

# Newsletter

April 1949

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- Competition for actual commission for a building which will go ahead is announced in this issue. Junior Chamber of Commerce National Headquarters is the problem; Servel and Trinity Cement are sponsors; Jedd Reiser is Professional Advisor. Competition is open only to young men, which is appropriate to purposes of Jay-Cees.
- Dept. of Commerce figures indicate decline in construction costs from September through November last year. Unofficial figures show that this decline has continued through last month. Lumber, cement, and paint declined, among materials (composite wholesale price index dropped 0.4% in December).
- Illustrating drop in construction costs, N.Y. State Housing Commissioner Herman Stichman points to a housing project in Schenectady which was bid in September, 1948 at \$10,888 per apartment, rebid in February, 1949 at \$7,143.
- It seems a good guess that drop in prices may result in pickup of work, which had fallen off largely due to high costs. F. W. Dodge figures for January of this year showed a 22% decline in dollar volume of contracts awarded (in 37 eastern states) compared with January '48. Biggest drop was in residential work (33%) with hospitals, schools, and churches holding nonresidential decline to 8%.
- Figures on public building construction since the war's end have been compiled by the Construction Industry Information Committee from various government reports. For architects who are looking in that direction for work, here's what happened in 1948. Total public nonresidential construction: \$1 billion. This breaks down as follows: educational, \$553 million; hospital and institutional, \$204 million; public administration, \$64 million; social and recreational, \$51 million. Lesser categories include industrial, penal, commercial.
- U. N. Headquarters building is going ahead rapidly, with excavation completed and cornerstone laid with much pomp.
- Commission for new Civic Center at Phoenix, Ariz., has been given to Alden Dow, Midland, Mich. architect. Sponsors had scouted entire country, talked to many top designers. Individual buildings connected with the Center may be done by local firms, and political skulduggery is already being charged. Dow may have accepted a tough job.
- A Uniform Plumbing Code is expected to come from a recent meeting of representatives of the industry sponsored by HHFA and the Dept. of Commerce. Springboard is Uniform Plumbing Code for Housing, successfully adopted last spring.
- Results of house construction studies at U. of Illinois are announced by Producers' Council. Savings, due primarily to pre-

(Continued on page 2)

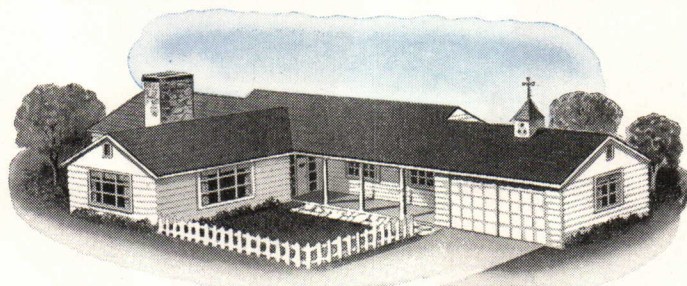


# Newsletter

assembled roof trusses which allowed nonload-bearing partitions, have run as high as 32% for plumbing and 38% for time spent on partitions, ceilings, and floors.

- Building research received its biggest impetus so far when the Building Industry Advisory Board held its first meeting recently and its sponsors announced that the funds for its operation for a period of five years are in hand or in sight. Heading the Board, which is set up under the National Academy of Sciences, is Dr. Frank Jewett, past president of the Academy.
- The work to be done is correlation and coordination of current research activities, fostering of new research, and disseminating information as progress is made. The original Board has been somewhat reconstituted. Only architect now on it is Walter Taylor, representing A.I.A.
- Corning Glass Works announces a new glass panel, to be suspended below lighting units. It is a photosensitive glass, and dark planes similar to louvers can be photographically reproduced within the glass. Thus the equivalent of an egg-crate "louver-all" ceiling can be had in one sheet of one material.
- A.I.A. testified in favor of S. 138 (Housing Act of 1949) through Louis Justement. Testimony before subcommittee suggested several modifications (removing slum clearance from "subordination" to housing; broadening provisions concerning relocation of displaced families, etc.) but did not condition approval of entire bill on these suggestions.
- At the same time the A.I.A. urged abolition of rent control in stages, by allowing progressive increases in maximum permitted rentals. The Institute also testified regarding changes in labor legislation, suggesting that organizations of professional employees "not be forced to affiliate with a nonprofessional labor organization."
- A new material described as ductile cast iron has been developed by the research division of International Nickel Co. It closes the gap between cast iron and cast steel, has high elastic modulus, high yield strength and ductility, is formed with magnesium as alloy. It has many possibilities in construction, obvious ones being pipe, electrical machinery.
- Six states - New Jersey, Pennsylvania, Rhode Island, Ohio, California, and Washington - have pending legislation which would aid urban redevelopment. Some architects and some local architectural groups are supporting these measures, seeing in them possibilities for immediate replanning and rebuilding of blighted areas.
- Meanwhile activity on modernizing building codes continues very slowly. American Society of Planning Officials points out that more than half of all cities either have no codes or are operating under regulations more than 20 years old. And less than 10% of the cities of over 5,000 population are making or planning to make changes in this respect. Smaller cities are most delinquent. Of the 93 cities having more than 100,000 population, 60% are making or have recently made major revisions.

**FOR THE MODERN HOME**



# HONEYWELL COMFORT

## begins with the Blueprint

WHATEVER a house may cost, it will not be a real *home* unless it is comfortably heated. So, in Honeywell national advertising we are urging home builders to consult you about their heating system while plans are in the blueprint stage.

Here are some of the Honeywell controls and control systems that can be selected, depending upon the size and type of home.

### CHRONOTHERM Electric Clock Thermostat



Every home should have the convenience and economy of automatic clock thermostat regulation. Chronotherm automatically switches to lower fuel saving temperature at bedtime. Then in the morning, before the family gets up, it restores daytime comfort temperature. Chronotherm will save 10% or more fuel and will give greater heating comfort and convenience.

### HONEYWELL Diffusion Register

Here at last is a forced air register that combines harmonious appearance with superior performance. It is scientifically designed to spread the warm air into every part of the room. It is so low in cost that no home need use old style, unsightly registers.



### ELECTRONIC MODUFLOW Control System

The new Honeywell Electronic Moduflow control system will give an entirely new conception of even, continuous heating comfort. Electronic Moduflow combines the magic speed and sensitivity of electronics with the Moduflow principle of continuous flow of heat. It does away with the drafts and cold



**Electronic Relay**



**Electronic Thermostat**

floors caused by intermittent heat supply. In larger homes and ranch-type homes, more uniform temperatures will be obtained throughout the house by an Electronic Moduflow system with two or more thermostats located in different sections of the house. For basement recreation rooms, a separate thermostat will maintain just the desired temperature without affecting the rest of the house. An Electronic Moduflow Control System will repay its moderate cost many times in added comfort, convenience and fuel economy.

For further information about Honeywell controls and control systems, contact the Honeywell branch office in or near your city. Or, write Minneapolis-Honeywell Regulator Company, 2602 Fourth Avenue South, Minneapolis 8, Minnesota . . . In Canada: Leaside, Toronto 17, Ontario.

MINNEAPOLIS  
**Honeywell**  
CONTROL SYSTEMS

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

# We...

## FOR ALL

ONLY SELECTOMATIC GIVES YOU ALL THESE ADVANTAGES

### **More Capacity**

Increases passenger carrying capacity during down peak periods up to 30% and during up peak periods as much as 20%! Big savings for you!

### **Reduced Waiting Time**

Tests show that Selectomatic drastically reduces average waiting time particularly at lower floors on down peak. Building efficiency for you!

### **No guesswork**

Automatically adjusts service to meet ever-shifting traffic concentrations under up peak, off peak and down peak. Better public relations for you!

## YOU CAN BE SURE...IF IT

## Selectomatic does it . . .

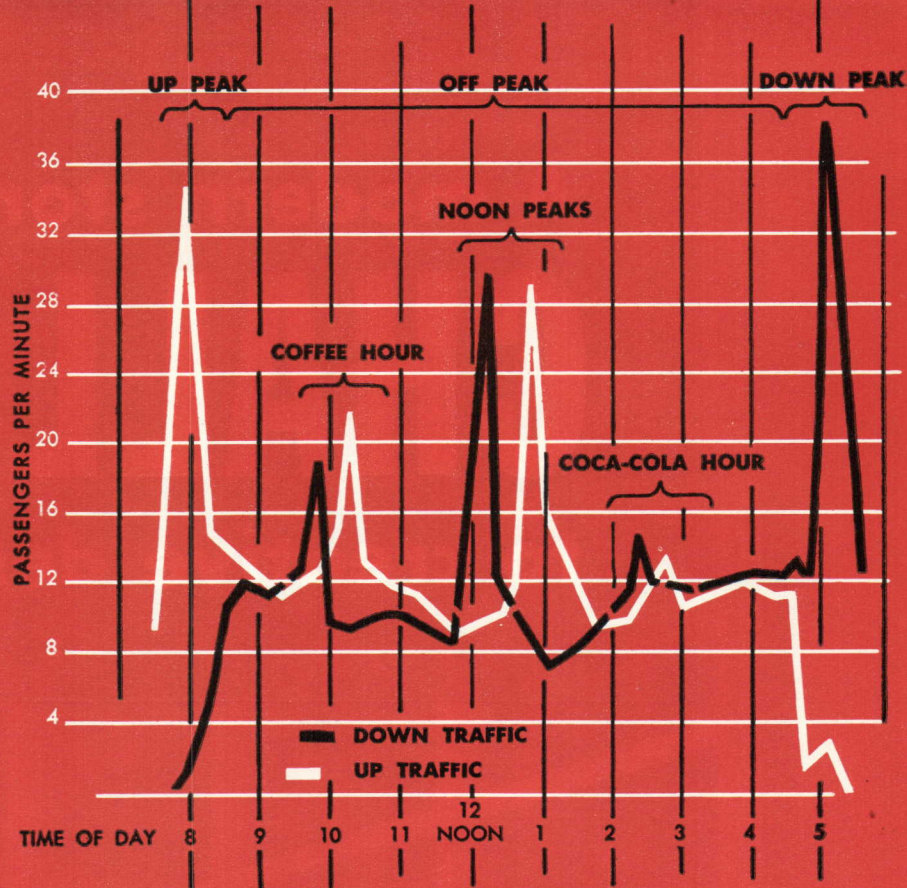
and Selectomatic has been doing it right along for the past several years! As a matter of fact, the chart on the right is an actual test record from a 10-story building where Selectomatic is doing what no other elevator system does—matching elevator service with demand automatically for all types of traffic conditions.

In this case, there were eight traffic peaks to be reckoned with. But Selectomatic, which was developed prior to the war and which is now operating in buildings from coast-to-coast, automatically handles all traffic problems with only three settings: up peak—off peak—down peak.

And Selectomatic is a development in vertical traffic handling that is so basic, it has revolutionized all previously accepted standards of comparison.

If you really want the best in elevators—come to Westinghouse.

WESTINGHOUSE ELECTRIC CORP. • ELEVATOR DIVISION • JERSEY CITY, N. J.



# MATCH ELEVATOR SERVICE WITH DEMAND AUTOMATICALLY FOR ALL TYPES OF TRAFFIC CONDITIONS!

AND ONLY WESTINGHOUSE MAKES SELECTOMATIC!

### Simplicity

Matched by any other system—only three push button settings throughout the day. Satisfied tenants for you!

### Reliability

Both mechanical and electrical—achieved through latest proved Westinghouse developments. Big savings and satisfaction for you!

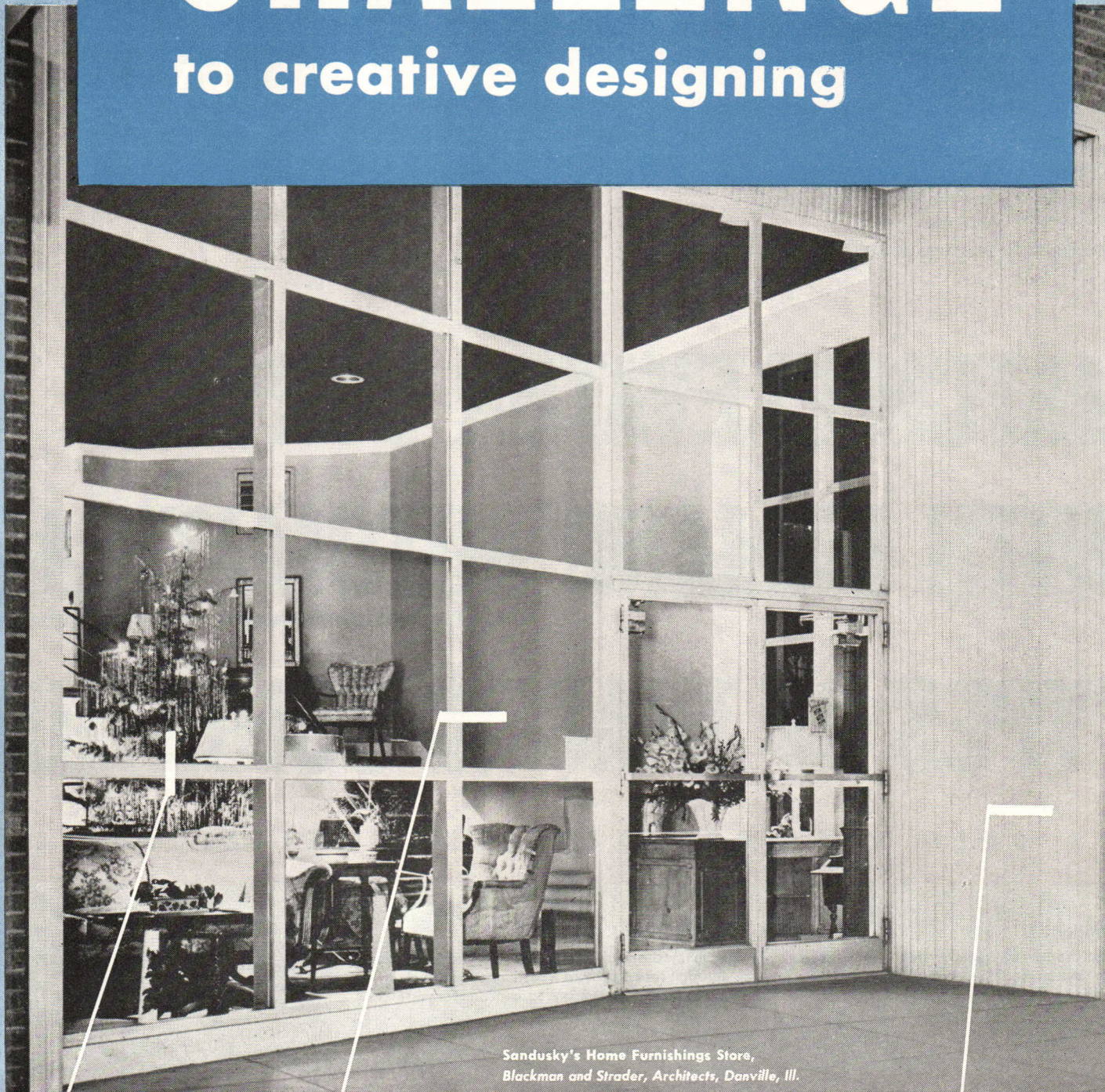
### Send for booklet

B-3597—  
"Selectomatic  
Makes Elevators  
Work As A Team."

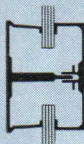


# Westinghouse

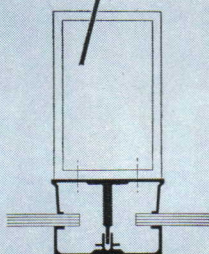
A modern store front is a  
**CHALLENGE**  
to creative designing



Sandusky's Home Furnishings Store,  
*Blackman and Strader, Architects, Danville, Ill.*



1/4 size detail  
of stock division  
bar, used horizontally  
in above store front.



1/4 size detail of stock  
division bar, used verti-  
cally with aluminum  
tubular reinforcement.



Zourite, the modern aluminum facing material. Available in  
green, brown, or black porcelain enamel, and in aluminite.

# You can meet this challenge with Kawneer Metals— they offer custom-styling in stock shapes

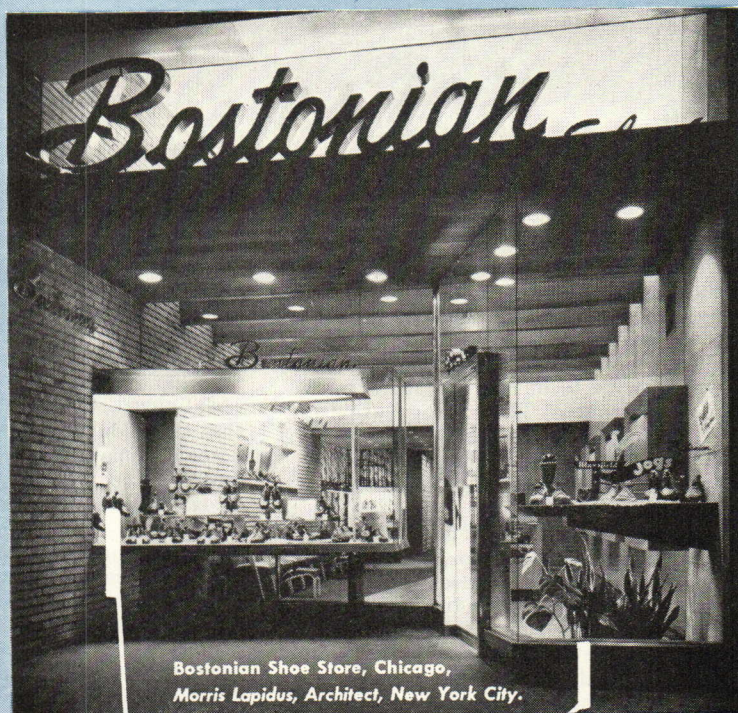
Kawneer Stock Store Front Metals possess the handsome appearance and striking individuality of custom-made shapes—yet they bring important cost-reductions to you and your clients. Kawneer Stock Metals cost far less than specially-made assemblies—they reduce the cost of drafting and detailing—and they eliminate costly delays.

Kawneer metals are styled and engineered to the highest standards of modern architecture. They also bring you new flexibility in designing, because many shapes are interchangeable and many serve multiple uses.

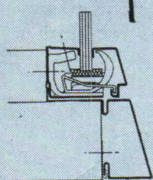
Pictured here are only a few of the Kawneer Stock Metals. Write for construction details. 205 North Front Street, Niles, Mich., 2505 8th St., Berkeley, Cal., or 817 East Third St., Lexington, Ky.

THE  
**Kawneer**  
COMPANY

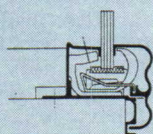
Store Front Metals • Modern Entrances  
Facing Materials • Aluminum Louvered Ceilings  
Aluminum Roll-Type Awnings



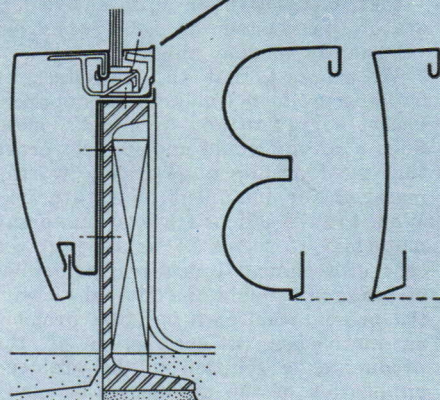
Bostonian Shoe Store, Chicago,  
Morris Lapidus, Architect, New York City.



1/4 size detail  
of stock glazing  
sash above.

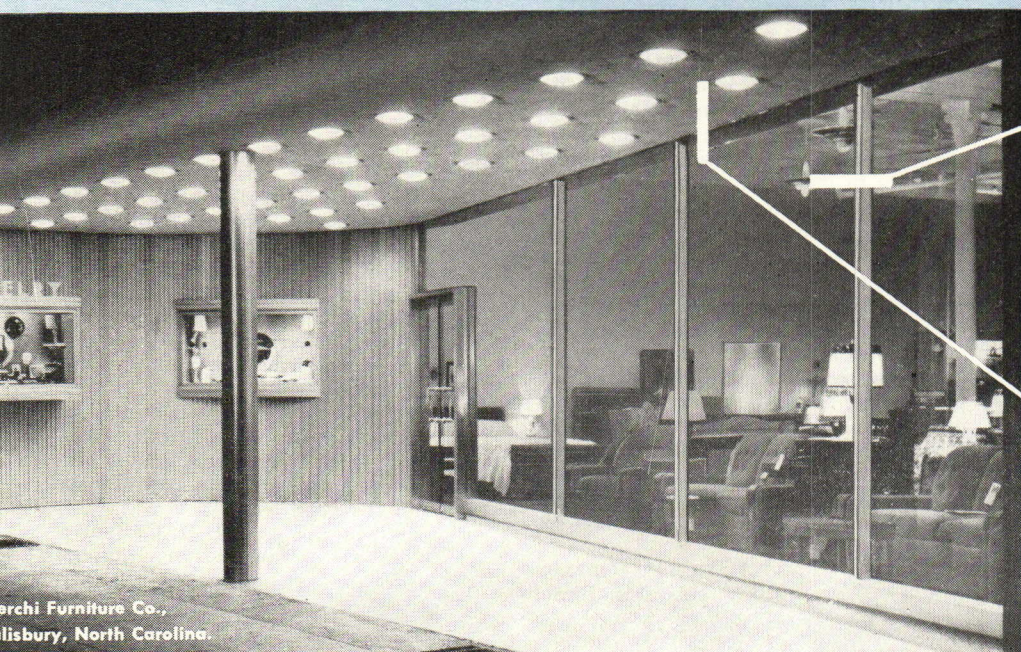


One of the many  
other stock sashes.

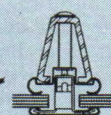


Stock bulkhead  
assembly used in  
above store front.

Two other stock  
bulkhead faces  
which are also  
available.



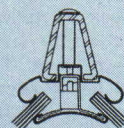
Merchi Furniture Co.,  
Wilmington, North Carolina.



1/4 size detail of  
stock division  
bar used at left.



Stock corner bar—  
angles from 90° to  
120°, 120° to 165°



Stock reverse  
corner bar.

Stiffeners shown  
here are Medium.  
Also available—  
Light, Heavy,  
Heavy X stiffeners.



Stock flush-glazing sash  
eliminates projecting metal.

## WASTEBASKET SURVEY

*Dear Editor:* It is hardly probable that this letter will win friends among building-product manufacturers or influence their advertising counsel. However, it should be recorded that something is wrong with technical literature in too many instances. The average architect is like the average attorney, doctor, dentist, accountant. What is the philosophy behind architectural magazine advertisements which treat the architect as an adolescent? Why do some advertisements of building products require the use of catch phrases, females in varying stages of undress, cartoons, ridiculous statements, unrealistic construction details, omission of salient features, and the like? Are we as architects to conclude that frivolity is a prerequisite in arresting our attention—that instructive or informative literature is wasted on us? We hasten vehemently to deny this.

We suggest that the hucksters of building products conduct a wastepaper-basket survey in any architect's office. Such a survey would undoubtedly prove that most architects save only worthy material for imminent or future use. What are the salient features of worthy material? It seems to us that in the case of technical brochures, principles of pedagogy should be followed, to wit: the presentation of a building problem as motivation, a description of the product as a solution to the problem, application of the product in as many ways as its inherent characteristics permit, a summary or brief recapitulation of pertinent highlights. Other factors include construction details, test data, photographic data in applicable instances, comparative data where possible, cost climate, streamlined specifications.

It may be well to remind the building-product manufacturer that every mailing piece, whether it is a letter or a brochure, is in competition with similar literature received daily in voluminous quantities by the architect. Let us examine first the letter. Some letters are designed to supplant a visit by the building-product representative; some are merely reminders to keep the product name in constant circulation. Others may speak of prices or price changes, etc. The average reading time for any letter in this category should not exceed two minutes. We have seen four- to six-page letters which prejudiced immediately against any desire to read them in their entirety.

In the case of brochures, if a casual thumbing through exposes an impression of worthiness, in the sense that a more careful perusal will bring into focus the pedagogic characteristics described before, then such a brochure is likely to survive.

Building-product manufacturers' representatives have many, many friends among architects. These architects would certainly permit representatives to examine their catalogue files in order to have the representatives learn at first hand the caliber of reference material saved. We are reasonably certain that the pedagogic criterion would soon become apparent as a necessary formula in the preparation of what may be termed a successful and useful brochure.

In our opinion technical literature which utilizes exclusively as its central theme such ideas as a list of successful installations or photographs of installations, or a laboratory report, or a series of generalizations, is destined for the wastepaper basket.

In conclusion, Mr. Advertiser, we would welcome more of the mature approach. We said it and we are glad!

BEN JOHN SMALL  
New York, N. Y.

## DESIGN FOR ISRAEL

*Dear Editor:* My whole experience here is a new one, as I watch a new country, amongst other things, trying to develop its own architectural traditions—and while doing so, drawing on the architecture of the world. But, architecture is also country and people and climate; so it will have to relate to all these important factors, as well as to the usual prerequisites for any real architectural expression! So there is a great deal that will have to be studied here, experimented with, and investigated. Architecture will not develop overnight, but will require years for its slow germination and eventual birth.

The materials are the newer ones, and the approach contemporary and refreshing. So we can hope for some expression of a "modern architecture" here in Israel in the course of the coming years. It's already discernable, but only in its infancy—its maturation and flowering are yet to come.

Such men as Neutra, Mendelsohn, and Neufeld have been instrumental in its inception, but it will require the talents of a native school to develop the real significance and worth of a native, modern architecture.

At the present time a National Competition is being held in the field of model dwellings. This can be only the beginning of the search for the architectural expression of this new country. It will go on from there—in all the other fields of architectural endeavor as well.

HARRY P. PORTNOY  
Ein Hashfeli, Israel

## THE CLIENT'S ESTIMATE

*Dear Editor:* I found Tomson's article in the February issue almost the paraphrase of a situation which we encountered and which finally climaxed itself by our suing a client for the balance of a fee.

The client claimed a cost limitation of \$15,000 and was immediately advised, before drawings were started, that his proposed job would run at least several times the figure. He instructed us to proceed with drawings and was fully advised of the nature of the proposed work. After bids were received, the client realized that the job would run several times his original figure, decided to abandon the project, and offered to settle on the basis of a \$15,000 cost. The jury finally awarded us the balance of our fee based on the \$15,000 cost in spite of testimony as outlined above. We found later that the jury was split as to whether we should receive any fee at all, even though our service had been performed and had been accepted by the client.

As a result of this experience, we now include the following clause as part of the standard A.I.A. agreement: "It is agreed and understood that the architect will to the best of his ability undertake to minimize the total cost of the work consistent with the owner's requirements and consistent with good construction practice, but that there is no limitation of construction cost provided as a part of this agreement."

Our attorney feels that typing this clause on the printed form lends particular emphasis to the fact that any limitation of cost is excluded from the architect's agreement.

HENRY L. BLATNER  
New York, N. Y.

## NEW IDEAS IN P/A

*Dear Editor:* I should like to say how much I and other British architects of my acquaintance appreciate the monthly splash of color and new ideas which P/A presents to us. You may be aware that color-printing in the postwar journals of British learned societies is more or less impracticable, except in the advertisements.

I am personally always delighted to see good examples of all-timber construction, which is an unattainable luxury at present in this country. Please carry on the good work.

J. H. C. BROWN  
Manchester, England

(Continued on page 10)

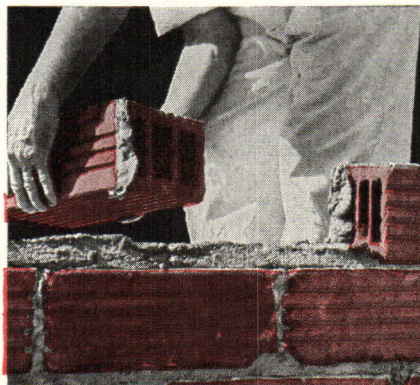
# GET BETTER TILE AND BLOCK-WORK with **BRIXMENT!**

Tile or block-work offers very little protection against the penetration of water, unless both inside and outside head joints are completely filled with mortar.

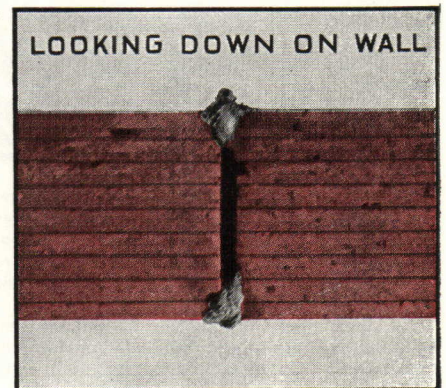
In laying clay tile, or concrete or cinder block, even when they are used only for back-up work, especial care should be taken to secure full head joints on both the inside and the outside edges of the unit. Either of the following two methods may be used:



Method 1. Full head joints should be thrown onto both edges of the tile to be placed, or—



Method 2. A full head joint should be thrown onto one edge of the tile in place and also onto the opposite edge of the tile to be placed.



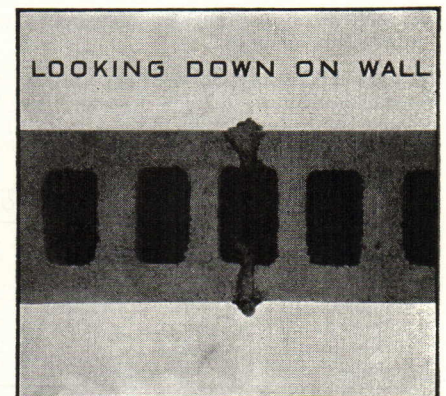
Enough mortar should be used to cause excess mortar to ooze out of the joints on both sides of the tile.



Method 1. Full head joints should be thrown onto both edges of the block to be placed, or—



Method 2. A full head joint should be thrown onto one edge of the block already in place and also onto the opposite edge of the block to be placed.



Enough mortar should be used to cause excess mortar to ooze out of the joints on both sides of the block.

One of the reasons bricklayers prefer Brixment mortar is the way it *sticks* to the tile or block, as shown above. It “stays put.” The bricklayer does not have to stoop to the board for more mortar. *You* get a stronger, more water-resistant wall. ● Brixment mortar is

easier to work, saves time, effort, and money. In addition, it has higher water-retaining capacity, greater bonding quality, is more durable. It is this *combination* of advantages that has made Brixment the largest-selling masonry cement on the market.

LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY

(Continued from page 8)

## APPRAISAL NEEDED

Dear Editor: Your PROGRESS REPORT (March 1949 P/A) on the Technical Committee and other New York Chapter, A.I.A., activities was a very good presentation. It may interest you that as a result of my recent talk on materials to the Ontario Association of Architects in Toronto, the Association is planning a technical committee, and the *Journal* of the Royal Architectural Institute of Canada plans to publish

the talk throughout the Dominion. In view of the flood of new materials and techniques, all requiring appraisal, such a source of information would appear to be an imperative need of every chapter. The device of distributing written reports of meetings, which we are hoping to make still more useful by incorporation of bibliography as guide to further study, makes such a committee practical even for groups whose members are more widely scattered than

ours. Let us hope your article, with its widespread circulation, will bear fruit in many places.

A further aspect of the problem was brought up in my three talks to the Pennsylvania Society of Architects, in Philadelphia, Harrisburg, and Pittsburgh (as also to some extent in Toronto); namely, the need for expansion of our A.I.A. technical department in Washington.

My own studies and experience make me feel deeply on the subject, and a number of industry spokesmen have expressed the opinion that the building materials industry would welcome such an expansion in Washington and would be happy to help finance it, as of great benefit to themselves. The New York Chapter and the Pittsburgh one have gone on record, some time ago, in favor of some such development.

LESSING WHITFORD WILLIAMS  
Chairman, Technical Committee  
New York Chapter, A.I.A.  
New York, N. Y.

## THE Sedgwick ROTO-WAITER ...a new kind of fully automatic electric dumb waiter that never overtravels

FOR TWO-STOP INSTALLATIONS...the new Sedgwick Roto-Waiter, with its unique endless chain drive principle of operation, embodies those features of safety, dependability and economy that make it the ideal dumb waiter for stores, hospitals, hotels, restaurants, libraries, clubs, schools, banks, factories, residences and other commercial, institutional and industrial buildings.

The single direction motor helps cut costs by eliminating the need for special control equipment normally required when reversing motors are used—and, by reducing starting torque, it cuts current consumption.

Furthermore, Sedgwick Roto-Waiters...

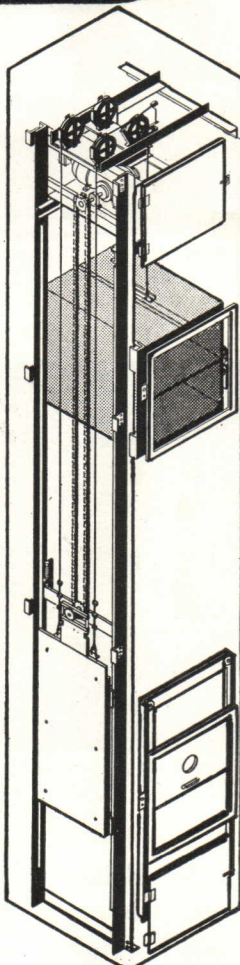
1. Never overtravel
2. Are completely factory assembled and tested
3. Require only minimum clearances
4. Have an overload safety device for safe operation
5. Require no heavy load-bearing supports, except at bottom
6. Are easy to install

The table of dimensions, shown below, lists three standard counter-weighted Roto-Waiters. A Sedgwick uncounterweighted Roto-Waiter (with car size 24" x 24" x 36", 150 lbs. capacity) is also available when the dumb waiter is to be installed in limited space, as for undercounter use.

| STANDARD ROTO-WAITER DIMENSIONS          |     |     |     |
|--|-----|-----|-----|
| Size No.....                             | 2C  | 3C  | 5C  |
| Capacity, lbs.....                       | 200 | 300 | 500 |
| Car width, in.....                       | 24" | 30" | 36" |
| Car depth, in.....                       | 24" | 30" | 36" |
| Hoistway width, in.....                  | 33" | 39" | 45" |
| Hoistway depth, clear in.....            | 27" | 33" | 39" |
| Hoistway depth, including doors, in..... | 29" | 35" | 41" |

In addition to the Sedgwick Roto-Waiter, Sedgwick also builds Multi-Stop Electric Traction Dumb Waiters, designed for installations where there are three or more landings to be served. Both are of all-steel construction. Specify, too, Sedgwick Steel Dumb Waiter Doors for complete satisfaction.

Whatever your vertical transportation problem may be, it is probable that we have case histories on parallel applications in our files. We'll be glad to supply you with such information, prices or any other data you may require.



## Sedgwick MACHINE WORKS

164 West 15th Street, New York 11, N. Y.  
ELEVATORS • DUMB WAITERS • RESIDENCE ELEVATORS • STAIR-TRAVELORS  
ROTO-WAITERS • SIDEWALK ELEVATORS • FREIGHT ELEVATORS • DUMB WAITER DOORS

**BUILDERS OF VERTICAL TRANSPORTATION SINCE 1893**

## SAYING AND BUILDING

Dear Editor: Your lead-off article, "Architecture—Not Style," in the December issue is one of the best editorials that I have read in a good many years. You have actually hit the nail on the head. Although you have perhaps tread on a lot of people's egos, the truth will always out.

This has been my opinion for a good many years and it takes a magazine like yours to come out, tear away all the words, get right to the guts of the problem and state it. I can only state how much I appreciate this article. Please keep up the good work and keep pounding, as this is a time when we need to build and not a time to do architecture with semantics.

It is too easy to say a building has validity, but it is quite a different thing to build a building that has validity.

CALEB HORNBOSTEL  
New York, N. Y.

## ART—AND MORE

Dear Editor: When the controversy first arose over your editorial "Architecture—Not Style," I stated in my letter that the editorial was timely and should be discussed further. We have now had two months of discussion and so far as I am concerned, we have not had enough. Most of it came from the esthetes, the people who believe that architecture is primarily art but some of whom begrudgingly grant that unfortunately in the nature of things, it is also other things besides art.

You are now being accused of being against art. The very title of your edi-

(Continued on page 12)



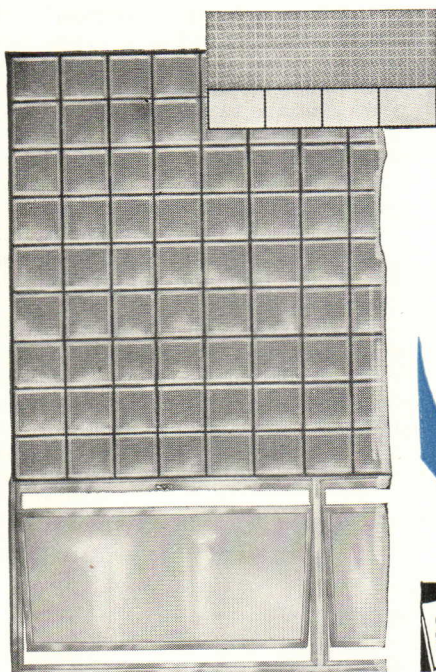
# A VERSATILE WINDOW FOR **GLASS BLOCK** CONSTRUCTION

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## ALUMINUM **VAMPCO**

Here's a new, greatly superior window that becomes an integral part of your glass brick construction. It's so *versatile* that you can use it in any type commercial or institutional building . . . so *adaptable* that it fits any space, large or small, you are likely to require . . . so *strong and rigid* that it can provide its own lintel under the glass blocks. It gives you vision — or ventilation — or both . . . with single pane or insulated glazing. Designed for use with Light Directional Glass Block. Constructed of high-tensile strength extruded aluminum alloy, it does away forever with maintenance costs . . . waterproof, weatherproof for life.



**RIBBON TYPE**

**SINGLE HUNG**

### SINGLE OR MULTIPLE MULLION TREATMENT

This VAMPCO unit may be installed singly or in groups. Dimensioned for all standard glass block sizes to fit a wide variety of openings.

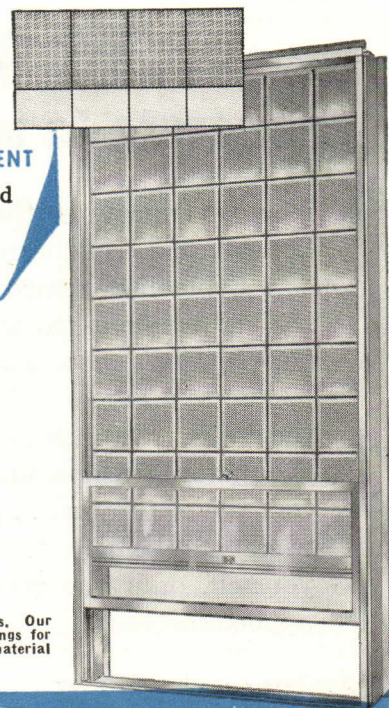
### STRIP OR RIBBON TYPE INSTALLATION

For continuous ventilation or vision, VAMPCO ribbon units are fabricated to order up to 25 feet long and assembled ready for erection — as employed in the school building shown above. Vents may be as wide as 48 inches, up to 40 inches in height. Head and sill sections are continuous and absolutely watertight. No lintels required — deep head flanges, plus heavy mullions between ventilators, provide strength and stiffness to support entire load of glass block.



### FOR COMPLETE DATA

Write for descriptive literature and full size details. Our Engineering Department will provide detailed drawings for ribbon-type installation when dimensional and material data are provided.



#### RIBBON TYPE

No structural lintel required . . . All-aluminum construction . . . Completely fabricated at factory—eliminating assembly of mullions and covers . . . Projected type ventilation.

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PLAINWELL, MICHIGAN

#### SINGLE-HUNG WINDOWS

All-aluminum construction . . . Completely weatherproof and waterproof . . . Glass block in sash integral in one frame . . . Easy access for cleaning block and sash.

## Views

(Continued from page 10)

torial shows that you are for architecture which in my understanding of things includes its esthetic aspect. I understood you to be against formalization of architectural esthetics into style or styles—modern or otherwise—imposed upon architecture.

I, too, was educated to believe that architecture is primarily art and everything else that we were learning in the school was to the end of producing art through architecture. It took me many

years to learn that architecture is building to meet people's needs, and as people need art fully as much as proper shelter and environment, art is an indispensable element of architecture. Art is no more the most important element in architecture than it is in the design of pots or pants. It is easy, of course, for the critics, writers, historians, and curators to talk of architecture as abstract art. How they would love it if it were like cheese to be smeared on a

canvas strictly in accord with one's emotions! They would think architecture mighty concrete if they had to build it.

I do not want to be misunderstood. I am all for art in architecture. We do not have enough of it. But no sane architect can grant that art is the most important thing about architecture, nor that it can be safely discussed apart from all other aspects of architecture. Building is successful when it is satisfactory in all aspects—the esthetic aspect included.

Permit me to congratulate you on the new slant in Rannell's monthly review of the technical press. It is swell and worthy of commendation.

ISADORE ROSENFELD  
New York, N. Y.



## "What do you expect... concrete to wear like granite?"

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If you have a tough problem involving concrete treatment, damp-proofing or protective painting, call on your Sonneborn Man. Chances are, he has the answers, or can get them for you. If you don't have his name, write your problem direct.

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BUILDING PRODUCTS DIVISION

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## ADMIRE AND AGREES

*Dear Editor:* Your comment on standards in your February piece on Office Practice does a beautiful job. It may be, of course, that I think so well of what you have written because I am so thoroughly in agreement with the sentiments expressed. I have long felt that "The Elements of the General Hospital," developed by Marshall Shaffer, have been a tremendous influence in getting hospital design details on a high level in the many hospitals being planned. Nevertheless, I have felt that they did have certain drawbacks, if they were widely used, as a crutch to the detriment of research and original planning.

However, I am less worried on that score since I have had an opportunity to study some of the plans being developed under the construction act. Architects continue to be original and inventive, as is evidenced by these plans which fail to show the slavish dependence on Public Health Service recommendations that might have been expected, and the regimented design that a few were afraid would result from the minimum requirements laid down by the law.

I am much more confident now that most designers are going to use the recommendations as a point of departure for their work rather than as the set pattern for the end result.

ROY HUNDENBURG, Secretary  
American Hospital Assn.  
Chicago, Ill.

## NOTICE

### EXHIBITION

There will be a showing of PERIOD ROOMS IN MINIATURE April 12-30 at the Grand Central Art Galleries, Inc., 15 Vanderbilt Ave., New York, N. Y., for the benefit of the Homemaker Service of the Children's Aid Society.

For the architect who wants something different

# STANLEY Extra Heavy

## BALL BEARING OLIVE KNUCKLE BUTT HINGE



Has all the advantages of ball bearing hinges—plus distinctive appearance



I like those sleek lines



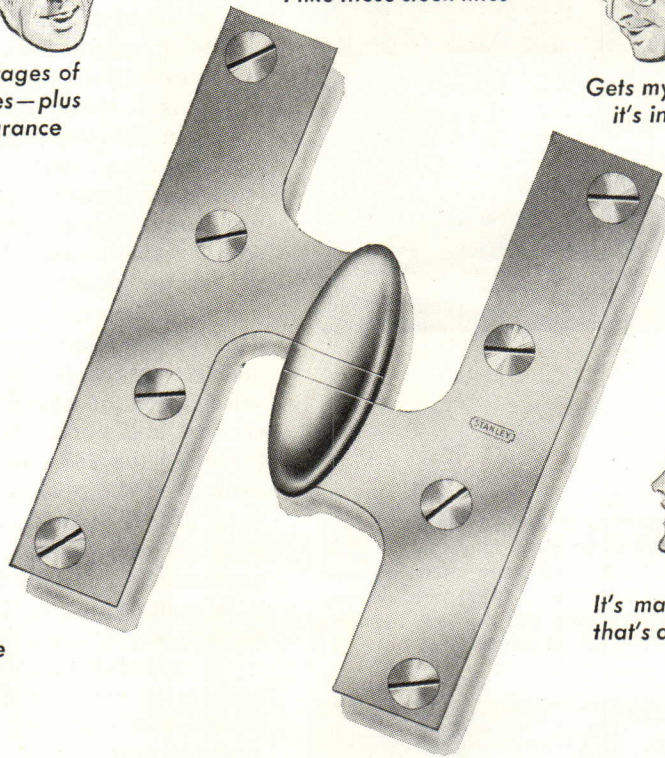
Gets my vote because it's inconspicuous



Goes well with the modern designs of my buildings



Ball bearings eliminate wear in hinge joints

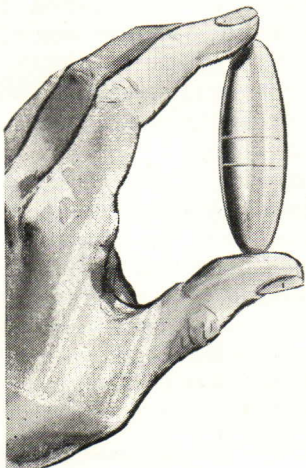


Olive knuckles can't collect dust



It's made by Stanley—that's all I need to know

Knuckle only is visible when door is closed



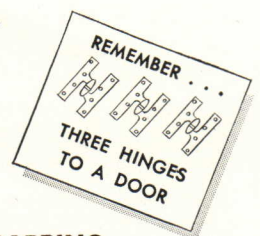
ARCHITECTS who like to get away from the conventional in design often find what they're looking for—in Stanley Olive Knuckle Butt Hinges. For hollow metal doors or heavy wood doors in office buildings, hotels and public buildings you couldn't ask for a finer hinge. (Also furnished in regular weight for residential doors.) The Stanley non-detachable, permanently lubricated ball bearing assures smooth, trouble-free service. Easy to install on metal doors and jambs since all leading metal door manufacturers have dies for recessing to fit.

THE STANLEY WORKS, NEW BRITAIN, CONN.

# STANLEY

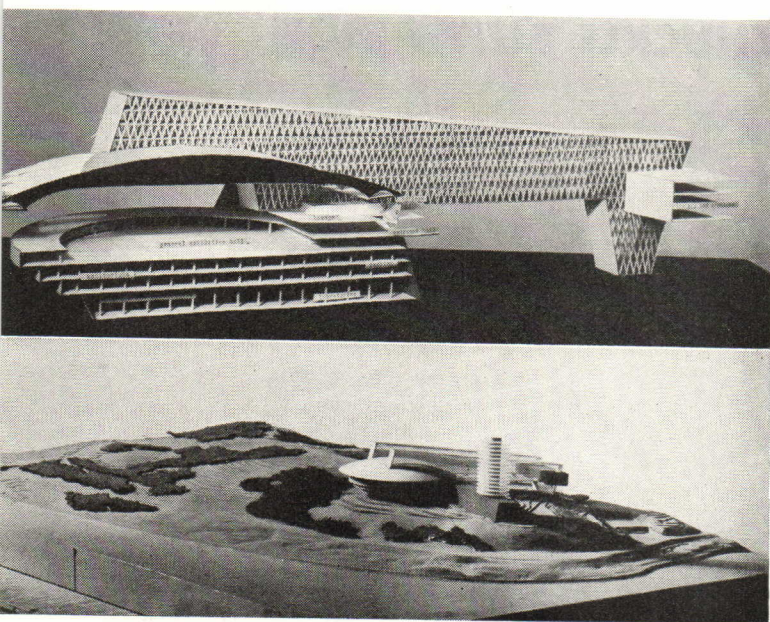
Reg. U.S. Pat. Off.

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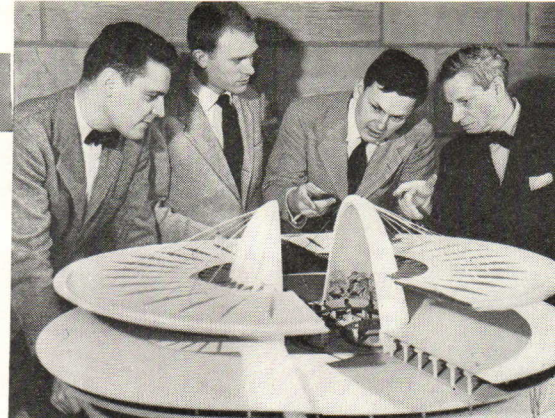
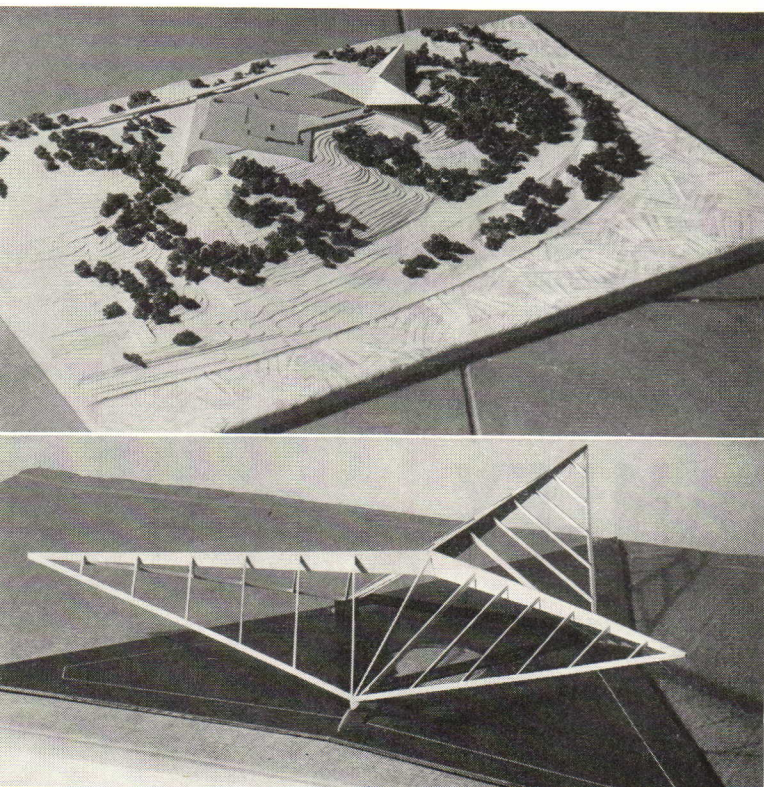


TEAM 14—"We thought that a discipline of architectural building form and sculptural land articulation was our most valid approach to Sculpture as such . . . That the Mural painting should, ideally, be as experimental in conception as the structural expression of the Architecture . . . We designed in the terms of this general thinking: the results are before you."

Photos: Yale University



TEAM 7—"In essence, the Building consists of three cantilevered trusses: the forces involved acting one against the other to produce a light, balanced composition with a minimum of constructive effort. Entrance is from below . . . into a round circulation area (with) circular ramp, water Sculpture (jets from the ascending ramp into the pool, forming a volute) and, around the pool, the Mural, of cut metals."



Critic Kahn (right) discusses work of Team 16.

## STUDENT ARCHITECTS, PAINTERS, SCULPTORS DESIGN TOGETHER

Success of 16 graduate-student teams of architects, painters, and sculptors at Yale School of Fine Arts assigned recently to a collaborative problem, "National Center of U.N.E.S.C.O.," recommends closer integration of the allied arts. The solutions illustrated here and on following pages indicate the development of influence painters and sculptors may exert on architects' designs.

Louis I. Kahn, Philadelphia architect and a Visiting Critic in the Department of Architecture, Yale University, and Jean Charlot, noted artist from Colorado Springs Fine Arts Center, directed the problem. In writing the program, Kahn assigned the roles of the members of the collaborative teams. The architects were assumed to be the master planners (including site development, as Yale has city planning courses but no landscape design students); the painters and sculptors were expected to collaborate in the development of ground sculpture, in the articulation of the enclosed areas with the means of vertical and horizontal circulation, and in the skeleton frame of the 200,000 square foot Exhibit Hall (specific subject of the program). Thus the coordination of arts went deeper than implied by the familiar collaborative program which simply cautions the architect to leave an appropriate space for the designs of painter and sculptor, it is pointed out by Harold D. Hauf, Chairman of the Department of Architecture.

In addition to the direct modeling of forms which appears to result from the convictions of the sculptor-members of the participating teams, as well as the generally successful color use on which the painters advised, the component parts—architectural forms, siting, murals, and sculptures—are freely expressed yet achieve a modulated balance in the best of the solutions. Kahn expresses satisfaction with the results of the collaborative effort, which extended for five weeks under supervision of the Yale architectural and fine arts professors. Dean Charles H. Sawyer of the School of Fine Arts notes that it "served to stimulate their imagination and provided a real challenge for all members of the teams."

The opinions and approaches of the participating graduate students are indicated by quotations herewith from labels prepared by each team for display of the completed models in a public exhibition at Yale's Art Gallery, arranged by Lamont Moore, Associate Director. Each team presented a model of the site solution for a certain plateau (topographic map furnished) overlooking the Schuylkill River in Philadelphia's Fairmount Park (part of the site rejected by U.N. when offered the East

(Continued on page 16)

ARCHITECT—FREDERIC P. WIEDERSUM . . . ELEC. CONTRACTOR—GEECO ELECTRIC CONSTRUCTION CORP.



## How do you specify 77 years of experience?

You're specifying signal and protection systems for a new school... you're conscious of how much depends on your recommendations...

The principal must be freed from the nuisance of clock-setting and bell-ringing. The maintenance staff must not be saddled with time-wasting regulations and adjustments.

Above all... parents must be secure in the knowledge their children are in a *safe, efficient* school.

In effect, then—you must specify

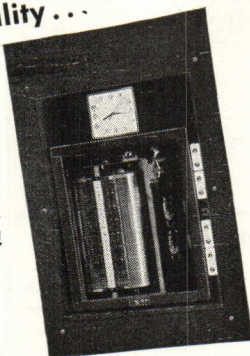
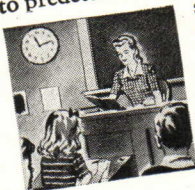
*experience . . . Experience in design, manufacture . . . performance.*

The new Martin Avenue School, at No. Bellmore, N.Y. is a case in point. Here, as in all school installations, Edwards' 77 years of experience fulfills the architect's responsibility by delivering the most efficient, trouble-free service possible.

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| 10-2-45. GENERAL REVISIONS             | DATE.  | ARON ROSE.       | A-3          |
|  | 2-1-49 | 721 10. 0000 ST. | SCALE        |
|  |        | ORRISON R. O.    | 1/4" = 1'-0" |

## Progress Report

(Continued from page 14)

River site in New York); a model of the skeleton frame of the Exhibit Hall (Kahn required that the unconcealed structure express the building form); miniature (in place) and detail of a mural for the Entrance Hall; miniature (in place) and detail of a sculpture for the Entrance Hall.

The theory of design for an appropriate "National Center of U.N.E.S.C.O." considers the mission of that permanent

specialized agency of U.N. "for the advancement of world unity through dissemination of knowledge in art, education, and science" and implies that the Exhibit Hall shall be an inspiring symbol of progress in knowledge, as well as an area for exhibition of important cultural works, experimental projects, and exchange of national achievements. Structural imagination was wanted and collaborative contributions in the broad-



Another of the imaginative designs for U.N.E.S.C.O. Exhibit Hall (by Team 8) is discussed by rivals, Herbert L. Bogen, student architect, Geraldine Lewis, sculptor, and Robert T. Riley, painter. Mural on glass would fill the major arched opening at front of the structure.

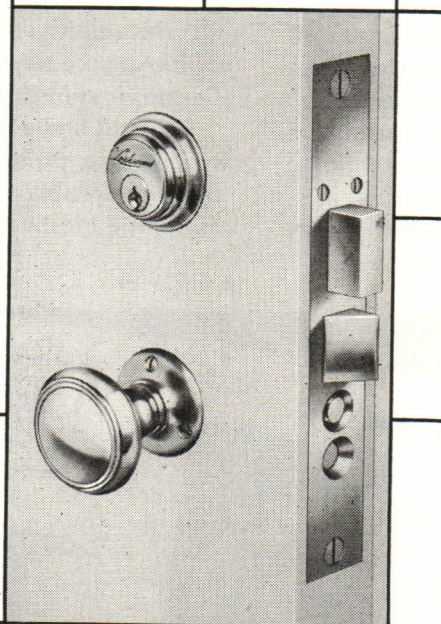
### Sometimes people pay too much (or not enough) for hardware!

Often it's hard to hit a middle-of-the-road line when you're selecting Finishing Hardware.

You figure you should have cast bronze . . . but there's no room for it in the budget. You don't want wrought brass, even though it's priced where you can reach it.

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23A



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to be sure!

... Graceful, trim Lockwood Polyflex, in forged brass. The lock: 5100 Series Heavy Duty, with Dead Bolt and Equipose Knob Action.

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HARDWARE MANUFACTURING CO.  
DIVISION OF INDEPENDENT LOCK COMPANY, FITCHBURG, MASS.

est design sense were encouraged.

Collaboration with students of other departments of the School of Fine Arts (Painting, Sculpture, and Drama) is an essential of the Department of Architecture at Yale. In general, the training of architects is "carried on by analysis of the problems which usually confront the architect in his professional work." The emphasis on collaborative effort is to encourage interrelation of the allied arts.

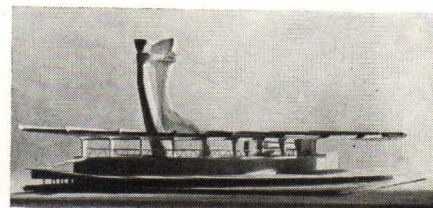
Graduate students comprising the teams whose work was chosen to illustrate this report are:

Team 1—Sonia Jean Albert and Jacob Kopel Rubenstein, architects; John Henry Rutter, Jr., and Warren Dan Spaulding, painters. (Below.)

Team 6—Frank Robbins Chapman, Jr., and John Whitmore Storrs, Jr., architects; Orrel Philip Reed and Bruce Etcheson, painters. (Page 18.)

(Continued on page 18)

TEAM 1—"We have tried to evolve a building for U.N.E.S.C.O. which would consider the individual coming to view the exhibits—not overpower him. The result was to envelope the Building around the higher land contours, so as to allow the public to descend from them to a lower exhibition area, which in turn would lead to a planned outdoor area. . . . With a semicircular plan, we had an opportunity to have a provocative means of support which would make our Sculpture part of the structural system. The sculpture (steel frame) holds cables supporting the roof of the building. Outdoor Mural . . . is intended as an introductory diversion to the skills, forces, and entertainments which would be displayed within the building. Elements of the Indoor Mural contain ideas already fixed in terms of recognizable representation."



*How you can use the*

# **FLEUR-O-LIER**

## **INDEX SYSTEM\***

Whether you make, sell, specify or buy fluorescent lighting equipment, The Fleur-O-Lier Index System will make your job easier. For the Index System provides a simple, usable method for rating and classifying fluorescent fixtures on the basis of their illuminating performance.

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simple and precise. It's easy to write—and easy for the purchaser to follow.

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Fleur-O-Lier fixtures are carefully examined by Electrical Testing Laboratories, Inc., and assigned a rating under the Index System. All the buyer need do is select fixtures that meet the specifier's Index System number. Then with the photometric test data and the coefficients of utilization provided with all Fleur-O-Lier fixtures, he has complete information to make an intelligent purchase of fixtures that meet the specifications and perform efficiently.

*\*To get complete information on this easy way to specify and buy fixtures, write for free booklet, "The Fleur-O-Lier Index System".*



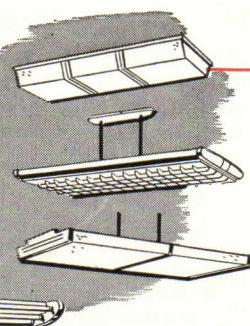
This label is attached to every FLEUR-O-LIER luminaire. It certifies that a similar fixture has been examined by Electrical Testing Laboratories, Inc., and found to conform to specifications. This label is your assurance of excellence in mechanical and electrical construction and in performance. It means that Certified Ballasts and Starters are used and that the requirements of the National Electrical Code have been met.

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## Progress Report

(Continued from page 16)

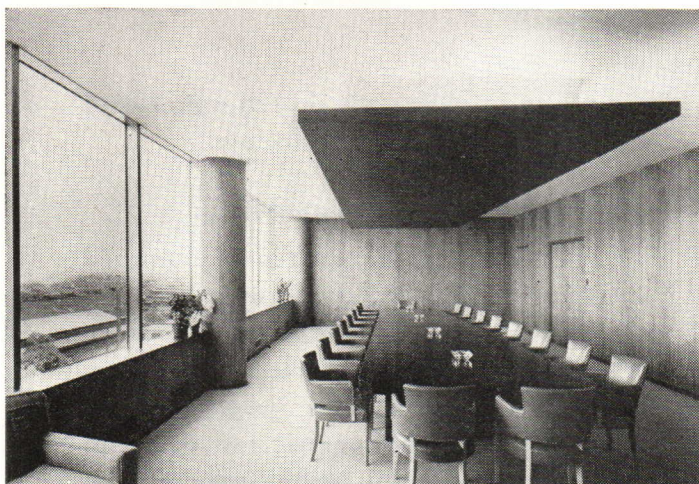
Team 7—Edward Dupaquier Dart and George Allen Hinds, architects; Mary Elizabeth Stone and Paul Valentine Tedeschi, painters; Robert Yens Larsen, sculptor. (Page 14.)

Team 8—Philip Joseph DiCorcia and John William Handy, Jr., architects; John Gaston Duigou and Ruth Suzanne Herz, painters; Brian Boaz Watkins, sculptor. (Page 16.)

Team 14—William Guy Garwood and William Sharp Kirkpatrick, architects; Howard John Besnia and Edith Ayrault Rose, painters; Evans Woollen, sculptor. (Page 14.)

Team 16—Abigail Cargill McCormick and Bliss Woodruff, architects; Sylvia Marilyn Gutman and Leonard Everett Fisher, painters; Geraldine Lewis, sculptor. (Page 14.)

## Room with a view on all four sides!



*Flat Cut Walnut Flexwood gives the Board Room a look of luxury and good taste. Othertypes of Flexwood were used in executive offices of this new building.*

● The recently completed building of the American Stove Co., St. Louis, is an outstanding example of modern construction, air-conditioned and treated acoustically.

Architect on this project was Harris Armstrong, a recent winner in the nationwide St. Louis Mississippi Riverfront Contest.

One feature of Mr. Armstrong's design is glass windows running the entire length of both sides. Notice how this gives the room above a sweeping panorama of the surrounding landscape.

But the other three walls offer a striking view, too. For architect Armstrong chose Flexwood for this and other important rooms in this beautiful

new structure. Here . . . complementing perfectly the beauty of the design . . . is a picture of luxury, good taste and the warm beauty of real wood.

Wood in its most versatile form . . . Flexwood. Fine decorative hardwoods sliced into thin veneers, and mounted on flexible fabric backing. This means you can use Flexwood anywhere . . . over new walls or old . . . on curved surfaces or flat. You can create almost any mood . . . sophisticated modern or dignified traditional.

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TEAM 6—"After several discussions involving personal feelings about the solution . . . the team precipitated a system of exhibition—an enormous Hall of shuttling planes (or platforms) to be utilized as positions from which the visitor could observe; positions upon which objects of display might be placed; and as planes over, under, and to the sides of the displays. The manner of support of these planes would be suspension by steel cables. Only the ground floor and basement garage would be directly borne by the ground—but the observation planes (above) would in most cases anchor themselves to the sides of the ravine in which the Exhibit Hall would be placed. A great Mural plane would intersect the building from ravine bottom out through the roof . . . A Sculpture would be placed on the exterior portion, which would be a point of focus for visitors."

## NOTICES

### CONFERENCE

THE SOUTHERN CONFERENCE ON HOSPITAL PLANNING will be held at the Buena Vista Hotel, Biloxi, Miss., May 19-21. Of interest to hospital planners, architects, draftsmen, contractors, equipment manufacturers and dealers, as well as hospital and health agencies, will be seminars and work periods, exhibits, and judgment of a hospital design competition.

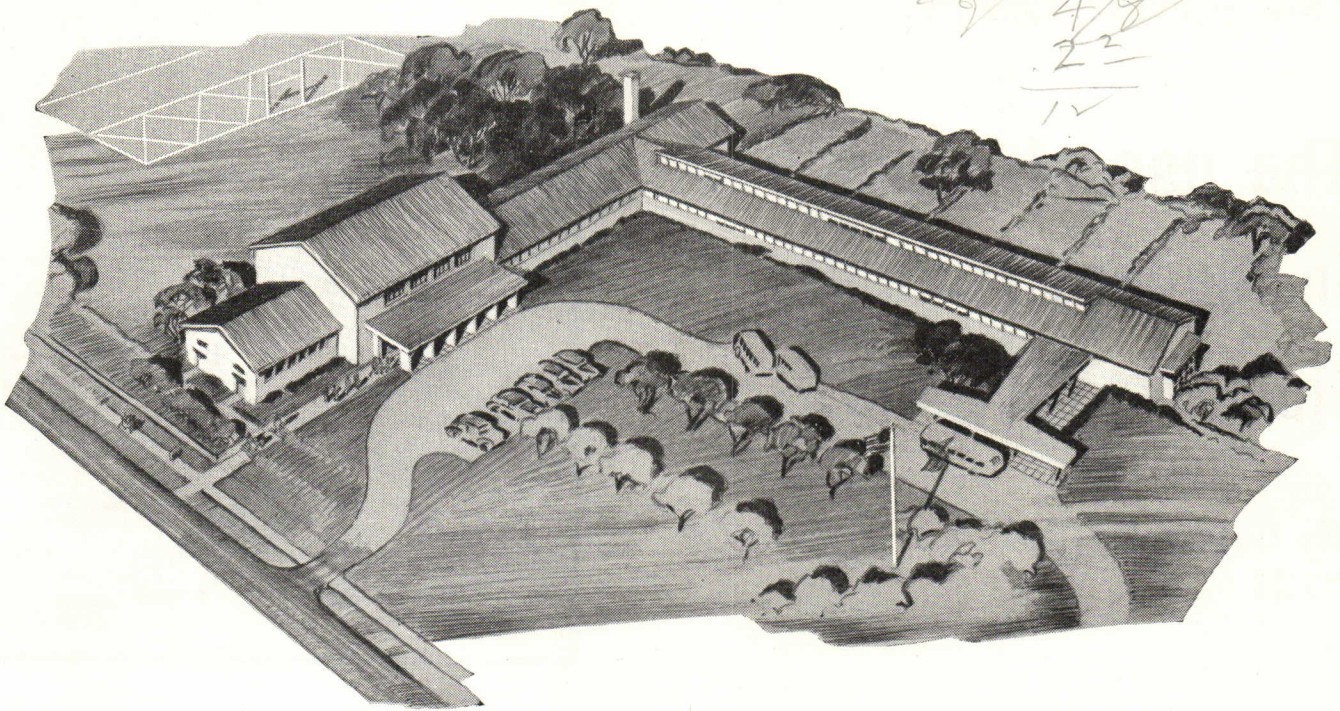
Speakers and discussion leaders will include Frank Lloyd Wright; Surgeon General Leonard A. Scheele, U.S. Public Health Service; Dr. Thomas Parran, former surgeon general and now dean of the University of Pittsburgh School of Public Health; Dr. Vane M. Hoge, Chief, Division of Hospital Facilities, USPHS; and Kay Kyser, health and hospital leader of North Carolina.

In work sessions and seminars surveying all phases of hospital design, experts in hospital architecture, administration, and consultation will direct and participate. Included will be Isador Rosenfield, William A. Riley, Carl A. Erikson, Thomas H. Creighton, James R. Edmunds, and Skidmore, Owings & Merrill.

State hospital plans, hospital equipment, builders' materials, and students' competitive drawings will be on exhibition.

A feature of the conference will be the judging of a hospital design competition in which Southern schools of architecture have participated.

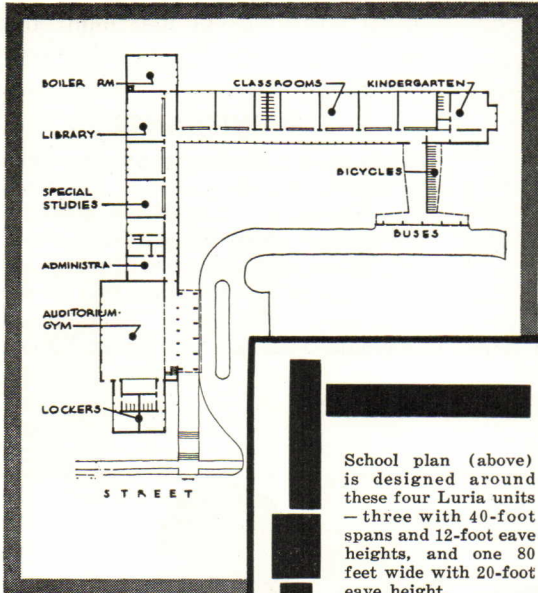
Chairman of the conference is Moreland Griffith Smith of the firm of Sherlock, Smith & Adams, 114 Bankhead Ave., Montgomery, Ala.



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—thanks to the imagination of architects who realize

the tremendous new possibilities in STANDARD BUILDINGS by LURIA



School plan (above) is designed around these four Luria units — three with 40-foot spans and 12-foot eave heights, and one 80 feet wide with 20-foot eave height.

Most people would never guess, in looking at the fine modern school shown above, that it was designed around a group of perfectly *standard* buildings. For here is complete architectural freedom—even to the choice of collateral materials, optional features and accessories. Yet the fact that these are Standard Buildings by Luria makes this school readily available anywhere—and keeps it well within the limits of the average school budget!

Far from *limiting* the imagination of the architect, Standard Buildings by Luria actually create new opportunities for design, and widen the circle of his prospective clients. For here is a new and flexible medium to work with—permanent, steel-frame structures that can be incorporated into any one-story plan with complete confidence.

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Luria buildings are available now—with clear spans of 40 to 100 feet, eave heights of 12 to 20 feet, and any desired length in increments of 20 feet.

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# The use of Asphalt Tile in Modern Multiple Housing Projects

*By Edwin H. Mittelbush, Architect*

The design of a rental housing project is secondary only to the financing pattern. The selection of each and every detail of construction, and the selection of each and every material is influenced thereby. The physical security for long term loans, by that I mean 27 to 32 year loans, must fulfill certain fundamental requisites and standards, some of which are dictated to us by the lenders, others by the myriad of building ordinance, and still others imposed upon us by the future tenants themselves.

We arrive, eventually then, at an area or range within which we must design. It is necessary, in order to obtain a fair return, that both construction, operating, and maintenance costs be consistent with the rental income expectancy. The fullest possible advantage must be taken of

all the factors involved.

In the 366 unit rental project now under construction in LaGrange Park, there is about 360,000 square feet of floor area or surface (not including basement laundry, storage and boiler room area).

These floors consist of a 2½" concrete slab poured in place over light weight steel beams. The choice of a floor covering for these concrete floors received our utmost attention for many months.

We are faced primarily with a maintenance problem. In addition to that, we were concerned with the original cost of installation or first cost.

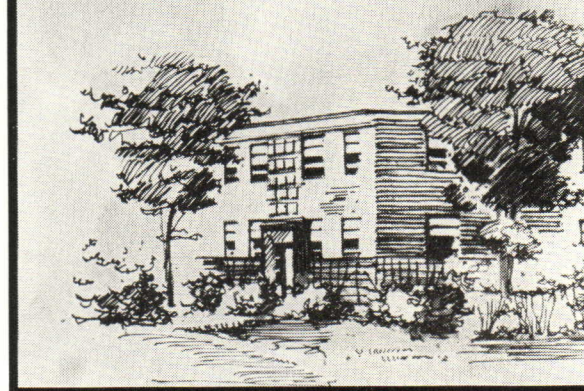
In this project there are 32 garden type apartments, in which the floors are about 2'-0" below grade. A floor

## MODERN FLOORING TECHNIQUES:

No. 4 in a series of articles on the use of asphalt tile flooring prepared by leading architects and building authorities for the information of the architectural and building professions.

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pioneer maker of asphalt tile.



material, such as asphalt tile, which resists moisture is required in these units.

Then last but not least in importance was the matter of floor color and its effect on the apartment color scheme. With these four basic and fundamental requirements in mind, we selected asphalt tile as the material which would best fulfill and satisfy every one of these standards and many more.

## MAINTENANCE

Plain soap and water mopping clean it easily. The dirt is never absorbed into the material itself but stays on the surface where it is easy to remove. An occasional waxing will bring out the rich colors although this is not necessary. We chose Greaseproof Asphalt Tile for the ground floor

Reading from left to right, Charles E. Joern, President of Wm. Joern & Sons, Builders; Edwin H. Mittelbush, Architect; and Elmer M. Larson, General Supt. for Wm. Joern & Sons... one of many discussions concerning "The Homestead."



This is a typical unit in "The Homestead," La Grange, Illinois. The development consists of 19 of these two and three story buildings containing four and five room apartments.



kitchens because it is grease proof, very seldom stains, and resists the passage of moisture. Replacement of tile is comparatively simple if unforeseen damage should occur in certain areas.

#### LOW FIRST COST

Asphalt Tile flooring is one of the lowest cost floor coverings available. The preparation of the surface for the concrete sub-floor is a very simple operation consisting only of troweling the concrete slabs to a smooth level surface in preparation for the mastic adhesive. The individual tiles can then be rapidly set in place, cleaned and ready for use immediately thereafter. Apartments are ready for occupancy in a matter of a few hours.

#### COLOR

We have selected a marbled deep

brown color for the living rooms and bedrooms, and a very light gray for the kitchen floors to harmonize with the cabinets and counter-tops. These floors will blend in with the driftwood finish of the mill-work and the aluminum sash. These color schemes, being somewhat neutral, will give the tenants the maximum utility as well as the least problem insofar as blending in with their present or new furniture, rugs, draperies, etc., is concerned. These are very real considerations which definitely affect rentability and in our experience we have found that asphalt tile has received the general acclaim and acceptance required of floor coverings in this type of dwelling unit.

#### LONG WEAR AND LONG LIFE

When the matter of long life was

given our attention, we examined asphalt tile floors that had been subjected to hard wear and traffic in stores and corridors for at least fifteen years. Upon close examination we came to the conclusion that this type of floor was practically "wear-proof."

#### RESILIENCY AND COMFORT

Figures indicate that the average housewife walks 25 miles per year making beds. This means that unless the floor is extremely resilient and comfortable, she wouldn't have enough energy left to complete the remaining household duties required of her. Asphalt tile is unusually resilient and less fatiguing than other type of floors. It is quiet as well, and provides a certain amount of sound-proofing, which is an important consideration in housing projects.

*Tile-Tex\* Asphalt Tile floors have been in use for more than twenty years. This quality asphalt tile has convincingly demonstrated its ability to perform satisfactorily in many different types of applications where wear is heavy and budgets are limited. For more information, or reprints of this article, write The Tile-Tex Company, Inc. (subsidiary of The Flintkote Company), Chicago Heights, Illinois. Sales offices in Chicago, New York, Los Angeles, New Orleans, Toronto and Montreal.*

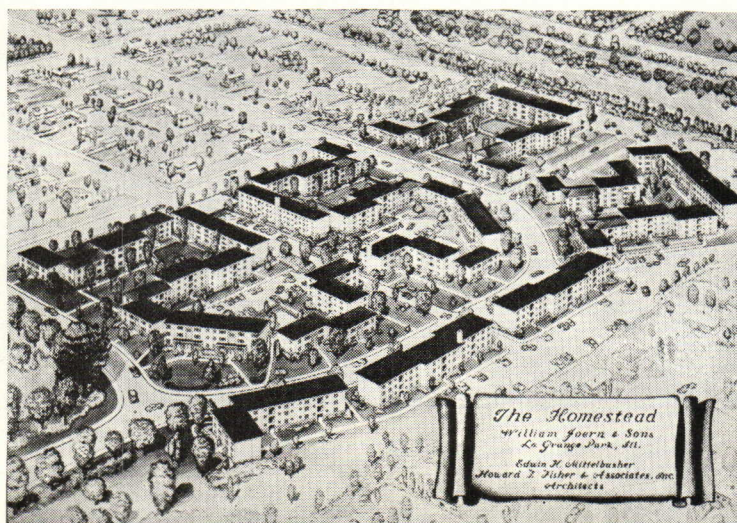
## The TILE-TEX Company, Inc.

CHICAGO HEIGHTS, ILLINOIS

\*REGISTERED TRADEMARK OF THE TILE-TEX COMPANY, INC.



This "aerial rendering" shows the entire "Homestead" project. There are 17 acres, 19 buildings, 366 four and five room apartments and 100 garages. Notice the careful planning of streets to minimize traffic hazards and provide "off-the-street" parking.



## FACTS ABOUT RESILIENT FLOORS

# PLAIN LINOLEUM — *is it an outdated flooring?*

The development of a variety of different types of resilient floorings over the past few years has given rise to the question—"Is plain linoleum an outdated flooring material?"

The question is a natural one because from 1942 until just recently plain linoleum was in short supply. In many cases, architects found it necessary to use other types of resilient flooring to get reasonably prompt installation.

Today, Armstrong's Plain Linoleum is in free supply. Generally, it can be specified for immediate installation.

As a result of past shortages the qualities of plain linoleum and its suitability to the job are frequently overlooked. It still rates among the top resilient floors for serviceability, low maintenance and attractive appearance. Recent improvements in the Armstrong manufacturing techniques give Armstrong's Plain Linoleum new attractiveness and durability. Because some of its qualities overlap those of other type resilient floorings, a review of the characteristics of plain linoleum may prove helpful to the architect.

### *What is plain linoleum?*

As its name implies, plain linoleum is linoleum in solid colors without design. It is made in roll form and offers unlimited opportunities to create smart single color floors with a minimum of seams. The standard colors, Brown, Evergreen, Dark Gray, Terra Cotta, Chocolate, and Black have been selected for many years for commercial installations where long

service, low maintenance and appearance are important factors. Twenty-one special or decorative colors present further opportunities to create unusual floors through color accents, color bands, or other combinations.

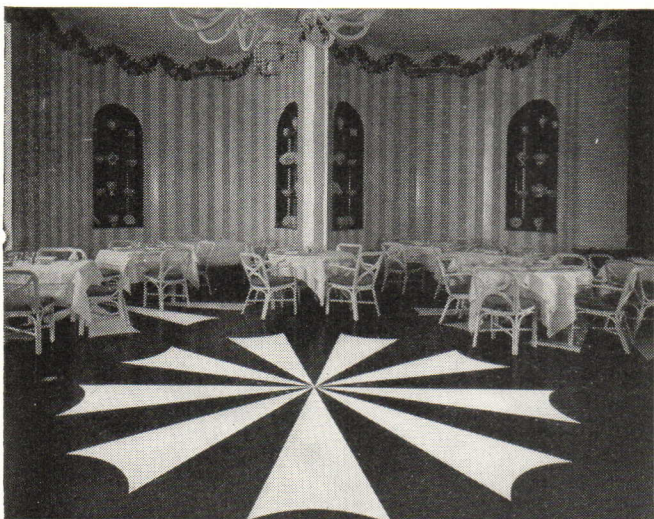
### *Recent Improvements*

**Smoother surface** simplifies cleaning. While Armstrong's Plain Linoleum has always been noted for its smooth surface, a new calendering machine recently developed by Armstrong gives the linoleum a still smoother surface. (See illustration.) This smoother surface improves appearance and helps resist dirt.

**Greater durability** through increased density and toughness. This results from improved raw material processing and newly designed manufacturing equipment. Because it is denser, Armstrong's Plain Linoleum offers greater wear.

**Greater resistance to alkaline soaps** — Recent developments in color pigments, especially in reds and blues, make Armstrong's Plain Linoleum more resistant to fading and to alkaline soaps.

**More grease resistant**—Today Armstrong's Plain Linoleum offers additional grease resistance. While it cannot be installed in areas subject to constant oil and grease, it can safely be specified for installation in areas where occasional spillage of oil, grease, or other inorganic solvents may occur.

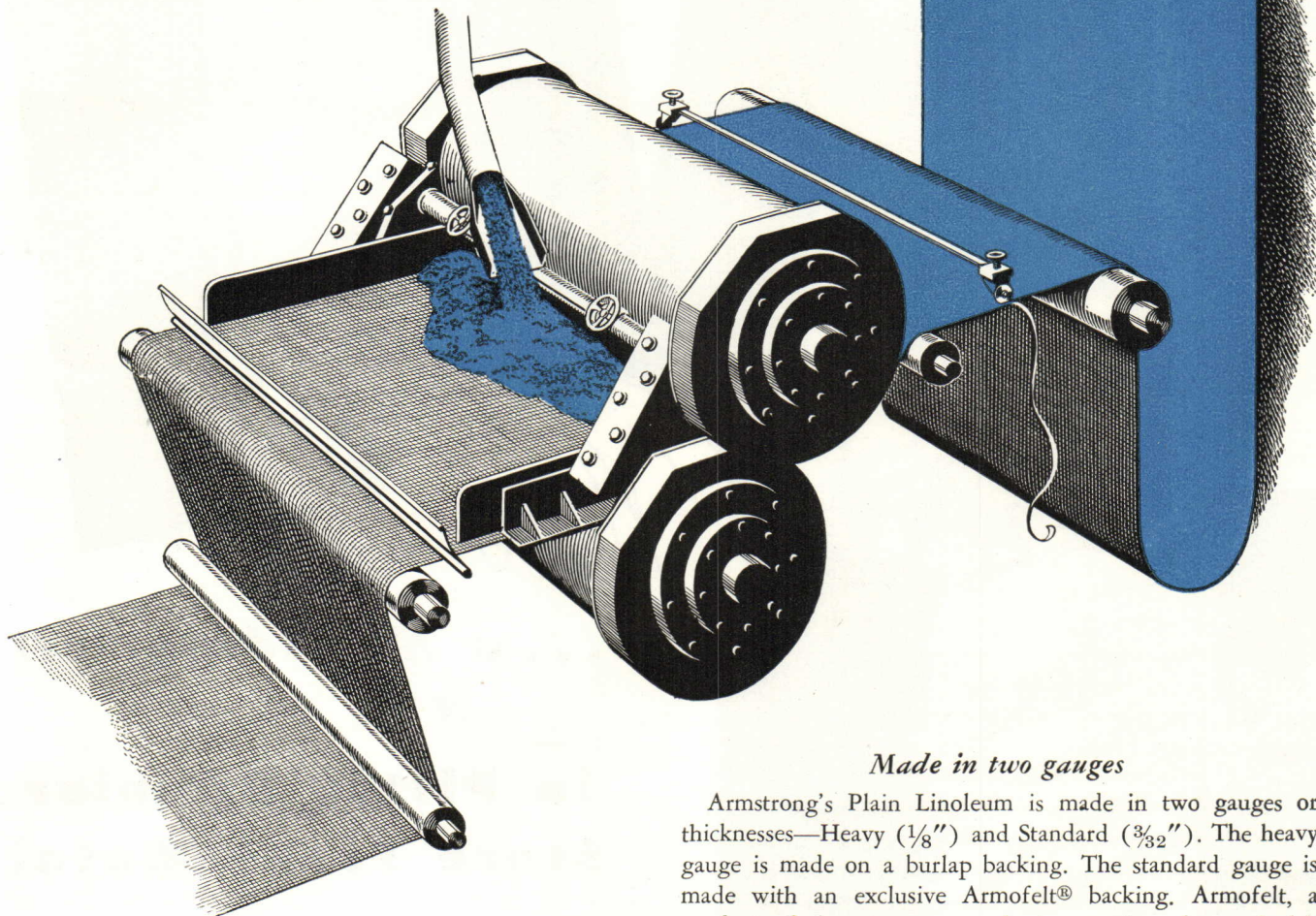


Plain linoleum offers unlimited opportunities to create highly decorative floors. This smart hotel dining room illustrates how plain linoleum can be designed to harmonize with both modern and conventional interiors.



This office section of a large city hall is a typical area where plain linoleum can be used to advantage. It is long wearing, easily maintained and is quiet underfoot. Its high resistance to indentation makes it an ideal office flooring.

The raw materials for Armstrong's Plain Linoleum are thoroughly blended in a series of mixers to produce an even, all-over coloring in the finished product. The resultant loose "mix" is evenly distributed over the backing material, and the two move together into a newly designed calender machine. Here the mix is drawn tightly between two highly polished rolls. The upper roll is hot and turns slower than the lower one which is cold. The enormous pressure compresses the particles of the mix into a dense sheet and it is "ironed" perfectly smooth as it is keyed to the backing. The material then undergoes a slow baking or curing process.



### *Made in two gauges*

Armstrong's Plain Linoleum is made in two gauges or thicknesses—Heavy ( $\frac{1}{8}$ " ) and Standard ( $\frac{3}{32}$ " ). The heavy gauge is made on a burlap backing. The standard gauge is made with an exclusive Armofelt® backing. Armofelt, a product of Armstrong research, is an extremely tough felt made from new cloth fibers and saturated with a clear resin. This backing eliminates the need for lining felt.

Armstrong's Plain Linoleum is made in rolls six feet wide and up to ninety-nine feet in length. Decorative borders in plain linoleum can be furnished in rolls thirty feet long in three to thirty-six inch widths.

Armstrong's Plain Linoleum in heavy and standard gauges is stocked in 133 warehousing points throughout the country. It is generally specified in schools, office buildings, hospitals, and commercial buildings of all types. It should not be specified for installation over concrete subfloors in direct contact with the ground since it will not withstand the effects of alkaline moisture always prevalent in this type of subfloor. Architects wishing samples, literature, and installation specifications are invited to write any Armstrong office or directly to the Armstrong Cork Company, Floor Division, 8904 State Street, Lancaster, Pennsylvania.

**Underfoot comfort**—Linoleum is one of the most comfortable flooring materials. Although Armstrong's Plain Linoleum has been made denser, none of its original resilience has been lost. It has a step cushioning effect which keeps foot impact noise to a minimum. Armstrong's Plain Linoleum also has a high resistance to indentation—75 pounds per square inch or three times greater than asphalt tile.

### *Decorative Advantages*

Armstrong's Plain Linoleum is made in six standard colors and twenty-one special colors. The colors have been created to harmonize with other patterns of Armstrong's Resilient Flooring. Where light reflectivity is important, Armstrong's Plain Linoleum offers a wide range of reflectivity values from a low of 4% to a high of 55%.

# ARMSTRONG'S FLOORS

LINOLEUM • LINOTILE • ASPHALT TILE



RUBBER TILE • CORK TILE • CORLON TILE

LINOTILE AND CORLON ARE REGISTERED TRADE-MARKS.



**... a Moulding Kit**

## **in Pittco Premier Store Front Metal**

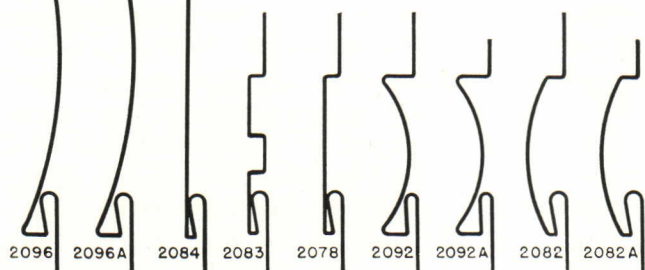
● The new basic mouldings in the Premier line of Pittco Store Front Metal may be truly called a Moulding Kit. They may be combined in a wide variety of attractive patterns, giving the architect fresh style and beauty, and great variety in design to help in the creation of distinctive, sales-winning store fronts.

Shown here with the same head and drip members are three of the many designs which may be formed with these new shapes. Cross sections of some of the new mouldings are shown at left.

Most of the shapes in the Premier Moulding Kit are interchangeable and may be used both horizontally and vertically. They make it easy to design several adjacent store fronts, giving each a distinctively different appearance through the proper selection and arrangement of mouldings.

This convenient Moulding Kit of Pittco Premier Store Front Metal, is another result of "Pittsburgh's" constant research, aimed at helping you solve architectural and building problems encountered in the field.

BASIC SHAPES OF MOULDING KIT (1/2 SIZE)

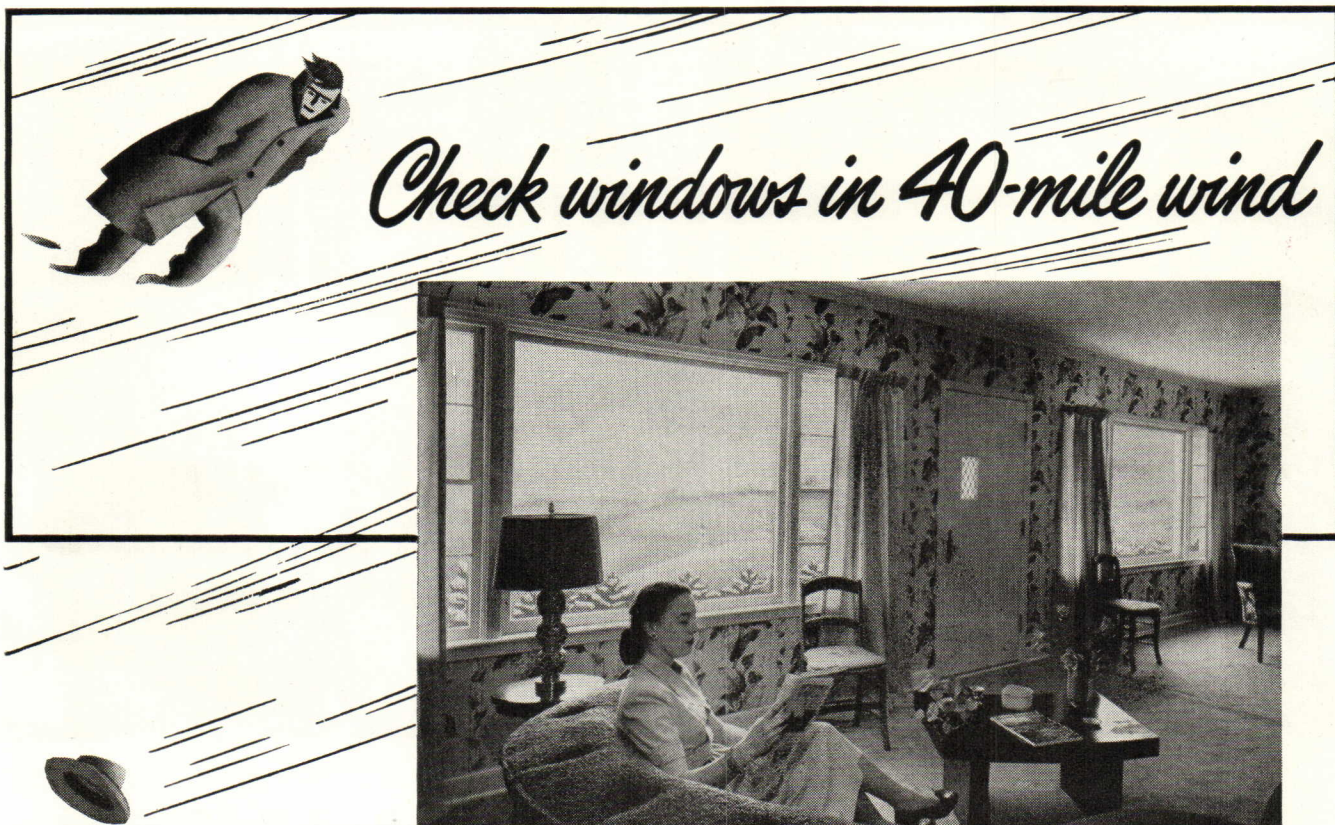


## **PITTCO STORE FRONT METAL**



PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

**PITTSBURGH PLATE GLASS COMPANY**



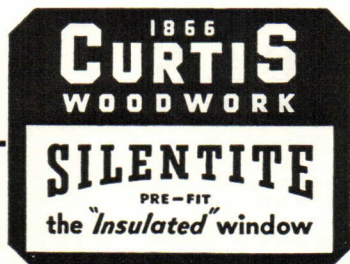
and you'll choose CURTIS Silentite!

In a 40-mile wind you'd soon know the difference between Curtis Silentite and ordinary windows. For under such conditions, Silentite allows 20% less air infiltration than the famous original Silentite—America's first "insulated" window.

There are scientific reasons for Silentite's superior weathertightness. "Floating" weather-strips press snugly against the side of the sash, yet allow easy movement. Gone is the conventional check rail—in its place a new type rail with specially designed weather-strip members. Bronze spring leaf weather-stripping at the head and sill complete this superior window design. And Silentite is a *wood* window for maximum insulation value and reduced heating costs.

Silentite Windows are easy to operate—have no weights, cords or pulleys. They have the streamlined beauty that comes from slender mullions and wide glass areas. Toxic and water-repellent treated, Silentite windows assure lasting value in any size or type of home.

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Please send me book on Silentite Windows, including casements.

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☐ Contractor  
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Not even during the recent difficult war years has American ever compromised in materials, design or construction; for, we regard the welfare and safety of your youngsters as our responsibility as well as yours. Instead, we've gone along in the good old American way building the best *Approved* Playground and Swimming Pool Equipment made; and today more customers than ever before continue to place their confidence in American at Anderson. American leads the field.

*Learn why American Approved Playground and Swimming Pool Equipment enjoys world-wide acceptance. Send for Literature, today.*

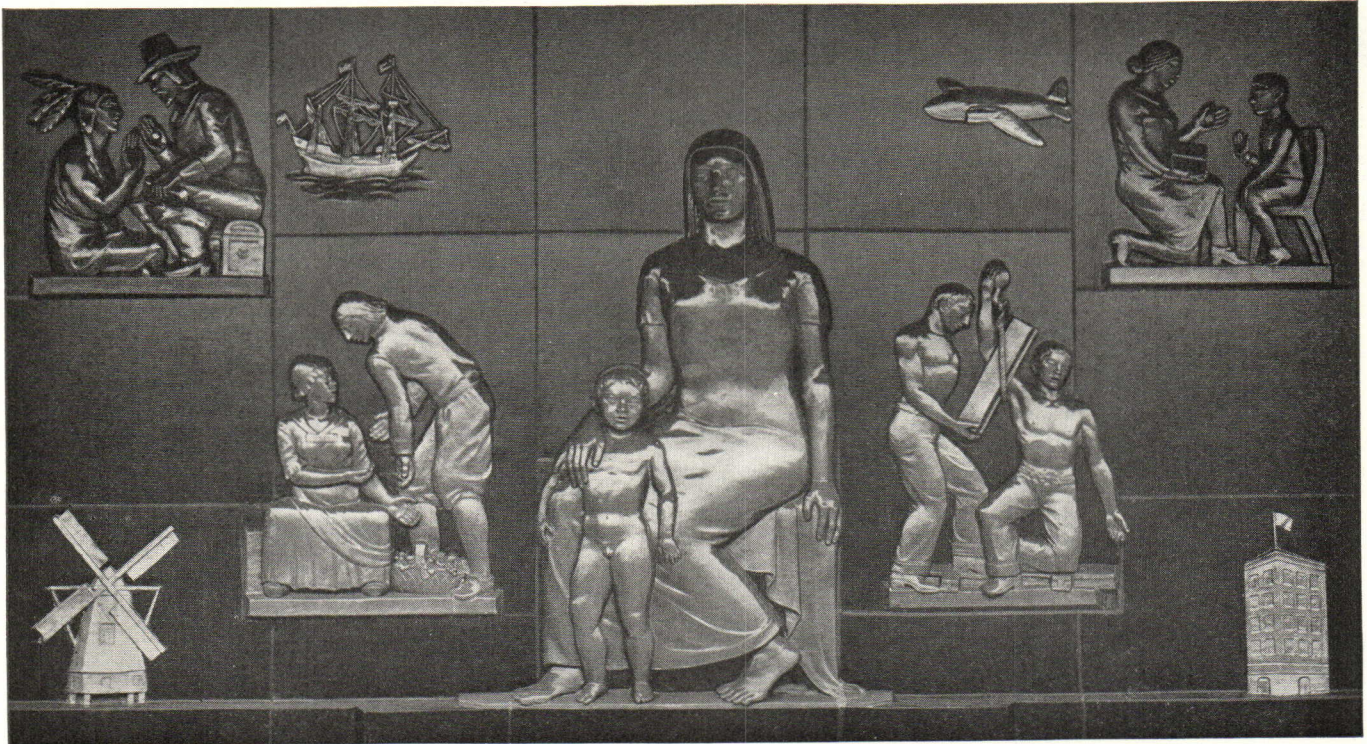


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*Construction detail, data, color samples, estimates, advice on preliminary sketches, will be furnished promptly without cost. Send your inquiry now.*



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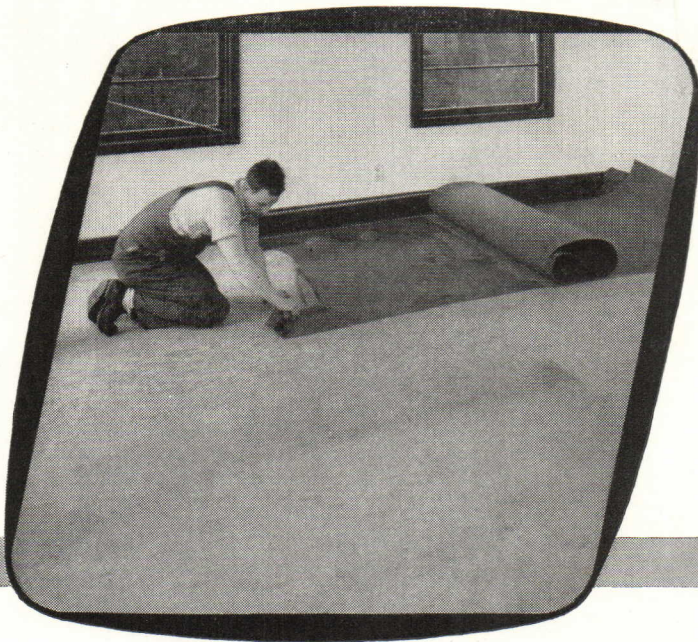
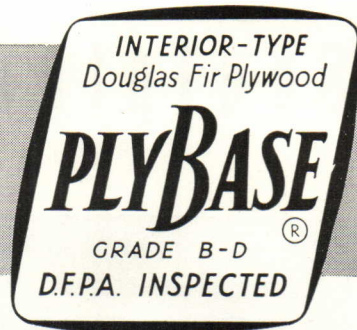
*In imperishable Enduro-Ashlar Architectural Terra Cotta, sculptor Anthony Di Lorenzo depicts in bas-relief the story of thrift from early Colonial days. Reeded pilasters at entrance, and background of sculptured panel, are a rich brown. Ship, windmill, airplane and building are silver; figures are a light brown.*

## FEDERAL SEABOARD TERRA COTTA CORP.



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PLANTS AT PERTH AMBOY AND SOUTH AMBOY, N. J.

# Linoleum, Tile, Carpeting— All Need This Better Base Panel



PLYBASE is a NEW GRADE of Interior-type Douglas fir plywood with a face of B (solid) veneer, and a back of D veneer. All sanded both sides. For full details on PlyBase use and application, see Sweet's File, Architectural, or send for the new 1949 Basic Plywood Catalog. Write the Douglas Fir Plywood Association office nearest you: Tacoma Bldg., Tacoma 2, Wash.; 1707 Daily News Bldg., Chicago 6; 1232 Shoreham Bldg., Washington 5, D. C.; The 500 Fifth Avenue Bldg., New York City 18.

## PLYBASE THICKNESSES:

3/16", 1/4", 3/8", 1/2", 5/8", and 3/4".

## PLYBASE WIDTHS:

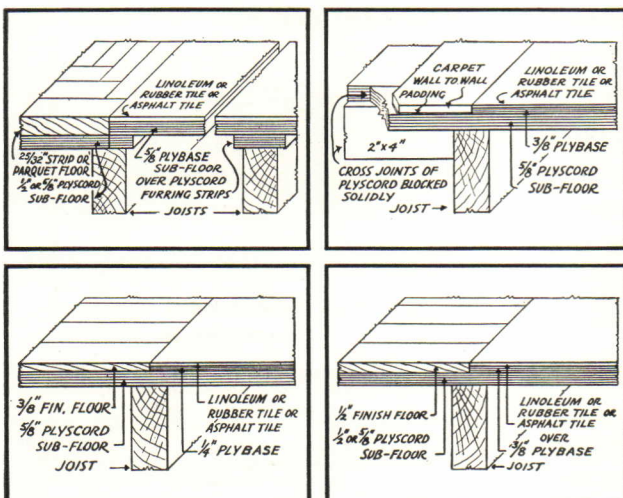
30", 36", 42" and 48".

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60", 72", 84", 96", 108", 120", and 144".

# PLYBASE Makes Coverings Look and Wear Better!

## SUGGESTED DETAILS FOR THE USE OF PLYBASE IN TYPICAL FLOORING JOBS



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Under PlyBase or any type of finish flooring, PlyScord is the ideal subflooring. The big panels of PlyScord cover joists quickly, provide a smooth, even surface that's strong, rigid, tight and draft-free. Identified by the "grade-trademark" at the right.



**PlyBase** is the ideal base material for all types of modern wall-to-wall floor coverings. Joints are reduced to a minimum; the covering is smooth, firm . . . looks better, lasts longer.

Sanded smooth, PlyBase presents a tight, solid surface. The large panel sizes go down quickly, are easy to handle, save time and labor on the job. Use PlyBase on remodeling work, too, as a firm surface for new coverings over old, rough, worn floors. And on walls, PlyBase serves as a backing for wall tile and over finish coverings which require a smooth, solid backing.

Specify PlyBase—identified by the grade-trademark shown above!

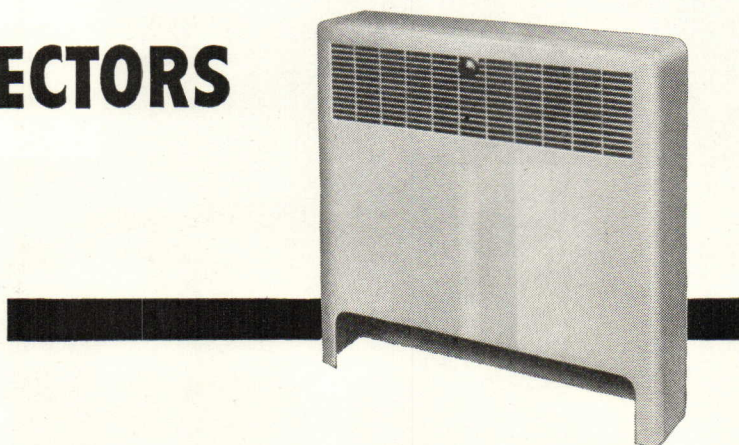
# Douglas Fir PLYWOOD

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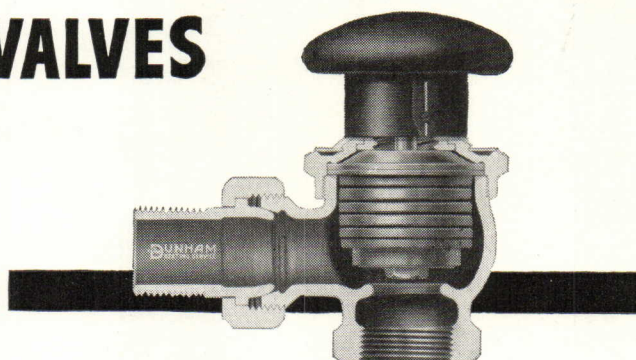
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*From* **CABINET CONVECTORS**



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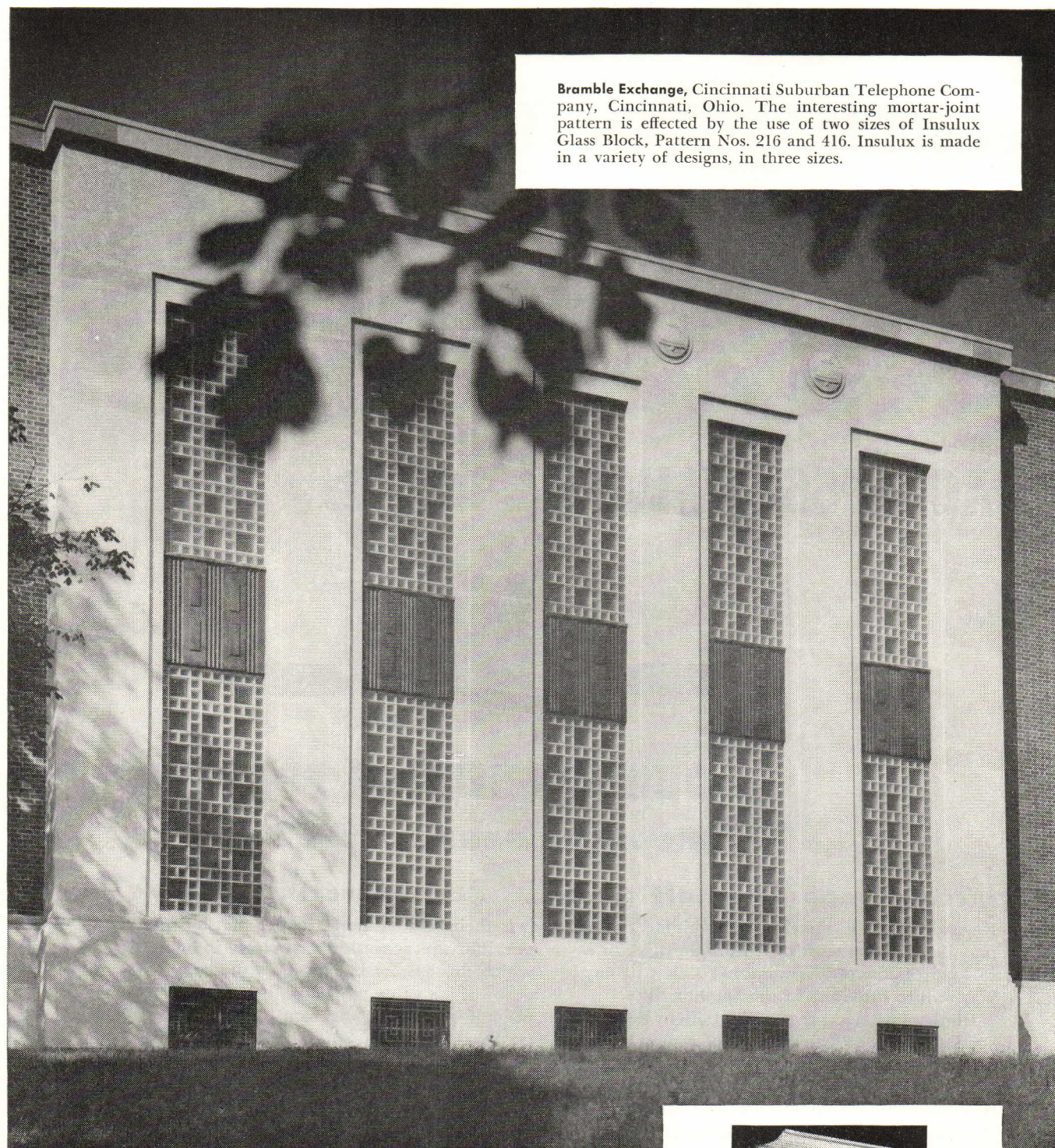
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**AND JOBBERS IN ALL PRINCIPAL CITIES**

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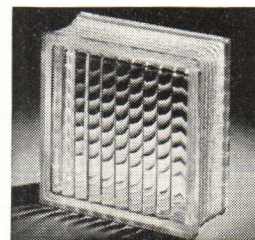
ARCHITECTS: HARRY HAKE AND HARRY HAKE, JR., CINCINNATI, OHIO

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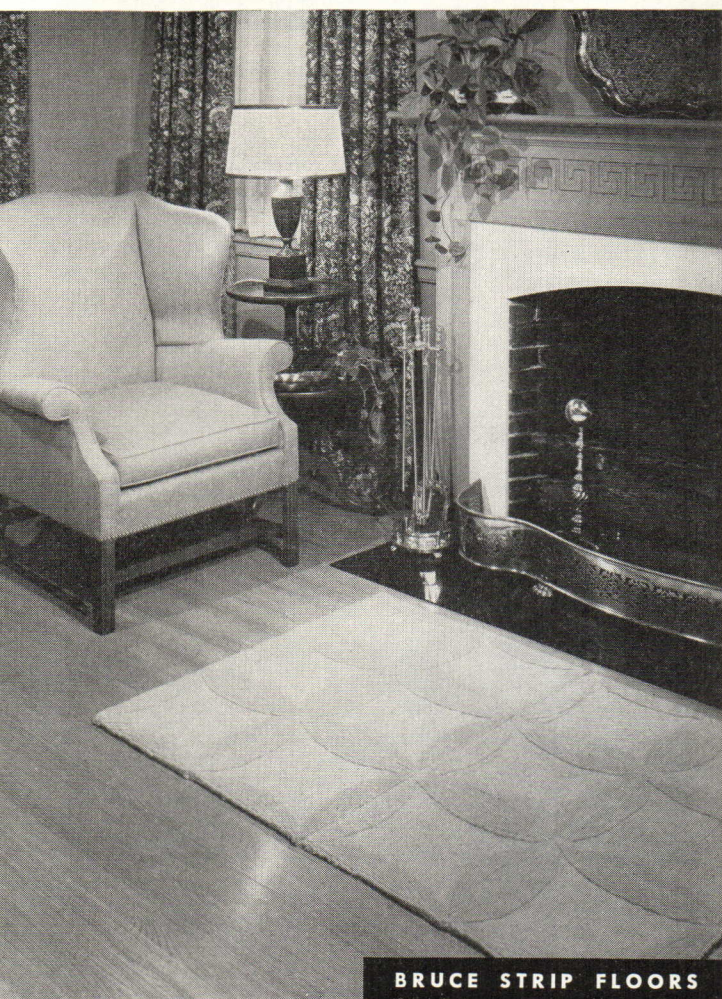
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# Welded Steel Framework Cuts Cost 50%

By Francis J. Schroedel, President  
Schroedel Construction Company, Milwaukee, Wisconsin

**D**IRECT savings of 50% over masonry and fire resistive construction are being realized in the erection of four 12-family apartment units, eight 16-family units and one 24-family apartment for the Estabrook project in Shorewood, Wisconsin. These savings result from greatly simplified construction methods using steel members for wall frame and floor joists and are made possible by arc welding.

A modular design using 2-foot increments enables mass production arc welding techniques for fast, low-cost shop fabrication of wall panel members for the first and second floors. Bethlehem open-web expanded-steel studs are welded between a channel cap or girt and a sill plate for both the first and second floor panels. Three-quarter inch channel is added between the studs for horizontal bracing.

During field erection, the wall panels are raised into position, held in place with a simple clamp (Fig. 1) and arc welded with  $\frac{5}{32}$ " diameter "Fleetweld 5" electrode, using 200-amp. engine-driven Lincoln "Shield-Arc" welders. The first floor framing is welded into an integral unit, and a finished concrete floor is later poured to cover the sill plates thus anchoring the building frame in position.

An "I" beam, supported by two outside

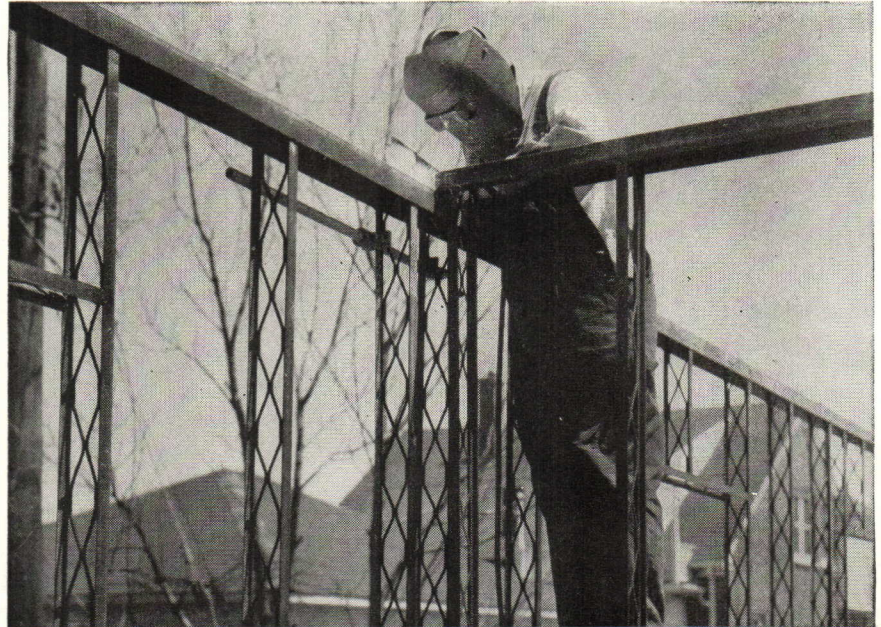


Fig. 1. Arc welding steel panels to form the side walls. Panels are made from 4" Bethlehem expanded steel studs.

walls and the center utility room walls, forms the center support for the expanded steel second floor framework. The erection of the second floor panels is then done without the need for any scaffolding.

Exterior walls are finished with

masonry, and interior plastering is applied to metal lath. In addition to direct cost savings in the building erection, additional benefits are easier, less costly installation of plumbing, wiring and insulation. The structure is both shrink-proof and verminproof.

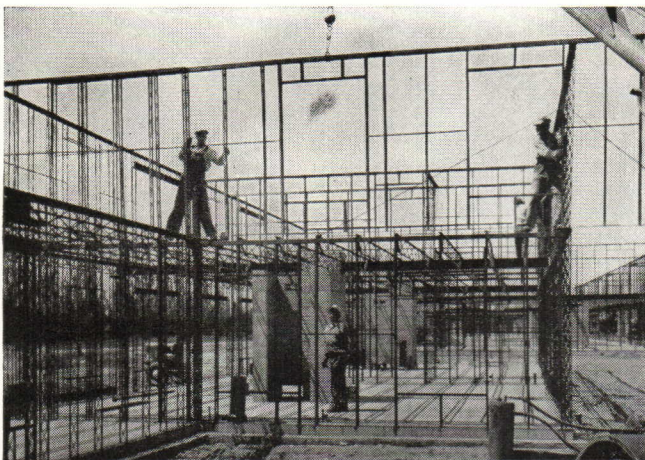


Fig. 2. Placing second floor prefabricated steel wall panels in position. Panels are hoisted and welded in place without use of any scaffolding.

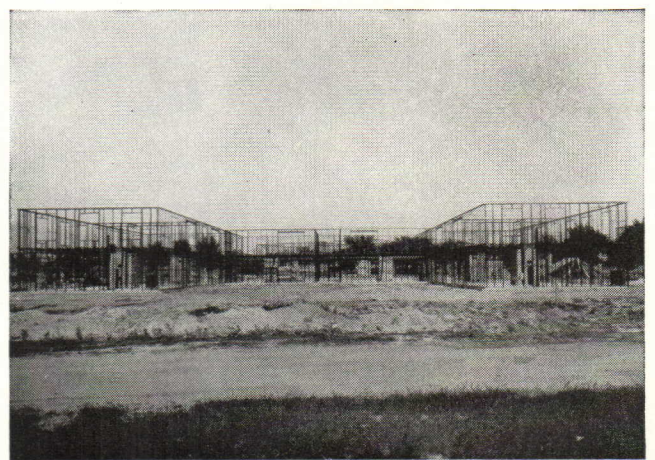


Fig. 3. Framework for one of many multiple family apartments built with all-welded steel construction. The Estabrook Homes project is located in Shorewood, Milwaukee, Wisconsin.

The above is published by **THE LINCOLN ELECTRIC COMPANY** in the interests of progress.  
Architects and engineers are invited to write on their letterheads to be placed on mailing list for Structural Welding Studies.  
The Lincoln Electric Company, Dept. 161, Cleveland 1, Ohio.

What every Architect  
should know about

# MICARTA

Micarta is ideal for bar tops and fronts as well as for fountain tops. It is not marred when cigarettes are snuffed out against it.

*If you are uncertain,  
if you don't know what  
Micarta will do . . .*

## Here's a challenging offer:

### Try to chip it!

Use silverware, cooking implements, the ordinary tools that would be used in a busy kitchen or pantry. *Just try!*

### Try to dent it!

Bang heavy glasses, ash trays, cups, or even cooking pots and pans on it. *Just try!*

### Try to stain it!

Spill alcohol on it, boiling water, nail polish, polish remover, even hydrogen peroxide up to 8 hours. *Just try!*

### Try to score it!

Gouge it with the edge of a half dollar. You can, of course, scratch it with the point of a sharp steel penknife, but as for anything else, *just try!*

### Try to spoil it!

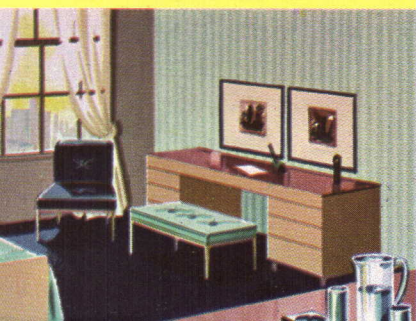
Use it as an ash tray. Snuff out cigarettes against it. Walk on it. Actually *boil* it in water. *Just try to spoil it.*



Micarta table tops offer a tough, impervious surface that makes possible "hospital cleanliness." Sanitation is quite as important in public eating places as in hospital operating rooms, where Micarta is extensively used.



Micarta's well known resistance to all types of food products, and to detergents and household cleansers, makes this beautiful plastic popular for kitchen sinks, and work surfaces.



**M**ICARTA is a remarkably tough and strikingly handsome plastic laminate, available in 32 colors and finishes. It is widely used in homes, stores, shops, public buildings and institutions.

Micarta requires virtually no maintenance. It is not affected by boiling water, alcohol, detergents, household cleansers, dilute acids, condiments, and barber and beauty shop preparations.

While Micarta is highly resistant to cigarette burns, a special cigarette-proof grade is available for *complete* protection. Micarta is made in the following forms:

**MICARTA SHEET**, 1/16" thick, used by fabricators who have the requisite bonding equipment.

**MICARTA PANEL**, in 7/8" and 1 1/4" thicknesses. This is Micarta Sheet, bonded to special cores of mahogany-faced Weldwood Plywood.

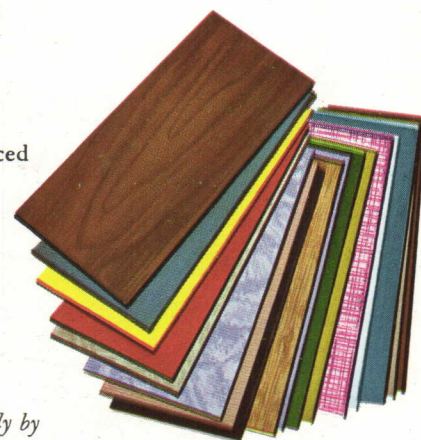
**MICARTABORD**, 5/32" thick, used generally as a wall surface.

We invite you to send the coupon for a free sample. Test Micarta's unusual properties yourself.



Made by Westinghouse. Sold for decorative purposes only by

**UNITED STATES PLYWOOD CORPORATION • New York 18, N.Y.**



### United States Plywood Corporation

55 West 44th Street, New York 18, N. Y.

I WANT TO GIVE MICARTA THE "THIRD DEGREE." Without any obligation whatever, send me, *free*, a sample of Micarta so I can see for myself how beautiful, tough, wear-resisting and abuse-proof Micarta really is.

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COMPANY \_\_\_\_\_

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More and more, Micarta is being used for furniture tops in homes, hotels, and institutions. Micarta Truwood, made with genuine wood veneers, is widely used for such applications. Incidentally, Micarta can be worked by hand tools. It can be sawed, trimmed, planed and drilled.

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- *PICTURE WINDOW*

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If your supplier does not yet have ready-made sash for *Thermopane*, urge him to stock it, or write us for a list of sash manufacturers.

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## *Thermopane*

MADE ONLY BY LIBBEY-OWENS-FORD GLASS COMPANY

2449 Nicholas Building, Toledo 3, Ohio

*at concrete floor prices you can get  
the beauty and durability of tile*

For concrete floors of tile beauty and durability, specify the use of Colorundum. For hotels, banks, stores, hospitals, service stations and factories you get bright, colorful floors with an armor plate surface—at the cost of an average concrete floor. Colorundum is a dry powder floated and trowelled into the floor topping. It is composed of powerful coloring agents, fused aggregates, water-proofing and hardening elements and cementitious binders. The colorful non-slip, dense surface is an ideal flooring for indoors or outdoors . . . on new work or when resurfacing old floors. Write for further information.



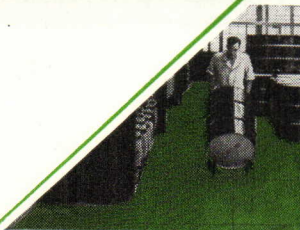
*FOR  
INTEGRALLY COLORED*

*CONCRETE  
FLOORS*

**COLORUNDUM**

**A.C. HORN COMPANY, INC.**

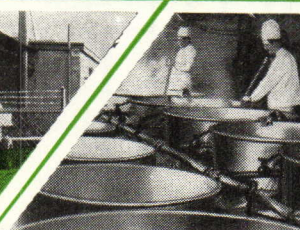
manufacturers of materials for building maintenance and construction  
10th STREET & 44th AVENUE • LONG ISLAND CITY 1, N. Y.  
HOUSTON • CHICAGO • LOS ANGELES • SAN FRANCISCO • TORONTO



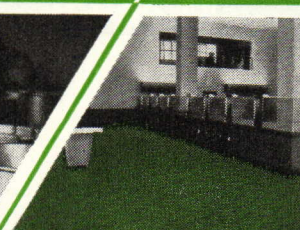
**PLANTS**



**DRIVEWAYS**



**KITCHENS**



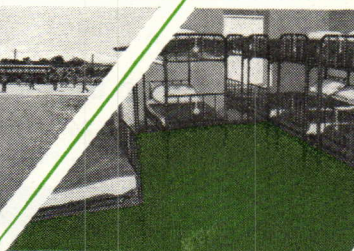
**BANKS**



Subsidiary of  
Sun Chemical  
Corporation



**WALKS**

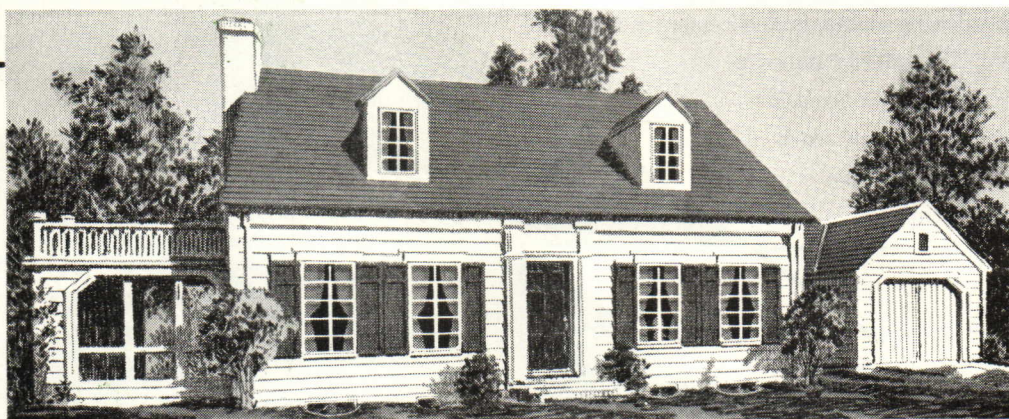


**HOSPITALS**



**LOBBIES**

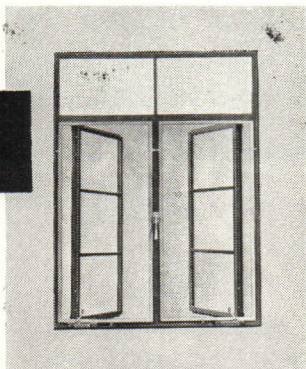
# HOW TO CUT BUILDING COSTS



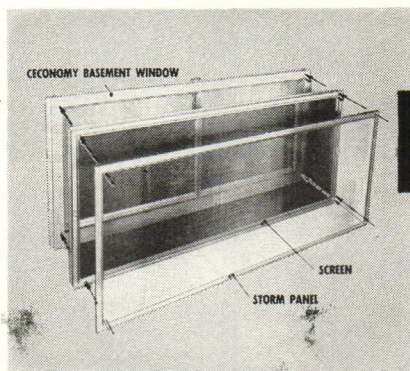
If your clients are budget-minded and bothered about building costs, here's how you can help them cut costs three ways. Yes, you'll drive costs down, down, down for them if

you specify (1) Ceco's money-saving Steel Casements, (2) Ceco's money-saving Metal Frame Screens and (3) Ceco's money-saving Ceconomy Basement Windows.

## STEEL CASEMENTS AND SCREENS



Installation costs are cut 30% and more. No extra hardware. No cutting or fitting. Metal screens are factory finished . . . ready to install.



## BASEMENT WINDOWS WITH COMBINATION SCREEN AND STORM UNITS

Standard sizes easy to install. No fitting or trimming necessary. Prime painted—cannot rot, warp or swell. They last and last.

**CECO  
STEEL**

**CECO STEEL PRODUCTS CORPORATION**

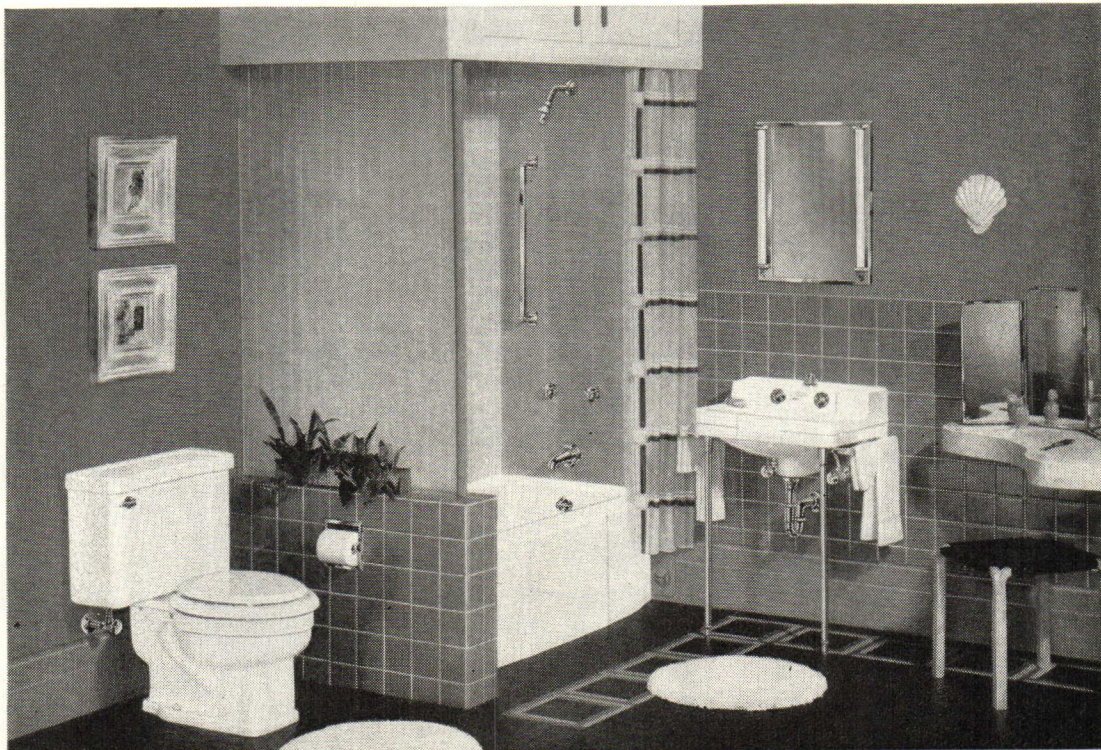
GENERAL OFFICES: 5601 West 26th Street, Chicago 50, Illinois

Offices, Branches and Fabricating Plants from Coast to Coast

*In construction products* **CECO ENGINEERING** *makes the big difference*

**for every taste...**

What home owner wouldn't exclaim over a beautiful bathroom like this? It's the Crane Drexel Group, styled to grace the finest homes.



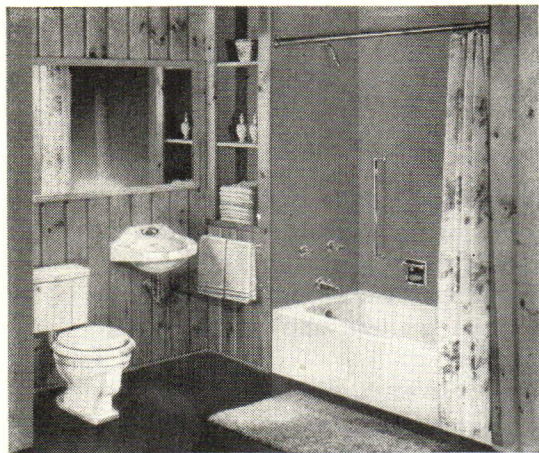
# For every taste...for every budget... **CRANE**

That's the beauty of a really *complete* line—it satisfies all individual likes. Crane can be gay, Crane can be sedate. Where "cost is nothing," Crane goes de luxe . . . where cost is everything, Crane gets right down to earth.

And whatever the preference in *styles*, there's no doubt of the preference in *names* . . . Crane is the best known name in plumbing.

The complete plumbing line includes bathroom fixtures, kitchen sinks, laundry tubs—all of them equipped with finger-tip *Dial-ese* controls. In heating, Crane supplies everything required for any home system . . . warm air, hot water, steam . . . coal, coke, oil, or gas.

For selections from the Crane line, see Crane Service for Architects—and be sure to check your requirements early with your Crane Branch or Crane Wholesaler.



**for every budget...**

It doesn't take a fat purse to enjoy America's favorite plumbing. Take this Crane Neu-Era Group, just right for modest budgets. It lacks nothing in dependable service, nor in the lasting gleam of the fixtures. Lavatory and bathtub alike are equipped with *Dial-ese* faucets, just as in the most commodious Crane bathrooms.

# CRANE

CRANE CO., GENERAL OFFICES; 836 SOUTH MICHIGAN AVE., CHICAGO 5, ILLINOIS

**RESIDENTIAL PLUMBING**

**PLUMBING AND HEATING • VALVES • FITTINGS • PIPE**

**NATION-WIDE SERVICE THROUGH BRANCHES, WHOLESALERS, PLUMBING AND HEATING CONTRACTORS**



## Freedom begins at home

IN America we take Freedom for granted. It is hard for us to understand why anybody would willingly give up his freedom, to live under a rule that dictates every move of his life.

Yet we must face the sobering fact that right here at home there are plenty of people who are working to curtail, and eventually to abolish personal

freedom, and substitute rigid central controls over our activities. Too often these misguided groups and individuals work harder at their self-appointed tasks than do we who think we prefer freedom.

We as business men, above all others, perhaps, have a responsibility in this matter which we can ignore only at the peril of our own survival.

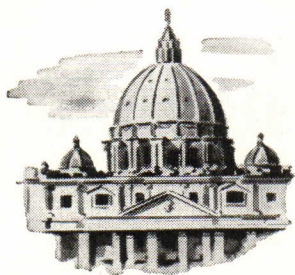
### The Youngstown Sheet and Tube Company

General Offices--Youngstown 1, Ohio  
Export Offices--500 Fifth Avenue, New York

MANUFACTURERS OF CARBON, ALLOY AND YOLOY STEELS

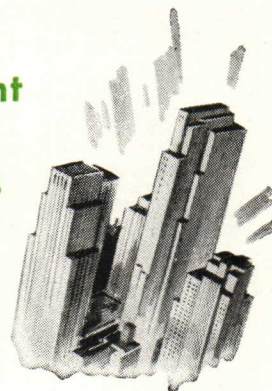
ELECTROLYTIC TIN PLATE - COKE TIN PLATE - WIRE - COLD FINISHED CARBON AND ALLOY BARS - PIPE AND TUBULAR PRODUCTS - CONDUIT - RODS - SHEETS - PLATES - BARS - RAILROAD TRACK SPIKES.

# aluminum



...enduring  
as a  
Cathedral

...efficient  
as Modern  
Business



The aluminum that covers the cupola of the church of San Gioacchino, in Rome, stands substantially unchanged after more than half a century. The same advantages of rustproof permanence and freedom from maintenance dictate its use in industrial roofing and siding.

These two extremes also demonstrate the architectural versatility of aluminum. Its soft-white natural color is attractive, particularly with Reynolds new embossed textures. And though aluminum requires no protective painting, interesting color effects are easily achieved as in the photograph below.

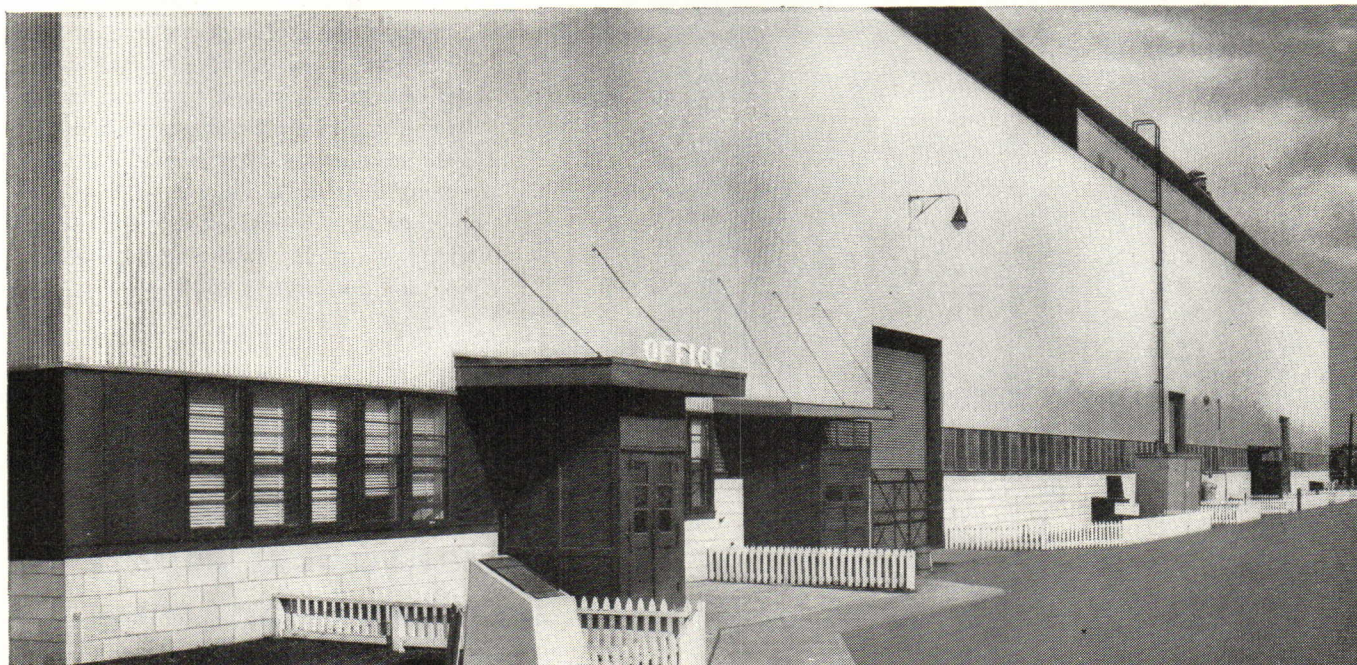
Reynolds, whose historic entry into aluminum production stimulated a vast increase in tonnage, is especially concerned with the *product development* of this modern material—as in building materials. Reynolds *Lifetime* Aluminum Gutters and Downspouts are an example... offering freedom from rust and from wall-stain at about half the price of other rustproof materials.

From roofing, siding, and windows to architectural shapes, Reynolds steadily extends the usefulness of aluminum in building. For descriptive literature in A.I.A. file form, please write:

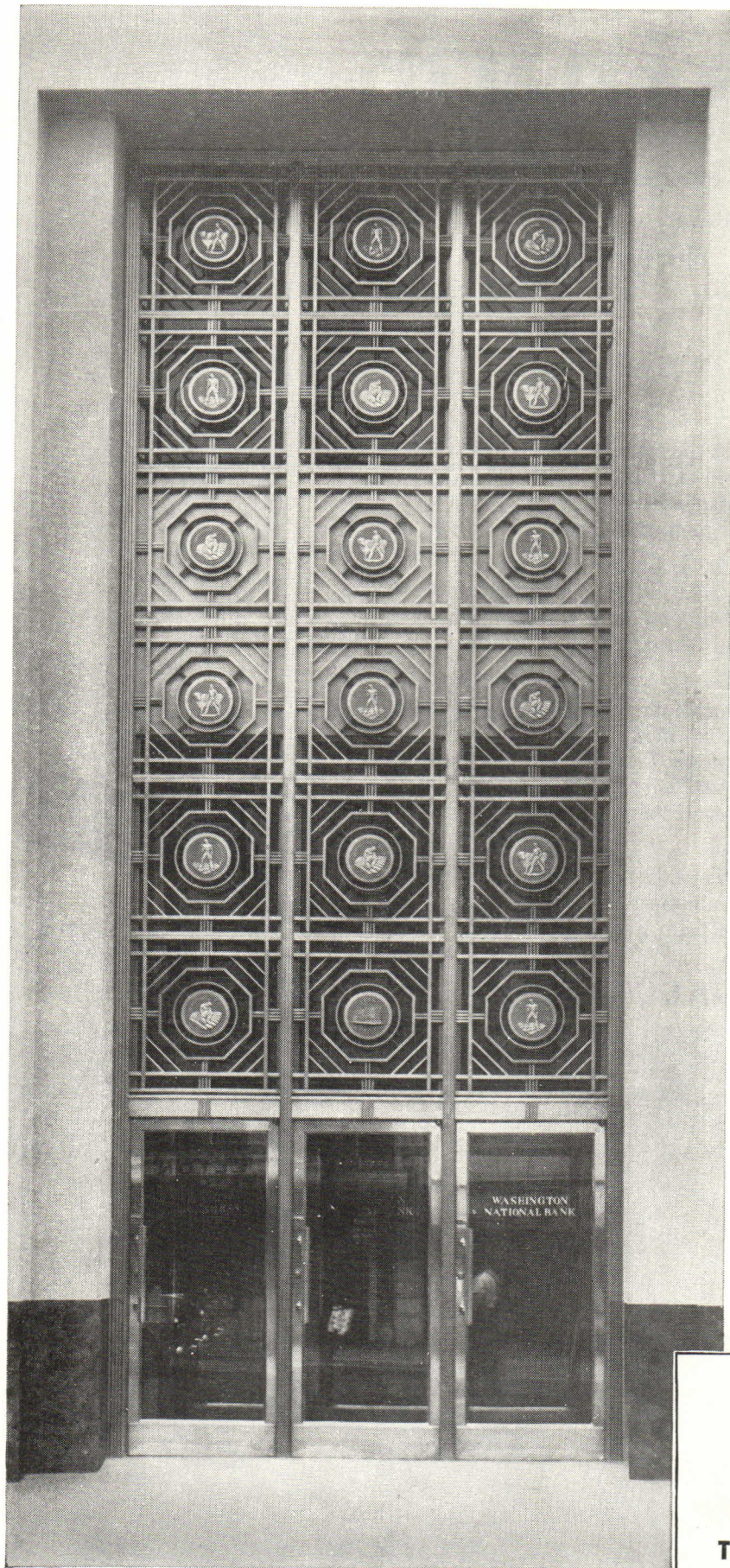


REYNOLDS METALS COMPANY,  
Building Products Division,  
Louisville 1, Ky., offices in  
32 principal cities

REYNOLDS *Lifetime* ALUMINUM



War Assets Administration building, Lansdowne, Md., occupied by Westinghouse. Siding specification: Reynolds Lifetime Aluminum Corrugated, .019" thickness, 2½" corrugation. Contractor: Cummings-Hart Construction Company, Baltimore, Md.



# Bronze

## **BELONGS!**

SINCE THOSE adventurous days when the money lenders of Venice and Florence began pushing back the frontiers of the known world . . . bronze has aptly befitted the temples of finance. Thus it is most natural that, in seeking to accent his work with dignity, security and permanence, the architect usually thinks first of traditional bronze.

In designing the Washington National Bank at Ellensburg, Washington, Architect John W. Maloney of Seattle combined Anaconda Architectural Bronze with nickel silver in the two story entrance facade.

Pilasters are of extruded bronze shapes. Door frames and the larger grille members are fabricated from bronze tube. Octagonal insets, supporting the cast nickel-silver medallions, are of cast bronze. The spandrel, back of the grille, is of sheet bronze. The work was executed by The Oregon Brass Works of Portland, Oregon.

Anaconda Architectural Bronze and Nickel Silver are available in a wide variety of extruded shapes, supplemented by drawn shapes, angles, channels, sheet and tube in color-matching metals. Thus can the architect and fabricator count not only on convenient forms, but also on metals of ready workability, with uniformity in dimension, composition and finish.

4902

**ANACONDA**  
from mine to consumer  
EST. 1891

# Anaconda

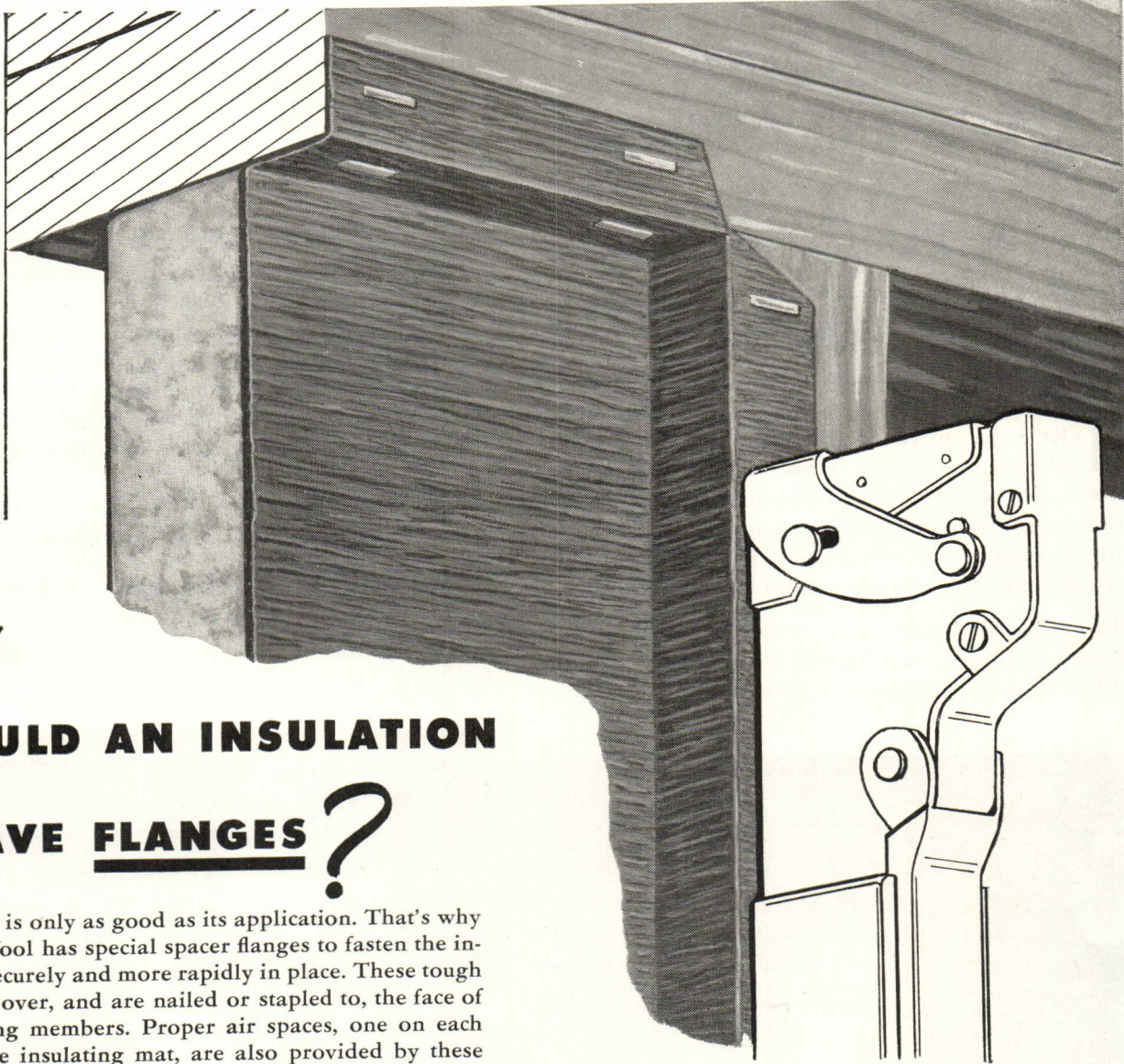
**ARCHITECTURAL BRONZE**

**THE AMERICAN BRASS COMPANY**

General Offices: Waterbury 88, Connecticut

*Subsidiary of Anaconda Copper Mining Company*

*In Canada: ANACONDA AMERICAN BRASS LTD.  
New Toronto, Ont.*



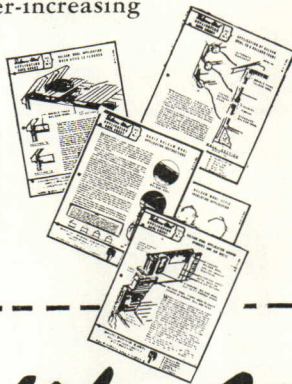
**WHY**

## SHOULD AN INSULATION HAVE FLANGES?

Insulation is only as good as its application. That's why Balsam-Wool has special spacer flanges to fasten the insulation securely and more rapidly in place. These tough flanges fit over, and are nailed or stapled to, the face of the framing members. Proper air spaces, one on each side of the insulating mat, are also provided by these flanges. The result: a sealed, tight, foolproof application for maximum Balsam-Wool insulating efficiency!

Balsam-Wool, the completely *sealed* insulation, constantly adds latest scientific developments to its own time-tested features... combining practical "on-the-job" experience with laboratory research. The ever-increasing popularity of Balsam-Wool as the *complete* insulation results from these advantages to you and your clients:

You'll want to specify Balsam-Wool on your next job... for it's the insulation that stays put for life. Send today for your complete set of Balsam-Wool Data Sheets in A.I.A. folder.



- Continuous, Integral Vapor Barrier
- Sturdy Wind Barriers
- Double Air Spaces
- Special Spacer Flanges
- Rot and Termite Treatment
- Highly Fire Retardant
- Rigid Quality Control

• • •

32 Data Sheets provide hard-to-get facts on insulation application problems... mail the coupon now!

# Balsam-Wool \*

SEALED INSULATION

BALSAM-WOOL • Products of Weyerhaeuser • NU-WOOD\*

\*REG. U. S. PAT. OFF.

Wood Conversion Company  
Dept. 117-49, First National Bank Building  
St. Paul 1, Minnesota

Please send me a set of Balsam-Wool Application Data Sheets.

Name.....

Address.....

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

*Announcing...*

# NEW AND IMPROVED Gold Bond ACOUSTICAL PLASTER

**H**ERE'S the answer for finest acoustical treatment like the one shown below—and for low budget jobs as well. Gold Bond Acoustical Plaster gives maximum noise reduction—high light reflection at very little increase in cost over regular plaster. And you'll save the costs of the lime coat and decoration.

The Perlite base is the secret of this new Gold Bond Acoustical Plaster. It is light in weight and is applied with regular plastering tools. Only regular plastering

skills are required, and like regular plaster, it adapts to any curved surface.

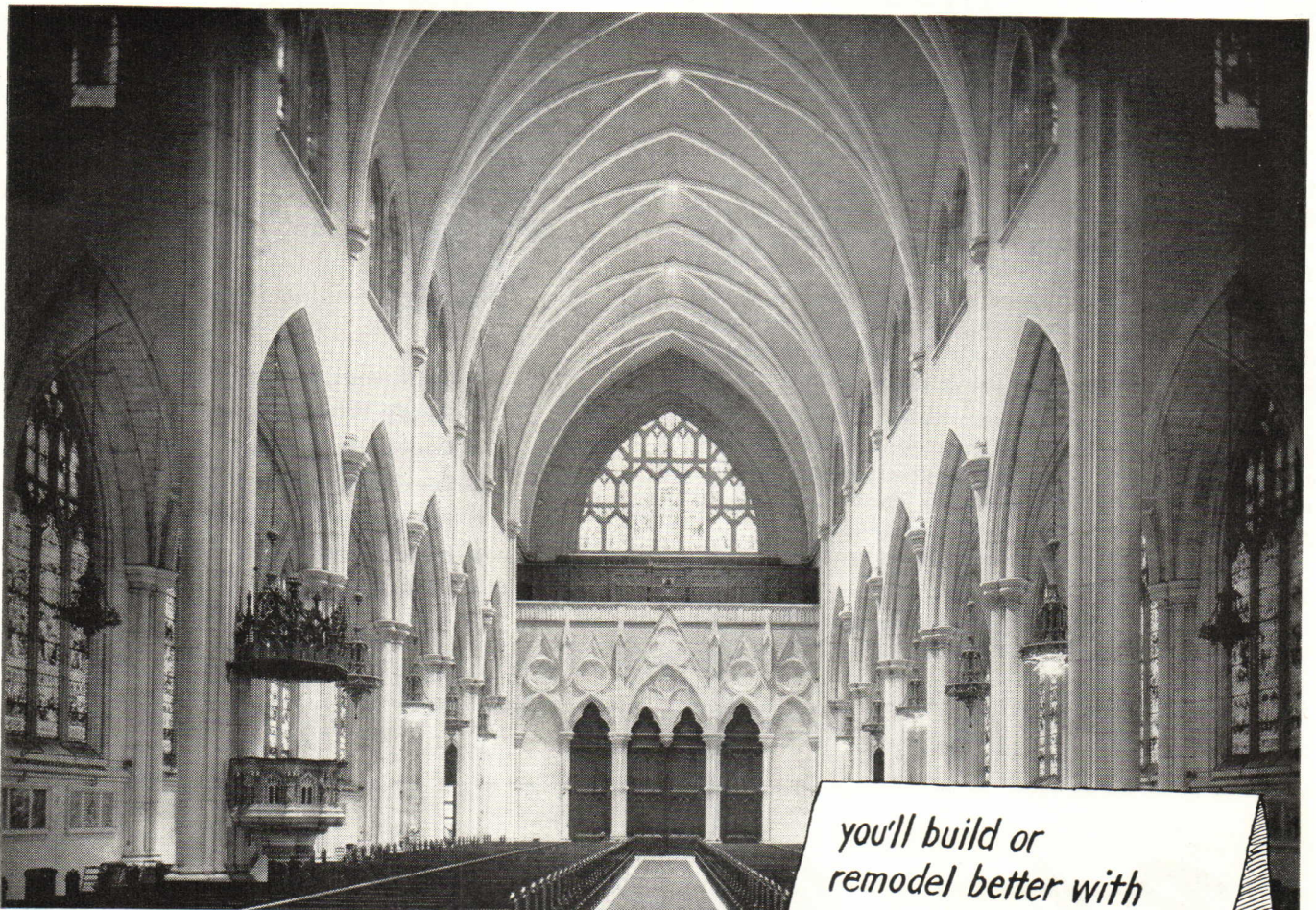
This new acoustical plaster excels in high light reflection (Natural—70%). It has a noise reduction coefficient of .55. Available in four shades: Natural (oyster white); Cream; Buff; and Ivory. Can be redecorated when desired with water

thinned paint with little loss of sound absorption.

*Write for free illustrated booklet with complete details  
on Gold Bond Acoustical Plaster.*

**NATIONAL GYPSUM COMPANY**  
BUFFALO 2, N. Y.

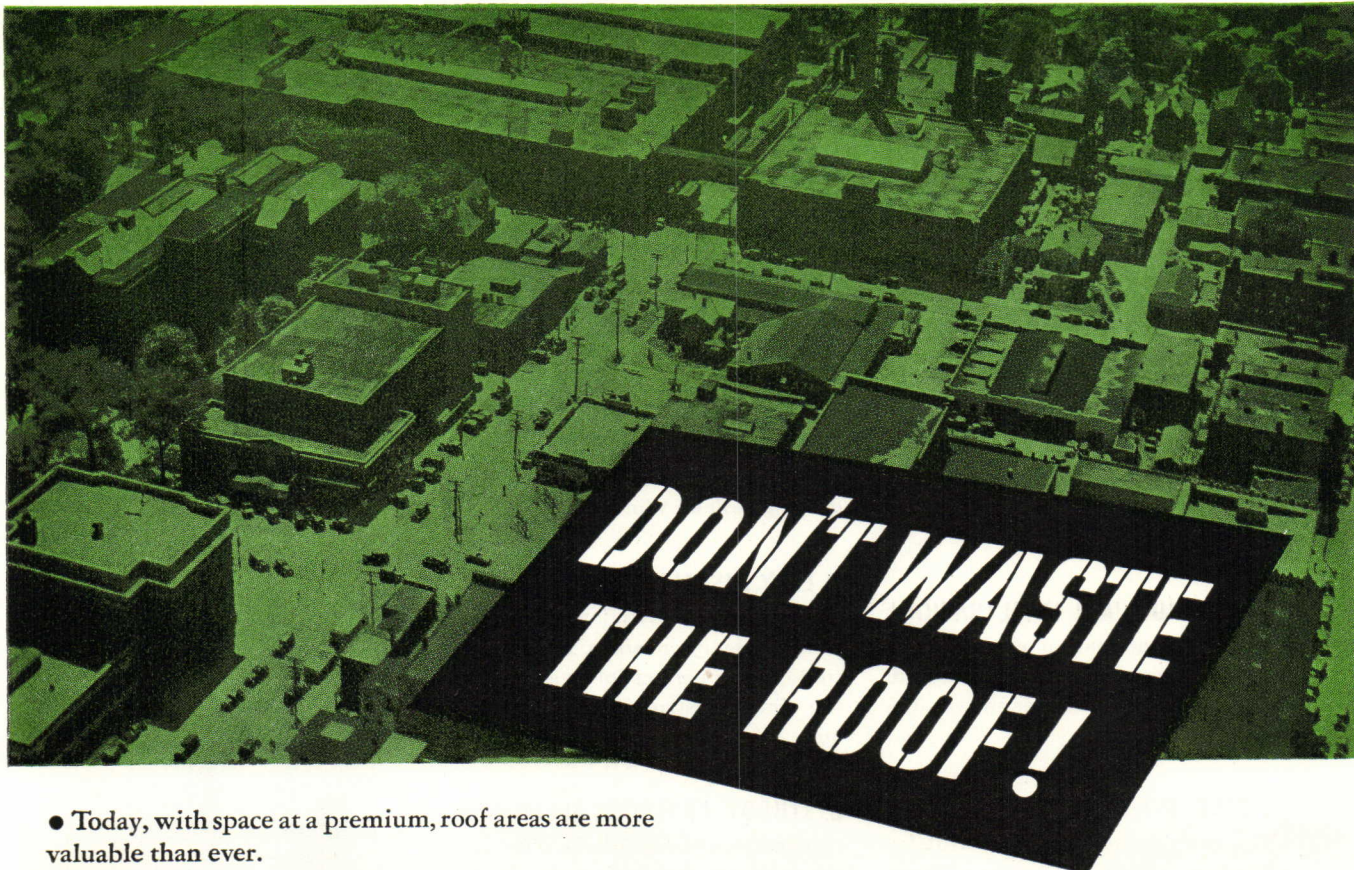
*Over 150 Gold Bond Products including gypsum lath, plaster, lime, wallboards, gypsum sheathing, rock wool insulation, metal lath products and partition systems, wall paint and acoustical materials.*



**ST. JOSEPH'S CATHEDRAL** in Buffalo, N. Y. is a good example of the adaptability of Gold Bond Acoustical Plaster. This intricate groined ceiling offered no problem, as Gold Bond works equally well over flat or irregular surfaces. Harmonizes with every type of architecture.

*you'll build or  
remodel better with*

# Gold Bond



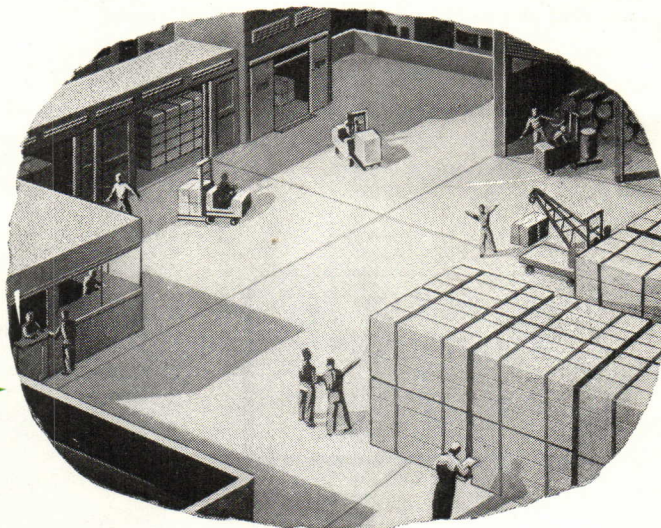
● Today, with space at a premium, roof areas are more valuable than ever.

Today, imagination is paying off in dollars... as hospital, school, office-building roofs are being turned into recreational areas... as factory and warehouse roofs are being converted to heavy-traffic use... as apartment and hotel roofs are blossoming into garden paradises!

Whatever type of building you plan, Ruberoid can help you make full and better use of the roof area. Complete specifications, soundly engineered in design, thoroughly tested in construction, are available at your nearest Ruberoid office—or from your Ruberoid Approved Roofer.

#### HEAVY TRAFFIC ROOF

Modern use of this roofing area gives extra shipping and storage space, adds to plant efficiency. Surface is concrete. Tough and wear-resistant for years of trouble-free service.



## The RUBEROID Co. built-up roofings

Building Materials for Industry, Home and Farm • Executive Offices: 500 Fifth Ave., New York 18, N. Y.

*The right roof  
for any job —  
from ONE source!*

Ruberoid makes every type of built-up roof—smooth-surfaced asbestos, coal tar pitch with gravel or slag surfacing, or smooth or gravel-and-slag surfaced asphalt... in specifications to meet any need.

Ruberoid Approved Roofers are not prejudiced in favor of any one type. You are assured of one source for all materials, centralized responsibility, smoother operation, uniform quality!

#### Sales Offices:

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DALLAS, TEXAS  
ERIE, PENN.  
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NEW YORK, N. Y.

## SIX REASONS WHY YOU SHOULD CHOOSE

# Adlake Aluminum Windows

### 1. NO MAINTENANCE COST!

Adlake Windows need no painting, no maintenance other than routine washing.

### 2. MINIMUM 'AIR INFILTRATION'!

A unique combination of non-metallic weatherstripping and patented serrated guides assures maximum weathertightness.

### 3. FINGER-TIP CONTROL!

You can raise and lower an Adlake Window with one finger—millions of times—each operation as smooth and fast as the one before.

### 4. NO WARP, ROT, RATTLE,

stick or swell, *ever*, with weather-defying Adlake Windows!

### 5. EASY INSTALLATION!

You put Adlake Windows into *completed masonry openings*. It's so easy to do that a perfect job is assured if the simple instructions are carried out.

### 6. STURDY, LUSTROUS ALUMINUM

construction makes Adlake Windows the most beautiful windows on the market today. And their beauty *lasts!*

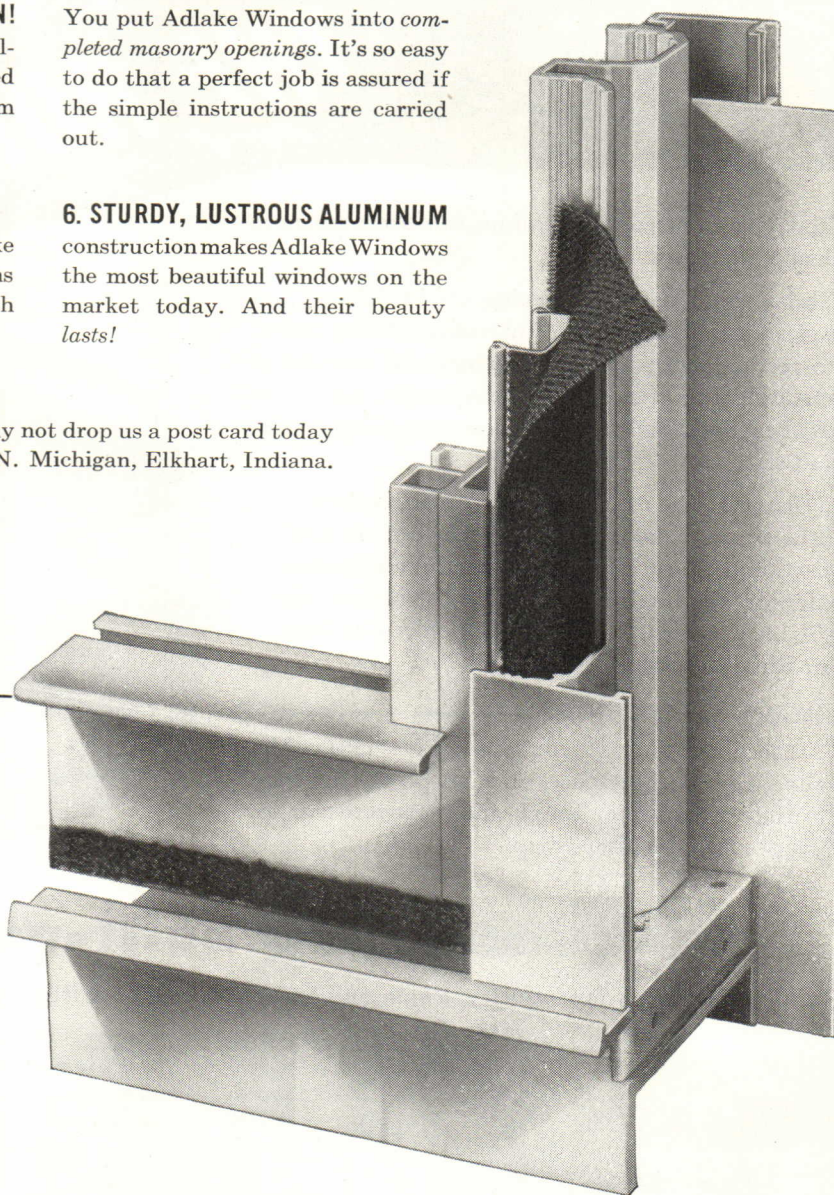
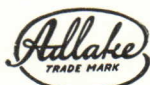
IF YOU PLAN to build or remodel, why not drop us a post card today for complete data? Address: 1103 N. Michigan, Elkhart, Indiana. No obligation, of course.



THE  
**Adams & Westlake**  
COMPANY

Established 1857

ELKHART, INDIANA • New York • Chicago



# Good Door Control Conforms to Your Design

## LCN Floor Type Closers are Used Where Transom Bars are Thin

● Pictured, one entrance to the new Chicago offices and warehouse plant of John A. Roebling's Sons Co., designed by architects Skidmore, Owings & Merrill of Chicago.

Here, as in many modern entrances, large expanses of glass are used, with narrow transom bars. The doors are hung on LCN bronze offset pivots and effectively controlled by LCN No. 16 Floor Type Concealed Door Closers.

These closers are of superior design. Power is applied to the door through a lever arm (always the most effective way) operating on a slide

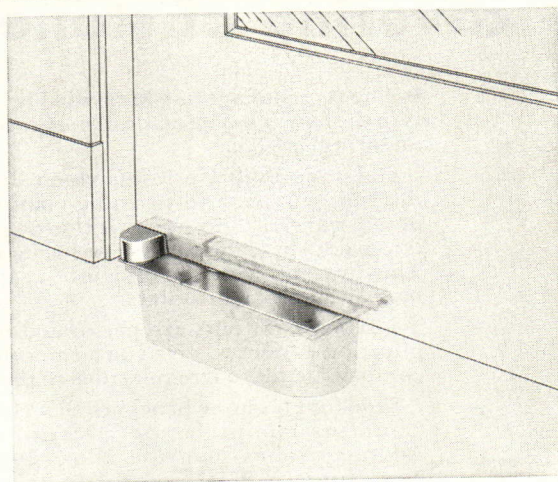
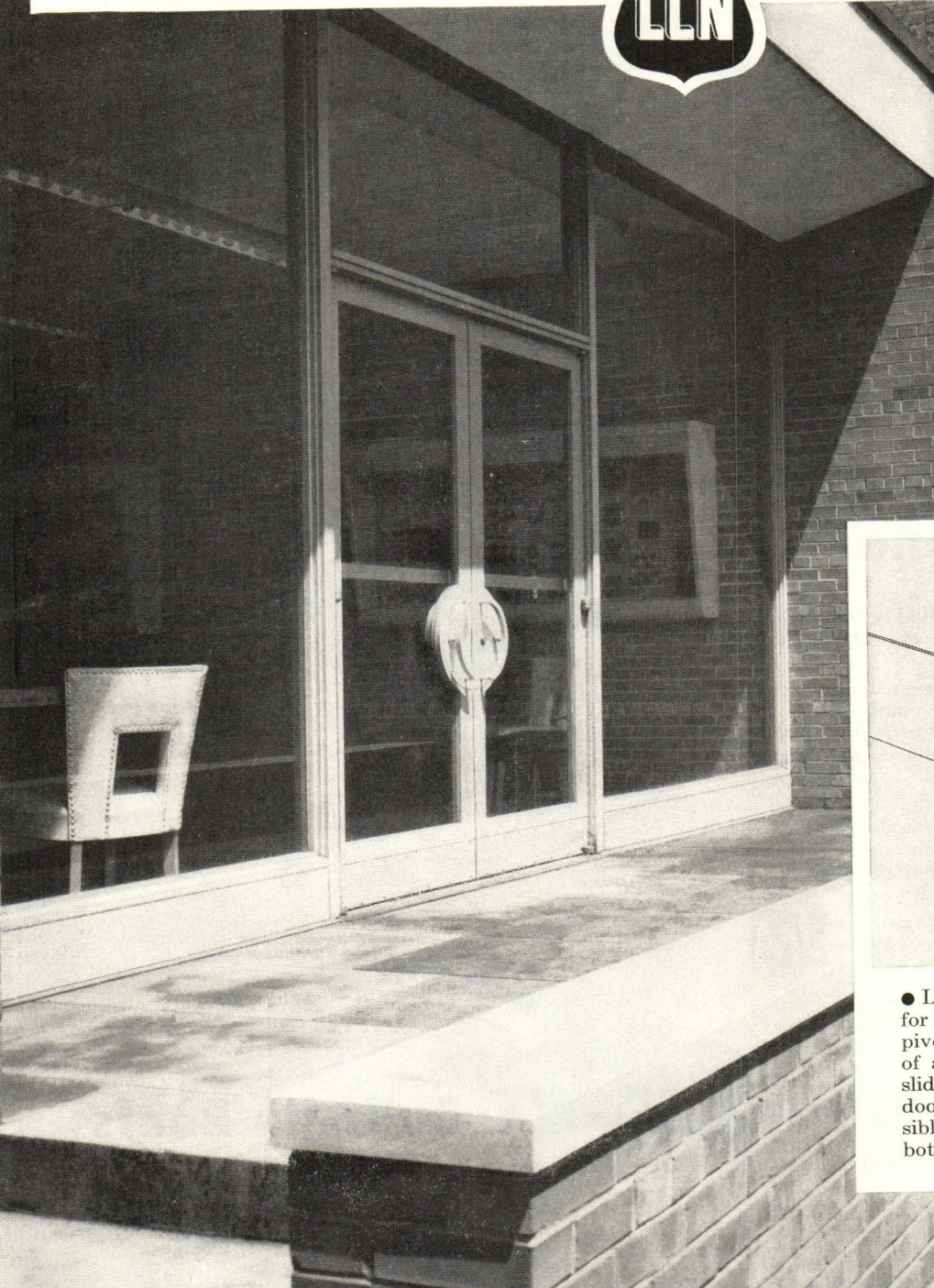
block concealed in the bottom of the door. The door's weight rests not on the mechanism but, independent of it, on the rigid closer box. Servicing the closer need never take the door out of use for more than a few minutes.

LCN's eleven types of concealed closers and full line of exposed types fill every need for door control that is effective, economical and suited to all common kinds of swing doors. Listed in Sweet's 1949. Latest catalog 11-b, almost a manual on the subject, promptly sent on request. LCN Closers, Inc., 466 W. Superior St., Chicago 10, Ill.

OVERHEAD AND FLOOR CONCEALED



AND EXPOSED TYPE DOOR CLOSERS



● LCN No. 16 Floor Closer is recommended for heavy wood or metal doors hung on offset pivots, where transom bars do not permit use of an overhead concealed closer. Block and slide concealed; lever arm visible only when door is opened. Closer mechanism easily accessible; does not carry weight of door. Top and bottom pivots included.

"LOOK AT THAT ROOF! IT'S SMOOTH-SURFACED...MADE OF ASBESTOS FELTS"

"THAT'S THE KIND THAT HAS NO SLAG OR GRAVEL...NO EXCESS WEIGHT"

## 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.

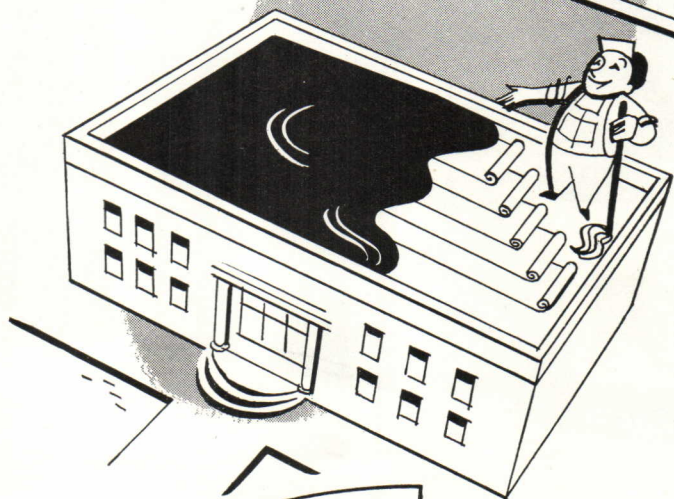
J-M Asbestos felts are perforated to make application easier... give you a smoother job and conform better to irregularities in the roof deck.

Send for Flexstone brochure BU-51A. Contains complete specifications. Address: Johns-Manville, Box 290, New York 16, N. Y.

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



"AND THESE PERFORATED ASBESTOS FELTS ARE FIREPROOF, ROTPROOF, WEATHERPROOF"



Made of ASBESTOS

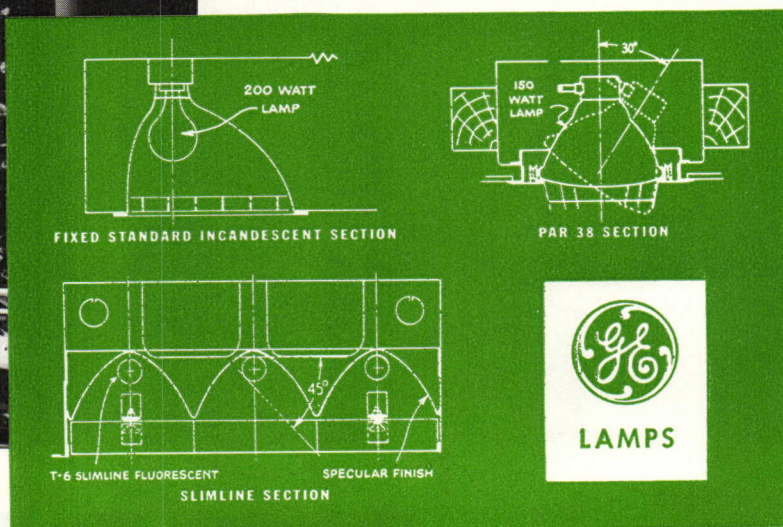
# Johns-Manville FLEXSTONE\* Built-Up Roofs

CORRUGATED TRANSITE\* • ACOUSTICAL CEILINGS

DECORATIVE FLOORS • \*TRANSITE WALLS • ETC.



## HOW TO MAKE A WINDOW SHINE



**T**O catch a customer's eye and show him the merchandise at its best, a show window needs a complete, flexible lighting system—like the one above.

General Electric slimline fluorescent lamps in parabolic reflectors bring out color, texture and details of the display. They have high efficiency and provide cool lighting. The G-E incandescent lamps raise the over-all brightness of the window to draw more attention. And the G-E PAR-38

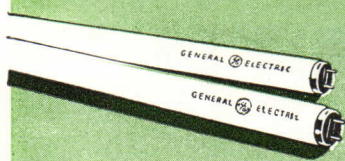
projector spot and flood lamps in movable fixtures put highlights right where the display man wants them.

Whether you're designing a show window or a complete store, an office, factory or home, be sure to specify General Electric lamps. That's the easy, sure way to specify quality. General Electric makes a lamp for every lighting need, all constantly improved by research to **STAY BRIGHTER LONGER.**

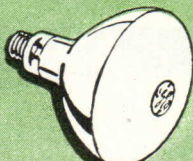
*You can put your confidence in—*

# GENERAL ELECTRIC

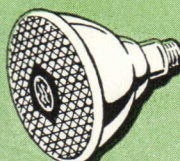
**CHOOSE THE BEST FOR YOUR DESIGN FROM THE MOST COMPLETE LAMP LINE**



**FLUORESCENT**  
Many types, sizes, colors  
now available.



**REFLECTOR**  
Spot or flood lamps.  
Built-in reflector directs  
light where needed.

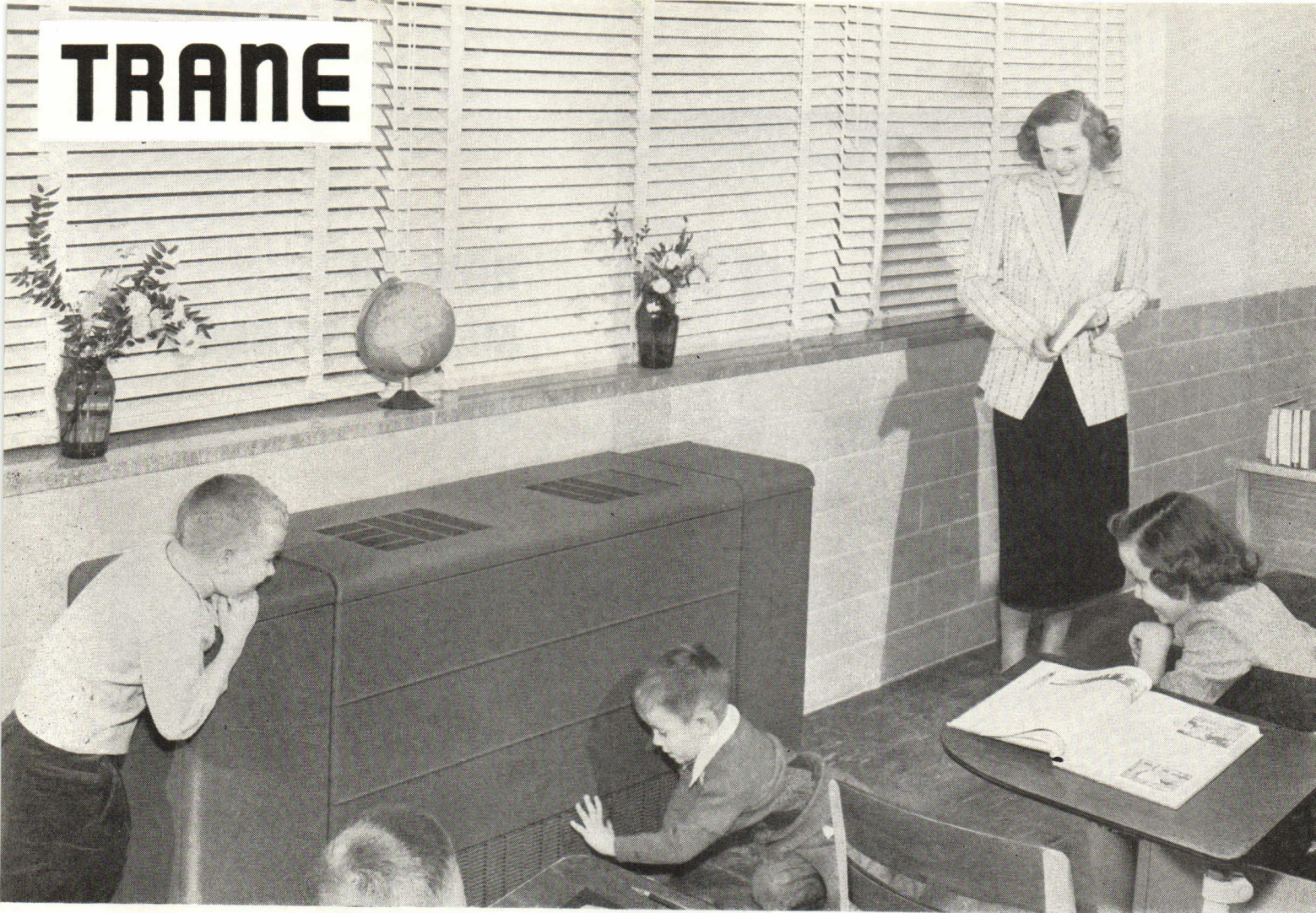


**PROJECTOR**  
Spot or flood. Rugged  
moulded glass permits  
attachment of accessory.



**SILVERED BOWL**  
Indirect lighting at low cost.  
60 to 1000 W.

# TRANE



## Classroom Weather Magic

Imagine a unit that brings healthful outdoor air right through the classroom walls. A ventilator that takes that air, cleanses it, warms it, floods the room with it.

You're imagining a Trane Unit Ventilator!

The unit adds beauty to classrooms, as well as health and efficiency. Never a noise to disturb concentration. No drafts to bring on colds. Just clean, healthful air, to increase alertness, to help every child make the most of his studies, to help him further enjoy the room where he spends so much of his time.

Trane engineering skill has developed smoothly-running fans that eliminate distracting noises. Kinetic Orifice coils guard the unit against freezing. Positive

block-offs banish drafts. Generous filters trap dust.

Service and maintenance are easy, too. One-man panels make it easy to "get into". The standard motors can be serviced by anyone. Anodized aluminum wall boxes end streaking of outside walls. And, like every product with the magic "T-R-A-N-E" on the nameplate, it gives economical, and completely satisfactory service for a long, long time.

### THE TRANE COMPANY . . . LA CROSSE, WIS.

Manufacturing Engineers of Heating, Ventilating and Air Conditioning Equipment—Unit Heaters, Convactor-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.

For kindergarten kids whose part-time playground is the classroom floor . . . for lordly seniors in high schools and colleges . . . Trane Unit Ventilators are doing a real job in schools all over the country.



THEY'RE

# ACCURATE

...in all 17 degrees



THEY'RE

# STRONG

...the lead is Pressure-Proofed\*



THEY'RE

# SMOOTH

...the lead is Colloidal\* processed



THEY'RE

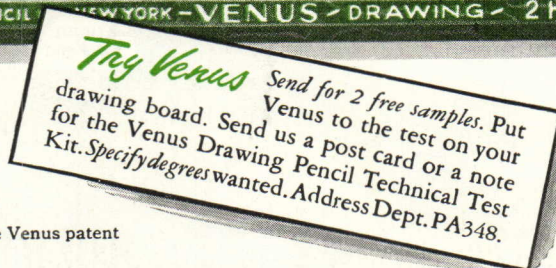
# VENUS

...the world's largest selling DRAWING PENCILS



LOOK for the green crackled finish!

\*Exclusive Venus patent



AMERICAN LEAD PENCIL COMPANY, HOBOKEN, NEW JERSEY... makers of famous Venus Pens

# H & H

## DUPLEX RECEPTACLES

*Complete Line  
for General  
Installations*

No. 9260 — the new Back-Wired Duplex Convenience Outlet — can be side-wired too but the back-wiring feature makes easier, more secure installation. Built-in stripping guide assures correct stripping, eliminates exposed wire. Individual terminal clamps hold wires with a no-slip grip. Strong plastic base (No. 9260, brown; No. 9260-I, white Ivorylite), with double T-slots. Double side-contacts with large recessed binding screws ample for No. 10 wire; washer-type plaster ears. Altogether a new "high" in receptacles.

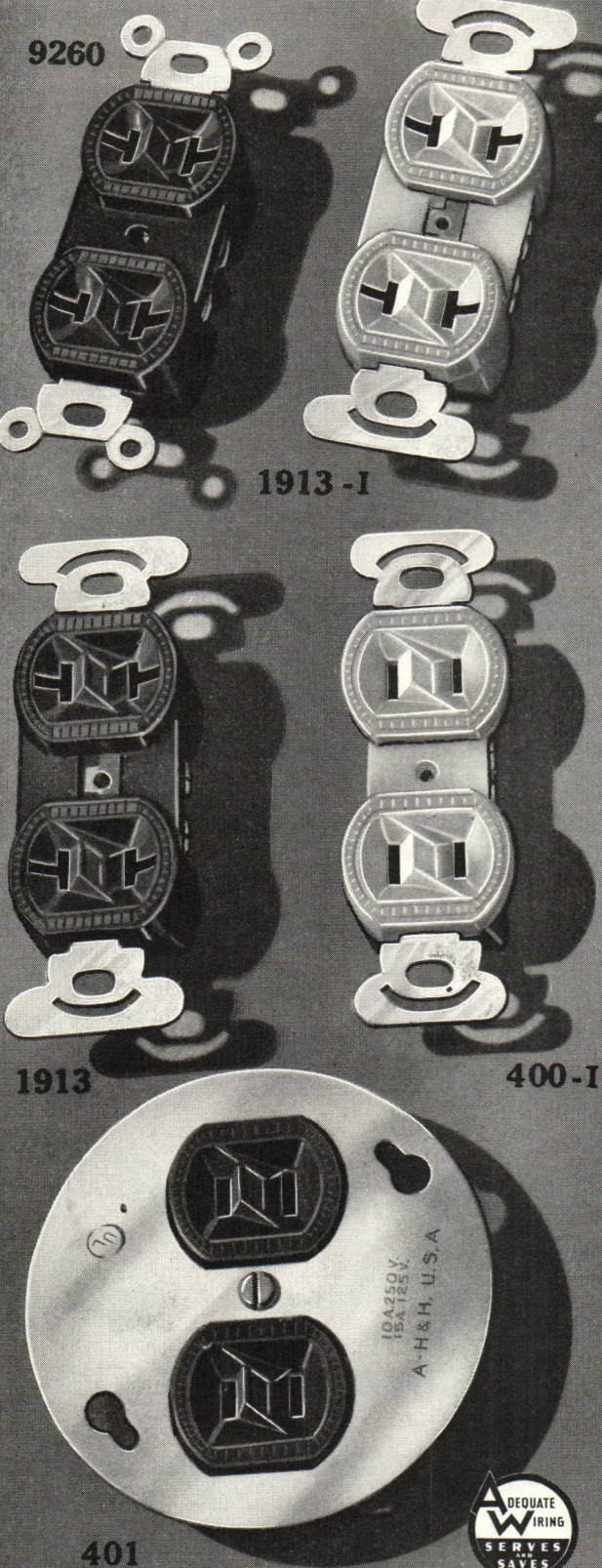
No. 1913-I — Duplex Convenience Outlet of white Ivorylite, with 4 binding screws for side-wiring only. T-slots and wide plaster ears. Long-proved a most dependable receptacle for high-grade residential wiring. (For brown plastic base, specify No. 1913.)

No. 400-I — New intermediate-grade Convenience Outlet, sturdily built, entirely encased in molded white Ivorylite. Double side-contacts with 4 contact screws ample for No. 10 wire. Parallel slots with guiding grooves for easy plug insertion; wide plaster ears. Meets REA and Federal specifications. (For brown plastic base, specify No. 400.)

No. 401 — Same receptacle body as No. 400 but furnished with metal outlet box cover for 3½" or 4" boxes for basement work, private garages etc.

DISTRIBUTED THROUGH ELECTRICAL WHOLESALERS

**HART & HEGEMAN DIVISION**



**THE ARROW-HART & HEGEMAN ELECTRIC COMPANY, HARTFORD 6, CONN., U.S.A.**

## 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</b> |   | <b>\$7,000</b> |

|                          |                                   |                               |
|--------------------------|-----------------------------------|-------------------------------|
| <b>JURY OF<br/>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,<br>Michigan |
|                          | Robert Law Weed, A.I.A. ....      | Miami, Florida                |

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

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

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

\* 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.

# INSTRUCTIONS TO COMPETITORS

## PROGRAM

The Official Program for the Competition was published in this same position last month (March 1949 P/A). Copies may be obtained from:

Jedd Stowe Reisner,  
Professional Advisor  
PROGRESSIVE ARCHITECTURE  
330 West 42nd Street  
New York 18, New York

Or directly from the sponsors:

SERVEL, INC.  
Evansville, Indiana

GENERAL PORTLAND CEMENT COMPANY  
111 West Monroe Street  
Chicago, Illinois

## 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.

## 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."

## 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 dimensional 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).

## 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 Advisor in the presence of the Jury, only after the awards have been made.

## 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, or Railway Express, 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.

## 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.

## 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.

## JUDGMENT

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

## 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  
Manufacturers of "Trinity White Portland Cement," plain and waterproofed.

## P/A FIELDS OF PRACTICE:

### School Design

In the Office of

Kump & Falk, Architects

San Francisco

California

Anyone familiar with today's school architecture is aware that the firm of Kump & Falk is doing outstanding work in this field. In this month's Fields of Practice Study, we present two new school jobs by this distinguished firm and a discussion of its method of operation.

#### OFFICE ORGANIZATION

At present, 29 persons constitute the Office of Kump & Falk. The two partners are Ernest J. Kump, architect, and Mark Falk, structural engineer. A junior partner, Architect Peter Kump, and one architect assistant are in charge of contract administration and supervision. Drafting and design are done by three architects, three senior architectural draftsmen, and eight draftsmen. Mark Falk has two structural engineers in his department, and there are two specification writers, who also have charge of samples and materials.

The office employs two site planners—men with teaching and administrative experience—who work on long-range planning programs, perform site planning, programming, and client liaison work, and obtain approvals by clients and public authorities. Another man—Hal Cruzan—acts as the firm's public relations representative, in addition to other duties. Four clerical workers complete the roster.

#### LONG-RANGE PLANNING

When a community or school district enters into a contract with Kump & Falk, it does not, as a rule, have simply a single building in mind, but rather the whole complex of the area's present and future need for educational facilities. Recognizing this, the firm will undertake to prepare (for a separate fee) an exhaustive survey of the existing school district and plant, the financial structure of the district, local educational and community policies that will affect planning, etc.

From these data a general recommendation for planned development is worked out—with reasons stated—and a program for steps to be taken, and costs involved, is prepared. Fully illustrated, this is presented as a brochure to the client. This work, described



Kump  
Falk



as "a means of assuring the taxpayers and parents of the District that their funds are being safeguarded and their educational interests protected," has proved both profitable and an important first step in the development of a particular building program.

## SCHOOL DESIGN AS A FIELD OF PRACTICE

On page 61 we present a symposium on the school-design field in general. Herewith are some of the conclusions reached by the Kump & Falk firm. They are frank to state that opportunities in this field are "enormous." The needs, the money, and the interest are present in most communities. The service to the community is great and "the work in any growing district continues." Since board members are primarily interested in the welfare of the children, "an architect receives warm response to any suggestions predicated on this interest." Financially, though the process of payment is sometimes slow, "there is no better credit risk than a school district in these times."

There are difficulties. There is, for instance, a fairly rapid turnover in school-board membership, which may be good or bad. The work involves late hours ("Architects' wives are not made any happier by this") and the infrequency of board meetings slows down the design process. The general conclusion, however, is that the work is rewarding in every sense.

## GENERAL PHILOSOPHY

Ernest J. Kump expresses the firm's attitude toward school design as follows: "The educational process today is a dynamic one—dynamic in that it is constantly subject to growth and change. This is true with respect to curricula, teaching methods and grade grouping; with regard to the number of students to be accommodated and the characteristics of space accommodations for teaching; it is also true of the economic, political, and social aspects of a school district.

"Most educators and school architects of today know that space requirements for classrooms at the elementary level have increased and changed at least three times in the past 25 years . . . Today, on the basis of retrospect and experience, it has been discovered that the only truly permanent school building is a flexible school building.

"A school, in addition to being an efficient utilitarian solution . . . also requires for its success an expression of feeling related to the psychological requirements of pupils, teachers, and the community." For example, in a basic primary school, the pupils experience their first adventure away from the security of familiar surroundings and the guidance of their parents. This implies as a design aim a feeling of shelter, security, and intimacy. In contrast, there can be a sense of activity and a greater degree of impersonality in buildings for children with greater experience.

In sum, the architect concludes, "good school architecture includes an understanding of the educational processes; long-range over-all planning; site utilization plans for ultimate development within the district; design within a principle of organic flexibility; and an emotional content integrated with the function of the buildings."

Large photo across page, from left to right: relocated, prefabricated building (Kump design) at present use as kindergarten; roof mass and tower of old school building in background; cafeteria-music building; two classroom wings.

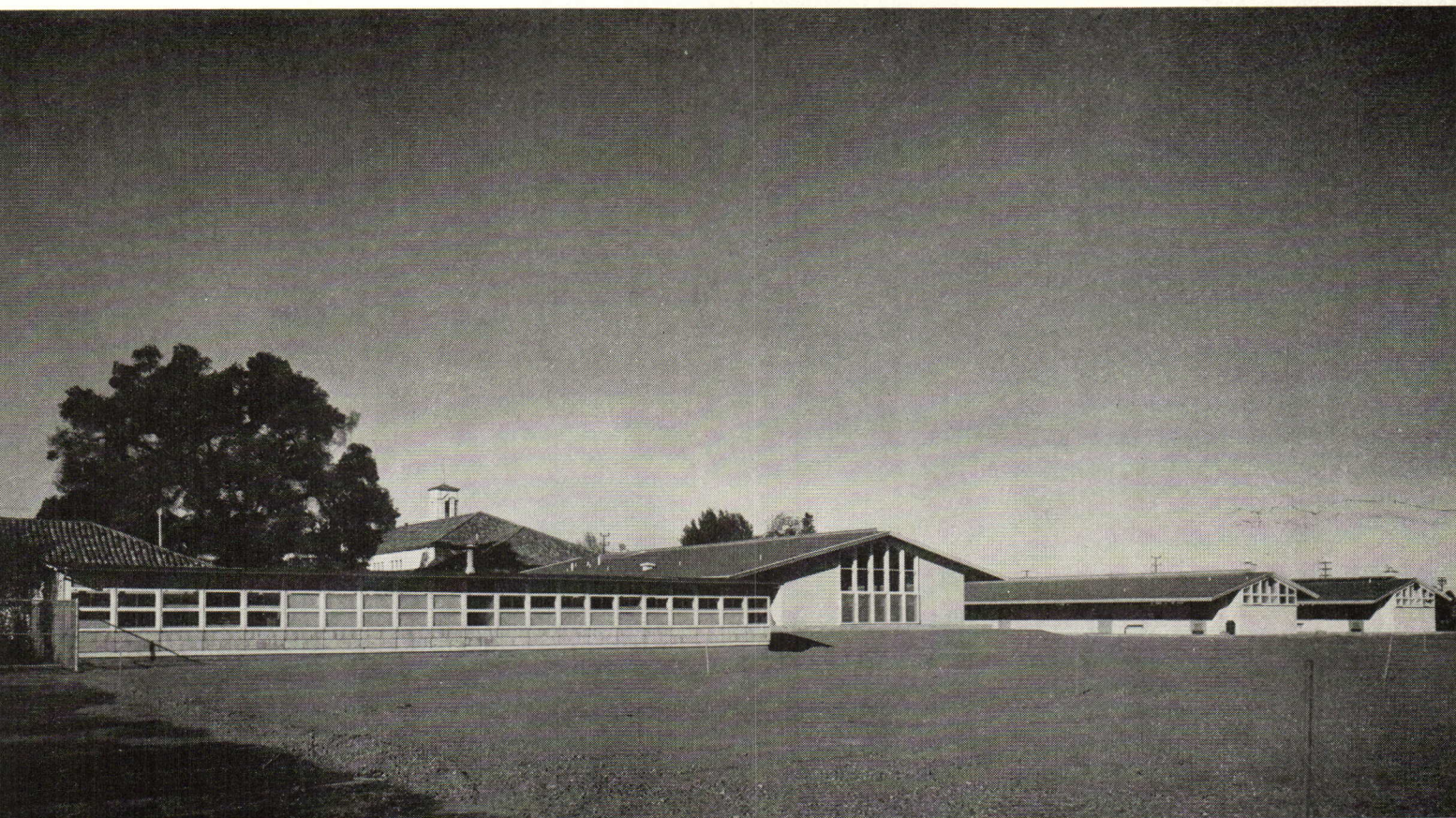
Small photo indicates the character of the old plant; new cafeteria-music building is directly behind tree.

All photos by Roger Sturtevant

program

solution

# Jefferson Union Elementary School, Santa Clara County, California

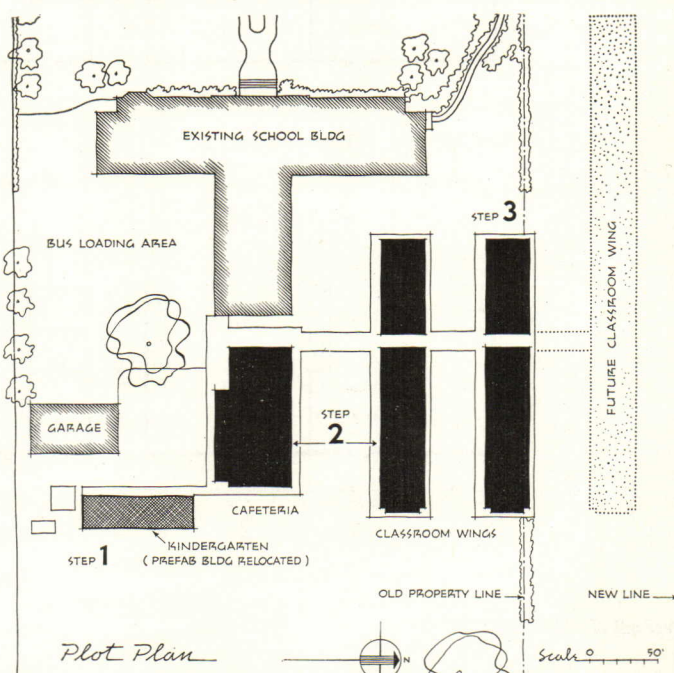
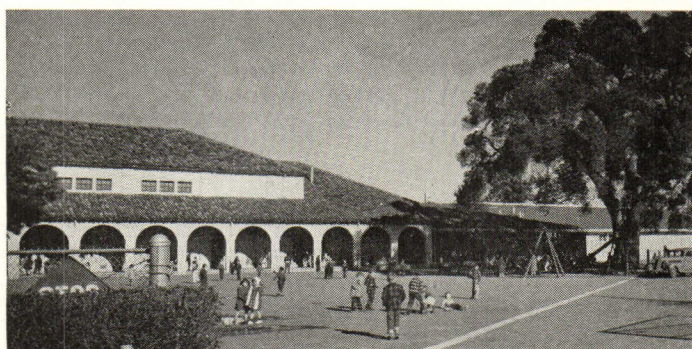


KUMP & FALK, ARCHITECTS

Long-range plan and building program to accommodate a fast-growing population area (down the Peninsula south of San Francisco) that is at present chiefly rural but is increasingly becoming suburban and residential. Existing old building does not conform to the State's present anti-earthquake construction law; hence could not be added to or reconstructed. Total plant to be built in a series of steps (see plot plan at right and photograph above) as money becomes available.

Level, reasonably large (though architects' survey recommended purchase of additional two-acre strip, indicated in site plan, on north boundary). Poor foundation condition, resulting in buildings of light-foundation loadings per square foot.

Total scheme, organized in relation to existing units, made up of a series of east-west-axis buildings interconnected with freestanding, porticoed walkways. Since this school is for elementary pupils, the design is consciously developed to provide a psychological sense of shelter and security and intimacy that the young child needs. Plans developed around 4-foot module, resulting in 28-foot square (or in some instances 28' x 32') classrooms; trilateral lighting. Intermediate partitioning readily removable to accommodate changes in grade-grouping or curriculum.



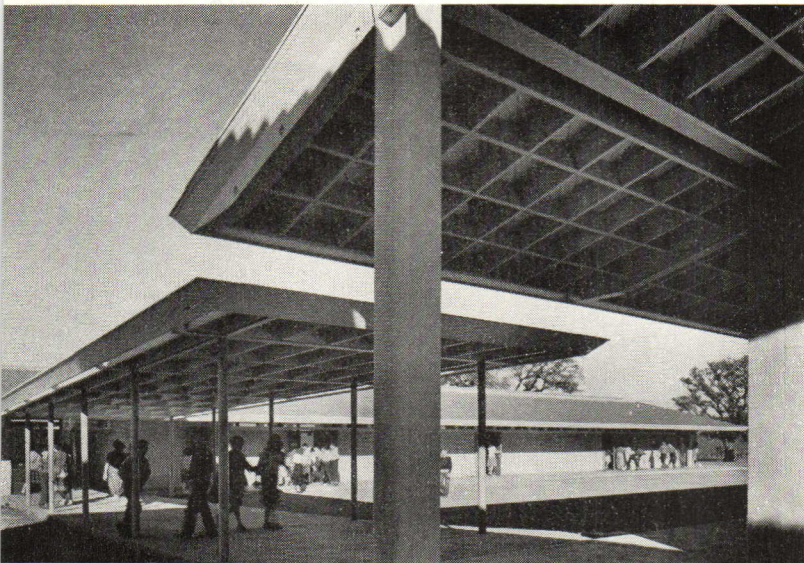
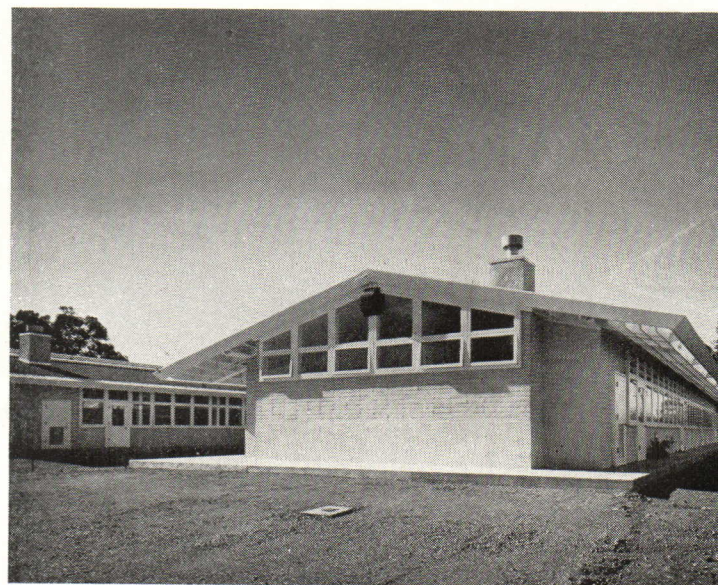


Photo at left: looking from end of cafeteria-music building to classroom wing. Method of joining is simply to run in freestanding portico under eaves of adjoining buildings.

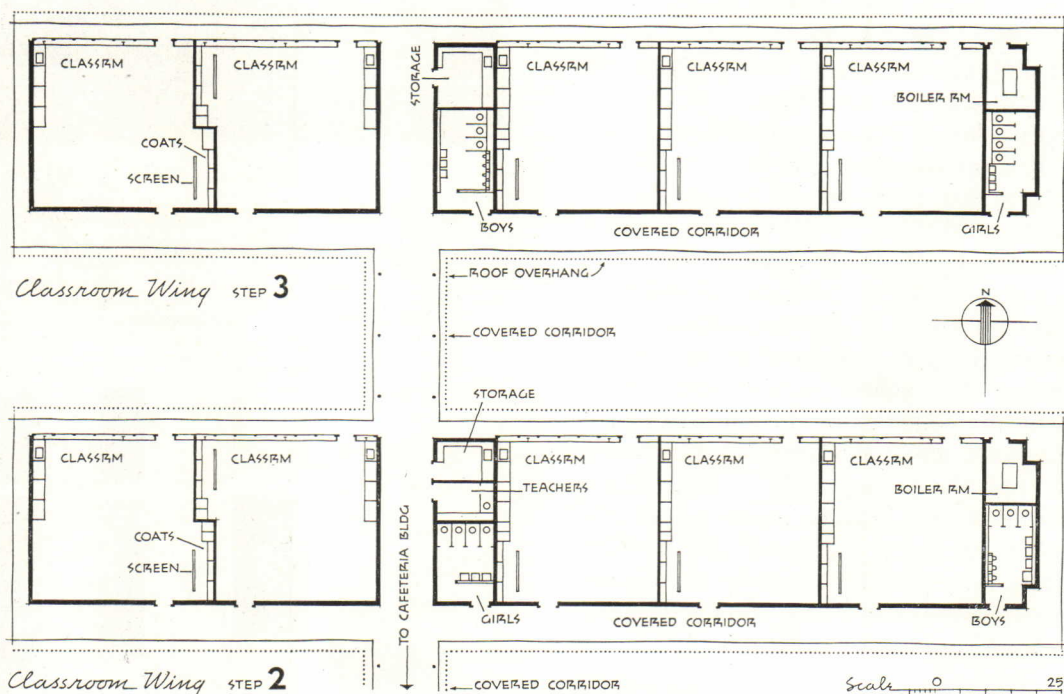
Below: end view of northernmost classroom wing. Note trellis device in roof overhang above big windows of north wall, so framed as to reflect southern winter sun back into rooms.

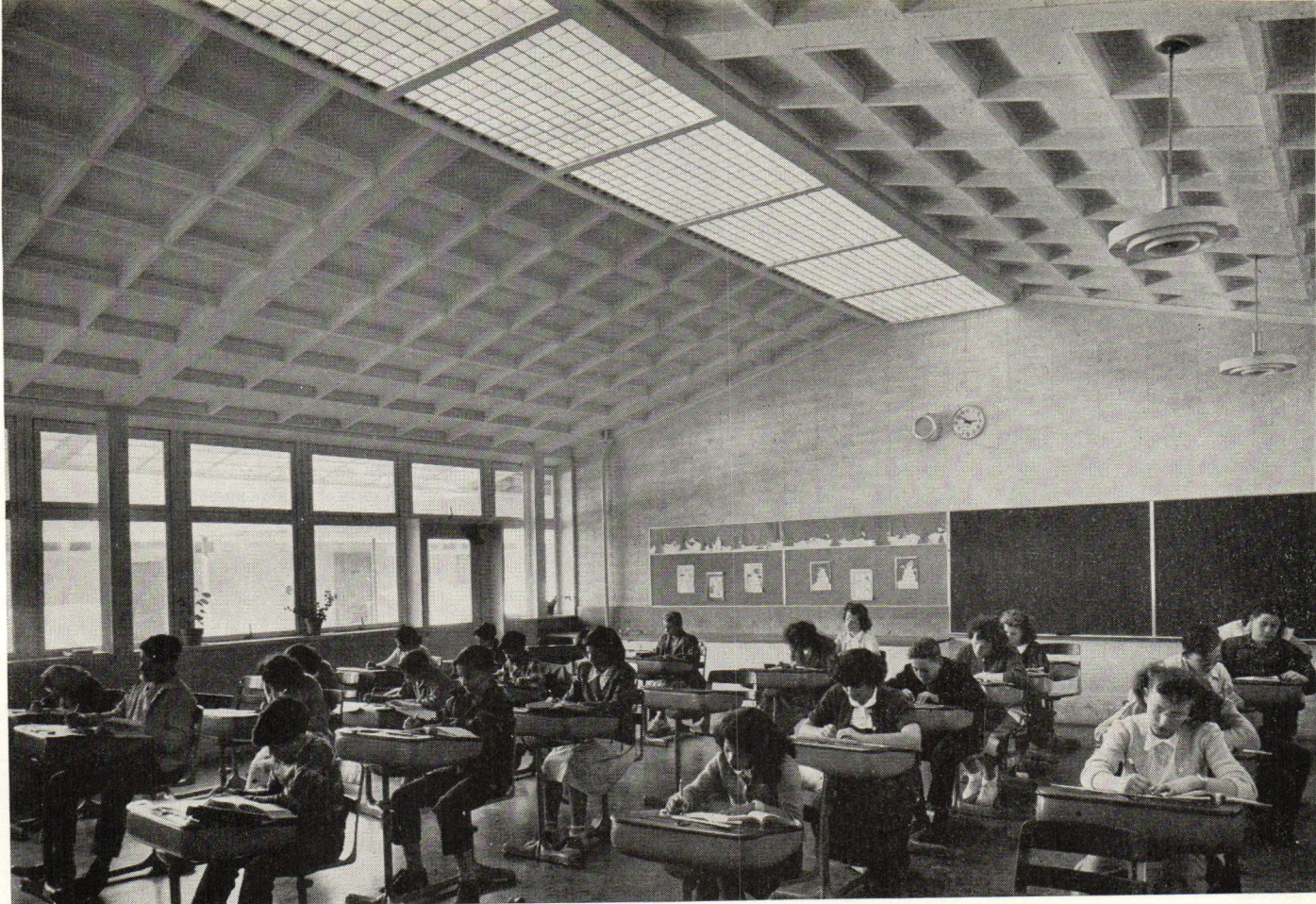


### MATERIALS AND METHODS

**CONSTRUCTION:** Framing: steel. Walls: concrete block, exposed both indoors and out. Floors: concrete slab surfaced with asphalt tile. Roof: wood; composition roofing; asphalt shingles. Fenestration: wood sash; sheet glass; obscure glass; obscure wire glass. Insulation: thermal: blanket type in roof; acoustical: fiberboard on upper portions of partition walls; coffer ceiling construction with composition panels also provide acoustical correction. Partitions: frame, with plywood or fiberboard surfaces.

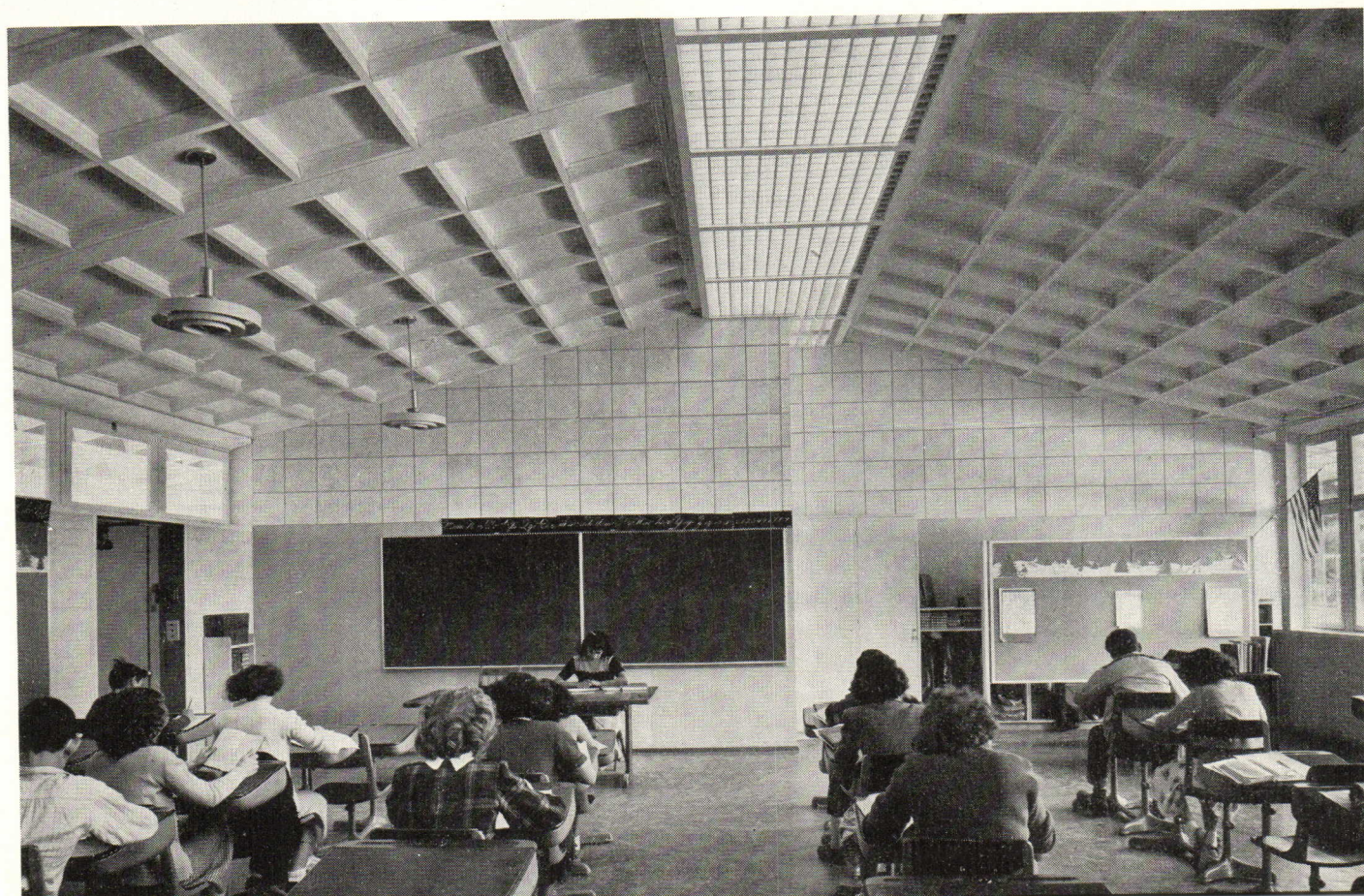
**EQUIPMENT:** Heating: radiant system in floor slabs; copper coils. Special equipment: 1/4" heat-absorbing wire glass skylight.



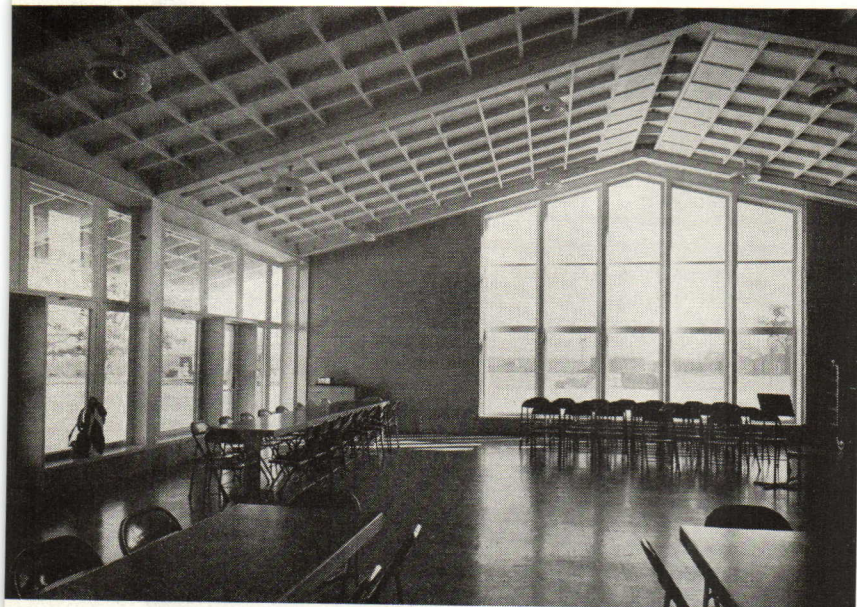


**ELEMENTARY SCHOOL, SANTA CLARA COUNTY, CALIFORNIA**

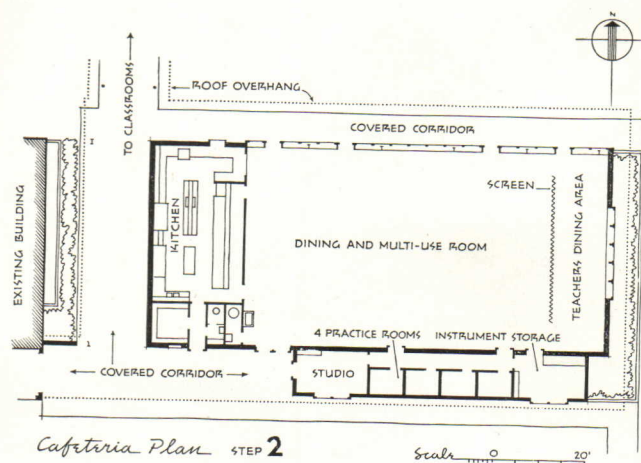
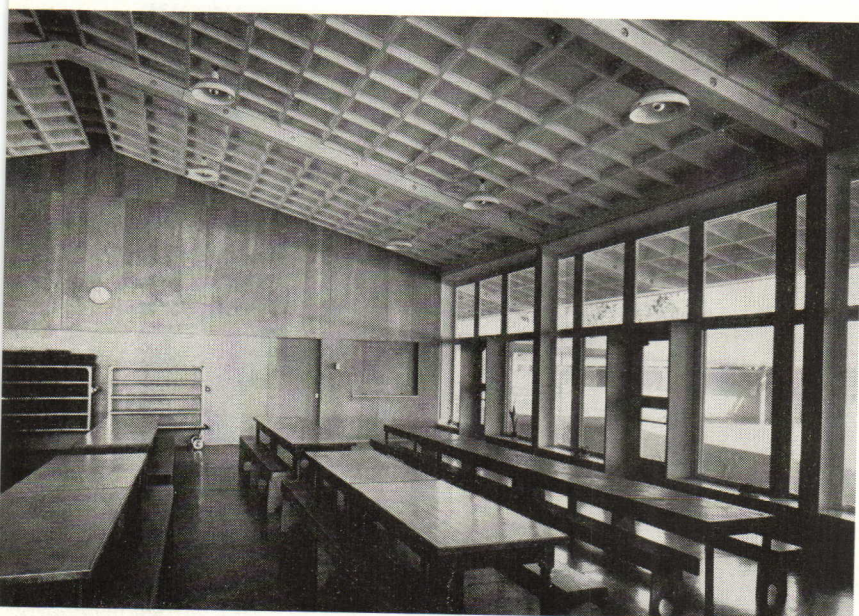
East (above) and west (below) ends of classroom. Trilateral lighting comes from high band of windows in south wall (above door height); louvered skylight, with east-west elements of grid slanted to exclude direct sunlight; continuous band of windows above storage cases along north wall.



## FIELDS OF PRACTICE:

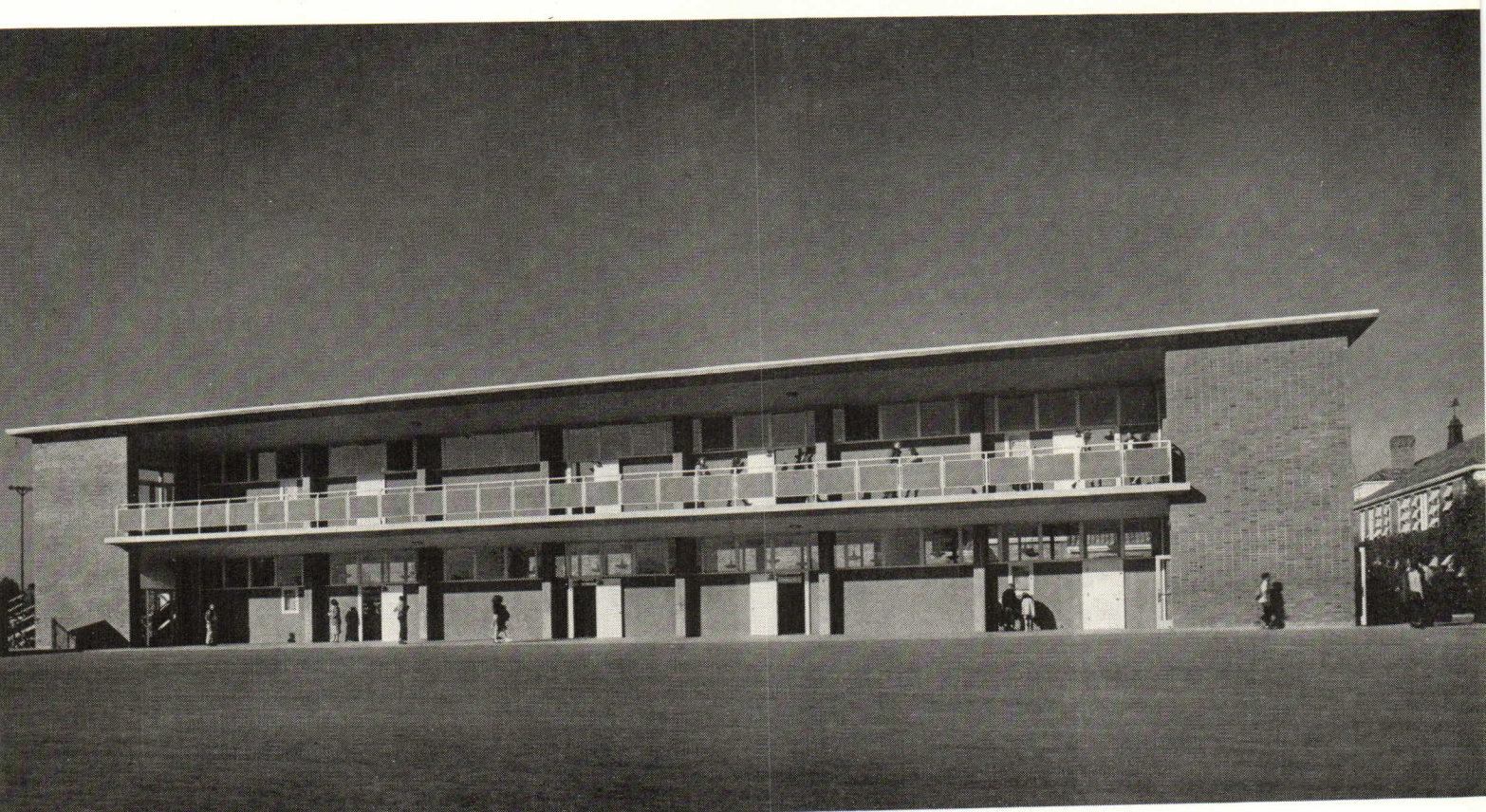


The cafeteria-music building is a multi-use facility for meetings, concerts, etc., as well as for its obvious uses. As with the classroom buildings, equipment is not attached, and rearrangement for different uses is simple. Since the outside corridor is along the north window wall, all operable windows tilt inward to avoid collisions. The deep door frames not only reflect the depth of the structural steel columns but also establish a window-tilting depth. The deep sills are good for sitting, for plants, or various sorts of display purposes. Selected Detail of this wall on page 99.



ELEMENTARY SCHOOL, SANTA CLARA COUNTY, CALIFORNIA

## Classroom Building: Union High School, Antioch, California



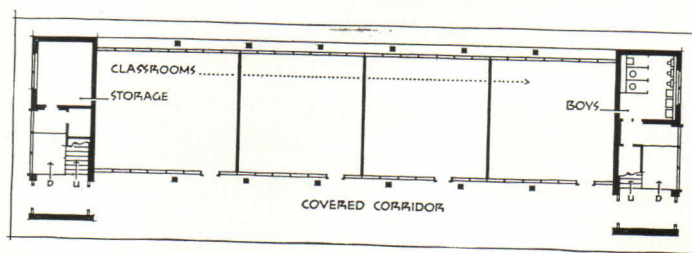
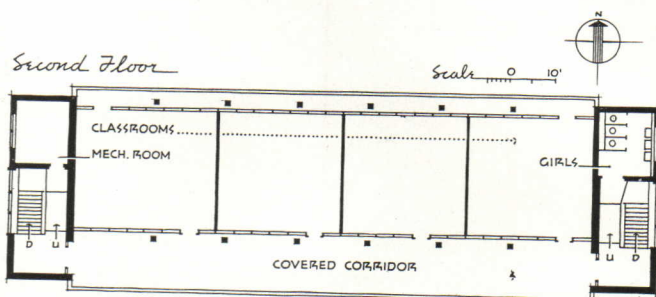
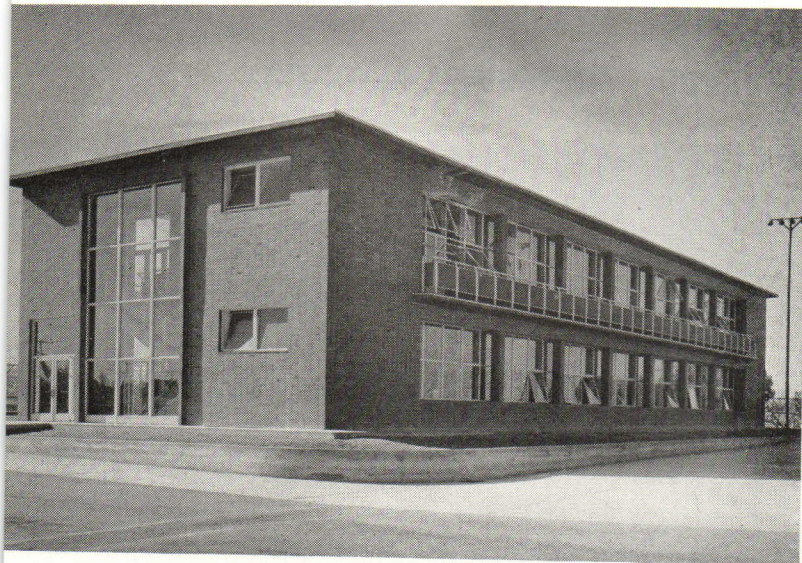
**KUMP & FALK, ARCHITECTS**



A two-story bank of bilaterally lighted classrooms. Outside corridor and balcony line the south front of the building. Stairwells at either end are enclosed to afford shelter from strong north and northwest winds.

*Photos: Roger Sturtevant.*

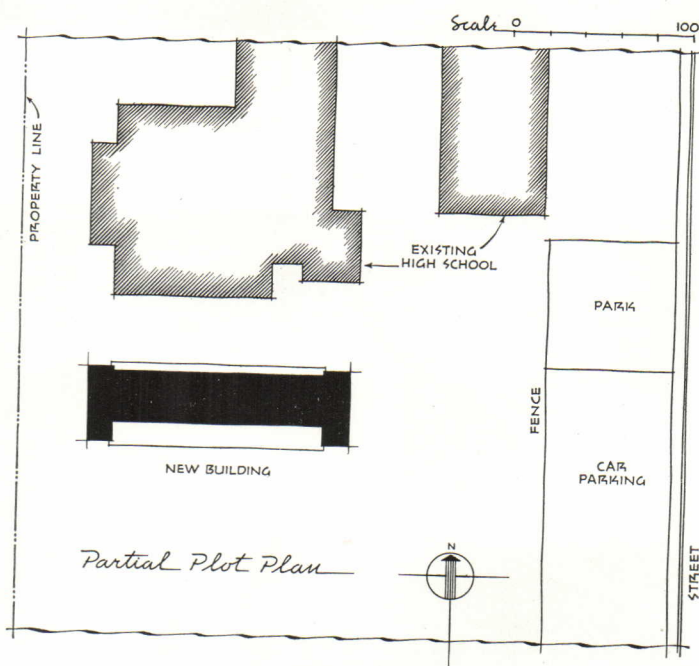
## CLASSROOM BUILDING:



**program:** Additional classroom facilities for junior-high grades. Existing buildings, nonconforming to California's Field Bill (anti-earthquake construction law applying to schools and public buildings). New building to be structurally independent of, though closely related to, the old buildings; to set the pattern for eventual rebuilding of the entire school plant in conformance with the Field Bill.

**site:** Limited area (indicating a two-story scheme) near the end of one of the old buildings. Well drained; fairly level; strong winds from north and northwest.

**solution:** Remarkable instance—the first?—of a two-story school building with all classrooms bilaterally lighted. Nonstructural partitions provide flexibility to accommodate possible future shifts in space needs. Outside corridors placed on sheltered, southern face; major window areas on north wall of classrooms. Reinforced-concrete frame developed on 16-foot module; brick veneer to harmonize with existing buildings.



## FIELDS OF PRACTICE:

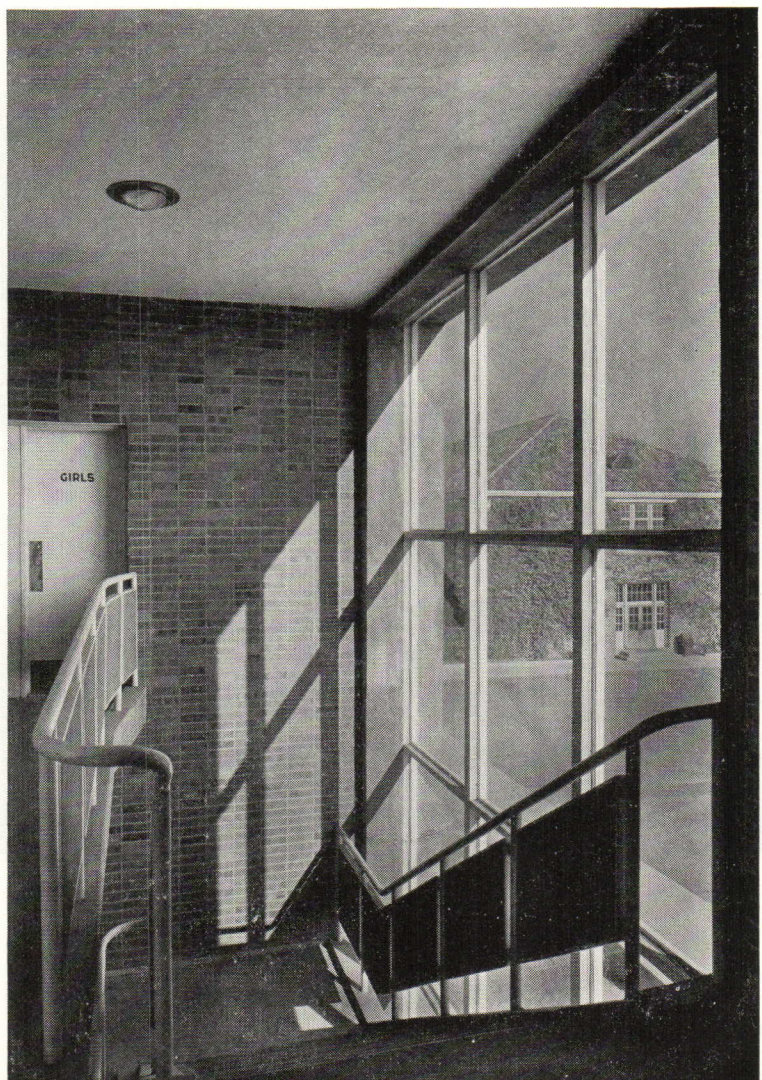
The sunny southern balcony corridor leading to second-floor classrooms. Notice the reinforced-concrete framing elements outside the curtain-wall. High windows on this side are balanced by the big north-facing windows (see photo across page). Selected Detail of the balcony—page 97.

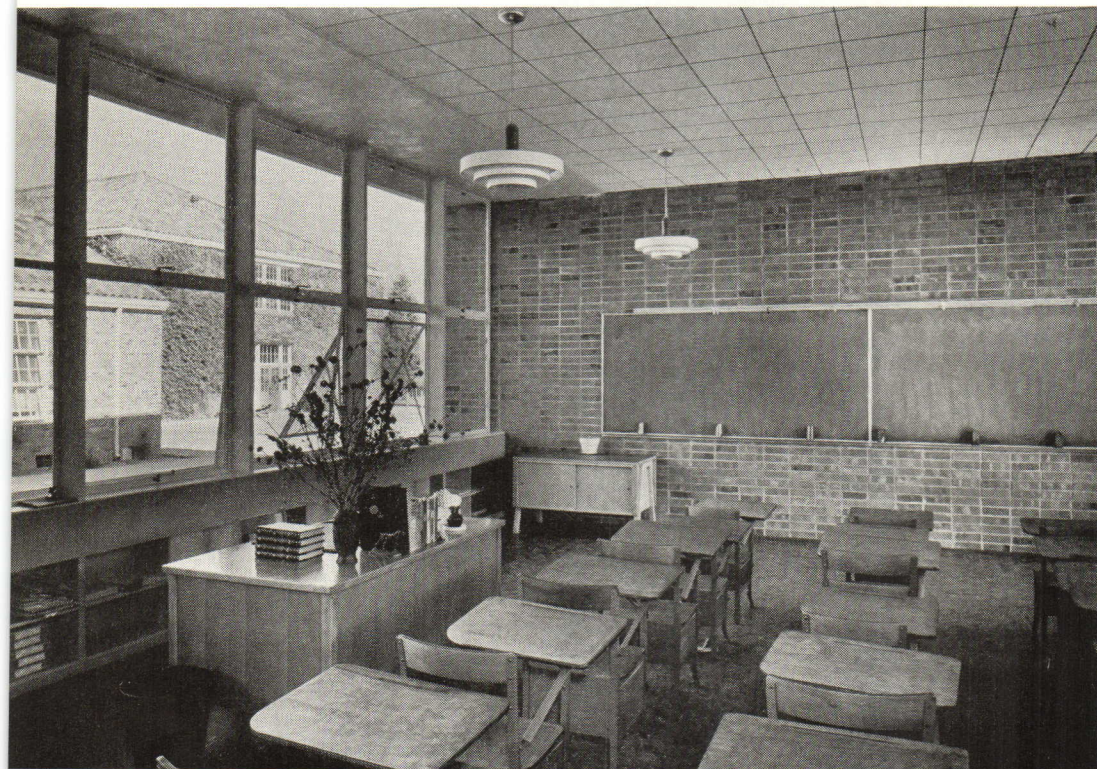
#### MATERIALS AND METHODS

**CONSTRUCTION:** Frame, floors, and roof: reinforced concrete. **Walls:** concrete and wood frame, surfaced outside with brick or stucco; inside, with brick or plywood. **Roofing:** composition. **Fenestration:** steel sash. **Partitions:** frame; plywood surfaced. **Doors:** flush wood; hollow metal.

**EQUIPMENT:** **Heating:** radiant system, mainly in floor slabs, but with additional ceiling panels.

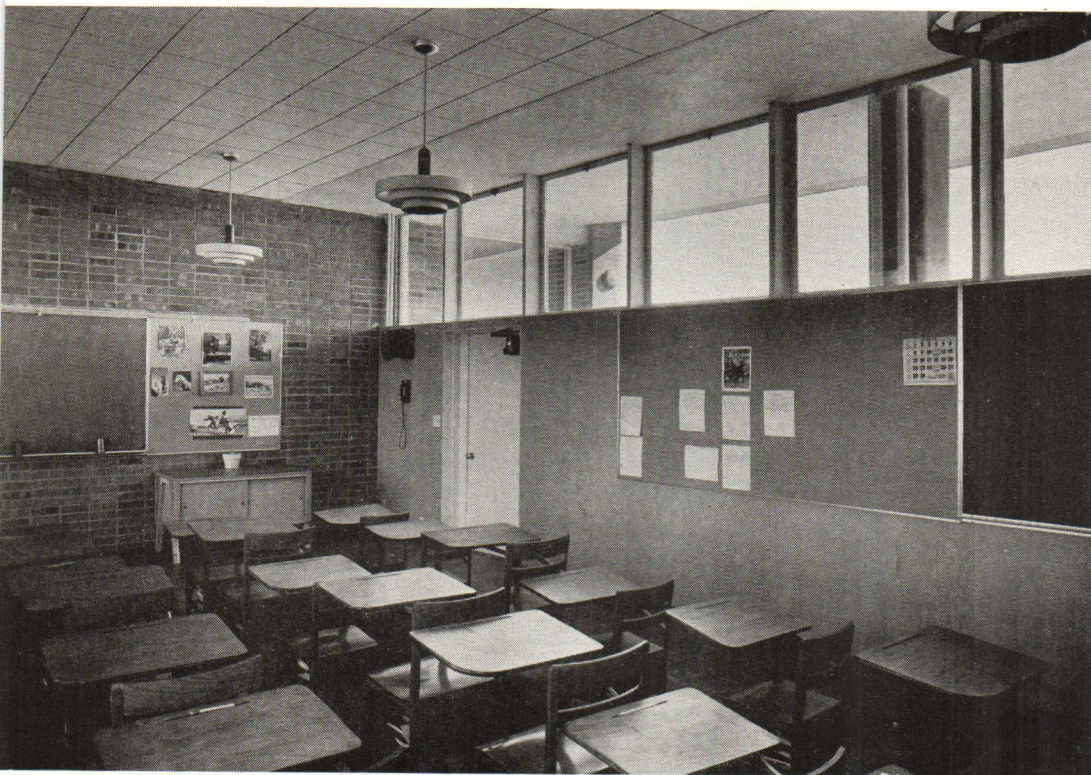
East stairwell; rail detail, with cement-plaster panels, is similar to balcony railing. The type and color of brick used, inside as well as out, were chosen to blend with brick of the existing buildings. All surfacing materials chosen for durability and easy maintenance.





Top: northeast corner of classroom, showing large steel sash, with out-opening lights.

Bottom: south, or corridor wall of classroom with high band of operable windows. Plastered roof soffits continue inside to form ceiling borders; central ceiling areas—fiberboard.



**CLASSROOM BUILDING, ANTIOCH, CALIFORNIA**

## A Symposium

While we are documenting rather thoroughly the philosophy and methods of operation of the firm of Kump & Falk, we felt that it would be instructive to conduct a broader survey of the school-design field. To do this, we asked a number of other firms who have done outstanding work in this category to tell us something about their practices; the following symposium is the result. Taking part in this "round table" are the following eight firms: Bamberger & Reid of San Francisco, California; Alonzo J. Harriman, Inc., Auburn, Maine; Moore & Hutchins, New York, New York; O'Connor & Kilham, also of New York; O'Dell, Hewlett & Luckenbach, Detroit, Michigan; Perkins & Will, Chicago, Illinois; Simon & Boulware, Philadelphia, Pennsylvania; and Sam'l G. Wiener & Associates of Shreveport, Louisiana.

Does your firm do school work exclusively, or mainly, or is yours a general practice?

If a general practice, does one man in your firm concentrate on your school work, or do several?

What special problems do you usually encounter in dealing with clients concerned with educational buildings?

What fee do you normally receive for school work? In general, does this constitute a profitable practice for you?

Only one of the firms reporting—Bamberger & Reid—does school work exclusively. "It is not our intention to limit our practice to schools," John Reid states, "but this type of work has been the main concern of the principals, and it seems that this is a type of work that we could do most effectively, especially in getting our practice started."

We asked the firms conducting a general practice whether one man concentrates on school design or if several are involved. Answers ranged from "one principal" (O'Dell, Hewlett & Luckenbach) to "all" (Alonzo Harriman, Simon & Boulware, Sam'l Wiener, and—obviously—Bamberger & Reid). In-between situations were highlighted by O'Connor & Kilham and Perkins & Will. The former firm points out that "school work is generally handled by one of the partners, but the other is prepared to handle it as well and frequently does." Perkins & Will state: "No man in the firm specializes by job category. The functional divisions of our firm are related to design, construction, management, etc."

The question of special problems encountered in dealing with clients concerned with educational building brought the most various response. Several mentioned one or more of the difficulties noted by Kump & Falk (see page 52); but a number of additional problems appear to be typical. Two of the firms commented on the problem of architectural style. O'Connor & Kilham find a regrettable tendency to be more interested in "the traditional appearance of the building than in its use." Sam'l G. Wiener, however, says encouragingly that he has found that "so-called Gothic and Colonial are dead as far as schools are concerned in our locality. We have, however, had instances where it was difficult to convince the client that an unfamiliar plan or detail had the advantage we claimed for it . . ." Simon & Boulware say the main problem is "getting a complete solution within the usually insufficient budget."

John Reid comments at length on a few of the problems his firm has encountered in dealing with school-board clients: "School boards and superintendents who are not dealing continuously with building procedures . . . are often at a loss to recognize the field of authority of all of the contributing parties. Sometimes the client will draw up a list of requirements and at the same time determine the price of the building needed to meet these requirements . . . The client often does not recognize the cost of the architect's office work, and in many cases will require changes in a design which has been rather fully developed . . ."

Regarding fees charged and whether or not these constitute a "profitable" practice, answers varied considerably. Three firms report a standard 6 percent fee and say this is profitable, though one of these qualifies the statement to add the words "under good conditions." Another firm has a sliding scale of fees depending on the size of the project. In one of the firms, fees range from 6 percent on the largest jobs to 10 percent on the smallest, and though this doesn't result in great profits, they comment: "We eat and come to work clothed." One of the other offices has separate fees depending on whether engineering is included (7.2 percent) or figured separately (6 percent). As to profitability: "It would normally be profitable except in the case of public

schools where the amount of work, the changes made at the architect's expense, and the delays are apt to be excessive, not only in decisions but in payment." Yet another office has a standard fee of 8 percent and finds this profitable, though by a narrow margin. "The conscientiousness of the architect toward his work determines whether or not 8 percent constitutes a profit . . ." this firm comments. "In view of the fact that the services of the architect in the design of a school building are increasing in complexity due to more checking agencies, more scientific approach to the work of design, and increasing complications in general, the cost of the services are higher than formerly. I am not prepared to advocate at this time, however, any increase in fees."

Most encouraging were the replies to the question whether architects were finding resistance to or interest in new educational developments and their effect on design. All of those queried reported genuine interest, though O'Connor & Kilham find that "when the client is a board of education or committee, there will always be some members strongly opposed." Sam'l Wiener also qualified his statement by pointing out that "the individual school cannot depart too far from the curriculum and teaching methods established by the State. It should also be recognized that recent developments may be controversial and are not necessarily accepted even by progressive educators."

Regarding the employment of special consultants, two firms report that they have seen no reason to employ such consultants in planning schools, and two others find that generally these services are unnecessary. One office states that it is "always ready to recommend any consultant who will study the problem and contribute intelligent ideas to the program or plans from his wider experience. We do not feel that he should be paid out of the architect's fee. We prefer to do our own research." An interesting variant on what usually is considered consultant work is provided by one of the questioned firms: "We firmly believe in the principle of referred work and employ our competitors, and they us, whenever we think they know something that we need to know for that job." One architect mentions the occasional difficulty when a consultant, rather than helping interpret the educational needs of the program, attempts to determine "building finishes, room sizes, heating and lighting installations, and building costs."

Our seventh question was whether it was possible, within the limits of the fees received, to study better methods of lighting, heating, etc. Without exception, everyone said yes. Perkins & Will elaborated to report that they budget research as "a part of the office overhead, and thereby some of it is charged to every job." John Reid finds his firm giving much study to these problems, but points out that it is in this area that the margin of profit comes close to evaporating: "I think that if the trend continues in the increasing requirements of architectural service that it may be expected that an increase in fees should be given serious consideration."

No particular discovery was made in reply to whether architects use presentation drawings, models, or both. Almost all said both. Perkins & Will add the following thought: "We have had particular success with Kodachrome slides of drawings and of models which can be selected to illustrate particular points of principle."

Most firms found little difference between the public- and private-school client, though one said it preferred the private client "from the financial point of view, because there is not so much difficulty in getting paid. The public commission is usually complicated by a lot of political considerations which delay the work as well as payment, often making collection difficult or reduced. By political considerations, we refer to the opposition in the town which is out to block the school at any cost."

Supervision of construction is generally given to all work—and preferred wherever possible.

Only one firm states that it does not profit at all from publications of educational societies, trade magazines in the educational field, or current literature on school planning. All of the others said they did. The following, arranged alphabetically, are the publications mentioned by more than one firm: *American School and University*, *American School Board Journal*, *Architectural Forum*, *Architectural Record*, *Nation's School*, *Progressive Architecture*, *The School Executive*.

Do you find client resistance to, or conversely, interest in, recent educational developments and their effect on design?

Do you employ, or recommend that the client employ, any special consultants? If so, of what sort?

Do you find it possible to study better methods of lighting, heating, etc., within the limits of the fees you receive?

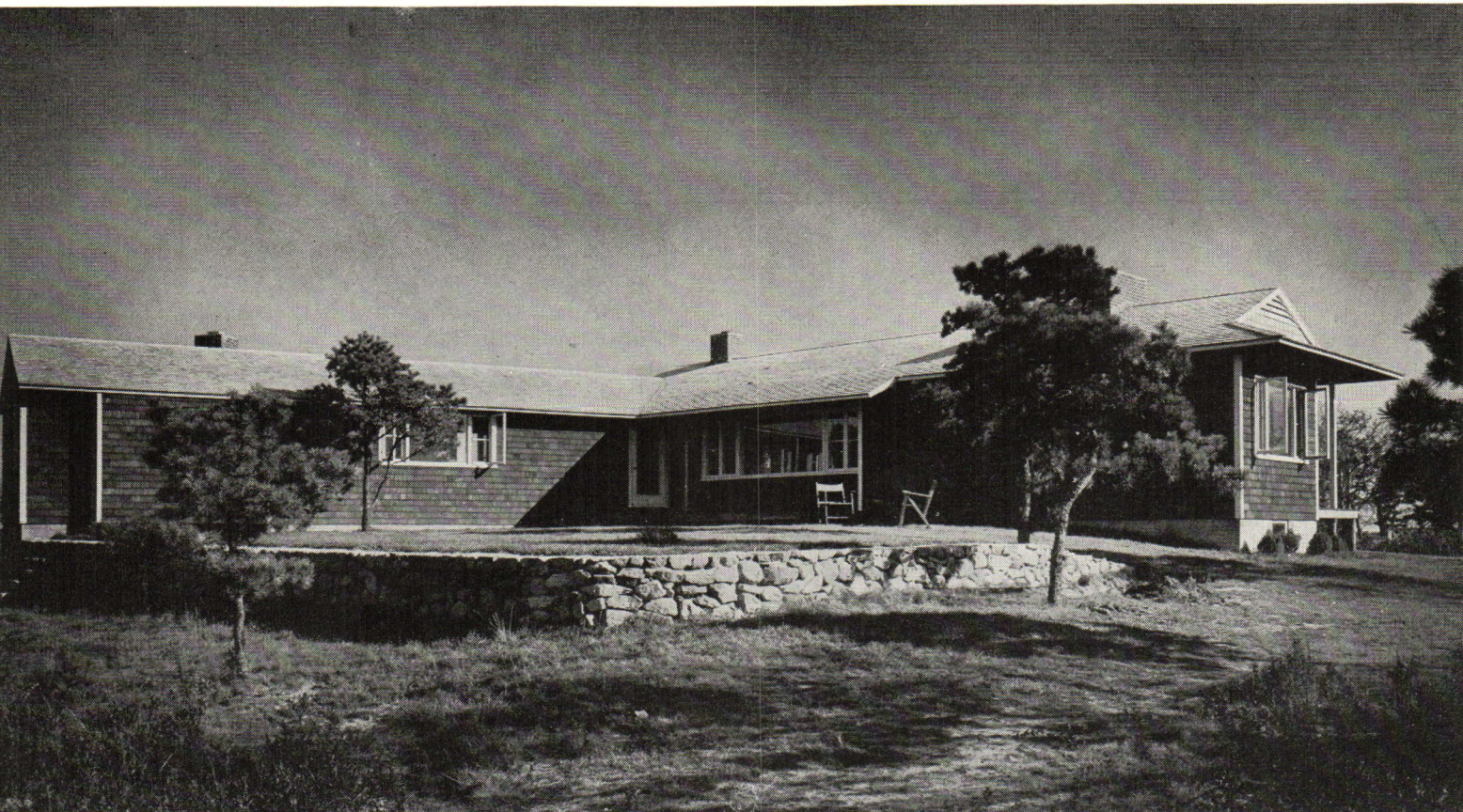
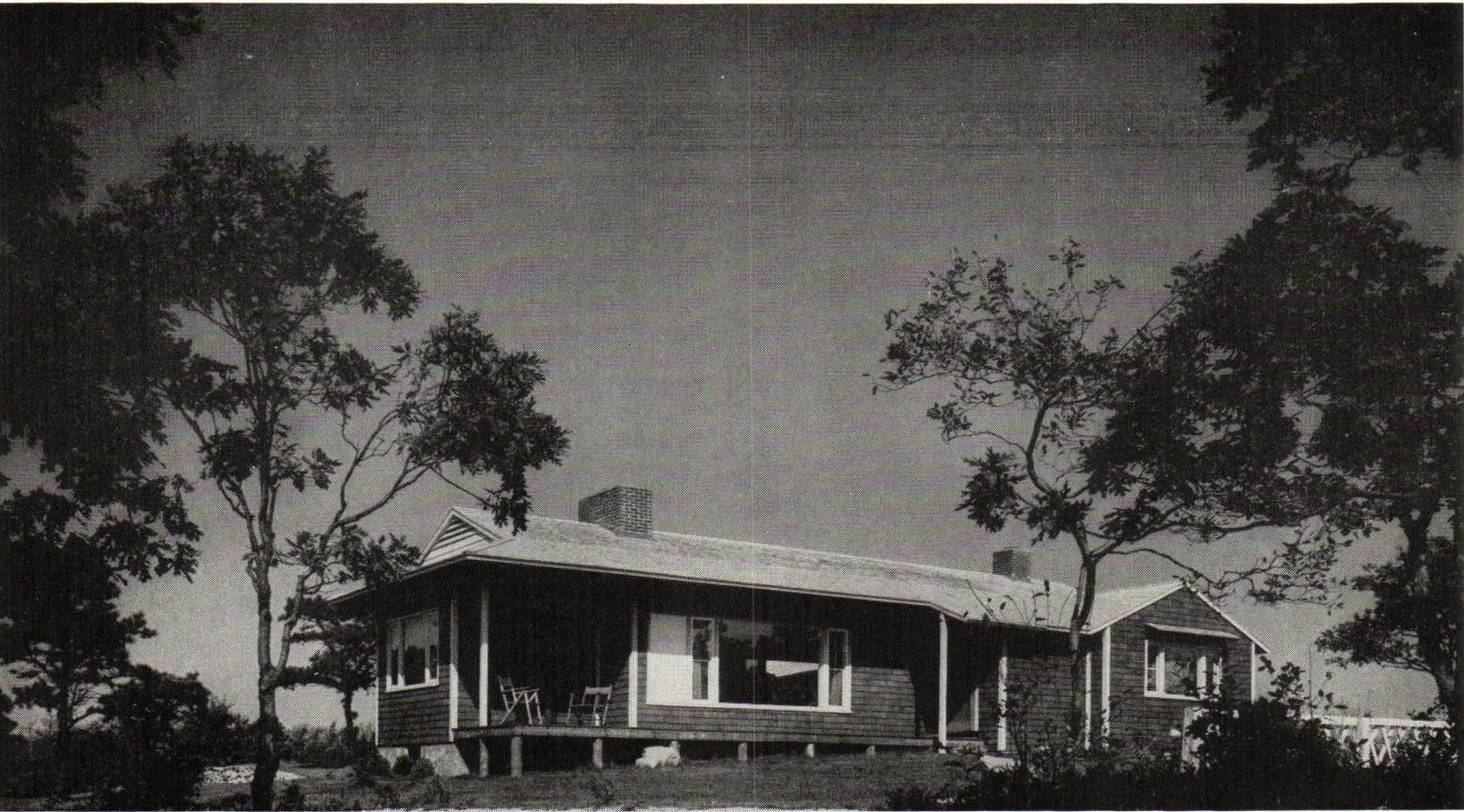
Do you use models or presentation drawings? Of what sort?

Do you find any difference between public- and private-school commissions?

Do you do your own supervision? On public work? On private?

Do you profit at all from publications of educational societies, trade magazines in the educational field, current literature on school planning? If so, what ones in particular?

## House: Brewster, Massachusetts



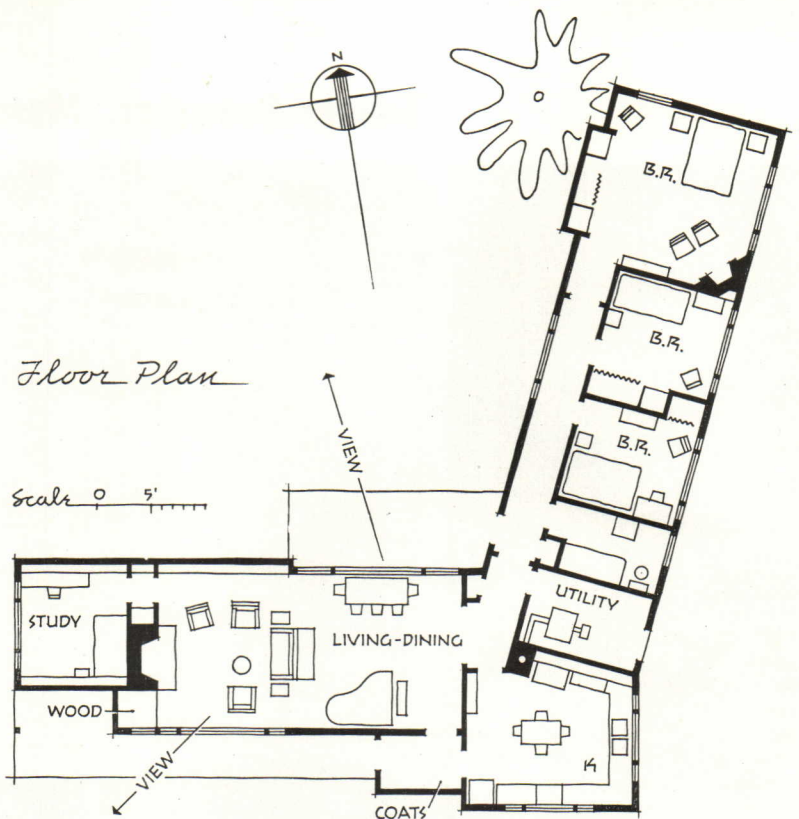
KENNEDY & JORDAN, ARCHITECTS

## HOUSE: BREWSTER, MASSACHUSETTS

### MATERIALS AND METHODS

**CONSTRUCTION:** Frame, walls & roof: wood.  
**Floors:** soft wood. **Surfacing:** exterior: wood shingles; interior: gypsum-core wallboard.  
**Fenestration:** wood sash. **Insulation:** thermal: aluminum foil (floors); balsam wool (walls); glass wool (roof); acoustical: cane-fiber board.

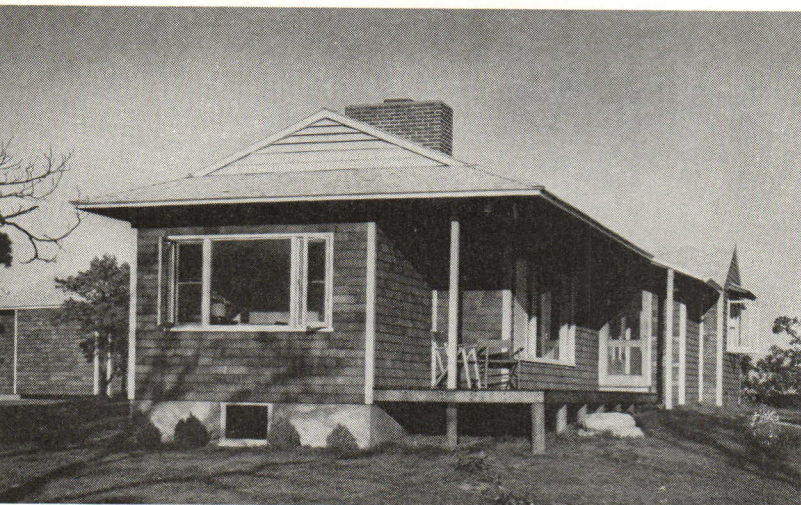
**EQUIPMENT:** **Heating:** forced hot-water system; automatic controls.



**program:** A modern house, which would not advertise itself as such, for a writer, his wife, and child. Desire for a design sufficiently flexible to accommodate varied activities, and suitable to the informality of country living.

**site:** An unspoiled piece of land in Cape Cod, some distance from the highway and other houses, overlooking Massachusetts Bay.

**solution:** A plan so arranged that the bedrooms and kitchen can form a unit apart from the living room-study wing, or bedrooms can be closed off from the living room-kitchen-entrance unit. Double doors separate the study from the living room. Outdoor living area on the north is cool in summer, while taking advantage of the late afternoon sun and the view over the Bay. The porch provides a play space and a useful place for drying sails and bathing suits. The simple landscaping and surfacing of wood shingles harmonize with the natural surround.



Kennedy

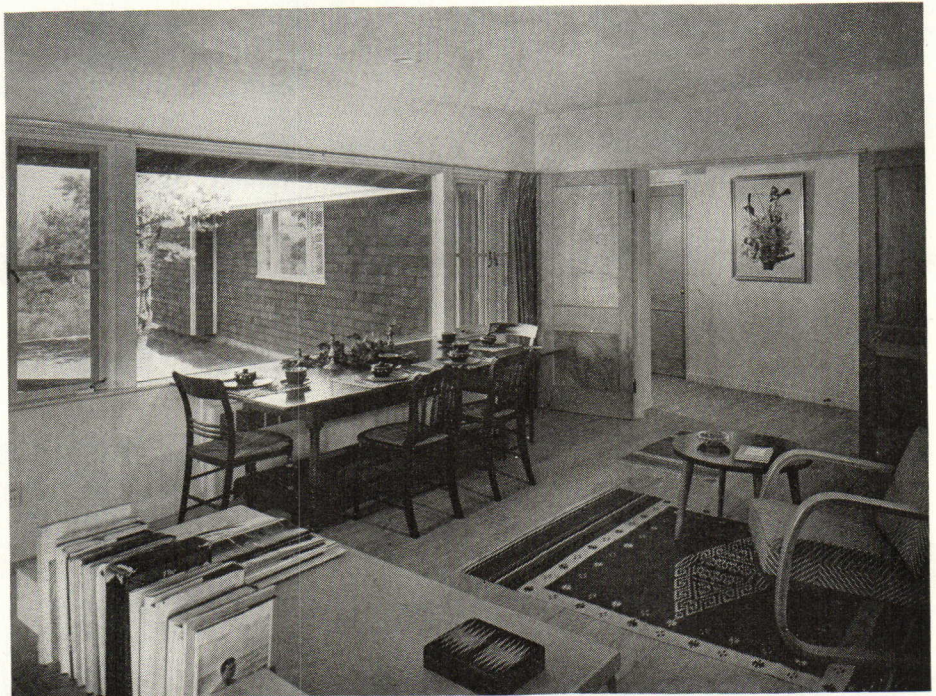


Jordan





Right: top—view of the living room. Study-workroom, at end of west wing, has two doors for noise insulation; center—the dining area, convenient to kitchen (bottom), overlooks the sheltered, terraced lawn. This wing of the house, with its large south- and north-facing windows, has full benefit of the view.





**House: Leawood, Kansas**

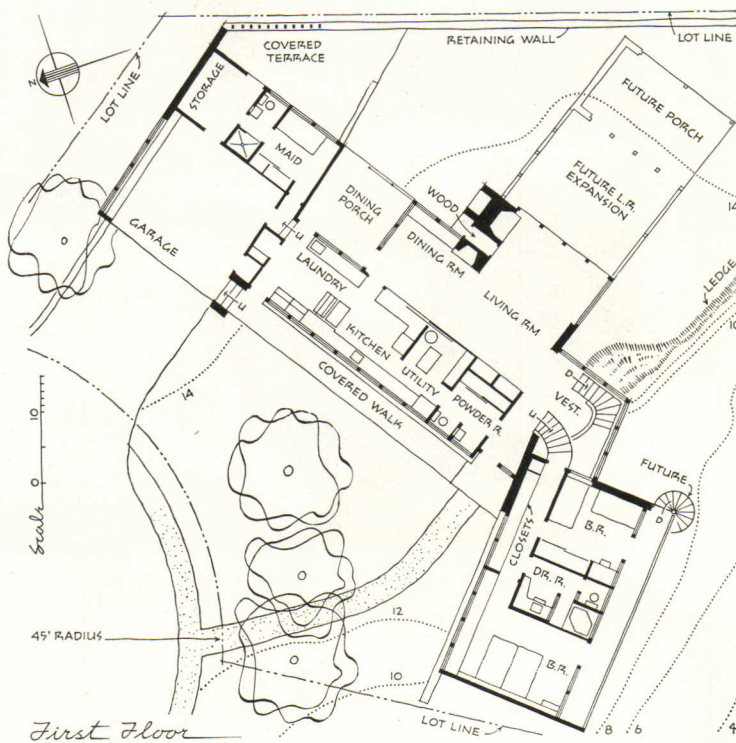


# A Mention in the 1947 P/A Awards

This is the home of one of the architects—James Ingraham Clark. Photos across page: top—looking south down the slope; bottom—view from street (utility rooms, left, bedroom wing, right).

Photo at top: Gene Hook.

Photo at bottom: Fred Gund.



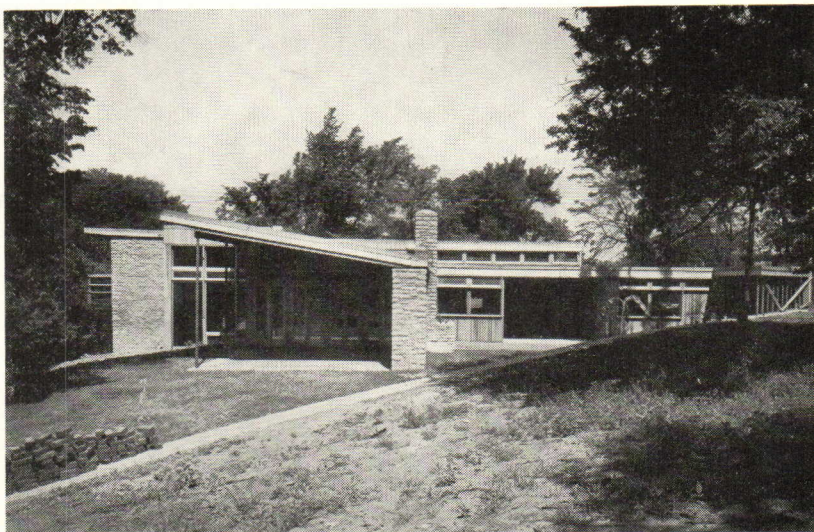
RUNNELLS, CLARK, WAUGH & MATSUMOTO, ARCHITECTS



Photos directly above: top—bedroom wing, additional bedrooms to be added later at lower level; bottom—living room and porch (right); glazed stairwell (left).

Photos at right of page: top—front door; bottom—view from east (living rooms, left, outdoor living, right center, service right).

All photos by Fred Gund except front door shot by Gene Hook.





**program:** Suburban residence for a growing family. Space provided under present bedroom wing for duplication of facilities on upper level.

**site:** Land at end of cul-de-sac street; one acre sloping toward the south; stone ledge under most of actual house site.

**solution:** Plan organized to turn its back to the street side and open out to the east and south. Design developed to have advantages of prefabrication although built on the site. Ledge proved both solid and flat; hence, prefabricated heating panels and foundations were laid directly on the stone; footings needed under bedroom portion only where rock ledge ran out. Plan worked out on a 4'-1/4" module—the 4' to take standard sheets of plywood; the 1/4" to allow a space between sheets, eliminating any fitting or butting at the joints. Dry construction throughout.

## MATERIALS AND METHODS

**CONSTRUCTION:** **Framing:** wood. **Walls:** no footings; stone foundations on solid rock; native stone. Interior finishes: Douglas fir plywood; exterior: 5-ply waterproof plywood. **Floors:** wood sash; double-insulating glazing; glass block (bathroom only). **Insulation:** acoustical: cement-impregnated wood-fiberboard exposed on ceilings; thermal: double-thick expansible blanket; flameproof cotton; glass-wool batts; blown-in wool type. **Partitions:** frame, surfaced both sides with plywood. **Doors:** birch-surfaced hollow core; solid flush exterior doors.

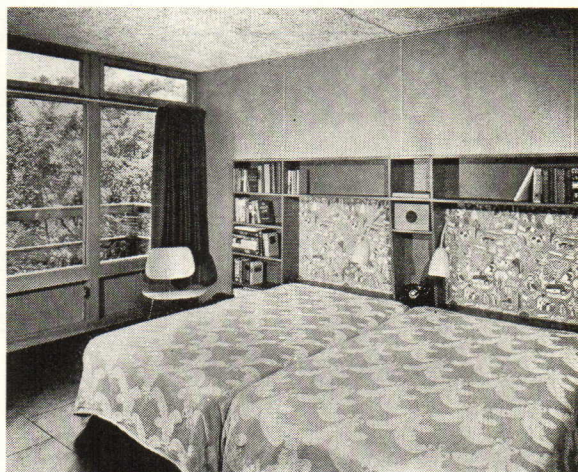
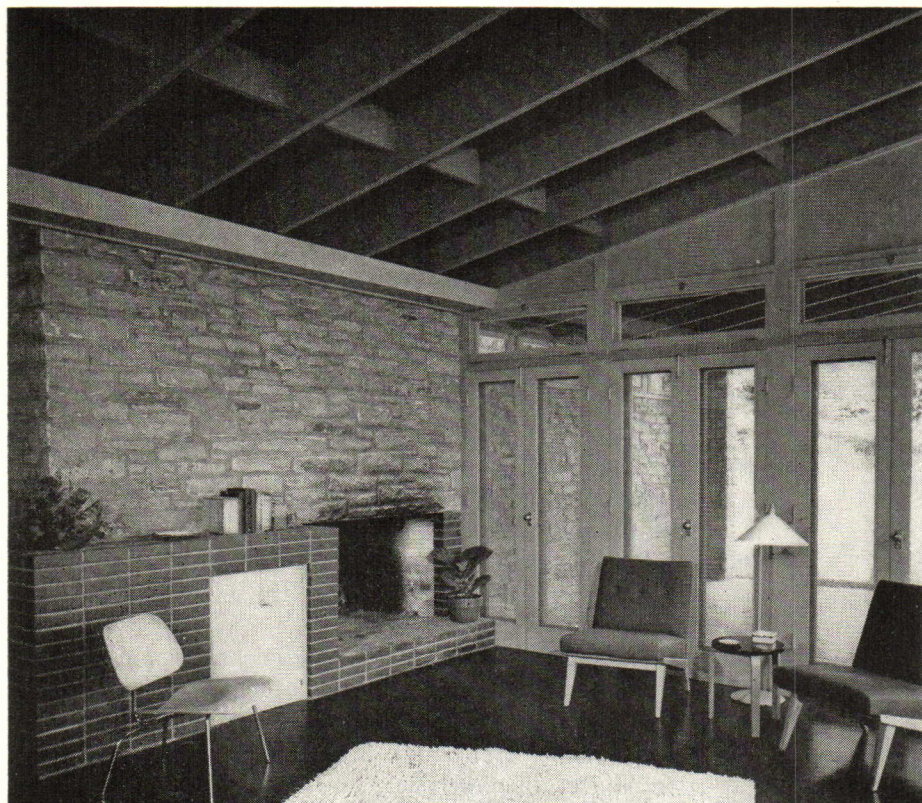
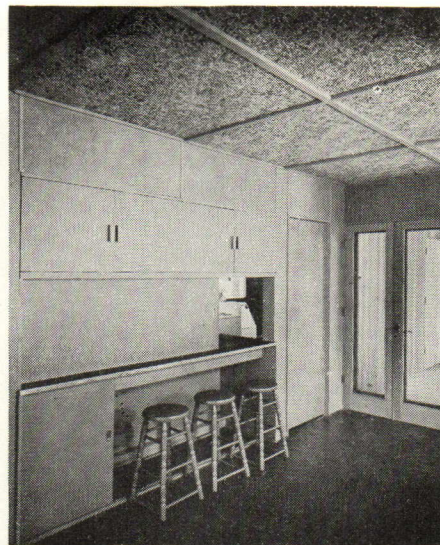
**EQUIPMENT:** **Heating:** hot-water radiant panel, zoned for three areas; gas-fired boiler; automatic controls; attic fan. **Kitchen:** electric stove, refrigerator, dishwasher, garbage disposal unit, deep freeze, and exhaust fan. **Special equipment:** water softener.

Photo across page: south window of living room and stairhall to bedroom wing.

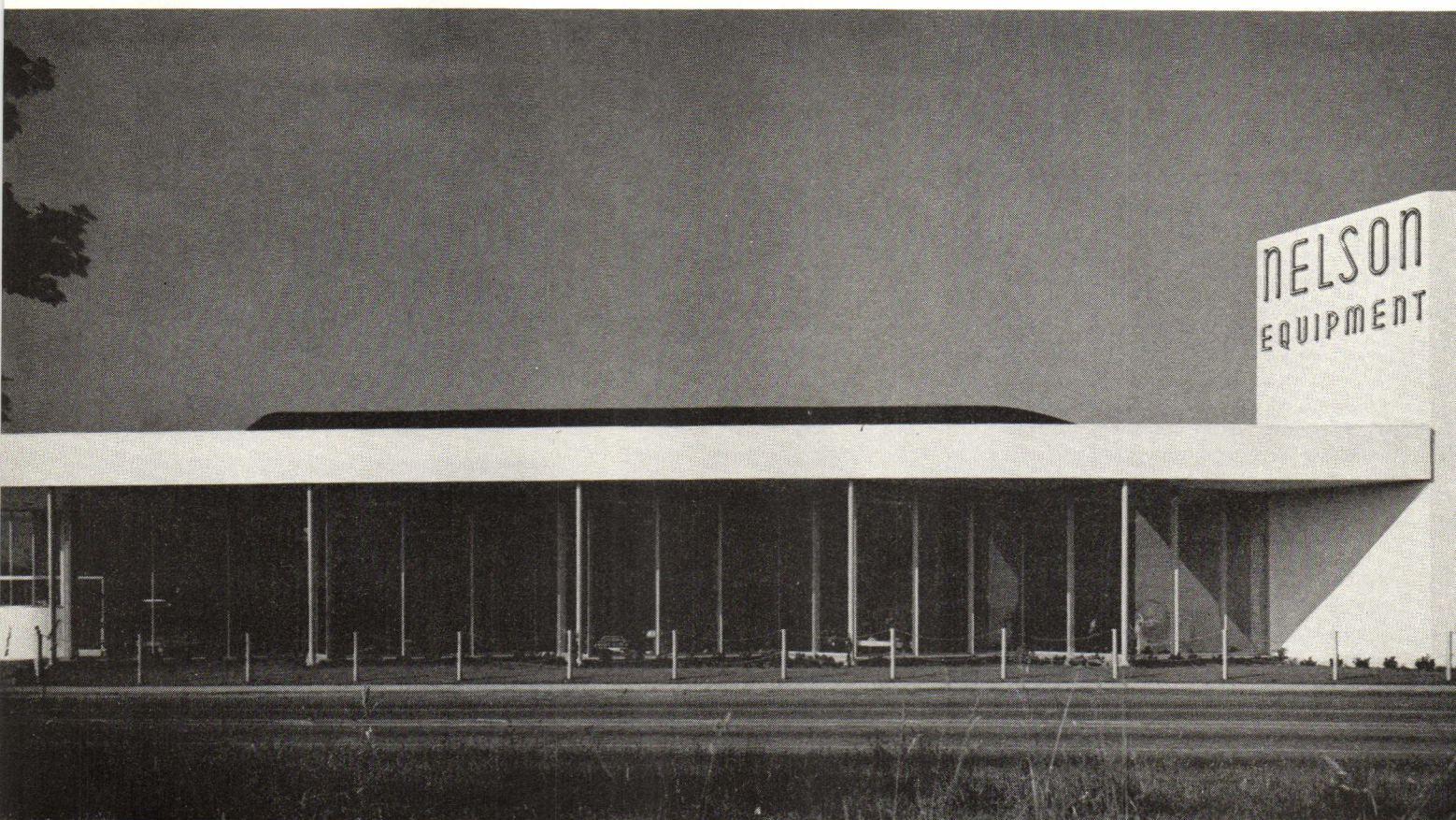
Photo directly below: fireplace corner of living room with east porch beyond.

Photos at right: top—wall between dining area and kitchen; center—same wall, opened up; bottom—master bedroom with cantilevered deck outside southeast window wall.

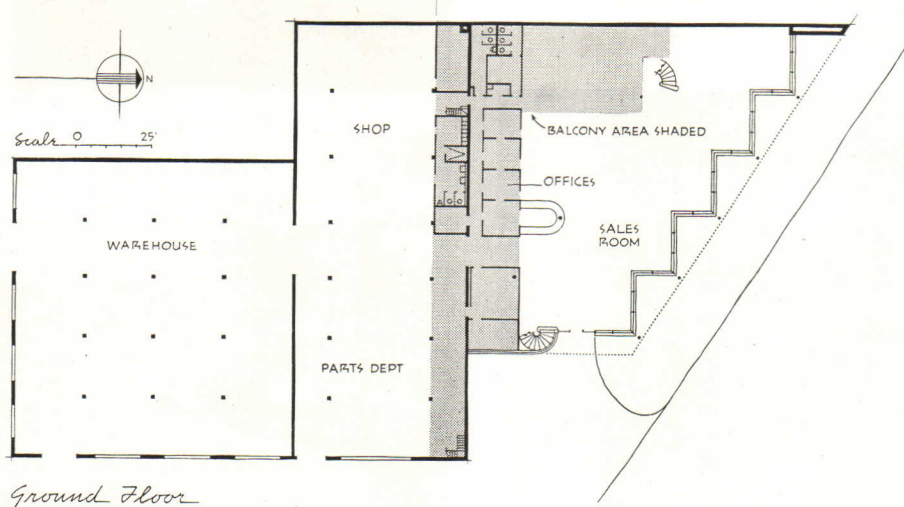
All photos: Fred Gund.



## Display and Sales Building, Portland, Oregon



VAN EVERA BAILEY, ARCHITECT



The hollow concrete masonry walls (form lumber unavailable at time building was built) proved on a unit basis to be 30 percent cheaper to construct than formed concrete, the architect reports, did not require furring for the finished plaster areas, and provided a valuable insulation factor. Mezzanine office area is suspended from timber roof trusses. The company reports that they are "extremely proud of the building and have found it to be very helpful in the advancement of sales volume. It's also a convenient building to work in."

Photos: P. A. Dearborn

- program:** A warehouse, shop, and salesroom (with offices) for a company dealing in construction, logging, and mining machinery and apparatus.
- site:** An ample, irregular-shaped lot bordering a super-highway on the outskirts of the city, highway at sharp angle across front.
- solution:** To take advantage of site angle, salesroom display front is made up of a series of sawtooth windows, providing maximum view from passing traffic and serving as an effective advertising device (see Selected Detail, page 95).

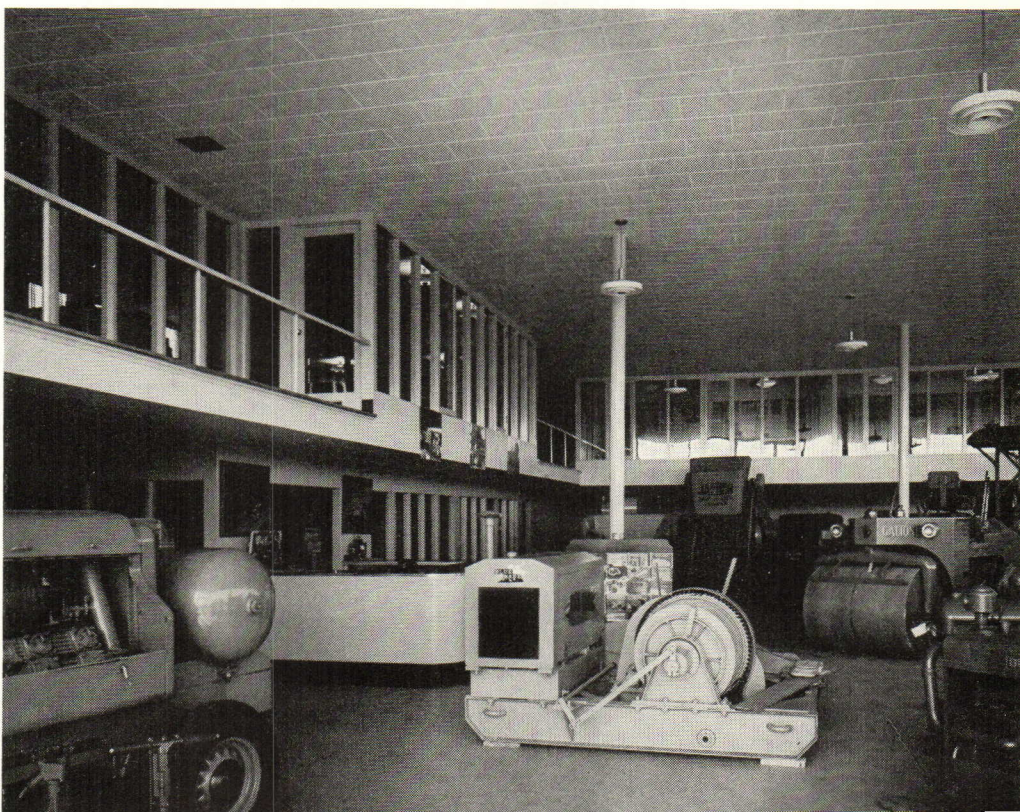
## MATERIALS AND METHODS

**CONSTRUCTION:** **Framing:** timber; concrete; pipe columns; wood roof trusses. **Walls:** concrete cavity construction placed by means of patented wall builder; glass. **Floors:** concrete, surfaced with cement or (in lower offices) asphalt tile. **Roofing:** built-up composition. **Fenestration:** wood framing for display windows; steel sash in shop and warehouse. **Insulation:** fill-type above insulation board ceiling finish, in salesroom. **Partitions:** frame, plastered.

**EQUIPMENT:** **Heating:** radiant coils in floor slab; oil-fired boiler; forced warm air system for ventilation.



*Van Evera Bailey: A.I.A., no formal training; too extraordinary a career to document fully—including work in oil fields, as a junior engineer with dredgers of canals for Venice, Calif. and a spell building miniature golf courses in New Zealand. Credits William Gray Purcell as being his chief architectural mentor and inspirer. Much design work (chiefly residential) around Portland, Ore. At present working in South Pasadena, Calif.*





## Small Airport Administration Facilities

BY THOMAS T. CRENSHAW, OF THE FIRM OF SARGENT, WEBSTER, CRENSHAW & FOLLEY

It will be self-evident that this commentary does not purport to present the viewpoint of the expert in the field. Its origin parallels the singularly successful army treatment of choosing the cooks from among most vociferous complainants against the food. A protest to the editor of *PROGRESSIVE ARCHITECTURE* regarding the dearth of published material in the rapidly expanding field of design of small airport administrative facilities was promptly parried by the suggestion that he of the overly sensitive stomach do the cooking!

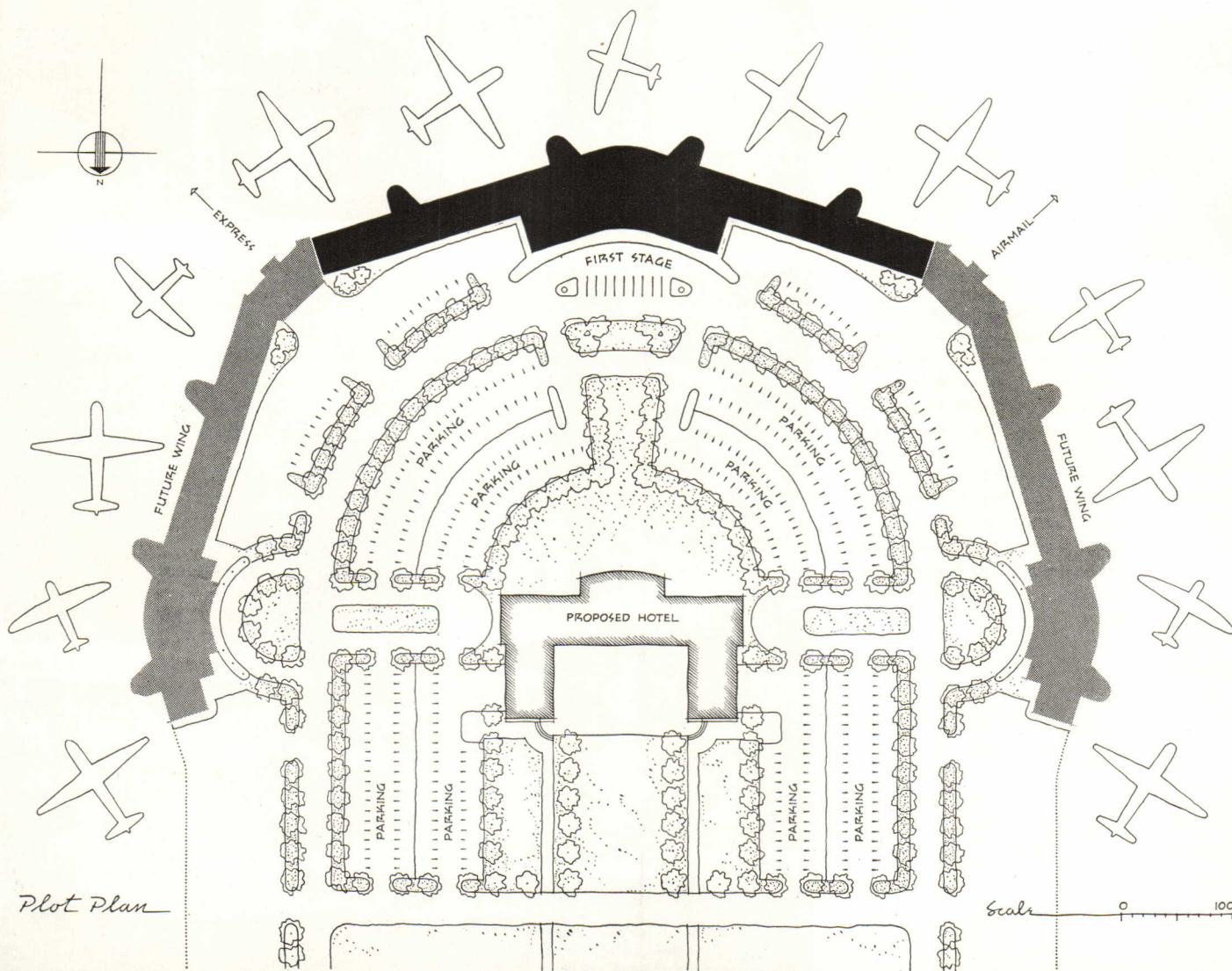
Hence, the chosen approach is not that of a critique but rather that of focusing the spotlight upon the more common problems, accompanied by an opinion or an illustration to point out a solution which has been found satisfactory. Increasing familiarity with these common problems will breed increasing perfection in the architectural and engineering answers. There is little of the spectacular in the illustrations chosen, since it is the writer's desire to serve up the more substantial meat and potatoes of daily diet, leaving the occasional crêpes suzette for some later cook.

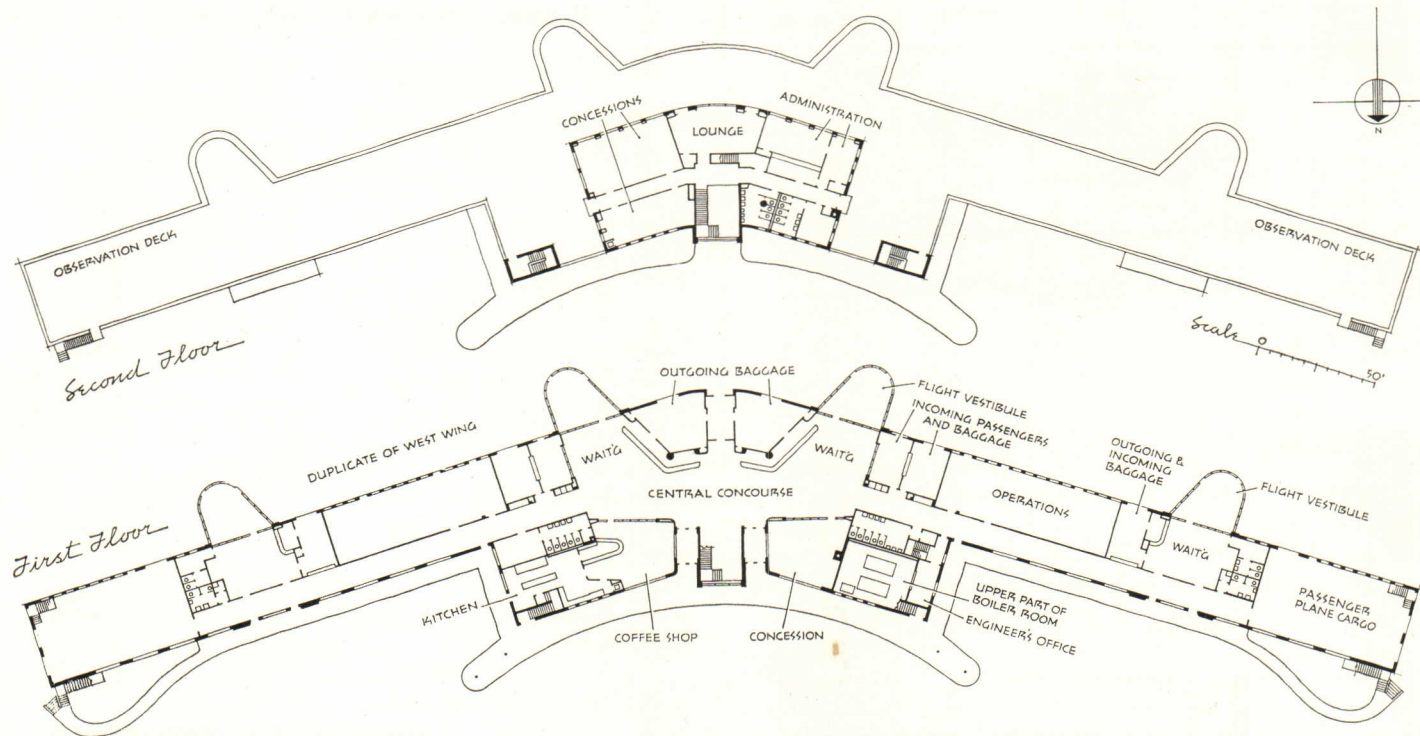
Four small facilities have been drawn upon for illustrative matter, comprising administration buildings either constructed or planned for early construction at Rochester, New York, designed by Ade & Todd; Burlington, Iowa, by Morgan-Gelatt & Associates; Islip Township, Long Island, by Robert H. Edwards with Petroff & Clarkson as consulting architects; and Watertown, New York, by Sargent, Webster, Crenshaw & Folley. The opinions which follow are not merely those of the writer, but reflect as accurately as possible the mean of conclusions independently reached by the architects represented. Within the scope of this commentary it is impossible to do more than skim the cream of mutual agreement among the four architectural firms as to the problems of first importance. These problems, with related opinions and possible solutions, are treated individually in order of occurrence.

### program:

### PROBLEM

The comparative novelty of air transport and its appurtenances has prevented establishment of recognized cri-

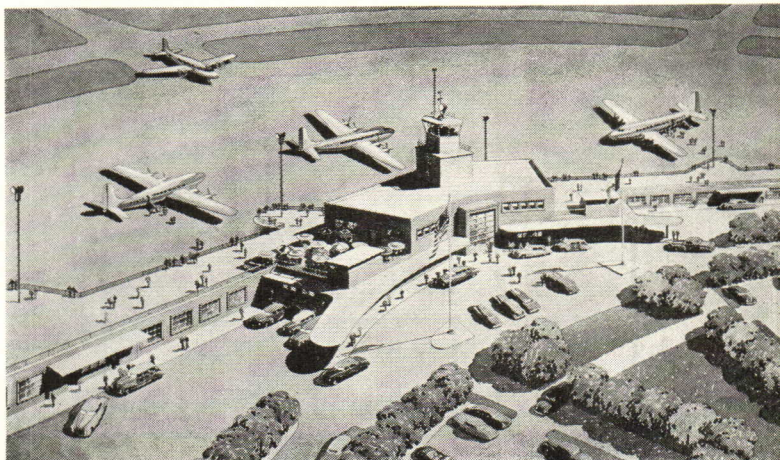




#### Ade & Todd, Architects

The Rochester terminal is the only one of the four whose expansion scheme is based on continued repetition of basic elements constructed in the first stage, with no major shift envisaged within stage 1. Final plan (opposite page) illustrates possibility of controlled expansion of initial facilities to carry substantial increases in traffic load. Contemplated lateral extension of building will provide space also for new air-mail and express services; ticket and information counters will be separated from main concourse.

Above: second floor, with observation lounge, offices, etc., opens onto roof deck. Flight vestibules simplify assembling of enplaning passengers.



teria. Programs prepared by six individuals to meet the same basic requirements would probably present six radical variations. This problem is accentuated by inability to predict even the immediate future of air transport in order to determine these basic requirements around which a program can be written. The client, usually a municipal commission or agency, can offer virtually no concrete assistance beyond general terms. The airlines, airport manager, customs, immigration, postal authorities, concessionaires, and various using agencies are of little assistance beyond their immediate requirements at best, and seldom are able to state conclusively even their own requirements. There is a universal tendency among the users to exaggerate space needs, and since present high construction costs usually necessitate some degree of subsidy in the rental of space, the tax burden can become prohibitive if too great elaboration is permitted.

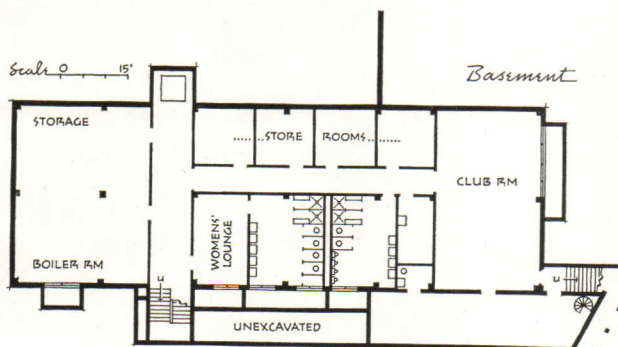
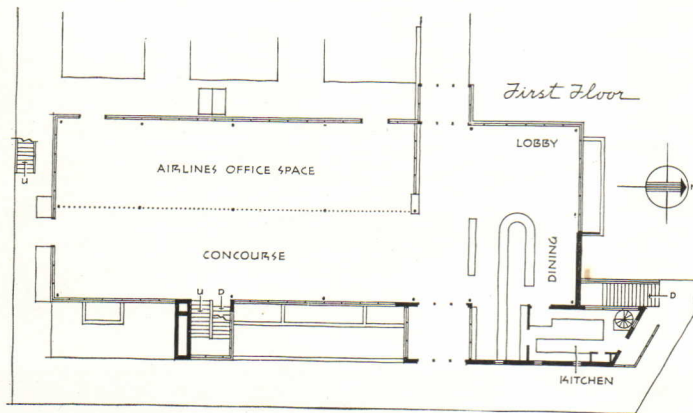
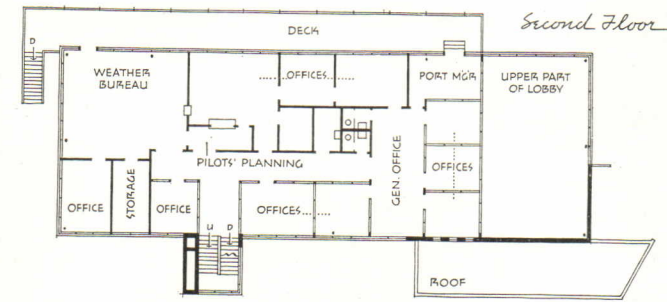
The Civil Aeronautics Administration is obviously the best source of general information on which to base a program, but is seldom, if ever, prepared to coordinate the necessary research and turn over an outline of specific requirements to the architect, as would a state education department, an industry, or a hospital board.

#### OBSERVATIONS

The preparation of the program is one of the most difficult and time-consuming phases of the architect's duties, and anyone undertaking it for the first time should allow for an expenditure of effort approximately equal to that required for preliminary sketches. There is no short cut to the laborious task of research into the past, present, and future of the airport in question to determine traffic expectancies; to the pecking away at the using agencies to provide concrete statements regarding their needs, and the microscopic examination of these needs tempered by judgment and facts; to the weighing of one requirement against another from the viewpoint of budget; and finally to the coordination of numerous changes by the various users that follow as surely as day follows night. The architect who waits for someone to hand him a program is wasting his time!

#### SOLUTION

Though there is almost unanimous agreement among the four architectural firms as to the importance and difficulty of the problem of program, no universal solution was forthcoming. One of the cooperators on this article notes



#### Morgan-Gelatt & Associates, Architects

The building for Burlington, Iowa, provides in its first phase (left) a flexible envelope, subdivided to meet the needs of the initial users, and admitting easily of future expansion and re-allocation of space.

Opposite page: final plan simply indicates the direction of proposed extension; a new wing repeating the design elements of the existing building will allow for greater variety of services as well as for larger volume of traffic.

that he closeted himself in a hotel room for five days with the airport manager, CAA Regional, Communications, and Weather Bureau representatives, and emissaries from the using airlines. The result was a reasonably concise outline.

The writer was less fortunate in getting all interested parties cornered at one time, and also had a somewhat greater variety of users involved. The problem was approached by a 60-page analysis, charting activity growth through 1955, some of it illustrative eyewash to build up the interest of the lay members of the Airport Commission and lead them on into the dry traffic-volume studies and tabulations which constituted the real meat of the program. The analysis terminated in a detailed tabulation which considered every type of facility which might conceivably be required in present or future, accepted or rejected the facility for present or future, and finally recommended the extent of the accepted facility for present and future. The report was then presented to the Airport Commission and to the CAA for approval, was accepted almost verbatim (perhaps because of weight rather than content), and from then on constituted a bible from

which there was little departure in major detail.

#### flexibility:

##### PROBLEM

The very uncertainties which hamper the preparation of the program dictate a need for flexibility that is even more pronounced than in most other building types. The requirement logically divides into two categories:

1. Flexibility of space arrangement within the constructed plan.
2. Future extension of the plan laterally or vertically, or both.

##### OBSERVATIONS

The majority of airport administration buildings must be planned for construction in two or more stages. This is particularly true in the smaller communities where restriction of schedules by regulation or from profit motives, inability of the carriers to meet all their expansion needs simultaneously, and delay in instituting a program for selling air travel have produced a level of airport activity below present potentials. In such cases, it may

be necessary to fit the first construction stage to the ability of the airlines, with a second stage planned to provide facilities for which the demand already exists, and successive stages beyond this point to absorb future increases in volume. The importance attached to a fluid plan is evident in all four buildings considered in this article.

## SOLUTION

The extent to which future re-allocation of space or expansion may be planned initially in detail is in direct ratio to the ability to prepare a program to interpret future growth. In all of the following case studies, preliminary plans were prepared in some detail to encompass the known future requirements, and the part of the building to be constructed developed into working drawings, with due consideration given to the orderly addition of future plan stages with minimum interference and expense.

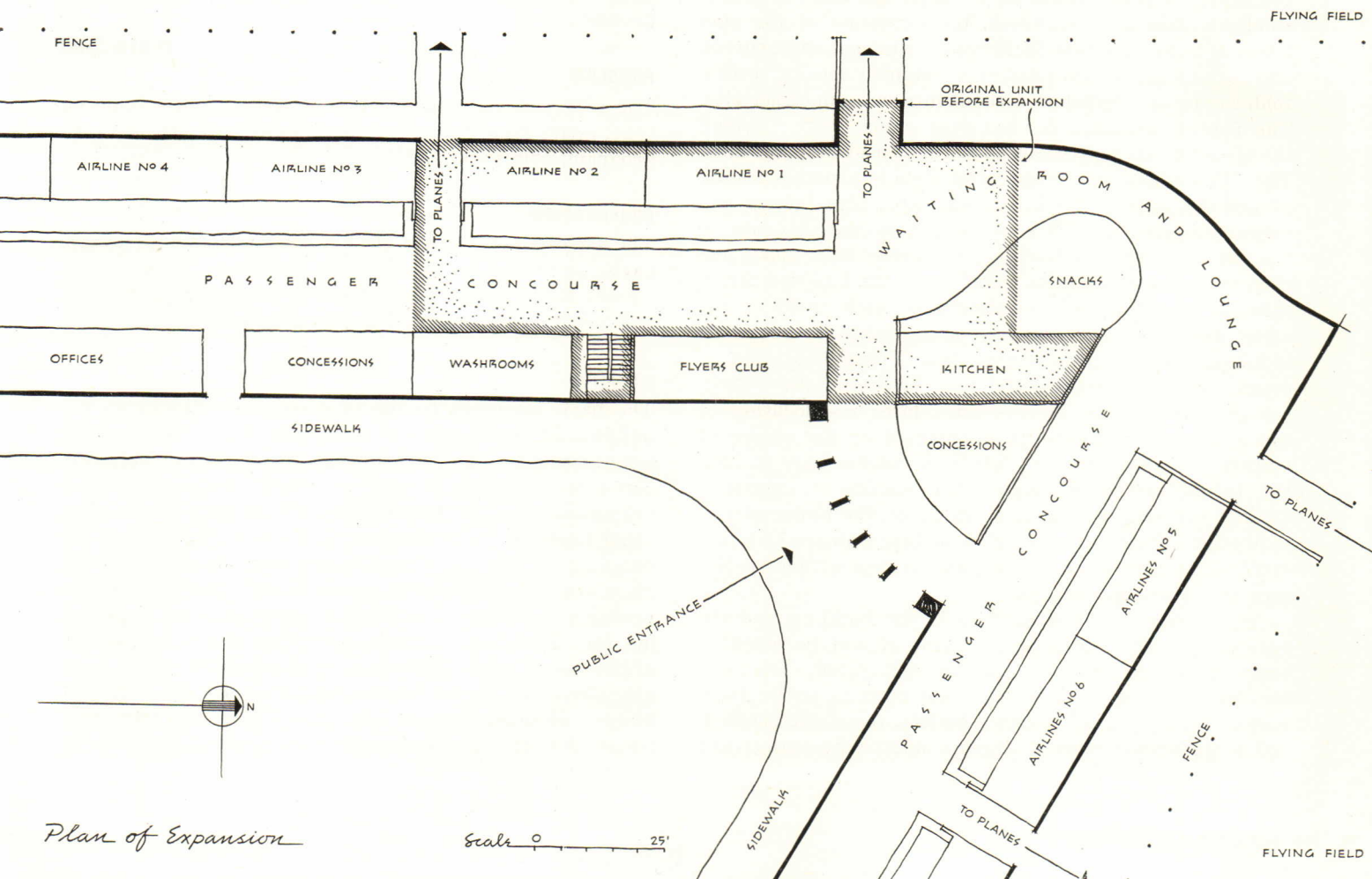
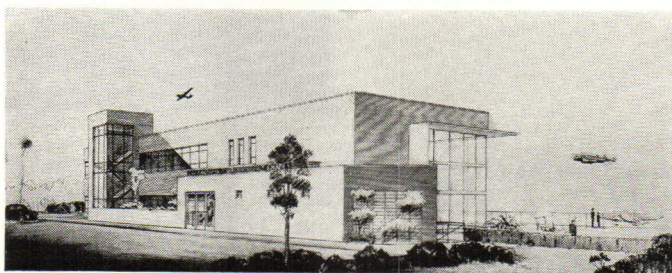
It is interesting to note that expansion provisions in the four illustrative plans assume two distinct patterns:

1. Continued repetition of basic elements constructed

in the first stage, somewhat less sensitive to adjustment to meet changing conditions, but capable of expansion to meet virtually any volume.

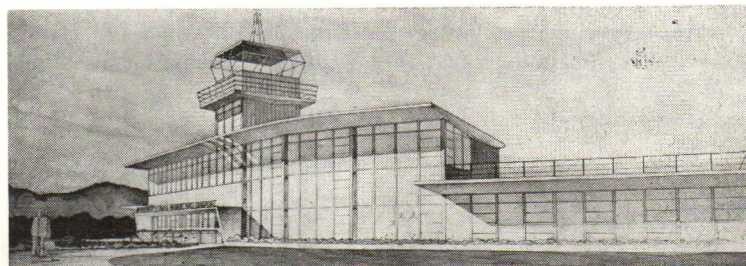
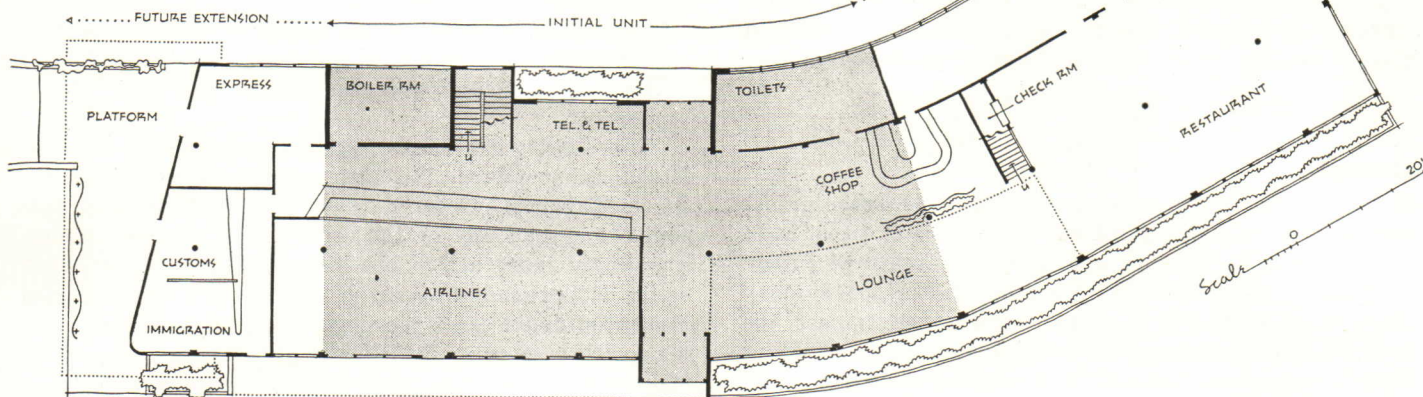
2. Repetition of initial elements and introduction of new forms in correct relationship, subject to complete flexibility in meeting future changes of criteria, but limited to volume increase in the order of 75-100 percent.

These two patterns are easily accounted for when we consider that only the Rochester plan falls in category 1., above. This port is located in a city of considerably larger population than any of the other three, and is a correspondingly more active but yet more stable port, with better background of operating experience. Thus, the real element of doubt exists more with respect to final capacity than with respect to facilities required. The other three plans reflect the more acute initial requirement for provision of minimum operating facilities to meet the first impact of traffic volumes which are probably potentially greater than indicated in the initial phase plans, but are as yet not fully developed. These plans are based more upon increase in variety of services to be rendered in the



## CRITIQUE: SMALL AIRPORT ADMINISTRATION FACILITIES

### *First Floor*



future than upon a multiplication by several fold of the facilities initially provided.

This difference in basic approach is directly reflected in plan. The Rochester terminal assumes a stable form in its first stage, to the extent that future changes within the initial envelope could be accomplished only with considerable difficulty. However, the extension of the plan laterally to provide new facilities for air mail and express, and to increase initial passenger-volume capacity several fold, can be accomplished without interruption of activity. The future provision for handling cross traffic through the air mail and express areas is a feature worthy of note. The other plans here illustrated include a planned shift of activity within the initial envelope, plus lateral and vertical expansion. This is carried to the ultimate in the initial stage at Burlington, where only space enclosure is provided by the first floor of the building structure, to be subdivided in accordance with needs of the users. Obviously, this may have undesirable repercussions if not subject to continuing control. Plans illustrated by terminals for Watertown and Islip Township are dependent in still greater degrees upon later re-allocation of space, with this possibility augmented by the choice of materials. Both repeat a pattern of column bays in both the initial and final phases, for maximum insurance against future contingencies. In effect, the philosophy is to provide a frame upon which a curtain wall can be hung, and the interior space subdivision created without reference to structural elements.

It is axiomatic that utilities to the building and the various service entrances for same should be sized to carry all future loads that can be anticipated. The need for flexibility of interior electrical runs is particularly acute. Power and convenience outlets, telephone conduit, and miscellaneous runs of empty conduit with outlets and

pull boxes, in addition to the specific services required by control tower, communications office, and weather bureau must be located to meet any eventuality. The exterior wall section of the Watertown building was designed to provide a continuous and easily accessible raceway, while floors in the operating areas conceal a complete conduit network.

### **materials:**

#### **PROBLEM**

The only general consideration imposed by the building type, apart from individual peculiarities of the accepted program, originates in the need for maximum flexibility.

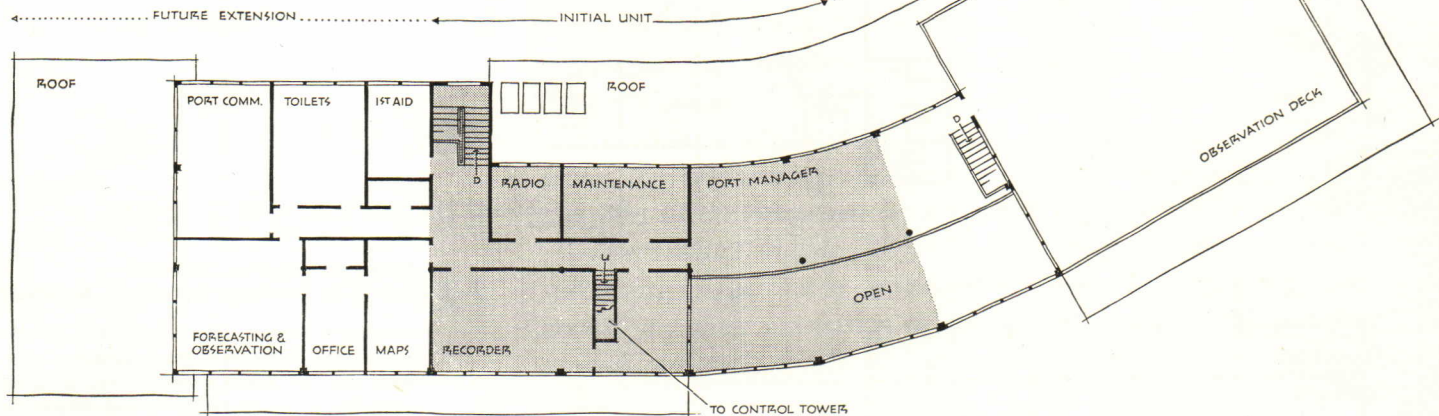
#### **OBSERVATION**

The use of steel frame, light curtain walls, and a movable partition system for areas subject to future change should receive full consideration. The use of panelized exterior wall construction may offer advantage.

#### **SOLUTION**

The basic approach to the problem of flexibility in the building at Rochester was such that the use of conventional masonry materials throughout entailed no sacrifice. The only two areas to undergo change in the future development could be treated initially as open space. The same was true at Burlington to a lesser degree, but the handling of the structural frame and the use of large glass areas, together with preconceived knowledge of the probable direction of expansion, gives at least a partial answer. However, it would seem that the very "nature of the beast" might indicate a more extensive use of movable partitions at the second floor, meeting the curtailed budget, if necessary, by the use of less expensive materials than the standard prefabricated partition systems.

## Second Floor



### Sargent, Webster, Crenshaw & Folley, Architects

In use of materials as well as in design, the Watertown terminal reflects expansion potential. Maximum flexibility is obtained by use of panelized exterior walls which can be removed or incorporated into expanded building; interior space can be subdivided without reference to structural elements. Lateral additions will provide space for express service and enlarged restaurant facilities, and for communications offices and weather bureau, now located elsewhere.

The remaining two examples show a greater preoccupation with material as an expression of the transitory nature of the initial construction phase. Metal panels and glass areas are in some instances designed for removal and incorporation in the expanded building, while masonry walls are confined to the stable core of the building. Continuation of plan in the predetermined direction becomes a simple matter. At Watertown, partitions as well as exterior walls are panelized, employing two-inch cement-surfaced fiberboard joined with splines in lieu of more expensive prefabricated systems, though the latter would prove more suitable. In the case of Islip Township, steel and glass partitions are contemplated for the base bid, with an alternate for substitution of wood studs and gypsum board.

It should be noted that the panelized exterior wall system used in the Watertown building did not result in the cost saving over conventional masonry walls that had been anticipated. An analysis after bids were received indicated actual saving per square foot of wall to be less than 15 percent, probably accounted for by the fact that the wall areas for which metal was used were small, of irregular size and shape, and complicated by flashing problems. Though possible cost saving was one of the reasons underlying the use of the aluminum siding, the additional factors of flexibility and the desire for a "dry" construction system to facilitate winter construction were of sufficient importance in themselves to justify the materials chosen.

### fees:

#### PROBLEM

Several factors inherent or more pronounced in this particular building type suggest that a six percent fee plus engineering costs is entirely inadequate:

1. Time expenditure required for development of program.
2. Necessity to carry preliminary sketches through later construction stages, often in complete detail.
3. Complicated nature of building, with little repetition of elements and consequent variety of details.
4. General unfamiliarity with the building type, and improbability that any clear-cut standards will evolve in the near future.
5. Time expenditure required by frequent conferences with client, CAA representatives, and all other using agencies.
6. Abnormal administrative and paper-work requirements imposed where federal funds are involved, exceeding even the expectancy for other federal projects.

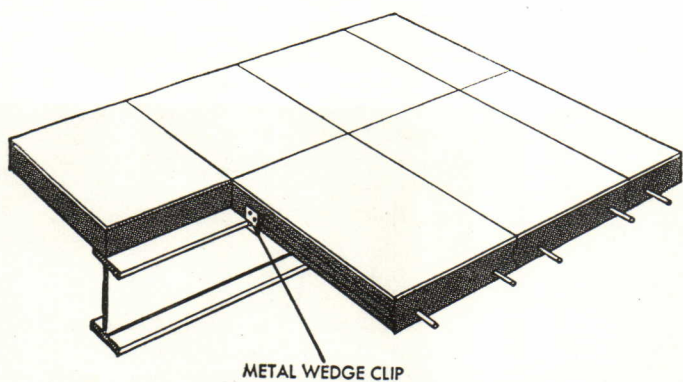
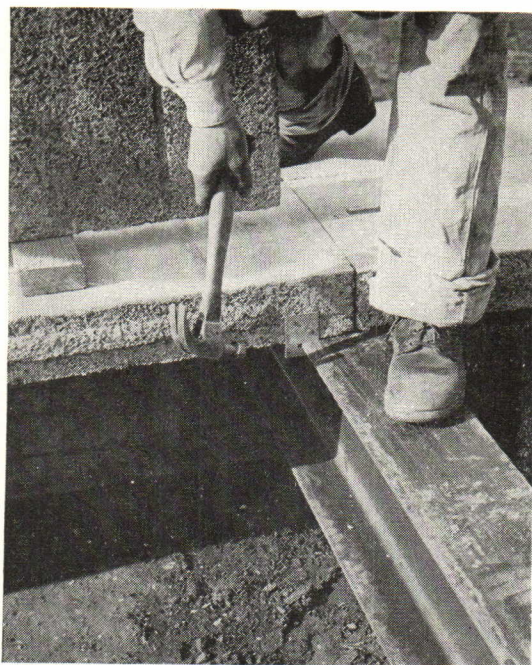
#### OBSERVATIONS

There was unanimous agreement that a six percent fee is not realistic in this instance. One of the collaborators feels that after having been through the mill once, the planning is somewhat less demanding than in the case of a hospital; another expresses the opinion that fees should be on a cost plus percentage or cost plus fixed fee basis. The writer would not be inclined to undertake a second building of this type, even with the accumulated experience, for less than seven and one-half percent, plus engineering, plus appropriate compensation for the additional preliminary planning of later stages not constructed initially.

#### SOLUTION

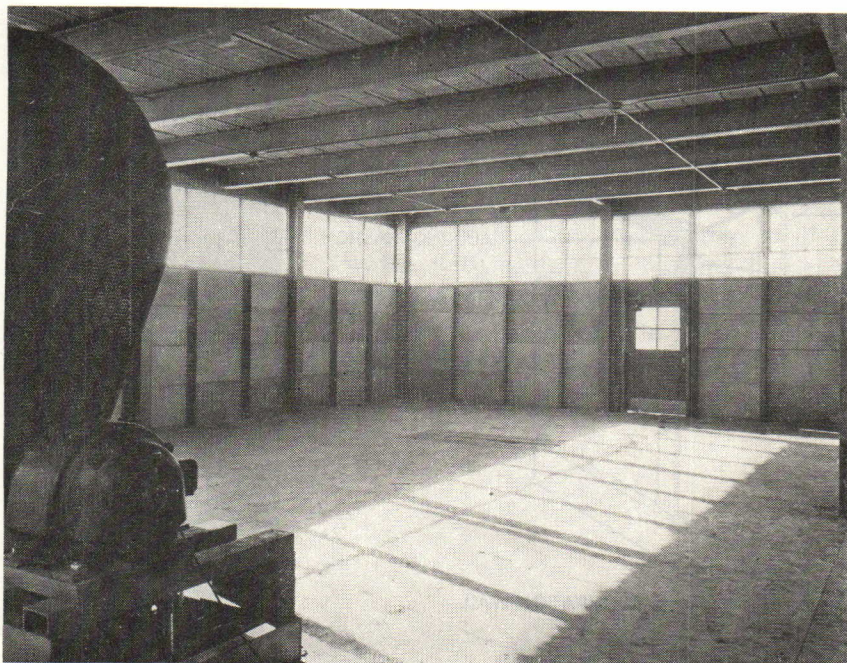
Unfortunately, a proper solution was not forthcoming. The majority of the architects herein represented held





Insulating roof slabs proved perfectly satisfactory for this job, although the designer's original skepticism resulted in steel framing which would have carried a concrete slab. Roof panels are  $4\frac{1}{4}$ " thick. Application, shown in the photographs, is by means of metal clips which grip the beam flange and secure the side of the slab.

**FACTORY, BEACON, N. Y.**



# Fireproofing Structural Steel with Vermiculite Plaster\*

Vermiculite plaster aggregate weighs only about 216 pounds per cubic yard, compared with 2,700 pounds for sand. Vermiculite plaster weighs about one-third as much as sand plaster. One inch of vermiculite plaster fireproofing with its reinforcing and supporting channels weighs approximately 4 to 5 pounds per square foot.

Vermiculite concrete aggregate weighs about 8 pounds per cubic foot. In the 1-to-6 mix recommended for floor fill (1 part Portland cement to 6 parts vermiculite concrete aggregate by volume) vermiculite concrete weighs only 24 pounds per cubic foot, compared with 150 pounds for sand concrete.

A. R. Kellar, licensed structural engineer, Chicago, recently investigated the comparative weights of various systems of floor construction and their fireproofing. The following table and illustrations give the data obtained:

The column spacing assumed was 24 feet each way. A live load of 50 pounds per square foot was employed in the design of each construction, which, with allowable reductions, resulted in a total live load of 24,450 pounds. Double beams were used as girders in all constructions to eliminate re-entrant plaster corners or angles which would be required to enclose the lower flange of deeper girders extending below the ceiling. The use of double-beam girders also cuts down story height with a saving in wall and partition materials.

In Figure 1, columns, girders, and beams are fireproofed monolithically with the sand concrete floor slab. Floor-beam spacing is 8 feet on center. The ceiling shown is for decorative purposes only.

Figure 2 shows the same framing used in Figure 1 with the monolithic fireproofing replaced with lightweight vermiculite-gypsum plaster on metal

lath. The reduction in weight of fireproofing has made possible a substantial saving in steel.

Figure 3 employs a structural frame of columns, beams, and ties, in which the ties act as a unit in a system of open-truss joists, placed 2 feet on center, which support a 2½-inch-thick sand concrete slab. The ceiling is constructed with metal lath and vermiculite-gypsum plaster.

In Figure 4, a cellular steel deck is used, supported on floor beams on 8 foot centers, with a fill of vermiculite concrete topped with a hard finish of Portland cement, troweled smooth.

The weight of the plaster fireproofing around the columns will be 16 percent or less of the weight of the material indicated in Figure 1. The weight of column steel in the various constructions will vary almost directly with the total load. It will be about 81 pounds in Figure 1, 60 pounds in Figure 2, 54 pounds in Figure 3, and 44 pounds in Figure 4.

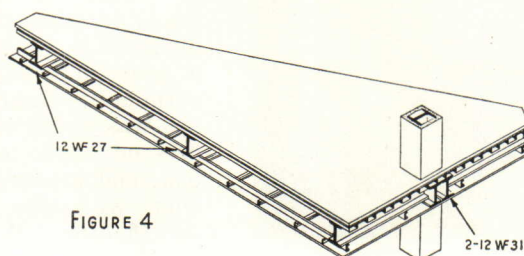
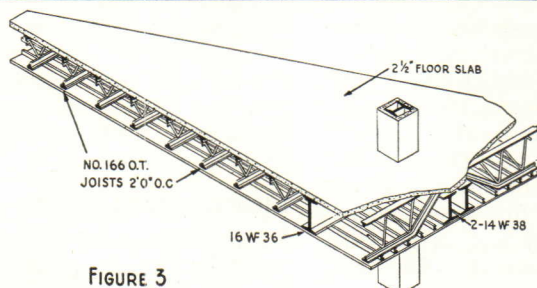
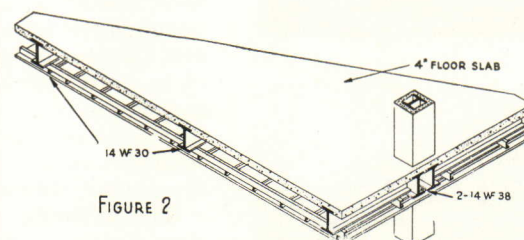
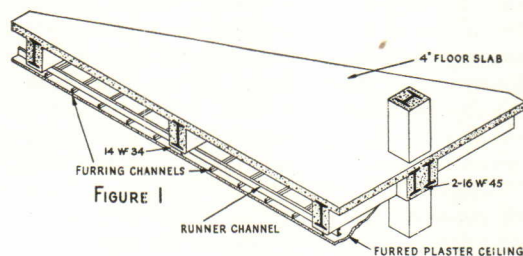
Is it possible for the architect and engineer to take advantage of this reduction in dead loads? Because of recent underwriters' fire ratings, yes.

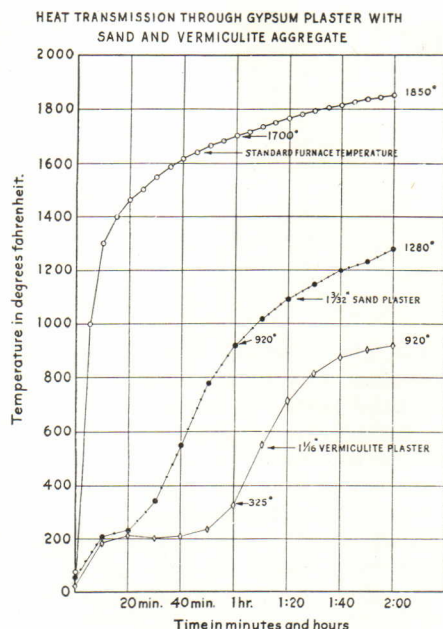
## FIRE RATINGS

In December 1939, Underwriters' Laboratories issued a fire-test report

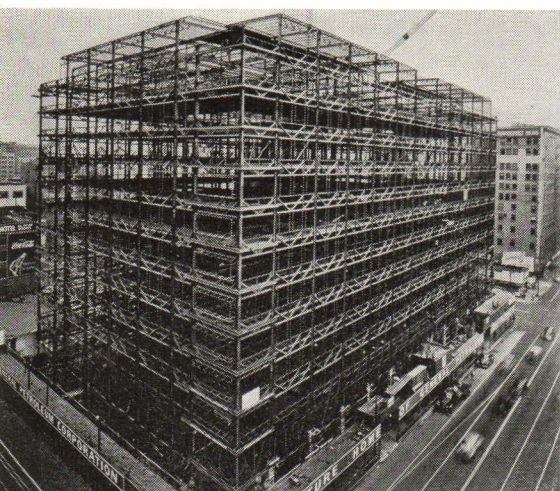
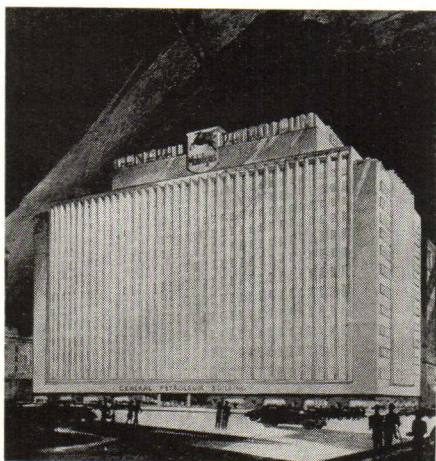
|           | Total Load | Dead Load  | Dead Load per sq ft | Lbs of Dead Load Required to Support 1 lb of Live or Pay Load | Efficiency Rating of the Floor System Live Load to Total Load |
|-----------|------------|------------|---------------------|---|---|
| Figure #1 | 81,150 lbs | 56,700 lbs | 98.5 lbs            | 2.32 lbs  | 30%   |
| Figure #2 | 60,050 lbs | 35,600 lbs | 61.7 lbs            | 1.45 lbs  | 40%   |
| Figure #3 | 54,000 lbs | 29,550 lbs | 51.3 lbs            | 1.21 lbs  | 45.3%   |
| Figure #4 | 44,000 lbs | 19,550 lbs | 34.0 lbs            | 0.80 lbs  | 55.6%   |

\*This article was prepared from data supplied to the editors by the Vermiculite Institute.





Pictured below is the General Petroleum Building in Los Angeles, Calif., Wurdeman & Becket, architects. By using vermiculite plaster fireproofing, full advantage could be taken of light-gage steel construction. Resultant economies will allow this \$7,000,000 structure to compete commercially with pre-war office buildings.



that opened a new era in the fireproofing of structural steel, and made possible the design of lighter-weight buildings. The report gave a 4-hour rating to a steel floor assembly protected by less than a 1-inch thickness of plaster. The insulating agent which made possible this high degree of fire resistance was vermiculite, a lightweight, nonmetallic mineral belonging to the mica group.

This performance established vermiculite plaster as an efficient retardant. Its effectiveness is due to the complementary physical properties of vermiculite aggregate and gypsum plaster, which are as follows:

Vermiculite plaster aggregate is incombustible. It is made by expanding controlled diameters of vermiculite ore. A chunk of crude vermiculite has about a million laminations per inch. Trapped between these laminations and within the mineral are microscopic quantities of water. When the ore is heated in an expanding furnace to temperatures around 2000F, these water molecules are released, causing the layers to separate and move apart. Expanded granules of vermiculite aggregate contain thousands of dead air cells that act as insulators; and, in addition, the shiny, golden-surfaced laminations are efficient reflectors for turning back heat.

Gypsum plaster contains chemically combined water. Upon exposure to fire, this water is released in the form of cooling steam, or water vapor, when the temperature reaches the boiling point of water (212F). The plaster tends to remain at this temperature until all the water is driven off. By retarding the rate of heat transmission into the plaster, vermiculite aggregate slows down the calcination process, so that the chemically combined water in the gypsum is released at a slower rate. The cooling efficiency is thus prolonged, and the maximum fire-resistive value obtained.

The assembly which received this first favorable rating in 1939 was a cellular steel floor with a 2-inch concrete top fill and a suspended ceiling of vermiculite plaster,  $\frac{7}{8}$  inches thick, on expanded metal lath. The plaster was a mixture of 100 pounds of gypsum to 2½ to 3 cubic feet of vermiculite aggregate. The assembly was subjected to the standard fire-endurance test, fire-hose stream test, and excess-load test in accordance with the standard fire-test specification. It carried its normal

load of 170 pounds per square foot without any evidence of distress during and after the fire endurance and hose stream tests, and during the cooling and drying period of 20 hours. After the 20-hour period, the assembly carried double its safe normal load without distress.

Official fire ratings for other types of assemblies incorporating vermiculite fireproofing became available in 1942, when the National Bureau of Standards report BMS-92 was issued. This report gave a 3-hour rating to a steel plate floor with 2½ inches of sand concrete topping and a ceiling of  $\frac{3}{4}$  inch of vermiculite plaster on metal lath. The same assembly was given a 4-hour rating when protected with 1 inch of vermiculite plaster. A 2½-hour rating was given to a steel joist floor with 2 inches of sand concrete fill and  $\frac{3}{4}$  inch of vermiculite plaster on metal lath; a 3-hour rating when the thickness of concrete was increased to 2½ inches; and a 4-hour rating when the thickness of vermiculite plaster was increased to 1 inch.

A number of fire tests were conducted subsequently at the Underwriters' Laboratories, Chicago. In 1944, a 4-hour rating was given to a steel "I" beam supporting a floor with 2 inches of vermiculite concrete fill and a suspended ceiling of 1 inch of vermiculite plaster on metal lath. A 1-hour rating was given to a load-bearing wood stud partition with  $\frac{3}{4}$  inch of vermiculite plaster on metal lath applied to both sides of the partition.

In 1947, Underwriters' Laboratories issued a 4-hour rating for a suspended ceiling of 1 inch of vermiculite plaster on metal lath as protection for steel construction, including beams, girders, etc.; also, a 3-hour rating for steel columns protected with 1 inch of vermiculite plaster on metal lath, with the lath spaced 1¼ inches from the column, and the space behind it on flange faces filled with plaster.

These ratings have been included in many city and state building codes, and are being incorporated in others. The assemblies which have received the ratings can thus be detailed and specified by architects and structural engineers, with assurance of approval.

#### REDUCTION IN DEAD LOAD

Of equal interest to architects and structural engineers is the reduction in dead load and steel tonnage that

FIREPROOFING WITH VERMICULITE

vermiculite plaster fireproofing makes possible, particularly when lightweight vermiculite concrete is used as a floor fill.

How the reduction in dead load (indicated in four test panels at the beginning of this article) works out in actual practice in a multiple-story structure is shown by the original building in which vermiculite plaster and vermiculite concrete fireproofing were used: the Mercantile Bank Building, Dallas, Texas; Walter W. Ahlslager, architect. It is a steel frame and brick-enclosed structure with 35 stories above grade and 2 stories below grade. The street-level floor contains retail stores, a lobby, and a driveway for customers to make deposits without leaving their automobiles. The main banking room occupies the 2nd floor. Above this are 11 typical office floors. At the 14th floor level, the floor area is reduced in size to form a tower which extends upward for 22 stories, 17 of which are office floors, the remainder being used for elevator machinery, house tanks, etc., and an observation room.

At the time the building was designed (1941), restrictions in the use of steel for building construction were being contemplated by the government. It was important to conserve as much steel as possible while maintaining a safe structure. Test data on the use of vermiculite plaster protection for primary beams and columns was not then available, but the National Bureau of Standards, when consulted, estimated that a 2-inch thickness of vermiculite plaster would give the 4-hour rating required by the Dallas code; and this was approved by the City Building Inspector.

The following summary shows the savings in weight, structural steel, and money effected by the use of vermiculite plaster and vermiculite concrete floor fill:

| Item  | Weight Concrete   | Weight Vermiculite | Reduction in Dead Load |
|---|-------------------|--------------------|------------------------|
| Floor area  | 68#/sq ft         | 25#/sq ft          |                        |
| 400,000 sq ft   | 27,200,000# total | 10,000,000# total  | 17,200,000#            |
| Beams   | 225#/ft           | 12#/ft             |                        |
| 41,985 lin. ft  | 9,446,625# total  | 503,820# total     | 8,942,805#             |
| Columns   | 389#/ft           | 25#/ft             |                        |
| 14,082 lin. ft  | 5,477,898# total  | 352,050#           | 5,125,848#             |
| Total Floors, Columns & Beams   | 42,124,523#       | 10,855,870#        | 31,268,653#            |
| Total Reduction in Dead Load  |                   |                    | 15,634 tons or 74%     |
| Total Structural Steel Required: (Using Vermiculite Concrete over Cellular steel floors and fireproofed with Vermiculite Plaster) |                   |                    | 6,280 tons             |
| Structural Steel Saved:   |                   |                    | 1,880 tons or 30%      |
| Economy: 1,880 tons at \$125 (1941 prices)  |                   |                    | \$235,000              |

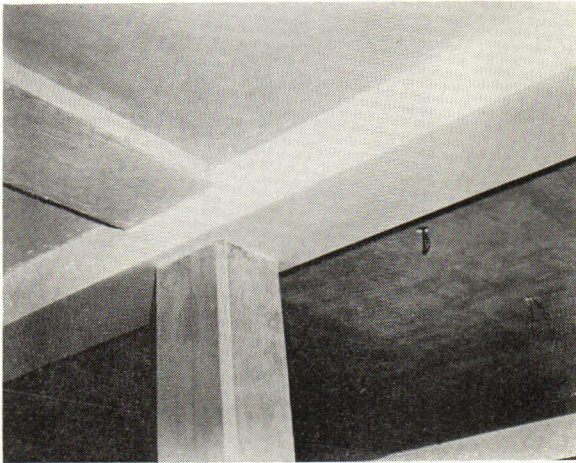
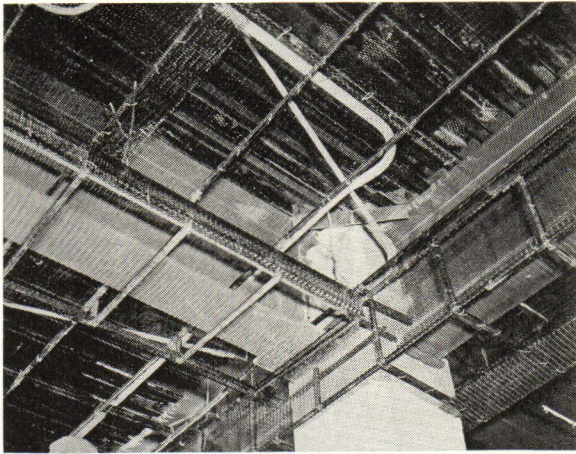
It should be noted that this landmark in lightweight, fireproof construction would not have been possible without the cooperation of Dallas building code officials. They, however, have always displayed a marked willingness to make use of Section 302 of their building code, "Alternate Materials and Types of Construction," so as to allow the use of new materials and constructions not covered by the code, when such materials are backed-up by the necessary test data.

The superiority of 2-inch solid partitions of vermiculite plaster, compared with masonry, has been recognized for light-occupancy buildings, such as hotels, hospitals, and apartment houses, where the total floor area is considerably subdivided into relatively small rooms. Here, the loss of space occasioned by heavy, thicker-than-necessary partitions and larger-than-necessary columns can become a serious matter; and a fireproofing medium which is light, thin, and economical is an obvious solution.

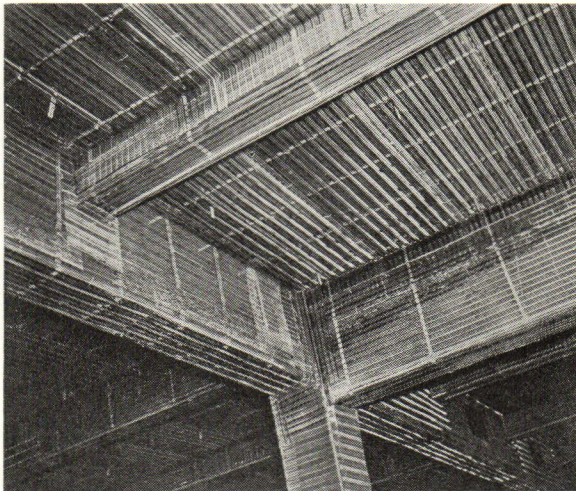
TENSILE STRENGTH

It has been said that vermiculite plaster has less tensile strength than sand plaster. Actually, the difference is small. Laboratory tests show that sand plaster, mixed in the proportion of 100 pounds of gypsum plaster to 200 pounds of sand (2 cubic feet) has a tensile strength of 220 pounds per square inch; in the proportion of 1-to-3, 160 per square inch. Vermiculite plaster, mixed in the proportion of 100 pounds of gypsum plaster to 2 cubic feet of vermiculite aggregate, has a tensile strength of 150 per square inch; in a 1-to-3 mix, 100 per square inch.

This difference in tensile strength is likely to be less under actual job conditions. Better control in mixing can be exercised with vermiculite aggregate, because a bagged material



Furring around beams and girders, and for suspended ceiling, are shown before and after vermiculite plastering in the photos above of the Register and Tribune Building in Des Moines, Iowa, designed by Architects Brooks and Borg. Preparation for closer fireproof plastering is shown below, in the John Hancock Insurance Co. Building in Boston, Mass., Cram & Ferguson, architects.





is easier to proportion, and the plaster is less apt to be mixed lean. Vermiculite aggregate is uniform in size and quality and is free from foreign matter. All these factors have a bearing on the strength and uniformity of the finished plaster.

Vermiculite plaster is resilient and will absorb considerable shock or impact without shattering. Nails and picture hooks can be driven into it without causing unsightly cracks. It can be readily cut, and the carpenter's finish work is consequently made easier.

#### **COST—AVAILABILITY**

Plasterers like vermiculite aggregate because of its easy application and light weight. Vermiculite plaster does not have a tendency to pull loose and fall off before it has a chance to set—a decided advantage to the plasterer on ceiling work. It is mixed and applied like ordinary sand plaster, and any plasterer who can apply sand plaster can apply vermiculite plaster (see photos at left). Vermiculite aggregate eliminates the labor of breaking up and thawing out a frozen sand pile in winter. There is no waste, and on small jobs the necessary number of bags can be thrown into the back of a passenger car and taken out with the crew. The aggregate is so reasonable in cost that its advantages make it desirable for all types of plastering, however low the cost of sand may be.

During the past five years, the vermiculite industry's production of vermiculite plaster and concrete aggregates has increased enormously. The supply of crude ore is virtually unlimited, and constant improvements have been and will continue to be made in mining, milling, and processing equipment and technique. The postwar resumption of industrial and commercial construction that must be fireproofed, and the light weight, economy, and dependability of the material call for even greater production; the industry expects to be able to meet the demand.





## THIS MONTH'S PRODUCTS

### air and temperature control

**Model A Ventura Propeller Fan:** newly added to line of industrial, commercial, home ventilating equipment. Square mounting panel, easily installed; streamflow motor enclosure; terminal box without exposed wiring. American Blower Corp., Fisher Bldg., Detroit, Mich.

**Type F Convector-Radiators:** for use with steam and gravity or forced hot-water systems; steel cabinets with removable front panel, designed for free-standing or semirecessed installations; heating elements, with copper tubes and aluminum fins, can be purchased without cabinet for use where concealed radiation is specified. Fedders-Quigan Corp., 57 Tonawanda St., Buffalo, N. Y.

**Hydrotherm Combination Unit:** welded steel expansion tank and hot-water supply system; simple controls permit use of combination system for convector and radiant-heating units; floor space required only 3' x 4'. Hook & Ackerman, Inc., 18 E. 41st St., New York 17, N. Y.

**Six Automatic Gas Controls:** Time-Modulating Thermostat; Plug-in Diaphragm Valve; Electronic Combustion Safety Control System; Electronic Modulator; Honeywell "Powerpile" Self-Generating Control System; Plug-in Chronotherm. Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., Minneapolis, Minn.

**Quiet-Seal Convector:** designed specifically for one-pipe steam; built-in damper for finger-tip modulation of heat delivery, eliminating "on-and-off" control valves. Available in same sizes as regular convector line. Modine Mfg. Co., Racine, Wis.

**Sno-Breze "Junior" Evaporative Cooler:** small, compact unit, for installation in practically any type of window opening; disperses 800 cu. ft. of filtered, washed cool air per min. Palmer Mfg. Corp., Phoenix, Ariz.

### construction

**Chem-Brick:** new, all-purpose brick (silica based) for residential, commercial buildings; meets A.S.T.M. grade SW specifications for first-quality brick; low laying cost due to size uniformity. Detroit Brick & Block Co., 95 St. Jean, Detroit, Mich.

**Stainless Steel Nail:** for face-nailing asbestos shingles to gypsum and insulation sheathing; two self-clinching legs lock sheathing material to shingle. Available in two sizes. Elastic Stop Nut Corp. of America, 2330 Vauxhall Rd., Union, N. J.

### doors and windows

**Nu Jamb Spring Hinge:** requires no hanging strip; single- or double-acting types available in button or ball tips, in sizes from 3" to 8". Milwaukee Stamping Co., 851 S. 72nd St., Milwaukee, Wis.

**Ventilating Window:** stainless steel construction, for glass block openings; 100 percent double weathering on head, jamb, sill; maximum corrosion resistance; may be equipped with tubular stainless steel screen frame. Modern Electric Laboratory, 6131-33 S. Wentworth Ave., Chicago 21, Ill.

**Vita Automatic Window:** electrically operated, double-glazed unit; disappears into wall at flip of switch, carrying screen into place as it moves; adaptable to any architectural style. Vita Automatic Windows, Smithtown Branch, L. I., N. Y.

### electrical equipment, lighting

**Residence Panels:** improved 4- and 6-circuit units, available in flush or surface mounting types; no screw heads show when one-piece front is closed; knockouts on sides and back; plaster adjustment on flush mounting models. Federal Electric Products Co., 50 Paris St., Newark, N. J.

**Guthlite, Jr.:** radiant fluorescent fixture; diffuse aluminum louvers provide comfortable shielding and low brightness at normal angle of view; easily opened hinge louvers may be removed for lamp and starter changes. Edwin F. Guth Co., 2615 Washington Ave., St. Louis, Mo.

**Homecraft Sidewall Fixture:** employs Westinghouse 18w Circlarc bulb (equivalent to 60w incandescent light); applicable to wide variety of installations. Homecraft Electronic Products, 1208 S. Kedzie Ave., Chicago 23, Ill.

**Surface-Mounted Fluorescent Fixture:** streamlined over-all contour; reflector works with lens and refractor to eliminate ceiling shadows and to light up ceiling; 90 percent downward illumination; unit can be used singly or in continuous runs. Leader Electric Co., 3500 N. Kedzie Ave., Chicago 18, Ill.

**Shallow Recessed Troffers:** adaptable to any type of ceiling; hanger yoke for ease of assembly and installation; available in 1-, 2-, 3-lamp units, unshielded, louvered, and Albalite-glass shielded; 4- and 8-ft. lengths. Sylvania Electric Products, 500 Fifth Ave., New York, N. Y.

**Electrical Conduit:** for wide variety of industrial operations. Neoprene-covered, flexible-shielding metal eliminates any danger of wiring damage by action of oil or grease. Techniflex Corp., 55 Jersey Ave., Port Jervis, N. Y.

**Series 300 Disconnecting and Lowering Hanger:** for use with twin or triple unit combinations of mercury and incandescent luminaires, as well as for similar straight incandescent units; facilitates maintenance and repair operations. Thompson Electric Co., 1101-59 Power Ave., Cleveland 14, Ohio

**#984 Torkmaster:** all-purpose time switch for control of window lights, signs, oil burners, coal stokers, intermittent pumping mechanisms, all types of indoor and outdoor safety lights. Heavy-duty construction; precision telechron motor and improved gearing claimed to give split-second performance without regular attention. Tork Clock Co., Mount Vernon, N. Y.

### finishers and protectors

**Chem-Rem:** acid- and alkali-resisting black paint for interior and exterior metal, masonry, wood; recommended for areas where smoke and chemical fumes are prevalent. Speco, Inc., 7308 Associate Ave., Cleveland 9, Ohio

**Rust-O-Primer:** vinyl-based, quick-drying wet primer applicable over wet or dry, clean or rusted metal, providing hard, paintable foundation for any type of paint. Wilbur & Williams Co., Greenleaf & Leon Sts., Boston 15, Mass.

### insulation (thermal, acoustic)

**Cellulite:** cotton insulating "blankets" for soundproofing purposes; noise reduction coefficient of 2-in. blanket is 70 percent; recommended for office and apartment buildings, hospitals, radio stations, and industrial plants. Gilman Bros. Co., Gilman, Conn.

### sanitary equipment, water supply, drainage

**"WU" Series Tankless Heaters:** for use with circulating pump on boiler water side. Baffling arrangement insures complete wiping action along entire length of tube bundle; claimed to have greater gallonage per square foot of heating surface than any similar heater now marketed. Bell & Gossett Co., Morton Grove, Ill.

**Perm-O-Seal:** stainless steel preformed molding, for installation with flat rim, built-in kitchen and lavatory fixtures, providing watertight seal between linoleum, wood, composition, or other counter top material and fixture. Briggs Mfg. Co., 3011 Leuschner Ave., Detroit, Mich.

**Boiler Feed Pumps:** four new sizes added to line of centrifugal pumps, adding to range of possible applications for this type of service. Worthington Pump & Machinery Corp., Harrison, N. J.

**Solids Interceptor:** prevents solid fragments in waste water from flowing into building drainage lines; designed for easy, quick cleaning. J. A. Zurn Mfg. Co., 1801 Pittsburgh Ave., Erie, Pa.

### specialized equipment

**All Aluminum Conveyor:** for increased flexibility in package handling; will carry items weighing up to 50 lbs. at rate of 30 per min.; any number can be combined into radially coupled units for carrying packages in straight line, around corners, over obstructions, or onto elevating conveyors. George Haiss Mfg. Co., Inc., Div. of Pettibone Mulliken Corp., 381 Canal Pl., New York 51, N. Y.

**Compact Electric Kitchen Range:** measures 42" high, 21" wide, 25 1/8" deep; four surface units, full size twin unit oven, high speed broiler; cabinet and steel frame finished in porcelain. Frigidaire Div., General Motors Corp., 300 Taylor St., Dayton 1, Ohio

**Visicall System:** silent, visual paging service for installation where noise conditions are extreme and audible signals cannot be heard, or where loud speakers are inadvisable, such as in certain retail stores, executive offices, hospitals, etc.; low-cost wiring, low-wattage bulbs, minimum upkeep. H. R. Kirkland Co., Morristown, N. J.

**Kitchenaid Cabinet Sinks:** standard 54 in. model added to line; two drawers, three large compartments in all-steel, baked white enamel undersink cabinet; porcelain enamel sink top, single bowl, two drainboards. 42 in. standard Kitchenaid cabinet sink available again; double-bowl sink with sliding drainboard to cover either bowl, large compartment with double doors. Mullins Mfg. Corp., Warren, Ohio

**Handeasy:** new wall washing machine, operated mechanically, recommended for rough surfaces, such as brick, corrugated metal, etc.; controlled moisture device eliminates dripping. Quaker Maintenance Co., Inc., 124 W. 18th St., New York 11, N. Y.

**No. 60 Dimensioner Template:** for use in all phases of drafting; symbols and sizes conform to standard drafting-room practice; made of cellulose nitrate, size: 4" x 3 1/4". Rapidesign, Inc., P. O. Box 592, Glendale, Calif.

**Smoothedge Carpet Gripper:** carpet anchoring device made of plywood strips with steel pins to penetrate carpet warp from underside; can be attached to all floor surfaces. Roberts Co., 1536 N. Indiana St., Los Angeles 33, Calif.

**Store Fixture Models:** moderately priced, accurate, miniature store fixtures (counters, display cases, etc.); can be arranged on planning table to create variety of layouts for contemplated modernization or new building project. Size scale: 3/4"=1'. Stark Industrial Models, 95 Jane St., New York 14, N. Y.

**Electronic Smoke Control System:** combined Walter Kidde Co. smoke detector and exhaust system for fire-protection purposes, developed from exhaust water-spray system devised jointly in 1947 by Westinghouse Electric Corp., Otis Elevator Co., and Grinnell Co., Inc. Walter Kidde & Co., Belleville, N. J.

**Armstrong Floor Covering:** 55 new patterns added to line of linoleum, rugs, and tile. Also improved greaseproof asphalt tile, for installation in residential and commercial kitchens, butcher shops, filling station offices; resists high-octane aviation gasoline, meat fats, oils; completely restyled line of 7 colors. Armstrong Cork Co., Lancaster, Pa.

**Heavyweight Shingle:** asphalt construction; weight: 290 lbs. per square; features thickness of butt (approximating slate) and triple coverage; coarse granule surface adds durability. Bird & Son, Inc. East Walpole, Mass.

**Ceramo:** asbestos cement siding again available; density of ceramic-coated surface said to prevent infiltration of moisture and dirt; standard 12" x 24" shingle size in wave line, straight line, or thatch butt pattern. Philip Carey Mfg. Co., Lockland Station, Cincinnati 15, Ohio

**Chapco Board:** resin-impregnated hardboard, high in moisture resistance and flexural strength; may be sawed, planed, drilled, nailed, or glued; recommended for dry-wall, flooring, sheathing, cabinet work, and paneling. Chapman Mfg. Co., Corvallis, Ore.

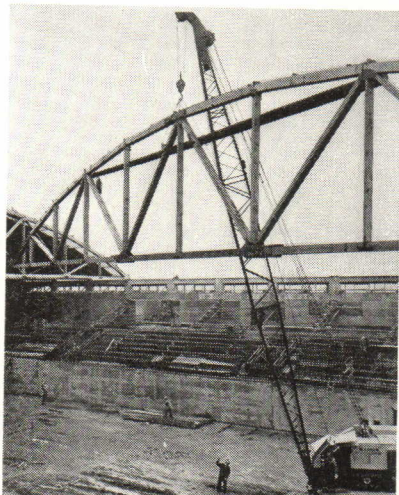
**Vinylite Sheetting:** stitchless, quilted, plastic material with wide range of decorative applications in fields of wall covering and upholstery; comes in patterns resembling leather, shark-skin, taffeta, or moire. Jason Corp., Hoboken, N. J.

### traffic equipment

**Motorstair:** single-file moving stairway, more massive in appearance and quieter in operation than first model brought out two years ago; metal moving handrail levels off at lower landing, runs parallel with level steps at bottom as well as top of stairway. Capacity: over 5000 people per hour. Multiscope, Inc., Coffeyville, Kan.

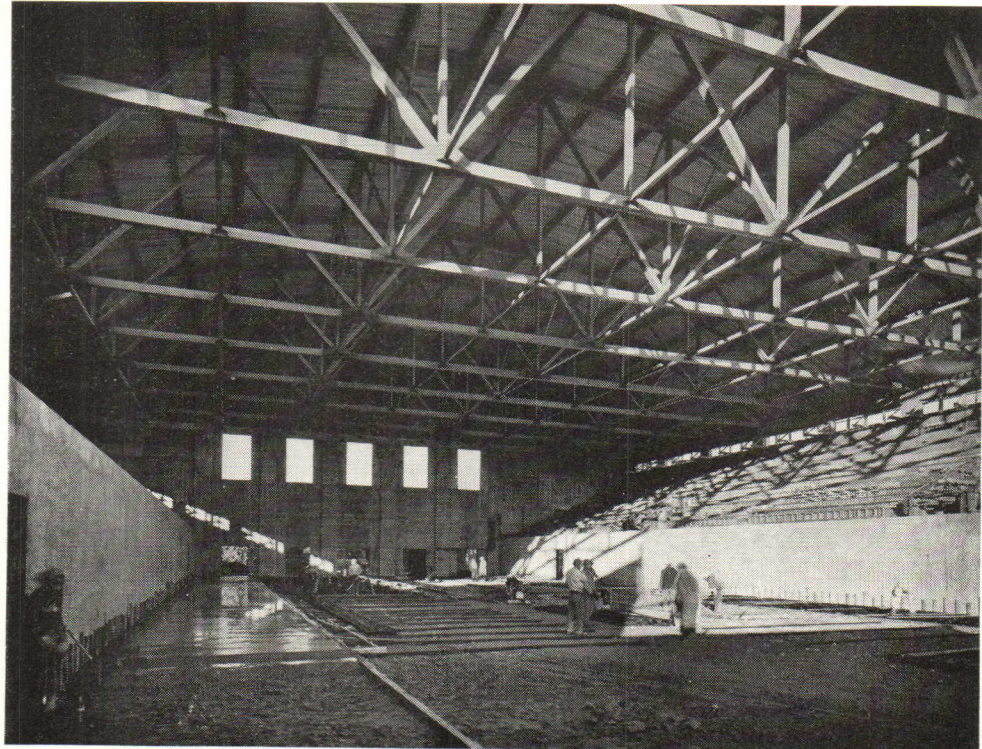


## PRODUCTS



The Memorial Field House for the College of Puget Sound, in Tacoma, Washington, is spanned by 168-foot wood trusses. The architects—Mock & Morrison—and the engineers—Smith & Murray—both of Tacoma, planned a building which would be free of intermediate supports for its full width. The solution was use of Monocord trusses fabricated by the Weyerhaeuser Timber Co.

Truss lumber was cut to pattern at



### WOOD TRUSS, prefabricated, field-assembled, raised as unit

the Weyerhaeuser plant, and sent to the construction site packaged. Assembly from the packaged units on the site required about a day for each truss. The trusses—largest yet to be raised as complete units—were then lifted by a mobile crane with a 75-foot boom (an 80-foot telephone pole acted as stiffener for the crown members during lifting), “walked” to the final location, and spotted on bolts already in place on the wall.

#### The Trusses

All structural members are wood. Technically designated by Weyerhaeuser as a Monocord bow-string type, the truss uses steel gussets and splice plates, with Teco bolted connectors (Timber Engineering Co.). Stress-grade Douglas fir was used. The lower chord consists of 6 by 12 material, double end posts of the curved upper chord are 6 by 16, and other members are 6 by 14's. The web consists of 4", 6", and 8" members.



### NEW HEATING UNITS announced

During the last month, a number of announcements have come to our attention, indicating new products, or improved products, in the field of heat-source units. For the information of designers and specifiers, we list some of them herewith.

Mor-Sun pressed steel forced warm-air furnaces are available in new models in sizes up to 175,000 Btu. Designed for either gas or oil as fuel, they are factory assembled and shipped as packaged units. Manufacturer is Morrison Steel Products, Inc., Buffalo, N. Y. (Figure 1)

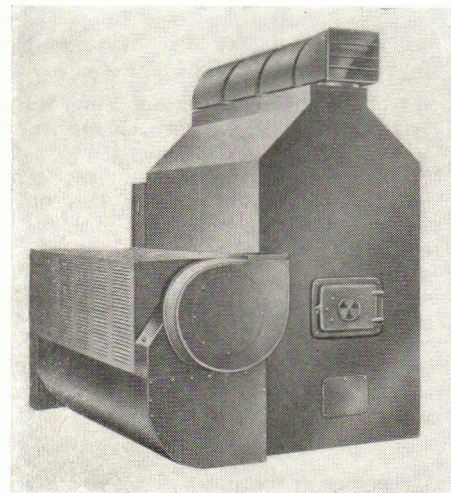
A new Dravo heater, for larger installations, will be available for early fall delivery. It is designed for 1,250,000 Btu or 1,500,000 Btu per hour capacity, and its feature is easy conversion from coal-fired use to firing with gas or oil. Combustion chamber is stainless steel; operation is based on warm-air recirculation principle. It is made by Dravo Corp., Pittsburgh, Pa. (Figure 2)

Three new Williams Oil-O-Matic fur-

naces are announced: Model 70, 70,000 Btu; Model 10A, 100,000 Btu; Model 15A, 150,000 Btu. The two smaller models have smoke outlets at the base of the heat exchanger, causing a hot-gas turbulence which the manufacturer calls “vertical counterflow.” Illustrated (Figure 4) is Model 15A. Manufacturer is Williams Oil-O-Matic Division, Eureka Williams Corp., Bloomington, Ill.

A new Gillen oil-burning furnace provides 80,000 Btu output. Constant warm-air circulation through a forced-draft system is accomplished by means of a three-stage flame (the lowest stage is a modulated pilot) controlled by a Mercoid thermostat. It is delivered complete, 25 inches wide. Manufactured by J. L. Gillen Co., Dowagiac, Mich. (Figure 5)

A new flat-top floor furnace provides 57,000 Btu input, burns natural, manufactured, or liquefied petroleum gas. It is designed for suspension beneath the floor, uses 16-gage steel on combustion chamber, 2-gage steel on radiators.



Made by Holly Manufacturing Co., Pasadena, Calif. (Figure 6) This manufacturer also makes a wall-mounted heater which fits between studs and provides 25,000 Btu.

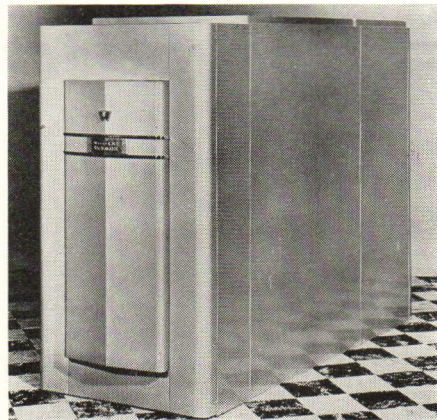
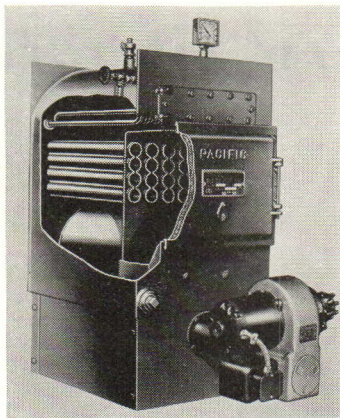
Another wall heater, gas-fired, makes use of radiant principles as well as convection. It comes in three sizes, has a baked-on enamel finish, requires only gas and vent connections. It is made by Bryant Heater Co., Cleveland, Ohio. (Figure 7)

The Mueller Modular Furnace recognizes the principles of modular coordination by providing additional parts—a basic gravity hot-air furnace, a section which converts this to gas- or oil-fired forced circulation, and finally a section that provides a cooling unit. The manufacturer is L. J. Mueller Furnace Co., Milwaukee, Wis.

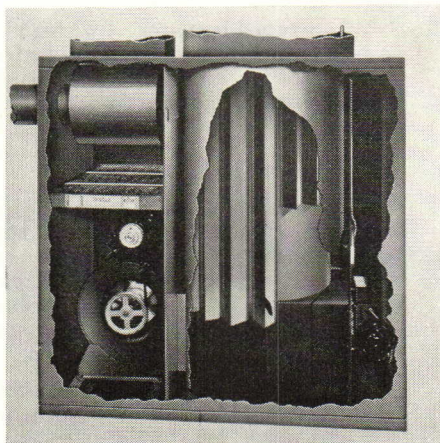
A residential unit, oil-burning, adaptable to steam or hot-water systems, is announced by United States Radiator Corp., Detroit, Mich. (Figure 3)

U. S. Radiator also announces two

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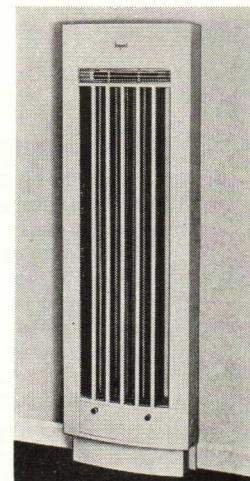
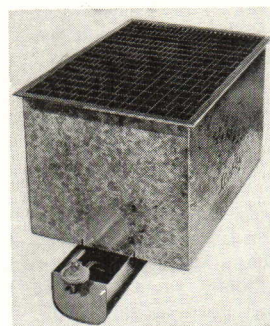


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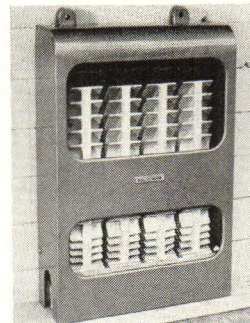
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new unit heaters, designed for either steam or hot-water systems. Broad blade fans, rubber-mounted motors, are features. One type is for horizontal, the other for vertical mounting.

A product called Minute Smokeless Furnace is designed to burn coal more efficiently, by utilizing both the gas and the coke that is formed as fuel. From 40,000 to 200,000 Btu, it is compact and is reported to be extremely efficient. Made by Worsham Co., Inc., St. Louis, Mo.

Finally, a specialized piece of equipment is the Electromode Explosion-Proof Heater, designed for use in hazardous locations. It is all-electric, and uses a cast-aluminum safety grid which allows convection, and a nickel-chromium resistor-wire heating element, completely sealed. It is approved as complying with Underwriters' Laboratories requirements for Class 1, Group D, Hazardous Locations, Manufacturer: Electromode Corp., Rochester, N. Y. (Figure 8)

8





★ *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

1-240. **The Axeman-Anderson Anthracite**, 8-p. illus. bulletin on boiler-burner heating unit using anthracite fuel; automatic overfeed stoking; radical design allows small amounts of anthracite to burn rapidly in small combustion areas, thus producing heat with highest efficiency. Description, operation, capacities and dimensions, diagrammatic views. Axeman-Anderson Co.

★ 1-241. **Mechanical Coal and Ash Handling**, AIA 30-G, 16-p. illus. booklet giving suggestions on how to cut small boiler-plant costs by mechanical coal and ash handling. Layouts, estimated costs, photos, charts, drawings. Bituminous Coal Research, Inc. (40 cents per copy; make check or money order payable to Bituminous Coal Research, Inc.)

1-242. **Scotch Boilers**, AIA 30C-1 (Bul. 8-B), 4-p. bulletin on line comprising 12 sizes ranging in capacity from 10 to 180 hp.; 1400 to 25,500 sq. ft. steam radiation; no casing needed, easily insulated. Design features, ratings, dimensions and details. Brownell Co.

1-243. **Carrier**, AIA 30-F-2, 35-i-4, 30-F-22, nine booklets on compressors, condensers, industrial and marine refrigeration, air-conditioning equipment. General, detailed information, installations, engineering data, applications, photos, psychometric charts, drawings. Carrier Corp.

1-244. **Weather Control** (Tech. Bul. 1, Jan. 1949), 8-p. bulletin on double-switch thermostatic control for radiant-heating systems. Application data, schematic diagrams. Sarcotherm Controls, Inc.

1-245. **Presenting the Warden** (W3-3M-84/11R), 4-p. pamphlet describing two shut-off valves for high- and low-pressure applications. Operating features, table of weights and dimensions, diagrams. Security Valve Co.

1-246. **Williams Oil-O-Matic Winter Air Conditioner**, three loose sheets on three furnace-burner models providing automatic heat, humidification, and air fil-

tering; ratings: 70,000; 100,000; and 150,000 Btus. General information, construction data, cutaway views. Williams Oil-O-Matic Div., Eureka Williams Corp.

1-247. **Strato-Limator**, 4-p. folder on low-cost air circulator thermostatically controlled for summer-winter operation. Features, applications, specifications. Wilster, Inc.

## CONSTRUCTION

3-52. **Cemex**, two loose sheets describing rigid type, incombustible, structural, lightweight building unit composed of wood fiber chemically treated and coated with Portland cement binder. Features, types, sizes, recommended applications. Cemex Corp.

★ 3-53. **Grade Use Guide** (Section II, File 2B2, Sheet 2-1148), new, revised, 4-p. guide sheet giving yard grades of redwood lumber, recommended grades for building construction, farm and garden uses. Tables of standard net sizes. California Redwood Assn.

3-54. **Stores Modernize With Marble**, AIA 22-A, 12-p. illus. bulletin containing recommendations for the use of marble in commercial buildings. Advantages, typical installation photos, description of characteristics, finishes, dimensions, application data, details. Marble Institute of America, Inc.

★ 3-55. **Specifications for Standard Grade Granite**, AIA 8-B-3, 4-p. folder, for inclusion in architect's specifications for any job. Index. National Building Granite Quarries Assn., Inc.

3-56. **Portite**, 4-p. illus. folder describing advantages and properties of non-toxic liquid admixture for use in concrete, cement plaster, mortar, precast concrete units, cement grout, etc. Laboratory test results, photos. Hopper Products, Inc.

## DOORS AND WINDOWS

4-175. **Bayley**, 1949 (APW 49), 6-p. illus. booklet on aluminum projected windows for all types of building structures; designed with extra deep sections to accommodate double glazing. Advantages, short specifications, typical units, sections, glass sizes. William Bayley Co.

4-176. **Steel Windows and Doors**, AIA 16E1 (Cat. P-47), 29-p. illus. catalog describing new modular types and sizes,

as recommended by the Metal Window Industry and American Standards Assn. Recommended layouts, installation details, specifications, photos, drawings, index; also window hardware. Bogert & Carlough Co.

4-177. **Floating Doors For Your Modern Home**, 4-p. illus. folder on new, noiseless sliding door, suspended by steel scissor mechanism, using neither tracks at bottom nor top hangers. Description, advantages, sections and details diagram. Dorflo Mfg. Co.

4-178. **Awning Windows in Wood**, AIA 19-E-1 (Cat. 82), 4-p. folder and three loose sheets illustrating construction and installation details; specifications, sizes, features. Gate City Sash & Door Co.

## ELECTRICAL EQUIPMENT AND LIGHTING

5-176. **Dual Direction Luminaire** (28 P8-152), loose sheet on flush or suspension-mounted fluorescent fixture for use in schools, hospitals, or wherever high-powered, glareless light is essential. Photos, specifications. Compco Corp.

Two 4-p. folders on store lighting fixtures, accessories, and directional signs. Descriptions, applications, dimensions, shipping weight, list prices. Edwin F. Guth Co.:

5-177. **Planned Lighting Accessories** (Form 834)

5-178. **Guth Signs** (Form 833)

5-179. **It Took Time—But It Was Worth It!**, 8-p. illus. pamphlet on louvered fluorescent fixtures for recess, surface, or suspension application, individually or in continuous rows; also diffusers and reflectors. Descriptions, diagrams. Lightolier Co.

5-180. **Plug-In Strip**, AIA 31C71 (554), 8-p. illus. catalog picturing 3 ft. and 6 ft. standard lengths of redesigned multi-outlet branch circuit assembly, required fittings, tools, trim. Descriptions, photos, drawings, installation directions. National Electric Products Corp.

5-181. **Architectural Troffers** (480), 16-p. illus. booklet on troffers, adjustable after installation by means of especially designed aligner hangers. Methods of installation in various ceiling constructions, typical layouts and installations, diagrams. Smithcraft Lighting Div.

Catalog and folder briefly describing louvered and glass shielding luminaires,

emphasis lights, aluminum and steel troffers, and new panel luminaire. Illustrations, cross-sections, prices, specifications. Solar Light Mfg. Co.:

- 5-182. Lighting Fixture Digest, AIA 31-F2
- 5-183. Like a Diamond in the Sky

FINISHERS AND PROTECTORS

Portfolio and 31-p. booklet on functional use of color for the improvement of efficiency and production in plants, schools, offices, etc. Color recommendations, general, detailed information, psychological aspects of light and color, typical layouts, charts, tests, brief descriptions of paints and finishers. E. I. Du Pont De Nemours & Co., Inc.:

- 6-151. Color Conditioning Recommendations
- 6-152. Du Pont Color Conditioning for Industry (A-4782a)
- 6-153. Foster Reference Manual, 16-p. bulletin, four data sheets included, on adhesives, sealers, and surface coatings for use with insulation in industrial and marine fields. Reference charts, technical data, uses. Benjamin Foster Co.

INSULATION (THERMAL, ACOUSTIC)

- 9-118. Kaylo Heat Insulating Block (KH1-485), 4-p. pamphlet on lightweight mineral insulation for temperatures up to 1200F. Description, physical properties, heat loss, surface temperatures, efficiencies data. American Structural Products Co.
- 9-119. Decorative Insulating Board (1B-30A), 12-p. illus. booklet describing ceiling paneling, wall plank, and building board for use as insulating material. Decorative suggestions, information on sizes, application in new construction or remodeling, color plates, photos, specifications. Johns-Manville Co.
- 9-120. Handbook of "U" Values, 108-p. manual listing 12,852 certified winter and summer insulation values of various walls, floors, and ceilings; coefficients calculated in accordance with FHA calculation procedure. Description of insulation materials containing Silvercote surfaces, charts, contents table. Silvercote Products, Inc.

SANITARY EQUIPMENT. WATER SUPPLY. DRAINAGE

- 19-365. Bathe-Rite Shower Products, AIA 35-H-G (Cat. 680), 8-p. illus. catalog describing shower cabinets, receptors, and doors. Specifications, installation diagrams, dimensions. Milwaukee Stamping Co.
- 19-366. Servel, 29-D-2 (Forms 9WH-79-23, 9WH-79-24, 9WH-79-25), three data sheets on automatic storage gas water heaters. Descriptions, selection, installation directions, equipment, specifications. Servel, Inc.
- 19-367. Stainless Steel for Roof Drainage Systems, 8-p. illus. brochure on downspouts, gutters, flashing, acces-

sories. Technical information, recommended standard forms, typical specification details, installation data. Sharon Steel Corp.

SPECIALIZED EQUIPMENT

- 19-368. Edgewood, folder describing several pieces of contemporary furniture from the William Armbruster collection; designed primarily for public lounges, lobbies, etc. Photos. Edgewood Furniture Co., Inc.
- 19-369. Products for the Drafting Room, 4-p. folder describing spray dispensers, solvents, cleaners, bleaches, etc., for draftsmen, architects, designers. Sizes, uses, shipping weights. Foster & Kester Co., Inc.
- 19-370. Glasco Table Top Refrigerator, 4-p. illus. folder on compact refrigerator with 5 cu. ft. shelf space. Advantages, photos. Glascock Bros. Mfg. Co.
- 19-371. What You Should Know About Safes, 12-p. illus. booklet on various types of fireproof safes, claimed to reduce burglary insurance premiums as much as 70 percent. Descriptions, photos. Mosler Safe Co.
- 19-372. Morganwall, 8-p. illus. booklet on cabinet assemblies serving as free-standing partitions, in various heights and lengths, for use as extra storage space. Illustrated selections of unit sizes and styles. Morgan Co.
- 19-373. Smoothedge Carpet Gripper, AIA 19J, 4-p. folder introducing a carpet anchoring device, attachable to any floor surface. General data, advantages, application drawings. Roberts Co.

SURFACING MATERIALS

Three folders describing enamel-fin-

ished wallboard, embossed plywood, and decorative laminates. Descriptions, patterns, colors, panel sizes, color plates. Plastics Div., Consolidated Water Power & Paper Co.:

- 19-374. Wal-lite Wall Board
- 19-375. Deco-Ply
- 19-376. Consoweld Decorative Laminates
- 19-377. Where and Why to Use Rigidized Metals, chart giving list of actual production applications and indicating reasons for use of ferrous, nonferrous, sheet, strip, solid or perforated rigidized metals. Pattern photos. Rigidized Metals Corp.
- 19-378. New Interiors for Old (815-25P-HP-128), 32-p. illus. booklet containing wide variety of suggestions for remodeling and repairing of residential interiors by use of laminated, 5-ply fiber paneling over damaged ceilings and walls; also construction of storage walls, closets, and work rooms in unused spaces. Photos, color plates, charts, trimming accessories. Upson Co. (25 cents per copy; make check or money order payable to Upson Co.)

TRAFFIC EQUIPMENT

- Catalog and specification sheets on single-file moving stairway, for continuous floor-to-floor transportation in all types of multistory business establishments; travels 90 ft. per min., will transport over 5000 people per hr.; provided with tested safety devices, built to meet all code requirements. Multi-scope, Inc.:
- 20-239. Motorstair, AIA 33-E-1 (Cat. 5-49)
  - 20-240. Specifications for Type "B" Motorstair (January, 1949)

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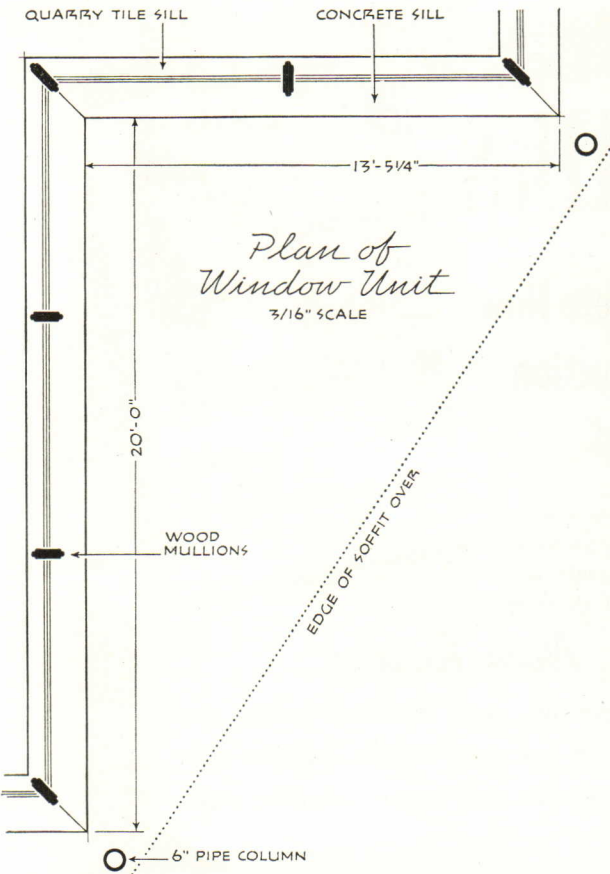
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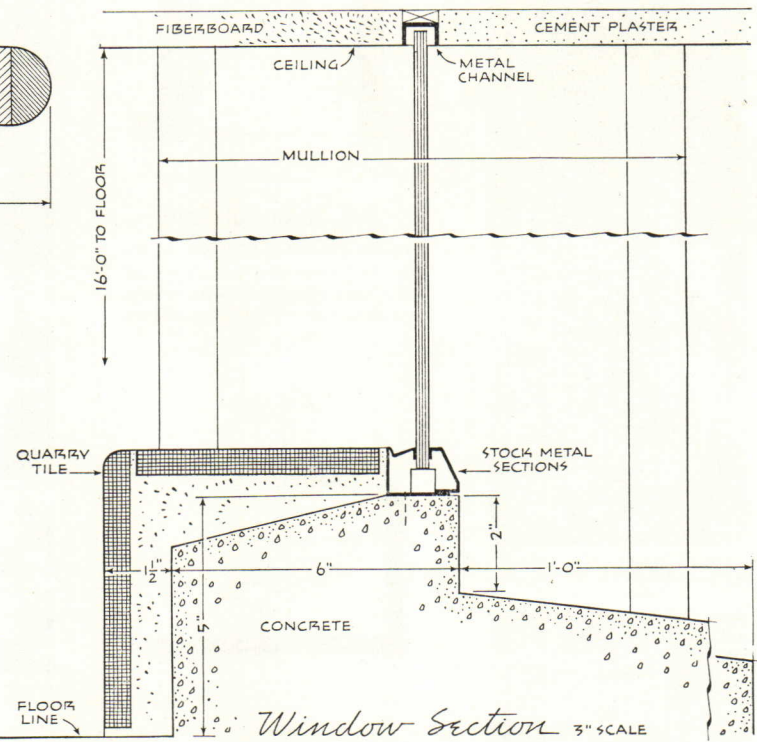
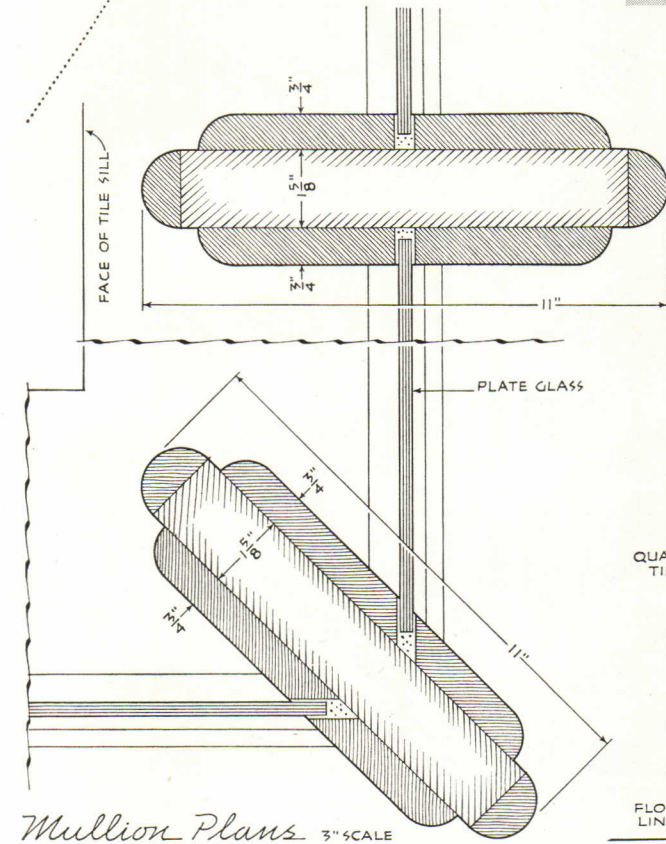
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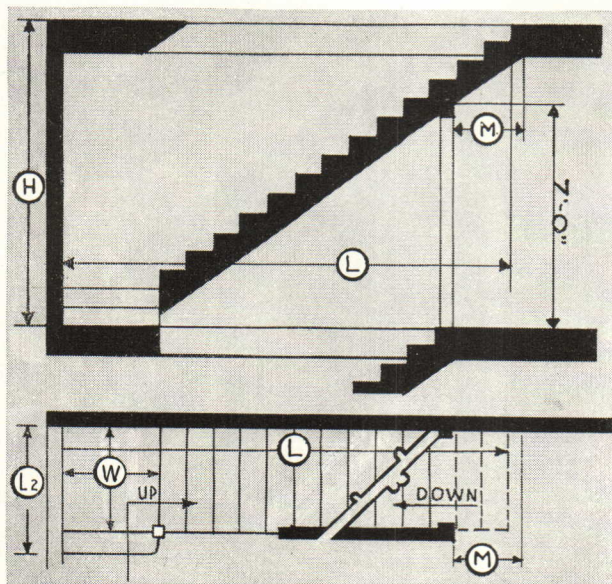


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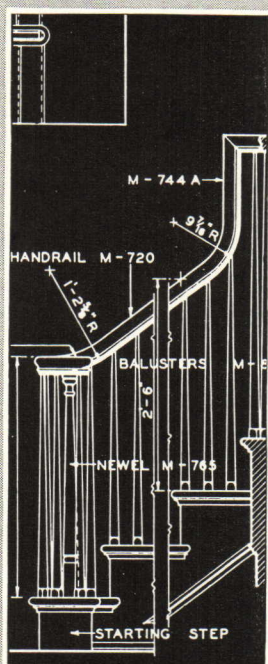
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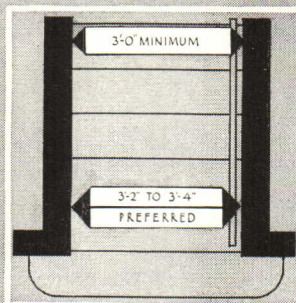
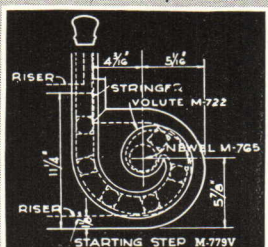


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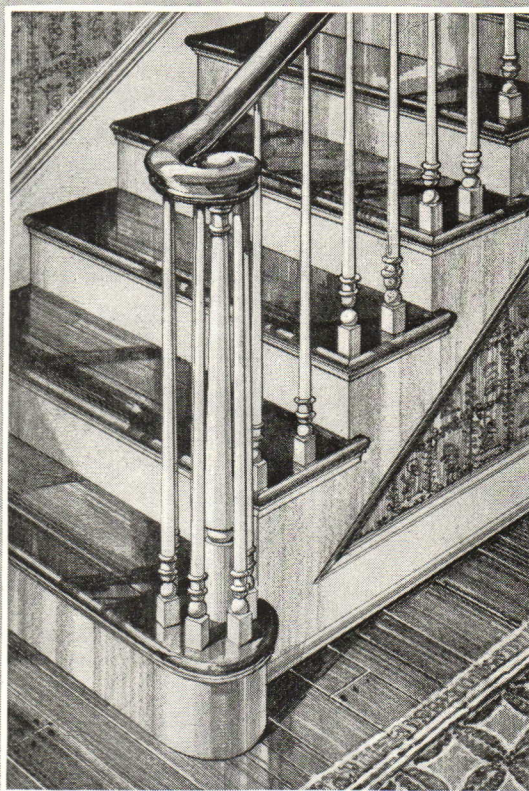
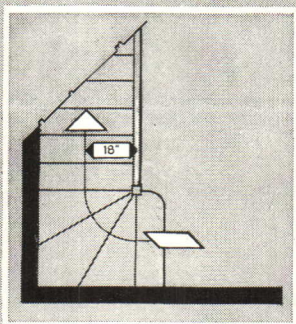


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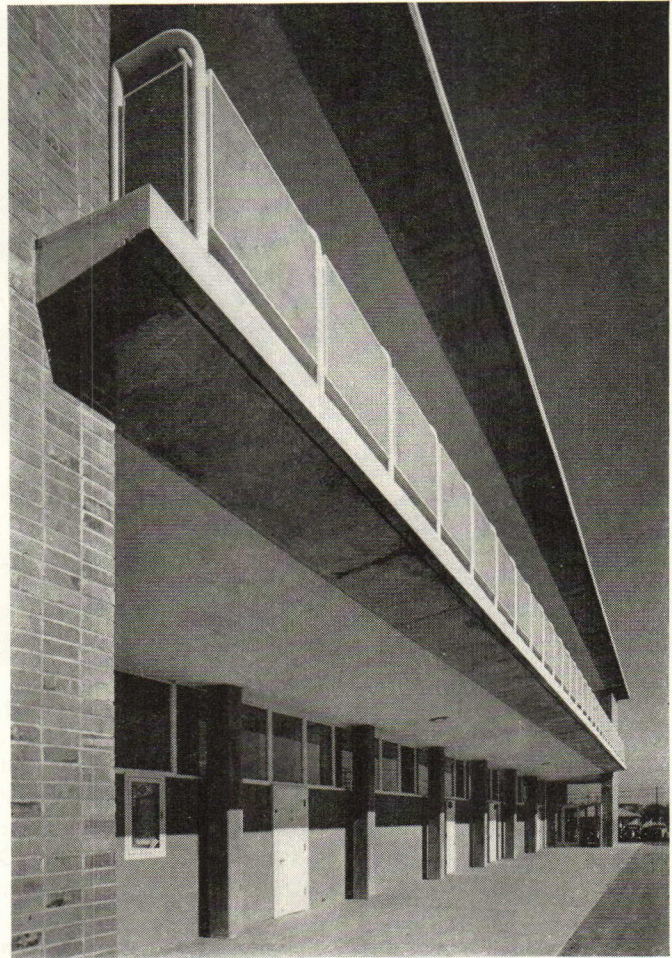
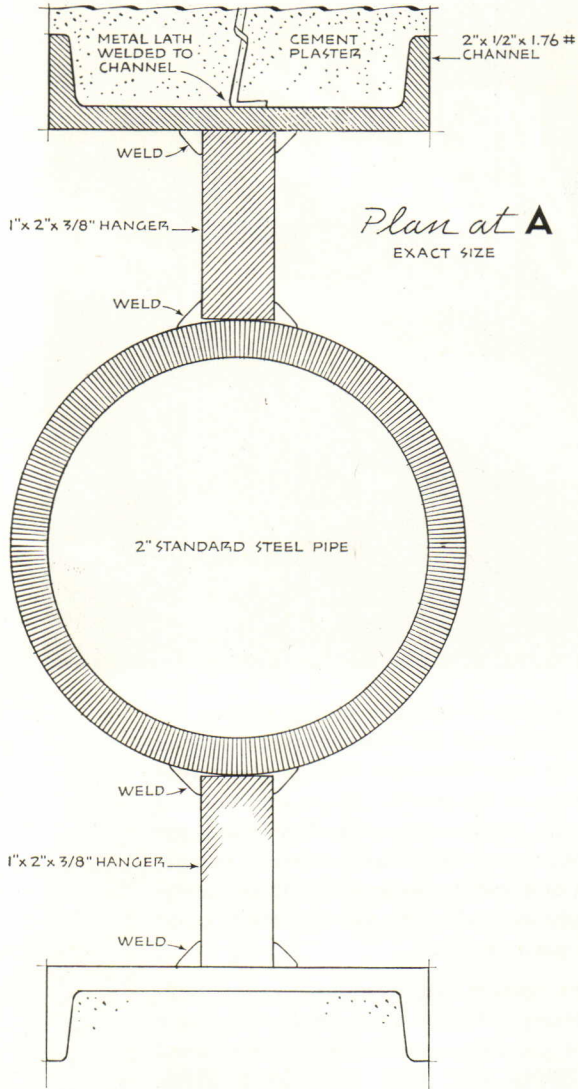
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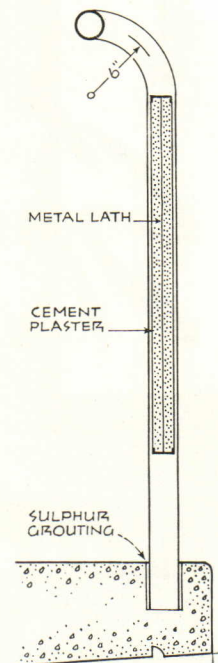
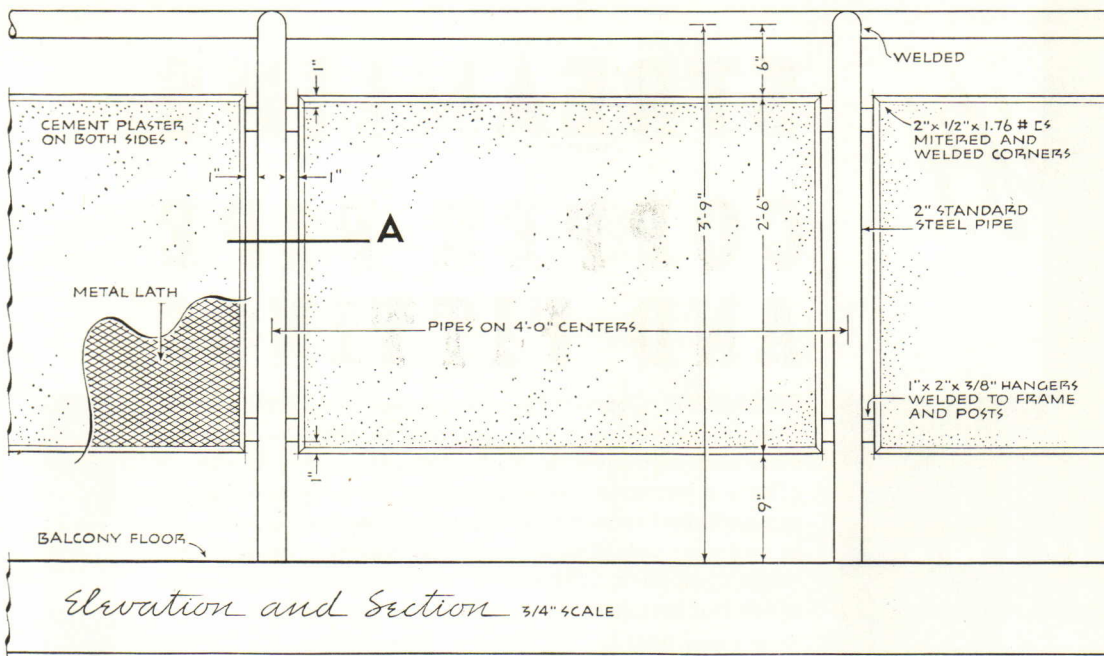


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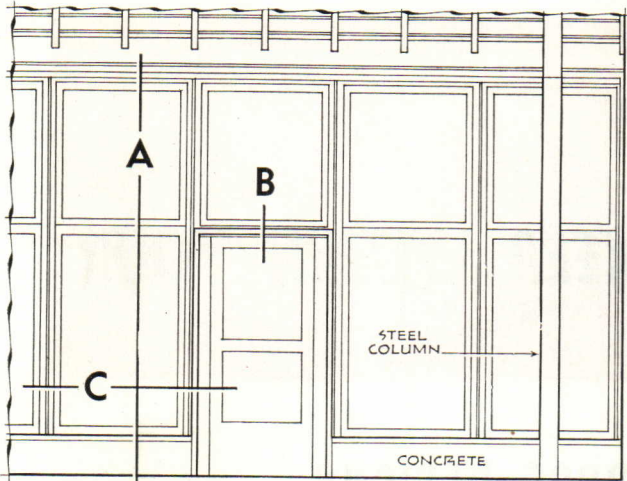
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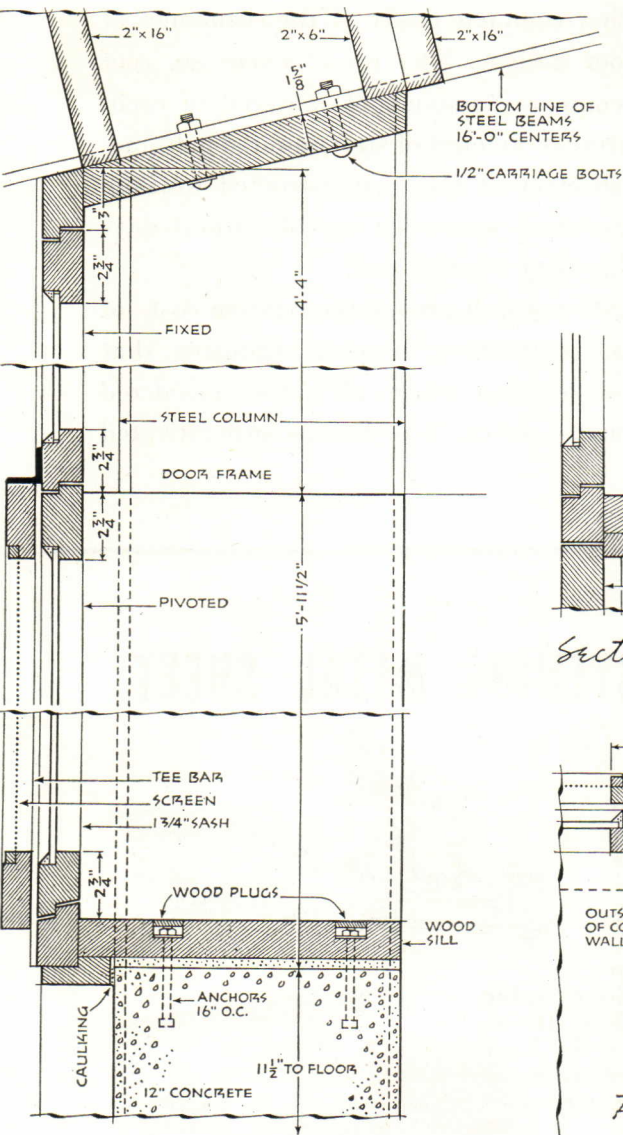
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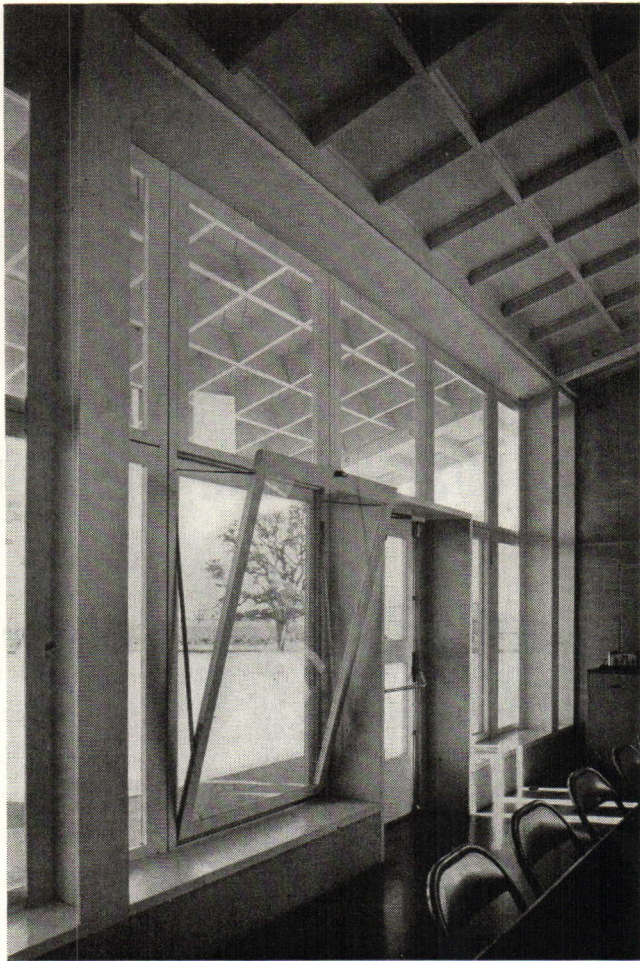
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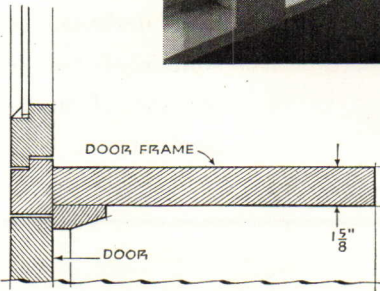
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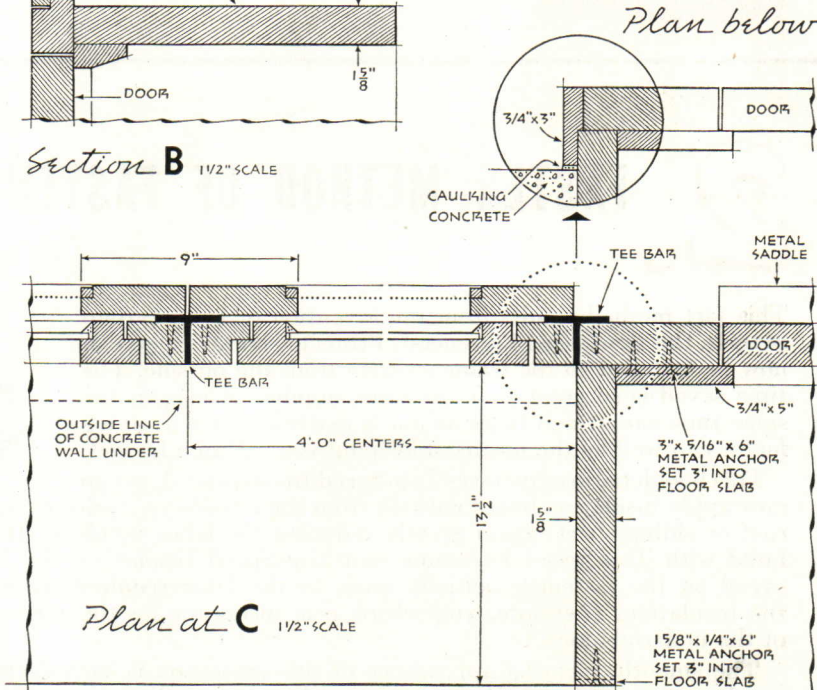
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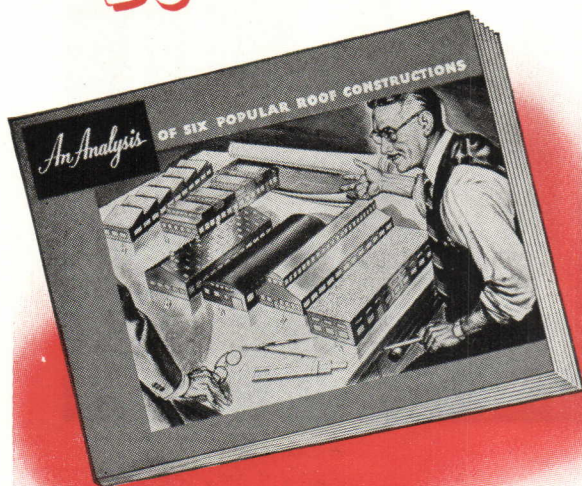
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## TO KEEP WITHIN YOUR

### 1. COST-CUTTING STUDY OF ROOF DESIGNS



This is the first complete study of the economics of industrial roof designs. The work covers six roof structures, compares amount of material in each, alternate materials, amount of steel required in framework, over-all erection time, unobstructed working space, maintenance, maximum use of natural daylighting and gravity ventilation.

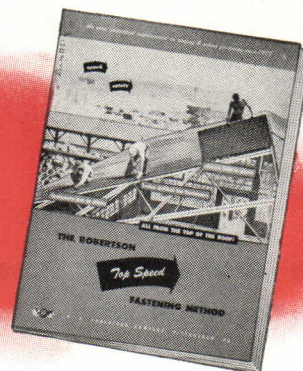
This original research proves the relative costs of roof designs, establishing beyond argument that some roofs cost less than others, all factors considered in terms of current prices. Write for this authenticated booklet.

### 2. FASTER METHOD OF FASTENING METAL SHEET

This fast method results from the invention of a new group of tools, the Top-Speed Fasteners\*. Protected metal sheets can now be fastened to the frame entirely from the outside. The time saved is so great that the same number of men in the same time can attach twice as much material. Such a saving factor can well be the means of keeping you within a budget.

This booklet also announces Top-Speed Insulation\*. You can now apply insulation board entirely from the outside just prior to laying roof or siding sheet, again greatly reducing the labor involved. If you build with Top-Speed Fastening and Top-Speed Insulation, the labor saved on the fastening actually pays for the labor required to install the insulation. Therefore, your client gets insulation for the mere cost of the material alone.

The smooth, pleasing appearance of this insulation is such that you can leave it unpainted. However, it can be painted. No straps or other fasteners show. It makes an unusually good-looking job and the insulation also has acoustical value. Insulation is increasingly required for today's industrial buildings. Here's a way to get it at lowest cost. Write for the booklet.



\*patent applied for

# CONSTRUCTION BUDGET

Faster methods and new materials are saving erection time. This cuts cost despite higher labor and material prices. These booklets explain new cost-saving construction developments.

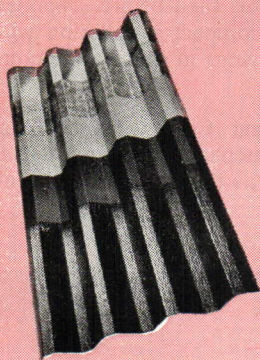
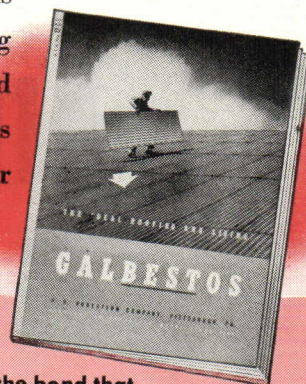
## 3. SAVE STEEL AND MAINTENANCE WITH GALBESTOS

The record of this protected sheet steel proves Galbestos has outlasted any other roofing and siding material through the most severe industrial heat, corrosion and weather. Galbestos can be top-speed fastened. It is strong, yet light in weight and reduces the number of purlins required. Galbestos saves steel, speeds erection and virtually eliminates maintenance. Write for the facts on Galbestos.

For insulated industrial buildings,

Robertson has a cost-saving method of installation to use with Galbestos.

For your cost-conscious clients, have the facts on hand about these faster methods and this steel-saving Galbestos roofing and siding. Order this literature for your file.



Lock your fingers like this picture. It will give you an idea of how asbestos fibers are locked into the very core metal of Galbestos. We call this bond the Galbestos Grip. It is a unique development of Robertson research.



So inseparable is the bond that Galbestos can be worked on ordinary sheet-metal shop equipment. By worked, we mean crimped, rolled, sheared, bent and riveted like unprotected metal.



Asbestos is fused to sheet steel by a metallic alloy. The myriad rock-born fibers are literally imbedded in metal. The asbestos is impregnated with asphalt and waterproofed.



Galbestos comes in standard roofing and siding sheets up to 12 feet by 33 inches; maroon or black finishes; flat or in several corrugations; for use over steel skeleton framework. Would you like to see samples?

Galbestos is listed and classified by Underwriters' Laboratories and the Associated Factory Mutual Laboratories.

### H. H. ROBERTSON CO.

2405 Farmers Bank Building  
Pittsburgh 22, Pennsylvania



Offices in 50 Principal Cities  
World-Wide Building Service

# WESTINGHOUSE ANNOUNCES THE NEW ALL-ALUMINUM PRECIPITRON\* MOST EFFICIENT AIR CLEANER EVER BUILT

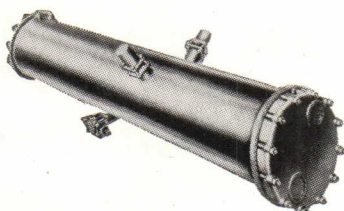
*Now PRECIPITRON\* is more effective than ever!* Introduced more than ten years ago by Westinghouse, PRECIPITRON\*, the electronic air cleaner, has opened important new avenues of cost reduction for business and industry. For only the PRECIPITRON\* principle eliminates up to 90% of all airborne dirt, smoke, dust, soot and industrial oil mists, compared to the 10% to 20% efficiencies of ordinary mechanical filters.

Thenew, all-aluminumPRECIPITRON\* cell now offers more advantages that

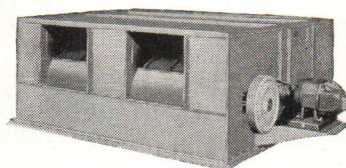
mean additional savings—

1. **25% More Plate Area Per Cell.** Means lower costs for cleaning a given volume of air. For, each PRECIPITRON\* Dust Collector Cell has 25% more collection area than before. This permits more compact installation with resultant savings in space and equipment.
2. **All-Aluminum Construction.** Means lower maintenance and installation costs. For, as the only electronic air

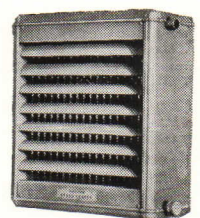
\*Reg. U. S. Pat. Off



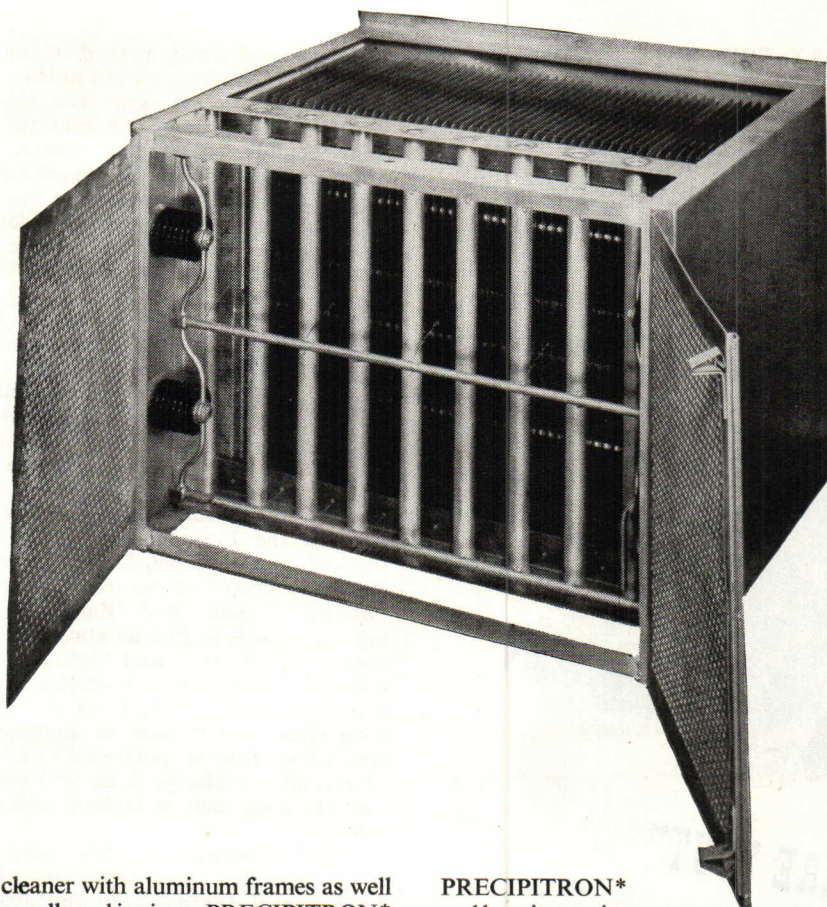
REFRIGERATION CONDENSERS



AIR HANDLING UNITS



UNIT HEATERS

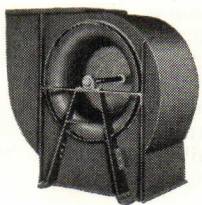


cleaner with aluminum frames as well as cells and ionizers, PRECIPITRON\* has an exceptionally high resistance to corrosion and rust—needs no protective coating. And, there's not a single part—with exception of power pack—which cannot be handled by one man without auxiliary lifting devices. Heaviest piece weighs only 50 lbs. So, PRECIPITRON\* is assembled quickly, easily—with resultant savings in labor costs.

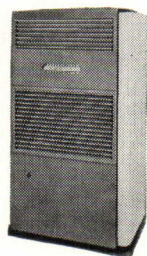
For more information on this new

PRECIPITRON\* and how it can significantly cut dirt-caused losses in *your* business or industrial operations, call your nearest Westinghouse office. Or, write to Westinghouse Electric Corporation, Sturtevant Division, Hyde Park, Boston 36, Massachusetts.

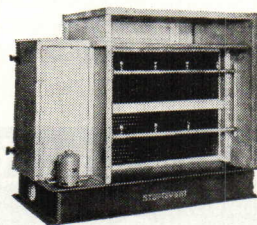
## Westinghouse Sturtevant Division



CENTRIFUGAL FANS



UNIT  
AIR CONDITIONERS



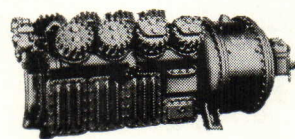
SURFACE DEHUMIDIFIERS



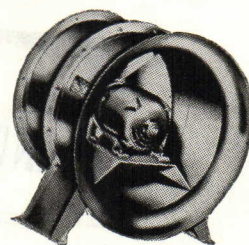
**Everything**  
that puts air to  
work for  
**Every** application

J-80134

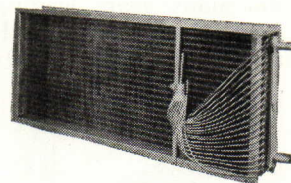
**25% MORE**  
PLATE AREA  
*per cell*



REFRIGERATION COMPRESSORS



AXIAL FLOW FANS



HEATING AND COOLING COILS



FROM THE TECHNICAL PRESS, monthly feature by John Rannells, will be resumed in our May issue, when he will compare magazines serving the hospital planning and management fields in the United States. This continues his series of discussions of specialized publications.

### X-RAY THE CITY!

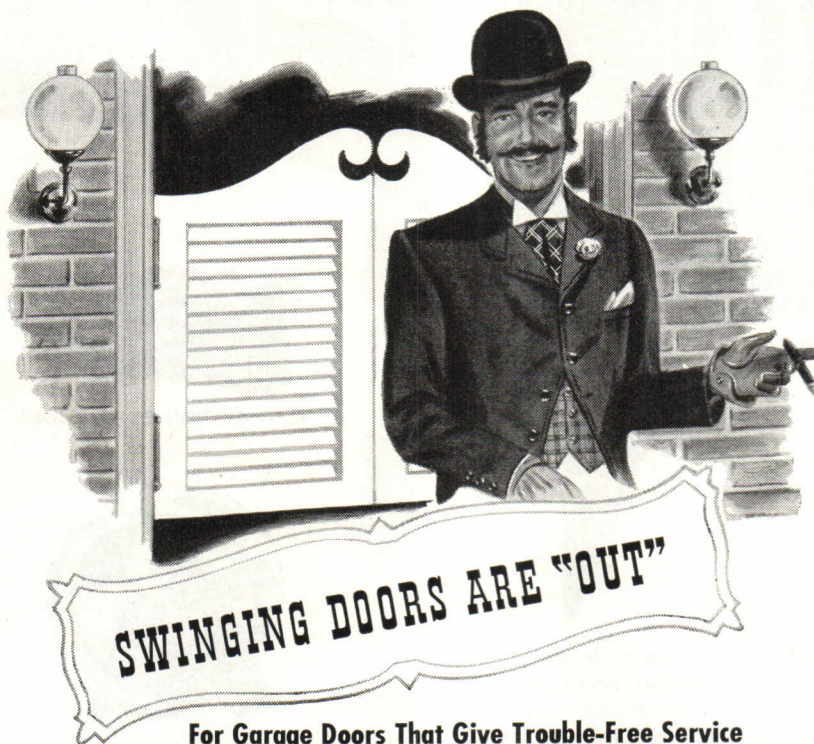
**The Density Diagram: Basis for Urban Planning.** Ernest Fooks. Wittenborn & Co., 38 E. 57th St., New York, N. Y., 1948. 108 pp., illus. \$3.00

Dr. Ernest Fooks, like most planners, is worried about population density. He

has developed a new method of analysis of densities in metropolitan areas which is supposed to overcome the lack of statistical uniformity inherent in political boundaries, census tracts, and other artificial means of segmentation. Fooks' method is to rearrange the density pattern according to a "density grid" which is a radial-concentric diagram with its center at the conventional center of the city.

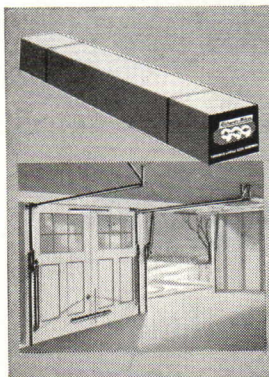
As a technique it seems to have promise. What is lacking, as so unfortunately is often the case, is any clear idea of what to do with it. Fooks is careful to point out that "high" density per se means nothing, that livability is a difficult quality to assay. Having said that, he falls back on a variation of the "neighborhood concept." Having rejected the Perry notion of an area focused on the school, he latches on to the "hierarchical" structure of "Group," "Block," "Rayon," and "Borough." For my money this is just as static a social concept as Perry's, and highlights the difficulty of trying to reconcile a fluid population with a rigid frame. Fooks recognizes that "however ingeniously devised, or however perfected as a work of art, such a Master Plan will become obsolete long before it has become a reality."

What is hopeful is that more and more planners are expressing their fundamental confusion in the absence of any sound philosophy of urbanism. Like Fooks, they can X-ray a city but can make no prognosis: recognition that "population is the starting point for urban planning" while helpful is not conclusive. HENRY S. CHURCHILL



**For Garage Doors That Give Trouble-Free Service  
... Specify RICHARDS-WILCOX 999 Garage Door Hardware**

For many years, leading architects and builders have agreed that Richards-Wilcox Door Hardware is the world's finest. Now, with the new line of R-W 999 Garage Door Hardware, out-dated, troublesome swinging garage doors can be converted quickly and easily into the modern, overhead type.




Overhead garage doors hung with R-W 999 Hardware are weathertight, the easiest to operate, and they "stay put." And R-W 999 Hardware comes complete—in one convenient kit—with everything needed for installation and operation.

For further information, simply call or write the nearest Richards-Wilcox office. Ask for free folder with complete facts about R-W 999 Hardware—your surest cure for garage door grief.

### ALL ABOUT WINDOWS

**Windows in Modern Architecture.** Geoffrey Baker and Bruno Funaro. Architectural Book Publishing Co., Inc., 112 W. 46th St., New York 19, N. Y., 1948. 144 pp., illus. with photos and drawings. \$8.50

Starting with the question, "Why is a Window?" and going through careful and intelligent discussions of the basic types; available stock units; hardware; sun, light, and heat control; glass—with 72 pages of illustrations and details of outstanding window installations of all types—this book makes itself an indispensable item for reading and reference in the architect's office. The layout is most attractive and convenient, and an unusually successful spiral-type binding allows the book to lie flat on the desk or board. T.H.C.

1880  1949  
Reg. U. S. Pat. Off.  
OVER 69 YEARS

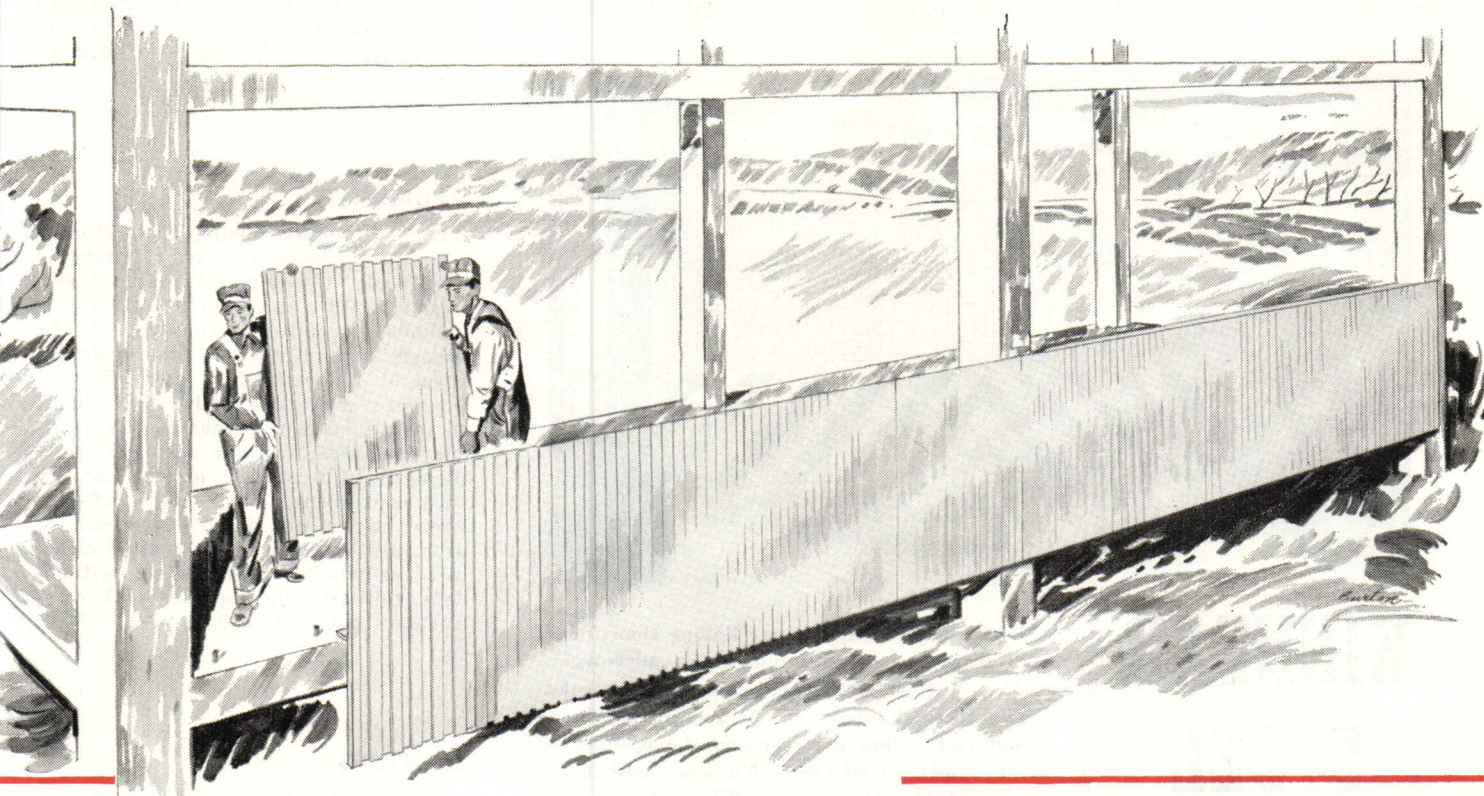
**Richards-Wilcox Mfg. Co.**  
"A HANGER FOR ANY DOOR THAT SLIDES"  
AURORA, ILLINOIS, U.S.A.

Branches: New York Chicago Boston Philadelphia Cleveland Cincinnati Washington, D. C.  
Indianapolis St. Louis New Orleans Des Moines Minneapolis Kansas City  
Los Angeles San Francisco Denver Seattle Detroit Atlanta Pittsburgh

(Continued on page 106)

# fact supporting wall

# under construction



... wall never will enclose anything. It never will support  
... ing ... except facts.

... was designed with the assistance of one of America's leading  
... tects; erected under the supervision of one of the world's  
... st construction firms. They will collaborate with Alcoa in  
... g its performance.

... are working here to develop new methods of aluminum  
... in wall construction with higher factors of strength, dur-  
... y, insulation and fire resistance; and low erection and  
... tenance costs.

This is one of many Alcoa research projects now under way  
in the building field. The answers as we find them will be avail-  
able to all architects and engineers.

During more than 60 years of aluminum research and develop-  
ment we have found the solutions to many problems of designing  
and building with aluminum. This information and our engineer-  
ing assistance are available to you. Write or call your local Alcoa  
sales office or ALUMINUM COMPANY OF AMERICA, 1868 Gulf  
Building, Pittsburgh 19, Pennsylvania.

# ALCOA FIRST IN ALUMINUM

• SHEET & PLATE • SHAPES, ROLLED & EXTRUDED • WIRE • ROD • BAR • TUBING • PIPE • SAND, DIE & PERMANENT MOLD CASTINGS • FORGINGS • IMPACT EXTRUSIONS  
• ELECTRICAL CONDUCTORS • SCREW MACHINE PRODUCTS • FABRICATED PRODUCTS • FASTENERS • FOIL • ALUMINUM PIGMENTS • MAGNESIUM PRODUCTS



## Reviews

(Continued from page 104)

### PLANNING AUTOMOBILE DEALER PROPERTIES

*Service Section, General Motors Corp., Detroit 2, Mich. 142 pp., illus.*

*Planning Automobile Dealer Properties* is interesting as a method of presenting the results of a competition—General Motors-Architectural Forum; helpful to garage and automobile showroom owners in planning new buildings and improving existing facilities; of service to

architects as a compilation of new thinking on a practical problem. One of its most interesting features is the "Space Analysis" table included with each of the 16 plans. Your reviewer was disappointed with the exterior appearance of many of the schemes, for they seemed too "tricked up" rather than well designed; some of this impression may be the result of the flatness of the renderings.

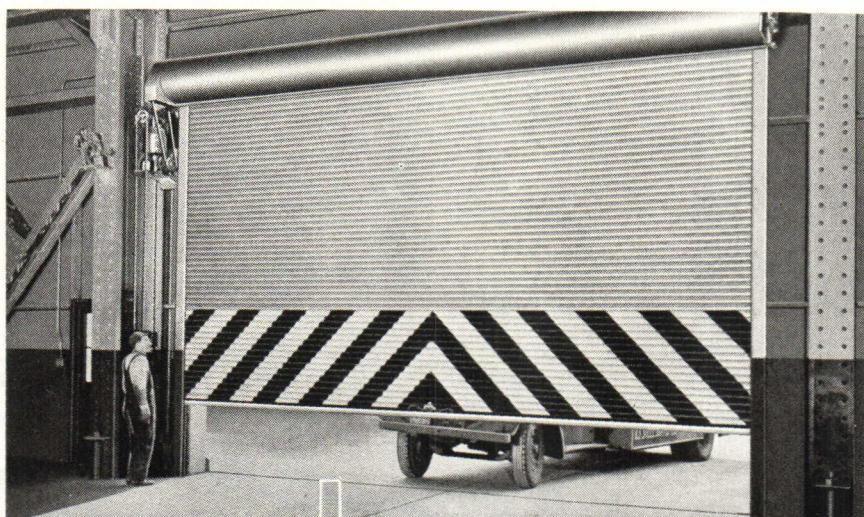
J.H. LIVINGSTONE

### BRITISH FILM

*Housing Britons, Films Div., British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. 35mm. film with study guide, \$1.00*

*Housing Britons* traces the history of British housing from the early 19th century to the present, with emphasis on government planning in the field. Not only was the government's intensive prewar slum clearance and housing program halted by the war, but much of the work already accomplished was destroyed. The film shows how short-term building with prefabricated houses and long-range planning are correlated to alleviate the most severe housing shortage in Britain's history.

M.W.K.

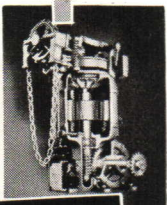


## KINNEAR STEEL ROLLING DOORS

Space-Saving  
Convenience  
Plus a Bonus  
In Protection

### MOTOR OPERATION

The rugged Kinnear Motor Operator shown at right can be added to any Kinnear Rolling Door for maximum speed, ease, and convenience of operation.



### REMOTE CONTROL

In addition to push-button controls at the doorway, others may be added, at any number of convenient points, on motorized Kinnear Doors.



**KINNEAR**  
ROLLING DOORS

### THE KINNEAR MANUFACTURING CO.

Factories: 1900-20 Fields Ave., Columbus 16, Ohio  
1742 Yosemite Ave., San Francisco 24, Calif.  
Offices and Agents in all Principal Cities

### ALUMINUM

Reynolds Metals Company, Louisville, Ky., has published a very handsome data book, *Aluminum Alloys and Mill Products* (164 pp., 6" x 9", \$1.00). It includes extended discussions of the properties and uses of the different wrought and cast alloys, also tables by the score, interspersed with clear photos of manufacturing processes. Reynolds has done well by their customers, and themselves, in putting all the data in such convenient shape. Very different from their recent direct-advertising to architects to whom they mailed circulars on windows, completely without data, following up inquiries with more circulars but still no data.

J. R.

### LIGHTING

*American Standard Practice for School Lighting* is available now in booklet form (78 pp., 6" x 9") at 50 cents per copy from the Illuminating Engineering Society. The controversial papers on the scientific basis that so enlivened the recent publication of this standard in *Illuminating Engineering* are lacking, of course, in this official publication. The "practice" has been developed over the years through conditions of actual use. It has been modified by the knowledge developed by those seeking a scientific basis of seeing standards.

The "scientific" basis seems pretty tenuous. Tests which can be verified are necessarily based on limited portions of seeing conditions, while the objective measurements which form a basis of comparison cover only a small portion of the whole subject of vision and "seeing comfort." Hence, the arguments arise as to validity of "blink rate," "heart rate," "muscular tension," etc. The newest experiments on muscular tension are taking place at Cornell and are tentatively reported in a paper in the November 1948 *Illuminat-*

(Continued on page 108)

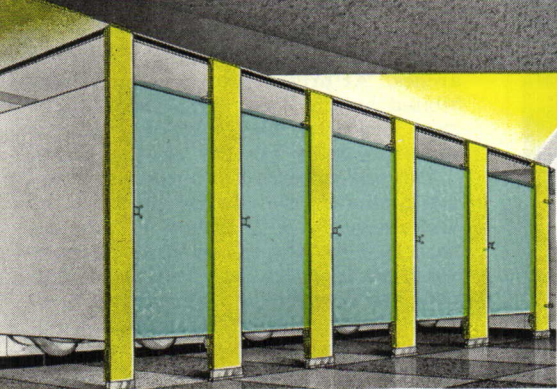
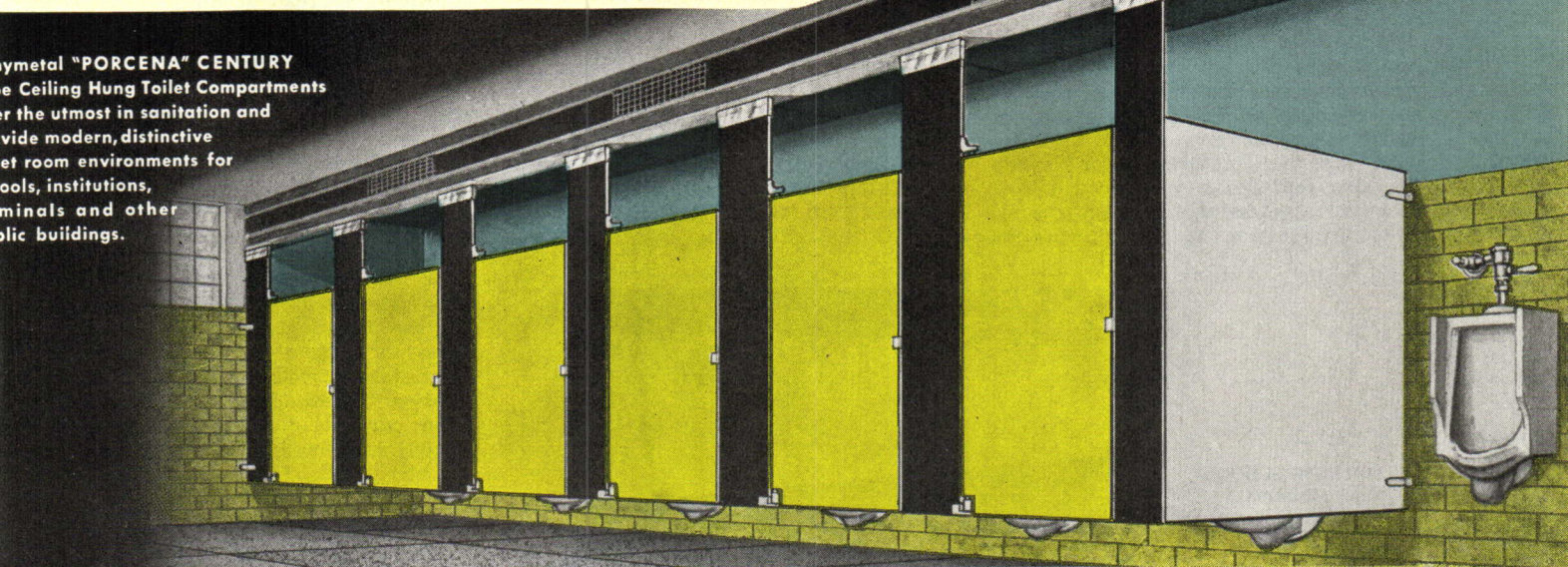
# Sanymetal "PORCENA"

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

(Porcelain on Steel)

## TOILET COMPARTMENTS

Sanymetal "PORCENA" CENTURY  
Ceiling Hung Toilet Compartments  
for the utmost in sanitation and  
provide modern, distinctive  
toilet room environments for  
schools, institutions,  
hospitals and other  
public buildings.



Sanymetal "PORCENA"  
ACADEMY Type Toilet Com-  
partments are suitable  
conservative but modern  
toilet room environments.

### How to Protect a Toilet Room Environment Against Premature Obsolescence

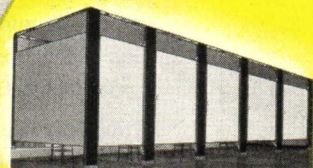
● There is one environment you can protect against  
premature obsolescence—the toilet room environment.

Toilet room compartments usually dominate a toilet  
room, influencing the toilet room environment. Sany-  
metal "PORCENA" (Porcelain on Steel) Toilet Com-  
partments provide a generous measure of protection  
because of these features. Sanymetal "PORCENA"

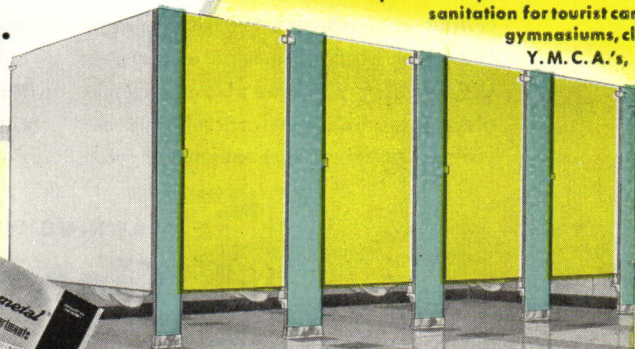
(Porcelain on Steel) Toilet Compartments always look new, do not  
absorb odors, are moisture and rust proof and resist the corrosion of  
ordinary acids. The glistening, glass-hard, "PORCENA" (Porcelain on  
Steel) finish can be wiped clean as easily as a porcelain table top, and  
greatly reduces sanitation and maintenance costs.

Sanymetal "PORCENA" (Porcelain on Steel) Toilet Compartments  
combine the results of over 35 years of specialized skill and experience  
in making over 100,000 toilet room installations. Ask the Sanymetal Repre-  
sentative in your vicinity (see "Partitions" in your phone book for local  
representative) for helpful suggestions about planning suitable toilet room  
environments . . . Refer to Sanymetal Catalog <sup>21B</sup>/<sub>6</sub> in Sweet's  
Architectural File for 1949.

**THE SANYMETAL PRODUCTS CO., INC.**  
1683 URBANA ROAD • CLEVELAND 12, OHIO



Sanymetal "PORCENA" ACADEMY Type  
Shower Stalls and Dressing Room Com-  
partments provide the utmost in  
sanitation for tourist camps,  
gymnasiums, clubs,  
Y.M.C.A.'s, etc.



# Sanymetal

\*Trade Mark Reg. U. S. Pat. Off.  
"PORCENA" (Porcelain on Steel)

## TOILET COMPARTMENTS, SHOWER STALLS AND DRESSING ROOMS



Write for Sanymetal Catalog 86  
which illustrates modern toilet  
room environments suitable for  
all types of buildings. Several  
attractive designs in a wide range  
of colors available. This catalog  
is also contained in Sweet's  
<sup>21B</sup>/<sub>6</sub> Architectural File for 1949.

Sanymetal "PORCENA"  
NORMANDIE Type  
Toilet Compartments  
endow a toilet room  
environment with dignity  
and good taste.

## Reviews

(Continued from page 106)

*ing Engineering.* ("Muscular Tension as an Index of Visual Efficiency," a progress report by M. E. Bitterman, T. A. Ryan, and C. L. Cottrell.)

Meanwhile, lighting installations are providing better and better visual environments stimulated by the work of the scientists as well as the promotion of the manufacturers.

*Illuminating Engineering* for November also contains a very good job of practical application of recent theory. ("An Application of the Interfection

Theory to Commercial Practice," by R. A. Coradeschi and L. E. Innis.) Methods are developed for construction of Interfection Tables for specific luminaires, using the basic tables of Moon and Spencer which are included in the paper.

The interfection method makes it possible to predetermine not only average illumination on the working surface, but also average brightness of walls. With tables for specific luminaires this can be done with a freedom

and accuracy which will make for great advance in lighting design.

This paper uses the rather formidable (proposed international) nomenclature of Moon and Spencer followed by standard I.E.S. terms in parentheses. Surprisingly enough, the combination is not unwieldy to read at all. J. R.

## CEMENT AND CONCRETE

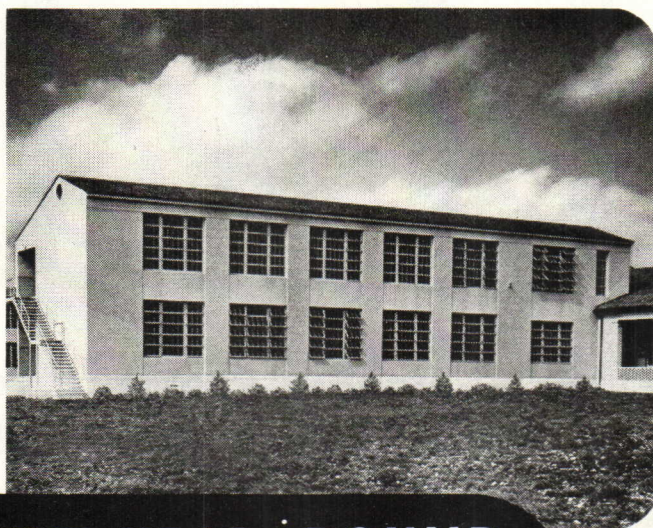
The Portland Cement Association and the American Concrete Institute have produced two characteristic manuals—*Cement and Concrete Reference Book for 1948* and *A.C.I. Standards, 1948*. The first is packed with easy-reading, well-illustrated promotional information on the manufacture and multitudinous uses of cement—all very interesting and serving well the aim of the association "to extend the uses of concrete." The current *A.C.I. Standards* (price \$2.00) contains all the standards (nine in all) published since 1941 excepting the "Detailing Manual," which is too large to include. The chief titles are: "A.C.I. Building Code," and two recommended practices, "Measuring, Mixing, and Placing Concrete," and "Design of Concrete Mixtures." The Institute is studying what to do about pipes for radiant heating in floor arches. At present, the practice is prohibited by the code. This code, by the way, is written for inclusion bodily or by reference in general building codes.

The recommended practice for measuring, mixing, and placing describes the best methods, with plenty of illustrations to show why cruder processes may result in poor concrete. All the standards are completely and technically to the point—very smoothly written. Voluminous references to the literature are included in several. J. R.

MELROSE SCHOOL  
MIAMI, FLORIDA

August Geiger,  
Architect

"Air conditioned"  
by nature and  
Gate City  
Awning Windows



## EFFICIENT YEAR-ROUND CLASSROOM VENTILATION *at Ordinary Window Cost*

• Minds stay alert when classroom air is fresh and circulating. By specifying Gate City Awning Windows, you can provide maximum ventilation plus scientific control at extremely moderate cost.

Hinged at the top to extend outward, the sash intercept the outdoor currents of air. Deflected indoors, these currents agitate the air mass at the ceiling . . . prevent the room from becoming stuffy. In addition, Gate City Awning Windows also offer complete glare and heat control by providing positive mechanically con-

trolled positions with various types of glass. Rigidly constructed of wood, Gate City Awning Windows cannot rattle, flutter or squeak. Their operating handle may be detached to prevent tampering. Their design discourages any desire to lean out.

Despite these important advantages, Gate City Awning Windows compare favorably in cost with conventional windows. They deserve careful consideration for any school or church. For further information, write Gate City Sash & Door Co., Dept. A-4, Fort Lauderdale, Fla., or see Sweet's.



AWNING WINDOWS BY  
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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.

## TECHNICAL TRANSCRIPTS

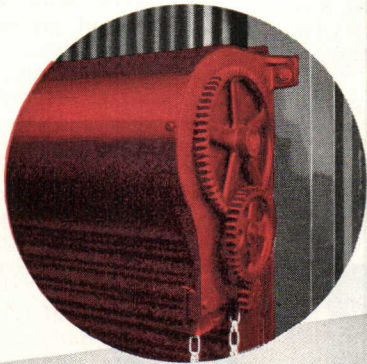
Discussions of building techniques and materials as transcribed at luncheon meetings of the Technical Committee of New York Chapter, A.I.A., were described last month in *PROGRESS REPORT* and two transcripts were published in this section. Three more of the transcripts follow:

**Increasing Use of Adhesive Saves Time and Expense in Fastening Architectural Trim to Structures**

From a previous address by Lloyd R. Cutler of the Miracle Adhesives Corporation, members of the New York Chapter learned that adhesives are being widely used for installations of glazed and ceramic wall and floor tile. On the occasion of his second visit,

(Continued on page 110)

# Rolling Steel DOORS



**Manually • Mechanically • Power Operated**

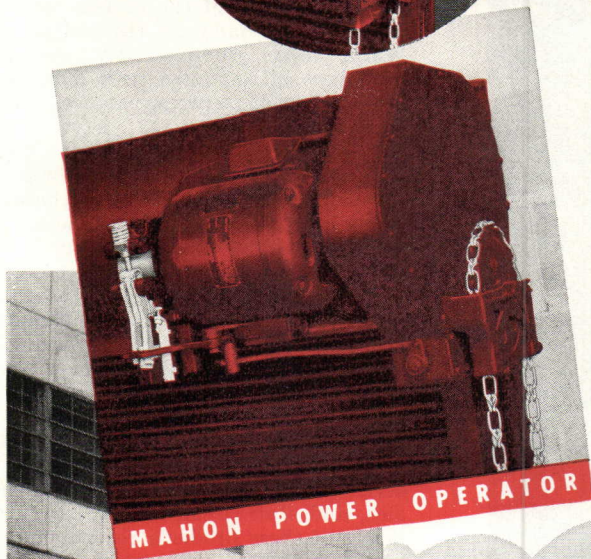
No door offers the inherent advantages of a good Rolling Steel Door . . . no other type of door offers the permanence of all-steel construction, the saving in space adjacent to door openings—and, most important, the satisfaction born of a lifetime of trouble-free door performance. These advantages are realized to the fullest degree in Mahon Rolling Steel Doors . . . comparison of details of construction and materials employed at critical points will reveal a greater door value . . . exclusive Mahon features will be found very desirable from an everyday operating standpoint. See Mahon's Insert in Sweet's Files for complete information, details and specifications.

## **THE R. C. MAHON COMPANY**

Detroit 11, Michigan • Western Sales Division, Chicago 4, Illinois

**Representatives in All Principal Cities**

Manufacturers of Rolling Steel Doors, Shutters and Grilles, and Mahon Steel Deck for Roofs, Sidewalls, Partitions, Acoustical Ceilings, Permanent Floor Forms and Oversize Doors.



**MAHON POWER OPERATOR**



Seventy Five Mahon Rolling Steel Doors are installed in the new building illustrated above, which was built by Spence Bros., Gen. Contrs. Saginaw, Mich., for a large midwestern Foundry Company.

# MAHON

## TECHNICAL TRANSCRIPTS

(Continued from page 108)

Cutler described many other uses for this element in the construction industry and suggested its tremendous possibilities to the architect.

The rapid strides made in the development of adhesives suggest many short cuts, for instance by the use of adhesives instead of Portland cement, lime, bolts, screws and nails; in fact, adhesives offer one of the brightest rays of light to the architect beset by high costs and shortages. Thirty pounds of adhesives will replace a half-ton of

cement and lime ordinarily required to set a hundred square feet of tile and at the same time will eliminate dampness and, consequently, some of the warpage and settlement. To show the staying power of adhesive and its waterproof qualities, Cutler cited examples of work where tile in outdoor swimming pools and exterior walls was still firmly in place after a 10-year period. The architect has, therefore, a new tool with which to work.

In the tropics, asphalt roofs post a

flow problem. Miracle Adhesive eliminates flow worries. Damp walls caused by capillary action of water working up through porous stone are prevented by the use of a coating of adhesive between the footing and the first course of stone or block.

### *Bonding a Sleeping Porch Deck*

Sheets of plywood were bedded in adhesive on the upper side of the rafters and tack-nailed to prevent slip. Joints were caulked with adhesive, and a second layer of plywood was installed with staggered joints and bedded with two coats of adhesive in a paint consistency. After seven years the installation is reported to be sound. A similar roof, built-up by using one course of roofers applied in the same manner, then 90 pounds paper cemented down with an adhesive mixed with sand, and a second course of paper bonded in the same manner, was recently installed on a cottage in Dover, Ohio. In this case, the tack-nailing of the roofers was the only use of nails in the entire job. Walls, floors, ceilings, windows, and roof were all installed with adhesives; also bathroom fixtures, cabinets, moldings, trim, etc.

One of the interesting adhesive short-cuts developed during the war was the application of metal insulation hangers to steel hulls, applied with adhesive instead of welding. This operation is now being applied to building construction, and in the John Hancock Insurance building at Boston 250,000 hangers made by Devices, Inc., New York, are being cemented on aluminum air-conditioning ducts with adhesive.

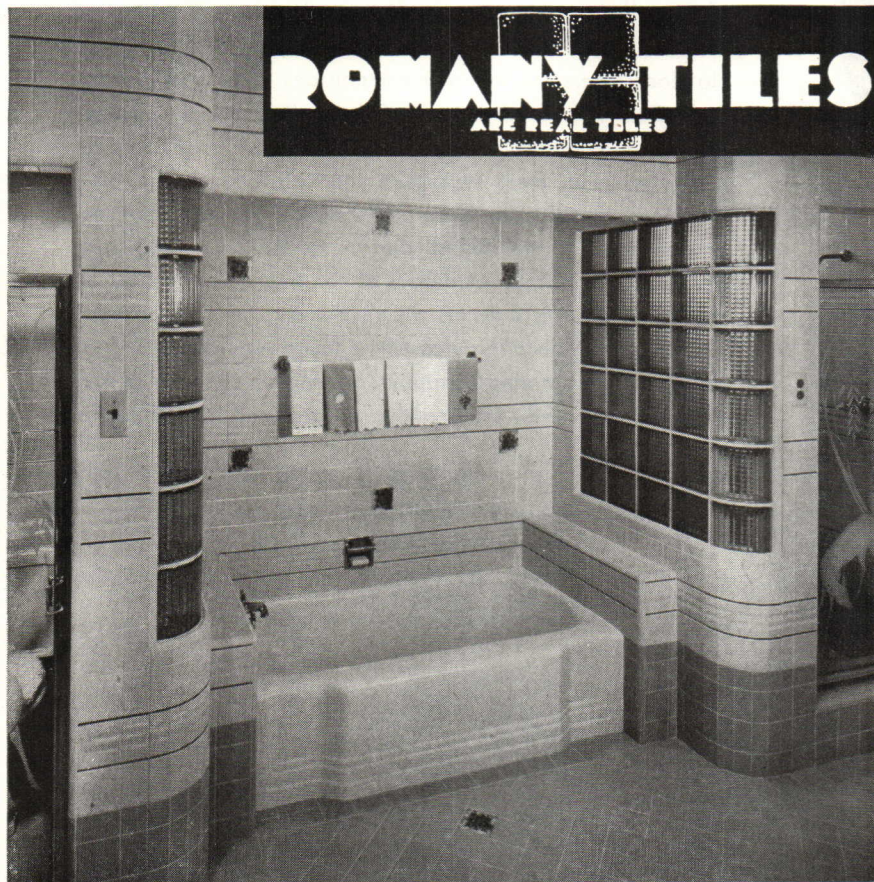
### *Cementing Down Treads and Saddles*

Other uses are the cementing-down of deck fasteners, deck treads, door saddles, and stair treads. Many manufacturers of these products recommend adhesive instead of bolts, which are costly and take time to install. An installation of 2200 door saddles proved to be sound after several years of use. Metal and plastic name plates were installed with adhesive on ships, saving thousands of man-hours. Robert Glenn Company found Miracle useful for this purpose at the United Nations project at Lake Success.

The Maritime Commission has used perforated anchors set with adhesive to install insulation, light wires, and cables. Today the Bell Telephone Companies in various parts of the United States hang wires on the same type of supports put up with adhesive, and the George A. Fuller Company used a similar hanger to bond the partitions of the UN Housing Project to concrete floors, thereby saving time and costly drilling.

Three-foot letters were cemented to polished granite on a telephone building in a temporary installation which, if set in the usual way, would be permanently defaced by granite. This is an application which all architects will welcome for the erection of bronze plaques, letters, etc. on the entrances of stone buildings.

(Continued on page 112)



## *For Walls of Many Colors*

### AND LIFETIME SERVICE

Romany—the real clay tile—offers all the inducement of a wide range of attractive colors. The hard glazed surface assures countless years of wear and a surface surprisingly easy to keep clean. For residences, there's nothing finer for kitchen and bath room walls. And for public buildings, institutions and restaurants, Romany assures the most sanitary of wall surfaces.

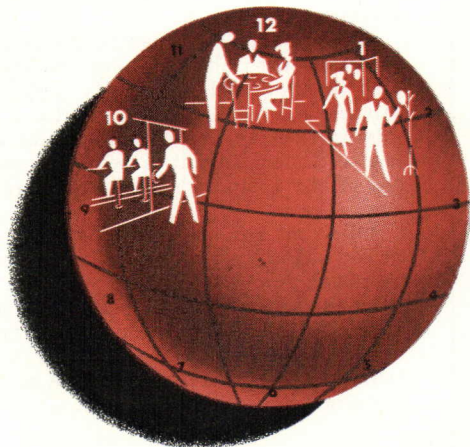
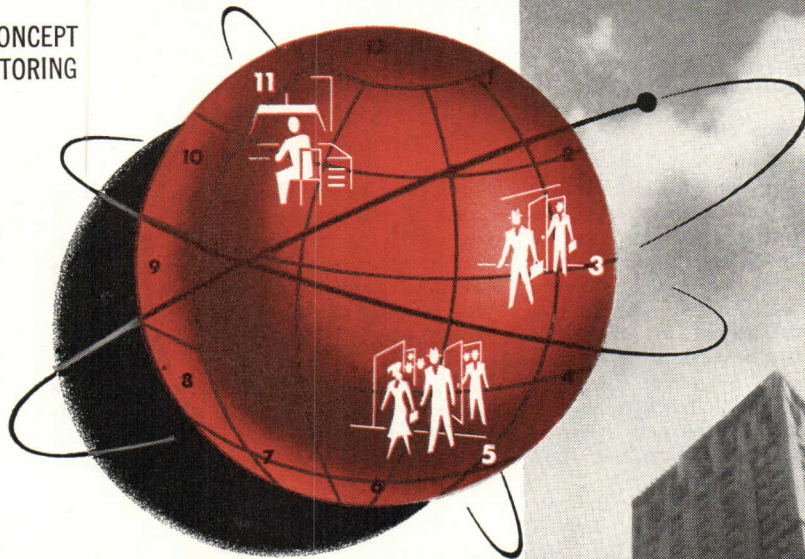
Write for color folder

**UNITED STATES  
QUARRY TILE CO**

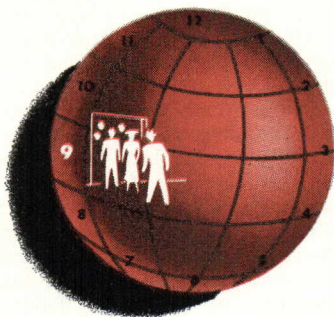
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timed to the **ENTIRE BUSINESS DAY**



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Otis AUTOTRONIC Traffic-Timed ELEVATORING is the first system to match service to all 6 of today's traffic patterns. Further, it operates automatically—without constant attention and frequent adjustment by the starter. Otis Booklet B-721-P explains how AUTOTRONIC Traffic-Timed ELEVATORING increases the efficiency of new or existing groups of elevators in office buildings, hotels, hospitals and department stores. Address: Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.

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**OTIS AUTOTRONIC**

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Timed*

**ELEVATORING**

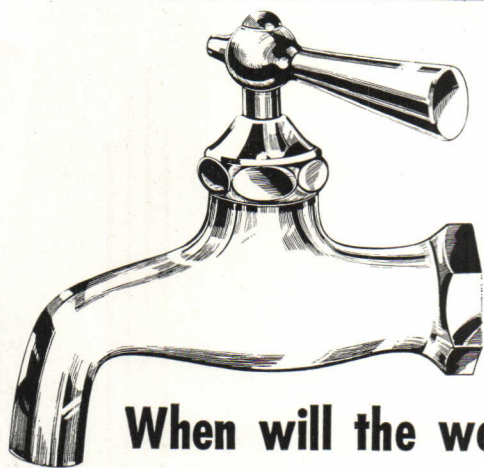
(Continued from page 110)

## Hangers Cemented to any Rigid Surface

Other applications include holding hangers for furring and insulation to masonry surfaces without roughing or drilling. These applications are based on the use of 2-inch by 2-inch square perforated metal, glued in place and fitted with a stud capable of receiving a hanger or hook. They are ideal for bonding 2-inch-thick terra-cotta veneer walls as was done on the new store of Best & Company, New York, or they

may be used for facing an old building with a thin veneer, as used on the Alcazar Hotel in Miami, Florida. Loads on hangers are limited. Hangers are used to apply Foamglas to ceilings and to support metal lath, brick veneer, glass veneer, insulation, wall fixtures, etc.

Experiments in providing a suitable adhesive for holding finishes to radiantly heated floors have been carried out by Miracle Adhesives Corporation.



## When will the well run dry?

Water sources are diminishing . . . in hundreds of communities all over America. And in hundreds of others, water disposal has become an awful headache. Many cities have ordinances which prohibit or curb the use of large quantities of water for air conditioning. That could be a tough situation for a lot of dealers . . . if it weren't for USAIRco's Refrigerated Kooler-aire.

That's the all-in-one-unit "central plant" that uses so little water that it will never get anyone legislated out of business. It actually cuts water consumption 95% . . . and all but eliminates the problem of water disposal.

But water is only one of the

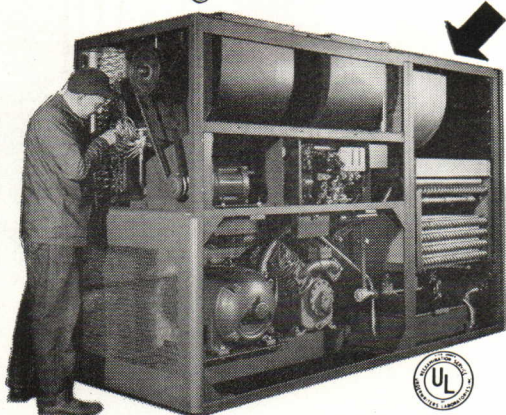
big economies you get with Refrigerated Kooler-aire. It costs less to install . . . because it's compact, complete, needs less plumbing, less electrical work, fewer building alterations. It costs less to run . . . because it's completely pre-engineered and tested, accurately controlled by automatic thermal devices. It costs less to keep in tip-top running order . . . because it's sturdily, simply built, and protected by automatic safety devices.

When your customers are looking for top air conditioning performance and rock bottom air conditioning cost . . . tell 'em about USAIRco Refrigerated Kooler-aire . . . and get the order!

## USES 95% LESS WATER

The water-saving secret is in the evaporative condenser. Once the unit is started, this condenser uses only enough water to replace the amount lost by evaporation. This loss is taken care of by an automatic float valve, which maintains tank level at a fixed point.

Result: total consumption of 5 gallons for every 95 gallons used by old-fashioned "water hog" systems!



**UNITED STATES AIR  
CONDITIONING CORPORATION**  
Como Ave. S.E. at 33rd  
Minneapolis 14, Minnesota

It is possible to incorporate ingredients with the adhesive that will direct the flow of heat downward, upward, or in both directions.

## Color Added to Glass Block

Glass blocks can be held without the use of reinforcement by buttering adjacent surfaces of blocks with adhesive and pressing them together. An interesting discovery was made by Cutler in experimenting with glass blocks. By painting the adjoining surfaces of blocks ordinarily used for holding mortar, it is possible to add color to the blocks. The tones are subtle and it is hard to distinguish the color source. Only by the use of adhesive instead of the ordinary buttering method, would it be possible to achieve this added warmth.

Mirrors may be cemented directly to the walls with adhesive, but the architect is cautioned to specify Type G. Miracle Adhesives, which is suitable for mirror work in lieu of the regular adhesive. Cutler said it is best to consult one of the company's field engineers in such a case.

Linoleum has been held to basement floors with adhesive. The adhesive seals the floor, but no uniform performance data on the linoleum is available. Each application has been a matter of trial and error because so many factors contribute to the success or failure of the installation.

CARL J. CARLSON

## New Ways of Testing Materials

In his opening remarks, Dr. Leslie D. Long of the Newark Testing Laboratory, stated he is a civil engineer, has specialized particularly in the testing of asphalt and concrete, and has had considerable experience in road building, both in Cuba and the United States.

Over 100 inquiries have been received by him regarding causes of concrete failures. These, he has found, were mostly due to the lack of control of the concrete mixture. As a guide, he has worked out a table of average concrete mixtures which he will gladly furnish any architects interested. Other tables are contained in Goldbecks Table of Mixes, appearing in National Crushed Stone Association Bulletin No. 11.

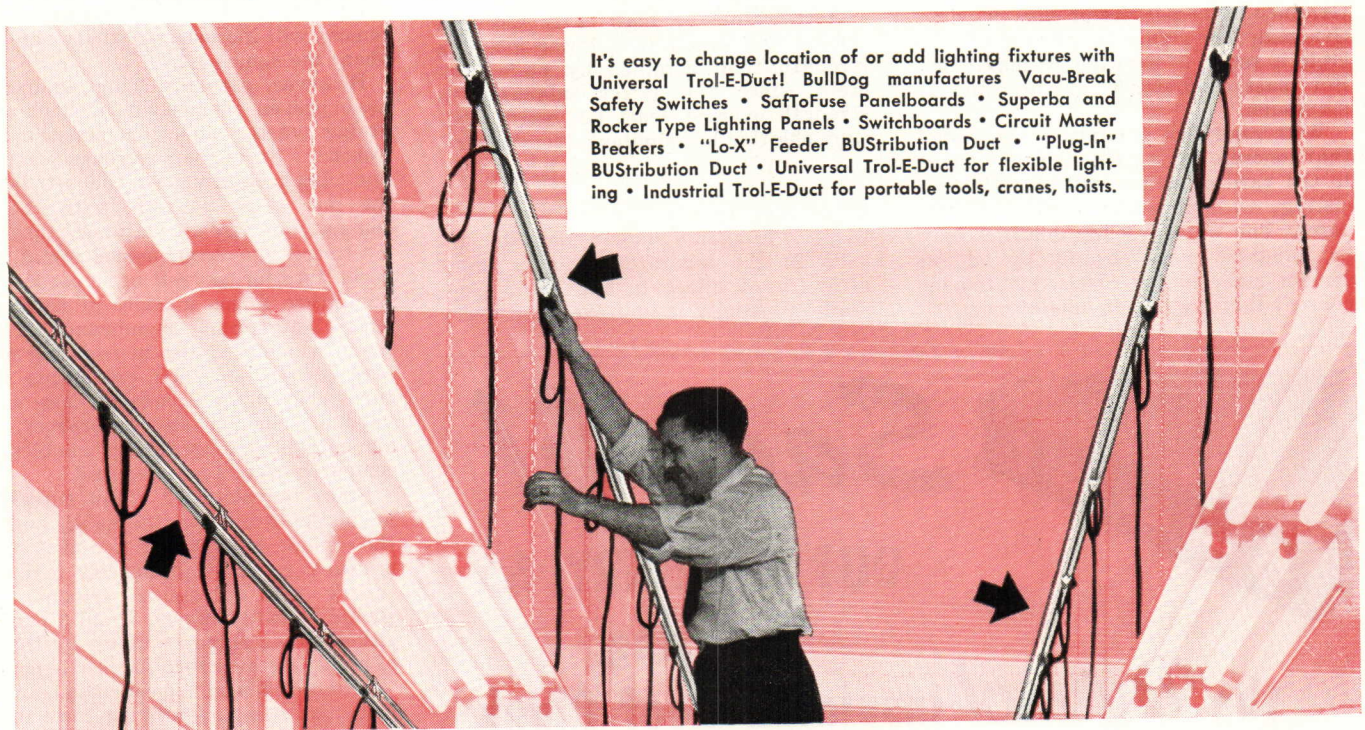
Specifications usually provide for a minimum amount of cement to be used for each cubic yard of concrete. Dr. Long recommends to specification writers that a greater economy is secured when no minimum amount of cement is specified, but that the proportions of the mix be determined by the design strength. The only difficulty with this procedure is that high early strength cements may be substituted and produce a deceptive result in short-term tests, but this can be detected in the laboratory.

It is important to specify the slump. In his practice only maximum slump is mentioned, since the minimum is de-

(Continued on page 114)

## ARCHITECTS and ENGINEERS

This message will also appear in a broad list of publications that are read by the men you seek to influence . . . your prospective clients



It's easy to change location of or add lighting fixtures with Universal Trol-E-Duct! Bulldog manufactures Vacu-Break Safety Switches • SafToFuse Panelboards • Superba and Rocker Type Lighting Panels • Switchboards • Circuit Master Breakers • "Lo-X" Feeder BUStribution Duct • "Plug-In" BUStribution Duct • Universal Trol-E-Duct for flexible lighting • Industrial Trol-E-Duct for portable tools, cranes, hoists.

## Highlights on low lighting costs

**H**AVE you ever looked into the cost of a simple job like moving or adding a fixture in an ordinary lighting system?

First, there are new materials — wire, conduit, junction box, outlet box, hangers, etc.; then, labor expense for splicing, threading, bending, taping, etc.; finally, loss of production while power is shut off for connections.

**There is no need to see profits drain away like this. Plug the leak with Bulldog Universal Trol-E-Duct.**

Bulldog Universal Trol-E-Duct is a flexible electrical system providing current *where* you want it, *when* you want it. Every inch of the enclosed copper bus bars in Universal Trol-E-Duct can be utilized as an outlet for lighting fixtures. You can plug in for current at any point along its slotted duct. Bus bar capacity: 50 Amps., 250 Volts.

**Bulldog** Universal Trol-E-Duct is 100% salvable, thus lends itself to major or minor plant changes. Simply dismantle prefabricated parts and reinstall to meet your new requirements. *Not a single piece need be scrapped.*

Ask your local Bulldog Field Engineer to show you a Universal Trol-E-Duct installation in your own neighborhood.

Bulldog Field Engineers welcome the opportunity to sit in with you during the early planning stages of a building project. Their knowledge of electrical distribution layout can mean savings in installation costs, as well as efficiency and reliability in actual operation. Why not take advantage of this service?

### BULLDOG ELECTRIC PRODUCTS COMPANY

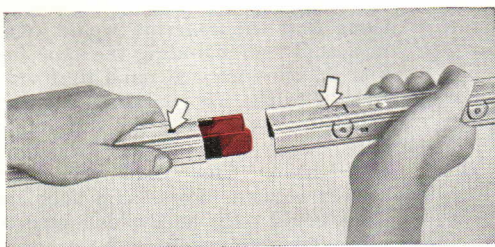
DETROIT 32, MICHIGAN • FIELD OFFICES IN ALL PRINCIPAL CITIES

IN CANADA: BULLDOG ELECTRIC PRODUCTS OF CANADA, LTD., TORONTO

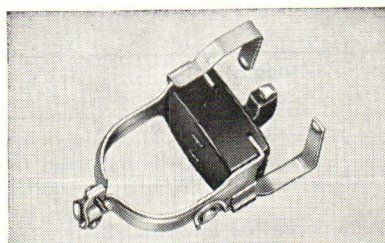


# BULLDOG

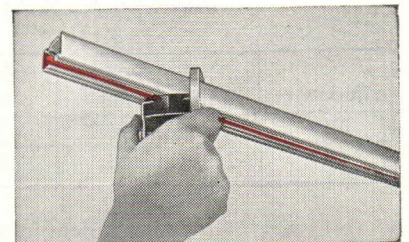
HEADQUARTERS FOR ELECTRICAL DISTRIBUTION



Bulldog Universal Trol-E-Duct is prefabricated in one to ten foot lengths for easy installation. A variety of couplings with specialized purposes join sections. Connections slip together; no nuts or bolts.



Terminal Twistout Plug, one of several types used to tap current from Universal Trol-E-Duct. Duct also accommodates movable trolley-type outlets.



Inserting a twistout plug is easy. Contact end is inserted in slot and twisted. "L"-shaped supporting fingers slide easily over top of duct.

## TECHNICAL TRANSCRIPTS

(Continued from page 112)

terminated by necessities of easy pouring. Generally, the slump for reinforced concrete is set at 5" average, 6" maximum. For mass concrete, 3" average and 4" maximum.

With regard to admixtures, he stated that concrete having 6½ bags of cement to the yard or better will be water resisting, without waterproofing admixtures. The waterproofing qualities may be imparted more cheaply by adding cement sufficient to reach this cement content than by use of admixtures.

Accelerators or high early strength cement will result in a lower ultimate strength than attained by plain concrete, since the latter increases in strength over at least 30 years. Calcium chloride has similar adverse effect.

### Dispersing Agents

Dispersing agents show remarkable results in the laboratory, but a great diversity of effect in the field. Generally, plasticity is improved, but every

so often an entire batch of concrete fails to set up. Until the action of these agents is better understood, and the necessary job controls determined, there is an element of risk in their use. Added cement will increase plasticity safely at about the same cost.

However, air entraining admixtures have proven themselves in road work, giving vastly superior resistance to weather. Since they increase plasticity and check bleeding, or the settling of the mix after pouring, with the accompanying rise of laitance, they are most strongly recommended for all concrete, interior as well as exposed. The admixture forms a series of tiny cells, with waterproof membrane around them, which aids also in resisting moisture penetration. Air entraining mixtures containing 6 bags of cement per yard of concrete are waterproof, and air entrainment generally enables the cement content to be reduced.

Since the quantity of an entraining agent depends upon the sand, and not the cement, it is proper to add it to the mixture, rather than specify manufacturer's air entraining cement. Air should be held between 3 and 6 percent, either by weighing or better by the use of an air meter before the mix is poured.

Where ready-mixed concrete is hauled long distances, overmixing may result. An actual mixing truck haul of 1½ hours showed equal or greater strength compared with a normal mixing time, but the air entraining agent should then be added to the truck at the job, where a few extra turns will incorporate it.

Long criticized the practice of specifying that the contractor select the testing laboratory and pay for testing of cement and concrete, since in such cases the contractor can bring pressure on the laboratory. Here Mr. Williams interposed with the statement that the A.I.A. documents provide that the owner pay for tests.

Time did not allow for a discussion by Long on the subjects of vermiculite and haydite, but he offered to answer any questions on those subjects.

### Question Period

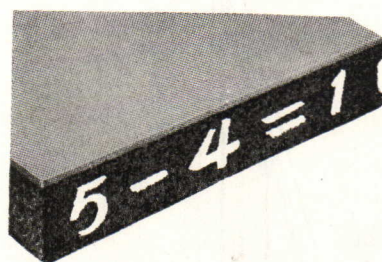
The question-and-answer period brought out the following additional information:

1. Accelerated tests of concrete for weather resistance are of value only to a certain extent, since it isn't possible to set up a sample for an accelerated test that would include the many conditions that the concrete would undergo in actual use, including the time factor.

2. In one instance, sand that was delivered to the job contained a corrosive element that stained the concrete, and cases were cited where an unknown chemical in the sand prevented the proper setting. Long said such conditions could only be avoided by testing all materials as well as the concrete itself. Such tests can be made quickly and are inexpensive.

3. Where job requirements do not al-

(Continued on page 116)



# Save \$1

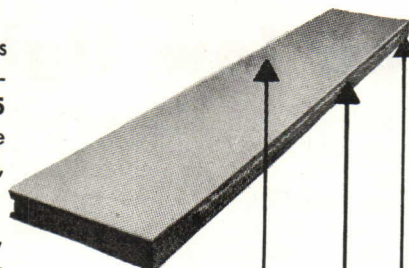
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## the Durisol Insulated Roof Plank

This roof plank combines so many functions in one material...all at one low installation cost...that \$4 does the work of \$5 as compared with other materials. Note the 3-in-1 advantages of this light-weight, precast, factory-coated plank:

- 1 Fireproof, reinforced, cement-surfaced, and ready for application of the built-up roofing.
- 2 Because Durisol itself is such an effective barrier against heat losses, no additional insulation is required.
- 3 Noise-deadening ceiling at no extra cost...distinctive and pleasing in appearance, with a sound absorption coefficient of 0.87 at 512 cycles.



THE ROOF DECK

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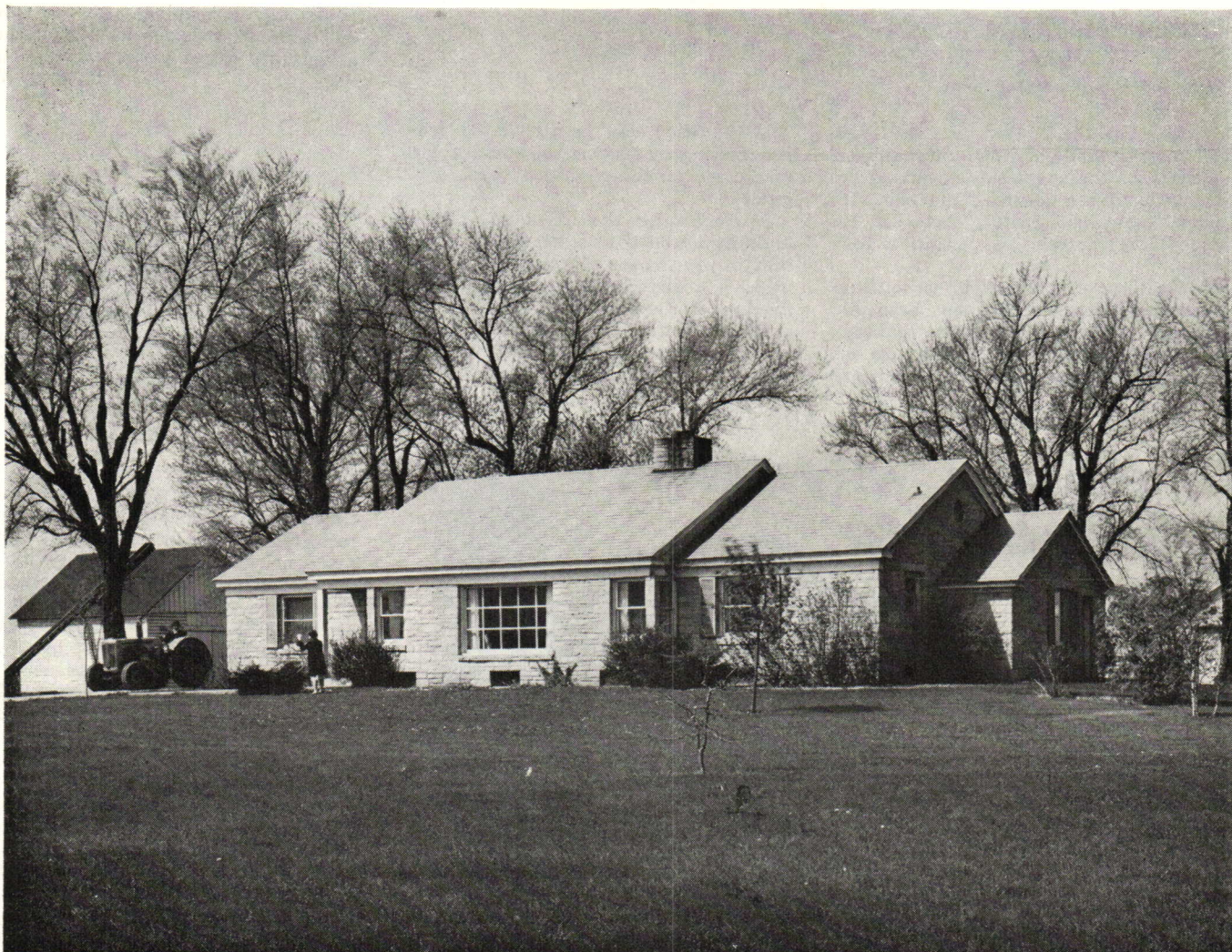
ACOUSTICAL CEILING

**DURISOL** is made from chemically mineralized wood fibres bonded with Portland cement and moulded under pressure. It is unaffected by moisture and is proof against rot, mould, vermin, termites—proved incombustible by laboratory tests.

| Thickness | Width | Maximum Span | Weight per sq. ft. | Long Edge         | Load   |
|-----------|-------|--------------|--------------------|-------------------|--|
| 3¼"       | 16"   | 6'8"         | 15 lbs.            | Tongue and Groove | 40 lbs. per sq. ft. live load with high safety factor. |
| 4¼"       |       | 8'           | 18 lbs.            |                   |  |

For complete information, write for folder (A.I.A. File Number 4-K). Also see catalog 3c/13a, Sweet's File Architectural, 1949.

**DURISOL, INC.** 420 Lexington Avenue, N. Y. 17, N. Y.



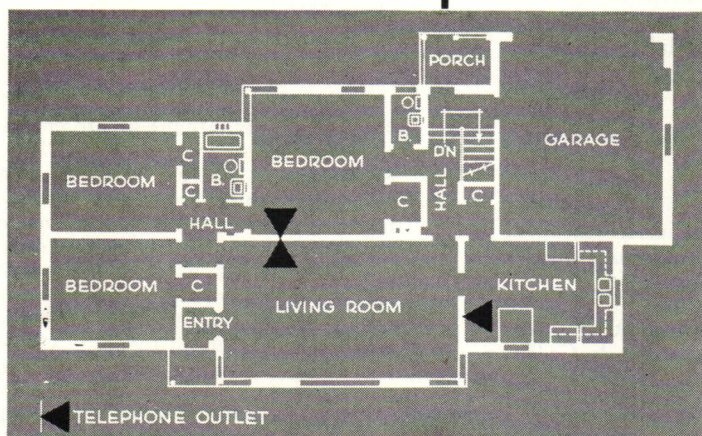
Arthur F. Moratz, Architect, Bloomington, Ill.

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It's easy to build a "Telephone Planned" home. That means concealed telephone wires, and preplanned, conveniently located telephone outlets.

Telephone raceways will do the job. Just a few short lengths of pipe or tubing, installed during construction, will carry telephone wires inside the walls to the outlets.

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**BELL TELEPHONE SYSTEM**

## TECHNICAL TRANSCRIPTS

(Continued from page 114)

low time for the 28-day tests, a 7-day test may be made and the approximate strength of the concrete determined on the basis of the shorter time test. In special cases, satisfactory tests can be made right on the job, within a few hours.

4. Spalling of concrete, in structures, after many years of use, has been observed in various parts of the country, and may be overcome by the use of controlled concrete and air entrainment.

The condition can be prevented from progressing by coating the surface with stucco, or patching of bad spalls with gunite.

5. Regarding the effect of air entraining on bond to steel, it was found that in most cases there was a decided increase in bond due to more uniform placing of the concrete. However, too much air will weaken bond.

Considerable interest in the discussion was aroused by this time, but the

chairman, in keeping with the rule to end these discussions at 2 p.m. sharp, reluctantly closed the meeting.

SAMUEL KATZ

### Air Entrained Concrete

John J. Hogan, regional structural engineer of the Portland Cement Association, opened his discussion on recent developments in portland cement concrete and air entrainment, with the statement: "It is our belief that the outstanding development in concrete technology, certainly insofar as exposed concrete is concerned, is that of air entrainment."

#### Discovery and Development

About 10 years ago it was recognized that the entrainment of air in concrete, resulting from intergrinding certain fatty or resinous materials with the cement, greatly increased the resistance of exposed concrete to frost and salt action. Following that discovery much study, research, and development work has been necessary to arrive at the present level of accomplishment. This progress has involved constant research in the laboratory as well as observation and study of test roads and other structures in service.

During the period 1938-1942, test roads were constructed by six of the North Atlantic states. Other states and agencies, including Wisconsin, Ohio, Michigan, Indiana, Kentucky, the City of Minneapolis, and the North Atlantic Division of the U.S. Engineer Department, were actively engaged in similar studies. The results were so outstanding that much military construction in this country during the war was built with air entraining cement. Air entrained concrete is now in standard use by the War Department, many states, municipalities, and other agencies. It is also provided for in the specifications of the Public Roads Administration.

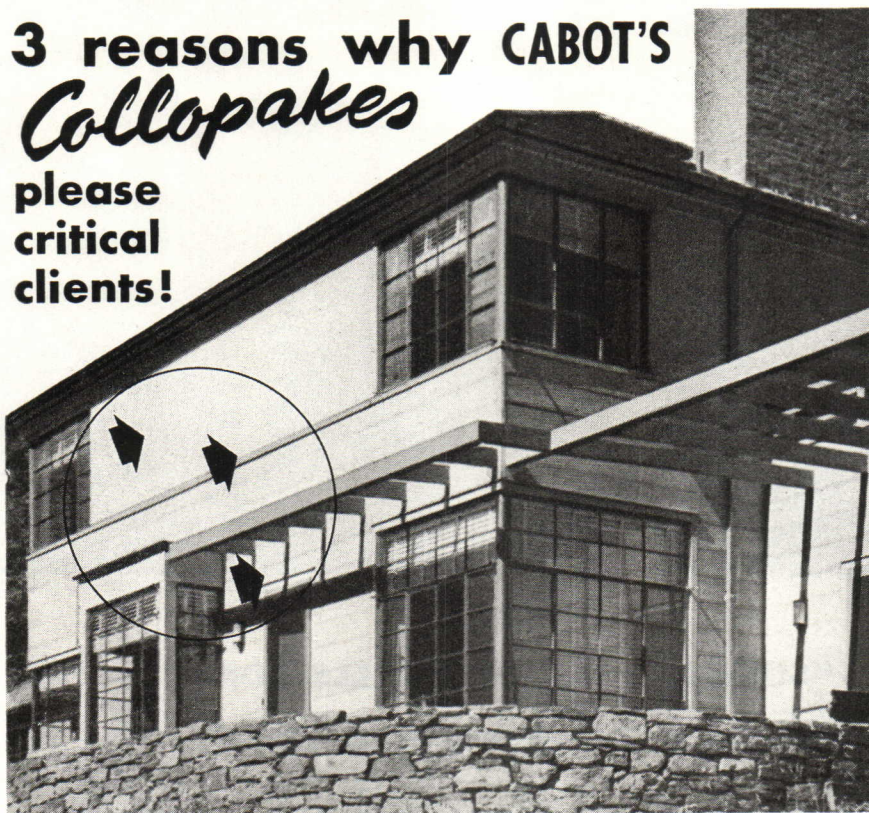
#### Increases Durability, Weather Resistance

The prime advantages of air entrained concrete are increased durability and resistance to scaling and disintegration due, under some conditions, to freezing and thawing action but more particularly to the action of de-icing agents such as calcium and sodium chlorides. Success in this respect has been outstanding, although air entrainment does not claim to be a "cure-all" because good concreting practices must be followed.

Other worthwhile advantages include reduced bleeding or water gain, improved workability and uniformity, together with freedom from segregation throughout the mass. Finishing operations on pavements usually follow closely behind the mixer, which is a decided working advantage.

(Continued on page 118)

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Architect: Willis N. Mills

- 32 lively colors — including many shades available from no other source — give freedom of color selection!
- Because no adulterants are used, Collopake's colors stay bright and fresh-looking for years!
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Even the most critical clients will express continuing satisfaction with the long-run economy, the enduring beauty of Cabot's Collopakes.

**Write Today** for color card, showing 32 colors. See Cabot's several exclusive shades including Haddam Barn Red, Longfellow Yellow, Harwichport Blue and Williamsburg Blue.

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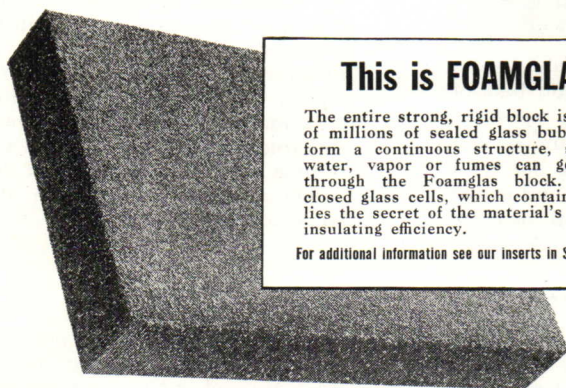
• When you face the problem of recommending the most efficient and economical roof insulation to your clients, you can solve it successfully by specifying PC Foamglas.

This cellular glass material possesses excellent insulating properties. Being true glass, it is also fire-

proof, vaporproof and verminproof. That is why—on many prominent buildings all over the country, PC Foamglas insulation has set new records for long, trouble-free service.

You can recommend PC Foamglas for the most exacting insulating jobs, with full confidence in its satisfactory performance. In roofs, walls and floors of all sorts of buildings, PC Foamglas—installed according to our recommendations and specifications—has retained its original insulating efficiency *permanently*.

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The entire strong, rigid block is composed of millions of sealed glass bubbles. They form a continuous structure, so no air, water, vapor or fumes can get into or through the Foamglas block. In those closed glass cells, which contain inert air, lies the secret of the material's permanent insulating efficiency.

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*... when you insulate with FOAMGLAS... you insulate for good!*



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## It won't mar the lasting beauty of Varlar Stainproof Wall Covering

**W**HATEVER stain you choose . . . ink, food, hair tonic, cold cream, crayon, even shoe polish . . . it washes right off Varlar, quickly and easily, with ordinary soap and water. Time and time again, Varlar comes up as sparkling-fresh as the day it was put up. Resists fire, steam, water and vermin, too!

Stainproof Varlar has no surface coating to crack or peel. No brittle plastic "skin" to chip or discolor. That's why *any* interior wall, commercial or domestic, can enjoy stunning new beauty and cleanliness never before possible. Varlar's rich new coloring and stain resistance go

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Varlar offers architects a versatile new decorating medium of durable beauty and protection . . . suitable for use in any room or hallway, public or private, domestic or commercial. All 93 stunning styles . . . florals, plaids, weaves, pictorials, stripes and tones . . . go up easily as wallpaper.

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I'll show you how to stain it! Send my **FREE** sample of Varlar and I'll make my own tests.

Name.....

Street.....

City..... Zone..... State.....

## TECHNICAL TRANSCRIPTS

(Continued from page 116)

Since the first air entrained concrete jobs, increased knowledge and experience have brought about so many improvements in specifications, construction procedure, and field control, that today the architect may specify air entrained concrete with full confidence.

Some architects prefer to add the air entraining agent at the mixer instead of using air entraining portland cement in which the agent has been interground at the mill. With careful control the end result should be the same. However, Hogan said that under most conditions the air entraining portland cement will prove the most convenient and practical way to obtain air entrained concrete.

### *Design Proportions*

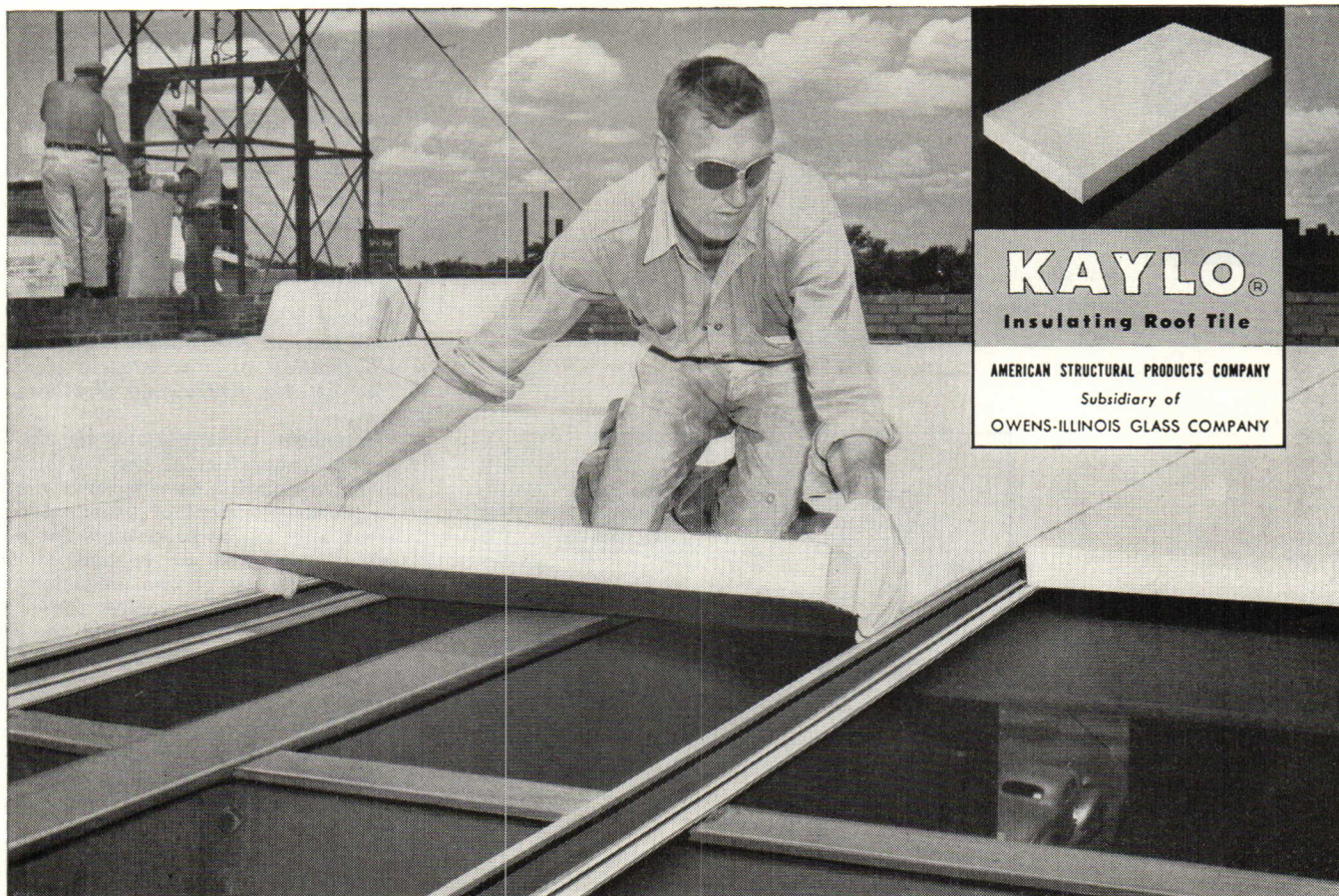
Concrete mix design practice, making provision for air entrainment, is now well established. Normally, the mix is specified for the same cement factor, amount of coarse aggregate, and total yield that has been established for a corresponding normal concrete mix. The water content can usually be reduced from  $\frac{1}{4}$  to  $\frac{1}{2}$  gal. per bag of cement and allowance must be made for the expected volume of air in establishing the desired yield. The consistency should be about the same as for normal portland cement concrete.

Under some conditions adjustment may be required in both coarse and fine aggregates; such adjustments are common with any mix design. Yield tests should be made and used as a basis for correction in the mix to obtain the desired cement factor. Maintenance of the established cement factor combined with a reduction in water-cement ratio, will keep the reduction in strength to a minimum. Such reduction in flexural strength may be expected to equal 2 percent for each 1 percent of air entrained. For most concrete mixtures, this reduction leaves ample strength for structural requirements. However, if deemed necessary on certain types of work, such reduced strength may be restored by a slight increase in cement factor. To insure the desired durability it is important that the volume of air entrained be at least 3 percent of the volume of the concrete and to avoid undue reduction in strength, it should not exceed 6 percent.

### *Measurement of Entrained Air*

Several methods and types of equipment are in use for determining the volume of air entrained in the fresh concrete. The more commonly used procedure in this area has been the unit weight or gravimetric method provided by A.S.T.M. C138-44. Accurate determination of air content by this method requires positive and accurate information on specific

(Continued on page 120)



In a Kaylo roof deck  
you get:

# INSULATION STRENGTH LIGHT WEIGHT

in one material

Advantages never before combined in one roof deck material are yours with Kaylo Insulating Roof Tile.

## Kaylo Roof Tile:

**Is lightweight.** This reduces dead load on buildings and saves steel. Weighing only about 5 to 6 pounds per square foot, Kaylo Roof Tiles are easy to handle.

**Is strong.** Kaylo Roof Tile is a reinforced structural unit designed for a total load of 50 pounds per square foot with an adequate safety factor.

**Insulates.** Special operation of applying insulation over the roof deck is eliminated. Kaylo Roof Tile has insulation value equal to an inch and a half of standard insulating board.

Kaylo Insulating Roof Tile can be specified for any standard structural roof. For special contour problems, Kaylo Roof Tile can be cut to fit, on the job.



**Easy to handle.** Two men here carry 8 Kaylo Roof Tiles, walking on roof deck already laid.



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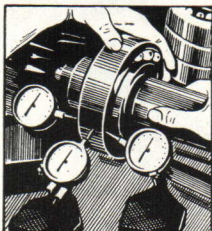
Gentlemen: Please send free 12-page illustrated booklet.

☐ Request for sample is enclosed on company letterhead.

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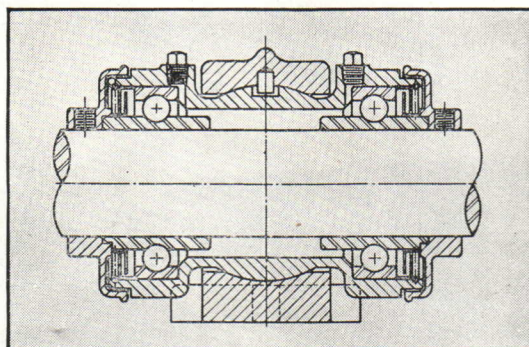
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— the small extra first cost of test samples pays off in assurance of efficiency and durability of the finished mechanism.



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6. Mechanical processing creates permanent transparency.



# ARKWRIGHT

## TRACING CLOTHS

AMERICA'S STANDARD FOR OVER 25 YEARS

### TECHNICAL TRANSCRIPTS

(Continued from page 118)

gravities of all materials, on free moisture and absorption of aggregates, on amount of water added at the mixer, and on total batch weight.

Methods of air determination which appear to be the most practical for general use are described in the Portland Cement Association pamphlet, *The Elimination of Pavement Scaling by Use of Air Entraining Portland Cement*:

"Extensive investigations by the Research Laboratory of the Portland Cement Association have recently resulted in the development of practical equipment and simple procedures for determination of the air content of fresh concrete by use of two unrelated principles. The methods using these principles have been designated the *Pressure Method* and the *Rolling Method*. Neither of these methods are dependent upon any knowledge of volumetric data pertaining to the several ingredients in the mix. Numerous field and laboratory tests have repeatedly shown remarkable agreement between results obtained by the two methods.

"*The Pressure Method* is based on Boyle's Law, and utilizes the reduction in volume of the entrained air in a sample of concrete, when it is placed under pressure, as a measure of the air content of the concrete. This method was conceived by W. H. Klein and is discussed by Messrs. Klein and Walker in the June 1946 Journal of the American Concrete Institute.

"*The Rolling Method* makes use of direct volume measurement by liquid replacement of the entrained air liberated from a sample of concrete while tumbling it in an excess of water. Alcohol is used as the replacement liquid because of its ability to dispel quickly and almost completely all foam formed during the rolling operation.

"Both the Pressure and Rolling Methods yield accurate results when applied to air entrained concrete. Time required to perform a test by the Pressure Method is about half that required for the Rolling Method; this gives the Pressure Method preference in most cases. In the case of concrete made with aggregates of high and variable porosity, such as slab, the Rolling Method is considered more practical."

#### Condition of Test Roads Was Surveyed

"A discussion of the use of air entrained concrete," said Hogan, would not be complete, at this time, without describing the performance record of the early test roads built in six of the North Atlantic states. Considerably more than \$1,000,000 was spent in constructing these roads on regular traffic routes incorporating air entraining portland cement along with other variables, in

(Continued on page 122)



## Pittsburgh Steeltex Floor Lath

gives you both

### *Form and Reinforcement*

The placing of floors moves swiftly, smoothly and at a big saving in time and material with Pittsburgh Steeltex Floor Lath. This combination of form and reinforcement for concrete and gypsum floors and roofs eliminates the need for slow, costly form-work.

Pittsburgh Steeltex Floor Lath is a combination of a uniformly spaced welded wire mesh laced to a waterproof cord-reinforced backing. The lacing wires are crimped to permit separation of the backing which gives you automatic imbedment from the weight

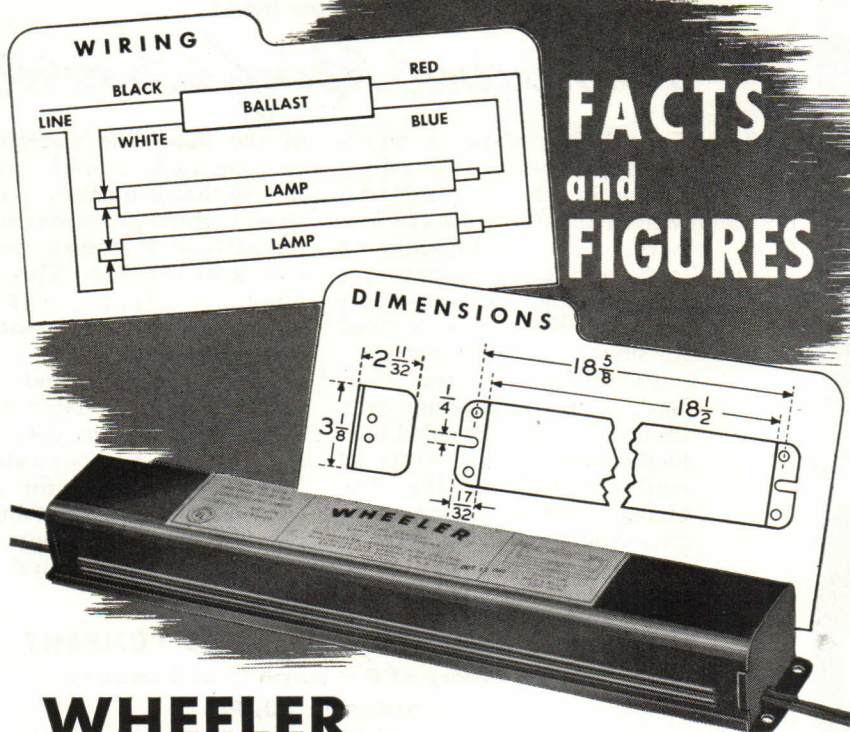
of the mix. The waterproof backing holds the water in the mix so that it must evaporate slowly which gives maximum strength and assures proper curing of the slab. This also minimizes drip, prevents loss of cement and eliminates cleanup expense.

For better floors and roofs use Pittsburgh Steeltex Floor Lath—it will save you time and money. See our catalog in Sweet's or write for your copy of D.S. 133 to Pittsburgh Steel Products Company, Department PA, Pittsburgh 30, Pennsylvania.

**PITTSBURGH STEEL PRODUCTS COMPANY**

**A Subsidiary of Pittsburgh Steel Company  
Pittsburgh 30, Pa.**

(Continued from page 120)



## FACTS and FIGURES

# WHEELER BALLASTS FOR SLIMLINE

Next time you work a slimline lighting treatment into your plans for a commercial, educational or industrial installation, check to be sure that the fixtures are equipped with Wheeler ballasts. You'll be doing your client an additional service by specifying ballasts that will give him maximum performance and economy. You'll be doing yourself a service by preventing future complaints of faulty fixture operation due to inferior components. Wheeler ballasts can play an important part in the success of your plans and recommendations.

We believe a fluorescent ballast should—besides operating a lamp—give the user the assurance that he is incorporating into his product the best ballast obtainable. He should feel that he's getting quality materials assembled by experts and tested to rigid specifications before they go into his fixtures.

Wheeler ballasts for slimline lamps meet the most exacting requirements. They're designed to give added lamp life, with a minimum of operating heat and noise. They're rated conservatively, built to uniform standards of dimension and carry the Wheeler guarantee without reservation. All Wheeler ballasts for slimline fluorescent lamps are approved by Underwriters' Laboratories, Inc.

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order to obtain comparisons of performance under normal traffic use."

A detailed study of all projects was deemed to be of interest and value to those who have experienced scaling troubles. Therefore, during the past season, a condition survey was made of 15 such test roads located in New York, Massachusetts, Maine, Vermont, Pennsylvania, and Delaware.

These projects were so planned that, in general, cement was the chief variable. Cements used were as follows:

1. Normal portland cement.
2. Special portland cements, including coarse ground varieties.
3. Air entraining portland cements, having the characteristics of (1) and (2) using the following additions in amount of 0.03 to 0.05% by weight of cement.

- a. Vinsol resin
- b. Beef tallow
- c. Codfish oil

4. Natural cements with and without addition of A/E portland cements.

In the past, some normal cement concrete pavements have developed severe scaling during the first winter's exposure to de-icing agents. In fact, freedom from scaling could not be predicted unless the use of chloride salts in any form was prohibited. All of these roads have been subject to normal ice control treatment as practiced in the respective states; one has survived nine winters. Hogan reviewed their performance.

Briefly, it can be stated that not one of these 15 projects, subjected to the most severe conditions of exposure, has had any scaling whatsoever where air entraining portland cement concrete was used. On the other hand, on most of the projects where air entrained concrete was *not* used there has been scaling and, in some cases, a considerable amount.

In Hogan's opinion, practically all scaling observed has been due to salts used chiefly in combination with abrasives and principally on hills, curves, and at intersections.

### Question Period

1. The key to good concrete when adding the A/E agent at the site of the mix is good on-the-spot inspection.

2. Be careful of salesmen who sell all admixtures, and ready-mix plants that use various admixtures.

3. Laboratory tests are not all inclusive; one must clearly supervise all mixes.

4. Trowelling is a little more difficult, where A/E portland cement is used, because the material is more tacky.

5. Where air temperatures do not change suddenly as in the Southern and West Coast states, A/E Portland cement is not especially required.

C. HERBERT WHEELER, JR.



## W. N. Murray OF HERMAN NELSON

*W. N. Murray, manager of Herman Nelson's Branch Office at 80 Boylston Street, Boston 16, Mass., has been with the company since 1928. A graduate of Massachusetts Institute of Technology, he was employed by his Alma Mater as an engineering instructor for two years before joining Herman Nelson as a Product Application Engineer. In 1942, he entered active service with the United States Navy and attained the rank of Lieutenant Commander before his discharge at the end of the war. His knowledge in the solution of heating and ventilating problems has been gained through years of study and actual experience. Territory served by Mr. Murray's Branch office includes the major part of New England, with the exception of Maine and eastern New Hampshire.*

**A**T YOUR SERVICE throughout America are skilled Herman Nelson Product Application Engineers like W. N. Murray of Boston.

Each Product Application Engineer . . . and there are more than 75 of them strategically located in principal cities . . . has been trained to work with you in the sound, practical and economical solution of heating and ventilating problems for industrial, commercial and institutional buildings of all types. Each is required to do a great deal more than sell Herman Nelson products. In fact, Herman Nelson regards the work of any Product Application Engineer as unsatisfactory if he sells by making extravagant claims that cannot be fulfilled, or if he sells our products for installation under conditions which will not assure satisfactory operation.

Working closely with Herman Nelson's 14 branch managers and Product Application Engineers are more than 200 carefully selected Distributors and Stocking Jobbers with personnel trained in the application, installation and servicing of our products.

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# It's the Law

By BERNARD TOMSON



Recently the writer addressed the New York Chapter, A.I.A., on "A Fundamental Legal Problem in Architectural Practice." The reaction indicated that the problem discussed should be brought to the attention of the profession generally for further discussion at chapter

and group meetings everywhere.

Specifically, the viewpoint expressed was that the A.I.A. contract documents relating to the architect-client relationship were inadequate and required drastic revision. Some of the difficulties that have been encountered in the use

of the present forms have been previously discussed by the writer in P/A.\*

It has been pointed out that there is no clause providing for a retainer fee payable at the time of the making of the agreement. There is no provision for adequate periodic payments during the preparation of preliminary studies and working drawings. The present provision of the percentage of cost agreement, that the percentage is to be computed "upon a reasonable estimated cost," should, it has been urged, provide that for this purpose the architect's estimates are to be binding until actual costs are finally determined. The advisability of a clause protecting the architect against claims based on alleged underestimates and the inadequacy of the provision relating to arbitration have been previously discussed.†

This is by no means an all-inclusive recital of the deficiencies of the present form. The defects recited are merely illustrative and sufficient to point out that the present forms are inadequate, imperfect, and incomplete. The present forms, therefore, place the architect on the horns of a dilemma. If he attempts to use the printed form he must strike out, modify, and insert to the point of mutilation, and thereby take the risk of placing the client on guard. If he does not use the printed form, he thereby loses a psychological advantage and ordinarily will rely on a simple letter which often results in a vague, indefinite, inadequate, or unenforceable "agreement."

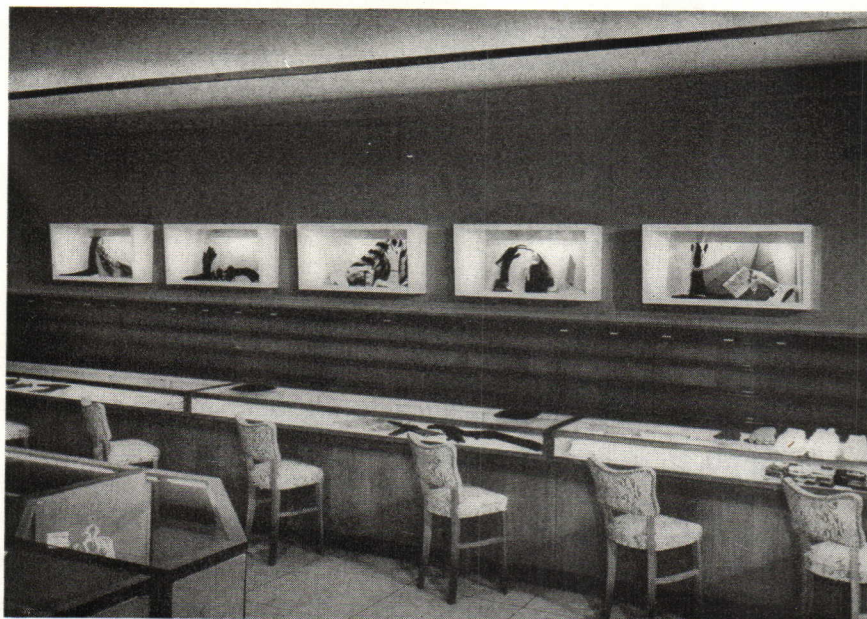
It seems fairly obvious that the profession urgently needs:

1. A simple short form of architect-client contract which could be used without significant alterations.
2. A separate, comprehensive set of terms, conditions, and general rules which could be "incorporated by reference" into the short form.
3. A brochure in simple, lay language for the client which will indicate in detail the probable extent of his commitment.

The need for these stems from the fact that, strangely enough, the general public has only a vague conception of what constitutes an architect's services. It knows the value and duties of a lawyer and doctor; everyone under-

(Continued on page 126)

STONE & THOMAS, THE PEOPLE'S STORE, CHARLESTON, W. VA.  
Designed by: George Frei, Amos Parrish & Co., Inc.



## THE PEOPLE'S CHOICE Bergen Elected Again!

Elected again! This time by the People's Store, who now proudly point to the most modern store in the South.

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Write for our Portfolio of "Jobs Well Done". It's worth seeing.



Bergen—sure the success of your modernization program with

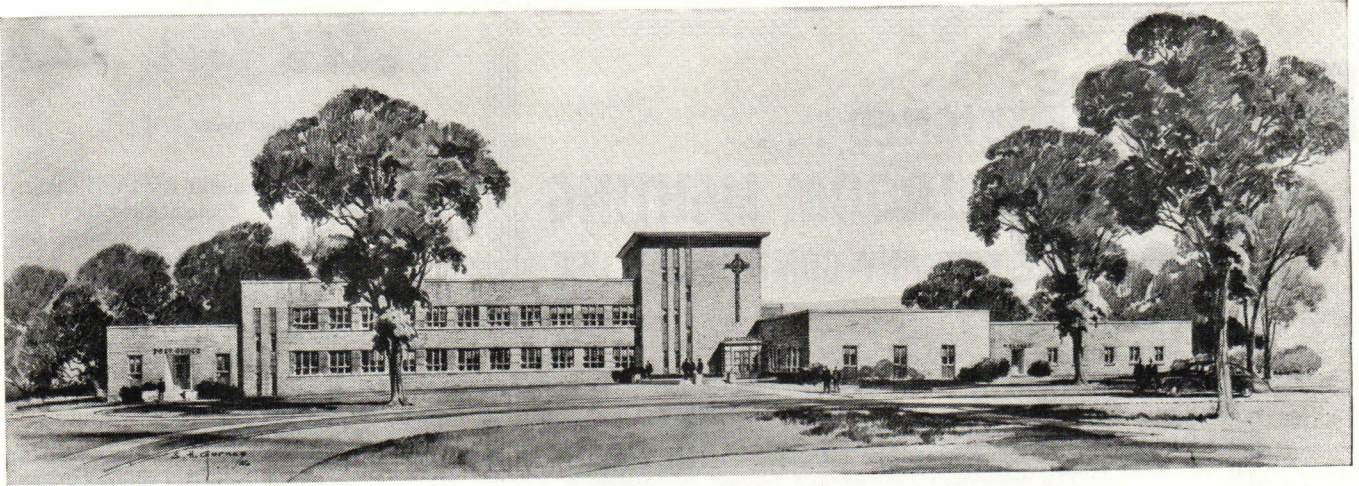
Architectural woodwork that makes the designer's plan an enduring reality

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Phone: PResident 2-3121

\* "You and Your Client," February, 1948; "It's The Law," February and March, 1949.

† See also Blatner's letter in VIEWS, page 8.



Boys Town, Nebraska, equipped with 2,621 Fenestra Windows in the Administration Building (above), High School, Trade School, Reception Hall, Dining Hall and Cottages. Architect: Leo A. Daly Co., Omaha. Contractor: Peter Kiewit Sons Co., Omaha.

## Your first trip to Boys Town, Sir ?

Come in, won't you, and look around.

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At least a part of that feeling comes through the windows . . . Fenestra's\* Fencraft Intermediate Steel Windows. Daylight and controlled fresh air are literally built into each room.

If you'd like to have the same qualities in your own buildings, here are some simple facts you'll want to know:

Fenestra's volume of production allows standardization of a *large variety* of windows—quality is high, cost stays low.

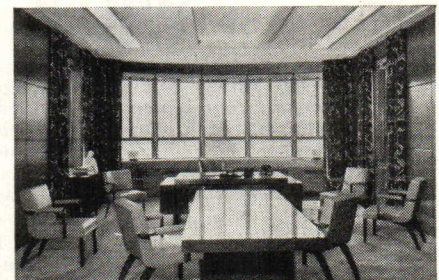
Beautiful Fencraft Windows are made of casement sections of advanced design—fabricated into 51 different Projected Windows, 14 Casement Windows and 36 Combination Windows.

All 3 types offer permanently-easy operation in any weather . . . weather-tightness . . . firesafety . . . low maintenance (they're Bonderized) . . . cleaning and screening from *inside*.

For full information on types and sizes, please mail the coupon, or see Sweet's section 16a/13. \*®



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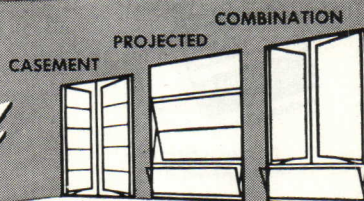


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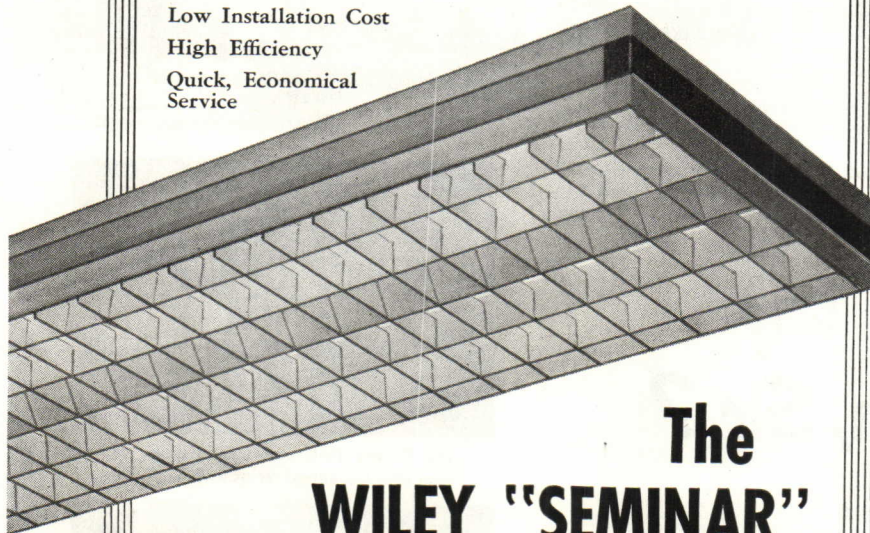
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There are no curved or slanting sides to trap light or collect dust and grime — and service is simple . . . one man, without tools, can quickly clean or replace lamps.

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## It's the Law

(Continued from page 124)

stands the financial worth of design (as distinguished from tailoring) in women's clothes; all appreciate that an inventor is entitled to a monetary return for a novel idea or design embodied in a patent. But for reasons unknown, the architect is not properly regarded as one whose ideas for design embodied in sketches and working drawings are compensable. Put another way, many people, including those who certainly should know better, think of an architect principally in terms of supervision of construction and as one closely related to what the architect would designate "a clerk of the works." Those who understand the true function of an architect in building form a very small minority. This is one of the basic problems facing the profession. Just as no one should think in terms of disease, actual or potential, without also thinking of a doctor, so no one should think of the problems affecting construction without also thinking of an architect. This is a problem in public relations which requires the immediate attention of all organizations of architects everywhere. (The New York Chapter has already done some excellent spade work in this field.)

This difficulty is obviously one with which the architect will have to live for some time. Until this problem is resolved, and as long as the public and the profession can meet on no common ground of understanding, the subject of architect-client contracts and relationships will continue to create in the architect a reaction of embarrassment, timidity, and bewilderment. In the meantime, it is vital that the architect provide himself with a psychologically advantageous method of entering into the contractual relationship with his client. In order to reassure the client and to protect the architect, it is necessary to have adopted by local chapters or local groups of architects a document incorporating such general conditions as apply to the usual architect-client relationship. These conditions should be such as could readily be referred to and "incorporated by reference" in the short form of agreement to be signed by the architect and client. The fact that these conditions are drawn by the profession as a whole would make it easy to have them accepted by the client. The short printed form of contract officially adopted by the profession locally would also serve the two-fold purpose of permitting the client to know exactly what his commitment is and would again indicate that the compensation sought by the architect was fair and reasonable. A brochure telling the client what his potential responsibility was at the inception of the relationship would have

(Continued on page 128)

## WHEN YOU PLAN A SCHOOL...

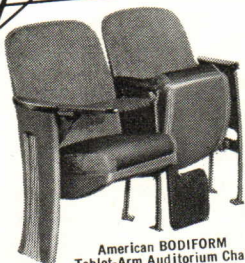
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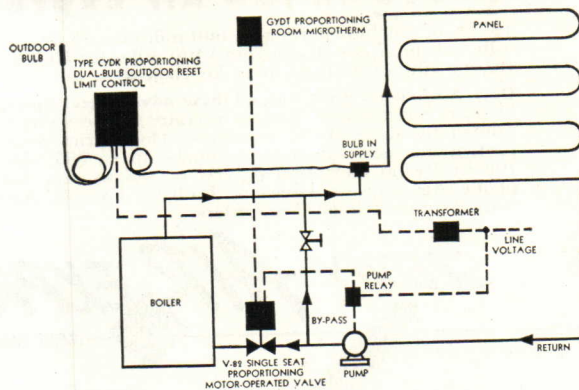
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AIR EXPRESS, A SERVICE OF RAILWAY EXPRESS AGENCY AND THE  
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## It's the Law

(Continued from page 126)

educational value and avoid further difficulties stemming from ignorance.

If the profession is to meet the challenge presented by the tremendous building program that lies ahead, it must also see to it that it is integrally associated with the planning of its every phase. No building project, no alteration, no construction should be envisaged by anyone anywhere in the United States without the employment of an architect. Since that concept is not yet part of the thinking of the American public, it is essential that the architect have available contract documents designed to cope with the problem that springs from this lack of comprehension. It is, therefore, suggested that each local organization face this problem and decide:

1. Are the "contract documents" now used inadequate?
2. Should an immediate study be made to formulate appropriate revisions?

Similar questions presented to the New York Chapter at the conclusion of the writer's address were answered in the affirmative. As rapidly as possible its example should be universally followed.

### NOTICES

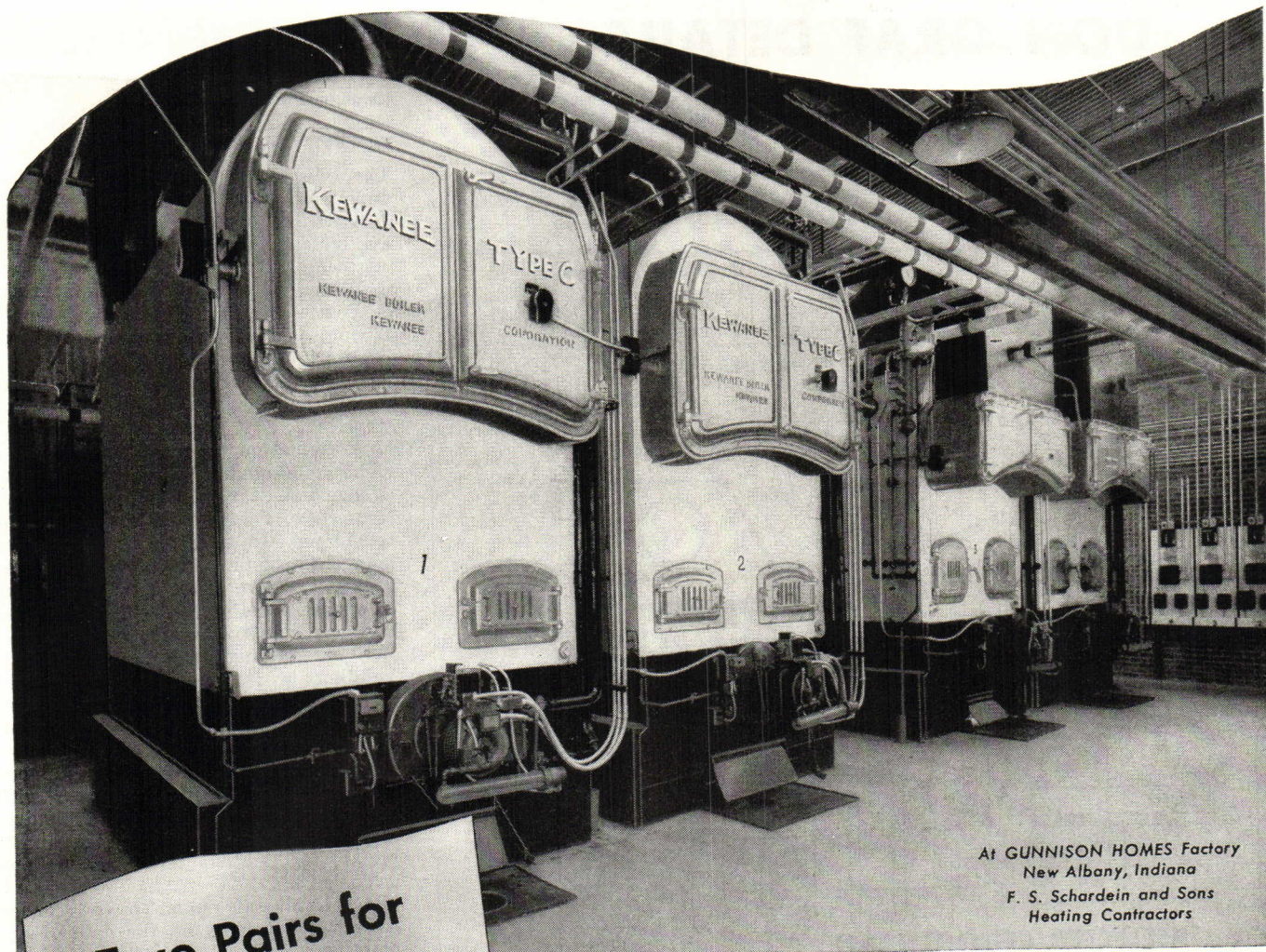
#### SUMMER SCHOOL

The first of a series of INTERNATIONAL POSTGRADUATE SUMMER SCHOOLS, organized for the Congrès Internationaux D'Architecture Moderne by the Modern Architectural Research Group of Great Britain, will be held in London in August. The school will be open to 40 postgraduate students of all nations for study of problems directly associated with the redevelopment of London. Complete information is obtainable by writing the Bursar, Daniel Stanton, 34 Gordon Sq., London WC1, England.

#### ARCHITECTURAL RESEARCH

THE NORTH CAROLINA ARCHITECTURAL FOUNDATION, INC., a nonstock, non-profit charitable and educational corporation, has been created to promote architectural education and research at North Carolina State College. The Foundation is sponsored by the North Carolina Chapter, A.I.A. Officers are Walter Hook, president; W. H. Deitrick, vice-president; R. D. Beam, secretary; J. G. Vann, treasurer.

(Continued on page 130)



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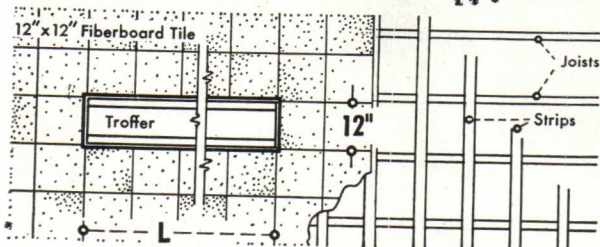
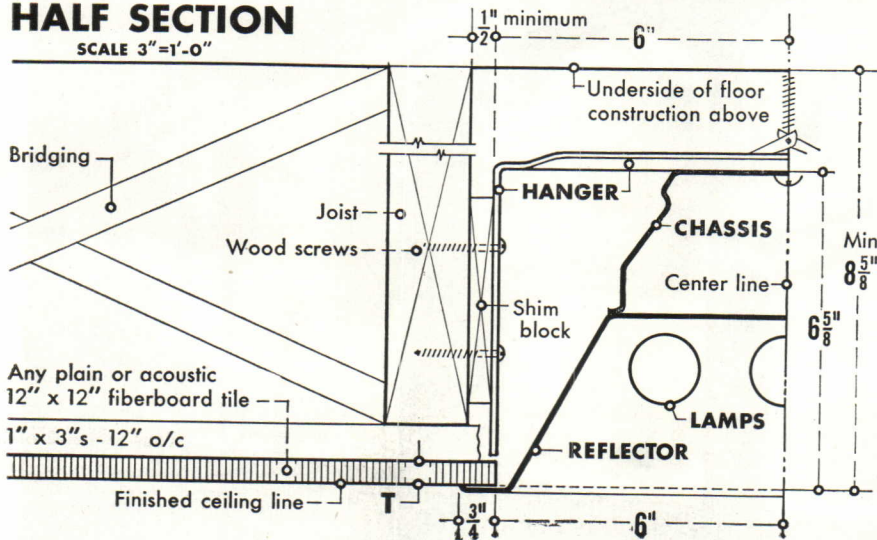
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# DON GRAF DETAILS ON NEW RECESSED TROFFER

## HALF SECTION

SCALE 3"=1'-0"



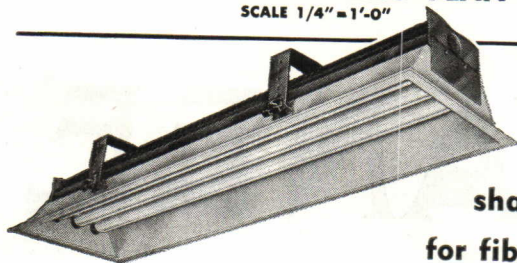
## REFLECTED CEILING PLAN

SCALE 1/4"=1'-0"

T is thickness of the tile and varies in 1/8" intervals with different manufacturers from 1/2" up to 1" thick.

L is the length of the row of troffers, which may be any multiple of either 4 ft. or 8 ft.

Note that drawings are to scale for tracing.



## Sylvania's new shallow recessed troffer for fiberboard ceilings.

Fiberboard tile 12" x 12" (or 12" x 24", scored in the middle) is available in plain surface and with holes or kerfing for noise reduction. Some types are predecorated. These tiles with the new Sylvania Shallow Recessed Troffers offer the designer a low-cost ceiling that is modern and that provides acoustic correction, combined with highly efficient and

truly architectural, fluorescent lighting. Troffers are simple to install and maintain; they are precision-made under the famous Sylvania standard of quality. The same basic units may be equipped with one, two, or three lamps, and they may be glass-shielded or louver-shielded to suit requirements of the installation.

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# SYLVANIA ELECTRIC

Sylvania Electric Products Inc., Adv. Dept. L-6804  
500 Fifth Ave., New York 18, N. Y.

I would like to receive the complete series of Don Graf details on Troffers, as they are issued, for my files.

Name.....

Address.....

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

☐ Architect  
☐ Draftsman

☐ Engineer  
☐

FLUORESCENT LAMPS, FIXTURES, WIRING DEVICES; LIGHT BULBS; PHOTOLAMPS; RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES

## Notices

(Continued from page 128)

### RESERVE COMMISSIONS

The Department of the Air Force has announced that COMMISSIONS IN THE UNITED STATES AIR FORCE RESERVE are available to qualified architects and engineers. Applicants who meet the requirements may be appointed in grades ranging from second lieutenant through colonel, depending upon qualifications and length of experience.

Applicants must possess a college degree in architecture; architectural, structural, civil, mechanical, industrial, or electrical engineering; city management or planning; or industrial management. A degree in engineering other than those fields listed above may be considered. In addition, an applicant must have had a minimum of three years' executive or technical experience in one or more of the following fields: civil or industrial engineer, construction or building contractor, architect, buildings and grounds superintendent, utilities management, city management, airport management, real estate management, or industrial management.

Grades will be based on total number of years of qualifying experience with the following scale of minimum requirements: lieutenant, 3 years; captain, 7; major, 14; lieutenant colonel, 19; and colonel, 25.

All applicants must have reached their 21st birthday on the date of appointment and must not have reached the age for the grade for which applying, as follows: second lieutenant, 28; first lieutenant, 31; captain, 38; major, 45; lieutenant colonel, 52; colonel, 57.

Former personnel of the Armed Forces, all members of the Air Force except officers of the regular components or civilian components on extended active duty, as well as persons without prior military service, are eligible.

Full details of the program for appointment in the Air Force Reserve are provided in Air Force Regulation 45-15 dated 9 November 1948, which may be obtained from local Air Force Training Unit Headquarters.

### ELECTED

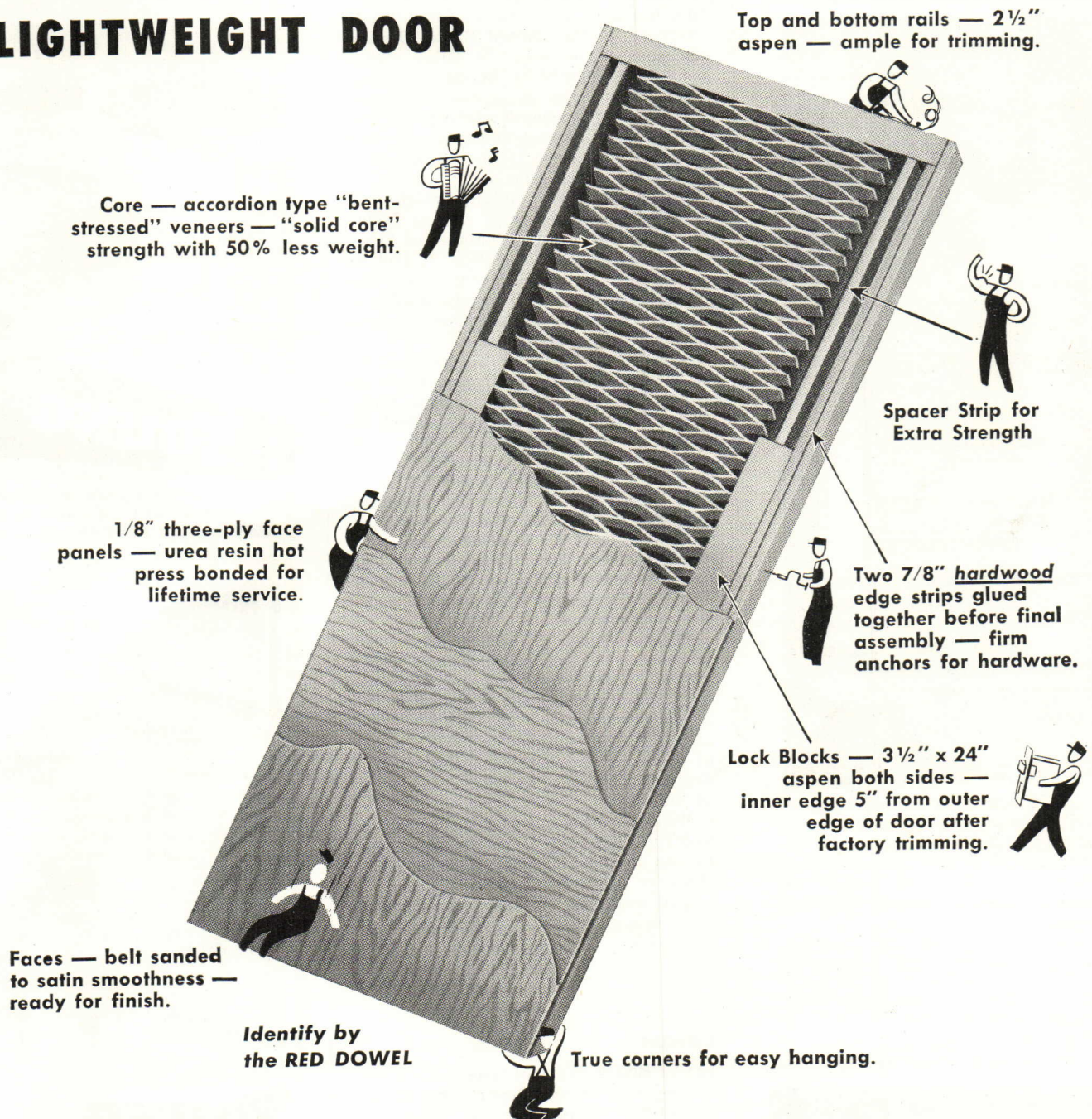
THOMAS F. McDONOUGH has been elected president of the Massachusetts State Association of Architects, Inc., for a two-year term. McDonough was vice-president of the Association in 1948.

The following have been elected officers of the American Designers' Institute for 1949: BEN NASH, New York, N. Y., president; HENRY GLASS, Chicago, Ill., vice-president; DAN JENSEN, Philadelphia, Pa., treasurer; and Ann Franke, New York, N. Y., secretary.

(Continued on page 132)

# Roddiscraft

## QUALITY FEATURES IN THE NEW HOUSEMART LIGHTWEIGHT DOOR



The new **Roddiscraft** Housemart Lightweight Door shows the same craftsmanship and attention to detail that has made Roddis a symbol of quality for over half-

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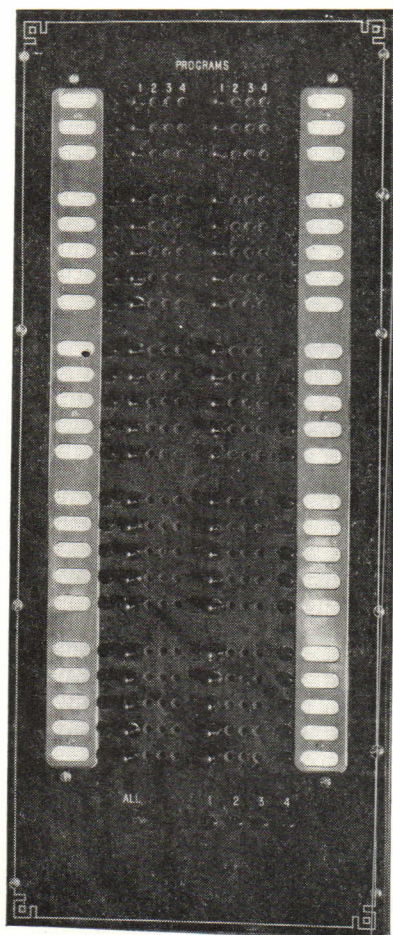
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| Chicago 8, Ill. . . . . 1440 W. Cermak Rd.       | Los Angeles 11, Calif. . . . . 2860 E. 54th St.    | Port Newark 5, N. J. . . . . 103 Marsh St.       |
| Cincinnati 2, Ohio . . . . . 457 E. Sixth St.    | Louisville 10, Ky. . . . . 1201-5 S. 15th St.      | St. Louis, Mo. . . . . 4453 Duncan Ave.          |
| Dallas 10, Texas . . . . . 2800 Medill St.       | Marshfield, Wis. . . . . 115 S. Palmetto St.       | San Antonio, Texas . . . . . 727 N. Cherry St.   |
| Detroit 14, Mich. . . . . 11855 E. Jefferson St. |  | San Francisco 24, Cal. . . . . 345 Williams Ave. |

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Two general types are available: one with individual bell line control buttons and one without. Panel is black bakelite with metal name slots. Flush or surface types.

Write for the new descriptive bulletin No. TP-1. Address Department D-293.

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## Notices

(Continued from page 130)

### COMPETITION

A national competition for the DESIGN OF AN AIR-CONDITIONED, FIREPROOF OFFICE BUILDING to house national headquarters of the United States Junior Chamber of Commerce in Tulsa, Okla., is being conducted by PROGRESSIVE ARCHITECTURE, with Jedd Stow Reisner, A.I.A., as professional advisor; for the U.S. Junior Chamber of Commerce, and sponsored by Servel, Inc., Evansville, Ind., and General Portland Cement Co., Chicago, Ill. The building, which will include the provision of a War Memorial to honor Junior Chamber of Commerce heroes of World War II and to commemorate the military record of the members, will be utilitarian. Auditoriums and other seldom-used features are excluded from the program.

The Jury of Award will include Pietro Belluschi, Portland, Ore.; Karl Fred Kamrath, Houston, Tex.; Hugh Stubbins, Cambridge, Mass.; J. Robert F. Swanson, Bloomfield Hills, Mich.; and Robert Law Weed, Miami, Fla.

Advisors, in addition to Jedd S. Reisner, are John A. Gilbreath, Manager, All-Year Air-Conditioning Div. of Servel, Inc.; Paul F. Keatinge, Manager, White Cement Div., General Portland Cement Co.; and Joseph H. Saunders, Jr., Vice-President, U.S. 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.

Winning drawings of the competition and the Jury Report will be presented in the September 1949 issue of PROGRESSIVE ARCHITECTURE.

For complete details, see the announcement which follows page 50 in this issue.

### AWARDS

JAMES EDGAR STEED of Greenhills, Ohio, a pre-junior in the Department of Architecture, University of Cincinnati College of Applied Arts, has been named winner of the first of four \$250 annual scholarships established at the university by the Lincoln Arc Welding Foundation. Steed won a competition held to select the scholarship winner, subject of the competition being the design of a suburban railroad station which called for use of a welded structure.

LOUIS CONRAD ROSENBERG, architect and artist of Fairfield, Conn., has been

(Continued on page 134)



AIR  
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UNITS



VERTICAL TYPE  
UNIT HEATERS



CABINET TYPE  
UNIT HEATERS

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**SPECIALISTS IN HEATING,  
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#### AERONAUTICAL PRODUCTS

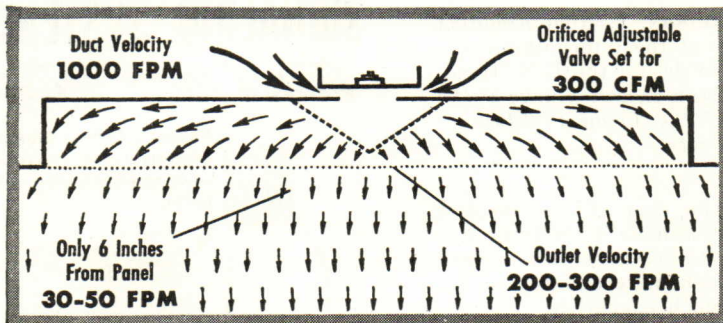
Oil coolers • Supercharger intercoolers • Radiators • Heat exchangers • Valves • Regenerators

### YOUNG RADIATOR CO.

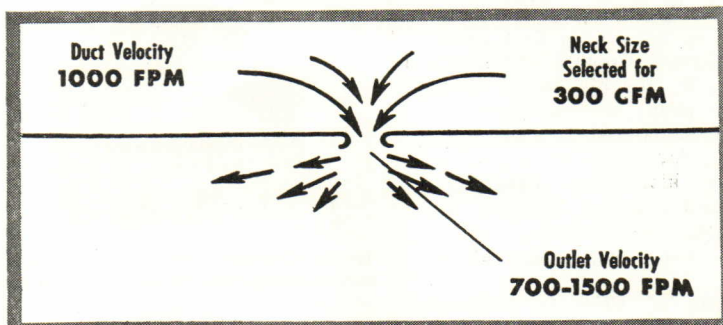
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Plants at Racine, Wisconsin, and Mattoon, Illinois  
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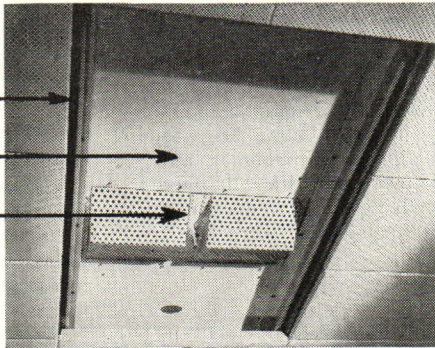


Concealed Multi-Vent Panel  
exposed by removal of six squares of  
metal acoustical ceiling.

Panel Frame . . . installed in the  
bottom of air supply duct.

Control Plate . . . supporting one  
or more valves per panel, is hinged  
in panel frame providing ready ac-  
cess to duct above for cleaning.

Pressure Displacement Air  
Valve . . . single adjusting screw  
raises, and lowers a valve plate above  
opening in control plate to regulate  
volume of air flow from duct into  
dual V-shaped primary distribution  
sections, the design of which insures a  
perfectly even distribution of air over  
the entire perforated area below panel.



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LOW VELOCITY AIR DIFFUSION

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**1 No Strong Air Streams to Direct!** *Only with Multi-Vent* are duct velocities so radically reduced (within the diffuser itself) . . . diffusion so rapid, thorough and wide-spread . . . that no air movement in excess of ASHVE comfort zone requirements exists more than six inches away from the perforated distribution plate.

**2 No Deflection Problems to Restrict Location or Capacity of Outlet Panel!** *Only with Multi-Vent* can the location and the capacity of the diffuser be determined solely by load considerations assuring maximum effectiveness and efficiency. The proximity of seating locations or the relative positions of partitions and lighting fixtures—which must be a major consideration in locating high velocity diffusers to avoid drafts—need not be considered with Multi-Vent regardless of ceiling heights.

**3 No Change in Air Diffusion Patterns When Desired Volume of Air Delivered is Varied!** *Only Multi-Vent* has an adjustable pressure displacement valve which can be easily set for delivery of various amounts of air without disturbing the balance of the overall system. Neither single panel adjustments to suit occupants special requirements nor substantial reduction or increase of air capacity at source to meet seasonal demands will in any way affect the desired air flow pattern.

**4 40% Higher DTD Will Meet Comfort Zone Requirements!** *Only Multi-Vent* will permit raising the usual 15° Diffusion Temperature Differential to as high as 25° (with an eight foot ceiling for example). Thus 40% less air need be used to handle a given load making possible substantial economies in ducts, fans, filters and coils.

**5 No Protruding Outlet Fixtures to Mar the Beauty of Modern Interiors!** *Only Multi-Vent* can be completely concealed above the square perforated pans in a metal acoustical ceiling. Multi-Vent installed flush in all other type ceilings is less conspicuous than diffusers of any other make.

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## Notices

(Continued from page 132)

awarded the *Fine Arts Medal of The American Institute of Architects*. Rosenberg was cited as a "scholar, teacher, architect, modest recipient of American and foreign honors."

CHARLES D. MAGINNIS, a past president of the A.I.A., has been awarded the *Benjamin West Clinedinst Medal*, which is presented by Artists' Fellowship, Inc., for outstanding achievement in the field of art.

HOWARD ROBERTSON, British architect and a member of the international advisory group to design the U.N. Headquarters, has been chosen winner of the *Gold Medal of the Royal Institute of British Architects*.

LEOPOLD ARNAUD, dean of the School of Architecture, Columbia University, has been named a *Chevalier of the French Legion of Honor* in recognition of his services to French education.

Prizes in the \$10,000 *Kentile-Architectural Forum Design Competition* have been awarded as follows: a first prize of \$1500 to GEORGE COOPER RUDOLPH, New York, N. Y., for his design of a modern candy shop; a first prize of \$1500 to G. RUSSELLO AND B. JOHNSON, Detroit, Mich., for their design of a suburban home's kitchen and breakfast area; and a first prize of \$1500 to A. ALBERT COOLING, Los Angeles, Calif., for his design of a living room featuring Kentile.

Second prizes of \$750 to GEORGE COOPER RUDOLPH, New York, N. Y., (kitchen); ROBERT PATTISON, Elyria, Ohio, (living and dining room); and MRS. BARBARA UPSHAW SIEGEL, Chicago, Ill. (candy shop).

Third prizes of \$500 to HARLAN E. MCCLURE, Minneapolis, Minn. (kitchen); MARY ROYER, Los Angeles, Calif., (living and dining room); and THOMAS WEATHERWAX, Philadelphia, Pa. (candy shop). In addition 45 honorable mention awards of \$50 were given.

### NEW ADDRESSES

CHARLES MELOV, architect, 23 Miracle Mile, Coral Gables, Fla.

PAUL THIRY, architect, 800 Columbia St., Seattle 4, Wash.

THOMAS F. HOLIFIELD, MILLARD P. BUCK, ROBERT D. CALDWELL, HAROLD C. POTTER, OTIS L. SPLINTER, DWIGHT B. MAPES, JR. (THOMAS F. HOLIFIELD, ARCHITECT), 1806 Hillcrest Dr., Bartlesville, Okla.

(Continued on page 136)

**protect the patient**

- help the nurse
- please your client

by specifying

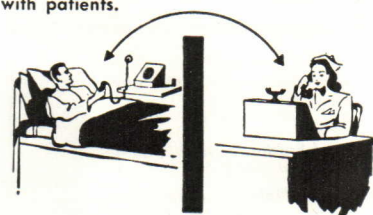


**HOSPITAL  
 SIGNALING SYSTEMS**  
*there's none better*

**Patient's Calling Station.** Signals nurse. Provides voice communication with nurse.



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## OUR APOLOGIES TO CALDWELL & McCANN

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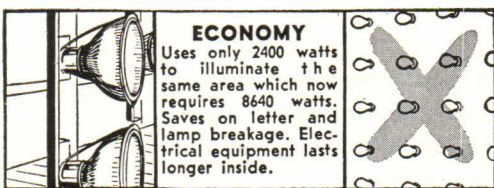


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Uses only 2400 watts to illuminate the same area which now requires 8640 watts. Saves on letter and lamp breakage. Electrical equipment lasts longer inside.



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No hazardous ladder climbing or balancing — no blocking traffic — no adverse weather to fight. Make your changes safely and swiftly from INSIDE.

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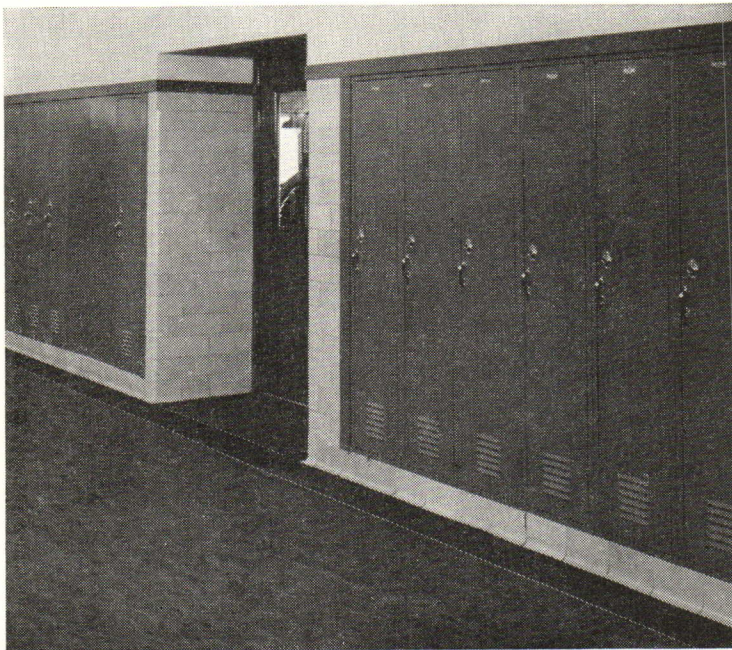
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develop quickly with **Berger Steel Lockers**



● Tommy's school day begins and ends at his individual Berger Locker. Mornings, he deposits coat, hat, lunch box, afternoon-class books, possibly his musical instrument or some item of athletic equipment in its roomy interior. Afternoons, he reverses the process. *Without conscious effort*, he's developing lifetime habits of order and neatness. His Berger Steel Locker—which so readily accommodates all his personal necessities—plays a big part in helping teachers influence Tommy's progress.

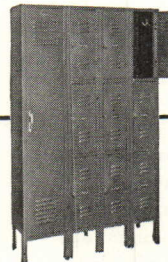
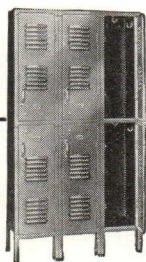
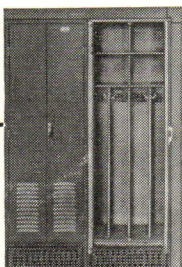
Naturally, the architect of Tommy's school primarily is responsible for including adequate, efficient storage facilities. And, this responsibility Berger is well qualified to share. Berger not only offers you the finest in steel storage equipment, but backs it up with a complete factory engineering and installation service. Here is a service which follows through from the original planning and engineering to tightening the final bolt . . . gives you specific information about numbers and types of lockers for corridors, classrooms, gymnasium, laboratories, shower rooms and special needs . . . suggests location of lockers for best efficiency . . . helps you through all planning stages. See Sweet's Architectural File for further information and specifications data, or write us for full details.

# Berger



## Manufacturing Division

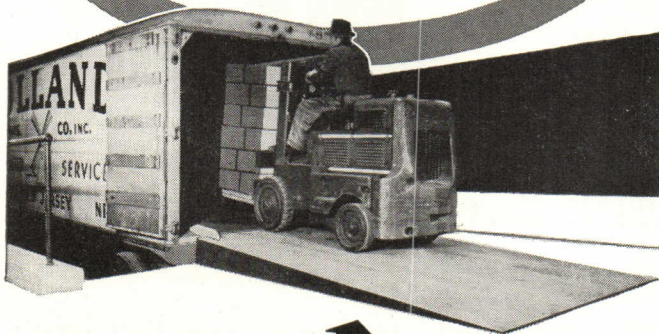
REPUBLIC STEEL CORPORATION • CANTON 5, OHIO



*New Efficiency Idea!*

# Rotary (R) LEVA-DOCK

SELF-LEVELING RAMP  
FOR LOADING DOCKS



Leva-Dock moves up and down with truck bed level

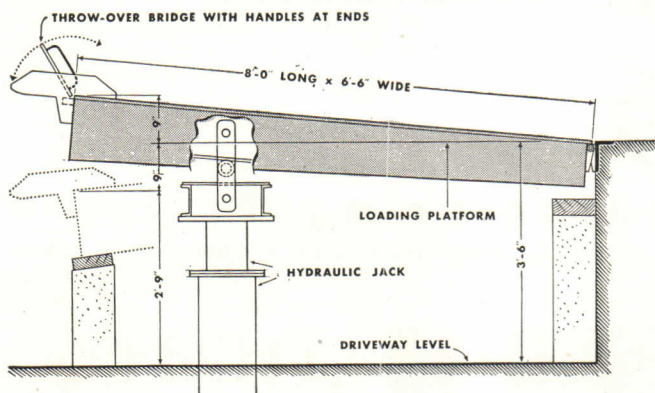
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### How the Leva-Dock Operates

The Leva-Dock is a hinged ramp, positioned by a hydraulic jack. Supporting arms and "throw-over" bridge connect ramp and truck bed. Platform automatically travels up or down as truck springs are relieved or compressed during loading and unloading.

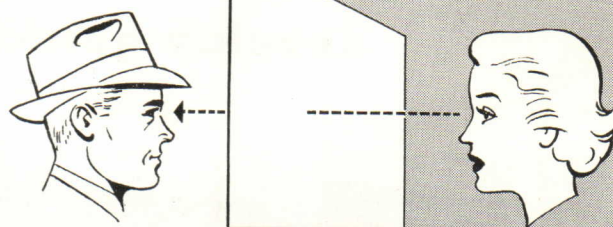
From his side . . .



IT'S A MIRROR

(HE CAN'T SEE HER)

From her side . . .



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(SHE SEES HIM)

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with Intriguing Uses*

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Transparent Mirrors have many practical and decorative uses—already they are being used as one-way vision panels in residence doors, in restaurant dining rooms and in displays . . . for special decorative effects in hotels, theaters and stores. Your own imagination will suggest many more uses.

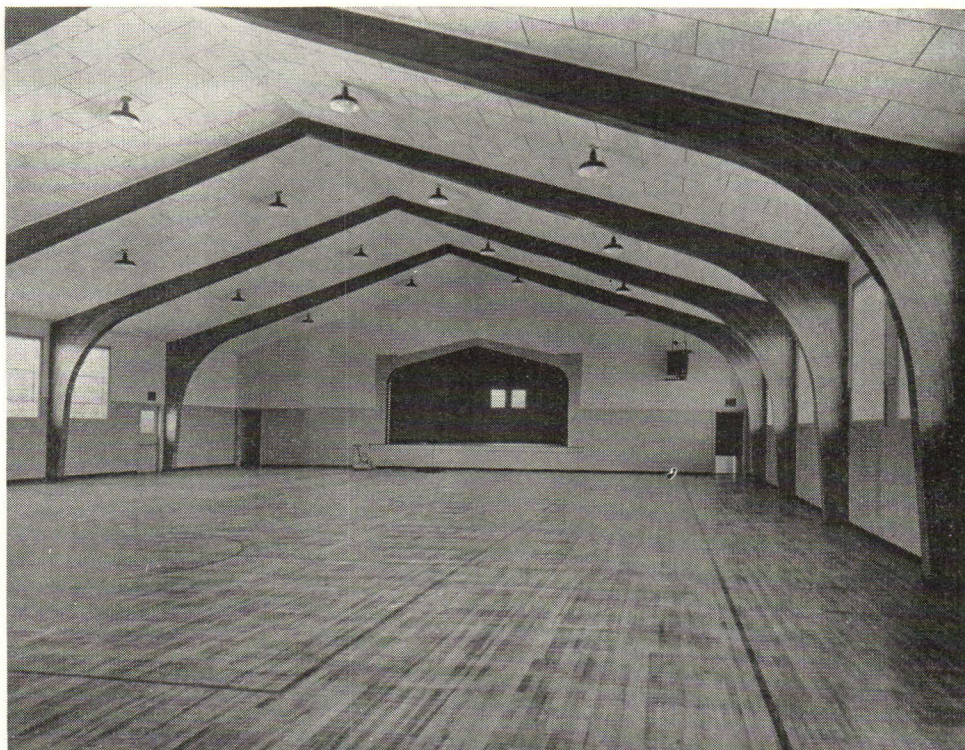
For full information on Transparent Mirrors, write to Liberty Mirror Division, Libbey-Owens-Ford Glass Company, 7149 Nicholas Building, Toledo 3, Ohio.

\* T. M.

*Libbey*  
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TRANSPARENT MIRROR

**LIBERTY MIRROR DIVISION**  
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Northern Hard Maple floor in the Greenwood Gymnasium, LaGrande, Oregon. Charles B. Miller, Pendleton, Oregon, Architect.



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**Specify it freely for its warm, bright beauty,  
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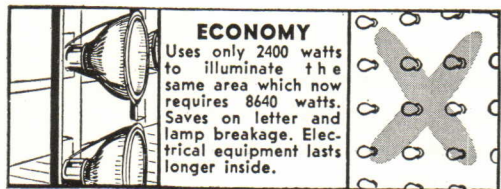
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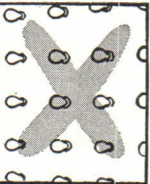
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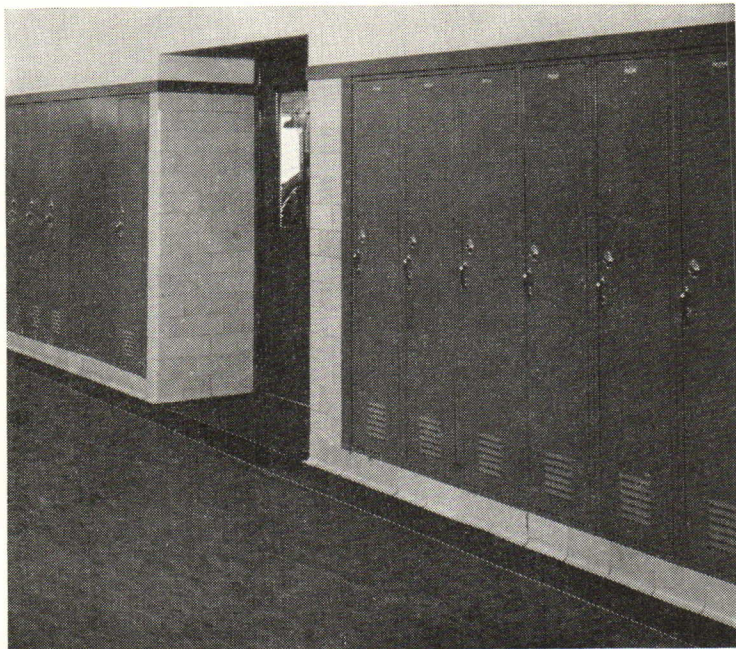
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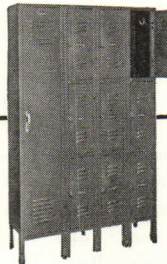
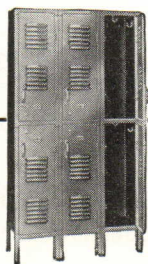
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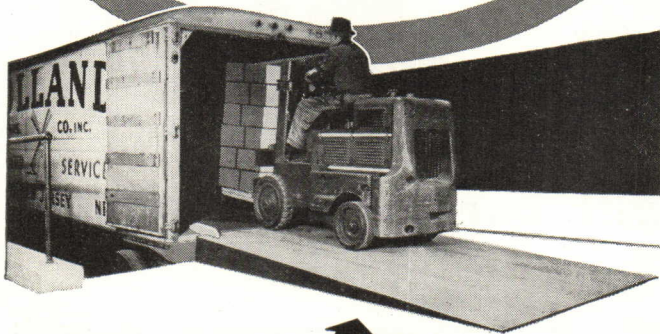
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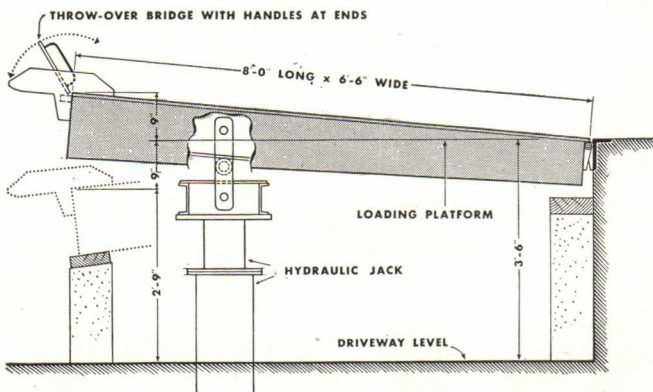
Leva-Dock moves up and down with truck bed level

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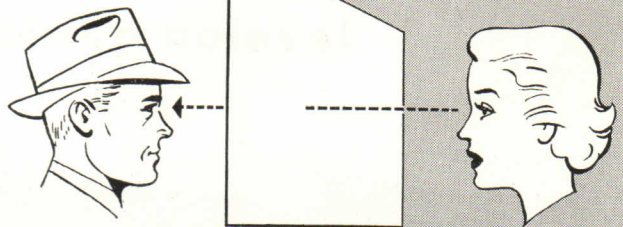
From his side . . .



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From her side . . .



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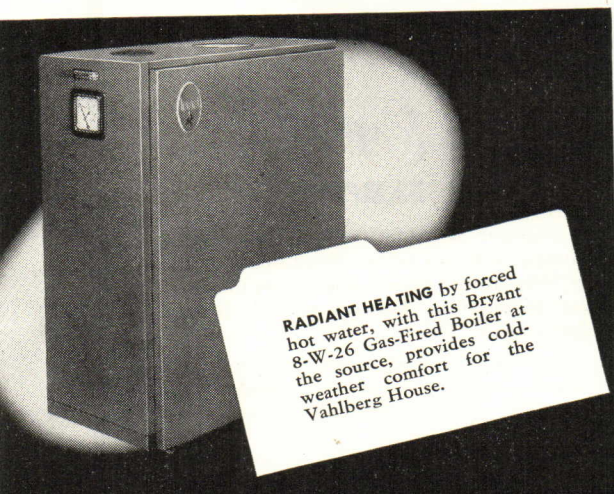
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IT'S A CASE OF  
*Quality...*



The Robert W. Vahlbergs' house, Oklahoma City; designed by the owner-architect; built by Robert Parks, Oklahoma City.

## ...in an architect's DREAM HOUSE



**RADIANT HEATING** by forced hot water, with this Bryant 8-W-26 Gas-Fired Boiler at the source, provides cold-weather comfort for the Vahlberg House.

Installation by White & Messer Plumbing & Heating Co., Oklahoma City)

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Architect Vahlberg has definite ideas about the things a house should have. He believes firmly in open planning to create a feeling of space; materials that are natural-looking and complementary to the setting of the house; wide expanses of glass, to capture the outdoors for indoor enjoyment; *automatic heating that provides the warmth of Spring sunshine*, no matter what the weather outside.

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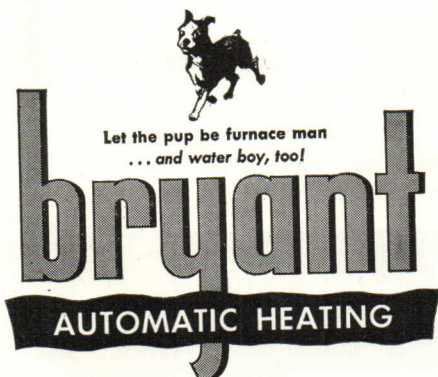
We like to think of architects like Bob Vahlberg as men who deal in comfort, because that's a big part of *our* business, too. It's a kind of partnership... with *creative* architecture and Bryant *quality* heating going hand-in-hand to provide the stuff that dream houses are made of.

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"I'll let the Pup be Furnace Man"

says ROBERT PARKS, builder of the Vahlberg House, Oklahoma City

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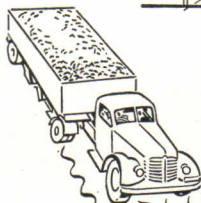
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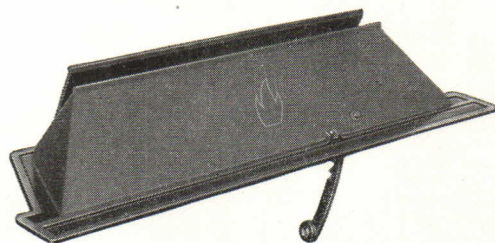


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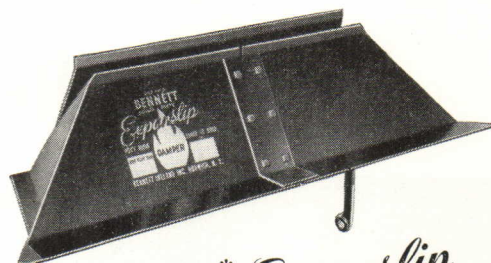
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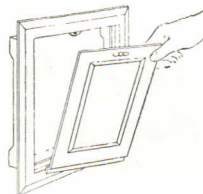
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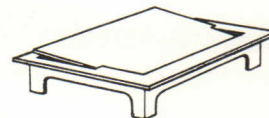
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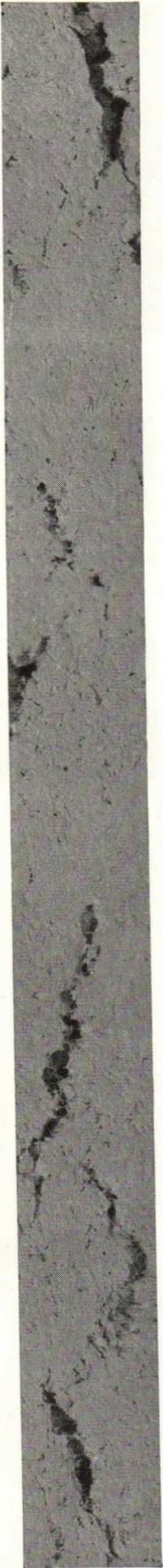
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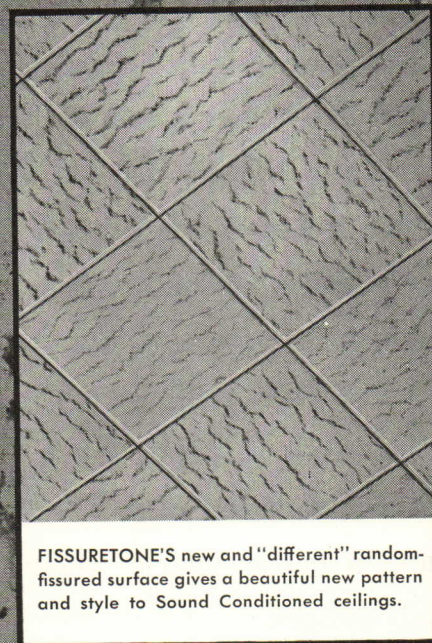
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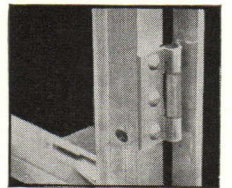
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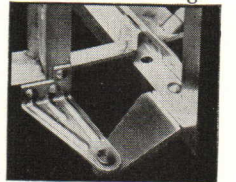
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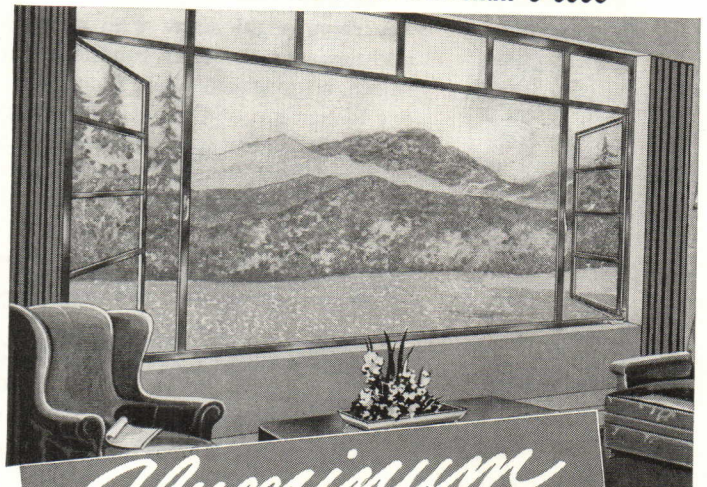


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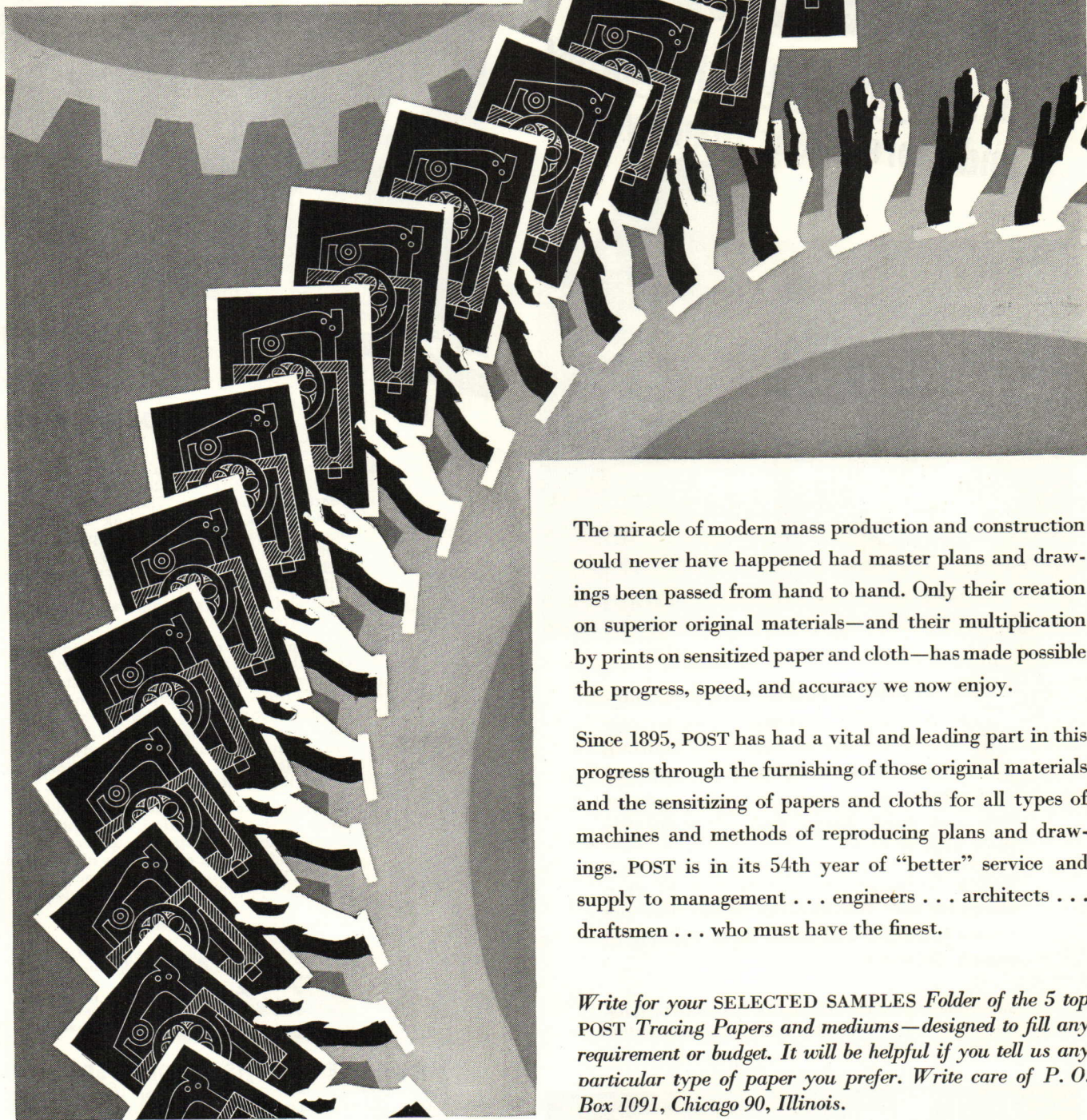
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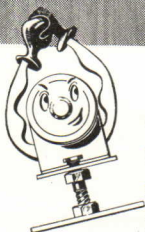
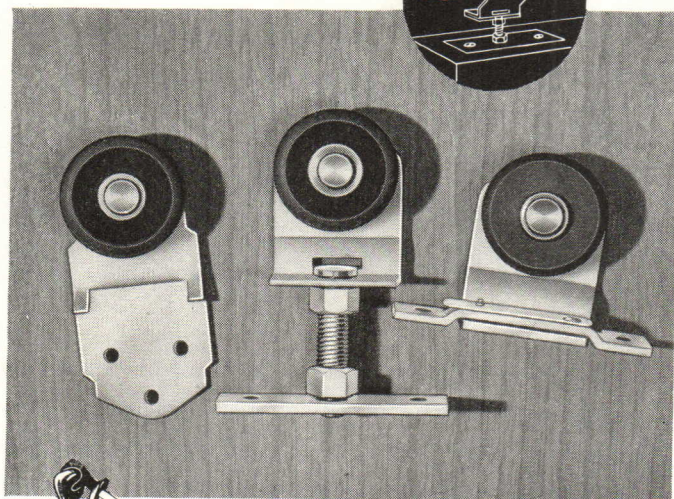
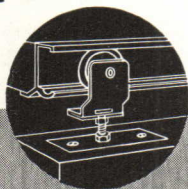
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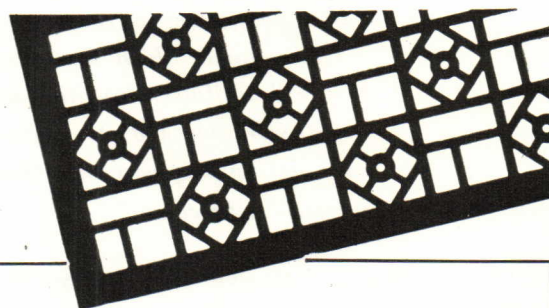
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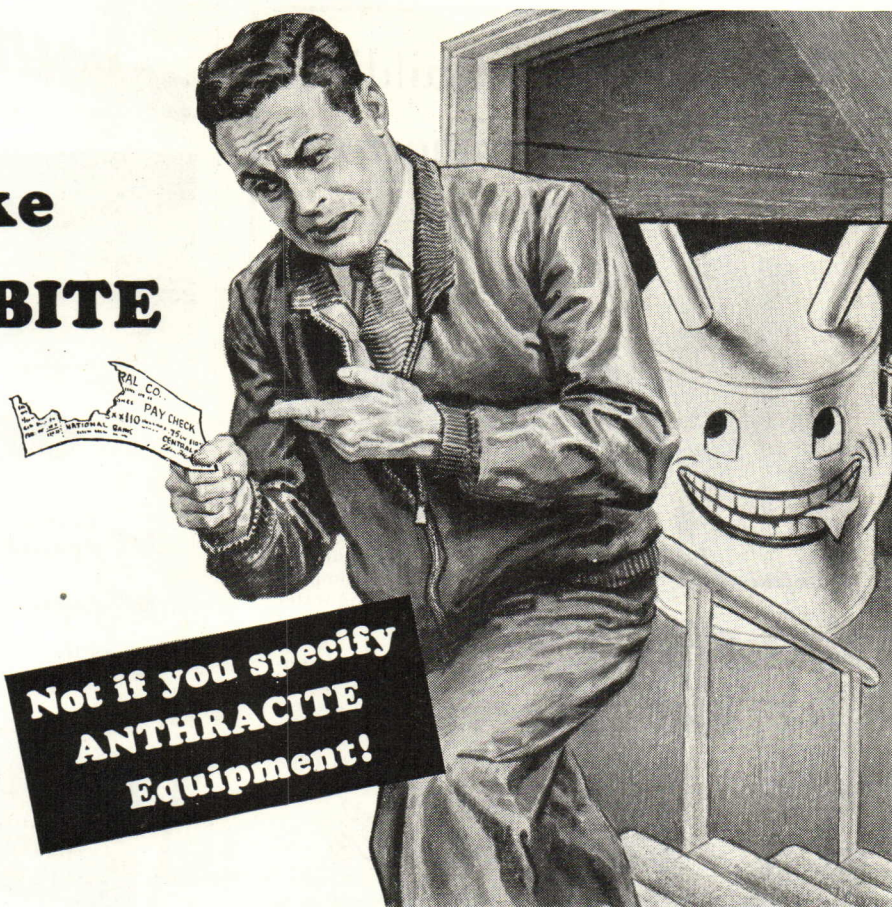
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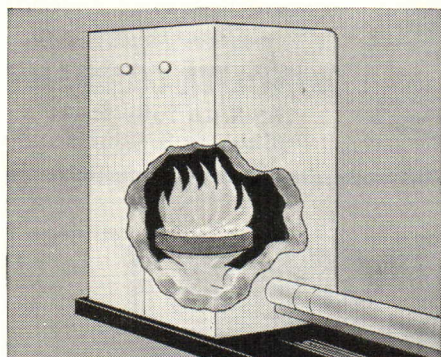
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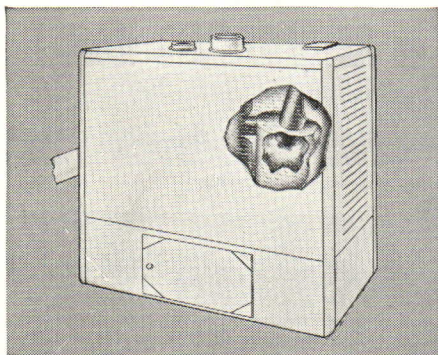
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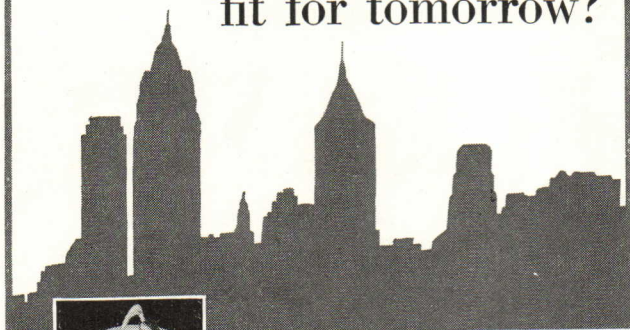
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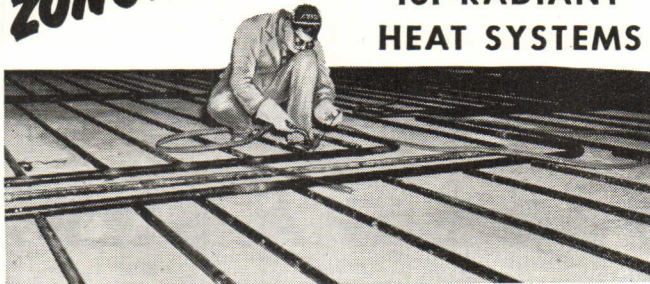
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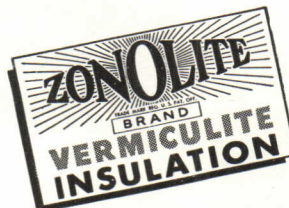
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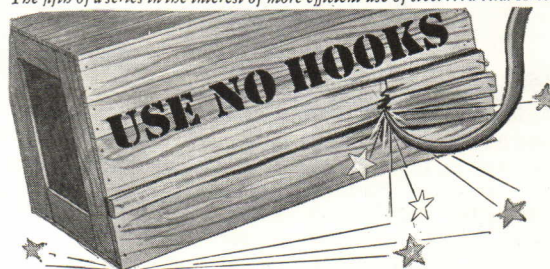


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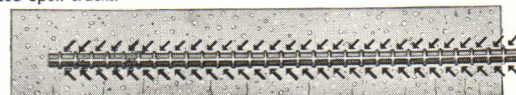
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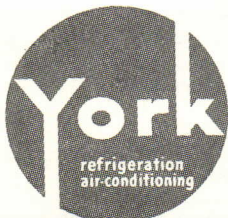
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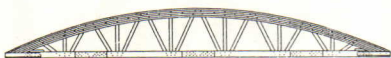


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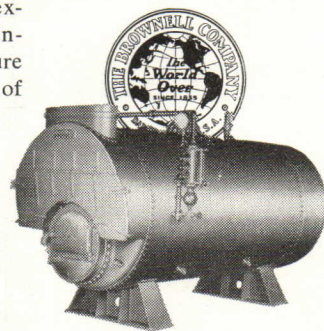
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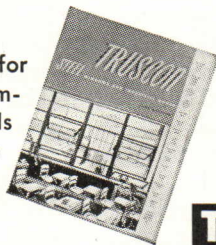


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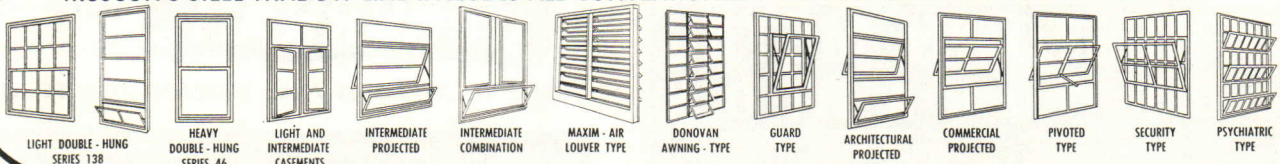
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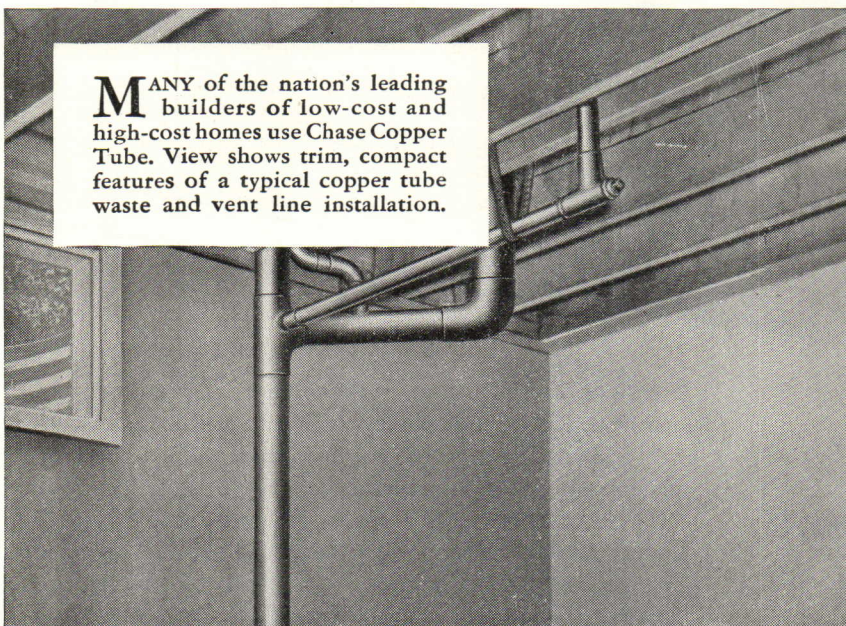
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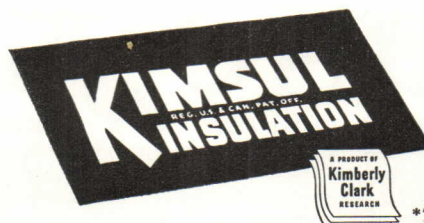
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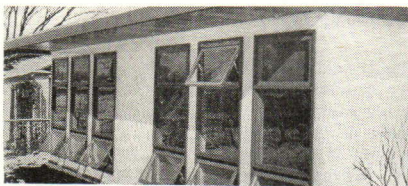
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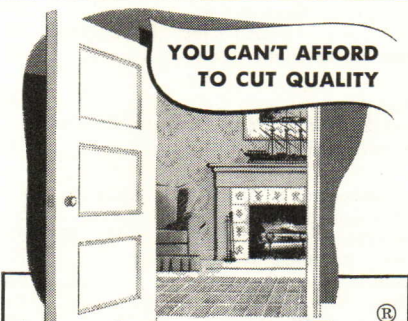
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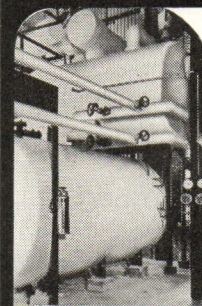
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## Product Report . . . . . April, 1949

A. S. Bennett & Associates, a New York research organization, has just completed a nationwide study to learn how building products get into buildings. In this and subsequent issues, we will discuss the study, giving details and comments about the 24 classes of products which were investigated. By observing the ways in which representative architectural firms specify products, you will have a better idea of how nearly your own operations are geared to those of your contemporaries.

### FACTORS IN SPECIFYING ELECTRIC POWER DISTRIBUTION SYSTEMS

The Bennett Survey investigated 19 buildings in its quest for information about electric power distribution systems. It was found that in some buildings two or more different systems were employed, depending upon the circumstances.

Some brief facts:

- 14 systems used operating voltage from main transformer.
- 5 systems used high voltage to local substations.

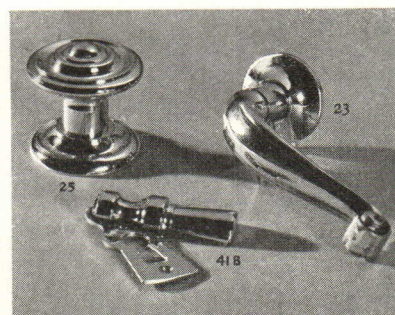
method of distribution:

- 10 conduit
- 3 underfloor ducts
- 3 plug in
- 2 armored cables
- 1 knockout

When it came to selecting a particular type of installation system, the architectural firms gave these reasons for the specifications:

1. Type & size of electrical load
2. Fire underwriter's requirements
3. Length of run (service entrance to point of use)
4. Voltage drop (efficiency)

(Continued next page)



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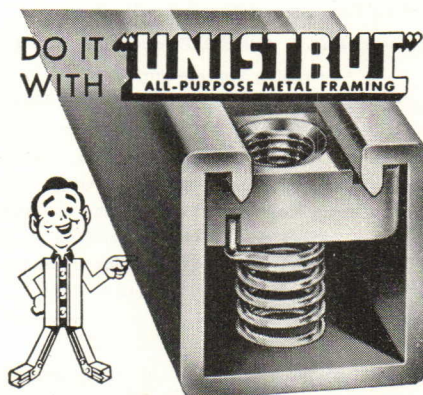
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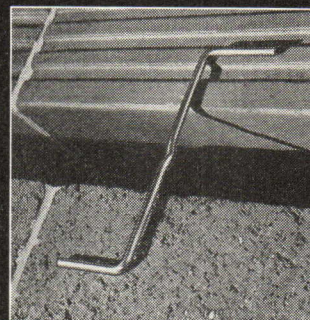
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(Continued from preceding page)

In almost every case, the type of installation was decided upon before the completion of final working drawings—and all were specified before completion of final specifications.

The men involved in the decisions were, in most cases, members of the architectural firms. In three cases the archi-

tectural firm called in a consulting engineer. In five cases the client was a factor.

When it came time to select the brand of electrical system to be used (and these decisions were made after the specifications had been written—during final working drawings in most of the

cases studied), a great many factors came into the picture. First, of course, the installation had to meet fire underwriter's requirements. Then it had to be capable of carrying the load. Then it came down to "past experience," "consultant's recommendations," etc. The reasons for selecting a brand were varied.

# These Four Books are jam-packed with profitable ideas . . . . .

## HOSPITALS INTEGRATED DESIGN

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This authoritative and comprehensive volume on all phases of hospital design, construction, costs, and equipment is written by a well-known hospital consultant who is completely familiar with the architectural problems involved in this work.

This book is a thorough, well-illustrated study based on a lecture series given at the Architectural league of New York under the auspices of the New York Chapter of the American Institute of Architects and the Department of Public Works, New York. This material has been greatly augmented and includes discussions by Doctors Kingsley Roberts, Leo Taran and Otto Bloom. There are also chapters by Thomas H. Creighton and A. Gordon Lorimer. 308 pages, 9x12 inches, illustrated. Price \$10.75

## APARTMENT HOUSES

by Joseph H. Abel and Fred N. Severud  
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Severud, A.S.C.E., includes in his section a discussion of the latest developments in structural systems, use of concrete, steel, and wood framing. Mr. Clifford Strock, Editor of "Heating and Ventilating," outlines the fundamentals of many possible heating systems and gives some cost analysis of them. Messrs. H. M. Nugent and W. H. Easton, Jr., of the Otis Elevator Company, have made a careful analysis of the problem in vertical transportation. Mr. Alfred Geiffert, Fellow, A.S.L.A., outlines considerations in apartment house landscaping.

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# P.S.

AS I WRITE THIS, ENTRIES FOR THE 1948 P/A AWARDS JUDGMENT ARE POURING IN, and our office staff is rather harried. The jury meets next week, and we will notify the winners at once. General announcement of the results will be made in our June issue. The jury, until now, has not been announced.

Members are:

Talbot F. Hamlin, educator  
Robert Kennedy, architect  
Fred N. Severud, engineer  
Louis Skidmore, architect  
Edward D. Stone, architect

As in past years, these men have been selected for diversified architectural experience, technical knowledge, and concern with the social problems of design. They face a tough judgment.

WE QUITE OFTEN RECEIVE LETTERS FROM ARCHITECTS OR ARCHITECTURAL STUDENTS—EVEN FROM OTHER PERIODICALS—IN FOREIGN LANDS where construction is difficult at the moment, and where technical development has been set back by the war. These people are hungry for information about what is going on in the United States, and yet they find it impossible to subscribe to the architectural magazines published in this country, because of either lack of funds or difficulties in exchange requirements.

I wish we could send free copies of the magazine to them all, but if we did we'd soon be out of business. I wish we could send them back issues, but we have no back issues except for those we keep for office reference. Our foreign exchange list with architectural journals abroad is already large, and it could so easily grow out of hand that I have to be cold-blooded, much as I hate to, in refusing new requests unless the other magazine is an outstanding one, with information to offer us in exchange for the data we hope we supply them.

Here's the sort of thing one wishes it were possible to respond to generously. It is a letter from Germany:

*Dear Sir: I am a young German architect and stand, along with my colleagues, about the rubbles and ruins of our country and have the problem before us of trying to extricate it from the ruins, and we are faced with the problem of providing new living quarters and renewed hope for the future. With the arrival of your soldiers came to us not only the victors but also the*

*arrival of news from abroad, something which had previously been prevented, so that we were unable to learn of your civilization and culture.*

*A short while ago a friend gave me a copy of your periodical and I have spent many an hour studying it. What I wish to say to you today is that you folks have advanced so very much and that we can learn a very great deal from you.*

*What is available here in the periodicals of Germany only touches the very edges of the actual possibilities. There is lacking the large, over-all perspective with which the oneness of a city is planned and executed.*

*If I judge you folks correctly, you stand for progress and service to the public. On this I base my request: Would you be willing to send me the current issues of your magazine regularly? You may rest assured that these will be used in giving me and a group of young German architects the news about the current developments in American architecture. Respectfully,*

*Gerhard Kahtz*

I wonder if any of you who are readers of P/A would care to send your copies abroad after you have read them? My suggestion is a tentative one, without much thought of how it might be done, except in the case of one country—Germany. Heinrich Waechter, A.I.A., able architect and presently teacher at Virginia Polytechnic Institute, Department of Architecture, Blacksburg, Va., offers to act as "clearing house" for copies of magazines sent to that country. He is currently in touch with practitioners, schools, and magazines in Germany; and he is willing and able to determine where our publications might do the most good. If any of you feel that you would like to help, he will be glad to hear from you. If any of you are familiar with conditions and personalities in other countries, and would like to act as agent, let me know.

AN INTERESTING RESULT OF VISITING MANY CITIES—in fact many areas—for short stays, usually with whirlwind tours and talks with a few representative architects as part of the visit, is that one builds up a series of impressions which could be very wrong. And yet I often find that further digging into developments in those areas support the original impression surprisingly well. It's somewhat like meeting a person for the first time—quite often you feel that you know him intimately in the first five minutes of conversation, and quite often you are right. An example of such surface impression, which could be very wrong, comes from three trips I've made recently to Ohio. I feel that the northern part of that state—around Cleveland—is active and progressive. The attitude is reflected in the buildings going up, the interest of the

profession in technical developments, the concern of the A.I.A. chapter with current questions, and many other things. On the other hand, it is my quick impression that the southerly part of the state, around Cincinnati and Columbus, is much more resistant to advance in design and building methods. Perhaps this remark will stir some replies and comments—and I expect to be told, and I should be told that I have no right to make such sweeping statements on the basis of short visits. But I can't ignore the impression I received.

DRIVEN SLIGHTLY MAD by reading the Australian equivalent of our Beautiful Home magazines, the editors of *Smudges* (that excellent publication of the Architectural Students' Society of the Royal Victorian Institute of Architects) have formed the Smudges Interior Decoration Advisory Group. S.I.D.A.G. plans to give advice to housewives, and begins with the following suggestion:

"For that breathless ten minutes after your first guests have arrived and everyone is waiting for the others . . . tense . . . watching . . . and you want to make everyone feel immediately at ease, we suggest that you prepare an old armchair, occasional table, or even an old china closet. When the moment is ripe, the conversation lulled—and what good hostess doesn't feel that moment—roll your chosen piece on the fire. See the change! The furniture, burning merrily, can easily set the mood for the evening."

THE ARCHITECTURAL PHOTOGRAPHERS' ASSOCIATION LAST MONTH HELD THE SECOND ANNUAL EXHIBITION of work of its members, at the Architectural League in New York. The show will now travel and if it reaches your community you might be interested in seeing the photographs, many of which have not been published, mounted as salon prints rather than used as illustrations for a magazine story. It was interesting to me, as one of the jurors who screened entries, to look at this art form from the point of view of excellence in photography rather than competence in illustrating an architect's work. Sometimes the two things are not the same. Some of the most beautiful prints, technically and artistically, are fairly dishonest presentations of the buildings they represent. In selecting work for publication, I resent this able deception on the part of the photographer. In judging excellence in photography, I found that my values changed. And I suppose the average architect welcomes photography that makes his work look better than it really is—or doesn't he admit that is possible?

*Thomas H. Wright*