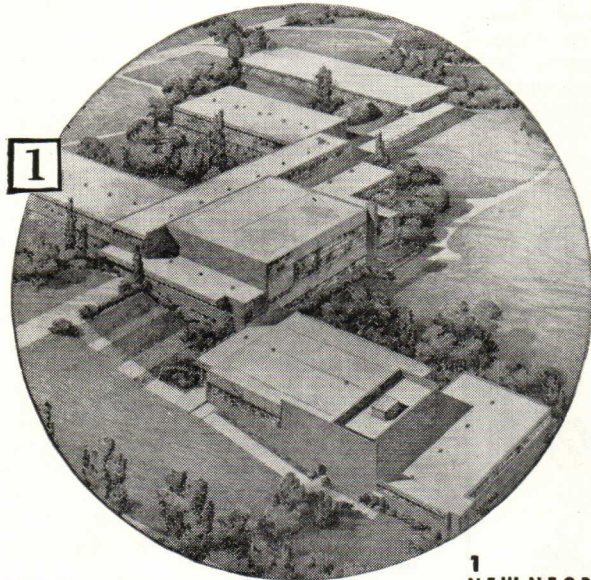
New York — Minneapolis — Chicago

(Continued on page 100)



*In Shreveport, Louisiana ...*

# 5 DIFFERENT ARCHITECTS CHOOSE ZONOLITE\* Vermiculite Concrete Roofs FOR INSULATING 5 NEW SCHOOLS



Roof decks that combine structural strength with thermal insulating efficiency are being designed by leading architects in all parts of the country. In Shreveport, La., alone, five different architects specify Zonolite Vermiculite Concrete for five different schools. Here's Why!

**LOW COST**—No additional insulation is needed on a Zonolite roof deck:

**PERMANENT**—Made by mixing Portland cement and Zonolite Brand Vermiculite Aggregate, a rotproof, verminproof mineral.

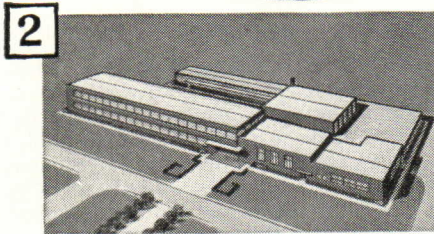
**LIGHTWEIGHT**—Zonolite Aggregate weighs as little as 6 lbs. per cubic foot, compared to 100 lbs. for sand.

**FIREPROOF and FIRESAFE**—High degree of thermal insulation blocks passage of heat. Won't burn—fusion point of vermiculite is 2500°F.

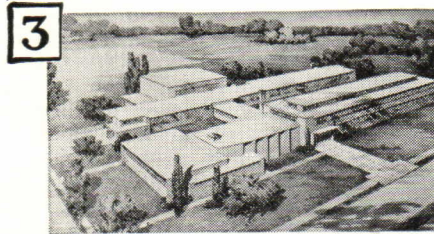
## and here's how:

Fast, economical applications of Zonolite structural concrete roofs may be made in a variety of ways. Pour it over paper-backed welded wire mesh—here no additional reinforcing is necessary, no troweling or tamping required, just screed to level. Or pour Zonolite insulating concrete over ribbed metal lath, over fiber, asbestos cement, or gypsum board forms. Zonolite concrete may also be pre-cast into slabs, easy to handle because they're so light in weight.

Zonolite concrete structural decks in place weigh about one-fifth as much as ordinary concrete, permitting great economies in the use of structural steel. Sloping for drainage is easily accomplished; cants, crickets and saddles easily formed. Provides the ideal surface for built-up roofing.

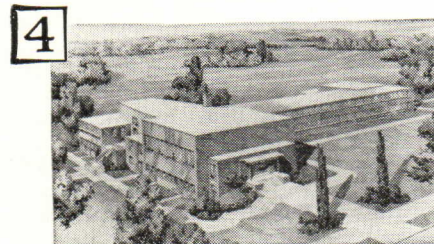


**1**  
**NEW NEGRO HIGH SCHOOL**, Shreveport, La. About 132,000 square feet of floor area. J. A. Harper, Contractor, Crowley, La. Van Os & Flaxman, Architects, Shreveport, La.



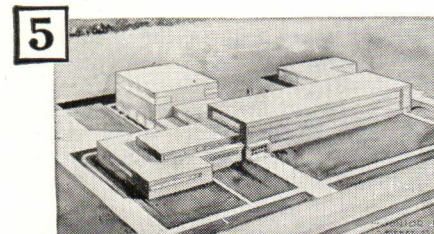
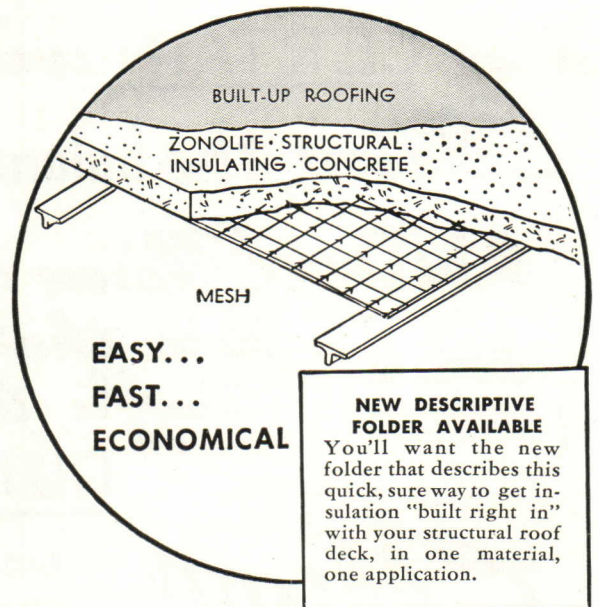
**2**  
**BROADMOOR JUNIOR HIGH SCHOOL**, Shreveport, La. McClenaghan & Barr, Architects, Southern Builders, Inc., Contractors, Shreveport, La. Approximate floor area 90,000 square feet.

**3**  
**CEDAR GROVE JUNIOR HIGH SCHOOL**, Shreveport, La. Floor area, 85,000 square feet. Wm. B. Wiener, Architect, Shreveport, La. Nathan Wohlfield, Contractor, Dallas, Texas.



**4**  
**JUNIOR HIGH SCHOOL BUILDING**, Lakeshore Drive, Shreveport, La. J. Cheshire Peyton, Architect, Harry Bosworth, Associate, Seth E. Giem & Associates, General Contractors, Jackson, Miss. Approximate floor area 90,000 square feet.

**5**  
**JUNIOR HIGH SCHOOL BUILDING**, for Caddo Parish School Board, Shreveport, La. Walker & Walker and Associates, Shreveport, La. Roof area, 65,000 square feet.



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Architect ... Engineer ... Draftsman ... Contractor ...



## Reviews

(Continued from page 98)

structures. However, a generous number of plans, sketches, and photographs of domestic and foreign examples of completed and successful store buildings and interiors, includes a complete presentation of the Globus Project at Basle, Switzerland, for which Parnes was the architect.

This book deserves to take its place among the most important of the reference documents on store planning.

DANIEL SCHWARTZMAN

### NEW WAYS OF BUILDING

*Edited by Eric De Mare. The Architectural Press, London, England, 1948. 235 pp., illus. 30 s.*

Many of the technical books published abroad are of little value to the designer in the United States. However, a volume called *New Ways of Building* can be recommended. It is a kind of appendix to the conventional works on building construction, empha-

sizing certain important modern uses of materials. There are sections on concrete, timber, brickwork, light metals, plastics, and sound and heat insulation. It is very richly illustrated with photographs of up-to-date examples and beautifully clear line drawings.

The main emphasis is on the design possibilities inherent in materials and techniques. The structural sections are especially informative, with enough explanation of theory to give adequate understanding of (for example) continuity, shell-roof structures, welding, prestressed reinforcement, and the different forms that result in the best use of various materials. Such general subjects as prefabrication and housing are only incidentally dealt with, mostly through the extensive bibliographies.

The great value of this book lies in the background and stimulus it gives the designer. J.R.

# Do YOU work hard? Balanced Doors Don't!

*Easy operation, in spite  
of adverse wind or  
air suction conditions,  
is CERTAIN with  
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**AND - Ellison is the  
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### TECHNICAL TRANSCRIPTS

Typical of the transcripts of luncheon discussions conducted by the Technical Committee of New York Chapter, A.I.A., described in PROGRESS REPORT (see p. 14), are the two printed below:

#### Problems in the Insulation of Flat Slab Roofs

At a lunch meeting Walter H. Kilham presided over a discussion of flat roof slabs and their insulation. Thermal, as well as acoustical, insulation and its accompanying problems of condensation, vapor barriers, and the like were carefully considered. Kilham suggested typical questions, such as: refusal of bond by roofer if insulation is placed on slab underside; use of fill-type insulation placed on slab top; location of dew point when insulation is on bottom; expansion joints; protection of materials susceptible to moisture damage.

F. C. Fowler of Munn & Steele described Vermiculite as mica flakes expanded to approximately 15 times their original volume. The resultant air cells act as heat-conduction resistors in concert with the reflective qualities of the expanded mica pellets. Vermiculite may be used with cement or gypsum, as plaster or concrete, for acoustic, fireproofing, and insulating purposes. The New York City Board of Standards and Appeals has given one inch of vermiculite plaster a four-hour fire-test rating.

Location of insulation is a debatable question. Fowler prefers insulation beneath the slab. He stated that with insulation on top of the slab, the structure must be fully heated in winter before such heat is arrested by the insulation, and that the heat storage capacity of the structure is usually large. In summer, bottom insulation is as good as top. There it controls condensation efficiently and in addition offers acoustical value.

(Continued on page 102)





## WHY SHOULD AN INSULATION BE BONDED TO ITS COVERING ?

Insulation *must* be bonded (securely fastened to its covering) to withstand the vibration that occurs in every house. Such vibration can shake the mat loose, allowing it to sag and settle. This leaves uninsulated areas. Hold a sample of insulation by the edges and shake vigorously . . . if the mat and liner part company, the insulation has failed one test of quality.

Balsam-Wool, the insulation that can't pack or settle down, offers EXTRA protection against uninsulated areas. The felted wood fibers of Balsam-Wool are bonded together to form a homogeneous insulating mat, firmly cemented to the liner . . . it is DOUBLE BONDED! In addition, the Balsam-Wool blanket is securely fastened in place, when applied, by its sturdy spacer flanges.

**Combining advanced design and engineering, Balsam-Wool embodies the latest scientific developments such as:**

You'll find the answers to many insulation application problems in a complete set of Balsam-Wool Data Sheets designed for you. They're yours for the asking, mail the coupon!



- Continuous, Integral Vapor Barrier
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(Continued from page 100)

Mr. Brennan of Pittsburgh Corning Corporation discussed Foamglas. He described it briefly as an inorganic material of approximately zero expansion, impermeable to water or air and capable of withstanding a reasonably compressive load. While it can be used either way, he recommends top-of-slab application. Foamglas has no acoustic properties. When insulation is placed on the underside, pipes usually pierce it and admit vapor. However, moisture so introduced has no effect on Foam-

glas itself. We were told that all manufacturers will issue a bond on roofs laid over it.

A. E. Shultis of Johns-Manville pointed out his company's unique position as the only manufacturer of fiber and mineral insulation. Fiberboard is inexpensive and, if properly protected with edge seals and joint stripping, is satisfactory and subject to roofing bond. If there is danger of moisture penetration, mineral insulation is considered more appropriate. Either insulation can

be applied at bottom of joists of slab. Where no vapor barrier or adequate ventilation is provided, there is apt to be trouble. Shultis felt that top locations were best.

Jack Isaacs of Armstrong Cork Company, makers of both cork- and fiberboard, noted the lower conductivity of corkboard and the fact that the latter may be used on the slab underside, for acoustic properties as well as insulation, particularly since it does not absorb moisture. Corkoustic is not now on the market but is expected to be available very soon.

The first question from the floor called for further discussion of the proper location of insulation with respect to condensation. Mr. Jenkins replied that the answer depends on the specific problem and the kind of insulation used. Ben John Small remarked that for human occupancy it may be either above or beneath the slabs, always bearing in mind the need of a vapor barrier to avoid condensation on the bottom of the slab.

Harold Sleeper told of the refusal of a contractor to apply cork to the bottom of a slab, lest condensation damage the adhesive. Isaacs replied that the contractor must have feared unusual humidity.

Shultis cited an example of condensation trouble. A dentist's office had a furred acoustic tile ceiling. Staining and dripping occurred. No ventilation was provided in the furred spaces. The remedy: ventilation; locate source of moisture. In this case the basement crawl space had no concrete topping; warm air from the heating plant evaporated moisture from the earth. Heat should be cut off from such spaces and if floors are too cold, they may be insulated.

Fowler pointed out that roofers object to Vermiculite insulating concrete fill because of the large amount of water necessary in preparing the mixture. In two days to a week excess moisture should evaporate. Roofers claim some remains. Some 12 or 15 million feet have been laid, including the Pentagon Building, but no job is 20 years old. In the tropics Vermiculite fill is put on the top of the roofing to protect the latter from the sun's infrared rays.

Question: Is paper around an insulation batt a sufficient vapor barrier? Shultis said that it is, except in occupancies such as laundries and provided the area is fully covered.

Question: In vaults constructed under sidewalks, where insulation must be on bottom, is there any danger to sprayed insulation if used? Shultis recommended mineral insulation held by adhesive and covered with a vapor barrier. Sprayed insulation cannot be properly vapor sealed. Isaacs stated that Armstrong has successfully used corkboard on vaults.

Question: Would top insulation permit a reduction in expansion joints? The answer is that it has been eliminated entirely. However, if there is a

## ★ Moisture Destroys Insulation Values

"Moisture increases the rate of heat transfer through a material, because water, which fills the pores or voids, conducts heat more rapidly than air". . . . . *Third edition of "Insulation," by Paul D. Close as Technical Secretary of Insulation Board Institute and former Technical Secretary of the American Society of Heating and Ventilating Engineers.*

## ★ Infra Is Impermeable to Water Vapor

**I**NFRA — multiple sheet aluminum insulation — is the best way to insulate a basementless house. It is noncondensation-forming. Easy to install, in crawl spaces, for instance. Infra excels as thermal insulation, preventing heat from entering or escaping. Note the remarkable results for **DOWNWARD** heat flow. These values are permanent. The insulation will remain in place and not tear at the staples or elsewhere because of moistened paper and excessive weight.

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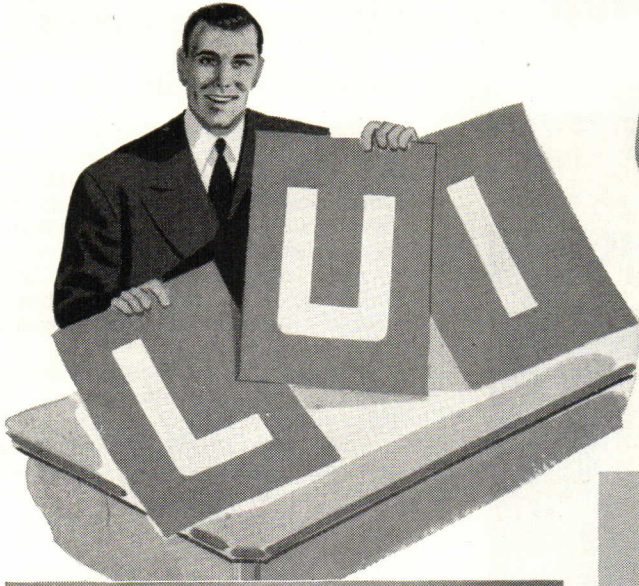
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ADDRESS DEPT. PA

(Continued on page 104)





# You choose the plan

## CURTIS HAS A KITCHEN TO FIT IT

*for instance*

Here's an L-type kitchen arrangement—made up of Curtis sectional kitchen units. Twenty basic unit types—a total of 70 sizes—give you a wide range in planning for individual needs and tastes. The dimensions of Curtis units have been standardized to co-ordinate with other standard kitchen equipment. Remember, these are *wood* cabinets—designed for durability—with the quality construction for which Curtis is well known.

In this U-type kitchen, note how the Curtis sectional units provide an efficient and step-saving arrangement. The Curtis kitchen cabinet line includes special units which "go around a corner" to provide extra storage space. Curtis cabinets come painted white and are used by some, temporarily, just as furnished. Others give cabinets another paint coat in the color of their choice.

This simple arrangement of Curtis cabinets is practical for the small home or apartment. Note the ample working space which these units provide. Curtis kitchen units are easy to install, in any size or shape of kitchen. The line includes such features as broom closets, pan units and snack bars. Beautifully styled hardware is furnished—to be applied after installation of cabinets.

**Curtis kitchen cabinet units are available for prompt shipment**

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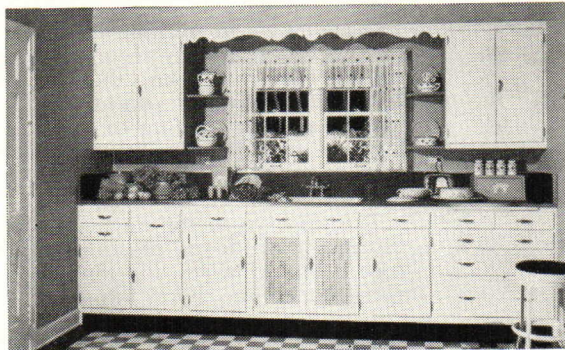
Please send me literature on Curtis kitchen cabinet units.

Name.....

Address.....

City..... State.....

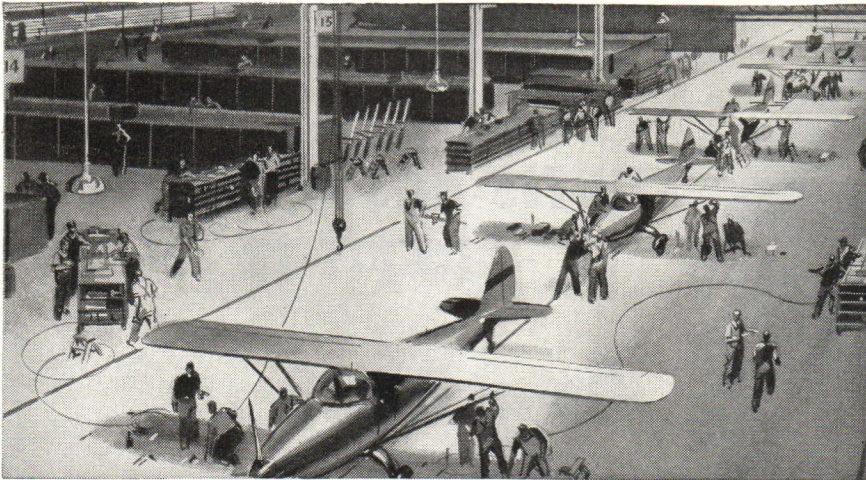
I am  Architect,  Contractor,  Prospective Home Builder  Student.  
Please check above.



When in New York, visit the Curtis Woodwork Display at Architects' Samples Corporation, 101 Park Avenue, New York City.



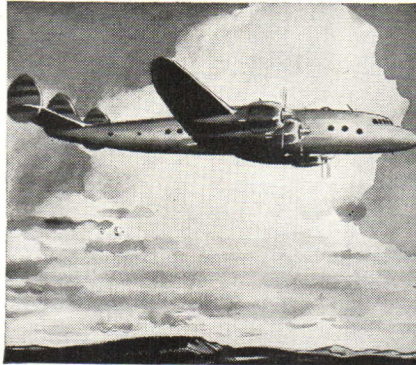
# Seven new planes completed ...at a cost of \$4.30!



New planes can't fly without control cable, and this manufacturer needed some—fast. He got it the same way he regularly gets many supplies and parts—by Air Express. Ordered in A.M., delivered to plant same day. 500 miles, 28 lbs., Air Express charge only \$4.30. So production continued without a break.



**\$4.30** included pick-up and delivery at no extra charge—and receipt for shipment. All this, plus the *world's fastest shipping service*. That's Air Express—used with profit by every business.



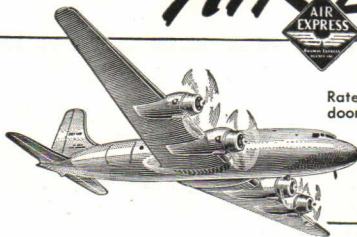
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22 lbs. of new fashions goes 700 miles for \$4.73.  
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## TECHNICAL TRANSCRIPTS

(Continued from page 102)

parapet it must be designed to move with the slab. On the 300-foot by 400-foot Woodhaven, New York, Army Post Office building, a 10-inch slab, reinforced, with no expansion joints, and with 2-inch insulation, seems to be performing satisfactorily. Cracks in the slab are of no significance, but the masonry parapet walls have moved and can't be made rigid.

Question: Do not the perforations in metal pan type acoustic materials provide self-ventilation? Shultis recommended more positive ventilation and one which also assists in removing heated air in summer.

LESSING WHITFORD WILLIAMS

## Preparation of Good Waterproof Concrete by Adding Admixtures

After concrete has been mixed and has hardened, it cannot be improved. "The mass of concrete will be as good or as bad as it was at the time of placing," said Emil Schmid, Vice-President of Sika Chemical Corporation. He stressed the careful mixing of the concrete batch and described the numerous types of defects. General porosity in lean mixes of concrete can be remedied with pore fillers. There is no better or cheaper one on the market than Portland cement.

Plastiment, product of Sika Chemical Corporation, acts as a densifier on the cement water paste by delaying formation of water and space consuming gels. It reduces porosity, shrinkage, and the maximum temperature of hydration. It increases compressive strength and surface hardness. The chemical action tends to correct many of the defects of poor concrete but it does not insure good concrete; proper preparation still plays the major part in securing the best waterproof concrete. Some architects do not hesitate to specify separate surface waterproofing treatments that cost from 40 to 80 cents per square foot area instead of concentrating on obtaining a high concrete. Plastiment adds about 3 cents to the cost of a cubic foot of concrete.

The same reasoning applies to hardening concrete floors; plastiment makes floor concrete harder and makes it unnecessary to use liquid hardeners.

*Surface Waterproofing Treatments*  
Surface treatments are advisable in some places. Structures subject to extreme vibration, like railroad bridges, require the use of membrane coatings. If structures are located in highly injurious acid soil, use asphaltic paints. Structures subject to extreme pressures, like elevator pits, require the use of cement or iron waterproofing coats.

(Continued on page 106)



# The NEW Truscon Series 46 DOUBLE-HUNG WINDOWS (Spring-balanced)

*trim, smart, streamlined*

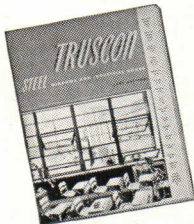


## strong, sturdy, economical

Architects like its structural strength and architectural correctness . . . contractors like its ease of installation . . . owners like its streamlined beauty and low maintenance cost. Everyone likes its all-round *economy!*

The new Truscon Series 46 Double-Hung Steel Window is recommended for use on any project except when fire windows are specified and a counterweighted window is essential. Use of a spring balance in this new Truscon window eliminates the necessity of large weight boxes, and avoids the cost of field labor required to install cast iron counterweights and place the sash in accurate balance after glazing.

The spring balances are housed in the head member and the stainless steel suspension tapes are wholly concealed with the sash either open or closed. Positive weathering is provided by flexible spring-bronze strips attached to the sash at head, meeting rails, sill and jambs. Bonderized. Baked-on paint. Lever-type lift handles. Muntins as desired. Screens, storm sash and window cleaner anchors available.



**New Literature.** Send for new catalog complete with installation details and specifications on Truscon Steel Windows for every type of residential, commercial, industrial and institutional use.

# TRUSCON STEEL COMPANY

YOUNGSTOWN 1, OHIO

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Manufacturers of a Complete Line of Steel Windows and Mechanical Operators • Steel Joists • Metal Lath • Steeldeck Roofs • Reinforcing Steel • Industrial and Hangar Steel Doors • Bank Vault Reinforcing • Radio Towers • Bridge Floors.



# 4 POTENT PREVENTIVES OF PUMPING PROBLEMS

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In buildings designed with real excellence in mind, it is natural to find Yeomans Pumps handling the four basic pumping functions—water booster, water circulation, drainage and sewage ejection.

## WATER BOOSTER

In hundreds of the world's foremost buildings, Yeomans Pumps are quietly, dependably at work—many of them after many years of quiet, flawless service.

## WATER CIRCULATION

Long experience, painstaking engineering and insistence on fine workmanship are fundamentals of Yeomans Pumps, and the true reasons why they deliver satisfaction.

## DRAINAGE DISPOSAL

Famous for the "troubles they prevent"—for their sturdy, lasting reliability—are these durable two: Yeomans Heavy Duty Bilge Pump for handling liquids free from solids, and Yeomans Screenless Ejector for wastes containing solids.

## SEWAGE EJECTION

Few mechanical devices have records comparable to that of the trusty **Shone\* Pneumatic Sewage Ejector**—for unflinching performance the world over. Yeomans also builds centrifugal sewage pumps for both wet pit and dry pit installations.

You find full information, with engineering data and helpful installation drawings, in Sweet's Files—Architectural and Engineering. Also Yeomans Bulletins "belong" in every Date File. Use the coupon for your bulletin request.

\*Trade Mark Reg. U.S. Pat. Off.



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 Drainage             Sewage Disposal

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Firm.....

Address.....

City, State.....

## TECHNICAL TRANSCRIPTS

(Continued from page 104)

Concrete-block construction should be targeted on the outside to prevent water accumulation in the blocks which would reduce their insulating quality. Sika Seal is a dampproofing, protective coating of this type. Sika-Kote is a brush coating used effectively to seal masonry walls. This coating is decorative, dense, and hard, but allows the coated masonry wall to breathe.

Schmid summarized his talk by stressing the following: (1) make sure that your structures are well designed; (2) insist on obtaining best possible concrete within economical limits; (3) in your waterproofing and hardening problem, deal with specialists in the field; (4) insist on high-class workmanship.

### Coal Tar Preservative Compound

Albert Forst of the Albert Forst Company stated that "among the most used materials for the surface-coating method of waterproofing are coal tar and creosote, because they will not mix with water nor will they deteriorate in constant contact with water." However, they have many disadvantages: high cost of skilled labor for applying and of heating necessary for applying, with the resulting fire hazard; poor bonding qualities and required use of primer coatings.

Forst said that Briggs Bituminous Composition Company has produced a product called Farbertite which overcomes these disadvantages. This material consists of a coal tar base meeting the requirements of the Navy Department Specification 52-T-5 and is combined with an inert filler.

It is incorporated with water, as a vehicle, containing an approved rust inhibitor and will not separate or harden standing in a closed container under extreme atmospheric conditions of temperature and humidity. It will not burn or explode; it is of good working consistency; it produces a firmly adhering, continuous protective coating when applied cold, by brush, spray, or trowel. It sets dry to the touch in 4 hours and cures in 12 hours. One gallon will cover approximately 80 square feet on smooth concrete surfaces.

C. HERBERT WHEELER, JR.

## NOTICE

### EXHIBIT

Those connected directly or indirectly with the home furnishings industry are invited to attend a ONE-DAY TRADE EXHIBIT, March 22 at Hotel Pierre, New York, N. Y., open only to those presenting professional credentials, under auspices of AMERICAN INSTITUTE OF DECORATORS and in connection with the 18th annual conference of A.I.D., March 21-22 at Hotel Pierre.

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*is first*

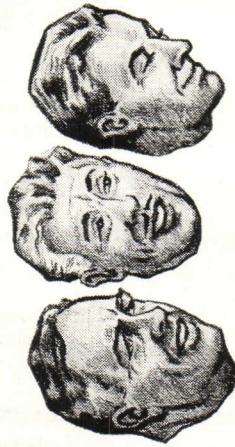
**Why KOH-I-NOOR?** Because it's professionally designed, and manufactured by the most modern type of machinery to meet the most exacting requirements. Uniform, accurate grading in all 17 degrees. Long Wearing. Unsurpassed Breaking Strength. Opaque (Perfect Reproduction)

**. Ask For #1500 -**

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- FIRST IN PERFORMANCE!
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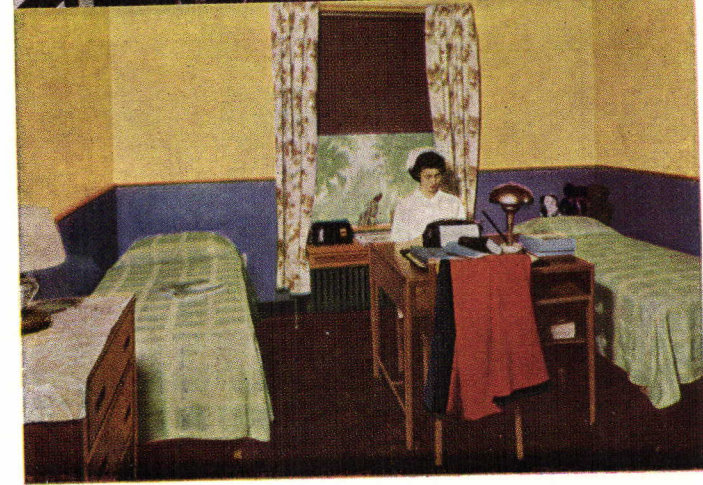
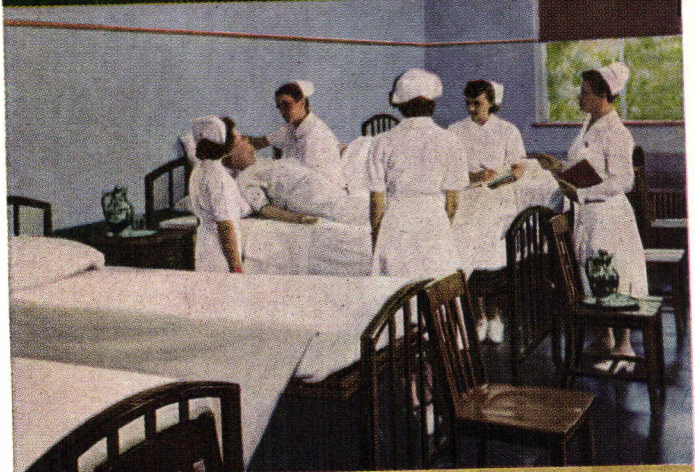
The RIGHT pencil for the RIGHT job  
KOH-I-NOOR PENCIL COMPANY, INC., BLOOMSBURY, NEW JERSEY







*Happy Hospital!*



Why are so many older hospitals grim, colorless places? Tradition, or inertia, or whatever it was that caused this unhappy situation is fast being overcome by architectural designers who recognize the actual therapeutic value of color and beauty to the sick . . . and to those who serve the sick.

Today, architects the world over are using Formica\* to prove that a cheerful material can be more sanitary and less costly to maintain than the drab, uninteresting interiors of the past.

For instance, here in the Good Samaritan in Cincinnati, Formica is on walls and window stools in training wards, corridors and nurses' dormitory rooms. Formica's smooth, tough, long-wearing surface actually repels dirt . . . what dirt might adhere to its non-porous surface wipes clean with the swish of a damp cloth.

Formica is unharmed by alcohol, mild acids, alkalis and boiling water.

See 1949 Sweet's Architectural File (section 13i, catalog 4) for more Formica information . . . and for availability of actual Formica color and pattern samples of your own selection. Copyright 1949, The Formica Co., 4633 Spring Grove Ave., Cincinnati 32, Ohio.

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Guaranteed by  
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# It's the Law

(Continued from page 108)

there is a provision in the contract permitting such service. Therefore, in a contract between residents of different states it may be of importance to designate specifically the manner in which notice must be given, in order to comply with the jurisdictional requirements of the state in which the agreement will be enforced. If this is not done, the effectiveness of the arbitration agreement will depend upon the good faith of both parties in voluntarily complying with it.

From the viewpoint of legal effectiveness, it also may be of importance to designate, in the agreement to arbitrate, the state in which the arbitration is to be held and the law which is to govern the contract. This would be so where the contract in question is made in a state which does not have an enforcing arbitration statute. In such a situation, it would be desirable in most instances to provide that the arbitration be conducted in and pursuant to the laws of a state which has such a statute. Many, although not all, of the states which do not have an arbitration statute will nevertheless not assume jurisdiction of a legal action where there is an agreement to arbitrate in a foreign state which does have such a statute. Thus, indirectly, the agreement to arbitrate is enforced. Similarly, where the actual contract in question is between a citizen of the United States and a citizen of a foreign country, the arbitration agreement should provide the place and the law under which the arbitration should be conducted.

An arbitration clause which is well-drawn will clearly set forth what disputes are subject to arbitration. On this point, the architect-owner form contract of A.I.A. merely provides:

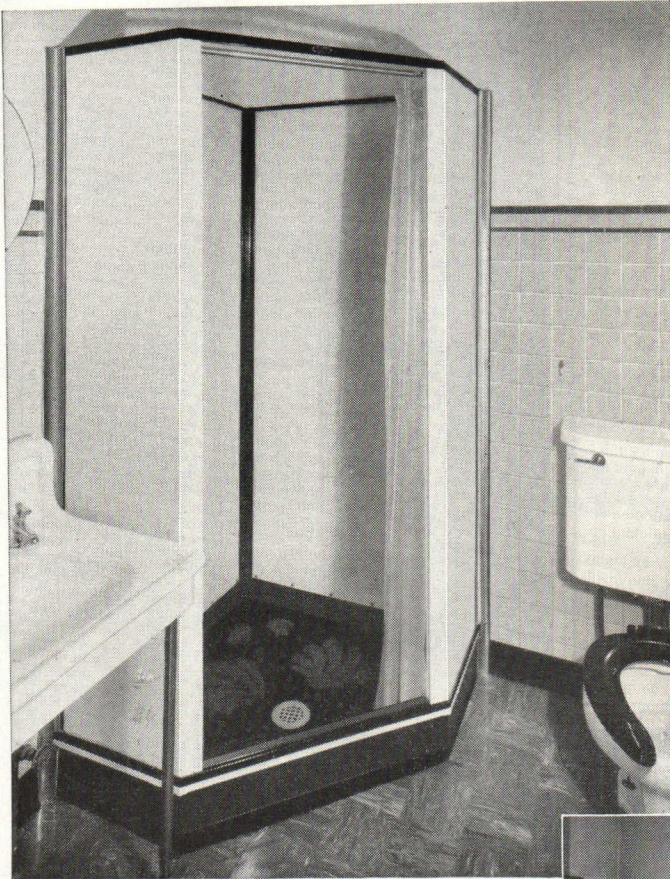
"All questions in dispute under this agreement shall be submitted to arbitration at the choice of either party."

The arbitration clause in the A.I.A. form for Small Construction Contracts (owner-Contractor) provides in part as follows:

"Any disagreement arising out of this contract or from the breach thereof shall be submitted to arbitration and this agreement shall be specifically enforceable under the prevailing arbitration law, and judgment upon the award rendered may be entered in the highest court of the forum, state or federal, having jurisdiction. It is mutually agreed that the decision of the arbitrators shall be a condition precedent to any right of legal action that either party may have against the other.

... "At the written request of either party, at any time prior to the complete appointment of arbitrators, as provided above, or in the event of any default or lapse in the proceeding, the arbitration shall be held under the Standard

(Continued on page 114)



Before and After Modernizing bathrooms in Hotel Van Orman, Fort Wayne, Indiana.



## MODERNIZE BATHROOMS

WITH

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Whenever you face the problem of bringing bathrooms up-to-date, consider the evidence of these pictures as to how Weisways can serve your purpose. Note the fine, modern appearance of Weisways. Then go beyond appearance and check the details of quality construction which assure your client's satisfaction through the years.

Weisways are built of service-tested materials. They are carefully engineered and precision-fabricated—guaranteed leakproof! Quickly, easily installed without special treatment of building walls or floors, Weisways are equally well adapted to modernizing and new building. In homes as well as in hotels, institutions and schools, Weisways combine with other standard bathroom fixtures to provide the utmost in bathroom appearance and serviceability.

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The pictures tell the story of striking improvement achieved through the use of Weisway Cabinet Showers in the modernization of Hotel Van Orman (formerly the Anthony) in Fort Wayne, Ind. Hotel guests prefer the comfort and cleanliness of the shower bath. In the Weisway, with its exclusive Foot-Grip, No-Slip floor of vitreous porcelain, they enjoy shower bathing at its best.

"Your Weisway Cabinet Showers in our hotel have elicited many compliments from our guests and I am happy to recommend Weisways most highly to all who are contemplating a similar installation," writes F. Harold Van Orman, president, Van Orman Hotels.

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### **PITTSBURGH STEEL PRODUCTS COMPANY**

*A Subsidiary of Pittsburgh Steel Company*  
**Pittsburgh, Pa.**







Before and After Modernizing bathrooms in Hotel Van Orman, Fort Wayne, Indiana.



## MODERNIZE BATHROOMS

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## It's the Law

(Continued from page 108)

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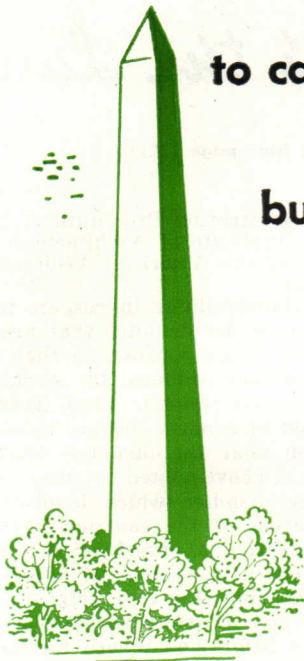
"Any disagreement arising out of this contract or from the breach thereof shall be submitted to arbitration and this agreement shall be specifically enforceable under the prevailing arbitration law, and judgment upon the award rendered may be entered in the highest court of the forum, state or federal, having jurisdiction. It is mutually agreed that the decision of the arbitrators shall be a condition precedent to any right of legal action that either party may have against the other.

... "At the written request of either party, at any time prior to the complete appointment of arbitrators, as provided above, or in the event of any default or lapse in the proceeding, the arbitration shall be held under the Standard

(Continued on page 114)

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to cap a monument  
eternal or a  
built-up roof:

# aluminum

NOTHING better demonstrates the architectural versatility of aluminum than this contrast: the massive aluminum casting on top of the Washington Monument, substantially unchanged by more than a half century of weathering; and Reynolds .004" Embossed Aluminum, supplied in rolls and applied like felt to built-up roofs.

In the older instance, aluminum's light weight, freedom from rust and resistance to corrosion were the obvious advantages...together with stain-free beauty.

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ALFORD REFRIGERATING WAREHOUSES, DALLAS, TEXAS — NOW UNDER CONSTRUCTION, ROOFING CONTRACTOR: LLOYD GRAY, MT. AUBURN ROOFING COMPANY. SPECIFICATIONS FOR THE 23 ACRES OF BUILT-UP ROOF: 2 PLYS OF REYNOLDS .004" EMBOSSED ALUMINUM OVER 30 LB. FELT



There's No Better Way to Hang  
**FLUORESCENT FIXTURES!**

Here's a fluorescent fixture installation that was fast and easy, required fewer hanger rods, and maintains perfect alignment.



They did it  
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**"UNISTRUT"**  
ALL-PURPOSE METAL FRAMING

You also can quickly, easily and economically build all types of shelving, framing, supports, mounts, racks, tables and benches—pipe and cable hangers, and fluorescent supports—and many other structures with only a hacksaw and wrench.

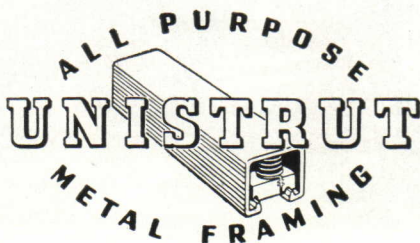
Here's real "strength without bulk." Completely adjustable and reusable, Unistrut is steel channel with a continuous slot. You simply insert the Unistrut spring nut at approximate point where you wish to attach another framing member, slide to exact position, bolt and tighten. No drilling or welding required.

Unistrut gives flexibility and installation advantages that can't be attained by old-fashioned methods of frame construction.

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*It's the Law*

(Continued from page 112)

Form of Arbitration Procedure of The American Institute of Architects or of the Rules of the American Arbitration Association."

These clauses differ in respect to a description of the disputes that are to be covered by the contract in that the latter provision includes the words *or from the breach thereof*. Thus, it could be asserted by a party seeking to avoid arbitration that the disputes covered by the first above-quoted provision are only those disputes which involve an interpretation of the contract as distinguished from a breach of the contract. There have been legal adjudications concerning this very point.

The purpose of arbitration is to avoid protracted litigation. Where the arbitration clause does not provide an adequate guide for the procedures which are to be followed and the rules by which the arbitration is to be conducted, the clause is self-defeating. If the arbitration agreement does not provide a method for selecting the arbitrators, holding the hearings, affording notice, etc., the parties to the agreement will find it necessary to go to court to resolve these questions if they cannot mutually agree. The parties run the further risk that the methods and procedures which they follow by agreement may not comply with the requirements of the state arbitration statute, if such a statute exists. On the other hand it is impractical to provide in the arbitration agreement all the necessary rules pursuant to which the arbitration should be conducted.

To resolve this problem, many commercial contracts have incorporated the standard form of arbitration clause provided by the American Arbitration Association. This clause provides:

"Any controversy or claim arising out of or relating to this contract or the breach thereof, shall be settled by arbitration, in accordance with the rules then obtaining of the American Arbitration Association and judgment upon the award rendered may be entered in any court having jurisdiction thereof."

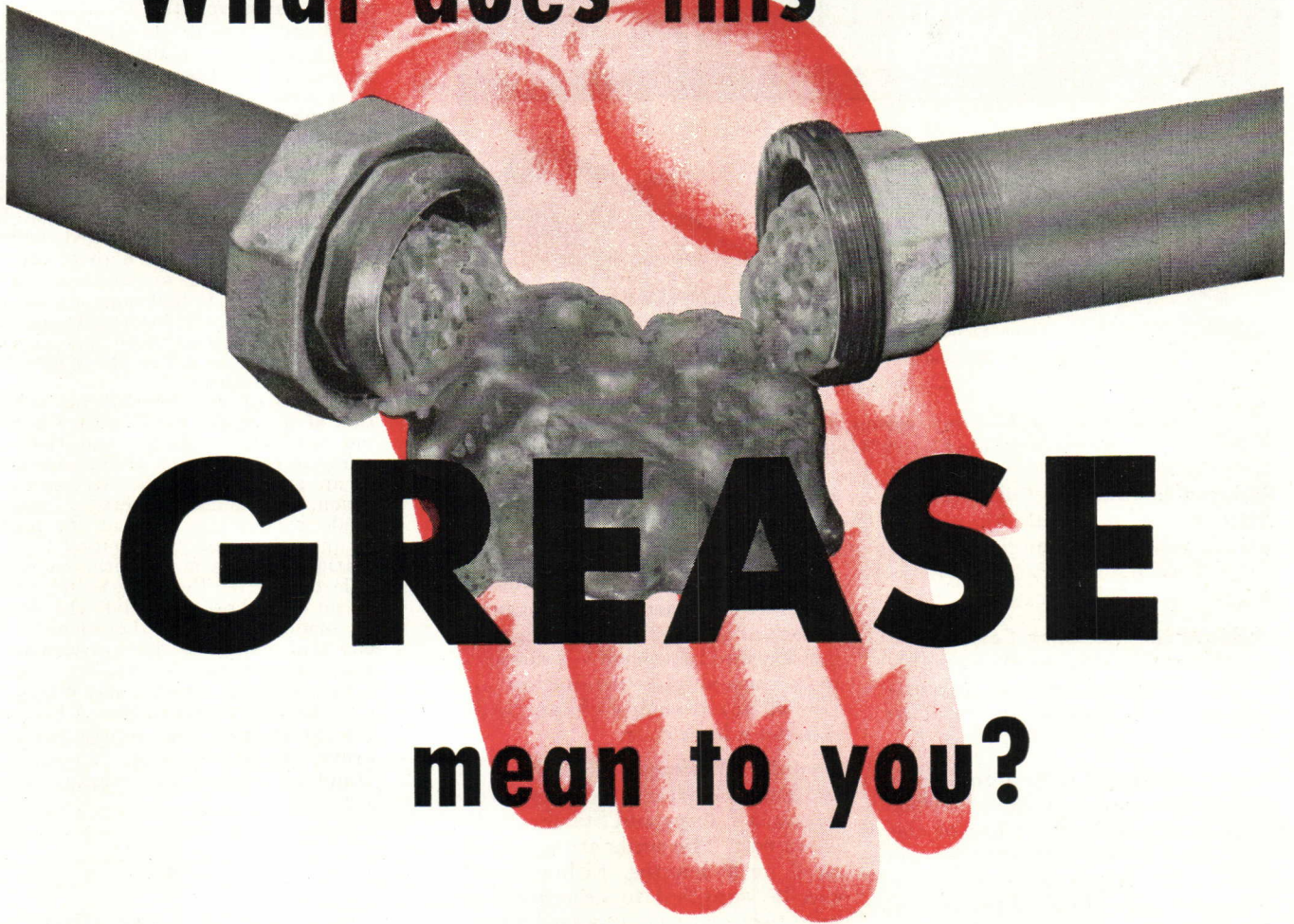
The rules of the American Arbitration Association have been drawn so that there will be compliance with the arbitration statutes when these rules are followed. Furthermore, these rules provide a standard procedure under which impartial arbitrators are selected, a fair hearing is conducted, and the technical requirements of notice, oaths, etc. are complied with. In utilizing a standard procedure, the parties to an architectural contract are thereby insuring, so far as possible, that the arbitration procedure will be effective and resort to the courts will be unnecessary.

The arbitration clause in the A.I.A.

(Continued on page 116)



# What does this



# GREASE

## mean to you?

Grease in drain lines means *trouble!* It means inconvenience to a hotel kitchen... costly repair bills to a meat packer... disagreeable odors to a hospital or school because grease clogged lines interfere with proper drainage! Grease in drain lines indicates that someone failed to provide the proper protection for the pipe lines of the building... failed to prevent damage to equipment... inconvenience and loss to the occupants.

The right time to guard against "grease-hazards" is when plans are being drawn—the right way is to specify only Josam Cascade Grease Interceptors. When the cost of proper grease intercepting equipment is so small compared with the building it protects, why let grease mean trouble to you? Modern construction calls for safeguards against grease—use Josam Grease Interceptors every time. Don't take chances—write for story today.

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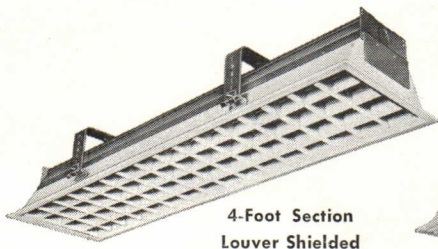
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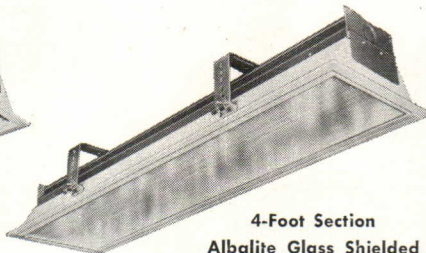


# INVESTIGATE

## these 6 advantages of Sylvania Fluorescent Troffers



4-Foot Section  
Louver Shielded



4-Foot Section  
Albalite Glass Shielded

Here are six of the many reasons why you should send for the complete story on Sylvania Electric's line of shallow fluorescent troffers.

**Reduced Installation Cost**—These fixtures are supplied completely wired, ready for hanging. Their simplified hanging assembly reduces on-the-job labor costs.

**Reduced Maintenance Costs**—The louvers or the Albalite glass shields are hinged to the reflector, permitting fast, easy cleaning and relamping.

**Maintained Light Reflection**—High initial reflection efficiency (86%) is maintained over the life of the unit because the reflector is surfaced with Sylvania's exclusive Miracoat—a hard-baked plastic finish that does not discolor and is highly resistant to cracking.

**Shallow Construction**—Only 3 $\frac{5}{8}$ " is required between the suspended

and the structural ceilings. Can be used with all standard ceiling materials.

**Adaptability After Installation**—Because one basic chassis is used, a louvered installation can be quickly and inexpensively changed to a glass-shield installation (or vice versa) if such a change is desired at a later date.

**Complete Packages of Light**—All units are delivered complete with Sylvania Lamps and Starters at no extra cost. The units are available in 4' or 8' lengths. Either length can be supplied to accommodate one, two, or three 40-watt lamps—and for installation with metal louvers, Albalite glass shields, or unshielded. Send coupon now for file-sized technical data.

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FLUORESCENT LAMPS, FIXTURES, WIRING DEVICES; ELECTRIC LIGHT BULBS; PHOTOLAMPS; RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES

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Mail  
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Today!

## It's the Law

(Continued from page 114)

form in "The General Conditions of the Contract for the Construction of Buildings," provides in part as follows:

"All disputes, claims, or questions subject to arbitration under this contract shall be submitted to arbitration in accordance with the provisions, then obtaining, of the Standard Form of Arbitration Procedure of the American Institute of Architects, and this agreement shall be specifically enforceable under the prevailing arbitration law, and judgment upon the award rendered may be entered in the highest court of the forum, state or federal, having jurisdiction. It is mutually agreed that the decision of the arbitrators shall be a condition precedent to any right of legal action that either party may have against the other . . .

"Notice of the demand for arbitration of a dispute shall be filed in writing with the architect and the other party to the contract. If the arbitration is an appeal from the architect's decision, the demand therefor shall be made within ten days of its receipt; in any other case the demand for arbitration shall be made within a reasonable time after the dispute has arisen; in no case, however, shall the demand be made later than the time of final payment, except as otherwise expressly stipulated in the contract."

It will be noted that this clause, unlike the one found in the A.I.A. form for architect-owner contracts quoted above, incorporates by reference the standard arbitration procedure of the A.I.A.

In the absence of such reference the parties to an agreement have no agreed procedure pursuant to which the arbitrators will be selected and the arbitration hearing conducted. Their only remedy would be to resort to legal action and have the court fill in the gaps which exist in their contract. The A.I.A. arbitration clause which is included in the Small Construction Contract quoted above, also refers to the standard procedure of the A.I.A. and the rules of the American Arbitration Association. This clause provides a *modus operandi* for proceeding with the arbitration where there is a disagreement between the parties. Incorporating by reference into your arbitration agreement a standard procedure which has successfully met the test of legal interpretation and adjudication is a practical and safe way to insure the benefits sought through the agreement.

There are a few jurisdictions in which the right of an architect to apply a mechanic's lien where he is unpaid for his services may be lost if he resorts to arbitration. Certain states have held that the submission of a dispute to arbitration constitutes a waiver of the

(Continued on page 118)



WHEELER OSGOOD *Tru-sized*®

*Doors set the stage*

for attractive interiors



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**A SECOND CLASS DOOR** doesn't save a penny. Not when your reputation is at stake. That's why so many builders specify TRU-SIZED Doors. They're first class, first quality in every way... and they save you up to 55 valuable minutes on each installation.

**TIME IS MONEY!** TRU-SIZED doors are factory machined to exact book openings. They're ready to hang—without sawing, fitting or planing. Resin sealing saves additional time—protects

the surface against dirt and dampness and eliminates need of any further priming coat before final finishing.

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# CEMENT PAINT... TO BRIGHTEN AND PROTECT



## For bright, protective Cement Paint... ATLAS WHITE CEMENT

There's a happy marriage of beauty and utility in factory-prepared portland cement paint, made with Atlas White Cement. There's bright, refreshing whiteness or color. And, when applied to concrete, concrete masonry, stone, brick or hollow tile this handsome finish penetrates the pores, forming a protective coating that resists moisture, dirt and dust.

Besides its decorative utility in portland cement paint, Atlas White Cement, when used as a matrix, also brings out clearly and permanently the rich values of color pigments and aggregates used in Terrazzo, Stucco and Architectural Concrete Slabs. An infinite variety of color tones and shadings is possible.

Atlas White Cement complies with Federal and ASTM specifications for portland cement. It has the same advantages for concrete and is used in the same way. Concrete made with Atlas White Cement cleans easily. Maintenance costs are low.

**For further information** on the uses of Atlas White Cement, see *SWEET'S Catalog, Section 4B/3 and 13C/5*, or write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, N. Y.

FOR BEAUTY AND UTILITY  
**ATLAS WHITE CEMENT**  
FOR TERRAZZO, PAINT, SLABS, STUCCO



"THEATRE GUILD ON THE AIR"—Sponsored by U. S. Steel Subsidiaries  
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## It's the Law

(Continued from page 116)

right of the arbitrating party to a mechanic's lien. The courts of Illinois, however, have held that resort to arbitration does not constitute a waiver of the right to a mechanic's lien and that such right is a cumulative remedy. The majority of opinions agree with this view. The law in New York on this subject, however, is somewhat in a state of flux. Early decisions contained language which indicated that an arbitration award constituted a waiver of a lien asserted by the plaintiff. A recent decision has seemingly reversed this rule in part. This decision was to the effect that an arbitration award did not eliminate the right of the plaintiff to go into court in order to foreclose a lien; but, the arbitration award would not afford the basis for such foreclosure. It would be necessary for the contractor in an independent legal action to establish his right to a judgment against the property.

Conversely speaking, there is a related problem which should be considered. A few jurisdictions have held that the filing of a lien is a waiver by the contractor of his right to enforce an arbitration agreement. The theory underlying this rule is based upon the assumption that the filing of a mechanic's lien indicates an attempt by the contractor to abandon his right to arbitrate. This assumption is, of course, not warranted and therefore many states have adopted legislation reversing this rule. In the lien law of New York, for example, it is specifically provided that the filing of a notice of lien does not constitute a waiver of any right of arbitration. This law further provides that in any arbitration in which the value of labor or materials furnished is determined, such value will be conclusive between the parties to the arbitration in any action to foreclose a lien. It is thus important for a contractor to examine the applicable law of the state to determine the relationship between his right to a lien and his right to arbitrate.

In summary, a properly formulated arbitration clause should contain:

1. A provision that "any agreement arising out of this contract or from the breach thereof shall be submitted to arbitration."
2. A reference to a standard procedure pursuant to which the arbitration is to be conducted.
3. A specific provision that all notices may be served by registered mail.
4. The designation of a state which has adopted an arbitration statute as the place where and pursuant to whose laws the arbitration will be conducted.



*Twelve Zones  
of Comfort...*



# Hydro-Flo<sup>\*</sup> Heating

gives each tenant  
individual control of temperature



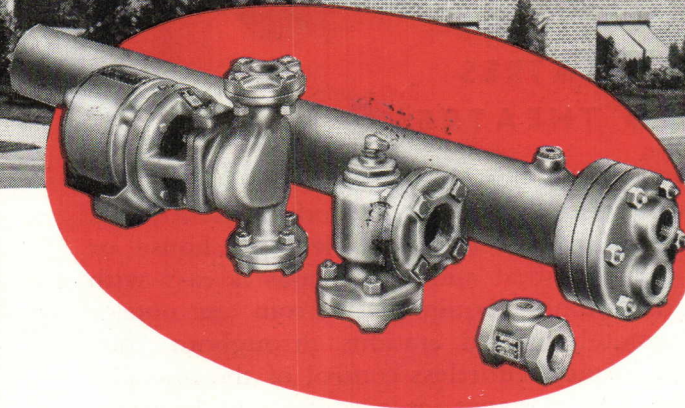
70°



75°

**PLUS AMPLE HOT WATER  
ALL YEAR 'ROUND**

The Water Heater unit of a B & G Hydro-Flo System furnishes abundant hot water, night and day, summer and winter. It is heated by the same boiler that heats the building.



*The simplicity of B & G Hydro-Flo Heating equipment assures dependable operation and insignificant maintenance. Basic units consist of a B & G Booster Pump, Flo-Control Valve, Water Heater and MonoFlo Fittings.*

Temperature regulation in apartment houses has always been notoriously inadequate—resulting in tenant discomfort and extravagant waste of fuel. B & G Hydro-Flo Heating—a forced hot water system—provides an easy solution to the problem.

The apartment house illustrated here was constructed with a B & G Hydro-Flo System, divided into twelve heating zones. Each apartment was served by a separate zone; hence, each tenant could set his thermostat for any desired temperature without affecting the comfort of other building occupants.

B & G Hydro-Flo Heating adds further to comfort by its sensitive control of the heat supply. It automatically changes the rate of heating to meet changes in the weather . . . saves fuel so often wasted by overheating.

There are no limitations to the application of B & G Hydro-Flo Heating. This forced hot water system is being used today on a nation-wide scale in small low-cost homes, factories, institutions and commercial buildings.



SEND FOR CATALOG  
OF B & G HYDRO-FLO  
HEATING PRODUCTS



## BELL & GOSSETT

Morton Grove, Illinois

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*Company*





**FOR NEW THEATRES  
FOR OLD THEATRES**

Push the button at your fingertips — and the POWERSTAT Dimmer lowers or raises houselights smoothly, silently and efficiently. Dimming, brightening or blending house or stage lights to create desired audience moods is easy with this modern light dimming equipment. From any one or a number of remotely-located stations throughout your theatre, you have instant, effortless control of the intensity of your lighting. The manager, at a convenient location; the head usher, from his station; or the projectionist, from his booth, can dim the house and proscenium lights by pushbutton action. There is none of the shock attending the usual "ON-OFF" switching. Quietly, unobtrusively, houselights lower to signal the start of the screen performance. Just as effectively, after the picture, houselights brighten to enable patrons to leave the theatre quickly, safely and comfortably.

Building a new theatre? Renovating your present operation? There's a POWERSTAT Dimmer to meet every application. These modern light dimmers handle incandescent and cold-cathode installations with equal effectiveness — provide trouble-free service.

Write today for complete details on POWERSTAT Dimmers for your theatre — then consult your illuminating engineer or electrical contractor.

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POWERSTAT VARIABLE TRANSFORMERS • VOLTBOX A-C POWER SUPPLY • STABILINE VOLTAGE REGULATORS

## COMPETITIONS

Winners of the *International Low-Cost Furniture Competition*, sponsored by the Museum of Modern Art and the Museum Design Project, Inc., have been announced. Awards for seating units are as follows: The first prize, \$5000, was divided between DON R. KNORR of Saarinen, Saarinen & Assoc., and PROF. GEORG LEOWALD of Berlin, Germany. The second prize, \$2500, was divided between CHARLES EAMES AND A UNIVERSITY OF CALIFORNIA AT LOS ANGELES GROUP, and DAVIS J. PRATT, Institute of Design, Chicago, Ill. Third prize, \$1250, went to ALEXEY BRODOVITCH, art director, *Harper's Bazaar*. Honorable Mentions were awarded to JOHN O. MERRILL and JOHN B. McMORRAN, Massachusetts Institute of Technology.

The first prize, \$5000, in the storage unit classification, was awarded to ROBIN DAY and CLIVE LATIMER, British designers. Honorable Mention in this division was ERNEST RACE, English designer.

Prize of \$2500 for best research report was awarded to JAMES L. PRESTINI AND THE ARMOUR RESEARCH FOUNDATION, ILLINOIS INSTITUTE OF TECHNOLOGY.

Winners of *The Hidden Talent Competition*, which called for design of a memorial community center for a hypothetical town in the Middle West, sponsored by the Museum of Modern Art and *Architectural Record*, have been announced. First prize, \$1000, JOSEPH Y. FUJIKAWA, firm of Ludwig Mies van der Rohe; second prize, \$750, G. J. LEE EVERIDGE, North Carolina State College; third prize, \$500, EDWARD CHASE WEREN of Saarinen, Saarinen & Assoc.

Honorable Mention prizes of \$50 were given to HERBERT S. JOHNSON, Gainesville, Fla.; WILLIAM R. REED, Chicago, Ill.; LOUIS F. MAMMIER, Brooklyn, N. Y.; CLIFFORD G. FOREMAN, Homestead, Pa.; EDWARD M. FEARNEY, University of Florida; SPERO PAUL DALTAS, Boston, Mass.; GEORGE E. RAFFERTY, St. Paul, Minn.; ELNOR M. HOOPS, Pontiac, Mich.; MARY ELLEN LINBERGER, Brooklyn, N. Y.; JAMES V. HIRSCH, St. Paul, Minn.

## CONFERENCE

THE ANN ARBOR CONFERENCE sponsored by the College of Architecture and Design, University of Michigan, will be held April 1-2 at the Rackham Bldg., Ann Arbor, Mich. Malcolm Storton will be chairman of the conference, subject of which is A Mid-Century Report on Design Progress, Review—Preview. Among those participating in the program will be Turpin C. Banister, Buckminster Fuller, Branson V. Gamber, Douglas Haskell, Joseph Hudnut, Richard N. Jones, Matthew Nowicki, G. Holmes Perkins, Walter A. Taylor, and Harold Van Doren.



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# WITH COPPER TUBES,

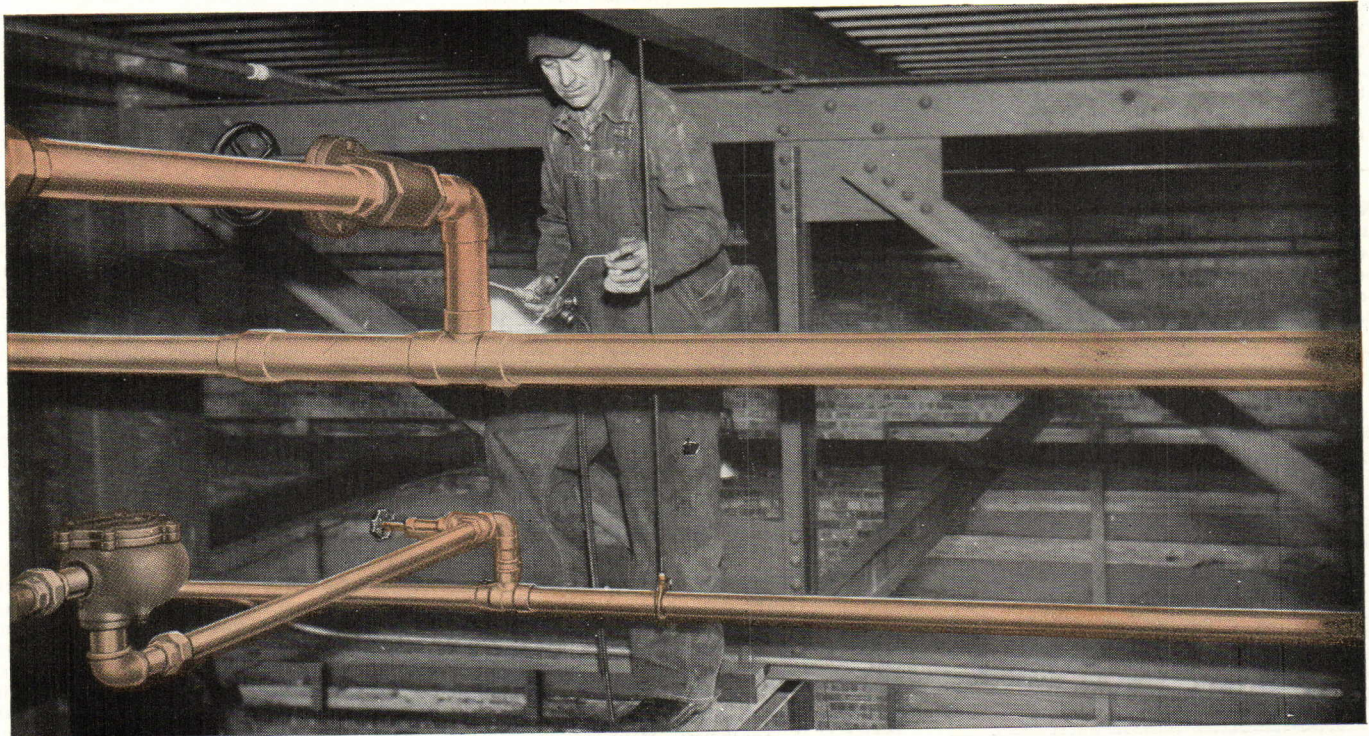
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**you subtract installation time . . .**

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**add years of rust-free service**

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WHETHER it's a heating installation like this one, or a simple plumbing job for a small home, Anaconda Copper Tubes offer the advantages of comparatively easy installation, freedom from rust, light weight, smooth flow through solder-type fittings moderate cost and long-term service.

The economies afforded by copper tubes make them a paying investment not only for water lines, but also in forced circulation hot water heating, as well as for lawn sprinkler systems, tank-to-oil-burner, bottled gas and other connections.

Anaconda Copper Water Tubes, Types K and L, together with solder-type fittings are supplied by wholesale distributors from coast to coast. Further information in Sweet's, 1948, A-26-1.

4776-B

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From mine to consumer

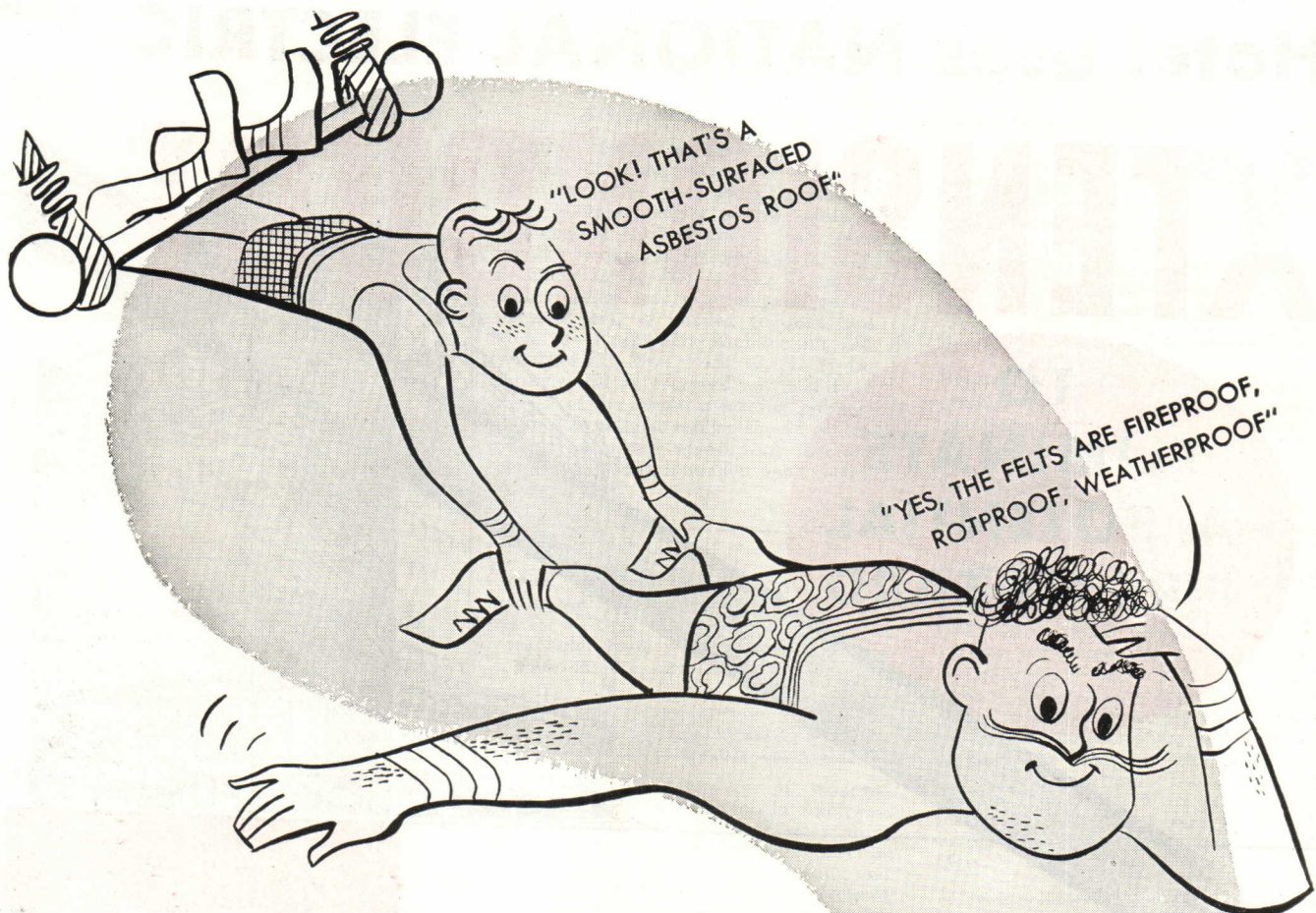
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**COPPER TUBES**

**THE AMERICAN BRASS COMPANY**

General Offices: Waterbury 88, Connecticut  
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"AND THERE'S NO EXCESS WEIGHT FROM SLAG OR GRAVEL"

## Yes—it's Flexstone\* Each ply is a flexible covering of stone!

• The secret of a Johns-Manville Flexstone Roof is in the *felts*. They're made of fireproof, rotproof, enduring *asbestos*.

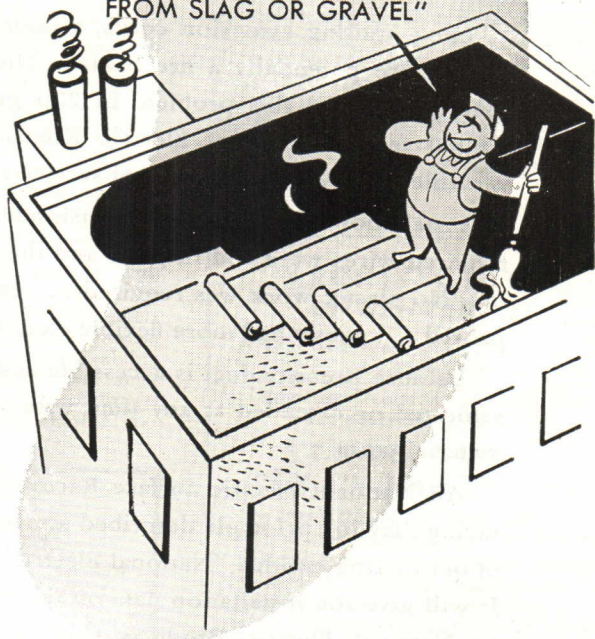
Flexstone Built-Up Roofs won't dry out from the sun... need no periodic coating. They're *smooth-surfaced*, too—permit thorough drainage... make any damage easy to locate and repair. They are engineered to each job... applied only by J-M Approved Roofers.

J-M asbestos felts are perforated to make application easier... give you a smoother job and conform better to irregularities in the roof deck.

Send for Flexstone brochure BU-51A. Contains complete specifications. Address: Johns-Manville, Box 290, New York 16, N. Y.



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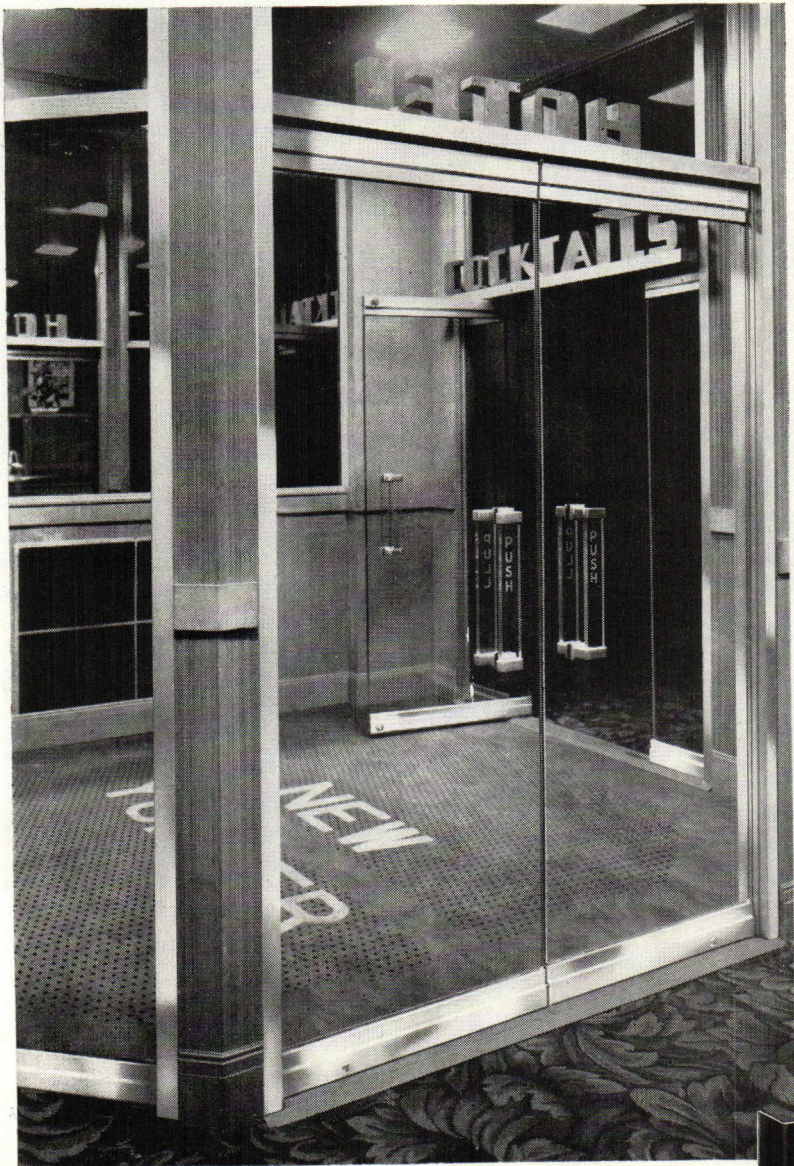
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# Johns-Manville **FLEXSTONE** Built-Up Roofs



# The New Factory-Assembled Door-Frame

that's *Easy to Specify - Easy to Install*



Architect: J. F. Lauck, Associates, Kansas City, Mo.

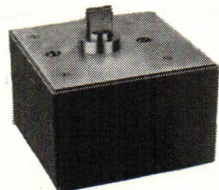
THE result of "Pittsburgh's" constant and extensive research, aimed at helping to solve architectural and building problems actually encountered in the field, this door-frame simplifies specification as well as installation. It is factory-built of special shapes and of heavy extruded aluminum, heavily reinforced with structural steel. It is fabricated to high quality standards by experienced metal craftsmen, who use special checking gauges to assure accuracy of all dimensions.

Pittsburgh Herculite Door-Frame Assemblies come in twelve standard designs and these make possible numerous combinations. There are no problems of setting and fitting; no assembly is required on the job. When ordering, all you do is indicate the name, "Herculite Door-Frame Assembly," and give the style number and size. It will come to you complete with moldings for transom glass, supports for sidelights, strikes for locks, sockets for bolts, and everything else necessary for its installation.

In addition, these door-frames are equipped with the famous Pittco Checking Floor Hinge. Only 6¼" x 6¼", this hinge has remarkable operating characteristics, such as positive door speed control, a separate checking control, and a built-in hold-open feature.

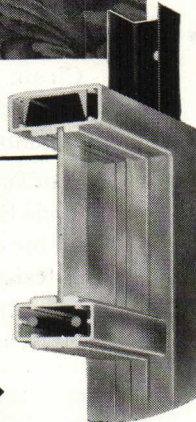
You will be interested in getting our illustrated booklet on Pittsburgh's Door-Frame Assembly. Fill in and return the coupon below for your free copy.

## HERCULITE DOOR-FRAME ASSEMBLY



Pitteco Checking Floor Hinge is sealed in oil for life. Case and covers are drop-forged. Main working parts are hardened and ground tool steel. Bearings are anti-friction, precision-ground.

Handsome, rugged design of frame is shown here. Fabricated of extra-heavy extruded aluminum, highly polished and anodized, it is heavily reinforced with steel channels and tie rods.



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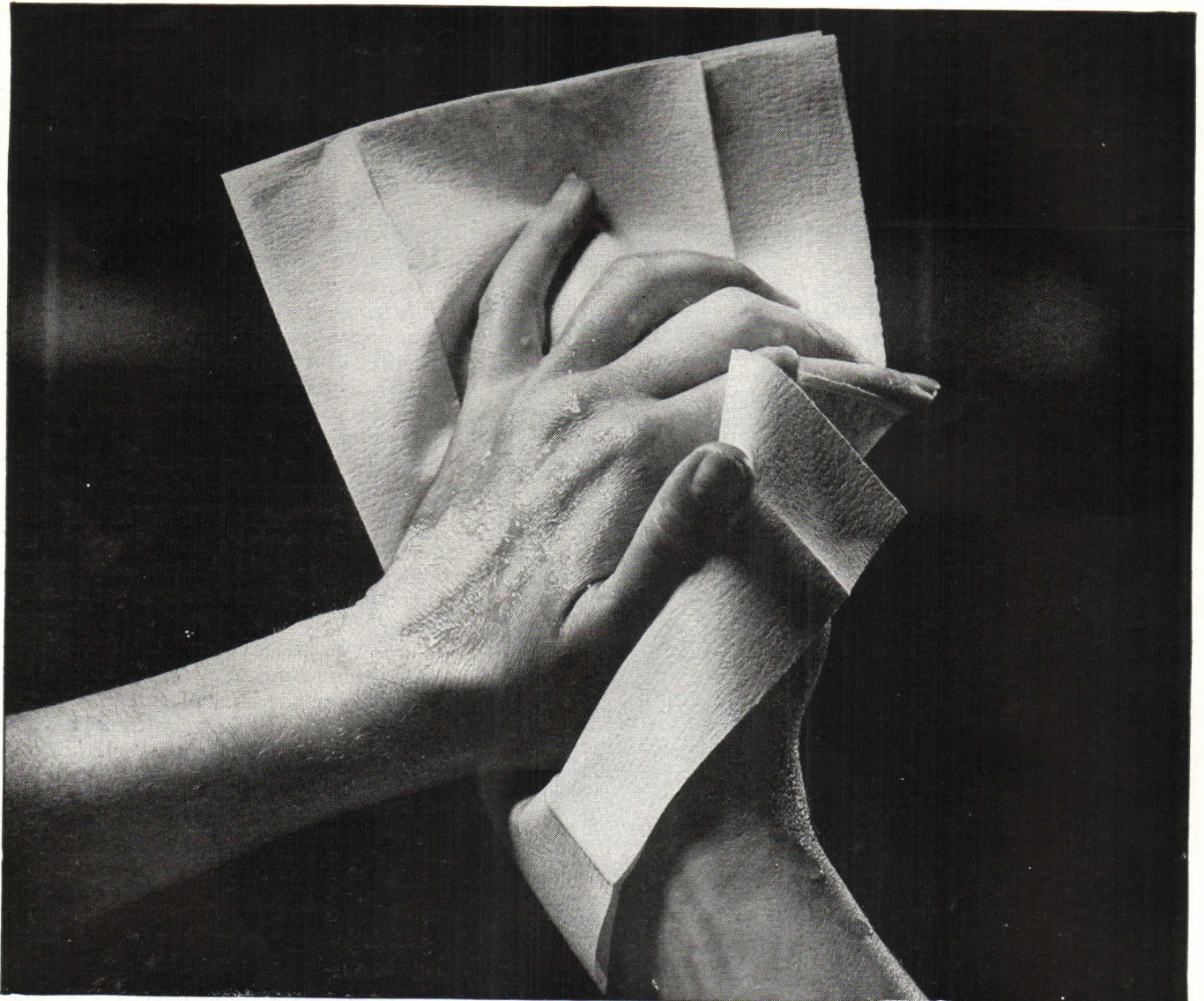
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PITTSBURGH PLATE GLASS COMPANY





Washrooms rank as one of the four most important factors in good working conditions—according to a survey of workers from 400 plants.

*In these hands...  
employee relations  
at work*

Well kept washrooms help demonstrate the consideration a company holds for its employees—and customers, too. Don't you feel a firm is inconsiderate when the washroom isn't *right*?

Clean, *modern, carefully* planned washrooms show thoughtfulness for the other person. You're doing your client a real service by making sure his washrooms *are* right.

ScotTissue Towels are a symbol of the right kind of washroom. Include ScotTissue Towel cabinets in your washroom planning. Send for our free booklet that's filled with helpful suggestions, well-tested plans and diagrams (by an architect specializing in this field) for large and small washrooms, etc. Write to the Scott Washroom Advisory Service, Chester, Pa.

Trade Marks "ScotTissue," "Duralose," "Washroom Advisory Service," Reg. U. S. Pat. Off.



## **SCOTTISSUE TOWELS**

**Symbol of the right kind of washroom**





Why I always use  
**CERTIFIED BALLASTS**  
 in fixtures I make!

- As a fixture manufacturer, I must have assurance that my complete fixture will be dependable and trouble-free in operation. I can't afford to offer a fixture that doesn't protect wholesalers and contractors and assure greatest satisfaction to the user.

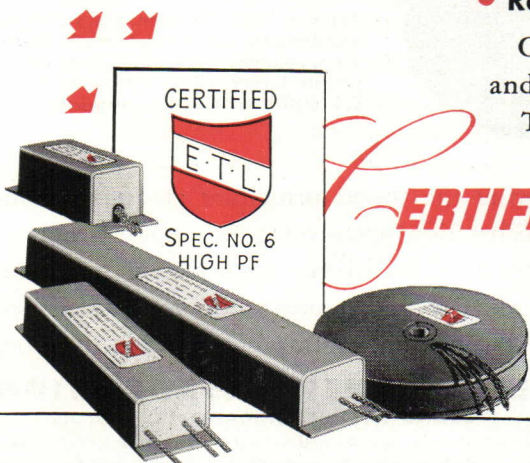
My reputation . . . my business future depend on the performance of the fixtures I make. That's why I always use Certified Ballasts.

Certified Ballasts assure—

- Full lamp life
- Quiet operation
- Rated light output
- Reliable performance

Certified Ballasts are made to rigid specifications—then tested and checked by impartial Electrical Testing Laboratories, Inc.

That's why I have confidence in Certified Ballasts. You will, too.

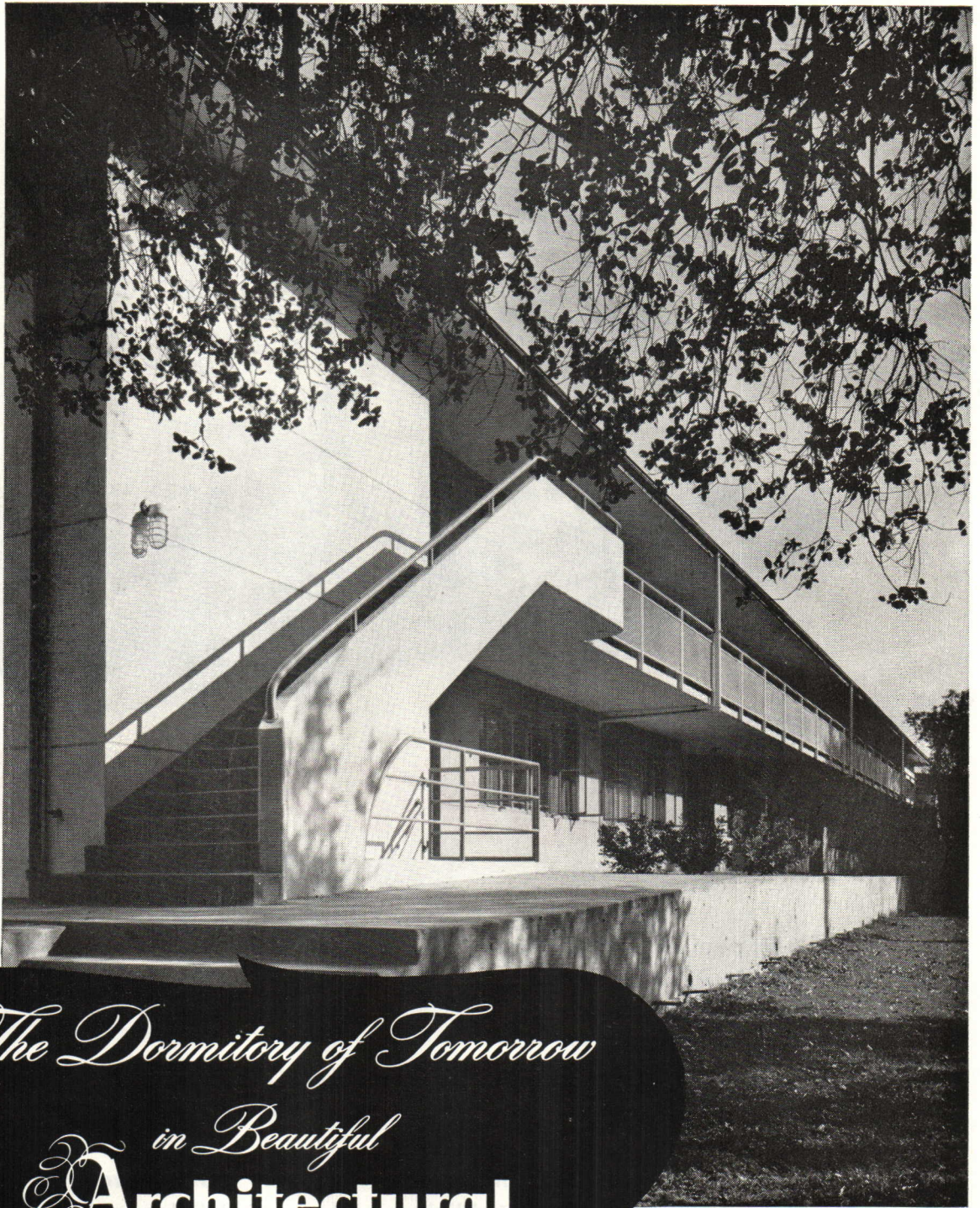


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## *The Dormitory of Tomorrow*

# *in Beautiful* **Architectural Concrete**

Appleby Hall, Claremont Men's College, was designed with concrete walls, floors, stairs, balconies and roof slab to withstand seismic forces. Allison & Rible, architects. E. S. McKittrick Co., Inc., contractor.

**T**HE new dormitories at Claremont Men's College, Claremont, Calif., featuring a simple floor plan and functional design, strike a strong masculine note as executed in architectural concrete.

Architectural concrete is adaptable to any style the architect may conceive. While it is rugged and enduring, it can be molded economically into delicate ornamentation possessing a sculptural quality.

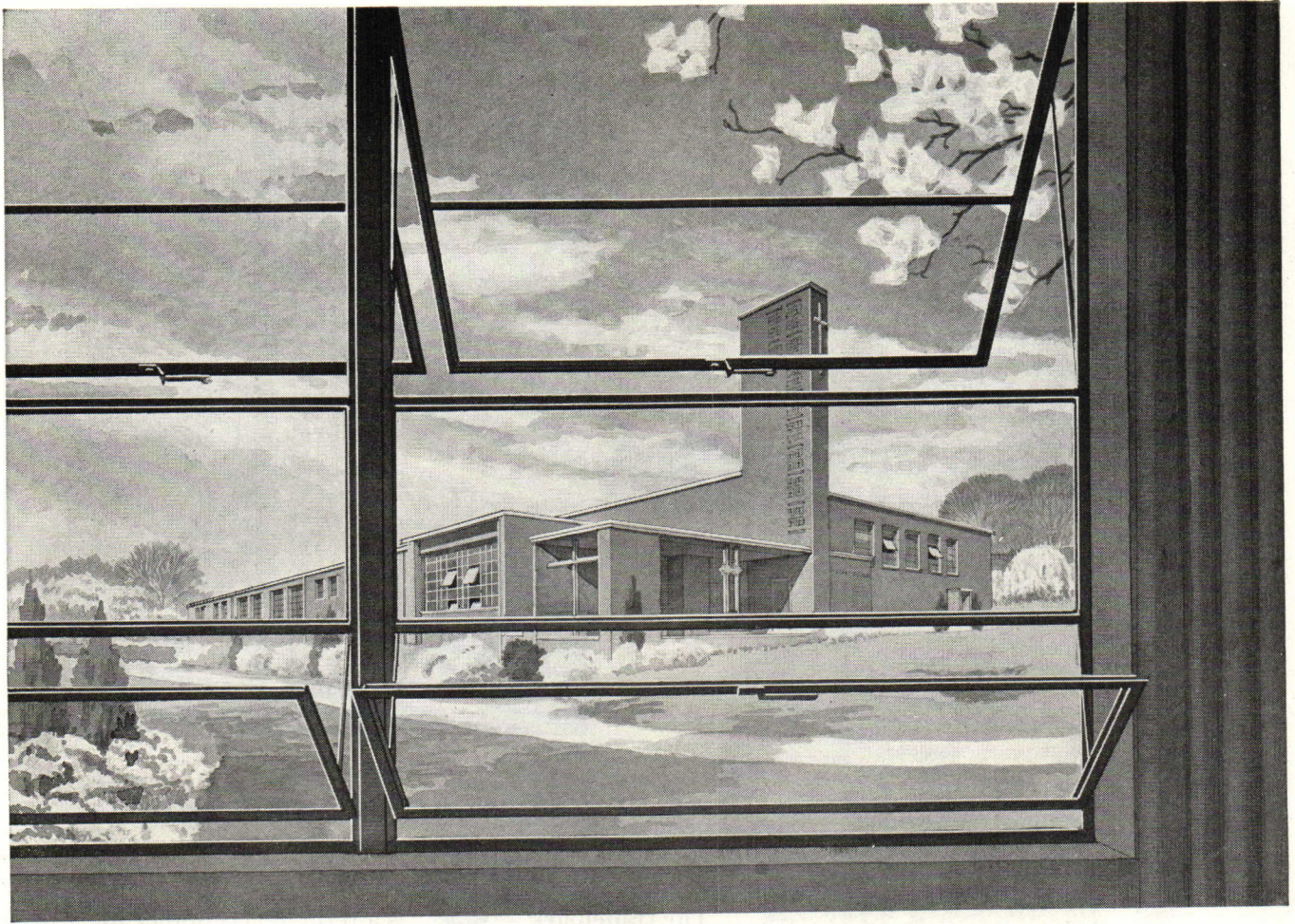
By following the tested principles of quality concrete construction architects can design architectural concrete buildings capable of resisting the climatic conditions prevailing in any part of the country, no matter how severe they may be.

### **PORTLAND CEMENT ASSOCIATION**

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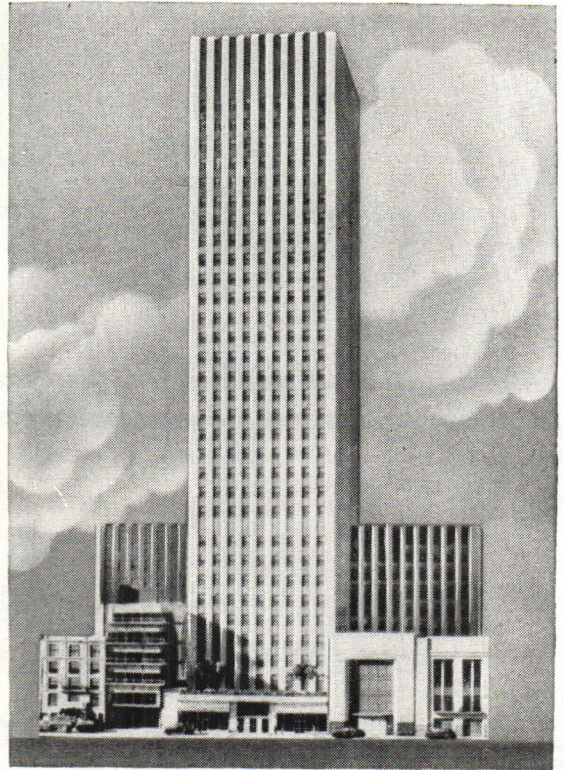
*St. Joan of Arc Parochial School,  
Hershey, Penna. Architect: Bernard  
E. Starr, Harrisburg, Pa. Contractor:  
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Harrisburg, Pa.*

Inside this school—as in hundreds of others—bright, cheerful classrooms tell the Lupton Metal Window story. Here are clear, effortless vision and controlled, healthful ventilation. Ventilators are easy to operate—will not warp, swell or shrink. Always weathertight. The Lupton projected movement opens ventilators to any desired amount and does not interfere with attachment of shades. Beautifully designed operating hardware adds the modern look to classroom interiors. Sturdy, long-lasting Lupton Metal Windows are backed by more than 40 years of steel window design. There is a Lupton Metal Window for every type of building—industrial, commercial, residential. Write for our catalog or see it in Sweet's.

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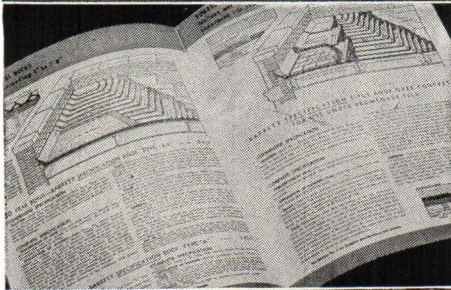
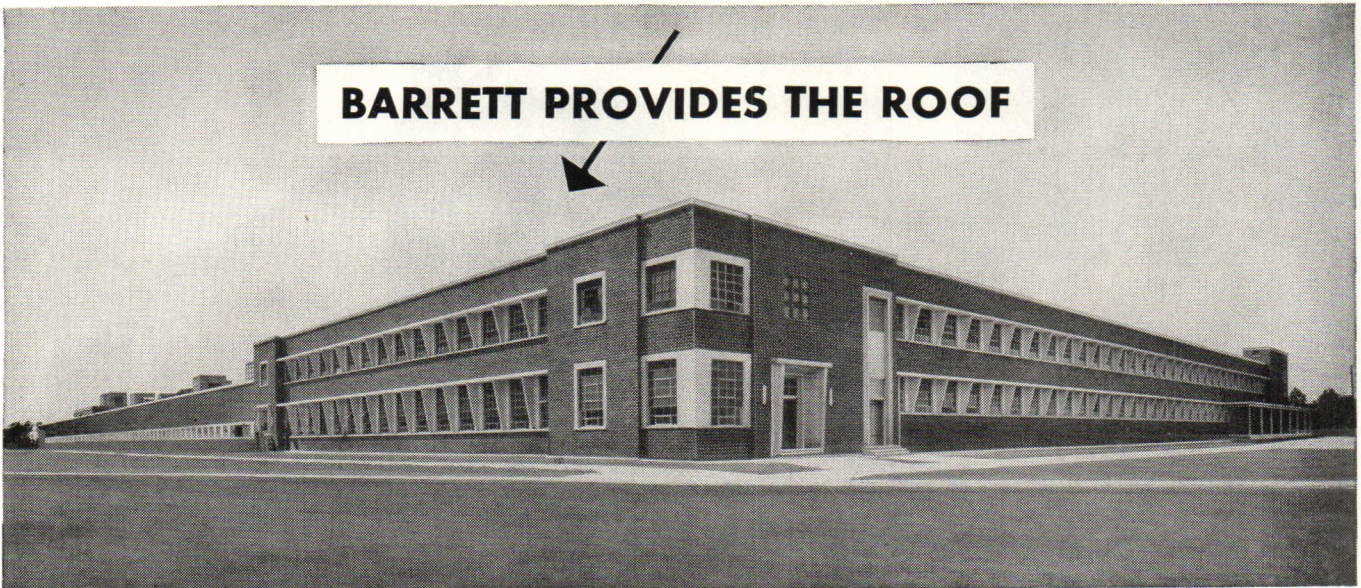
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**BARRETT PROVIDES THE ROOF**



No effort has been spared to make this huge new bleachery of the Springs Cotton Mills, near Lancaster, S. C., one of the world's most up-to-date buildings of its kind. Fittingly, it's protected by a Barrett\* roof. Barrett Specification\* roofs are modern, today, as they were when they were first developed many years ago—still the toughest, longest-lasting, best-value built-up roof that money can buy.

- 1 Barrett Specification\* roofs are applied by Barrett Approved Roofers according to rigid Barrett specifications developed through years of successful roofing experience.
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- 3 Top quality felt of Barrett's own manufacture holds the pitch in place and permits the use of greater quantities of this waterproofing than would otherwise be possible.
- 4 Final steps are a triple-thick coating of pitch—*poured*, not mopped—plus an armored surface of gravel or slag. Result is a roof that takes Fire Underwriters' Class "A" rating—a roof so good it can be bonded for 20 years.

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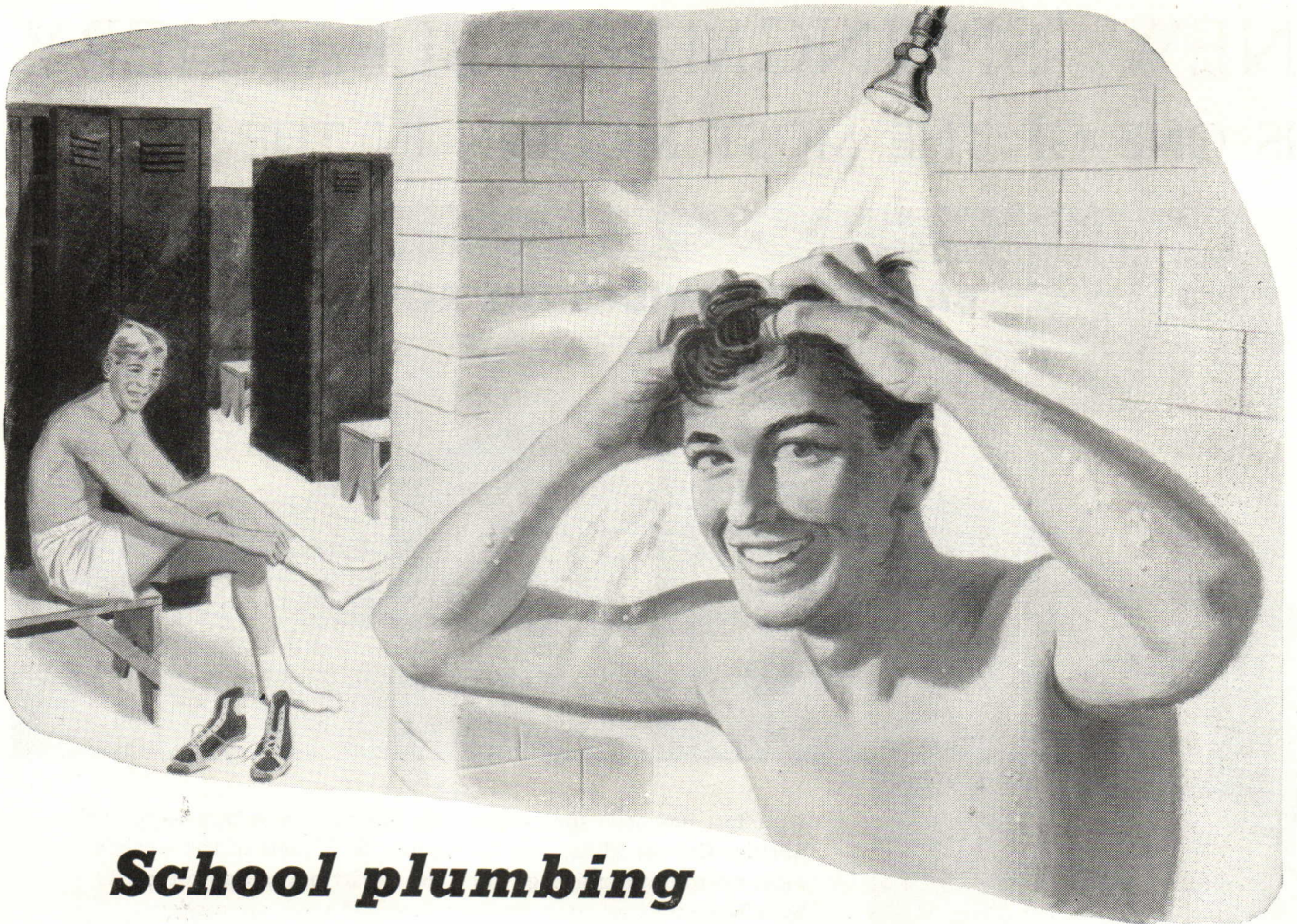
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Day in, day out—through the whole school year.

Crane designers keep that in mind. They know that school plumbing fixtures are going to take a beating . . . they *allow* for it. That's why Crane fixtures stand up through year after year of hard school usage.

Crane builds this extra strength into a complete line of school plumbing—fixtures of a type and size for students of all ages.

The Crane school line is represented in your copy of Crane Service for Architects. For special requirements, check with your Crane Branch or Crane Wholesaler.

# CRANE

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## **SCHOOL PLUMBING**

**PLUMBING AND HEATING • VALVES • FITTINGS • PIPE**

**NATION-WIDE SERVICE THROUGH BRANCHES, WHOLESALERS, PLUMBING AND HEATING CONTRACTORS**

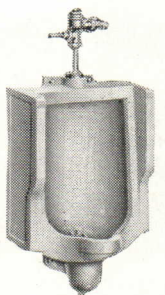
### **Highest Sanitation**

*. . . Crane provides extra safeguards to protect student health. Drinking fountains are designed to prevent any possible contamination. Shown: the C-9268 Corridor Fountain.*



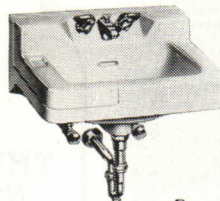
### **Complete Selection**

*. . . The broad Crane line includes every last requirement in school plumbing—not only the fixtures, but the piping that makes them work. Shown: the 7-87 Correcto Urinal.*



### **Easy Replacement**

*. . . To renew one of these Dial-ese faucets, you merely slip out the old cartridge unit, slip in the new. One unit fits all Crane faucets. Shown: the 1-135 Oxford Lavatory.*



### **Quick Cleaning**

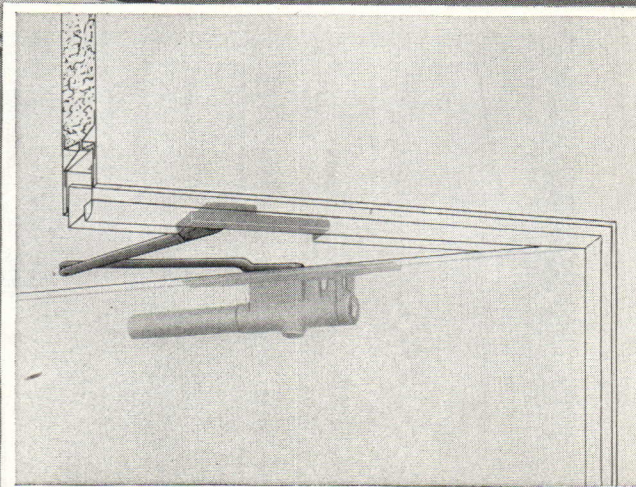
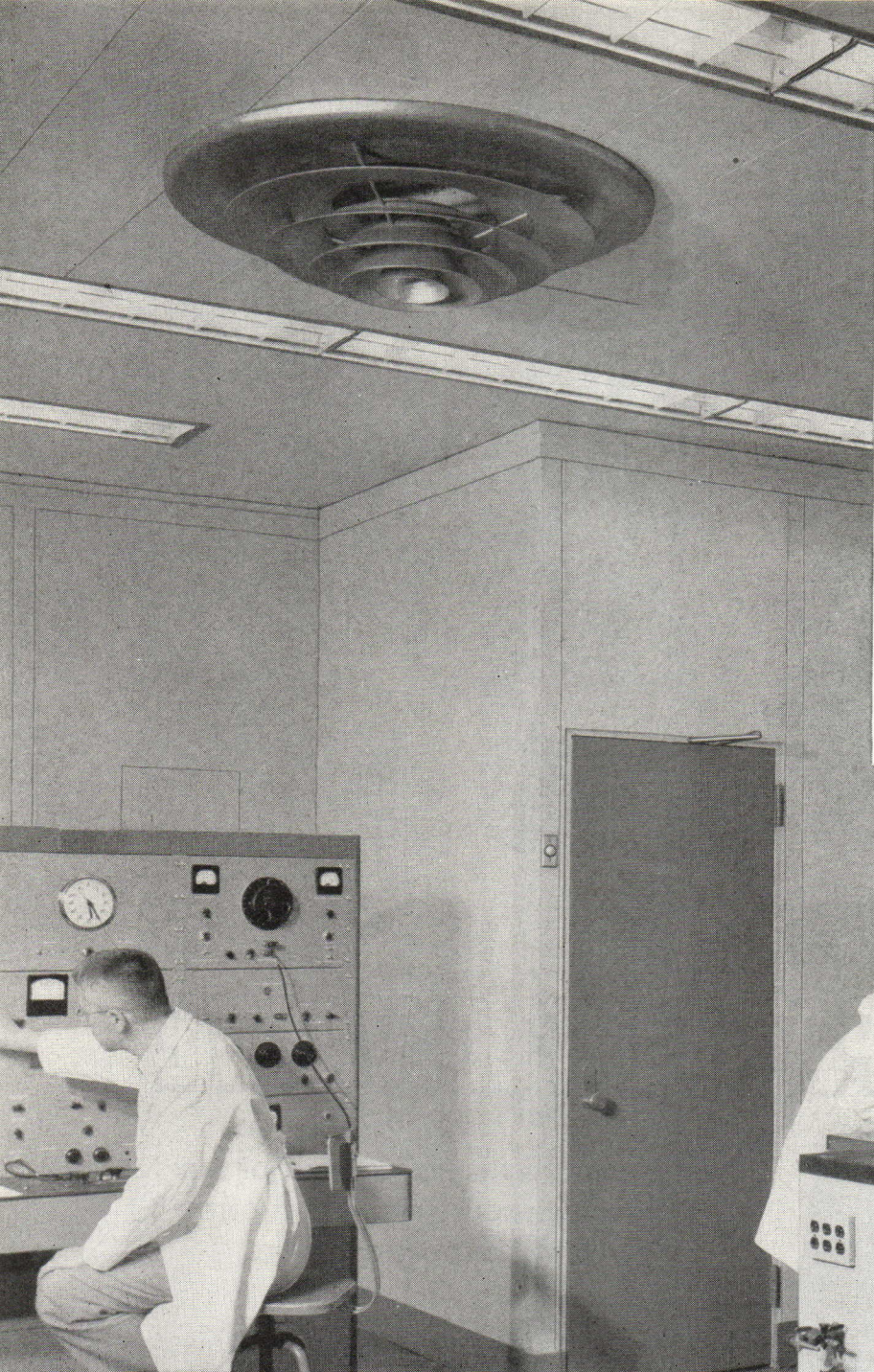
*. . . It is easy with wall-mounted toilets like this one. Once over with a damp cloth, and Crane school fixtures shine like new. Shown: the 3-468 Lowall Closet.*











● Designed especially for use in metal door and frame construction, the LCN No. 304 Closer is concealed within the door. Requiring only  $1\frac{5}{16}$ " in width, it fits easily into a  $1\frac{3}{4}$ " door prepared by the fabricator, and is secured by machine screws. The arm connects with a soffit plate in the head frame, where a three-point mounting allows for adjustment to local conditions.

## In This "Lab" Everything Has to be Right

**So the Steel Partition Doors Have LCN Concealed Closers**

● Modern from top to bottom is the new Whiting Research Laboratory, designed for Standard Oil Company of Indiana by Holabird & Root & Burgee, Architects.

The movable steel walls, fabricated by The E. F. Hauserman Co., have hollow metal doors equipped with LCN No. 304 Closers Concealed-in-door. The powerful mechanism of this closer is entirely hidden in the door itself, and with its unobtrusive lever arm will handle easily any metal interior swing door up to  $3\frac{1}{2}$ " x 7' x  $1\frac{3}{4}$ " in size, and will operate efficiently under common conditions of in-

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A hold-open feature is available where desired, as an integral part of the closer. Back-check action (to protect walls and fixtures on the opening swing) is always included.

This is but one of LCN's eleven types of concealed door control based on over twenty years of engineering and manufacture in this special field. LCN Catalog 11-b, almost a manual on the subject, promptly sent on request. LCN Closers, Inc., 466 West Superior Street, Chicago 10, Illinois.

OVERHEAD AND FLOOR CONCEALED

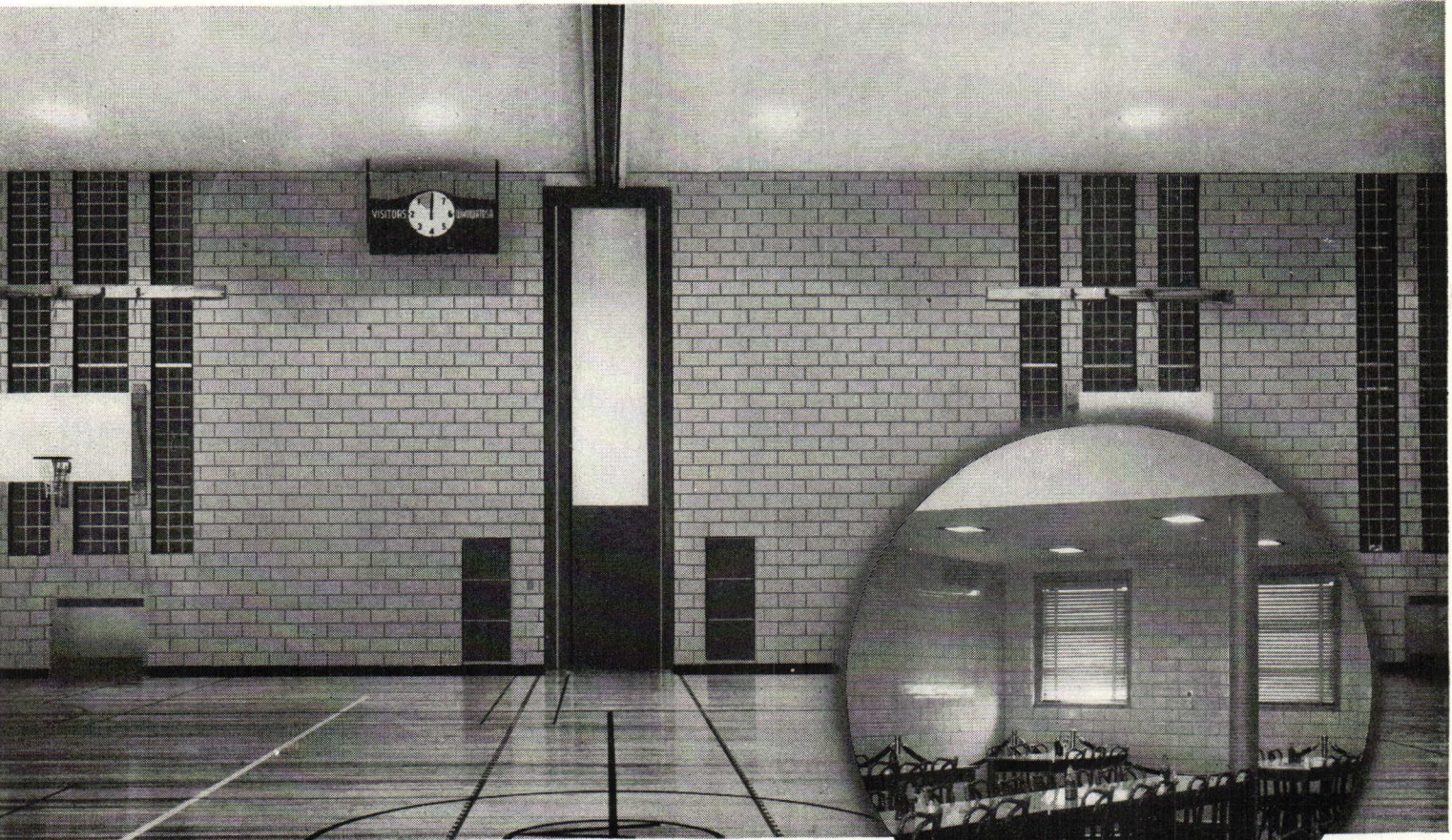


AND EXPOSED TYPE DOOR CLOSERS



# Cheer-leader" in school interiors . . .

# bright, clean walls of Facing tile



Glazed facing tile

Glazed facing tile

Here are interiors worth cheering about.

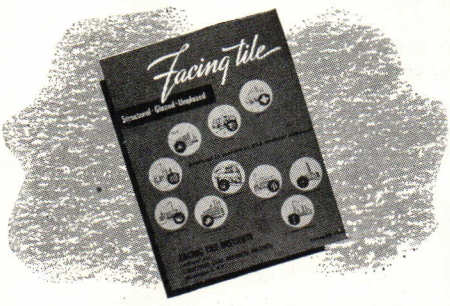
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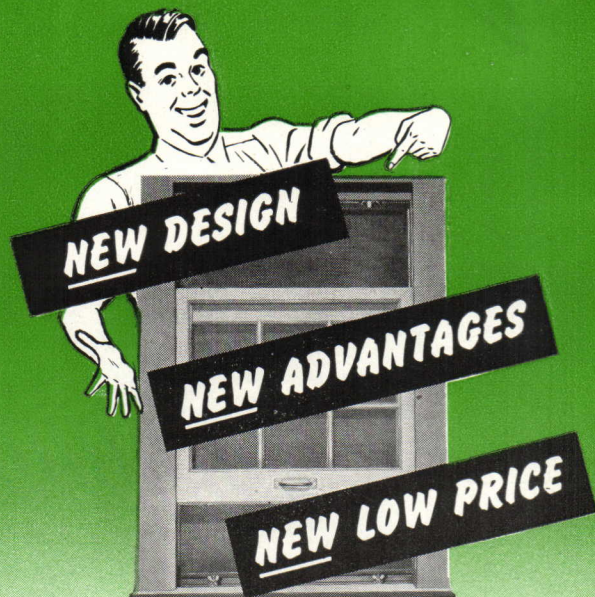
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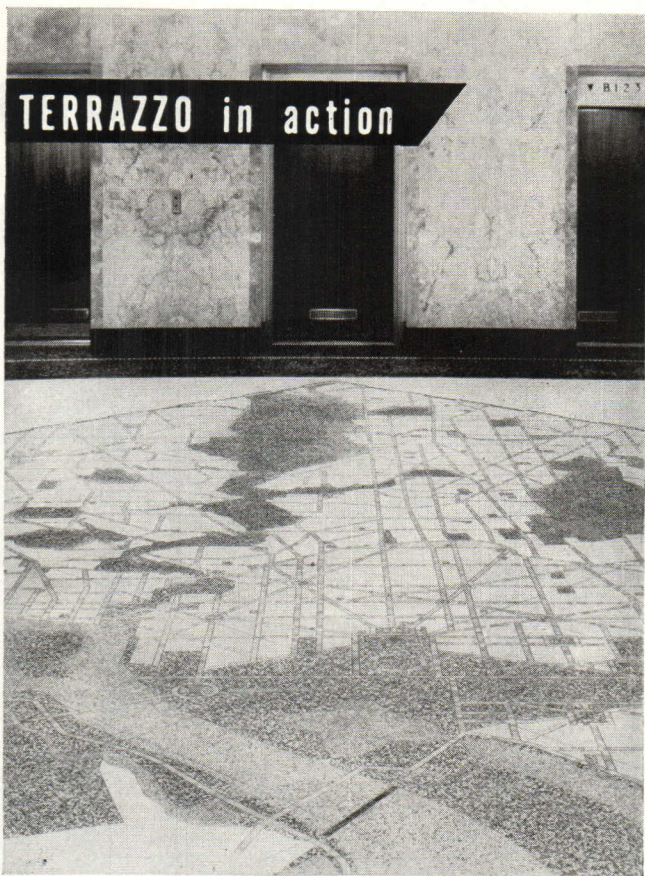
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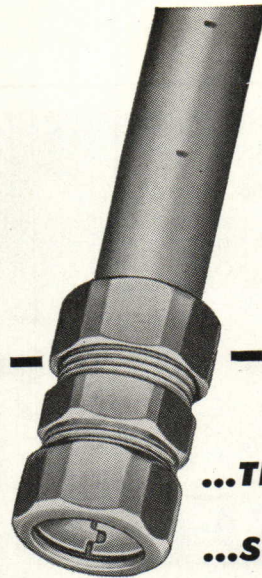


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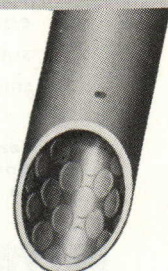
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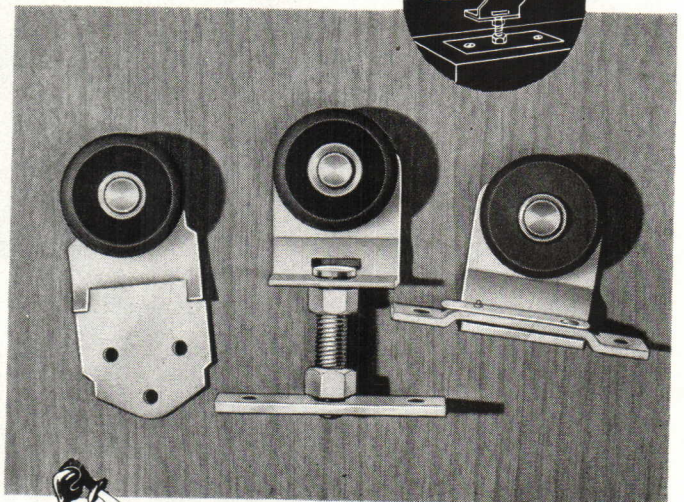
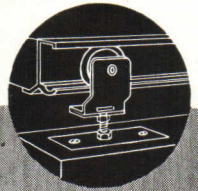
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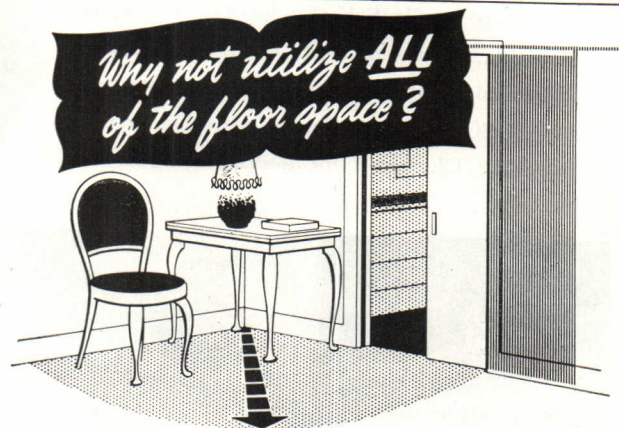
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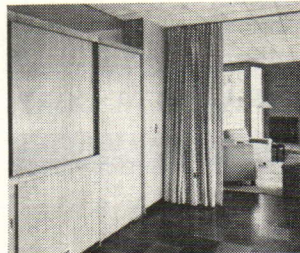
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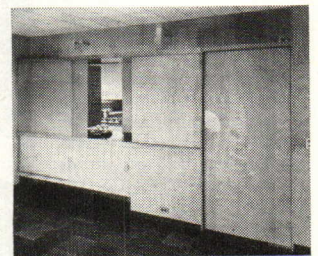
Looking from the dining room into the living room. Notice the commodious cabinets in dining room wall.



Maple Weldwood paneling and large windows make the nursery light and airy. Built-ins under the windows conserve floor space.



Again built-ins are accented in the birch-paneled living room and sliding-door closets in vestibule. Keyhole bracket, one of many used, is illustrated.



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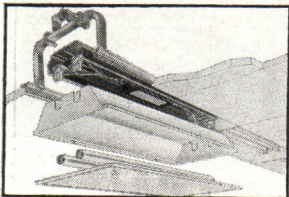
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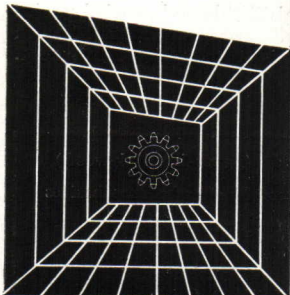


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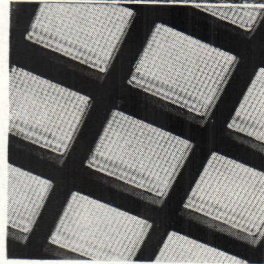
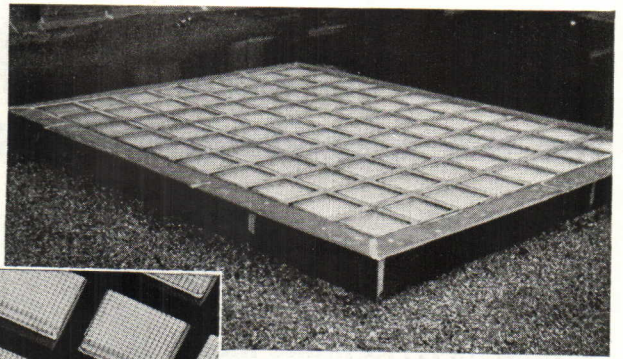


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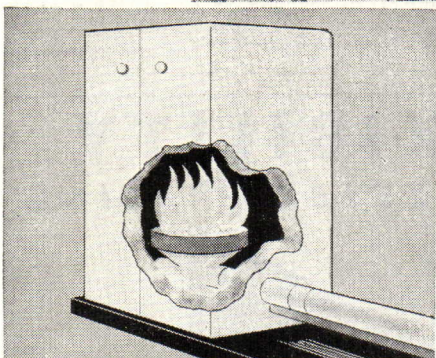
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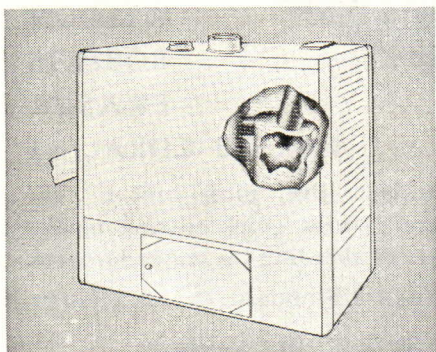
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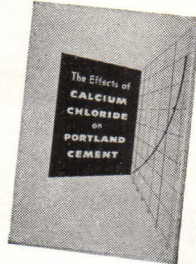
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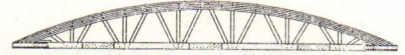
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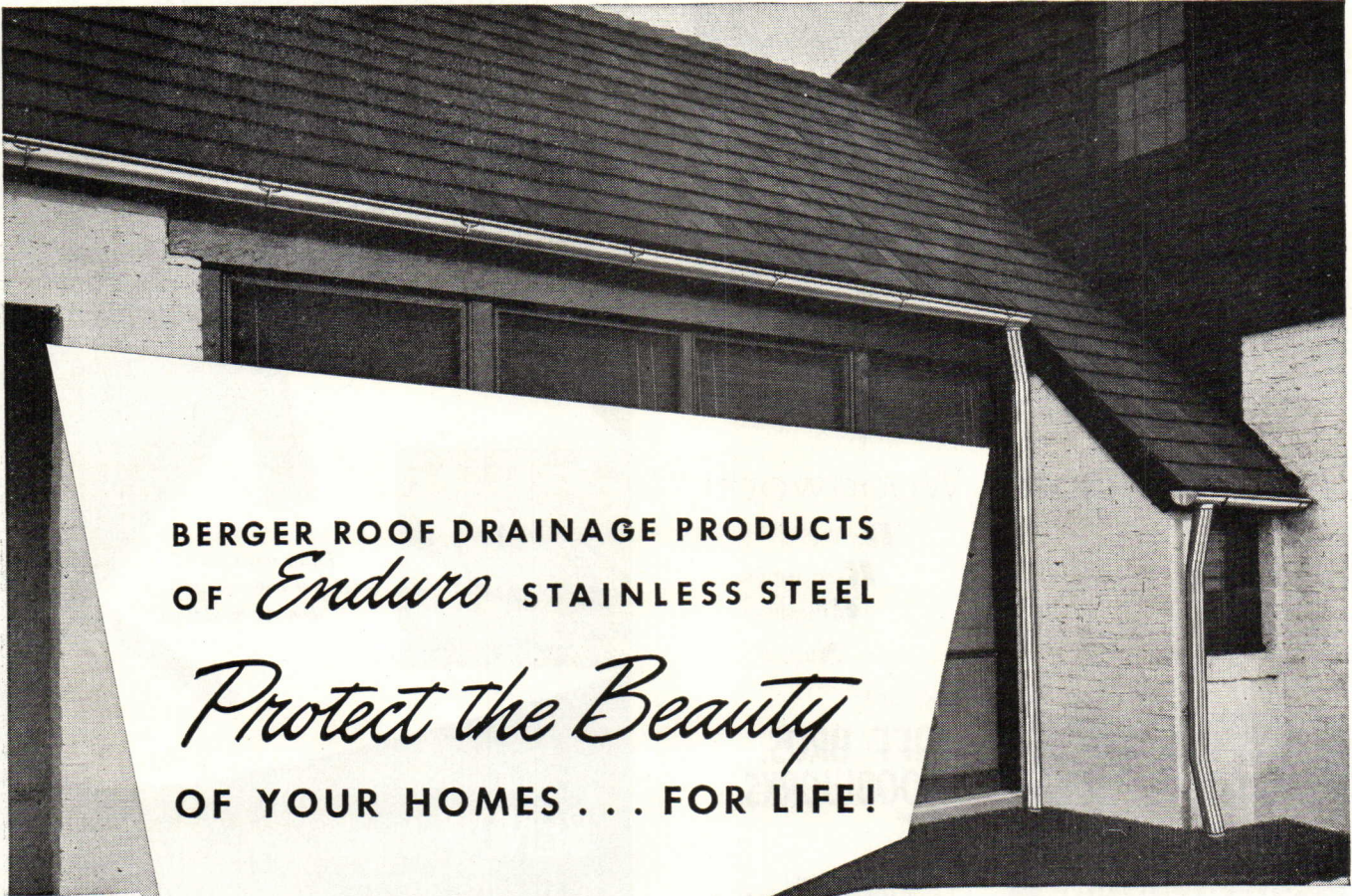
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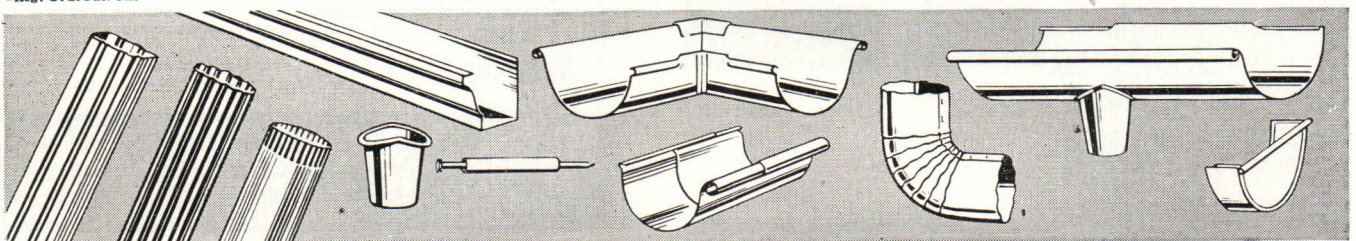


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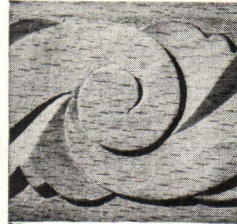
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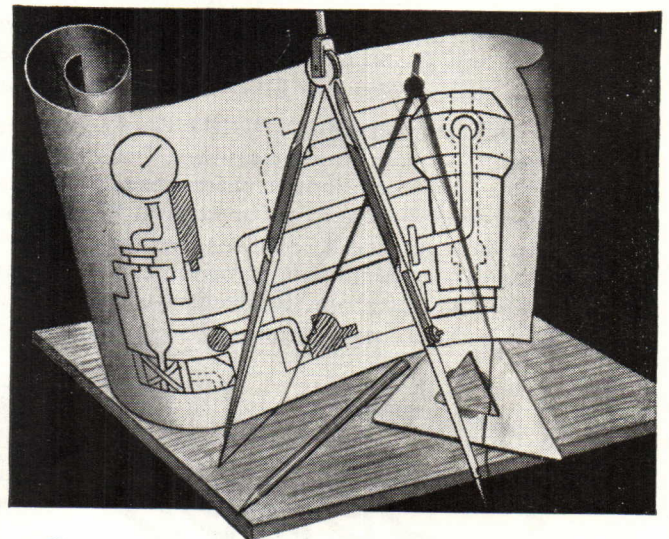
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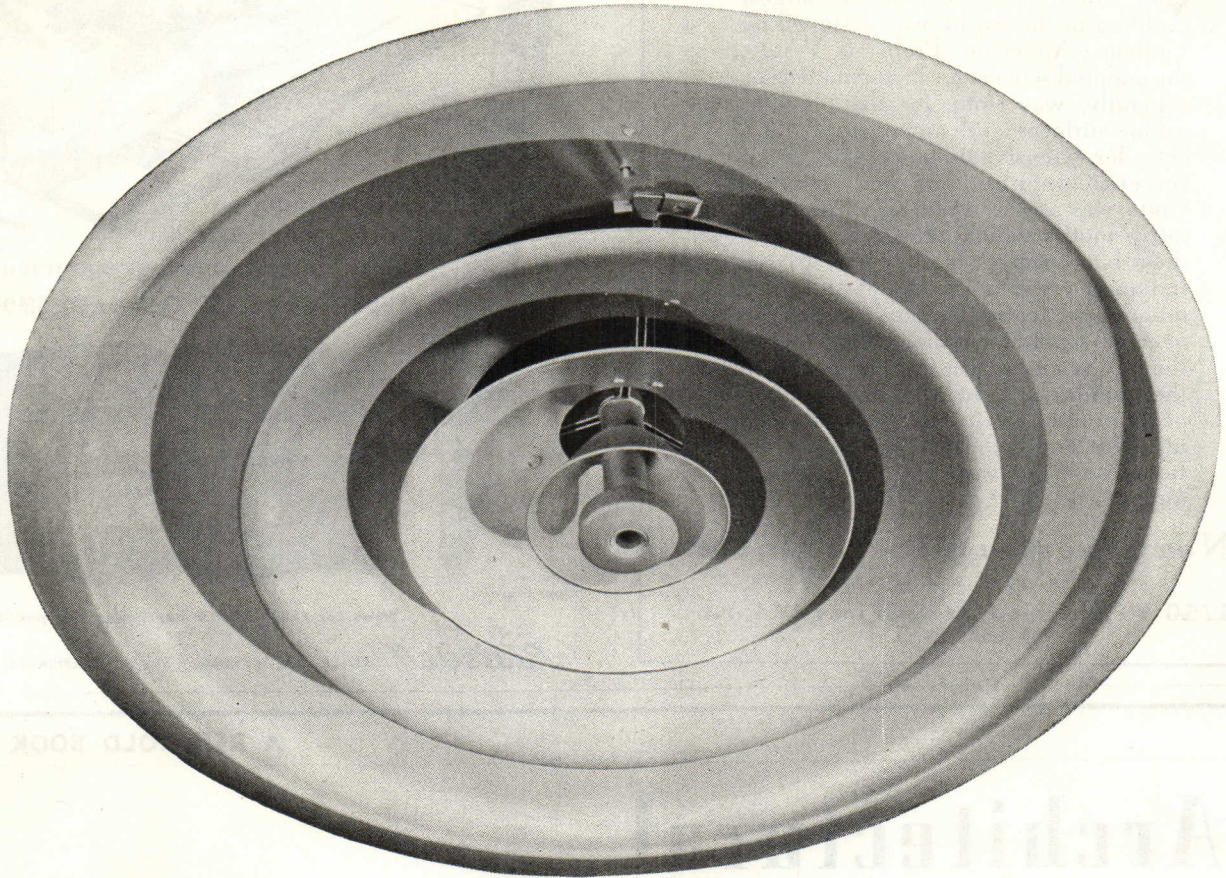
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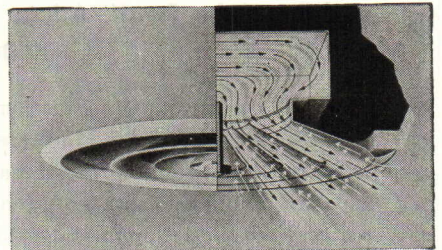
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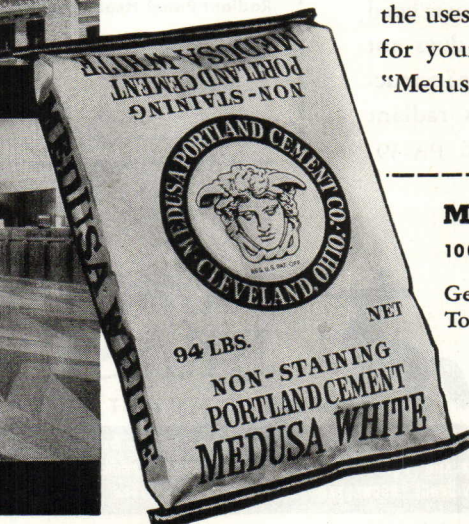
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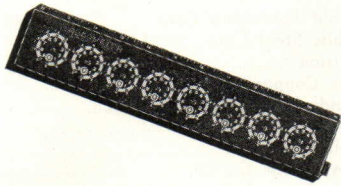
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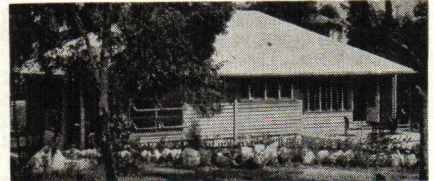
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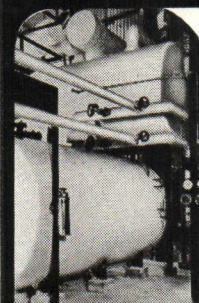
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(Continued from previous page)

of electric panelboard to be used as soon as you can—during preliminary drawings, if possible. If not that early, at least by the time final working drawings are completed, and well before detaining is begun.

It is interesting to note that in 50%

of the cases the architectural firm did all recommendations and specifications of electrical panelboards; in 25% of the cases the architectural firm made the decisions after talking with a consulting engineer; in the other 25% of the cases the decisions were made after talking with client, etc.

Thus it becomes apparent, as it has throughout this continuing discussion of the Bennett study, that the men in architectural firms must know as much as possible about as many things as possible. Only by this knowledge can they select and specify the right product for the job at hand.



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It is the finest thing of its sort that I have had the pleasure of reading; and I am not alone, by far, in this opinion. Even though the issue is comparatively new, I have had several architects commending this book to me.

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# P.S.

**NO PERSONAL OPINIONS, NO TRAVEL-OGUE THIS MONTH.** For once I will let this column be a true postscript to the editorial material in the main part of the issue.

**ROBERT SWANSON GOT MORE THAN HIS FEE** for the work he did on the Birmingham, Michigan, bank illustrated on page 52. He tells us that he was elected to the board of directors of the bank, so satisfied and grateful were the clients. For Swanson that's fine, but this result of a good design job gives us food for thought. It might be a very dangerous precedent. Does the man who designs a good funeral parlor have to spend the rest of his life wearing cutaway coats and doleful smiles? Is the architect of a public building automatically to be elected a senator? Does the designer of a successful residence have to move in with the family? Pick your building types carefully in the future.

**THE OKARCHE HOSPITAL IS A TRUE COMMUNITY PROJECT.** The excellent little health facility shown on page 68 was made possible through the activity of a citizens' committee consisting of a banker, a retired grain dealer, an implement dealer, a druggist, a hardware man, several farmers, and a mail carrier.

The chef for the nurses' home is a local Congregational minister. Drapes for the patients' rooms were made by women of the community. Although Okarche is predominantly a Roman Catholic community, persons of all faiths (and the faithless, we presume) gave time, services, and what money they could to the project. We wish we could have been at the dedication, at which the Okarche high school girls' sextette sang.

**ANTONIN RAYMOND AND MRS. RAYMOND LIKED MANY THINGS ABOUT INDIA.** While Raymond was working on the Pondichery dormitory, presented to our readers on page 45, I suspect that his wife was very nearly converted by the appealing philosophy of Sri Aurobindo. Certainly they both liked the city, and no one could blame them, judging from

the description Mrs. Raymond gives of it in a note to us:

"Pondichery is an old 18th century French Colonial town some hundred miles south of Madras on the Indian Ocean. The city still has style and color. The buildings in the colonial section of the town are colonnaded, finished in plaster with rich moldings, painted in lovely colors. Black, spindly plasterers in magenta turbans and loin-cloths execute these moldings today, from the top of bamboo scaffoldings, with the same skill and knowledge as their ancestors. Seldom has an art been so scrupulously preserved.

"Salt winds blow from the sea; there are typhoons and periods of rainy weather, as well as blazing sun; the plaster is washed and weathered and the color of the buildings becomes enchanting against the background of green sea, blue sky, and earth quite orange."

Sri Aurobindo, according to the Raymonds the most important among the living spiritual teachers of India, went to Pondichery a number of years ago and lived for some time as a recluse. Eventually he was joined by a few disciples, the number of whom increased until they formed a small community. When the dormitory was projected Raymond, then living and working in Japan, was asked to study the problem.

As Mrs. Raymond writes: "It is a part of the philosophy of Sri Aurobindo to relate closely the spiritual man and the physical world in which he finds his experience, and nothing seemed more natural to this teacher than that his disciples should be housed in a building expressive of contemporary ideas, technology, and the forms that result therefrom. There seemed nothing shocking in the contrast between the old 18th century buildings and this one of the 20th century. Time, change, growth, were thereby expressed. It is interesting that a seat of learning somewhat remote from our wordly progress should so naturally harbor these views, whereas our American universities cling so hysterically to the ghosts of departed styles of architecture."

The construction process must have been a fascinating one. To quote Mrs. Raymond once more: "To Sri Aurobindo the building itself had only a relative importance. What seemed to count most was the experience which the disciples were to draw from its design and erection, from the effort to be made in raising a new and difficult

structure as perfectly as possible. So labor did not matter very much and time not at all. Other kinds of economy mattered. A good thing is always worth paying for if you can afford it, but waste is always an abomination. Not a nail was unaccounted for.

"Before the building could be started, various shops were organized in which the workmen learned how to use the tools—some of which had to be manufactured on the spot—and the materials. Concrete mixtures had to be tested. There was no contractor for the building. When the first shipment of steel bars arrived from France (some of which very nearly went to the bottom in the difficult transfer from ship to barge in the strong surf of the bay), a sample one-room house was erected. Many of the old methods of building were put to use. Men and women laborers could be seen in gangs bringing up the concrete in things resembling metal salad bowls which they carried on their heads and passed from one to the other. The concrete was tamped by a mixed multitude of laborers and disciples wielding bamboo poles. The steel reinforcement was not out by a fraction of an inch. The workmanship was perfect."

**PUBLISHING A FOREIGN BUILDING** is sometimes a long and difficult job. To gather all the information, to secure photographs, to get an on-the-spot opinion from a reliable person, if possible, requires time and patience. When Antonin Raymond first showed us a set of grainy, foggy pictures of the Pondichery building it looked very promising, but we couldn't publish on that basis. So we wrote to the editors of the new Indian architectural magazine, *Marg*, asking their cooperation. One of their people made a trip to Pondichery, was impressed, wrote us so, and helped us order photographs from the Sri Aurobindo Asram official photographer. *Marg* also intends to do a story on the project.

The South American architects don't write letters. We are likely to get a note from Marcelo Roberto or Oscar Niemeyer saying, "Enclosed are photos of my latest work. Best regards to all my friends," and no amount of correspondence on our part elicits any further information. The unusual amount of data that we had available on the Rio bank (page 60), in addition to its architectural excellence, made it an irresistible candidate for publication.