ROGRESSIVE
RCHITECTURE
ENCIL POINTS]

blished monthly by REINHOLD PUB-HING CORPORATION, 330 West nd Street, New York 18, N.Y., U.S.A. ph W. Reinhold, Chairman of the ard; Philip H. Hubbard, President; Burton Lowe, Executive Vice President d Treasurer; Gilbert E. Cochran, Vice sident and Secretary; Francis M. ner, Vice President; William P. nsor, Vice President. Executive and torial offices: 330 West 42nd Street, w York 18, N. Y. Subscriptions pay-e in advance: 1 year, $4.00; 2 years, 00; 3 years, $8.00 in U. S. and Pos-sions, Canada and Pan American on; $2.00 extra for each year in all er countries. Single copies, $1.00. nted by Lotus Press Inc., 508 West h St., New York 1, N. Y. Volume XXVIII, No. 8, Aug., 1947. exed in Art Index.

MANY TRANSLATIONS

The quick assumption made by most laymen and too many architects —that all "modern" architecture is the same, self-consciously stark and bare, expressing a new "style"—should be further dispelled by this issue of PROGRESSIVE ARCHITECTURE. As we have said editorially before, we are interested in a critical analysis of progress, not in pushing any brand of stylishness.

Milton Kirchman's article dissecting the work of the "International" school (a school, incidentally, which no one admits belonging to) will probably displease some people. It will be a surprise to some readers and a disappointment to others to have the "anti-rational" aspects of this architecture pointed out, and its esthetic and emotional basis defined.

What we should like the issue to prove further is that this is not the only influence on a native contemporary design. For example, the two museums from Sweden typify another modern approach which has never had much relation to what was done in the Bauhaus. Highly individual, as all recent Scandinavian work has been, it does not follow the esthetic that Kirchman analyzes, in the direction, for instance, of recent Brasilian designs.

Then what "style" would include the two churches in this issue? Different from one another, they show various influences, but above all they each have a character quite different from either of the groups we have mentioned. They study structural possibilities and use them to produce an emotional impact which is contemporary, fitting—and indigenous. This is architecture of the United States emerging. Again, the lusty, frank designs for two new California airport buildings have a lack of concern with pure esthetics, and yet a very real human scale and a "come and make use of us" quality.

No one can yet speak, with any meaning, of a "modern style." Modernism is a way of thinking in terms of today which can be translated into many architectural expressions. Some of the translations begin to read very well.

The Editors

Concrete Joist Construction?

Because Today's Costs are NOT Out of Line . . . Because, strength and durability considered, concrete joist construction is the most economical way to build . . .

In these days of high costs, economy in building is important, provided strength and durability are not sacrificed. Here is where concrete joist construction comes in—since it provides rigid, strong, sound-proof buildings which are fire resistive, yet construction cost is lower. That is because the amount of concrete and, consequently, the dead load, are kept to a minimum for any span or live load. The concrete joist and monolithic top slab are formed with cores of removable Meyer steelforms, supported on skeleton centering. Once the concrete has set, the forms are removed and re-used from floor to floor and from job to job. Therefore, a nominal rental charge can be made for each use. Construction is speeded up.

WHY SPECIFY CECO?

Ceco originated the removable steelform method of concrete joist construction. The company is first in the field—actually providing more services than all competitors combined. So, when concrete joist construction fits your need, call on Ceco, the leader over all. Thirty five years of experience in the field, on the job, have given Ceco a sure grasp of all concrete joist construction problems. This fund of knowledge is yours to command, in 23 strategically located offices from coast to coast.

CECO STEEL PRODUCTS CORPORATION

GENERAL OFFICES: 5701 W. 26th Street, Chicago 50, Illinois

Offices, warehouses and fabricating plants in principal cities

See Ceco catalogs in Sweet's Architectural File or send for free descriptive literature

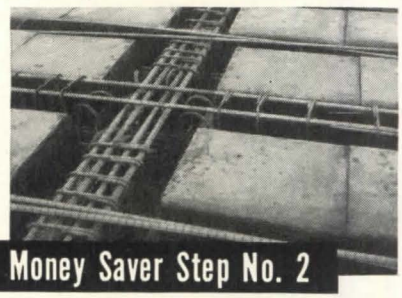
CECO STEEL

makes the big difference

4 STEPS TO REDUCE BUILDING COSTS...

Money Saver Step No. 1

Meyer steelforms completely erected on open wood centering, ready for placement of reinforcing steel and concrete. Note column spirals awaiting installation in columns. Ceco engineers lay out and supervise the complete installation of steelforms on open wood centering.



Money Saver Step No. 2

In this photograph, the reinforcing bars are installed as detailed by Ceco, in proper relation to the erected steelforms. Now the job is ready for placement of the temperature mesh in the top slab. This mesh reinforcement is also supplied by Ceco.

Money Saver Step No. 3

Here the mesh, also known as welded wire fabric, has been placed in correct position and the pouring of concrete for the top slab has commenced. In Ceco-erected jobs such as this, the design is carefully engineered to assure proper reinforcement throughout the structure.

Money Saver Step No. 4

Underneath the concrete joists, Meyer adjustable steel shores support the open wood centering. Forming the floor construction above are adjustable-type steelforms nailed to the centering. Also available are flange-type steelforms, used when plastered ceilings are to be installed.

Partial list of other Ceco Products:

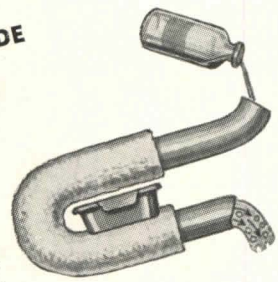
STEEL JOISTS AND ROOF DECK
METAL WINDOWS AND DOORS
METAL FRAME SCREENS • ALUMINUM STORM PANELS • METAL LATH AND ACCESSORIES • HIGHWAY PRODUCTS
CORRUGATED ROOFING • LOUVRE VENTILATORS

HERE'S *WHY* THE GAS REFRIGERATOR STAYS SILENT... LASTS LONGER

LIQUIDS COOL ON EVAPORATION

When you pour alcohol on your skin and blow on it, it will feel cool. That's because liquids draw heat from the surrounding area as they evaporate. You could test this for yourself with a thermometer. Both gas and electric refrigerators operate on this principle . . . but there's a *big* difference in application. Study the following illustrations and you'll see why Gas Refrigeration's method is superior.

SUPPOSE YOU MADE A SIMPLE REFRIGERATOR



All you would have to do would be to pour continuous streams of ammonia or any other refrigerating liquid and air through a bent metal tube. As the ammonia evaporates on the inside, the outside of the tube cools . . . which causes refrigeration. The evaporated ammonia is then passed off in the form of vapor gas. However, in the form of frigeration, allowing this vapor gas to escape would be wasteful. It must be recovered and used again.

WHETHER you're building apartments or private homes, it will pay you to study the simple explanation shown above before placing any orders for new refrigerators.

The chart shows why Servel's method of operation is simpler, different . . . and better. There is not a single moving part in the freezing system. That means there's nothing to cause mechanical humming or clicking. The entire freezing job is done by a tiny, silent gas flame.

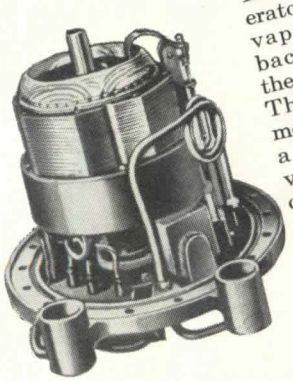
That explains why there's an increasing trend toward the Servel Gas Refrigerator. Today tenants and owners expect new household refrigerators to operate silently. Many architects and builders realize that it's good business to install Servel Gas Refrigerators NOW . . . for once the housing shortage is eased, freedom-from-noise will be an important factor in renting apartments and selling homes.

And—equally important—Servel *lasts longer*. Since the freezing system has no moving parts, there's nothing to wear or break down. Servel's repair and replacement bills are remarkably low. Operating costs remain low too. After years of dependable, trouble-free service, the depreciation of the Servel Gas Refrigerator—compared with a mechanical refrigerator—is much less. For complete information, consult Sweet's Catalog . . . or write today to Servel, Inc., Evansville 20, Indiana.

STAYS SILENT
LASTS LONGER

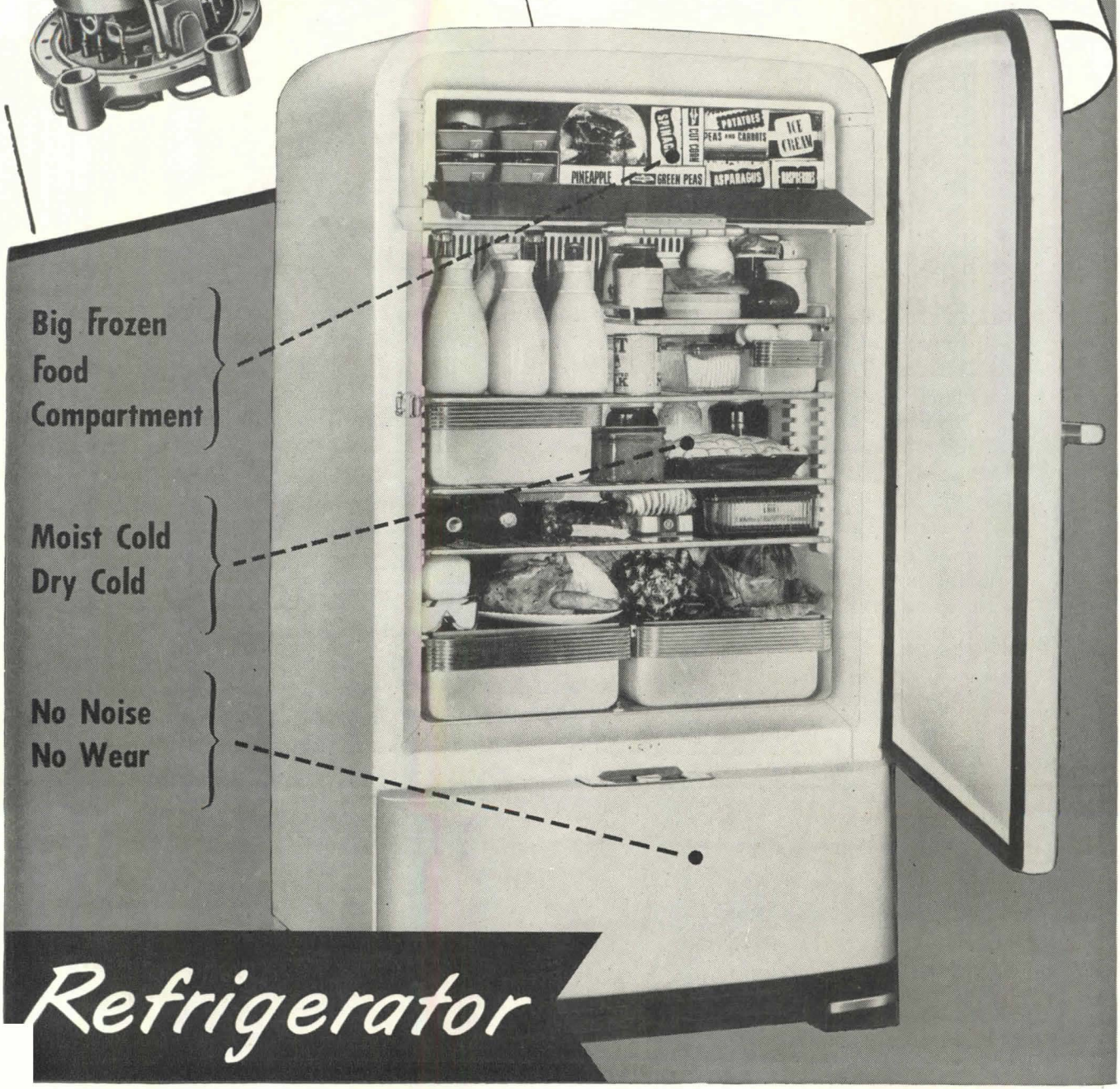
Servel The GAS

THERE ARE TWO WAYS OF CHANGING VAPOR BACK TO LIQUID FOR RE-USE



In an electric refrigerator, the ammonia vapor is compressed back into liquid by the use of machinery. This machinery, or moving parts, includes a motor, pumps, valves, pistons, and compressors.

But in the Gas Refrigerator, the vapor is changed back to a liquid by first being passed through water. The water absorbs the ammonia. The mixture is then boiled by a tiny gas flame. The ammonia is driven off in the form of hot ammonia vapor. Cooled by passing through pipes, it condenses again into a liquid. *Not a single moving part is needed.*



Refrigerator

Does a jig-saw puzzle make a good heating picture?

SOME TYPES of heating equipment are like a jig-saw puzzle. Controls from manufacturer A. Oil burner from manufacturer B. Boiler from manufacturer C. Combustion chamber from manufacturer D. Then, it's left to the dealer to put the pieces together.

But jig-saw puzzle methods *can't* produce the most efficient heating equipment. That's why General Electric boilers and winter air conditioners are:

- *coordinated units*
- *engineered and designed by General Electric*
- *assembled in the G-E factory*
- *tested and installed as a complete, factory-designed unit*

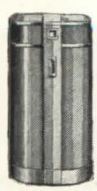
You might suppose that the more efficient, more reliable General Electric heating equipment might be out of line as to price. But it isn't. *G-E heating plants are priced competitively in the better grade heating field.*

For Specifications see Sweets, Section 29A-6. Call your General Electric contractor today for prices and delivery dates. He's listed in the Classified Telephone Directory. *General Electric Co., Air Conditioning Dept., Section 7508, Bloomfield, N. J.*

Automatic Home Heating

GENERAL ELECTRIC

OIL-FIRED



G-E Boiler for steam or hot water

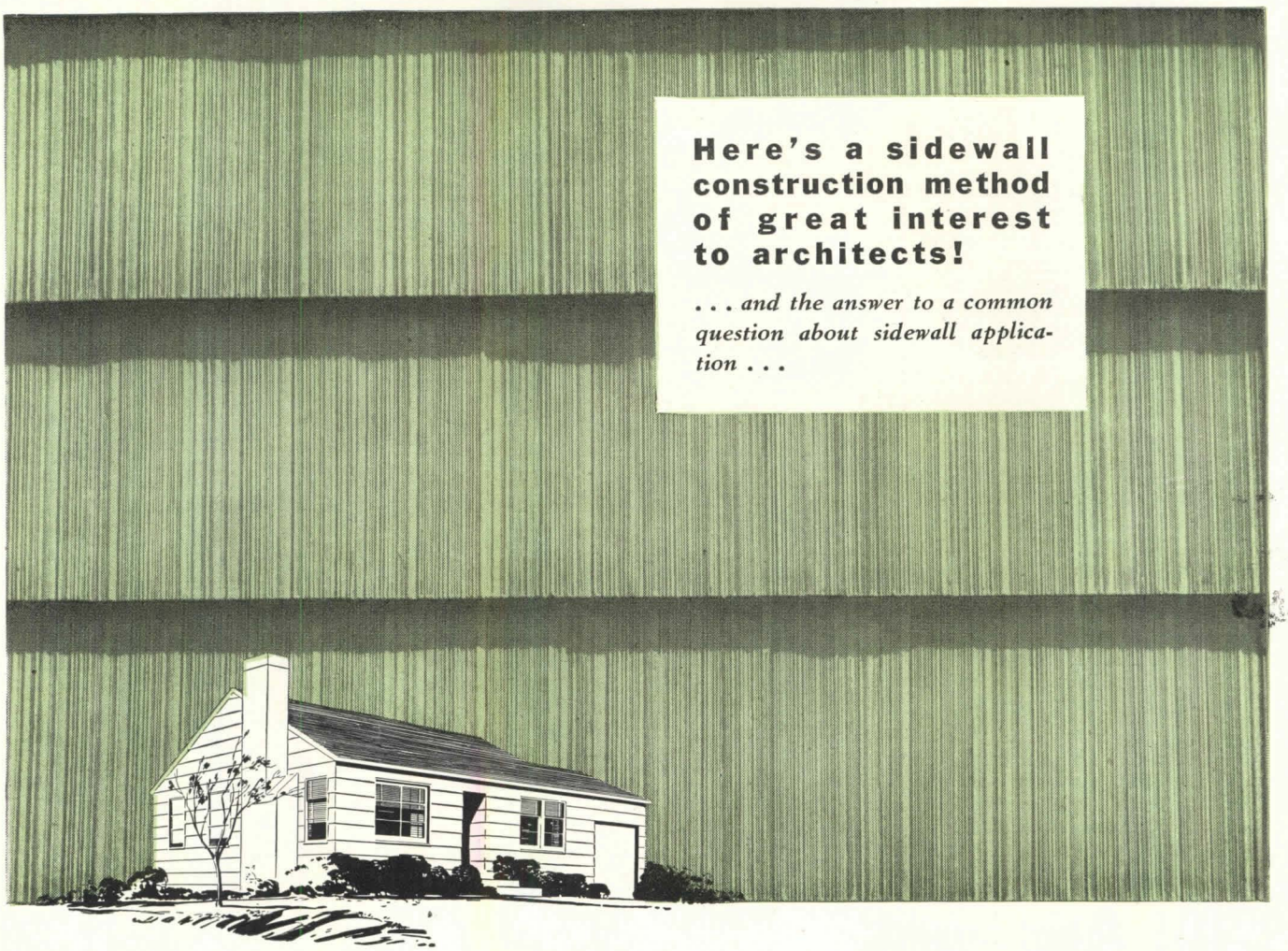
G-E Warm Air Conditioner

G-E Oil Burner

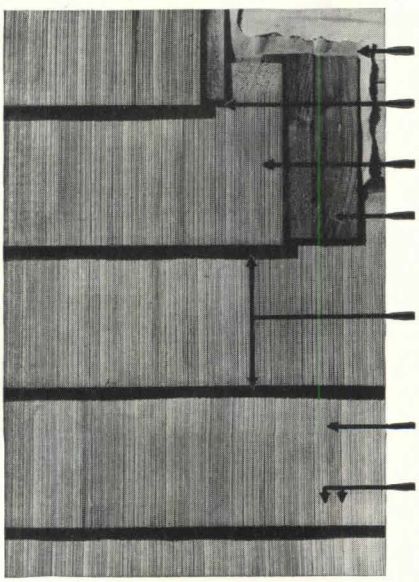
GAS-FIRED

G-E Boiler for steam or hot water

G-E Warm Air Conditioner



What do you know about *double-coursing?*



THESE FACTS ARE IMPORTANT TO YOU . . .

Unsaturated building paper is laid between Shingles and sidewall sheathing.

Outer course is laid ½" lower than the under (concealed) layer, providing attractive thick appearance and heavy shadow line.

No. 1 CERTIGRADE CEDAR SHINGLES or CEDAR SHAKES for outer course.

Unstained No. 2, No. 3 or Undercoursing Grade Shingles are used for the under course. Use of these inexpensive undercoursing shingles is an important economy factor. A strip of shiplap may be used as a convenient nailing guide for both under and outer courses.

Weather exposures may be varied to achieve many desirable architectural effects. Sixteen-inch shingles or shakes may be exposed up to 12" to the weather. Eighteen-inch shingles allow exposures as great as 14" to the weather.

Cedar Shingles and Shakes may be laid with either tight or spaced joints, depending on the effect desired.

Two rust-resistant, small head 5d nails per shingle or shake for outer course, applied 2" above butt-line and ¾" from edges. Each under-course shingle may be stapled temporarily, or held in place with one 3d nail.

RED CEDAR SHINGLE BUREAU
5510 White Bldg., Seattle, Washington, or
Metropolitan Bldg., Vancouver, B. C., Canada

Send for free "Double-Coursing" folder which explains how to estimate quantities and compute costs — a real benefit to home designing architects.

SPECIFY CERTIGRADE SHINGLES—FOR YOUR PROTECTION

VIEWS

NO LONGER NEEDS US

Dear Editor: I am sorry to say this old office of Harding & Seaver is about closed up, after forty years of very enjoyable and satisfactory architectural work, the kind of work that seems now to be stopped by business conditions and not by the failure of the building public to want the sort of work we do and did. You can readily gather this office is of the old school, not at all of the sort you and the other magazines are pushing so hard with doubtful success.

I do not like your magazine. I used to for years take *Pencil Points*, and have folders of detached plates in my files. I took five magazines and have come down to yours, and now discontinue that. I recently asked a younger architect in Connecticut if I would do well to change to the *Forum* and he said it was just as bad as PROGRESSIVE ARCHITECTURE, but did admit he took both at present.

Enough said: can't you see the building public, after these war years, does not want the stuff you have been pushing? Look at yesterday's *New York Times* showing big new apartments in New Jersey in Georgian style, and many advertisements along the same, and only one apartment in New York City in a narrow street understandably "modern."

So far I have never had a client who asked for any "modern" design, and do not expect to, for the people I know are refined and have good taste.

HENRY M. SEAVER
Harding & Seaver
Pittsfield, Mass.

DECORATOR'S PLEA

Dear Editor: So many times in recent years friends of mine, after having leafed through a copy of PROGRESSIVE ARCHITECTURE, have commented on the utter coldness of home interiors. That meant another would-be devotee of contemporary design was lost forever.

After an architect does a perfectly wonderful design and planning job on a building, the interior furnishings belie all that the building itself implies. Whatever the reason for this apparent slip-up, certainly the interiors do no justice to the building. It is so rare indeed to see intelligent interiors, period or contemporary, in the pictures of recently built homes that I wonder if architects consider the finished result.

As a decorator and the head of the design section of the "Career Builders" placement agency, I put in a plea to architects to seek the services of an accomplished decorator who can do an intelligent job in a business-like manner from the planning stage.

FRED B. SHRALLOW
New York, N. Y.

MORE AND BIGGER GLASS

Dear Editor: We have been advised by local glass distributors that they are unable to glaze metal casement windows in which the non-structural members have been removed with DSA or DSB due to the fact that the greater percentage of their glass allotment is received pre-cut for small lights. Apparently these small lights are the result of recommendations of Metal Window Institute. We have written the Metal Window Institute, Producers' Council, and Libbey-Owens-Ford Glass Company protesting this unnecessary shortage and adherence to past architectural expression. We solicit the cooperation and help of you and PROGRESSIVE ARCHITECTURE in correcting this weird and unnecessary condition.

CHARLES GRANGER
Austin, Tex.

BEHIND THE SUN FINS

Dear Editor: I have lived and practiced architecture in Brasil before the present boom. When we talk of Brasilian architecture today, we think of the charming fenestration of some recent works. But when one lives there—the story is different.

Analyze the floor plan of "Apartment House, Copacabana, Rio de Janeiro," in your April issue. The kitchen is an inside room, without exterior window or ventilation. If any, it ventilates into the living room. (Ed. Note: Onto the open service porch, as shown on plan.) Also, note the bathroom on a 2′ x 4′ light-well through 14 floors.

Analyze the "Public School, Niteroi." A 6-foot corridor for eight classrooms and this on the third floor 110 feet away from the only stairway.

If this is the best, how about the rest? I have lived in so-called modern hotels with inside bedrooms ventilated into a dark corridor. I have eaten in a prominent restaurant with washrooms beyond the kitchen and dishwashing and have been in an expensive office building where in case of emergency one had to change stairways in three different locations in order to reach the street from the sixth floor.

Le Corbusier left his ground-floor columns behind—everything is perched up—it is *the thing* to do. The rest, however, is far away from being functional or sanitary. After all, the Brasilian lives for the show and would rather spend a small fortune for an ultra entrance than for an up-to-date air conditioning system.

Of course, of all South American cities the curse is the traditional narrow lot and loose ordinances. But even on a multiple lot the floor plan in most cases is a jumble of confused functions where utility is always sacrificed for fancifulness.

MARTIN DEVY DE DUBOVAY
Los Angeles, Calif.

COVER A RELIEF

Dear Editor: Congratulations on your cover make-up. It is attractive and at the same time useful—a relief from the screwball antics of some of your extreme competitors.

CHARLES C. PLATT
New York, N. Y.

FILLS A BIG GAP

Dear Editor: I have noted in your June issue the review of *Specification for the Design of Light Gage Steel Structural Members*, which was published in April, 1946, by the American Iron and Steel Institute.

I would like to point out that this modest booklet of 39 pages constitutes a minor revolution and a major advance in the building field, and deserves therefore some attention.

The *Specification* accomplishes two important tasks:

1. It fills a big gap in the building codes and specifications, giving workable design standards for the otherwise complex design procedures of sheet steel structures. This has special significance for the designers and manufacturers of prefabricated steel houses. Up to the appearance of this *Specification*, the field of light gage sheet steel members was terra incognita for most architects, engineers, and, last but not least, building code officials.

2. It introduces the truly revolutionary concept that structural elements *can be considered as safe even though the applied loads cause noticeable distortions* on free edges of the steel members. This, of course, is revolutionary only to the structural steel designer, but is well known to the stress analyst of aeronautical structures. It is, indeed, an encouraging sign that this has been "officially" noticed by the building industry.

It is unfortunate that both the *Building Code Requirements for New Dwelling Construction (BMS 107)*, recommended by the National Housing Agency in January, 1947, and the *Recommended Revision of Prefabricated Homes, Commercial Standard CS125-45* (May 1947) by the Department of Commerce, have completely ignored the A.I.S.I. Light Gage Steel Specifications. Both of these codes are supposedly quite progressive.

I believe that the readers of your magazine should profit through the application of this latest A.I.S.I. Specification.

PAUL WEIDLINGER
Washington, D. C.

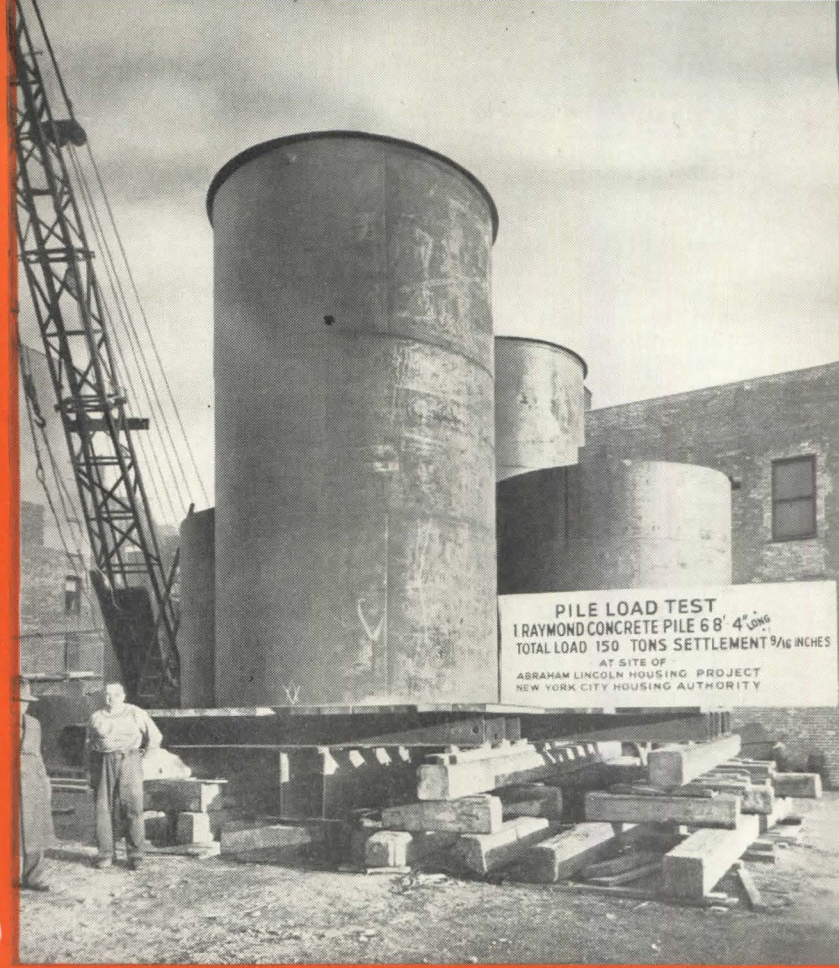
NOT A SCRAPBOOK

Dear Editor: I have been a subscriber to your magazine for some time, and find it very helpful. One step forward is your new cover, giving a ready reference to some of the most important subjects between its covers and also the blank margin which allows for additional information one may jot down for ready reference.

(Continued on page 10)

ADVANTAGES OF RAYMOND CONCRETE PILES · NO. 2

greater carrying capacity



OTHER ADVANTAGES: Uniform Bearing Capacity · Permanency · Engineered for the Job · Saving in Construction Cost · Complete Satisfaction

HERE ARE FOUR IMPORTANT REASONS WHY...

1. The use of rugged equipment and heavy hammers permits driving to high carrying capacities.
2. The steel shell remains in place and prevents distortion of fresh concrete by external pressures.
3. Soil pressures developed during driving are maintained.
4. Ease of inspection after driving justifies loading to capacity.

CONSULT US FOR DETAILED INFORMATION ABOUT RAYMOND METHODS AND SERVICES

50 YEARS — FOUNDED IN 1897 — OF PROGRESS

SCOPE OF RAYMOND'S ACTIVITIES includes every recognized type of pile foundation – concrete, composite, precast, steel, pipe and wood. Also caissons, underpinning, construction involving shore protection, shipbuilding facilities, harbor and river improvements and borings for soil investigation.

RAYMOND

CONCRETE PILE CO.

Branch Offices in Principal Cities of United States and Latin America

140 CEDAR STREET · NEW YORK 6, N. Y.

VIEWS

(Continued from page 8)

I am a designer and builder of stores, including fronts and fixtures. However, I am not limited to this field alone as I have built schools, theatres, nightclubs, restaurants, etc., in various locations in New York, Florida, and California. One outstanding store designed and built by me is the Russell McPhail chocolate store at Syracuse, New York. Another is the Lincoln candy & toy shop in the Hotel Lincoln in New York.

Now getting down to a brickbat for your magazine of which I can enumerate many, is, why don't you print a separate loose page for the listing of "Manufacturers' Literature" wanted instead of having to cut up a magazine, and having it look like a scrapbook instead of what it is intended to be (a ready reference book). This also will help the busy architect and designer who does not want to mutilate his magazine to get the information by just jotting down the items wanted and slipping same in an envelope; or better still, if it were on a card he would only have to apply a stamp and send it on to you. I have at various times in the past written for literature mentioned in your "Manufacturers' Literature" list but received only about half the items requested. I do not request literature unless I believe it will be helpful.

FRED D. WEIERTER
Bay Shore, N. Y.

THE LAW ADVANCES

Dear Editor: The Commonwealth of Massachusetts has recently enacted a law which will be of great interest to the building industry in general, and to prefabricators in particular. This is the former Senate 605, to be published in August as Chapter 631 of the acts of 1947.

Because we were convinced that legislation of this type would constitute a real benefit to the public and a step forward for the building industry, the Bemis Foundation made its technical services available to drafters of this law, and we may bring out in the near future a short release on all of the features of the law and their relation to the general rationalization of building controls. Meanwhile, however, we wish to direct attention to certain features of considerable immediate importance.

Under the new law, two sections (3J and 3K) are added to Chapter 143 of the General Laws of Massachusetts. Briefly, they provide that the Board of Standards in the state Department of Public Safety shall set up alternative provisions covering the use of materials and structural systems in dwellings, which shall then become acceptable throughout the state, despite the possibly differing requirements of local building codes. When the Board of Standards has satisfied itself regarding any new material or construction system, and has brought out its regulations, a local building inspector must issue a permit if the material or construction system to be used complies with these state regulations.

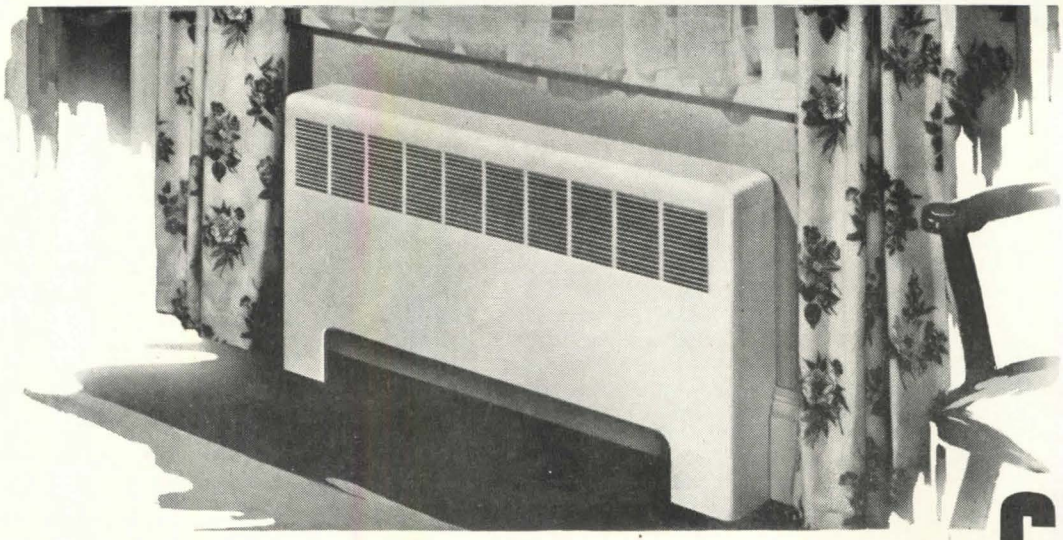
This makes it legally possible, we believe for the first time, for a prefabricator to have the new features of his fabrication system tested and approved by a state board, and thereafter to sell throughout a state-wide market, free of local building code restrictions and difficulties.

BURNHAM KELLY
Assistant Director
Bemis Foundation

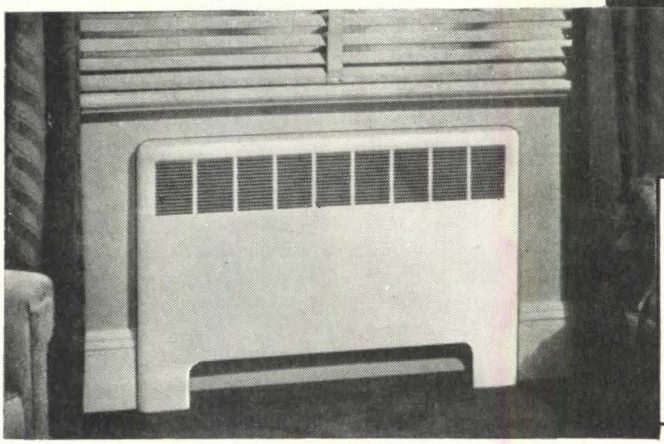
OUR MAY ISSUE

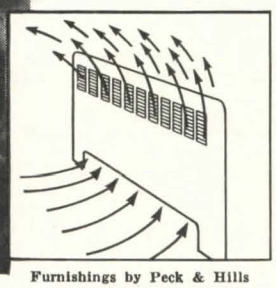
Dear Editor: I would like belatedly to tell you how much I enjoyed your Retail Store issue. In my opinion, this is the best architectural magazine to come out since I have been in the business. Congratulations!

A. L. AYDELOTT
Dent & Aydelott
Memphis, Tenn.



THERE'S A REASON WHY HOME OWNERS APPROVE CH*





T&B Convectors, designed for chimney-effect action, assure proper air circulation, more comfortable rooms. Cool air enters at base . . . passes through heating element . . . leaves by grille as heated air.

Furnishings by Peck & Hills

*We mean Convection Heating

Performance . . . appearance! Two customer demands that determine satisfaction with heat distribution systems. And these are the factors that have "sold" more and more prospective home owners on heat by convection, Tuttle & Bailey Convectors. They have found by experience that—on both counts — T&B units will meet even their most exacting requirements, better.

Here are a few of the performance statistics that have impressed home-owners, that will interest prospects in the planning stage. Start with the principle of convection heating as provided by Tuttle & Bailey Convectors. It means transference of heat by circulation . . . even, more comfortable room temperatures.

Tuttle & Bailey heating elements—constructed entirely of copper — mean faster response to thermostat control, quicker transmission of heat from fuel to rooms, fuel cost savings.

Appearance — the second important consideration in selecting heat distribution equipment — is another Tuttle & Bailey "first." Neat, trim units harmonize with the most modern home furnishings. Space-saving recessed type, *exclusively designed for recessed installation*, provides front panel plaster overlap feature.

These are important facts. It will pay you to keep them in mind when your customers ask advice.

TUTTLE & BAILEY

*Standardized COPPER CONVECTORS

ASK YOUR JOBBER TODAY

For detailed facts that will aid specifying and installing Tuttle & Bailey Convectors, send for a copy of Catalog C6R. WRITE . . . . Tuttle & Bailey, Inc., New Britain, Conn.

NOTICES

COMPETITIONS

PAUL CANIN, a student at Pratt Institute, Brooklyn, N. Y., has been awarded the $1,000 prize offered by *Garrison's Magazine* for the best design of a junior department store. The competition was open to the American Designers' Institute and its junior and student members. Five prizes of $100 each were awarded to WESTON ANDERSON, ANN RUTH BOCK, HARRY DAVID GUTMAKER; and to two teams: PAUL WRABLICA and PAMELA DOHNER; and GEORGE H. and MAX C. HANNENSTEIN. All are students at Pratt.

Announcement of the jury for the Jefferson National Expansion Memorial Competition reveals seven distinguished architects on the panel. They are: HERBERT HARE, Kansas City, Mo., landscape architect and city planner; FISKE KIMBALL, Philadelphia, Pa., architect, historian of Jeffersonian architecture, and director of the Philadelphia Museum of Art; LOUIS LABEAUME, St. Louis, Mo., architect, and former vice-president of the A.I.A.; CHARLES NAGEL, JR., architect, and director of the Brooklyn Museum of Art; RICHARD J. NEUTRA, Los Angeles, Calif., architect, and chairman of the California State Planning Board; ROLAND A. WANK, New York, N. Y., consulting chief architect of the T.V.A.; and WILLIAM W. WURSTER, Cambridge, Mass., architect, and dean of the School of Architecture & Planning of M.I.T. The competition, awarding $40,000 to the winning design of the 42-block site, is open to architects, construction engineers, and students in those fields. Landscape architects, painters, sculptors, and laymen may take part by associating themselves with an architect. Further information is available upon request from George Howe, Professional Adviser, Old Courthouse, 415 Market St., St. Louis 2, Mo.

NEW PARTNERSHIPS, PRACTICES

ONNIE MANKKI has begun a new practice of industrial design and architecture, with offices located at 7113 Euclid Ave., Cleveland 3, Ohio.

JAMES GAMBLE ROGERS has announced that upon completion of his current work his practice will be carried on by the firm of ROGERS AND BUTLER at the present offices, 70 E. 45th St., New York 17, N. Y.

ALEXANDER S. COCHRAN has opened an architectural office at 411 N. Charles St., Baltimore 1, Md.

EDWIN A. THORNQUIST, EVERETT D. WITTE, and SHERMAN S. SMITH have formed a partnership for architecture and engineering, with offices in the Eisfeld Bldg., Burlington, Iowa.

PAUL ATCHISON, architect, has associated with CARL A. KLOVERSTROM with offices at 1254 Monaco Parkway, Denver, Colo.

NEW ADDRESSES

LEO J. BARRETT, 1740 E. 12th St., Cleveland 14, Ohio.

FREDERIC HUTCHINSON PORTER, 1009 E. Lincoln Highway, Cheyenne, Wyo.

LESLIE MARKOVICH, Pioneer Builders, Inc., 5501 W. North Ave., Milwaukee 8, Wis.

J. RAYMOND MIMS, 2420 Wilson Blvd., Arlington, Va.

WILLIAM D. RAFFEL, industrial and architectural scale models, 55 E. 9th St., New York 3, N. Y.

HUGH STUBBINS, JR., 103 Pleasant St., Lexington, Mass.

GREGORY AIN, JOSEPH JOHNSON, and ALFRED DAY, 2404 W. 7th St., Los Angeles 5, Calif.

G. EVANS MITCHELL, B. of L. E. Bldg., Cleveland 13, Ohio.

AMERICAN HOUSES, INC., 165 W. 46th St., New York 19, N. Y.

C. BERT R. BITTER, Rm. 753, Penobscot Bldg., Detroit 26, Mich.

FOSTER AND YASKO, 407 Scott St., Wausau, Wis.

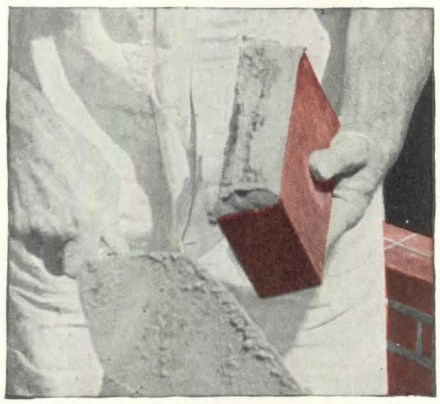
LAWRENCE SINGER, 22 W. 46th St., New York 19, N. Y.

LOUIS G. MCNAMARA, 53 W. Jackson St., Chicago, Ill.

Get BETTER WORKM_NSH_P with BRIXMENT!

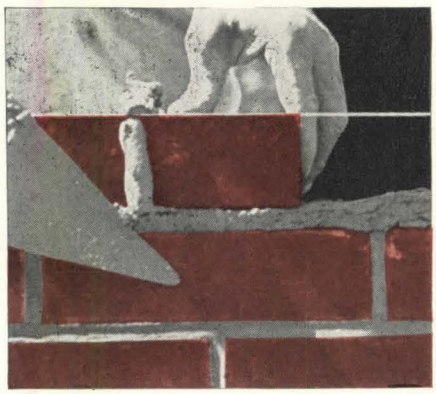
No. 4 OF A SERIES—

THE RIGHT WAY AND THE WRONG WAY—IN HEADER COURSES

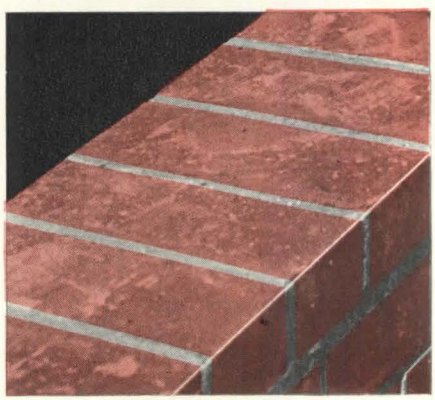


Mortar should be spread over the entire side of the header brick before it is placed on the wall.

To secure full header joints, mortar should be spread over the entire side of the header brick before it is placed in the wall.



The brick should be shoved into place so mortar oozes out at the top of the joint.



This completely fills the joint.

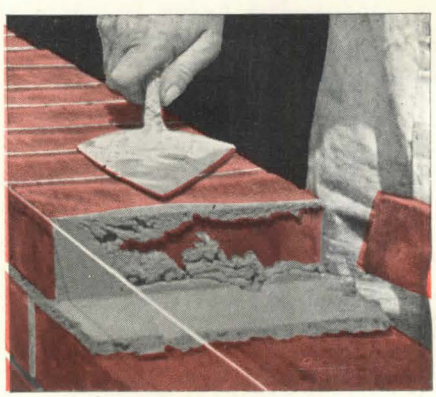
BRIXMENT is so workable, so plastic, that when the bricklayer pushes the brick into place, he does not have to *force* it home. The excess mortar "flows" readily into every part of the joint, thus providing good, full joints without requiring extra work or effort on the part of the bricklayer.

Aside from its greater plasticity, Brixment mortar has higher water-retaining capacity and bonding quality, greater resistance to freezing and thawing, and freedom from efflorescence. Because of this combination of advantages, Brixment is the leading masonry cement on the market.

When a dab of mortar is spotted on one corner of the brick,

A dab of mortar spotted on one corner (or both corners) of the brick cannot possibly fill the cross joint. Slushing will not fill the voids.

there is very little mortar in the cross joint.



Slushing will not fill the voids.

LOUISVILLE CEMENT CO.
Incorporated
LOUISVILLE, KY.

THIS MONTH

MILTON FREDERICK KIRCHMAN

NILS AHRBOM

HELGE ZIMDAHL

Milton Frederick Kirchman, architect, of New York, is the author of the thought-provoking analysis, "Logic? . . . or Esthetics?" featured in this issue. After receiving his B.A. in English literature from New York University, Kirchman went on to study architecture at the university's School of Architecture, and at the Institute of Fine Arts in New York, where he received his Master's degree. He has taught at Brooklyn College and N.Y.U.'s architectural school (now defunct), and is busy with classes at Pratt Institute, Brooklyn, N. Y., and in the Division of General Education of N.Y.U. Before starting his own practice, he was engaged in hospital planning, stress analysis, and structural design.

Two new Swedish museums are presented this month. The Linkoping design is the work of **Nils Ahrbom** and **Helge Zimdahl,** architects, who are not only good friends and partners, but brothers-in-law as well. (G. Howard Smith, who sent the museum pictures to us, writes that only the most initiated can separate the work of one from the other—little wonder!) Both men graduated from the architectural school of Kungliga Tekniska Hogskolan in 1927, where Ahrbom now holds a professorship. They have been in partnership since 1932, principally designing schools, sports structures, industrial and laboratory buildings. **Kurt von Schmalensee,** architect of the Norrkoping museum, is also a graduate of the Tekniska Hogskolan, from where he went on to study at the Academy of Arts. He was appointed city architect for Norrkoping in 1929, and his work is comprised mainly of buildings for that city.

KURT VON SCHMALENSEE

Widely known for advanced theories on school construction, the firm of **Franklin, Kump & Falk,** of San Francisco, demonstrates adeptness in another field with the design of the new airport buildings for Merced and Modesto, California. (For biographical notes, see April 1945 PROGRESSIVE ARCHITECTURE.)

The projected All Saints' Episcopal Church for Riverside, California, comes from the office of Ralph C. Flewelling &

(Continued on page 16)

NEXT MONTH

● Continuing our series of Critiques of the primary building types, we will present next month a review of five homes. The architects whose work has been chosen by the editors for this critical presentation are: Robert Montgomery Brown, Philadelphia, Pennsylvania; Kenneth Kassler, Princeton, New Jersey; Jack P. Coble, with Raymond Loewy Associates, New York, N. Y.; Clarence W. W. Mayhew, of San Francisco, California; and Campbell & Wong, of the same city. All the houses are suburban or country places.

● From Norway we have obtained pictures of the recently completed Radiohus in Oslo, designed by Nils Holter. The wing of the building containing broadcasting studios and facilities for studio audiences will be shown in some detail.

● In the same issue there will be data on "A Modular Garden for a Residence," prepared for our readers by James C. Rose, landscape architect, of New York, N. Y. The Materials and Methods section will conclude with a discussion of newest developments in Quonset construction—based on material obtained from Stran-Steel Division of Great Lakes Steel Corporation.

An Exclusive Creation
BY TILE-TEX

Architects are designers—as such, they prefer to use materials that enable them to create proper decorative backgrounds for any interiors.

That's one reason why so many architects prefer Tile-Tex Asphalt Tile*—because it gives them more design freedom in creating correct floors for the interiors of buildings. This is particularly true in retail stores, where modern merchandising requires floors of appropriate design.

Variety of color and size, plus the necessary decorative and functional accessories, are all available in Tile-Tex Asphalt Tile. Here's a product that helps the architect create beautiful, striking floors that help merchants sell goods.

Tile-Tex does more than give the architect design freedom. It gives his client a long-wearing durable floor—easy to clean and keep clean—resistant to stains and scars. Its smooth, tread-easy surface is comfortable to both customers and store employees.

Our experience in planning individualized floors for merchandising areas may be of some value to you at some time. We would appreciate the opportunity to help you.

The Tile-Tex Co., Inc., Chicago Heights, Ill. Sales Offices: Chicago, New York, Los Angeles and New Orleans.

ASPHALT TILE-TEX TILE

TILE • TEX ASPHALT TILE

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

THIS MONTH

(Continued from page 14)

Associates, architects, of Los Angeles, California. **Ralph C. Flewelling** was educated at Wesleyan University, Middletown, Connecticut, and did graduate work at Massachusetts Institute of Technology. He has been practicing architecture in Los Angeles since 1924, where he has been an active participant on numerous architectural and planning boards. A Fellow of the A.I.A., he has served as an officer of the Southern California Chapter, from which he has received honor awards.

The second proposed church structure, for the Church of the People, Seattle, Washington, is a design of **Pietro Belluschi**, well known Portland, Oregon, architect whose work has been presented many times in the pages of PROGRESSIVE ARCHITECTURE. (See August 1946 issue for biographical details.)

From Berkeley, California, comes the residential example selected this month, the work of John Ekin Dinwiddie, architect; Albert Henry Hill and the late Phillip Joseph, associates. **John Ekin Dinwiddie** attended the University of Michigan, did graduate work under Eliel Saarinen, and then toured Europe as holder of the Booth Traveling Fellow-

(Continued on page 18)

RALPH C. FLEWELLING

JOHN EKIN DINWIDDIE

ALBERT HENRY HILL

BRUCE FINISHED FLOORS have saved us more than $45,000 since 1942!

—Reports L. H. MILLS

Leading Chicago Home Builder

Here is an outstanding record of economy and performance that speaks for itself. The use of Bruce Finished Floors in 948 units saves $45,000 and 3,792 working days! The reason—the elimination of costly, time-consuming sanding and finishing on the job.

Throughout the country, builders choose Bruce Finished Flooring because it saves them time and money . . . and because it gives home owners more beautiful floors with a superior, longer-lasting finish.

E. L. BRUCE CO.
Memphis, Tenn.

Laurance H. Mills, President
Jack Alan Mills, Vice President
William F. McHugh, Ass't Vice President
Edward B. Baier, Sec'y and Treas.

MILLS AND SONS
and Associated Companies
REALTORS ... BUILDERS
Main Office
7610 Grand Avenue : Chicago 35, Ill.
Lackawanna 1402 : Elmwood Park 2500

Brokerage
Management
Home Building
Insurance

June 3, 1947.

E. L. Bruce Co.,
Memphis, Tenn.

Gentlemen:

As you know, we began purchasing Bruce Finished Flooring from Barr & Collins, in 1942, and have been using it exclusively in all of our housing construction. In fact, I understand that we were the first in the Chicago area to change over to this new type of hardwood flooring. Therefore, I am sure that you will be interested in the following data from our records.

(1) Since 1942, we have installed Bruce Finished Floors in a total of 948 individual houses in our projects at Racine, Wis., and Elgin, Franklin Park, Ivanhoe and Elmwood Park, Ill.

(2) On these four and five room units we have realized a saving in flooring costs averaging $45 to $50 per unit through the elimination of "on-the-job" finishing. This totals more than $45,000 on all units completed to date.

(3) In addition to the actual dollar savings mentioned above, we have gained many valuable days' working time ordinarily required for sanding and finishing. I couldn't even begin to estimate the value of this saving alone, but I think it is sufficient to point out that at a minimum average of four days per unit, this amounts to 3,792 working days.

Of course, Bruce Finished Floors have many other advantages, but I think that the above is sufficient to tell you why Mills and Sons have been and will continue to be enthusiastic boosters for these fine floors.

Also, I want to take this opportunity to congratulate E. L. Bruce Co. on their stabilized price policy. I was surprised in looking over my lists the other day to find that the list price of Bruce Finished Flooring is actually less in many cases than that of some unfinished strip floorings.

Keep up the good work.

Sincerely yours,

MILLS AND SONS
BY:

Laurance H. Mills
President.

LHM:EH

BRUCE *FINISHED* FLOORS

THIS MONTH

(Continued from page 16)

ship. He established his own general practice in San Francisco in 1932, and proceeded to attract national attention through his work and the winning of numerous national competitions. In 1938 an association was formed with **Albert Henry Hill**, a graduate of the University of California who had worked for his Master's degree at Harvard under Dr. Walter Gropius and Marcel Breuer. Associated at first, Hill soon became a full partner in the firm, which continued to win competitions, notably, the *House & Garden* 1st prize for three consecutive years. After the war years, which Dinwiddie spent in defense and war housing and Hill in the armed services, a new partnership was formed with Eric Mendelsohn as the third member of the firm. This firm was recently disbanded, Hill and Mendelsohn forming a new partnership, and Dinwiddie reopening his own office.

"Cavity Wall Construction," the featured article in this month's Materials and Methods section, was written for us by Ben John Small. Since a biographical note on the author was printed in the August 1946 PROGRESSIVE ARCHITECTURE, he has been made an associate with Alfred Hopkins & Associates, well known New York architectural firm.

NOTICES

APPOINTMENTS

Stanford University, Stanford, Calif., has announced the appointment of VICTOR KING THOMPSON as assistant professor of art. Mr. Thompson will devote his time to the development of the curricula in pre-architecture and pre-industrial design.

WILLIAM W. WURSTER has accepted the chairmanship of the Architectural Advisory Committee of the Federal Public Housing Authority. Mr. Wurster succeeds HOWARD MYERS, who has resigned for reasons of health.

GLEN LUKENS, ceramic artist, has become affiliated with Lightolier, Inc., and will design glass and ceramics for the company's lamps and lighting fixtures.

SCHOLARSHIPS, COURSES

DALE C. BYRD of the firm of Skidmore, Owings & Merrill, has been awarded the annual Rotch Traveling Scholarship. Mr. Byrd, who holds a master's degree in architecture from Harvard, will continue his studies in France and Italy.

Review courses for the New York State Registration Examinations have been announced by the FEDERATION TECHNICAL INSTITUTE, 5 Beekman St., New York 7, N. Y. Classes cover eight fields in architectural design and construction, and begin September 22. Further information on enrollment is available upon request from the Institute.

NEW PARTNERSHIPS, PRACTICES

CORTLAND ENGINEERING CO., structural engineers, have opened an office at 5 Beekman St., New York 7, N. Y.

L. W. COOK and R. A. ZERN have formed a partnership to be known as COOK AND ZERN, consulting engineers, with offices at 607 Wabash Bldg., Pittsburgh 22, Pa.

J. LEE THORNE, ASSOCIATES, industrial designers, have begun a new practice at 1700 Sansom St., Philadelphia 3, Pa.

IRVIN MICHAELSON and WILLIAM J. FEDELI have formed an architectural partnership with offices at 905 Fox Bldg., Philadelphia 3, Pa.

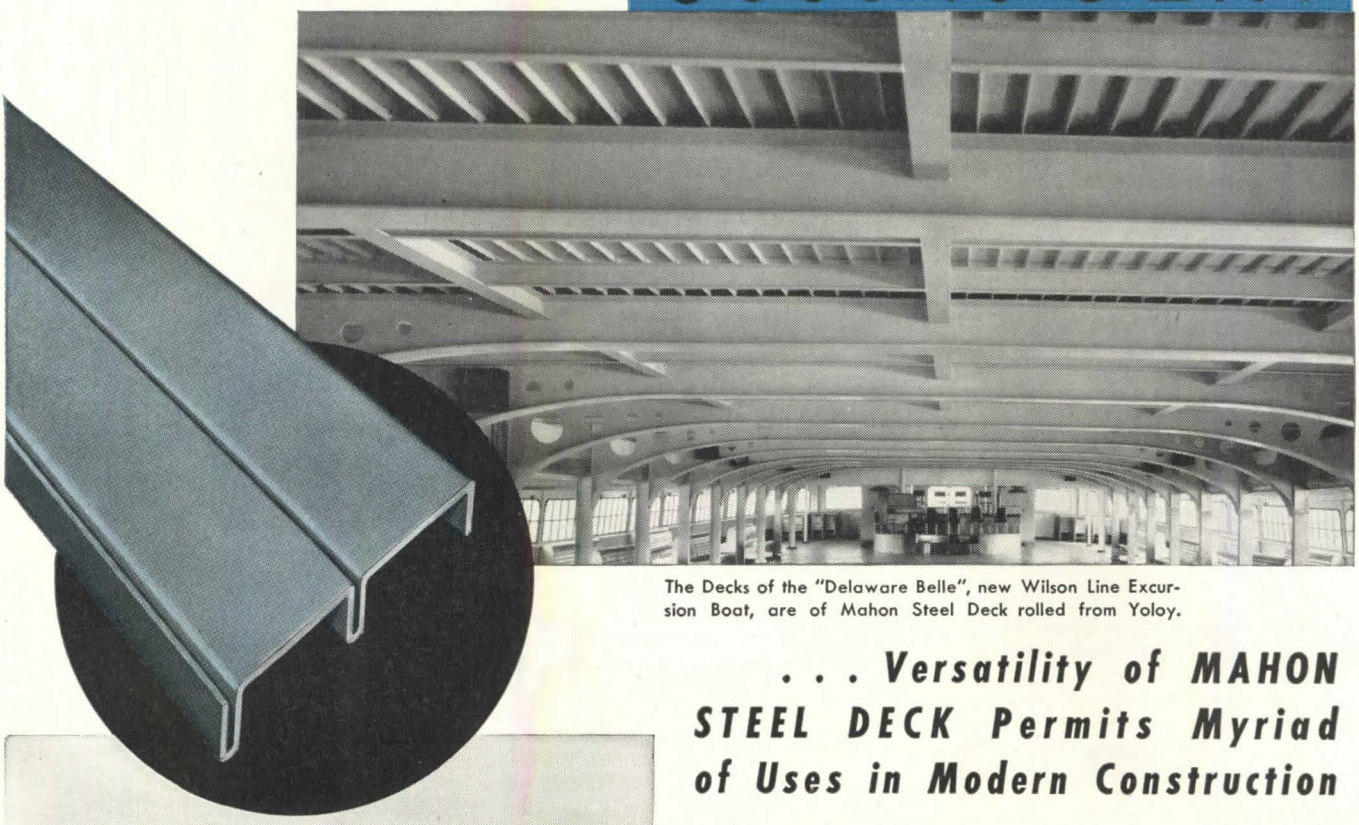
A. N. MCANINCH and J. R. MAHNKER, JR., have announced the establishment of an architectural partnership at 512 Exchange Bldg., Little Rock, Ark.

HAROLD J. PERRY has opened an office for architectural practice at 16 Bloomfield Ave., Flemington, N. J.

EVANS AND DAVIS, architects-engineers, have opened an office at 403 Fulton St., Troy, N. Y.

JOHN P. O'NEILL has opened an office rendering architectural services in the planning, specification, and supervision of building construction at 625 Hutton Bldg., Spokane, Wash.

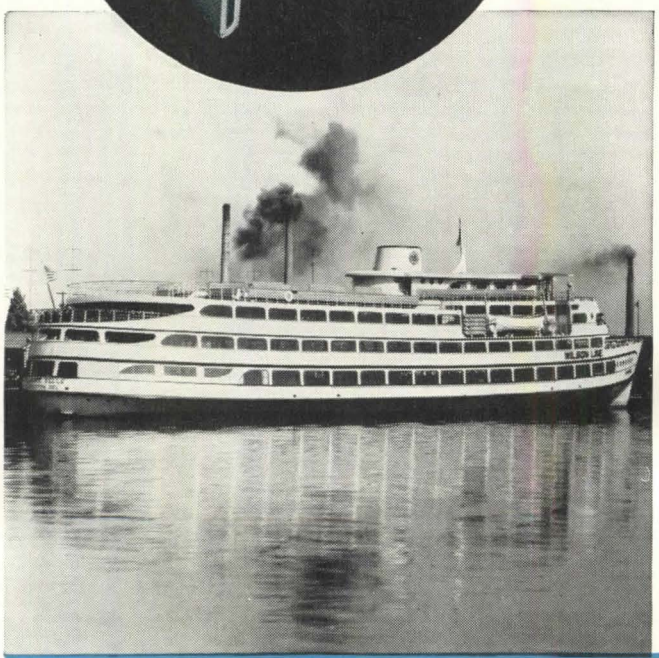
STEEL DECK... Goes to SEA!



The Decks of the "Delaware Belle", new Wilson Line Excursion Boat, are of Mahon Steel Deck rolled from Yoloy.

. . . Versatility of MAHON STEEL DECK Permits Myriad of Uses in Modern Construction

Mahon Steel Deck, rolled from high-tensile, low alloy Yoloy, was used for decks of the all-welded, all-steel constructed "Delaware Belle", of the Wilson Line, illustrated here . . . this is typical of numerous new applications by alert designers in which Steel Deck solved their problem of light weight construction with adequate strength and rigidity. You will find that Mahon Steel Deck, due to its basic design, with narrow, vertical-leg stiffening ribs, lends itself to a broader range of uses in modern construction. See Mahon's Insert in Sweet's File for complete information, specifications and latest construction details, or consult a Mahon representative.



The all-welded, all-steel constructed "Delaware Belle". All three of the upper decks are Mahon Steel Deck rolled from high tensile, low-alloy Yoloy.

THE R. C. MAHON COMPANY

Home Office and Plant, Detroit 11, Michigan

Representatives in all Principal Cities

Manufacturers of Steel Deck for Roofs, Sidewalls, Ceilings, Floors, Partitions and Doors. Also Roof Sumps and Recesses, Rolling Steel Doors, Grilles, and Underwriters' Labeled Rolling Steel Doors and Fire Shutters.

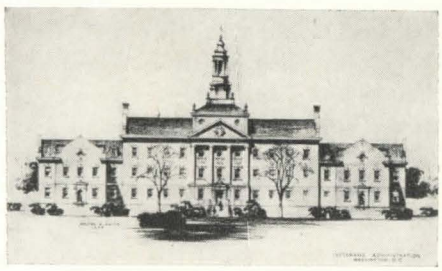
MAHON

PROGRESS REPORT

THE VETERANS HOSPITAL PROGRAM

The much publicized Veterans Administration new hospital program, which got off to such an auspicious start last year, threatened during this last month to blow up and hurt someone. Unfortunately, the private practicing architects (who have been giving an excellent account of themselves) were within range and in danger of becoming casualties. Capable architects were having their plans returned after review with severely critical comments; the program had stopped for what one engineer-general called a "breathing spell." What had happened? PROGRESSIVE ARCHITECTURE has studied the situation at first hand and, digging behind the many complicating factors, is convinced that the issue resolves itself to a large and simple question: can an agency of the Government afford to sponsor good design by competent architects, or must public works continue to be unimaginative and undistinguished?

The most successful Government building programs have been those in which an *advisory* bureau has worked with a carefully selected group of private architects and engineers. The Hospital Facilities Division of the U. S. Public Health Service is an outstanding example of this advisory and consultative function on the part of a Government agency. To be cruelly blunt, the work done by the design and construction service of the Veterans Administration, before the present program was turned over to the Army's Corps of Engineers, was a depressing example of the tired lack of inspiration that has characterized so much public building's architecture.



WHICH GOVERNMENT AGENCY DO YOU READ?

The site for this hospital, designed by the Veterans Administration, is ideal for the care and rehabilitation of the neuropsychiatric patients who will be its occupants. . . . Reinforced concrete and steel construction will be used for all buildings. They will have a brick exterior trimmed with limestone and designed in the Georgian style of architecture.—*War Department, Public Relations Division.*

It is of utmost importance to remember that a hospital is more than just a building with bedrooms. It is a complicated, highly specialized functional structure which must be designed for the various facilities, instead of having the facilities forced into certain areas because of a desire to produce some particular architectural appearance.—*Division of Hospital Facilities, U. S. Public Health Service.*

The *new* V. A. hospital program promised to be (and has been, up to this point) an exciting illustration of the right way to do the job. Design and construction were entrusted to the U. S. Army Corps of Engineers. Lt. Col. William E. Jeffrey (now Mr. Jeffrey), speaking to the architects last year for Brigadier General Bragdon, Assistant Chief of Engineers for Military Construction, promised: (a) "The Corps of Engineers proposes to do none of the design work"; (b) "We are not going to use any standard plans"; (c) "The concurrence of the Veterans Administration on preliminary designs will be secured by the Chief of Engineers. . . . With that approval the Veterans Administration then transfers whole responsibility . . . . to the Chief of Engineers . . . . So you have not two masters to serve; only one."

The architects naturally applauded this program. Things started well. The written and graphic programs for various types of hospitals, prepared by the V. A. medical staff under General Hawley, and transmitted to the architect-engineer firms by the Engineers, were excellent statements. ("The standards of planning of veterans' hospitals are probably the highest we have had yet in the history of the United States"—November 1946 PROGRESSIVE ARCHITECTURE, p. 58.) As architectural firms were chosen in various parts of the country, an unusually intelligent approach to this tough problem of selection was apparent. Younger, local firms were allied with more experienced, established architects. Progressive, forward looking designers turned up for the first time in assigned Government work. The Corps of Engineers was an admirable client; reviews were fair and rapid. Everything seemed rosy. Where, under the old dispensation, the V. A. had fumbled for several years on the design of five hospitals, now within a few months $770,000,000 worth of work was largely assigned and began to pass rapidly to the working drawing stage. Outstandingly able designs appeared.

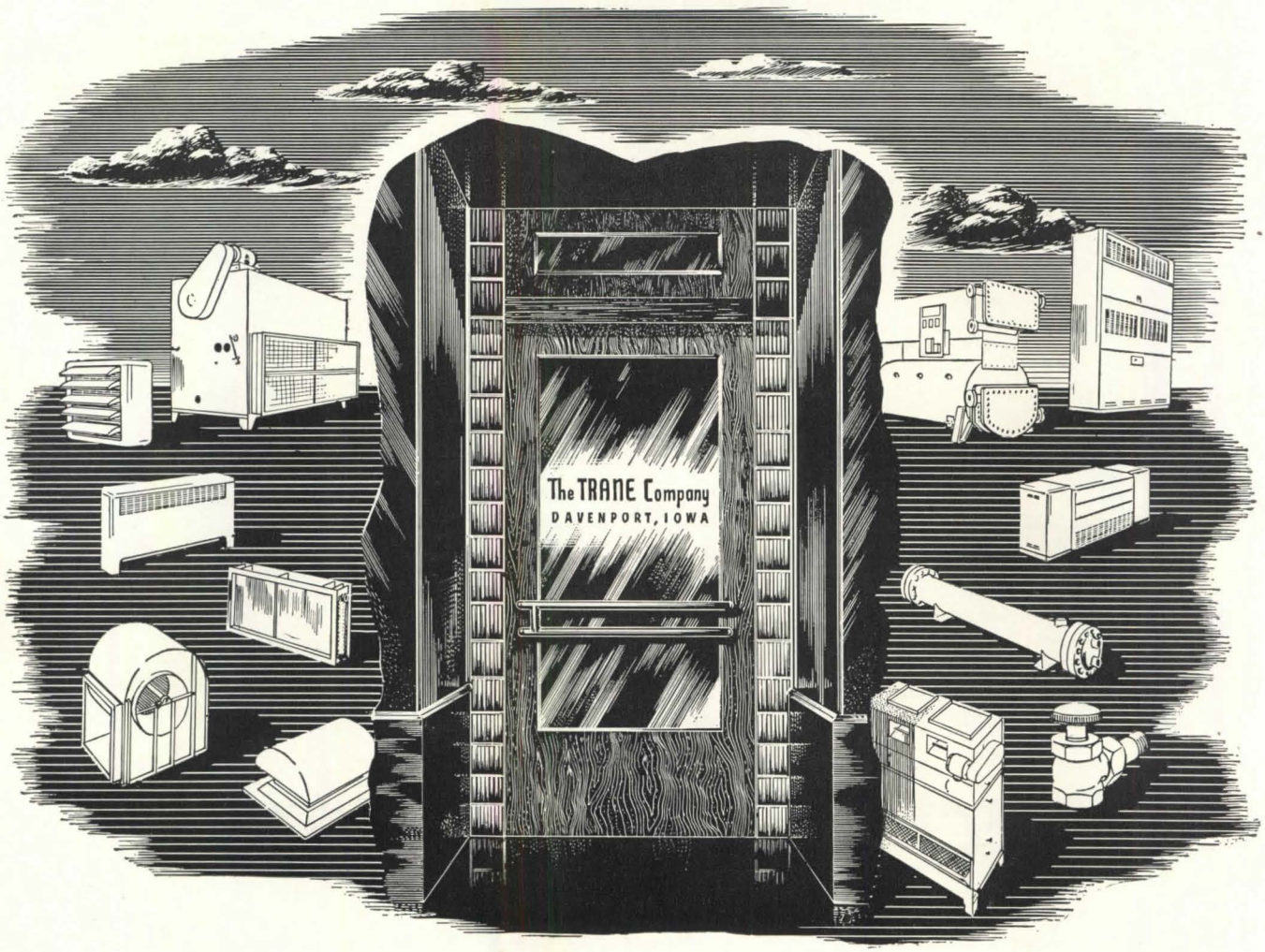
But trouble was brewing. In the arrangements that had been made, and that had been approved by General Bradley as part of his over-all housecleaning in V. A., one factor had been bypassed and lay quietly waiting until the time came to reassert itself. That was the design and construction service in V. A. If this Civil Service group had been brought into the program as an advisory agency, later trouble might have been avoided. As it has turned out, pressure to allow the V. A. to do more than review preliminaries became too great for the Corps of Engineers to resist, and in February of this year the Corps practically withdrew as client (remaining as administrator) and a board of review was set up within the Veterans Administration to go over the architects' work from the medical, social service, and design points of view.

Some of the review was undoubtedly necessary; some of the comment was valid; not every architect working on the program was an hospital expert. However, inconsistency and delay appeared because of this revised arrangement, and in some instances picayune and unreasonable criticisms were offered. The architects grumbled, discussed the situation among themselves, and finally asked the A.I.A. to act. Meanwhile, the Engineer branch of the Army found the increasing interference by the Veterans' branch unbearably hampering, and about a month ago practically stopped the entire design program until the matter could be adjudicated. The various generals have held long meetings; the lower staff members have glared at one another; hospitals for veterans have waited.

Another factor has complicated the situation: costs are running higher than the original estimates. It is interesting to note that individual architects were given programs, but not budgets. Bid costs on the jobs for which drawings have been completed have run high—up to almost $1.80 a cubic foot. V. A. and the Engineers are agreed that the original $770 million program will actually cost $150 million more than that to build. What General Bragdon calls the present "breathing spell" is being used to decide whether to ask for more money from an economy-minded Congress or to reduce the program, either in number of structures or building by building.

The situation is potentially dangerous to architects and architecture, because a solution which now turned the program back to V. A. would tend to discredit the work that has been done. In future Government design, it would be possible for bureaucrats to point a finger and say, "See—the private architects did a poor job on the V. A. program. They were incompetent, slow, and extravagant. The old Government agency had to take over the job to get it done." Undoubtedly, a compromise will be reached, and the Engineers will not pull out of the program, as has been rumored. The compromise will allow the V. A. design bureau to design some of the remaining jobs that have not been assigned. Just what will happen about review of architects' work in progress is anybody's guess and General Bradley's decision to be made.

It is a situation for all architects interested in design progress to watch carefully. If a bad solution seems imminent, full support for an agressive campaign by the A.I.A. would seem to be indicated. A big step forward both in hospital design and in architect-Government relations had been made, and it would be too bad to shuffle backward. This sort of advance in architecture is worth fighting for.



Trane Heating and Air Conditioning Is as Near as Your Telephone

Trane Engineered Air Conditioning—which refers to heating as well as cooling—stands for a complete line of engineered products. Each unit is developed and built by manufacturing engineers. Each is designed to work together with every other, for systems that function with the balance of matched components.

In addition, Trane product engineering extends to the drafting boards of architects, engineers, and contractors, where Trane Field Engineers cooperate in the application of Trane products and systems. Many of these field engineers are alumni of the Trane Student Class—an organization which each year trains outstanding engineering graduates in the problems of heating and air conditioning.

Because Trane manufactures a *complete* line of products, entire Trane heating and air conditioning systems are possible. There is a Trane Field Engineer within a few hours of any part of the country to work together with architect, engineer, and contractor in designing Trane systems.

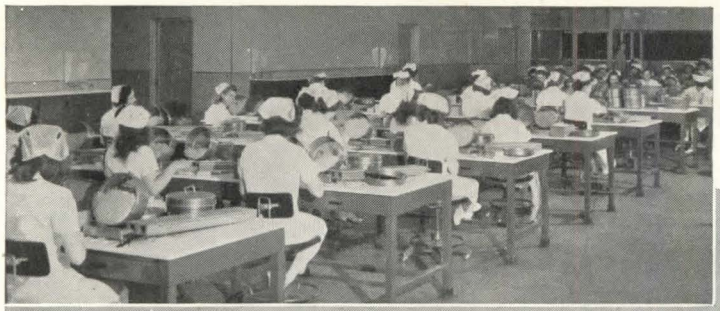
* * *

The Convector-radiator—modern successor to the old-fashioned iron radiator—has been engineered by Trane for universal application to steam and hot water heating systems, and is being produced in quantity so you can now secure it from local distributors' stocks.

TRANE

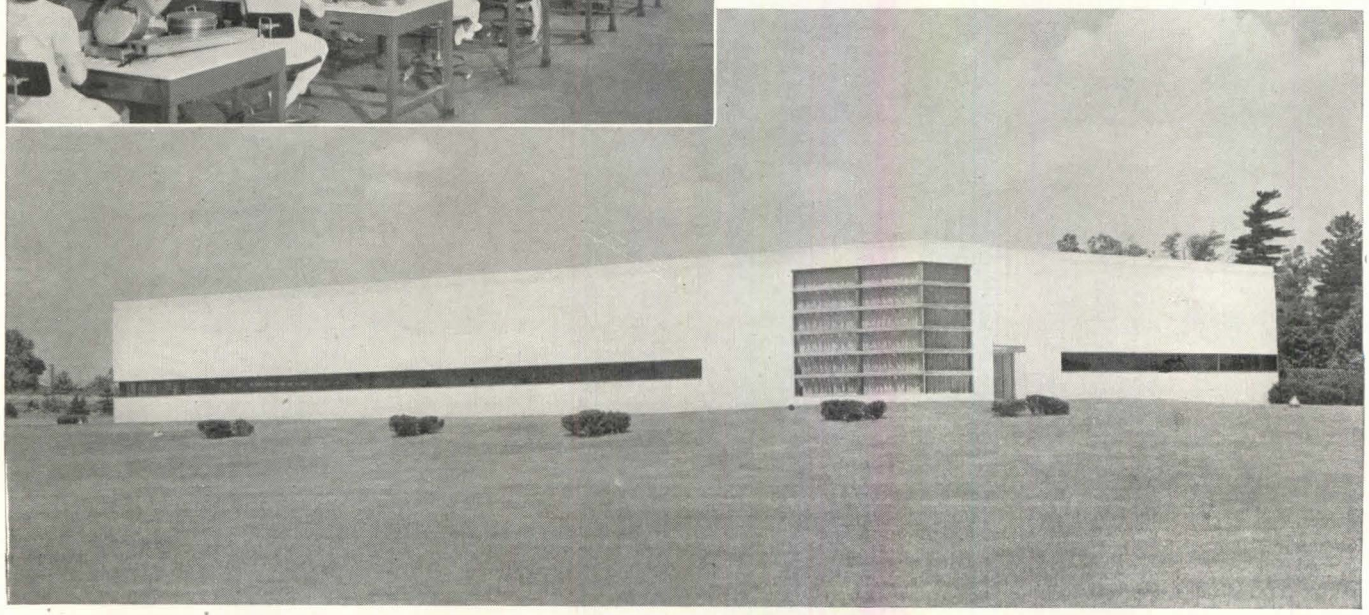
Manufacturing Engineers of Equipment for
HEATING AND AIR CONDITIONING

THE TRANE COMPANY, LA CROSSE, WISCONSIN • *Also* TRANE COMPANY OF CANADA, LTD., TORONTO, ONTARIO



Scene in suture winding room where conditioned air and controlled humidity are necessary safeguards. Blocker Air Conditioning Corp., Newark, N. J., installed the system.

General view of Ethicon Suture Laboratories, designed by architects R. G. and W. M. Cory, New York. Rogers & Gons, New Brunswick, N. J., were builders.



PERFECT SETTING FOR SUTURES...

Comfort Cooling—Controlled Humidity— Hospital Cleanliness . . . with Maximum Safety Assured by "Freon" Refrigerants

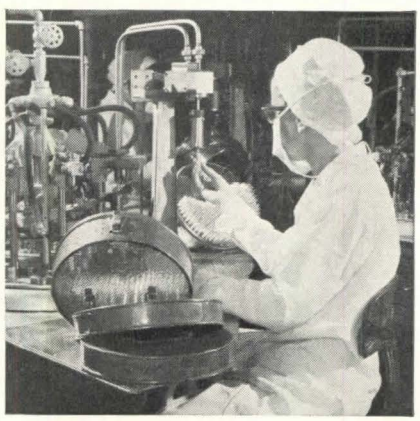
In the ultra-modern Ethicon Suture Laboratories—a division of the surgical dressing house of Johnson & Johnson, New Brunswick, N. J.—cleanliness rivals that maintained in the world's largest and finest hospitals. The laboratories are immaculate throughout and perfectly air conditioned with equipment utilizing "Freon" safe refrigerants exclusively.

In a "winding room," catgut sutures are wound on small paper reels. Temperature and humidity are of the utmost importance because catgut *stretches* when there is an excess of moisture . . . becomes brittle if conditions are too dry. So temperature is held constant at 75°F.; relative humidity at 45% the year round.

In the sealing room (a sterile area where the sutures are packed in hermetically sealed glass tubes), conditioned air is a comfort necessity, for the sealing operation is done with the aid of confined flame in automatic glass-blowers.

Plant equipment providing both the conditioned air and perfectly controlled humidity consists of a 75 h. p. York refrigerating machine and a 5 h. p. Copeland compressor. Both units are located in a convenient motor room in the basement of the building. Both use "Freon" . . . recommended because the dryness, purity and uniformity of these well-known refrigerants assure maximum safety, economy, and efficiency of operation.

When plans call for modern air conditioning, humidity control or refrigerating systems . . . recommend or specify equipment designed to utilize "Freon" safe refrigerants. Kinetic Chemicals, Inc., Tenth and Market Sts., Wilmington 98, Del.



Sealing room operators keep comfortable despite heat from glass-blowers used in their work.

KINETIC
REG. U. S. PAT. OFF.

FREON
REG. U. S. PAT. OFF.

safe refrigerants

"FREON" IS KINETIC'S REGISTERED TRADE MARK FOR ITS FLUORINE REFRIGERANTS AND PROPELLENTS

When you insulate with FOAMGLAS

...you insulate FOR GOOD !

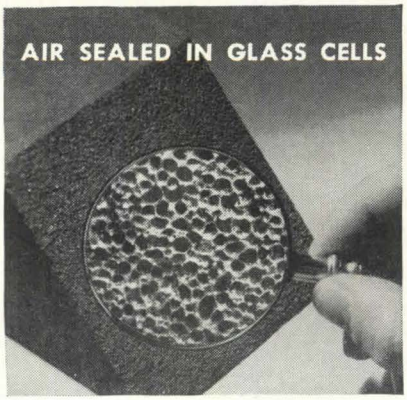
PC Foamglas has won a wide reputation as the *permanent* insulation. And the reason is that Foamglas is just what its name implies: glass foam, made up of millions of air-filled, sealed glass cells.

Being glass, Foamglas is moistureproof and vaporproof. Extensive tests have conclusively proved that water cannot get into it or through it, that vapor cannot penetrate it.

Being glass, Foamglas is unaffected by exposure to extreme humidities, acid atmospheres, wide variations in temperature. It won't check, rot, swell, shift, shake loose or pack down. Rodents and insects cannot eat it or nest in it.

In fact, the elements which so frequently reduce or entirely destroy the insulating efficiency of other insulating materials, are completely powerless to harm PC Foamglas. Foamglas is the one truly permanent insulation . . . for roofs, walls, floors, ceilings of all kinds of buildings. It is the insulation that never grows old. When you insulate with Foamglas, you insulate *for good!*

We invite you to send for complete facts about this amazing material. Just check and mail the convenient coupon. No obligation. Pittsburgh Corning Corporation also makes PC Glass Blocks.



FOR ADDITIONAL INFORMATION SEE OUR INSERTS IN SWEET'S CATALOGS.

Pittsburgh Corning Corporation
Room 459, 632 Duquesne Way
Pittsburgh 22, Pa.

Please send me without obligation, your free booklets on the use of PC Foamglas insulation for: Roofs_____ Walls_____ Floors_____

Name_____

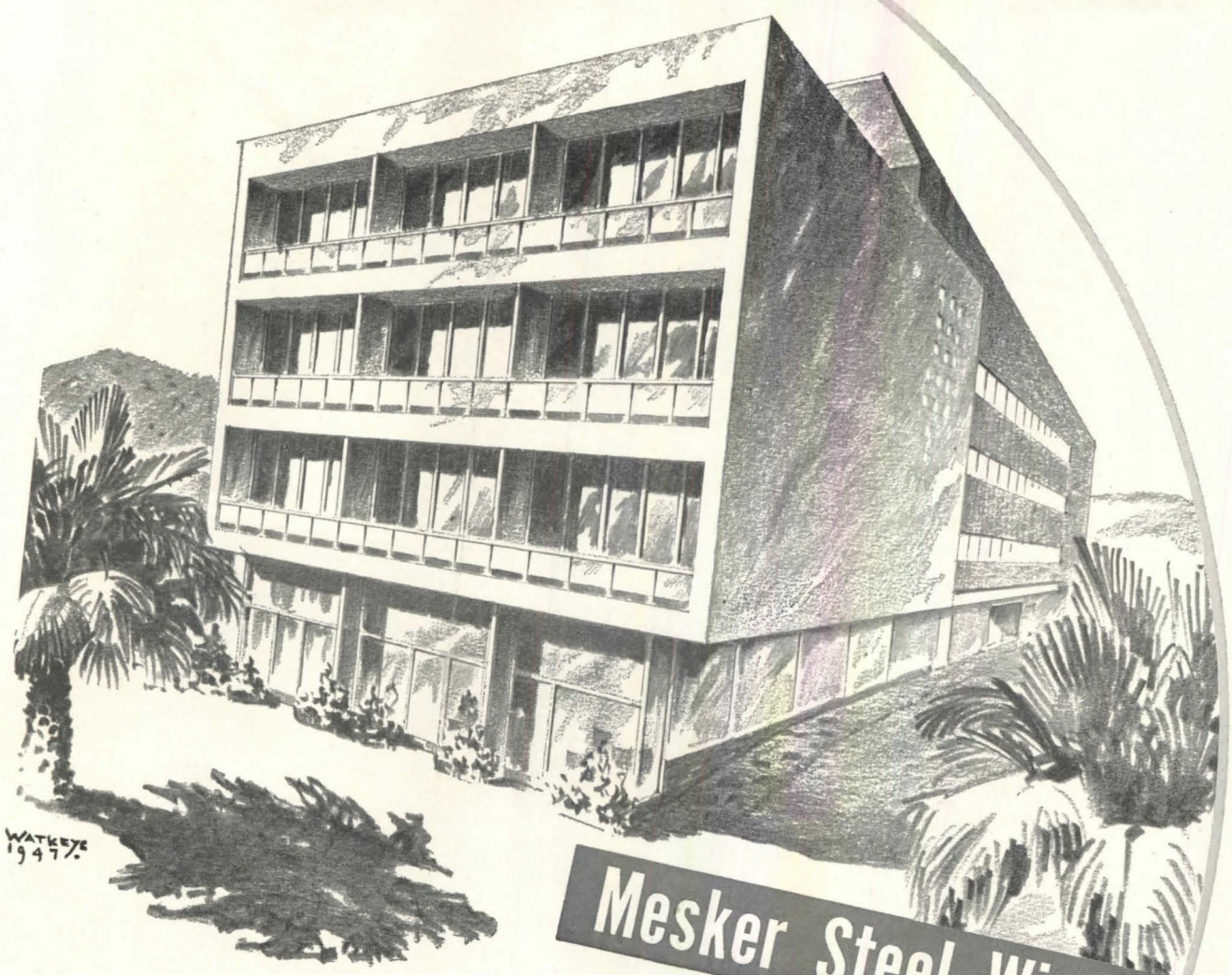
Address_____

City_____ State_____

PC FOAMGLAS *Waterproof Fireproof* **INSULATION**

T. M. REG. U. S. PAT. OFF.

Gruen & Krummeck design a commercial building



Mesker Steel Windows

"For ample ventilation, for protection against weather, fire and intruders, nothing takes the place of sturdy steel in windows for commercial buildings."

For your copy of the Mesker Book of Windows for Office Buildings, write to Mesker Brothers, 4340 Geraldine Avenue, St. Louis 15, Mo.

Design by
Gruen and Krummeck
Associates
Hollywood, Cal.

Celotex Pre-Seal is roofing news!

This new development in insulated roofing is of special interest to architects.

Celotex Pre-Seal Roof Insulation is an improved product providing excellent thermal insulation. It is coated both sides and all edges with a special asphalt which provides protection against all moisture conditions – before, during and after installation. Improved insulation plus moisture protection—a premium product.

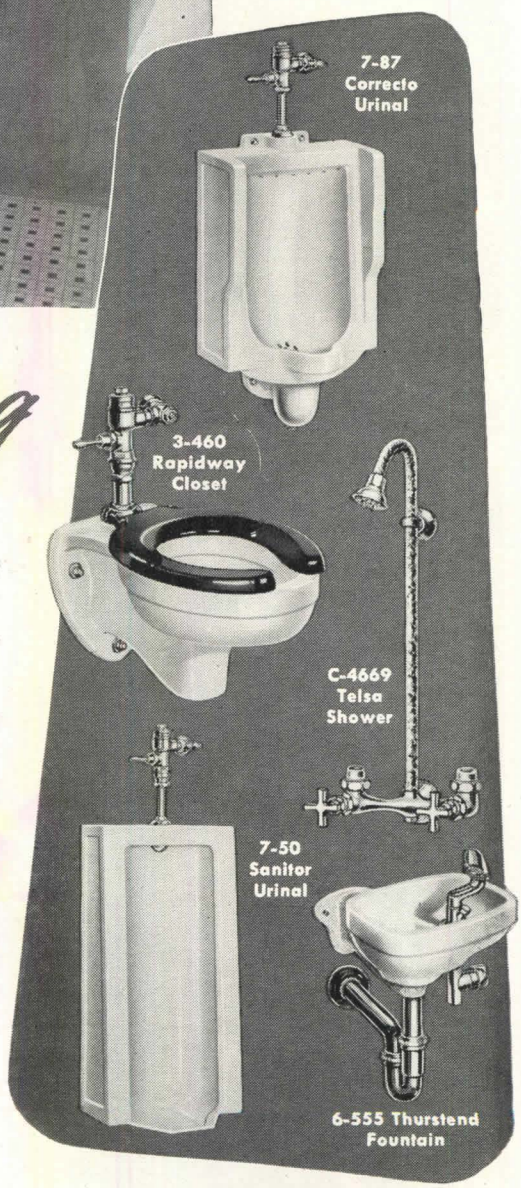
Celotex Vapor-Seal Roof Insulation has a low density core which insures high insulation efficiency. It is a patented product with a special channel feature particularly effective where excessive humidities are encountered.

Our Regular Celotex Roof Insulation, a rigid cane fibre board which may be applied to both combustible and incombustible types of roof decks, has been used extensively for over 20 years and is available in increasing quantities.

Complete information regarding these and other Celotex products is always available to you, without obligation, of course, through our local representatives and Architects' Sales Service Department.

Detailed specifications covering all Celotex products will be found in Sweet's File.

THE CELOTEX CORPORATION • CHICAGO 3, ILLINOIS



for industrial plumbing

Crane meets every requirement

Shown here are just a few of the many Crane fixtures designed for industry. The broad Crane line meets every plumbing requirement . . . for large plants and small . . . for office and for factory.

Whatever fixtures you select, you can be sure they're built to stand tough usage . . . they're easy to clean . . . they provide proper sanitation. And you can count on this—*the name Crane is better known to your clients than any other name in plumbing.*

For a description of the Crane line now in production, refer to your copy of "Crane Service for Architects." If you are still without one, ask your Crane Branch for a free copy.

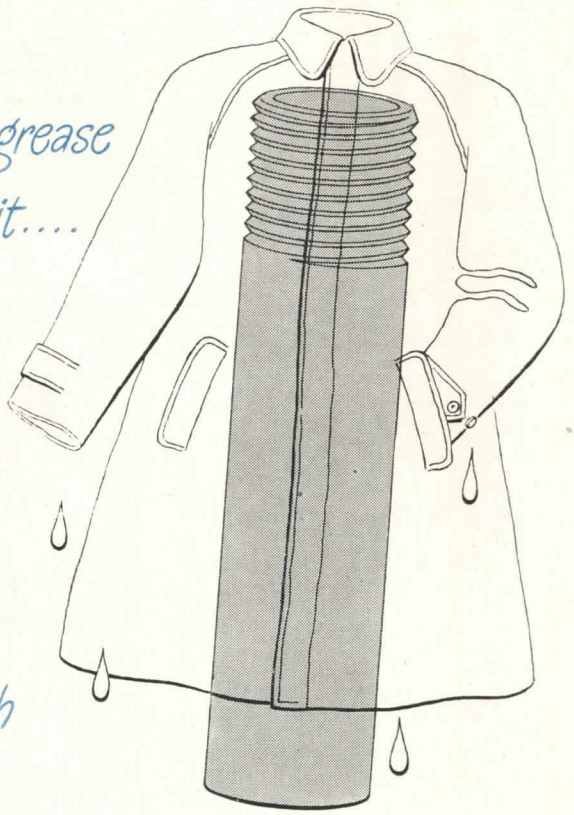
CRANE

CRANE CO., GENERAL OFFICES:
836 S. MICHIGAN AVE., CHICAGO 5

PLUMBING AND HEATING
VALVES • FITTINGS • PIPE

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

Steel wears a raincoat of grease in transit....



The coating of grease with which metals are treated for shipment, keeps them safe from moisture, rust and corrosion.

Buildings keep dry with

KOPPERS ROOFS

Koppers coal tar pitch roofs give similar protection to buildings. Water may stand for long periods on roofs . . . and if those roofs are constructed of Koppers Old Style Pitch and Tar-saturated Felt, the water has practically no damaging effect.

That's why Koppers roofs are good for flat roofed homes, and for commercial buildings, many of which utilize the roof for cooling purposes in summer. And that's why, also, that Koppers roofs withstand the severity of rains and snows throughout the years.

Sun's rays, too, are less damaging to a Koppers coal tar pitch roof, because of its property of "cold-flow" by which cuts and cracks heal themselves.

When you specify roofing, consider these advantages of Koppers Old Style Pitch and Tar-saturated Felt.

KOPPERS COMPANY, INC.
PITTSBURGH 19, PA.

Naturally, a Koppers roof for long life

ROOFING
& WATERPROOFING

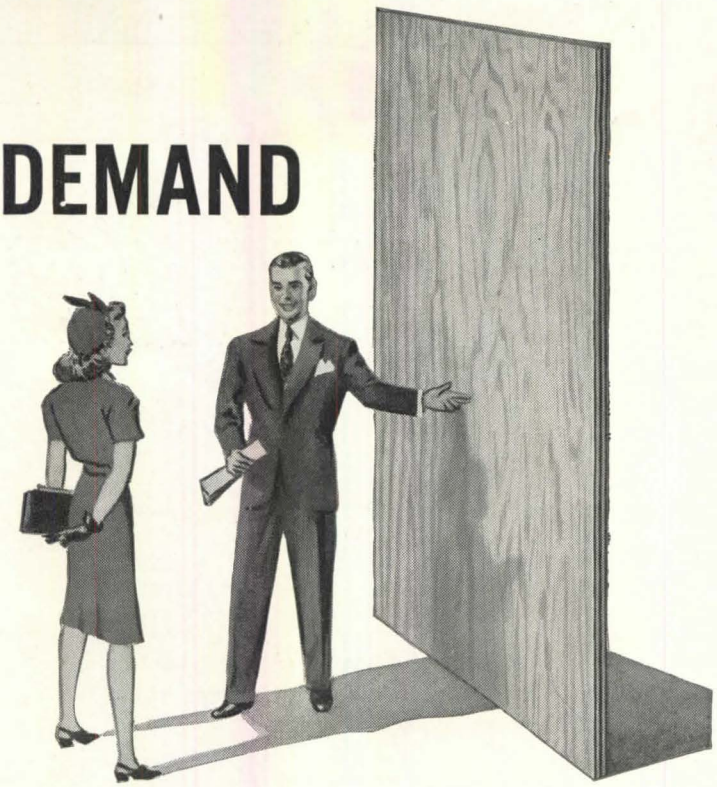
Refer to your Sweet's Catalog or write us for complete specifications

Now we can

MEET THE HUGE DEMAND

for

FINE WELDWOOD HARDWOOD PLYWOODS



For the first time since before the war, Weldwood Plywood is available in large supply . . . in a wide variety of fine cabinet hardwoods!

And you'll find eager acceptance for Weldwood all through your clientele.

Why? Because . . . even in the face of serious shortages . . . we've carried on a vigorous national advertising campaign to sell Weldwood to home-minded Americans. As a direct result of this advertising, almost half-a-million prospective users have written for more complete information.

We've told them all the entire Weldwood story. They know, for instance, that Weldwood has striking decorative beauty plus high structural strength. They know, too, that Weldwood can be installed easily and economically . . . either for remodeling or new construction.

And your clients know this: Weldwood's first cost is the last. It's guaranteed against splitting, cracking or warping for the life of the building in which it's installed.

Take advantage of this knowledge . . . and the acceptance that comes with it. Specify Weldwood. It's a modern material of *proved* quality and demand.

You can get detailed information on the wide variety of sizes and veneers now available from your nearest USP office or representative.

WELDWOOD Plywood

Weldwood Plywood and Mengel Flush Doors are products of

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

THE MENGEL COMPANY Louisville 1, Ky.

Distributing units in Baltimore, Boston, Brooklyn, Chicago, Cincinnati, Cleveland, Detroit, Fresno, High Point, Los Angeles, Newark, New York, Oakland, Philadelphia, Pittsburgh, Rochester, San Francisco, Seattle. Also U.S.-Mengel Plywoods, Inc. distributing units in Atlanta, Dallas, Jacksonville, Louisville, New Orleans, Houston, St. Louis. *In Canada:* United States Plywood of Canada, Limited, Toronto. *Send inquiries to nearest point.*

Weldwood* Hardwood Plywood
Douglas Fir Weldwood
Mengel Flush Doors
Douglas Fir Doors
Overhead Garage Doors
Molded Plywood
Armorply* (metal-faced plywood)
Tekwood* (paper-faced plywood)
Flexmetl*
Weldwood Glue* and other adhesives
Weldtex* (striated plywood)
Decorative Micarta
Flexwood*
Flexglass*
Firzite

*Reg. U.S. Pat. Off.

Weldwood
Plastics and Wood Welded for Good

Waterproof Weldwood for exterior use is bonded with phenol formaldehyde synthetic resin. Other types of water-resistant Weldwood for interior applications are manufactured with extended urea resins and other approved bonding agents.

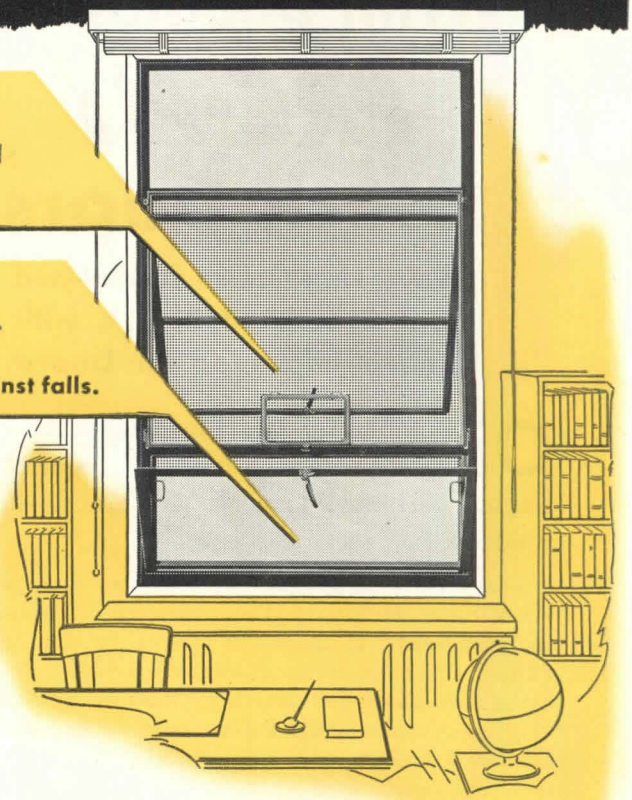
For All-weather Ventilation

LOW-COST FENCRAFT PROJECTED WINDOWS

Designed for: SCHOOLS • HOSPITALS • OFFICES AND PUBLIC BUILDINGS

OPEN-OUT VENT—
Forms canopy over opening. Sheds rain and snow away from the opening.

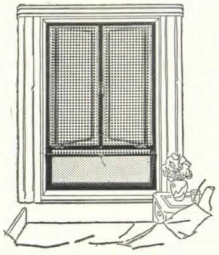
SILL VENT—
1. Deflects incoming air upward—prevents drafts.
2. Sheds rain to outside.
3. Prevents leaning out windows—guards against falls.



Vents are easy to reach—simple to open, close and lock. Ventilators stay in selected open position—close to a weather-tight fit. Both sides can safely be washed from inside the room. Screens attached or removed from inside.

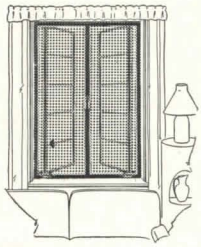
The trim lines of Fencraft Projected Windows enhance both inside and outside appearance—match architectural trends to the horizontal. Extra daylight, firesafety and low maintenance . . . all are benefits that make them ideal for many types of buildings.

STANDARDIZED FOR ECONOMY. The Fencraft family of windows—Projected, Combination and Casement—has been standardized in sizes that conform with current modular construction practice. Standardization reduces first cost and saves installation time and money. Fencraft Windows are built by craftsmen of America's oldest and largest steel window manufacturer. For details, see Sweet's Architectural File (Section 16a-9) or mail the coupon.



FENCRAFT COMBINATION WINDOW

—generous fresh-air ventilation. Swing leaves deflect breezes into the room. In-tilting sill vent protects against drafts. Both sides safely washed from inside. Ideal for hospitals and office buildings.

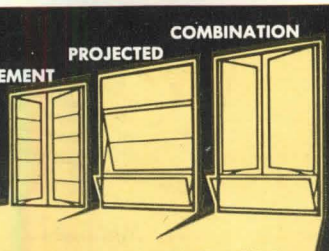


FENCRAFT CASEMENT WINDOW

—safe washing—from inside. Easy to operate. Uniform screens, protected from outside dirt. "Homey" appearance makes them ideal for clubs, large homes, dormitories, and nurses' homes.

Fenestra

COMBINATION
PROJECTED
CASEMENT



FENCRAFT INTERMEDIATE STEEL WINDOWS

Detroit Steel Products Company
Dept.P A-8,
2253 East Grand Blvd.,
Detroit 11, Michigan

Please send me data on types and sizes of the new Fencraft family of Fenestra Windows:

Name_____

Company_____

Address_____

INSTALLATION TIME REDUCED 50% to 80%

With Douglas Fir PRE-FIT Stock Doors

Save Time—Save Labor—and Get a Better Job . . . with These Improved Fir Doors!

ONE BUILDER reports as many as seven installations in the time previously required for a single door! Savings of from 50% to 80% are common.

That's because Douglas fir stock doors are *pre-fit* to exact size at the factory. They reach the job trimmed and squared, ready to hang. No sawing or planing is required. Precious time is saved—and there's far less danger of on-the-job marring, "butchering" and poor alignment due to unskilled help or improper tools. Corners are clean, trim, true—scuff-stripped for protection. The result: a better, as well as a faster, job!

and PRE-SEALED, too,

for Protection and Better Finish

Douglas fir stock doors—featured in definite, plainly marked grades and a wide range of designs, including modern 3-panel layouts adaptable to all types of building—are also *pre-sealed* at the factory. They reach the job fully prepared for a better finish. They're protected against moisture and checking, with resulting improvement in dimensional stability.

MORE FIR DOORS SOON!

It is a fact that Douglas fir doors may continue in short supply for a number of months. Two factors make this true: the present overwhelming demand—and the shortage of essential raw materials. But production IS stepping up. Warehouse and dealer stock should soon reflect this increased production. We suggest that you keep in touch with your regular source of supply.

For Even Greater On-the-Job Economies, Specify Fir Doors "FACTRI-FIT"

Durable, attractive Douglas fir doors may also be ordered completely precision-machined—not only pre-fit and pre-sealed, but gained for hinges and mortised or bored for locks as well. Here again, cleaner, trimmer jobs are assured, because all work is done at the factory by high-speed precision tools. Time savings more than offset the slight additional cost.

No on-the-job mortising or boring required!

The National Association of Fir Door Manufacturers

For Better, Faster Installations, Specify:

Douglas Fir DOORS

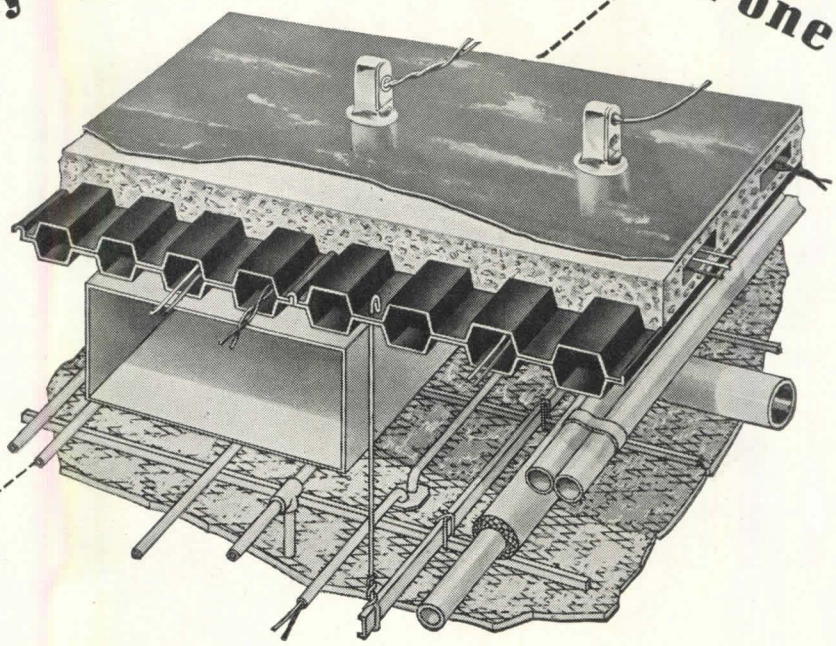
FIR DOOR INSTITUTE

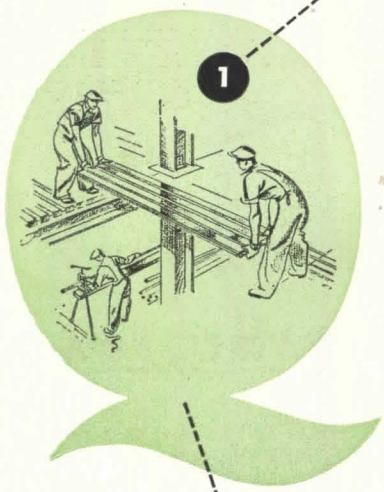
Tacoma 2, Washington

Look closely for Two specifications in one

Q·FLOOR

Q-Floors require no revision of drawings—no matter how many changes of electrical outlet location are called for after construction begins. Q-Floors also save drawing revisions for support locations of mechanical equipment, which is suspended anywhere from steel Q-Floors, without prelocating inserts.





FOR REDUCED CONSTRUCTION TIME

Steel Q-Floors come to the job cut to fit and go in so fast that floors are up about as soon as the steel framework to which they are welded. Two men can lay 32 sq. ft. in 30 seconds. The Q-Floor becomes a dry, noncombustible, safe working platform for all other trades. Over-all result is to reduce building time 20 to 30%. This effects savings from the start for client as well as designer.

Lightweight steel Q-Floors make possible additional floors where heavier construction is not feasible. Complete with suspended ceiling, the total dead weight is less than forty pounds per sq. ft., despite a four hour fire rating.

FOR QUICK ELECTRICAL CHANGE

Every six-inch area of the exposed floor can be tapped for electricity. This feature permits permanently flexible floor plans and, therefore, guards the entire building against electrical obsolescence. It's a god-send to both owner and architect, for partitions and outlets can be rearranged as often as desired, with no debris, electrical fuss or muss. The cells of the floor are crossed over by headers in such a way that an electrician can fish wires to any spot. A new floor outlet takes literally a few minutes—and no trenches. Just a small hole drilled. Q-Floor Fittings can be seen at any General Electric construction materials distributor's.

The price is right. And there are thousands of installations all over the country in all types of buildings from garages to skyscrapers. Your Robertson representative will be glad to give detailed information and advise on delivery dates. For literature, please write

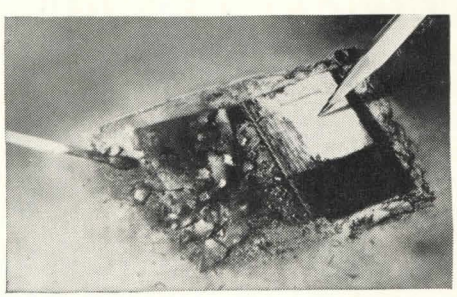
H. H. ROBERTSON CO.

2405 Farmers Bank Building
Pittsburgh 22, Pennsylvania

Offices in 50 Principal Cities
World-Wide Building Service

THE EASIEST THING FOR A BUILDER TO FORGET— *Floors are what a building is for*

Each ply is a flexible covering of stone—made of asbestos



Make this Fire Test! The ordinary roofing felt, on the left side, was reduced to ashes by the consuming flame. But the J-M Asbestos Felt, on the right, remained unharmed . . . proving its fire resistance. We'll gladly send you the materials to make this convincing test yourself.

Protect your building from the hazard of flying sparks and burning embers. Insist on a Johns-Manville Flexstone Roof. *It will not support combustion.* That's because the *felts* in a J-M Flexstone Built-Up Roof are made of the magic mineral *asbestos*—fireproof, rotproof, long-lasting.

Flexstone Roofs are *smooth-surfaced*, too—permitting thorough drainage, eliminating the weight of slag or gravel, and making any damage easy to locate and repair. Need no periodic coating. Felts are perforated to insure smooth application.

All Flexstone Roofs are engineered to the particular requirements of your building—whether it's new construction or re-roofing. To insure skilled application, they are applied only by J-M Approved Roofers.

Three types available: Flexstone *Super "A," Standard,* and *Service* —each the finest that can be specified for its purpose. Write for brochure BU-51A, containing complete specifications. Johns-Manville, Box 290, N. Y. 16, N. Y.

• • •

Because of unprecedented demand, there may be times when we cannot make immediate delivery. Please anticipate your needs.

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville FLEXSTONE BUILT-UP ROOFS

At Least a

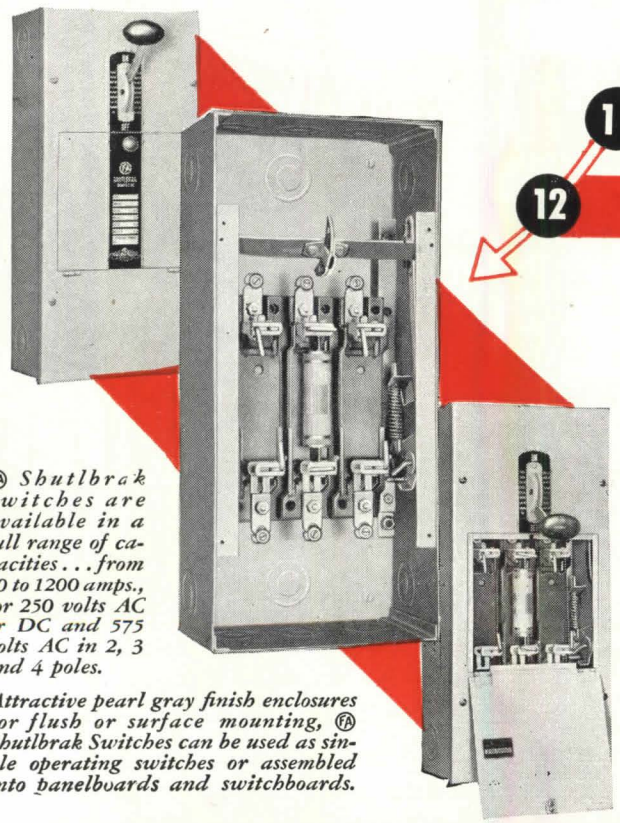
Dozen Reasons

WHY YOU'LL LIKE

FA SHUTLBRAK ENCLOSED SAFETY-TYPE SWITCHES

There are many reasons for the mounting popularity of FA Shutlbrak Switches. Some say, for instance, they like its easier, split-second speed of operation . . . its new shuttle mechanism feature that gives quick make and break connections. Others say it is the simplicity of design that appeals to them . . . ample knockouts and wiring space at top, bottom and back. Still others say it is its trouble-free service and many practical safety features . . . its long lasting economical operation.

1. Positive Make and Bre
2. Interlocking Fuse Doors (With special release)
3. Front Operation
4. Attractive Finish
5. Removable Switch U
6. Kamklamp Fuse Holders
7. Full Range of Capaciti
8. Silver-Plated Contacts and Connecti
9. Ample Wiring Space and Knockouts
10. Silver-Plated Solderless Pressure Connect
11. Approved by Underwriters' Laboratories
12. Can Be Used Singly or in Panelboard and Switchboard Assemblies



FA Shutlbrak Switches are available in a full range of capacities . . . from 30 to 1200 amps., for 250 volts AC or DC and 575 volts AC in 2, 3 and 4 poles.

Attractive pearl gray finish enclosures for flush or surface mounting, FA Shutlbrak Switches can be used as single operating switches or assembled into panelboards and switchboards.

Whatever the reason, the fact remains that FA Shutlbrak Switches embody the latest in design and construction, making them the popular choice for high quality, heavy duty switching. So the next time you need a good operating switch, ask your dealer to show you an FA Shutlbrak or send for our 20-page Bulletin No. 70.

If it's FA it's "OK"

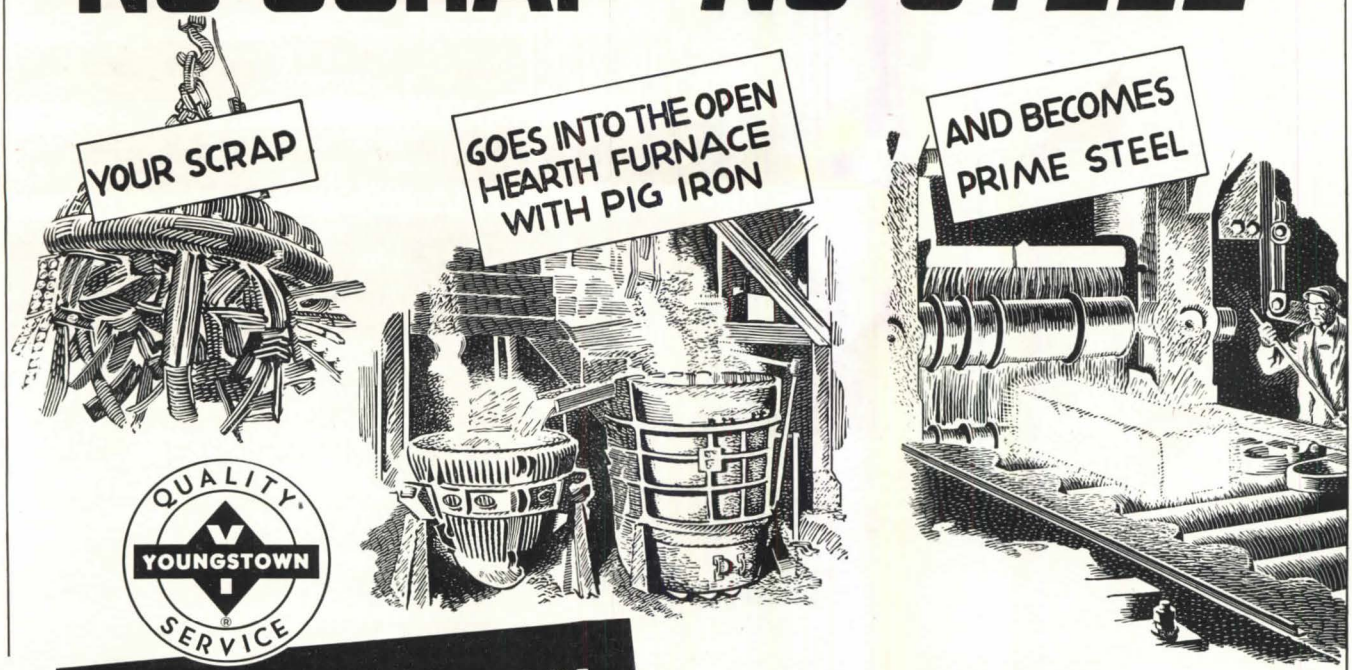
MAKERS OF . . .
BUSDUCT
PANELBOARDS
SWITCHBOARDS

Frank Adam
ELECTRIC COMPANY
St. Louis, Missouri

SERVICE EQUIPMENT
SAFETY SWITCHES
LOAD CENTERS
ELECTRIC QUIKHETER

NO YEAST - *NO BREAD*

NO SCRAP - *NO STEEL*



QUALITY · YOUNGSTOWN · SERVICE

YOUNGSTOWN

THE YOUNGSTOWN SHEET AND TUBE COMPANY

GENERAL OFFICES - YOUNGSTOWN 1, OHIO

Export Offices - 500 Fifth Avenue, New York City

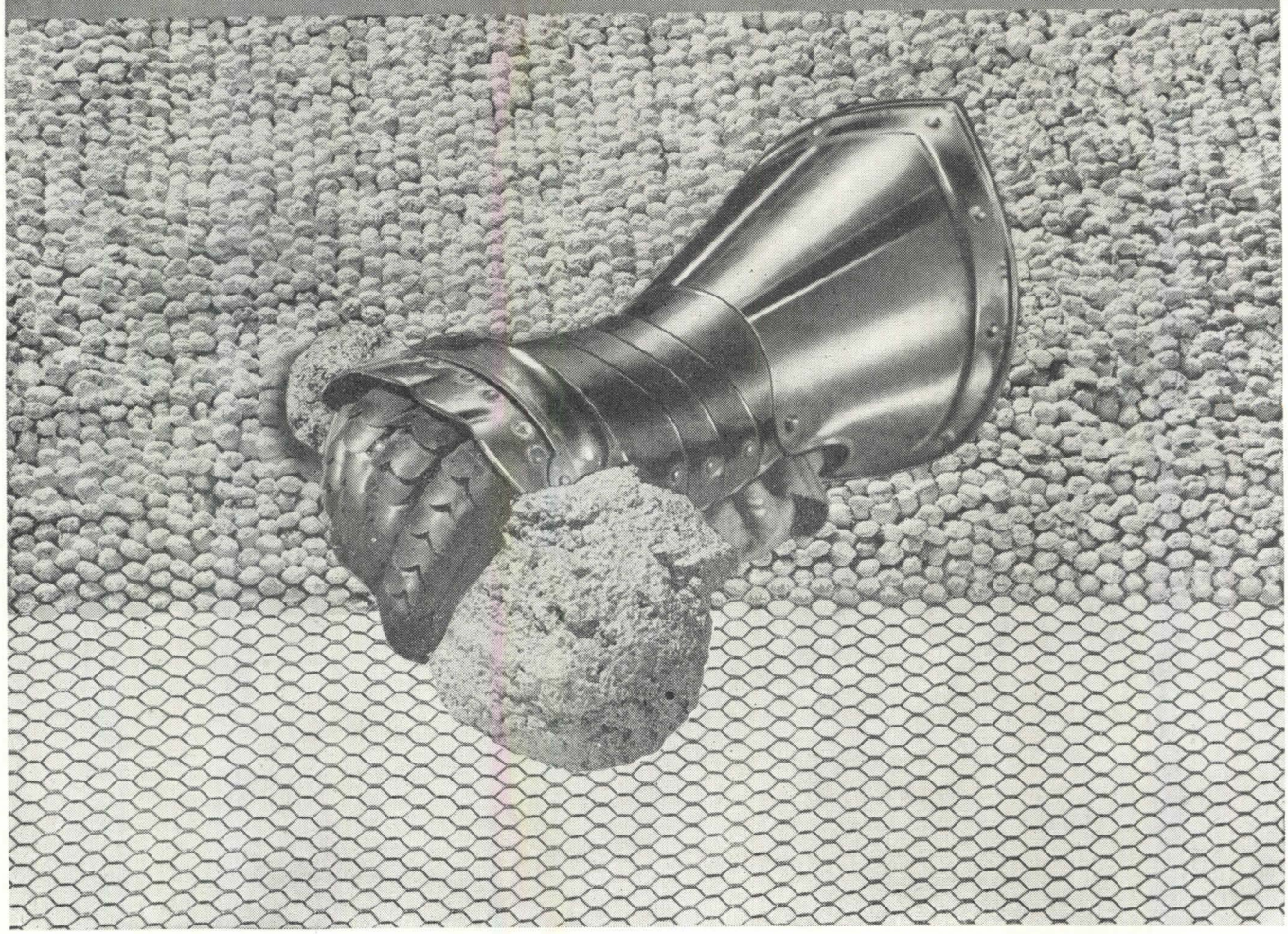
Manufacturers of

CARBON - ALLOY AND YOLOY STEELS

Pipe and Tubular Products - Sheets - Plates - Conduit - Bars - Rods - Wire - Electrolytic Tin Plate - Coke Tin Plate - Cold Drawn Carbon Steel Rounds - Tie Plates and Spikes.

REMEMBER *this--It* requires large quantities of scrap to produce each ton of prime new steel. So to increase the possibility of making more steel available, turn in your scrap through your regular channels. Do it now! Keep it coming!

FOR MODERN INTERIORS USE PLASTER



PLASTER GRIPPED
by thousands of steel fingers

Notice how the plaster is keyed to the expanded steel mesh of USG* Metal Lath. This results in one solid slab of steel lath and plaster.

Fire ratings of one hour or more have been given USG Metal Lath and RED TOP* Plaster partitions and ceiling constructions by recognized testing laboratories, using prescribed plaster mixing proportions and thicknesses.

The reinforced walls and ceilings of USG Metal Lath and plaster have great capacity for retaining their firm smooth surfaces while resisting the strains occasioned by settlement of foundations, impact and vibration.

USG Metal Lath is readily shaped to ornamental contours to a degree not possible with other type plaster bases. The reinforced plaster slab means unusual resistance against cracks.

To obtain the utmost in fire resistance, flexibility, low maintenance cost and enduring beauty, specify USG Metal Lath and RED TOP Plaster for your quality lathing and plastering.

Write for your copy of the new USG TECHNICAL INFORMATION book, "Metal Lath AIA File Number 20-B."

*USG and RED TOP used above are registered trademarks which distinguish products manufactured only by the United States Gypsum Company.

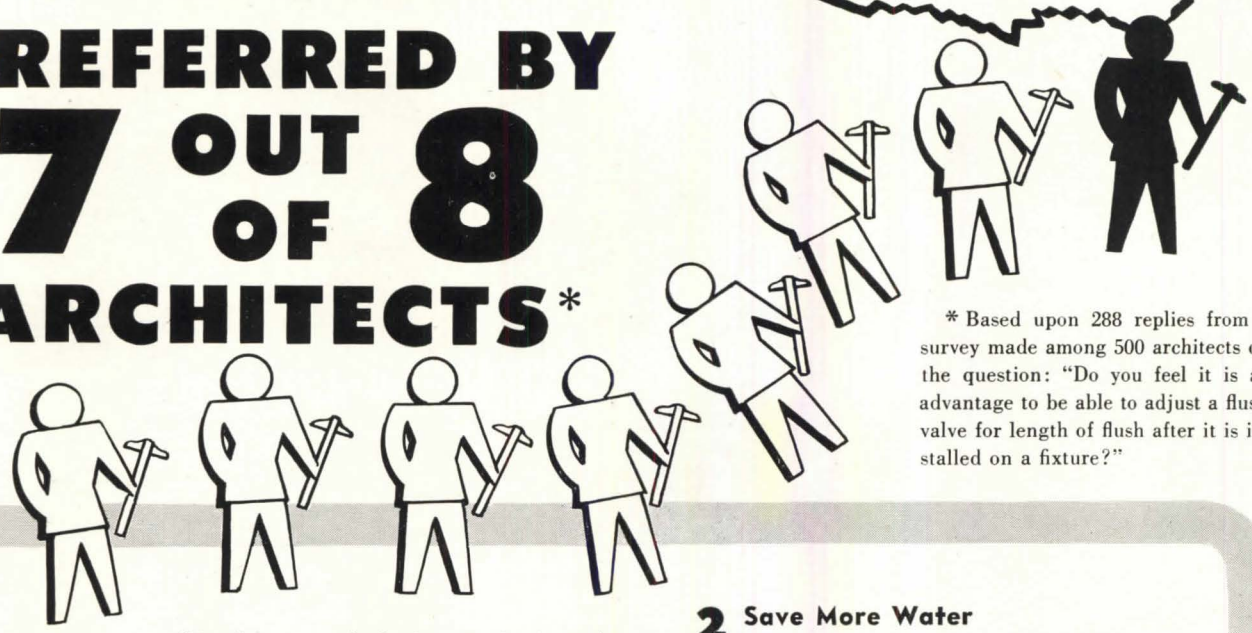
United States Gypsum

For Building • For Industry

Gypsum • Lime • Steel • Insulation • Roofing • Paint

Adjustable Flush Valves

"All flush valves shall have an external adjustment for length of flush."



PREFERRED BY 7 OUT OF 8 ARCHITECTS*

* Based upon 288 replies from a survey made among 500 architects on the question: "Do you feel it is an advantage to be able to adjust a flush valve for length of flush after it is installed on a fixture?"

To the overwhelming majority of architects, the adjustable feature means flush valves at their best. To many, too, adjustable means Watrous, because Watrous pioneered the idea, and because *all* Watrous flush valves are adjustable. Here are just 3 of the many benefits to be expected when your specifications call for Watrous adjustable flush valves.

1 Fixtures Operate More Efficiently

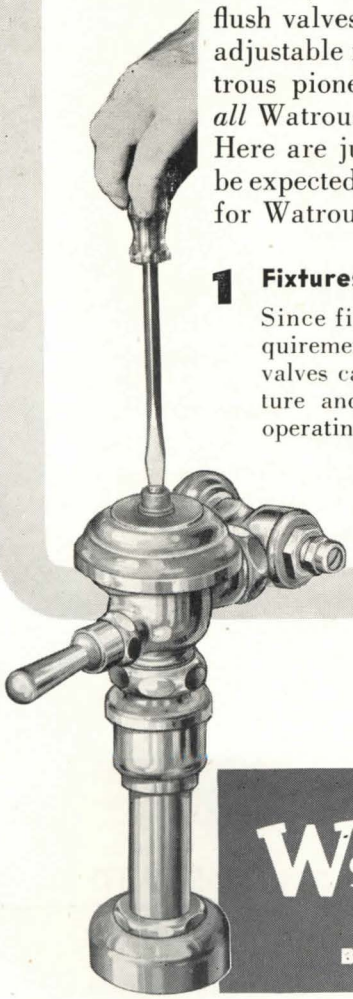
Since fixtures differ in their water requirements, *only* with adjustable flush valves can the exact coordination of fixture and flush be obtained to get top operating efficiency.

2 Save More Water

By delivering only the amount of water required for the fixture on which it is installed, an adjustable flush valve often saves an extra half gallon or more of water on each flush. In a building with 500 flush valves this can amount to extra savings of 1,460,000 gallons or more of water per year.

3 Efficiency Maintained Even After Years of Service

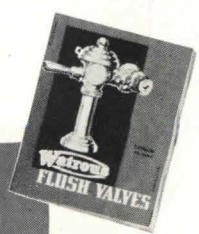
Over the years, normal wear and foreign material in the water are bound to change operating conditions. When flush valves are adjustable, compensation for these changes can be readily made to maintain maximum operating efficiency.



THE IMPERIAL BRASS MANUFACTURING CO.

1207 West Harrison Street, Chicago 7, Illinois

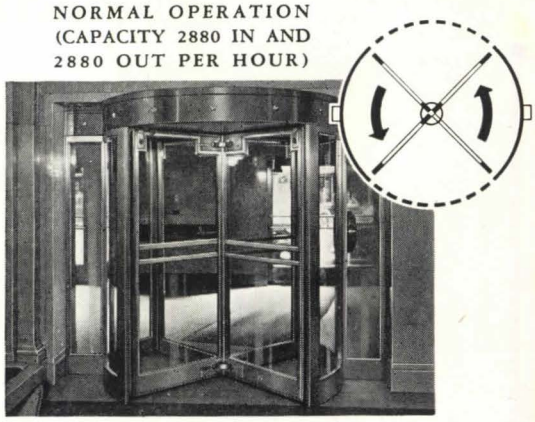
For complete information on Watrous Flush Valves see Sweet's Catalog, or write for Catalog No. 448-A. Also ask for Bulletin No. 447 giving a summary of "Architects' Views on Flush Valve Applications".



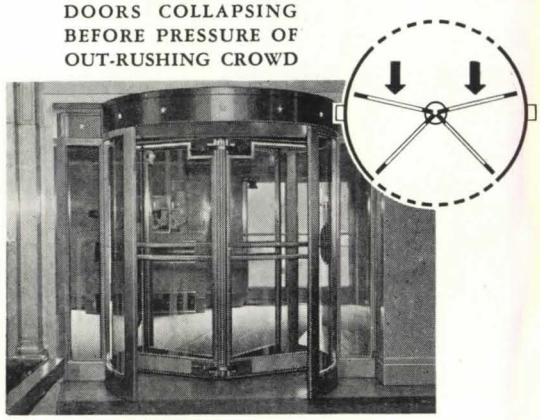
Watrous Adjustable Flush Valves

BOTH DIAPHRAGM AND PISTON TYPES

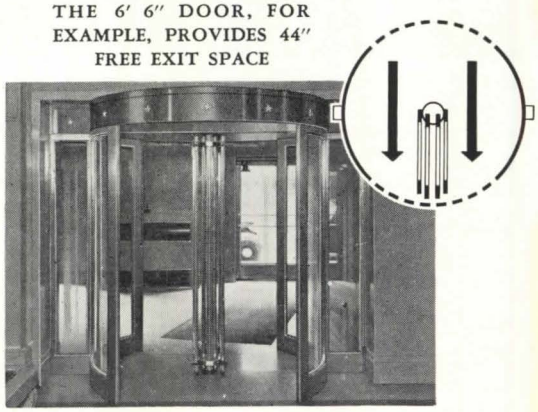
NORMAL OPERATION
(CAPACITY 2880 IN AND
2880 OUT PER HOUR)



DOORS COLLAPSING
BEFORE PRESSURE OF
OUT-RUSHING CROWD



COMPLETELY COLLAPSED.
THE 6′ 6″ DOOR, FOR
EXAMPLE, PROVIDES 44″
FREE EXIT SPACE



Designed FOR COMPLETE SAFETY...

...THEY *Give* COMPLETE SAFETY

First consideration in any public building plan—new construction or remodeling—is SAFETY! And the first point of safety is the entrance, the most used part of any building. In emergencies as well as day-in and day-out handling of traffic, International Van Kannel Revolving Doors protect you and users of your building from accidents. Should emergency necessitate quick, unhampered egress, International's exclusive panic-action mechanism allows the wings to fold outward before rushing crowds. For complete safety, plus many other money-saving advantages outlined below, no other make or type of entrance equals . . .

REVOLVING
INTERNATIONAL
DOORS
VAN KANNEL ATCHISON

When Considering Doors, Ask These Questions About Revolving Doors

1. WHAT SPECIAL SAFETY FEATURES SHOULD THEY HAVE? First, immediate and unimpeded egress in emergencies. With International Van Kannel Revolving Doors, slight excess pressure on any two wings in opposite directions causes the wings to open outward. International's exclusive, adjustable tension, ball-and-socket mechanism assures years of dependable service with a minimum of upkeep.

2. HOW ABOUT HEATING AND COOLING COSTS? International Van Kannel Revolving Doors provide savings in heating and cooling up to 25 % . . . in many instances more.

3. WILL REVOLVING DOORS INCREASE OR DECREASE USABLE FLOOR SPACE? International Van Kannel Revolving Doors, by eliminating drafts and controlling warm air loss, allow counters and work areas right up to the door itself, thereby materially increasing "pay" space in the building.

4. CAN THEY HANDLE DAILY TRAFFIC EFFICIENTLY? Elimination of cross traffic reduces confusion, speeds up crowd handling. Revolving Doors by International can handle up to 2880 passages per hour smoothly and safely . . . with surprisingly small air-loss.

5. HOW ABOUT DUST, DRAFTS, NOISE, ESPECIALLY IN HIGH WINDS? Tall buildings are like chimneys. Suction drafts (up to 60 m.p.h.) make swing door operation almost impossible. Revolving Doors are balanced. High winds do not affect their efficient air-seal, which keeps out dust and disagreeable outside noise.

6. HOW ABOUT COST? First cost of International Van Kannel Revolving Doors is actually less than swing doors of comparable traffic capacity . . . and they are far superior in economy of maintenance and length of service.

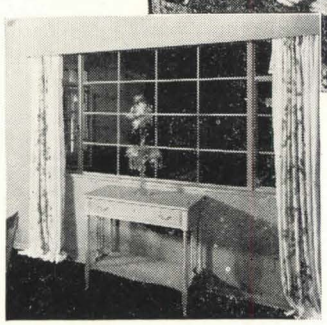
FOR COMPLETE INFORMATION, WRITE INTERNATIONAL STEEL CO., REVOLVING DOOR DIVISION, 1537 EDGAR ST., EVANSVILLE 7, IND.

The PLANNING BOARD

The Truscon Planning Board Says,"Normal delivery on many of our Steel Building Products is now possible. In fact, on all material for which raw material is readily available, a normal rate of production and delivery is currently in effect." However, since production and delivery schedules change from week to week, we suggest you contact the nearest Truscon sales office for the latest information.

47,354 Truscon Steel Casements for Stuyvesant Town Apartments

A big dent in the New York City housing shortage situation is being made as unit after unit of the new Stuyvesant Town Apartments is being completed. The entire project will cover 75 acres, with 35 separate buildings containing 8,759 modern apartments.



In every room of each of these many apartments, Truscon Steel Casement Windows will bring the occupants ample supplies of nature's free sunlight and fresh air. The beautiful design of the windows themselves helped achieve outstanding architectural distinction in the structures, both for the exteriors and interiors.

Truscon Steel Casements, due to their individuality and flexibility of arrangement, meet the particular requirements of every type of room. Where windows are opened and closed frequently, or where ventilation needs are great and varied, Truscon Steel Casements fill a definite utilitarian need in addition to being highly decorative. Clean, bright, air-controlled kitchens are possible. The side-hinged casements can be adjusted by fingertip touch to invite or retard the flow of air, to suit the range of requirements in each room.

Truscon heavy steel construction, corner-welding of ventilators and frames, projection-welding of hinges and sturdy hardware assure the home-owner a long-time, trouble-free investment in windows with an economy of maintenance. There is no sagging, binding or warping in Truscon Steel Casements. Perfect fit and uniform contact give complete protection against inclement weather. Truscon's Bonderizing of all steel surfaces and the baked-on prime coat provide an excellent surface for finish coats of paint, and assure maximum protection against corrosion.

Truscon Casement Screens and Storm Sash are available for quick, convenient installation. Write for free descriptive catalog showing complete range of Truscon Steel Casement types and sizes.

Stuyvesant Town Apartments, New York City, a Development of the Metropolitan Life Insurance Company

Roof Jobs Made Easy

Specify Truscon "Ferrobord" Steeldeck to get the quick, economical, permanent answer to any roof problem you may have.

"Ferrobord" Steeldeck consists of a parallel system of strong structural interlocking steel members, which present a smooth surface over which can be applied built-up roofing

Application of "Ferrobord" Steeldeck

of any type, with or without insulation. "Ferrobord" is made from 18-gauge copper-bearing strip steel, having an ultimate strength of not less than 50,000 lbs. per square inch. Each unit is 6 inches wide and has a depth of either 1½ or 1¾ inches.

With these specifications you can design a roof job that's got strength and effective area coverage at reasonable cost. The Truscon Steel Company will be glad to cooperate with local roof companies in selecting the proper type of insulation and built-up roofing to meet certain definite requirements of structures. Write for free catalog.

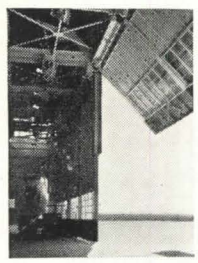
Concrete Reinforcing Bars Proved Worth in 1906

An interesting fact is that the San Francisco earthquake disaster in 1906 served as a proving ground for Truscon's Reinforcing Bars. Among the buildings which did not crack or crumble from the quake were those constructed of concrete utilizing Truscon Bars.

Doorways to Skyways

Truscon Steel Hangar Doors are the product of 20 years of manufacturing experience and research combined with the best engineering skill, workmanship and materials. Their design, manufacture and erection is a highly developed art and must be undertaken by experienced men, in order to attain completely satisfactory installations.

The success of a hangar door installation depends to a great extent on the experience and good judgment of the manufacturer's field organization. Truscon's field crews are comprised of specially trained men who "know how" through years of experience with many installations, to do just the right things to make the job a success.



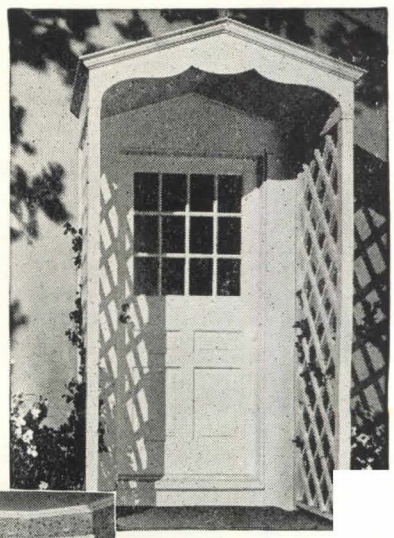
Truscon designs and manufactures Straight Slide Doors; Tail Doors; Braced, Unbraced and Bifold Doors; Vertical Lift Canopy Doors and Three-Section Vertical Lift Type Doors. Write for free descriptive literature.

New Literature

A new 8-page folder on light Industrial Steel Doors, Series 31. Complete with construction and installation details, specifications, sizes and types. Write for your free copy today.

TRUSCON STEEL COMPANY
YOUNGSTOWN 1, OHIO
Subsidiary of Republic Steel Corporation

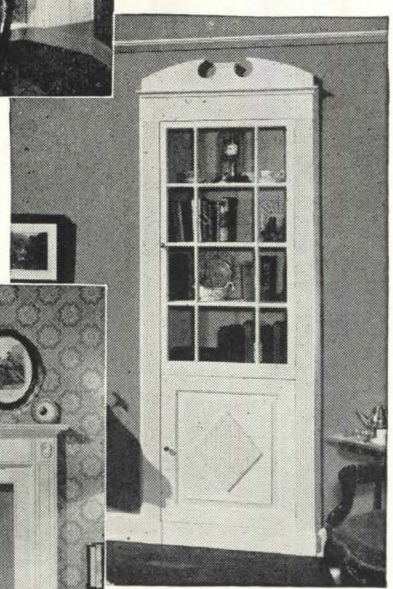
HOW TO TAKE THE *Chill* OFF ECONOMY



Economy is a "must" in the design and construction of many a home today. But economy need not be cold and repellent. At modest cost, Curtis Woodwork can add the extra charm and convenience that mean so much to the home owner—as witness this Curtis entrance (Design C-1767). One of many new Curtis entrances, it is priced for the modest building budget. All Curtis entrances are toxic and water-repellent treated.

For the small home or apartment—for dining room, bathroom, or any room—these Curtis cases will fit in for almost any use. They may be built-in in corners or walls, or set out in the room. (Curtis Design C-6571.) Priced to meet the smallest budget. Curtis offers a selection of eighteen styles of wall and corner cases. All are shown in large size in the new Curtis catalog.

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



Nothing makes a room more homelike than a well-chosen built-in cabinet. This one (Curtis Design C-6558) is suitable for any room of the house. It is also made for corner installation. One of many new designs.

The "magic touch" for making a room modern and friendly is a Curtis mantel. This design (C-6049) has an inspired simplicity, yet it is smart enough to meet today's demands. Like all Curtis Woodwork, it is built with the precision of fine furniture.

Have your Curtis dealer show you the big new Curtis Woodwork Style Book—an entirely new and different way of presenting the Curtis Woodwork line. Measuring 15 x 19 inches, this book contains 100 pages of beautiful woodwork styles and decorative ideas in natural home settings—many photographs in full color.

1866 CURTIS WOODWORK

Curtis Companies Service Bureau
PA-8W Curtis Building
Clinton, Lowa

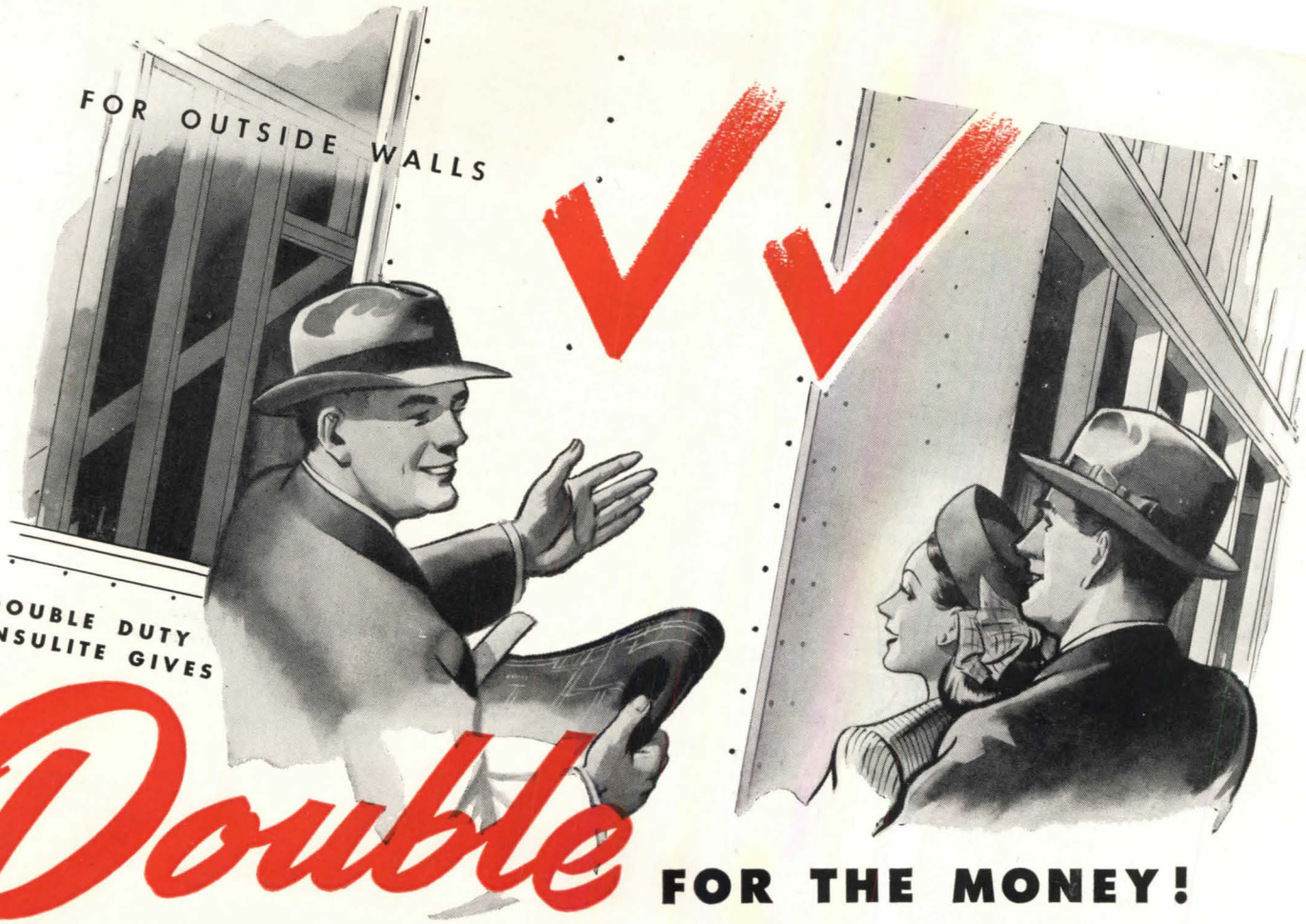
Gentlemen: Please send me your book on the new Curtis Woodwork line.

Name.....

Address.....

City.....*State*.....

I am ☐ Architect, ☐ Contractor, ☐ Prospective Home Builder, ☐ Student
(*Please check above*)



Double FOR THE MONEY!

Remember this!

INSULITE SHEATHING is a double-duty building material performing two important functions—

(1st) *It Sheathes* (2nd) *It Insulates*

When you show the job to clients, you can say: "These outside walls give you *double* for the money—two things for the price of one—sheathing PLUS insulation." Double-duty Insulite provides bracing strength considerably superior to wood sheathing horizontally applied. Its insulation value over wood is common knowledge. Specify double-duty Insulite sheathing.

Refer to Sweet's File, Architectural Section 10 a/9

INSULATES AS IT BUILDS AS IT

double-duty INSULITE

The GENUINE

BUILDS INSULATES

"Insulite" is a registered trade mark, U.S. Pat. Off.

INSULITE DIVISION MINNESOTA & ONTARIO PAPER COMPANY
MINNEAPOLIS 2, MINNESOTA

G. E. Kidder Smith

Dynamic forms which rest on apparently fragile supports replace the entablature and column of trabeated architecture.

LOGIC?.... OR ESTHETICS?

A STUDY OF IRRATIONALISM IN SOME MODERN WORK

By MILTON FREDERICK KIRCHMAN, Architect

We want to be sure we understand each other when we speak of modern architecture as a rational expression. One aspect of modern architecture—that one which has come to be known as the "International style"—is now almost a historical movement, and can be evaluated critically. Although it is somewhat difficult to define, since its influence has spread to so many people and so many places, it has been described by numerous writers, and we know its qualities from photographs and examples around us. There are several ideas about modern architecture of this particular expression which would benefit from re-examination. One idea, which springs not from the proponents but from the opponents of modernism, is that architecture in the manner of the International style is reduced to a bare "functional" and "rational" expression.

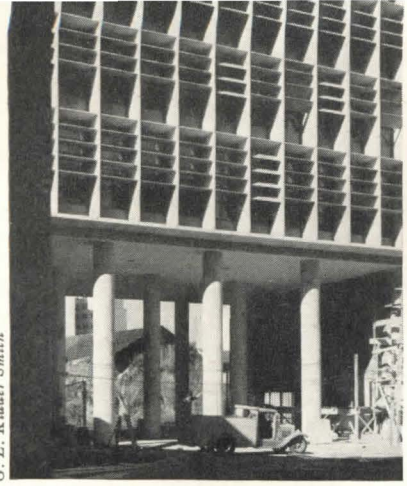
Most of the discussion of "modern architecture" has expressed either blind adherence or automatic rejection. A typically antagonistic comment is to the effect that all modern design is coldly rational and scientifically functional. It ignores, say its critics, the emotional and esthetic content of architecture. This article, we feel, should help to destroy that illusion. Mr. Kirchman analyzes the modern expression that has come to be known as the International style, and points to its emphasis on purely emotional and frankly esthetic design concepts.

While we do not agree entirely with some of the author's conclusions, we admire his generally objective attitude. It's time we all grew up and stopped being hysterical about this subject.

The Editors

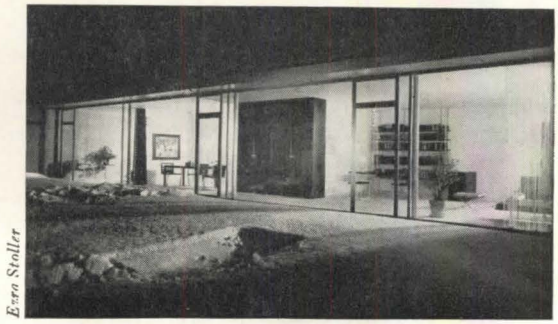
Protagonists of the International school themselves disavow that their architecture is "functional." As a matter of fact, Le Corbusier, Mies van der Rohe, Walter Gropius, and J. J. P. Oud, all of whom we associate with the movement, have subscribed to an esthetic credo which "deliberately opposed the highly materialistic theory of 'functionalism,' a credo so unrealistic that it was never actually practiced even by those who were most articulate in its support."[1] Le Corbusier also has said that "Architecture has another meaning and other ends to pursue than

[1] *Elizabeth Mock*, Built in U.S.A.; 1933-1944, *Museum of Modern Art, New York, N. Y., 1944, p. 12.*



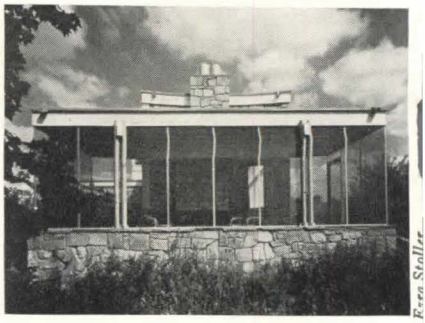
G. E. Kidder Smith

Columns partly concealed by shadows tend to disappear in space.



Ezra Stoller

Forms are open; spaces penetrate one another; the facade as such is purposely destroyed.



Ezra Stoller

Materials may be selected and juxtaposed for esthetic as well as structural reasons.

showing construction and responding to needs."[2]

International style is not so much an expression of modern materials, of modern technology, or, for that matter, of a scientific outlook in general, as it is an outgrowth of esthetic principles which are *anti*-rational rather than rational in some of their fundamentals. Historically and stylistically, this aspect of modernism is allied to cubism, constructivism, futurism, purism, and related developments in art. In its use of geometrical forms it recalls abstract painting and sculpture. It disavows ornament because it is a non-representational style; it works with so-called pure forms. It is an architecture of space. In it, science and logic are adapted to serve the needs of expression. Expression is "felt": it is an inner compulsion. As such, the International style may be viewed as a contemporaneous phase of neo-romanticism expressed in terms of modern dynamics and technology.

I propose to point out a few of what I consider to be anti-rational elements in modern architecture, which have resulted from the influence of the International school, and let the chips fly. Only when these matters are understood, and not misinterpreted, can architecture of this school be properly evaluated.

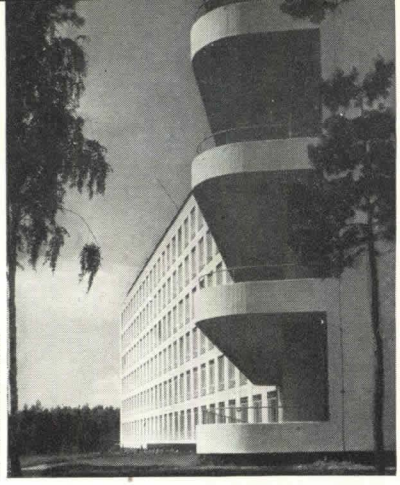
For example, why are so many examples of architecture in the International style "anti-gravitational" in character? This architecture seeks dynamic forms. It creates the effect of forms suspended in space to acquire an intensity which is emotional rather than rational, esthetic rather than structural. In this modern work the feeling of weight is avoided. The relationship between beam and support is concealed. The pediment, entablature, and columns of classical trabeated construction are forgotten. Although a steel frame is in essence a compound trabeated form, the relationship between load and support is destroyed by sheathing columns in shiny metals which reflect light and thereby dematerialize the effect of a solid supporting substance. Gropius's Bauhaus has miracles of glass walls which stand free from the skeleton frame. By reason of scintillating reflections and deep shadows in the sun, as in much of the Brasilian work, the wall is transformed into an impressionistic play of light and shadow, of a space within a space. In many instances, the structure as a whole appears to be a floating mass resting on comparatively insubstantial sticks rather than on ponderous columns which almost shout their load-bearing activity. The anti-gravitational character of the style cannot be identified with scientifically rational construction: it does not grow out of technical needs. We cannot say that it is a function of plan. Anti-gravitation, per se, is an esthetic device.

Then too, it seems to me that architecture of the International style is deliberately "anti-symmetrical." Let us avoid the phrase, unsymmetrical. The Erectheum is unsymmetrical; the Propylaea is unsymmetrical. But neither the Erectheum nor the Propylaea is anti-symmetrical. The approach we are discussing is anti-symmetrical in that it *avoids* symmetry. Symmetry ties forms to an arbitrary logic. Symmetry produces static balance, but order and balance obtained through symmetry are not considered assets in International style. Its order and its balance are obtained by other devices.

International architecture is not illogical because it is anti-symmetrical. It is not irrational in the sense that it is not motivated by a program. To the contrary, International style is highly programmatic: it is notable for its manifestoes and intellectual excursions. A historical implication is intended in speaking of anti-rationalism in the sense used here. Perhaps it would be better to speak of it as anti-classicism rather than anti-rationalism. Let me explain: the nineteenth century experienced a conflict over the issue of classicism versus romanticism. Classicism not only reverted to Greek and Roman antiquities and to the humanistic past, but it also sought order and symmetry, definition and clarity, in style. Classicism was conceived as a rational expression as opposed to romanticism, on the other hand, which found escape in a mystical and medieval past. The International style in our own century also has a historical record of protest against arbitrary restraint identified with symmetry and, coincidentally, with classicism.

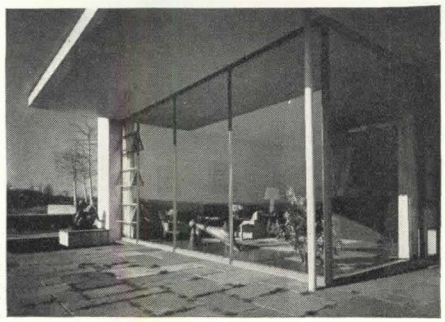
Another feature of many modern structures is the

[2] *Le Corbusier*, Towards a New Architecture, *Architectural Press, London, England.*



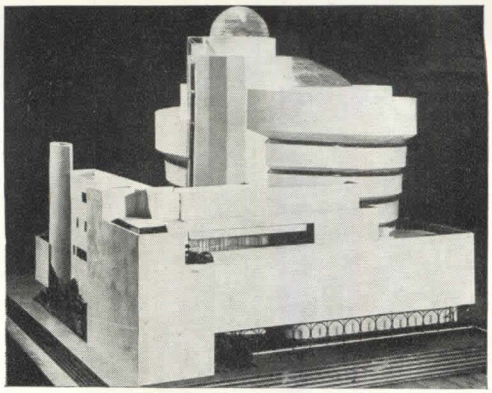
G. E. Kidder Smith

Cantilevers have a structural use; they can also be purely esthetic devices.



Ezra Stoller

The urge to express structure is often emotional; posts may be obtrusively evident.



An anti-gravitational and non-objective attitude has influenced many modern projects.

use of open planning. Comparisions with Baroque architecture are brought to mind. Space is conceived as a continuum. Forms are open: one leads to the other. No one form is strictly self-contained: all have a relationship to the space in which they exist and which they help define. This characteristic has been described stylistically as being "atechtonic." The International style makes wide use of atechtonic elements—curved two-dimensional walls, corrugated surfaces, overlapping forms, and other devices ably described in many books. The work of van der Rohe is well known for its employment of open planning. Although he uses planes, his style is not *planimetric*, but is spatial. And, unlike Baroque, his space is not plastic, of sculptured masses and voids, but is a space of nonsubstantial, dematerialized elements which interpenetrate one another and which themselves represent space.

Without questioning the architectural contribution of open planning, the point here is that such stylistic devices are not always functional in origin or in application. Often a closed space—a well defined cubical compartment, for instance—would do as well as an open space. Given the choice, the architect influenced by the International style will adopt the open space.

Still another characteristic of International modernism which may be isolated for analysis is the use of materials in a manner which is not rational, functionally or scientifically, although we *might* say that it is rational in that it is consistent with the style itself. To take an example of what is meant, there is a frequent use of polygonal masonry—rough-hewn, irregularly shaped boulders laid random in thick beds of mortar. One can almost see the anguish of the architect who calls for specially-hewn polygonal masonry and gets the available coursed ashlar instead. The use of stone, cork, glass, plastic, or what you may choose to name, produces a desired esthetic effect which has its logic in the juxtaposition of contrasting elements, emphasizing texture and color, for instance, rather than in the use of materials scientifically or technologically.

In regard to the *appearance* that is accepted as the result of modern technology, consider the use of the cantilever. Technically, a cantilever may be called for where a slab juts out over the water, or for some other reason cannot be readily supported. But what shall we make of the cantilevers on all the houses that do *not* hang over water? Cantilever construction in rigid frame design *can* and *does* effect savings in building costs. Cantilever design has suitable structural application. However, the use of cantilevers in International style is not always rational except, again, in a stylistic sense. To the contrary, structurally considered, cantilevers are like as not irrationally applied and simulate logical construction rather than achieve it.

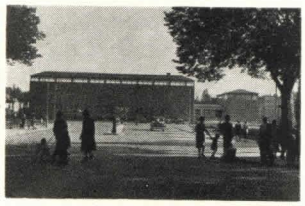
Modular framing is another structural case in point. In modular framing, as employed in design of the International style, columns are often spaced in a regular pattern. A unit module is selected and this module is made to serve as the base for a grid system in the structural frame. Columns are permitted to stand outside an adjacent partition or wall even if it may be possible or desirable to conceal the column in the partition. Specifically, when the grid becomes an end in itself, dwelling as much in appearance as it does in structure, and being motivated by a concept of free-standing forms, the module may do violence to actual structural benefits.

This discussion has been entirely of the International style and the buildings it has influenced, although the properties mentioned are shared by much contemporary architecture to a greater or lesser degree. A strong influence back on Frank Lloyd Wright, from the style he unwittingly helped to create, is evident in several of his recent designs.

I do not argue that International style, or modern architecture in general, should discard these particular qualities. In fact, where they have been intelligently employed, they have been elements of a real contribution to the emergence of a genuine contemporary architecture. If we want to be good modern architects, we should know something about the origin and nature of various aspects of modern architecture. With this knowledge we can make progressive architecture more progressive. If we set up the question properly, the solution suggests itself more readily.

LINKOPING MUSEUM

NILS AHRBOM and
HELGE ZIMDAHL
Architects



Svenska Dagbladet

NORRKOPING MUSEUM

KURT VON SCHMALENSEE
Architect

Goran Algard Photos

2 MUSEUMS IN SWEDEN

THE MUSEUM AS A COMBINED SOCIAL AND CULTURAL CENTER

The progressive approach to museum design considers the collections as living indices from which all may read and enjoy the cultures and daily life of different times instead of dead remains to be placed in a tomb. "Life" rather than "necrology" is the function to be expressed in the final design form. In place of an impressive and imposing structure, unwelcoming in appearance and hard on the feet, today's museum offers recreation as well as enlightenment; and it tends to be a friendly place, including along with the collections some of the aspects and facilities of a social center, a proper meeting place for all sensible citizens. In museum technique, the contemporary trend has been both to reduce the size of exhibits and to change them often.

It is a very special pleasure to present two museums from Sweden that express this approach admirably. It should not be overlooked that these are small-city museums, not great megalopolitan warehouses of art. For our opportunity to publish these two significant bits of architecture, we are indebted to G. Howard Smith of Stockholm who told us about them in the first place and then, in conjunction with Goran Algard, the photographer, proceeded to document the material for our use.

In Sweden, according to Mr. Smith, "the idea of the 'living museum' has been taking firm root during the last ten to fifteen years . . . The National Museum in Stockholm—the national art gallery—has for many years now not only had a sizable and representative collection of the work of living painters and sculptors, but also a section containing examples of modern industrial art. At Rohsska Museet in Gothenburg, where the chief collections consist of books, printing, Chinese art and textiles, the main public-drawing attraction has been the exhibit of modern furniture and industrial art which is completely renewed every year. . . In fulfillment of the idea of raising the museum to a real center of culture and life, however, honors in Sweden must go to the two provincial cities of Linkoping and Norrkoping." It is these two museums which are shown on the following pages.

The differences between the two derive in the main from the distinctions between the cities where the museums occur. Linkoping, a city of less than 50,000 population, has long been the intellectual and cultural center of its province, a church center, and the seat of the provincial government. Norrkoping, on the other hand, with its 80,000 citizens (the fourth largest city in Sweden) is mainly renowned as a commercial and industrial center. Curiously enough—and an encouraging sign to those who believe art should be generally available—these two small cities are but 25 miles apart! Mr. Smith comments: "In both these places the museum has been transformed into a combined social and cultural center—'a world of knowledge and beauty available to all,' as a local dignitary expressed it—where not only the city's art and historical collections may be housed, but where local art events may take place and music be heard, and where also many of the more serious group-study activities may find a meeting place."

A number of traditional museum design problems are freshly solved in the two museums. Lighting of the main galleries is one. In Linkoping, the upper galleries are lighted from a louvered slope of the room ceiling that occurs underneath a roof skylight above. Since light enters the gallery from the slope, it is thrown onto the walls and main exhibits where it is needed. In Norrkoping, a flat glass ceiling above the main galleries borrows daylight from rows of clerestory windows in the building walls at either side above ceiling level. In both museums, ground-floor galleries are lighted by side-wall windows, quite closely spaced to cut down brightness contrast. Storage of reserve paintings is conveniently handled on sliding panel-screens that occur in walls between galleries; coatroom checking is open and immediately accessible—a pleasant contrast to the cavernous holes with bank-like window counters typical of so many traditional museums.

Perhaps the least common denominator between the two museums—and the most inspiring—is the completely human approach to the design, in plan, in choice of simple materials, in the refined but informal finished design which offers the visitor a greeting rather than a rebuff.

LIGHT FROM A SKYLIGHT (above) enters Linköping's main galleries (large photo, facing page) through louvered ceiling slopes.

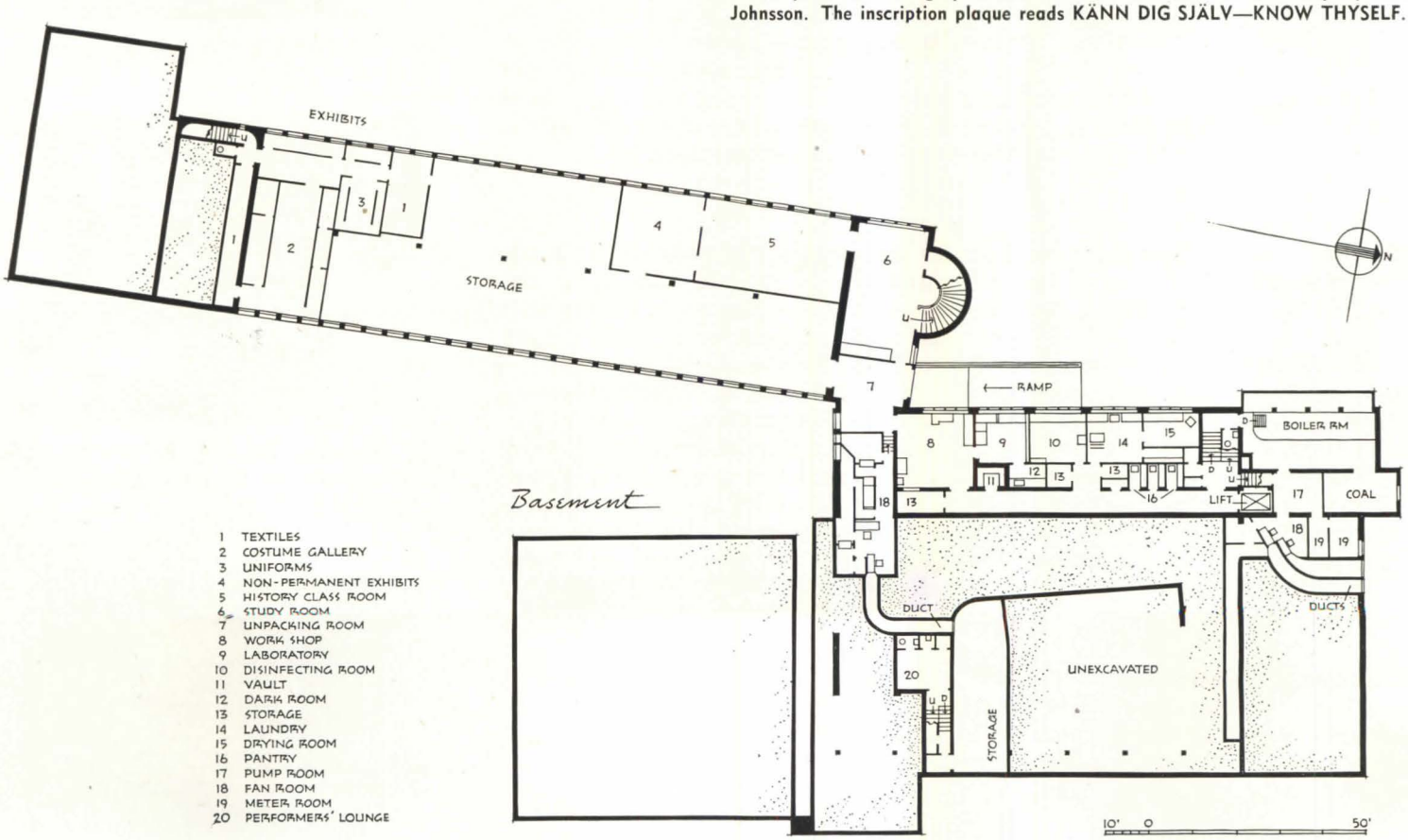
SLIDING STORAGE WALLS between galleries.

At Norrköping, **ANGLED DISPLAY PANELS** reduce reflections that occur when displays parallel the light source.

OPEN COAT CHECKING at Linköping Museum.

Goran Algard Photos

The MAIN ENTRANCE and the social activities section extend forward in a low pavilion. The gray marble frieze is the work of the sculptor, Ivar Johnsson. The inscription plaque reads KÄNN DIG SJÄLV—KNOW THYSELF.



Basement

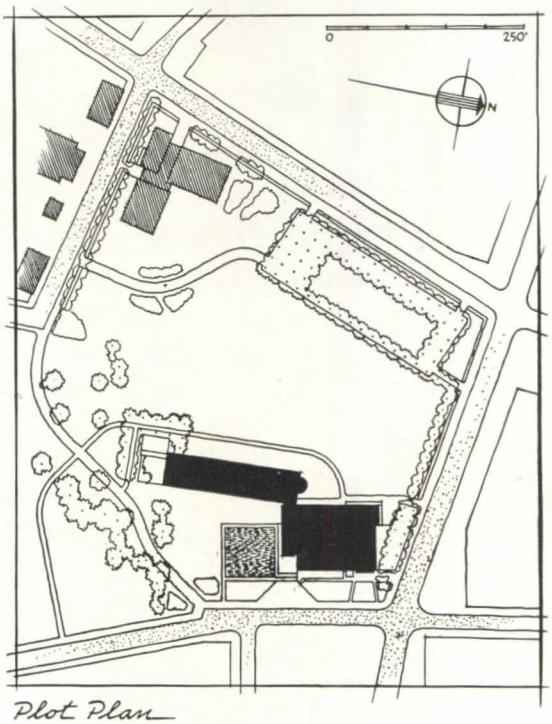
1 TEXTILES
2 COSTUME GALLERY
3 UNIFORMS
4 NON-PERMANENT EXHIBITS
5 HISTORY CLASS ROOM
6 STUDY ROOM
7 UNPACKING ROOM
8 WORK SHOP
9 LABORATORY
10 DISINFECTING ROOM
11 VAULT
12 DARK ROOM
13 STORAGE
14 LAUNDRY
15 DRYING ROOM
16 PANTRY
17 PUMP ROOM
18 FAN ROOM
19 METER ROOM
20 PERFORMERS' LOUNGE

MUSEUM AT LINKOPING, SWEDEN

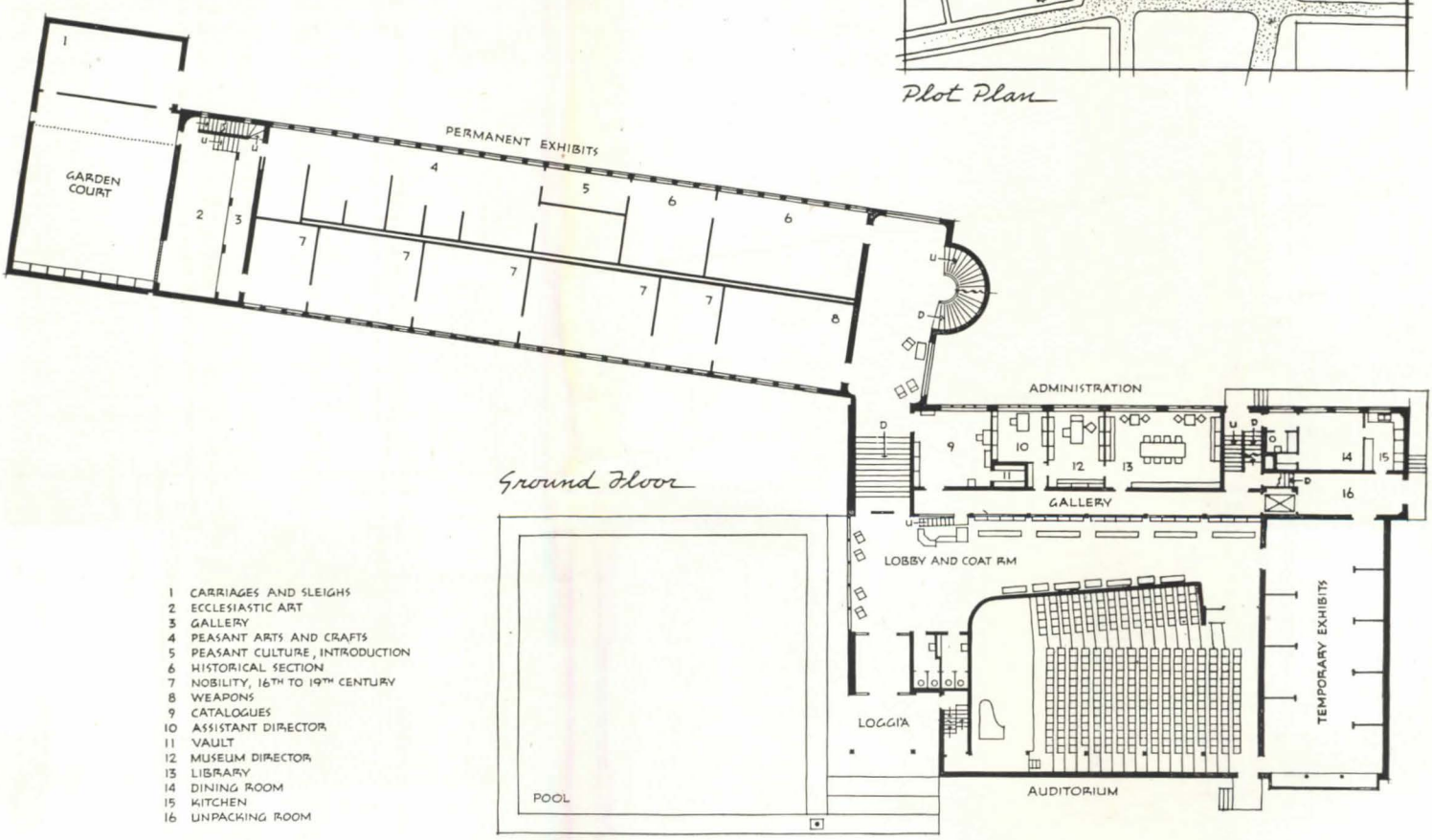
NILS AHRBOM and HELGE ZIMDAHL, Architects

Built on a site with beautiful trees, this gracious structure occurs in the medieval core of a modern community. Within the angle formed by the two wings of the building, the park-like character of the neighborhood is enhanced by inclusion of a children's wading pool, with seats arranged around the perimeter—an accent on youth and life in the midst of ancient dignity. Organization of the plan into two main elements assists the informality of the scheme. The hall for concerts and lectures may be used quite independently of the main gallery areas. Wall-height windows at the entrance and at the side of the main lobby achieve continuity between the natural beauty out-of-doors and the museum proper. Due to the size of the museum, as well as to its interior organization, a trip through is never a tiresome affair; in fact, the two-part plan enables a visit to be made in easy stages without the need to pass through rooms one may wish to avoid. In the basement, in addition to storage space and museum workrooms, there are rooms for study groups, at the bottom of the main stair.

GENERAL VIEW, looking across wading pool.

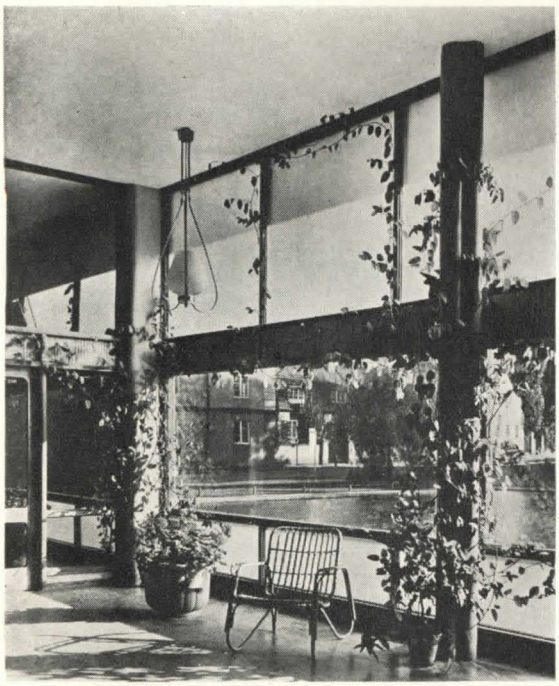


Plot Plan

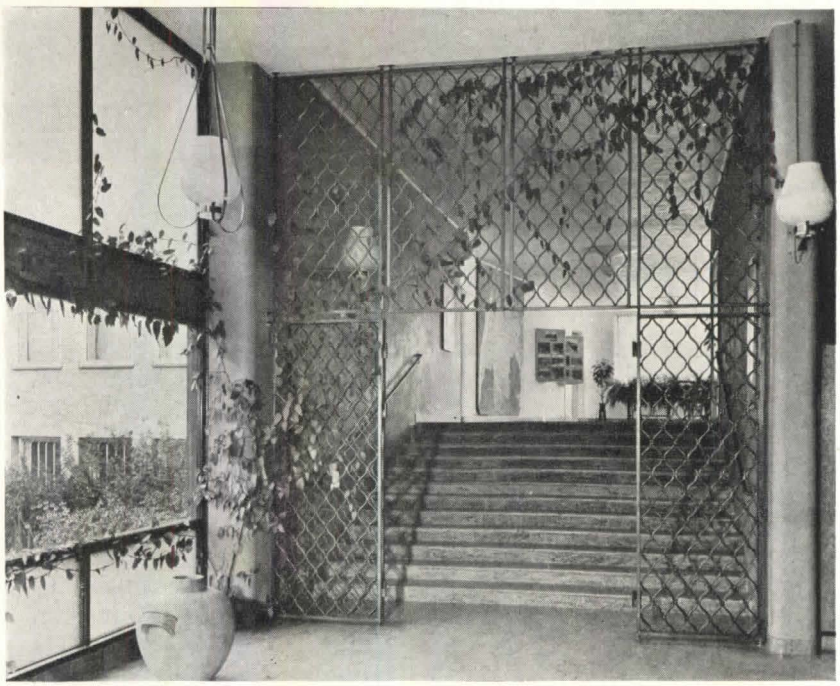


Ground Floor

1 CARRIAGES AND SLEIGHS
2 ECCLESIASTIC ART
3 GALLERY
4 PEASANT ARTS AND CRAFTS
5 PEASANT CULTURE, INTRODUCTION
6 HISTORICAL SECTION
7 NOBILITY, 16TH TO 19TH CENTURY
8 WEAPONS
9 CATALOGUES
10 ASSISTANT DIRECTOR
11 VAULT
12 MUSEUM DIRECTOR
13 LIBRARY
14 DINING ROOM
15 KITCHEN
16 UNPACKING ROOM

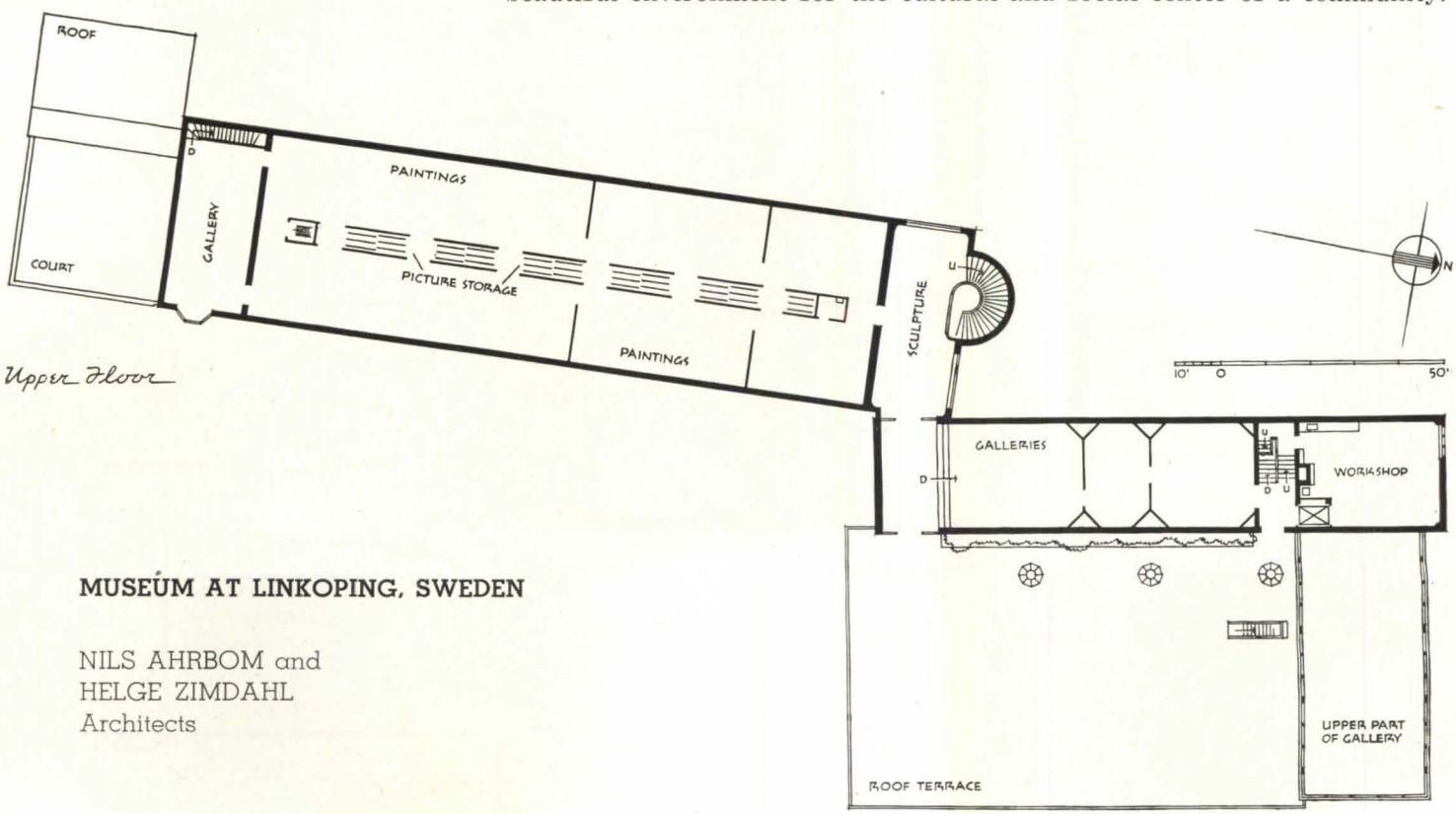


LARGE WINDOWS at the entrance frame the pool outside.



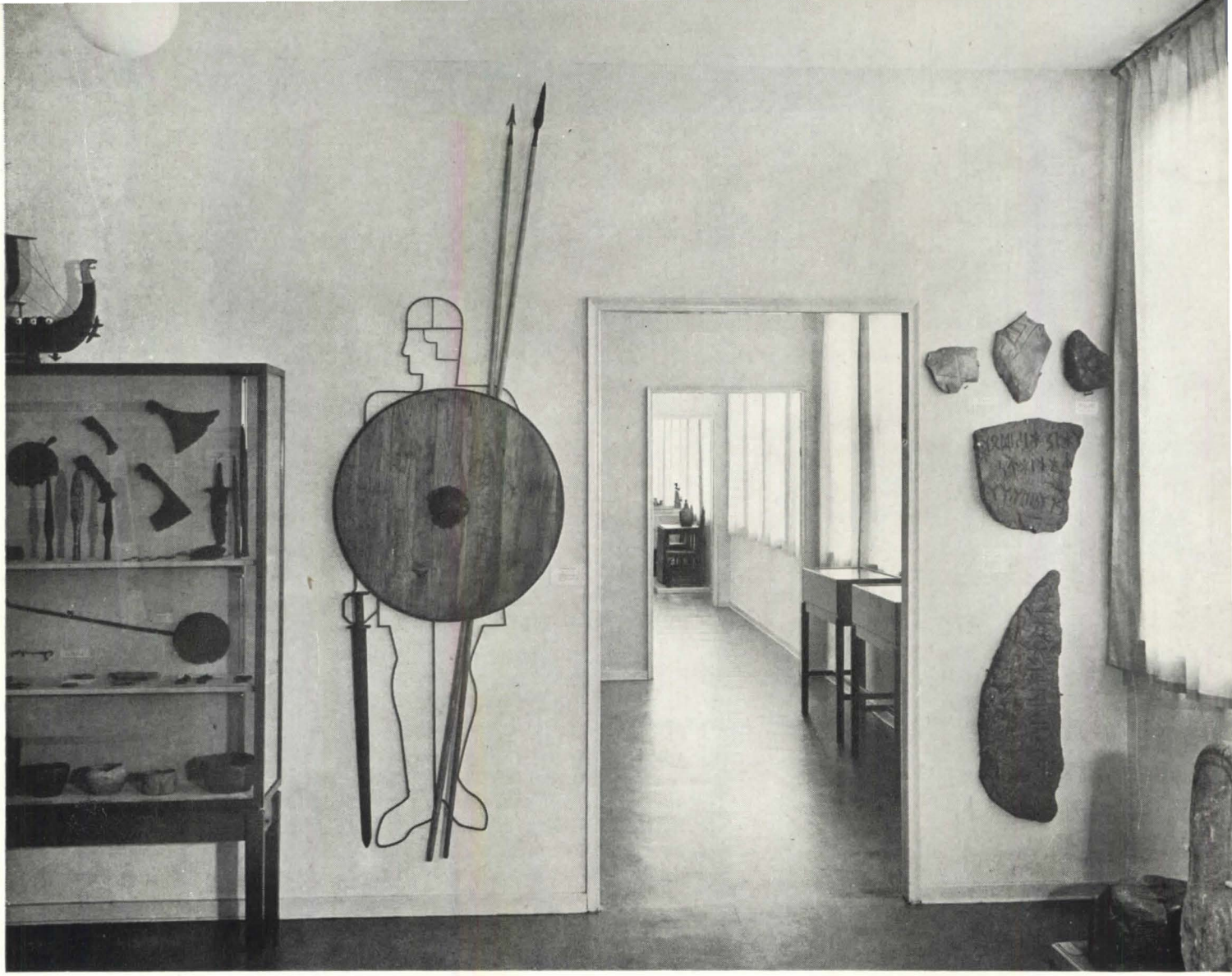
GATES close off the main gallery areas, permitting the public hall to be used independently.

The structure is a combination steel and reinforced concrete frame, with concrete floor and roof slabs; filler walls are of brick, with a soft buff-brown variety used for exterior surfacing. All public rooms are heated by a panel system installed in the ceilings; private offices have conventional radiators. Throughout, the detailing has been handled to provide a genial, unobtrusive background for the exhibits and the visitors—a dignified, beautiful environment for the cultural and social center of a community.

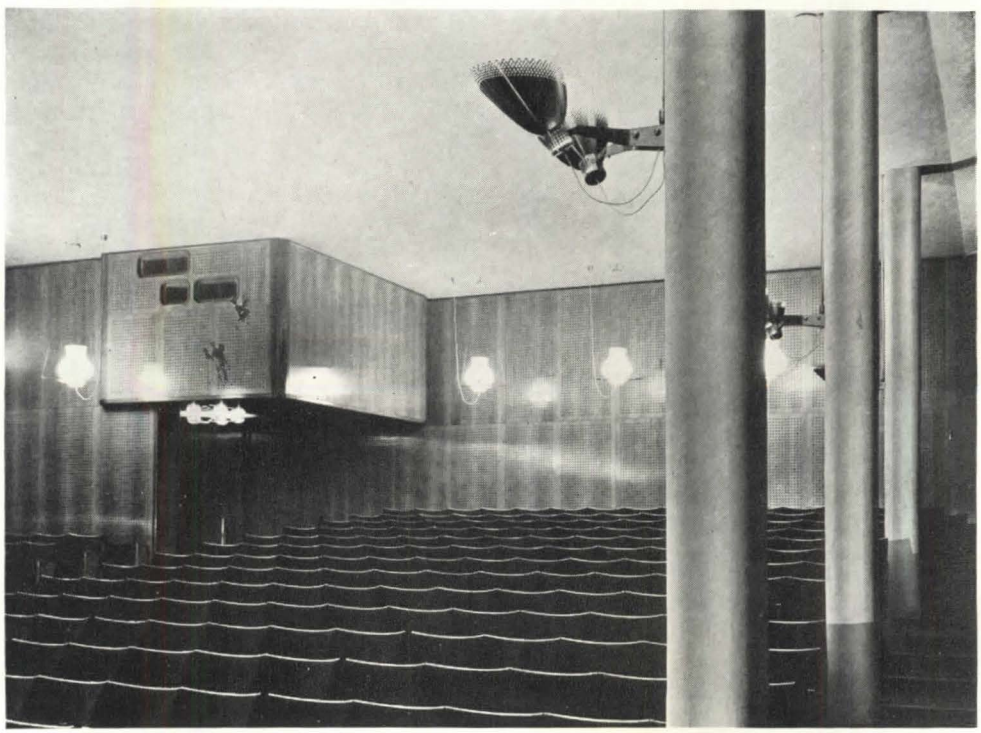


MUSEUM AT LINKOPING, SWEDEN

NILS AHRBOM and
HELGE ZIMDAHL
Architects



SIMPLE BACKGROUNDS emphasize the displays. View above is of ground-floor galleries.



THE MEETING HALL is used for lectures, concerts, and discussion of popular problems. The perforated natural pearwood walls assist acoustical correction. Notice the brass light fixtures with pierced borders that lessen contrast. Seats, upholstered in dark red textile, may be removed for occasional use of the room as additional exhibit space. At such times the stage is joined with the rest of the hall by temporary flooring extending over the first six seat rows.

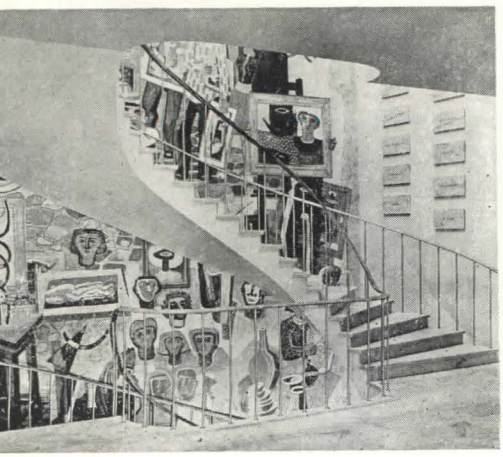
Svenska Dagbladet

THE MUSEUM is placed at the end of the city's main boulevard. Eventually three other wings will form an enclosed courtyard.

Goran Algard Photos

A freestanding SHELTER-REFLECTOR at the main entrance.

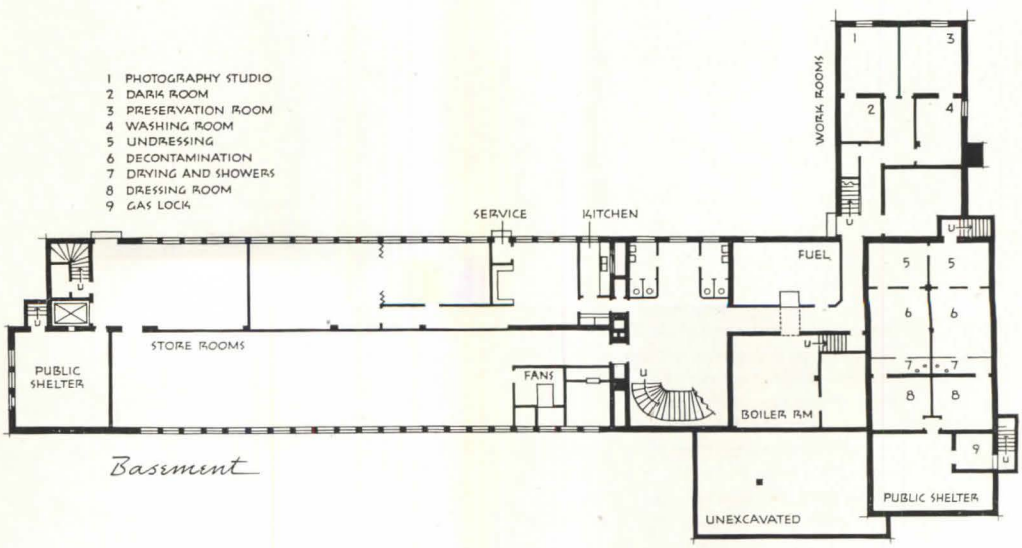
ENTRANCE HALL: gray marble floor; white walls.



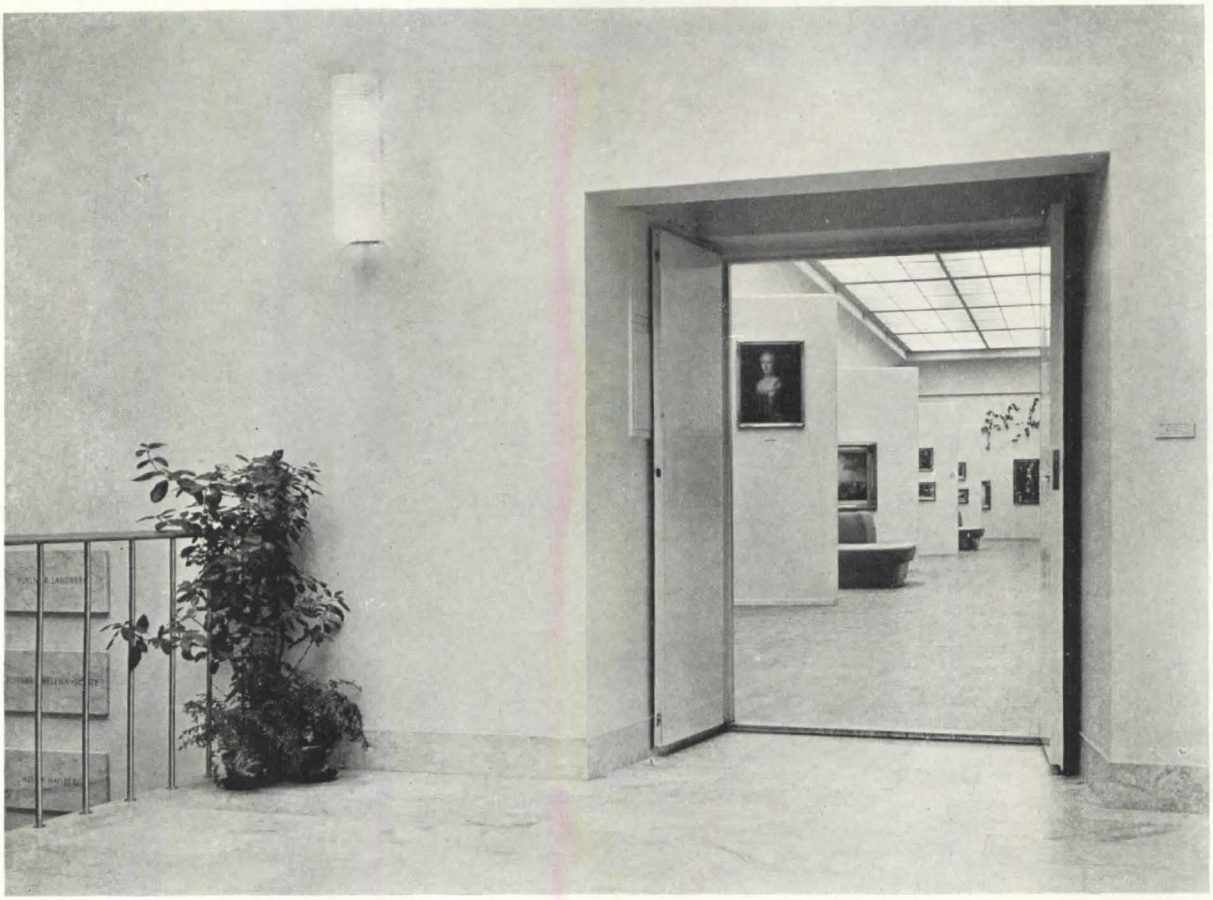
MUSEUM AT NORRKOPING, SWEDEN

KURT VON SCHMALENSEE, Architect

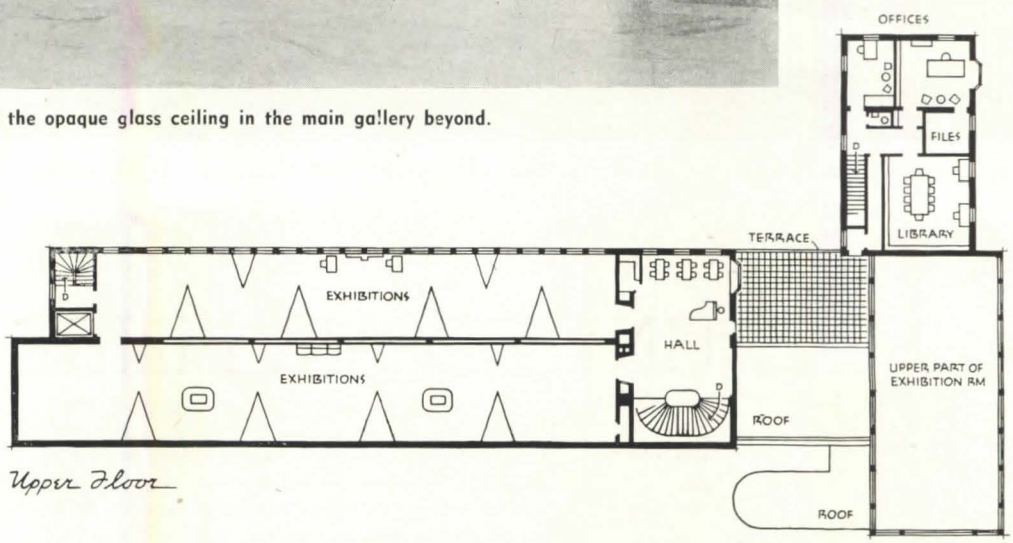
The Norrkoping Museum is as much concerned with local history and the city's industrial interests as it is with its collection of Swedish art. In the words of Major Frank Bensow, chairman of the museum committee: "We have particularly tried to avoid making it a depository of the traditional type, aiming instead at creating a living museum, a vital and continually active cultural factor in the community." Interesting instances are inclusion of an industrial art section, the archives of the city labor unions, and generous premises for study groups and youth club activities. Eventual development of the museum contemplates an enclosed central courtyard of which the present structure will constitute one side. In downstairs galleries, lighting is from wall windows; upstairs galleries are lighted from an opaque glass ceiling that receives its light from clerestories in the walls overhead. Wedge-shaped display screens provide much added wall space as well as gain the advantage of lighting from an angle. An exceptional design element is the colorful, three-floor-high mural bordering the main stair. This mural, by Nils Wedel, includes copies of several of Wedel's best known paintings (see photo, bottom left).



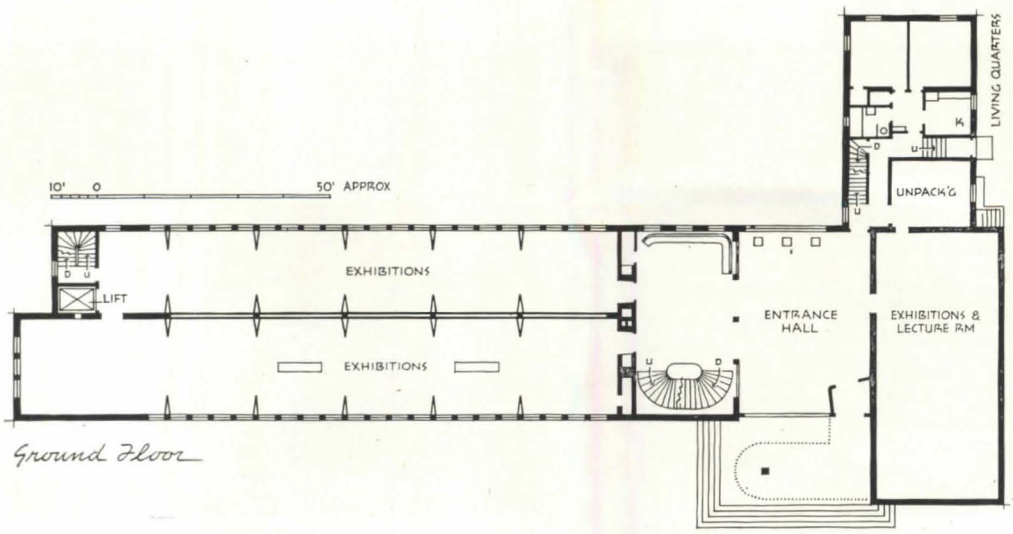
Basement



UPPER LOBBY; also used for musicales. Note the opaque glass ceiling in the main gallery beyond.



Upper Floor



Ground Floor

HIGHWAY FACADE. City manager's office and C.A.A. weather bureau space in low wing at right. Walls are variously of brick or wood.

2 UNITED AIR LINES PASSENGER

The well designed smaller airport station is as rare as the proverbial dodo. With these two clean-cut structures in California, therefore, United Air Lines makes a signal contribution. Now that the start has been made, let us hope that other lines and other places will have the vision to see what a whale of a difference care'ul planning makes.

Roger Sturtevant Photos

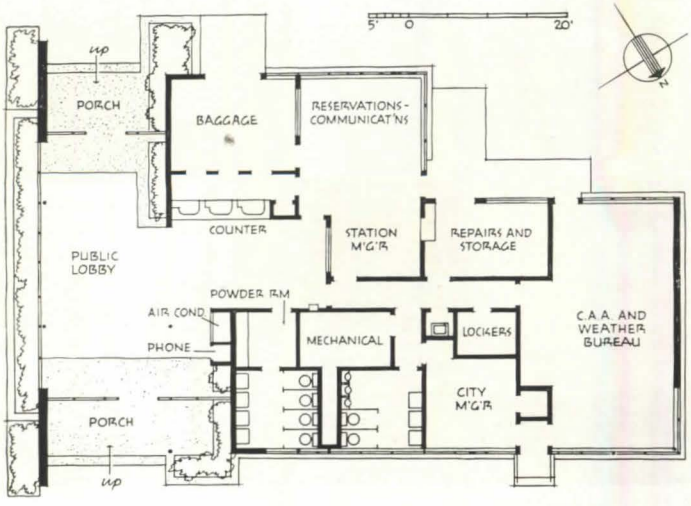
FIELD SIDE. Baggage room is through double doors at center.

STREET ENTRANCE.

LOBBY. If expansion is needed, wing will be added through wall at left. Insulating tile ceiling; walls: brick or board and batten.

STATIONS IN CALIFORNIA

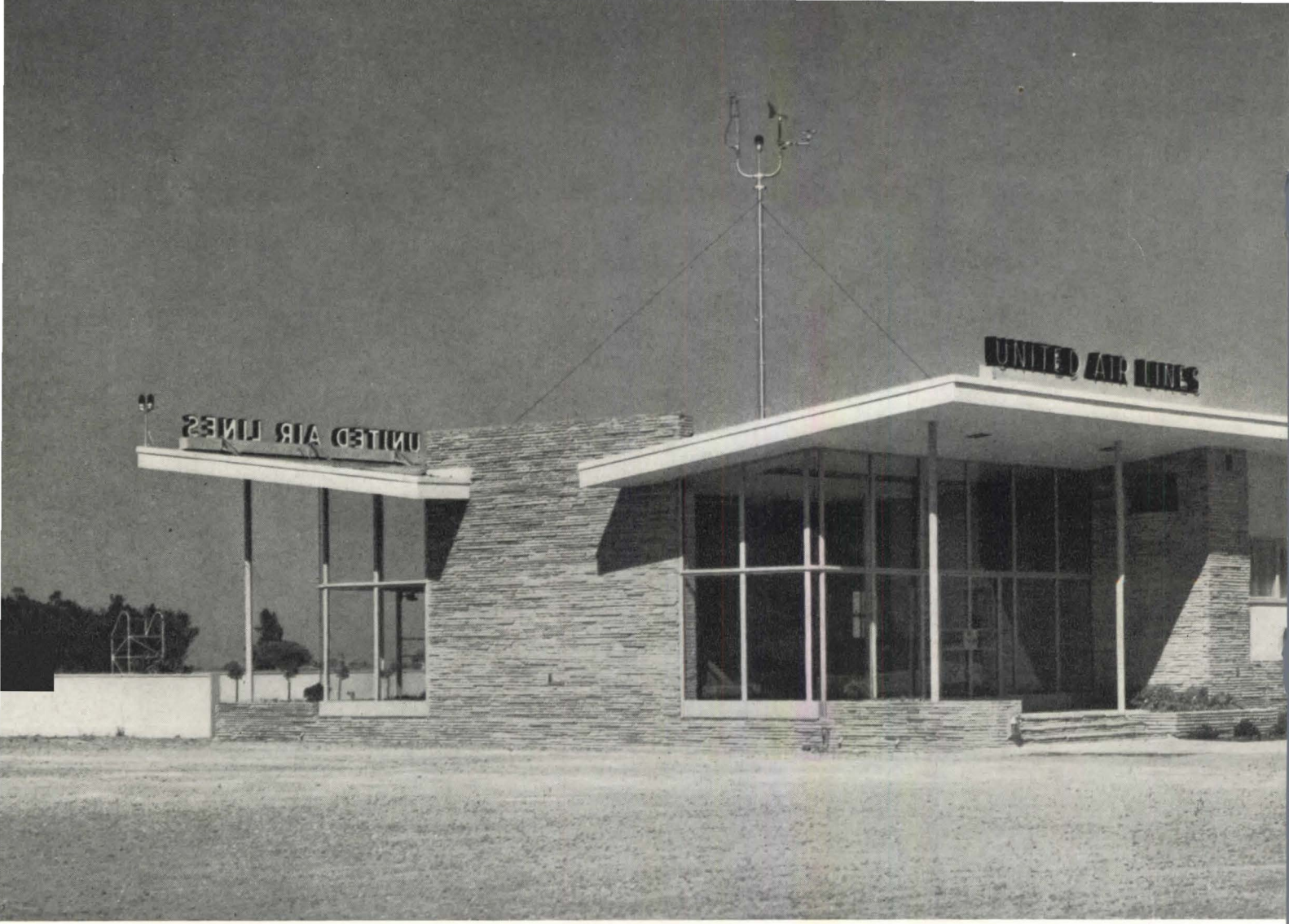
FRANKLIN, KUMP & FALK, Architects



Floor Plan

1. STATION AT MODESTO

At both Modesto (these two pages) and Merced (three pages following) logical acknowledgment is made of the fact that an airport station has two fronts of equal importance—toward the field and toward the highway. They also assume that people in an air station enjoy watching things on the field and in the sky; hence, there are many and (toward the field) high windows. The other provisions for passengers and personnel are handled in a similarly straightforward way. The plans of the two buildings are almost identical; however, the owner requested that the Modesto station be made to differ in appearance from the one at Merced—to the detriment of the former, in our opinion.

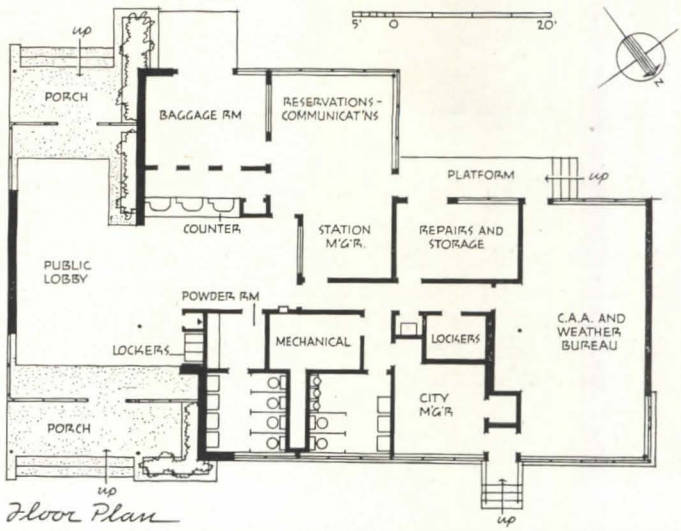


HIGHWAY SIDE.

Roger Sturtevant Photos

FIELD SIDE.

ENTRANCE DETAIL.



Floor Plan

2 UNITED AIR LINES PASSENGER STATIONS IN CALIFORNIA

FRANKLIN, KUMP & FALK, Architects

2. STATION AT MERCED

Although the plan is almost the same as that for the Modesto station, its expression in finished design (nearer to the architects' original concept for both buildings) seems considerably clearer, not to mention the dramatic and appropriate use of a dihedral roof. This emphasizes both fronts equally and facilitates a view of sky activities. One wonders if the over-all design might not have been yet further unified, if this roof line had been carried the full length of the building. Floor construction in both buildings is a concrete slab, within which are embedded copper coils for a radiant panel heating system. All sash are of steel.

Both Merced and Modesto are municipal airports; hence the office for the city airport manager. United Air Lines leases the plots from the cities. At present, in addition to a growing air mail and cargo business, the ports are used simply as feeder lines, with a single northbound and one southbound passenger flight each day. They are built, however, to accommodate eight to ten daily schedules each way and U.A.L. has leased sufficient land to handle this increased traffic. The ports are only about two miles from their respective cities, so eating concessions were considered unnecessary.

LOOKING TOWARD TICKET OFFICE; station manager's office, right. Note the plant border that (along with the brick wall) continues beyond the window wall.

STATION AT MERCED, CALIFORNIA

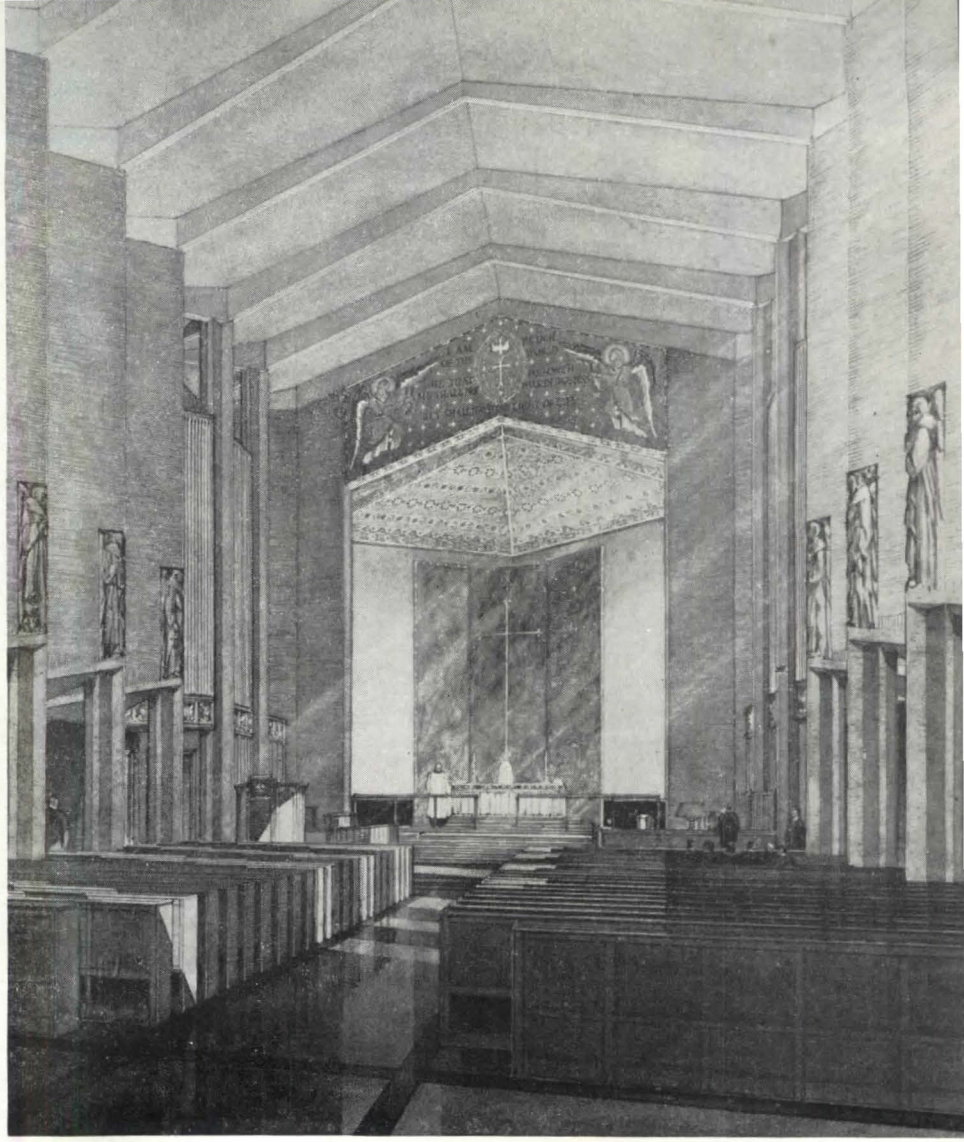
FRANKLIN, KUMP & FALK, Architects

Inside the building, forthright use is made of just a few materials—continuous planes of brick, plywood, or gypsum board. Asphalt tile covers the floor, and the ceilings are of composition tile. The wood-framed roofs have 4 inches of wool-type insulation.

FIELD ENTRANCE. The upsloping roof provides an unhindered view for visitors.

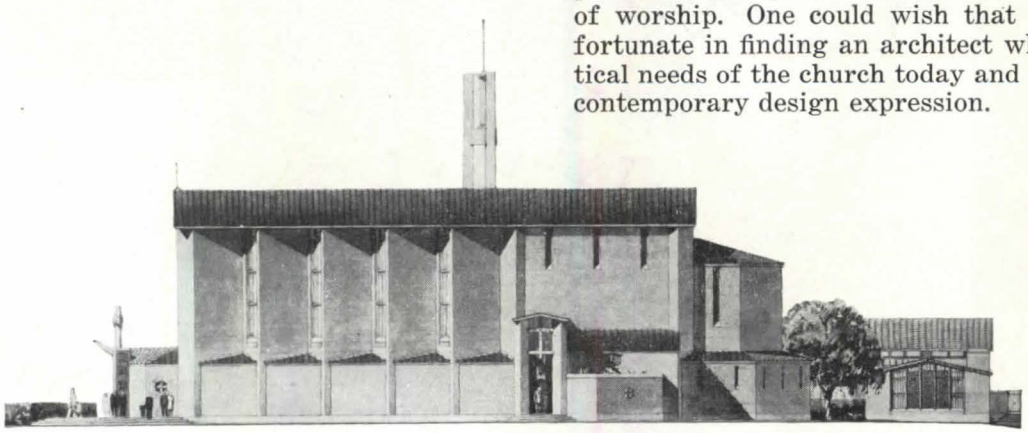
LOOKING FROM THE PASSENGER LOBBY out to the landing field. The yard enclosure provides additional visitors' space.

RALPH C. FLEWELLING
& ASSOCIATES
Architects

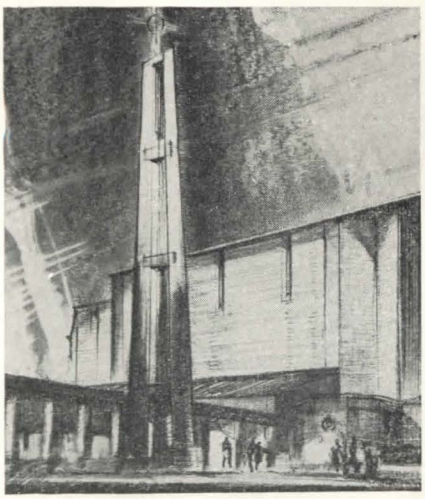


PROPOSED EPISCOPAL CHURCH, RIVERSIDE, CALIFORNIA

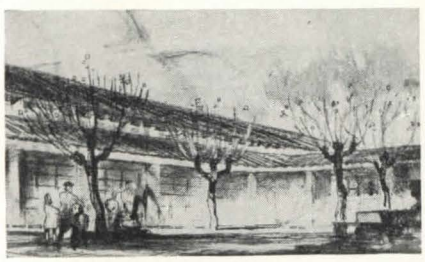
The distinguished design of this proposed church and parish house derives from precisely the same sort of intellectual and architectural honesty that has typified important ecclesiastical building of all times. Building materials are used imaginatively to achieve a result that is as logical in a structural sense as it is satisfying esthetically. The over-all design soars beyond mere function to produce an atmosphere of dignity and serenity appropriate for the individual exercise of worship. One could wish that more congregations were equally fortunate in finding an architect who understands both the ecclesiastical needs of the church today and the basis for developing a genuine contemporary design expression.



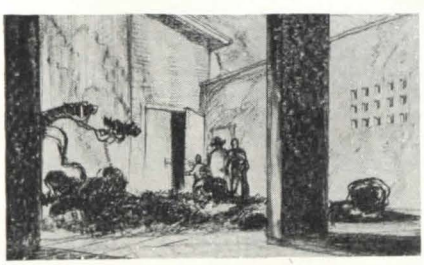
THE SERRATED SIDE WALLS of the nave produce a distinctive interior, with a series of triangular vertical prisms, pierced at the base by side aisles. The concept is far from purely esthetic, however; see next page for its lighting, acoustical, and structural properties.



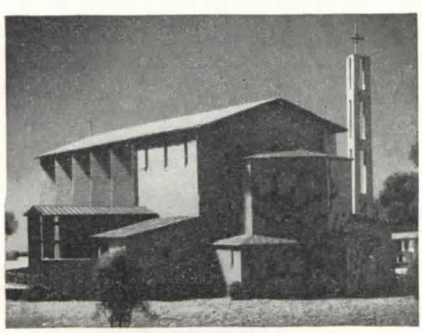
CHIMES TOWER, a triangular reinforced brick pylon supporting the chimes above possible interruption of sound waves by adjacent building walls.



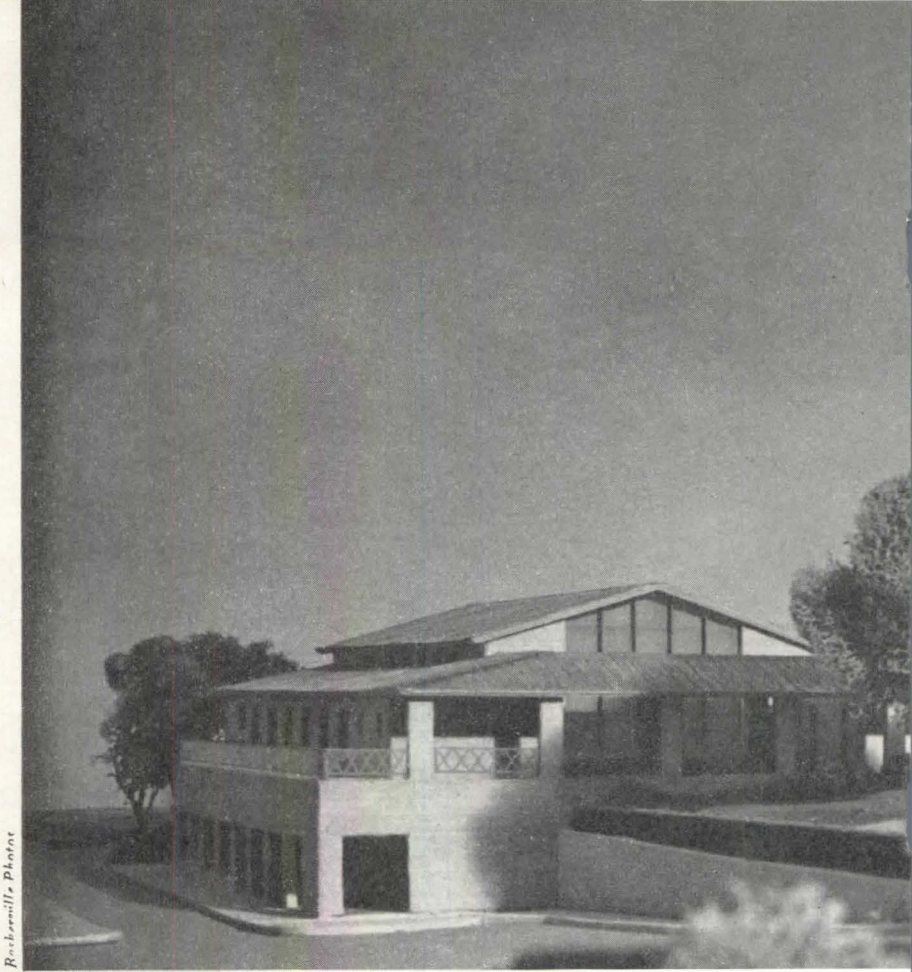
A CLOISTER forms one side of the forecourt to the parish house-auditorium.



FROM THE CLOISTER, across a planted space to auditorium entrance.

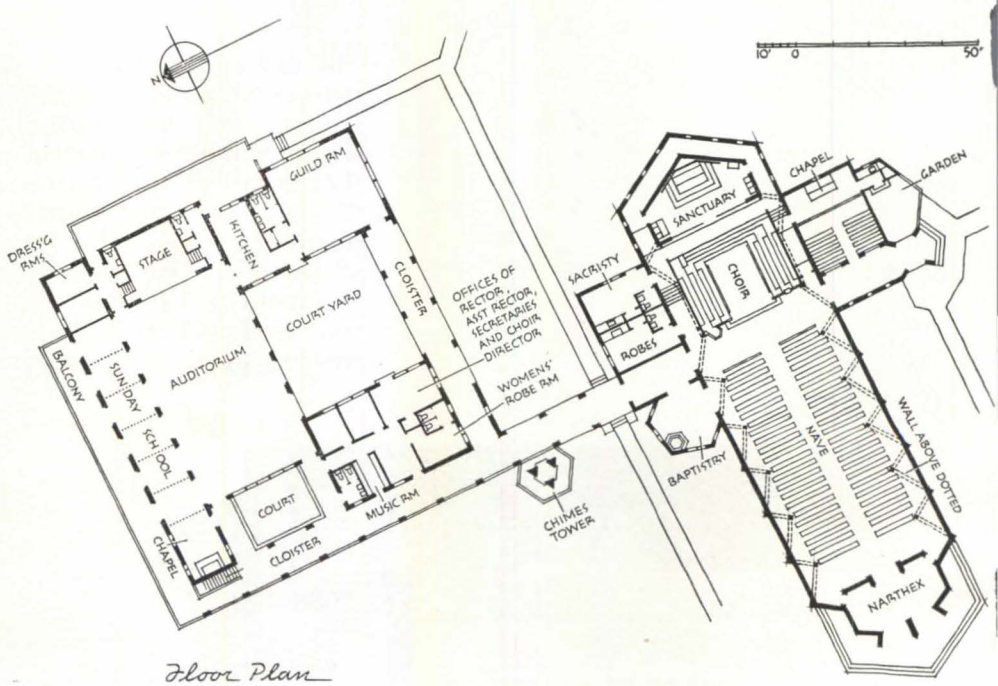


THE SHAPE of the church building is traditional, even to a cruciform plan; it is also oriented conventionally, with the altar toward the east.

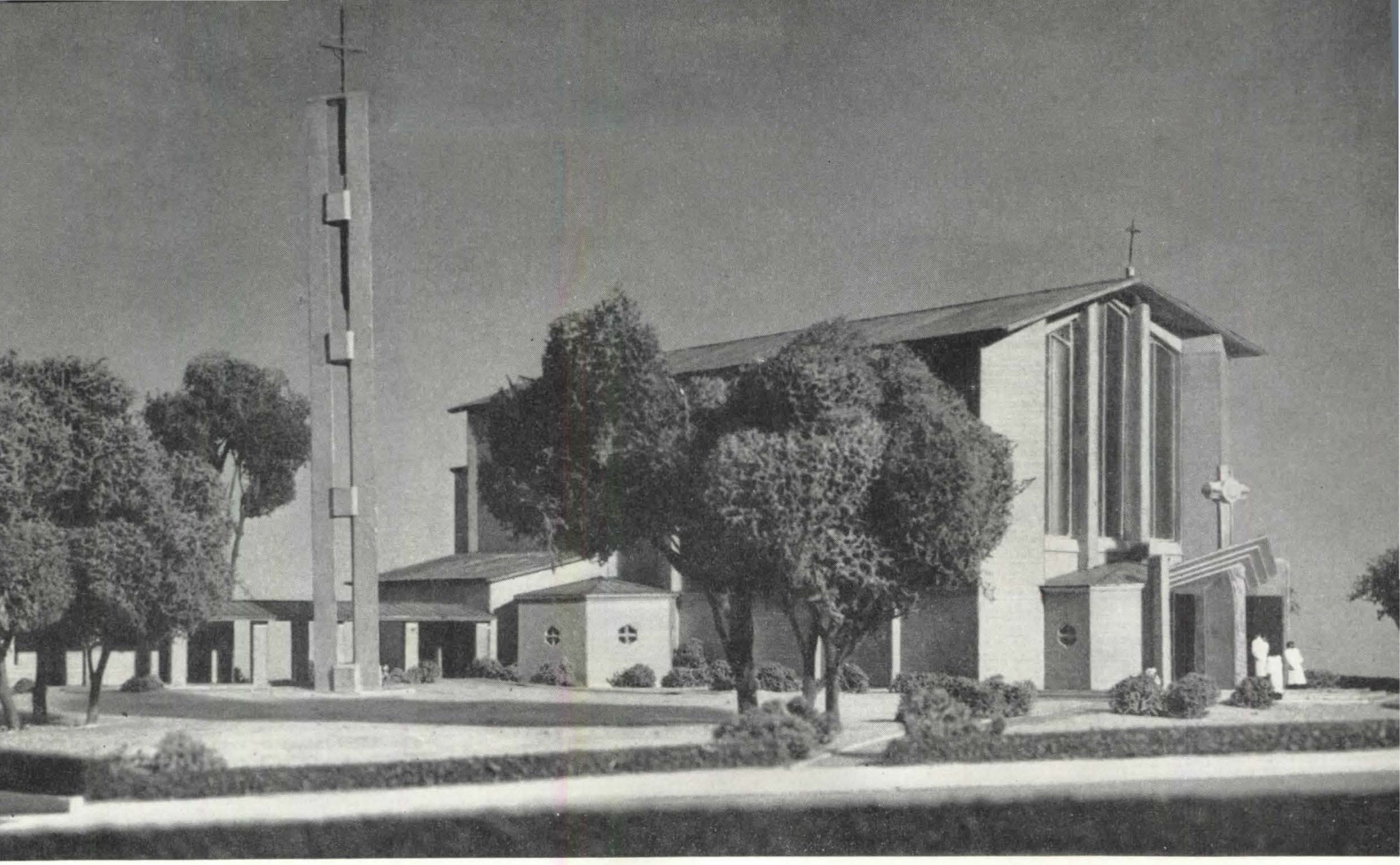


Rockwell-Photos

PROPOSED EPISCOPAL CHURCH,



Floor Plan



RIVERSIDE, CALIFORNIA

RALPH C. FLEWELLING & ASSOCIATES, Architects

Major determinants of the structural-esthetic design scheme were provision of proper lighting, acoustics, and resistance to earthquake shocks. The serrated side walls solve all three of these problems: windows in the forward panel of each "sawtooth" throw light toward the sanctuary over the shoulders of the worshippers; the broken wall shape helps acoustical correction; and a rigid, earthquake-resistant structural pattern derives from the resultant series of triangular forms. The spaces in the serrated walls between the window panels actually become vertical beams taking the lateral thrust and, according to the architect, distribute it over nearly twice the normal load-bearing area obtained by normal construction methods. A rigid frame is produced by monolithic roof beams and slab, terminating in triangular shaped sections spanning the area between window panel and vertical wall beam. The result: a series of vertical prisms tied at the top by the rigid roof structure and at the base by a concrete slab. Masonry portions are of reinforced brick.

THE SITE is a 4-acre tract at the intersection of two streets, with the land sloping up from the more important street and the north portion of the land dropping off to a deep arroyo. Thus the church has a commanding outlook in all directions.

GENERAL VIEW.

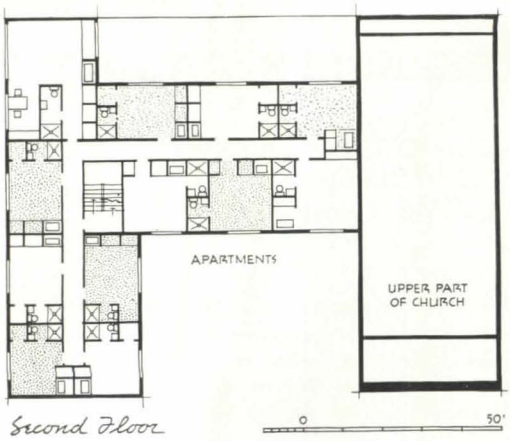
CHURCH OF THE PEOPLE, SEATTLE, WASHINGTON

This unusual proposed building combines the functions of worship and housing. The problem was to house a liberal independent congregation whose creed is one of world brotherhood. In addition to an auditorium for discussion and formal worship, the need was for living quarters for members of racial minorities who are students at the near-by University of Washington.

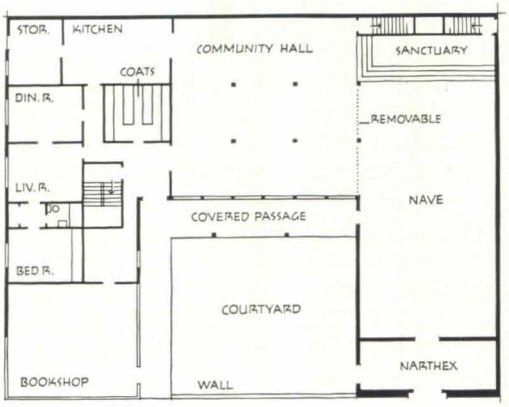
Conceived as a small international center, the project consists of two main parts—the meeting house proper, which will accommodate lectures, motion pictures, and some drama in addition to its use for worship, and a group of one-room apartments, to be made available to students from other lands for whom living accommodations appear to be somewhere between undesirable and nonexistent. To round out the program, the proposal includes a community hall and kitchen, supervisor's apartment, lending library-reading room, and office space for various social organizations.

Arranged around a walled courtyard, the building has its public-use rooms all on the first floor; apartments occur on the second floor of the left-hand wing and on the second and third (and possibly a later fourth) floors of the connecting block at the rear. Local brick is suggested for the walls of the building, with a symbolic sculptured group above the main entrance to the church.

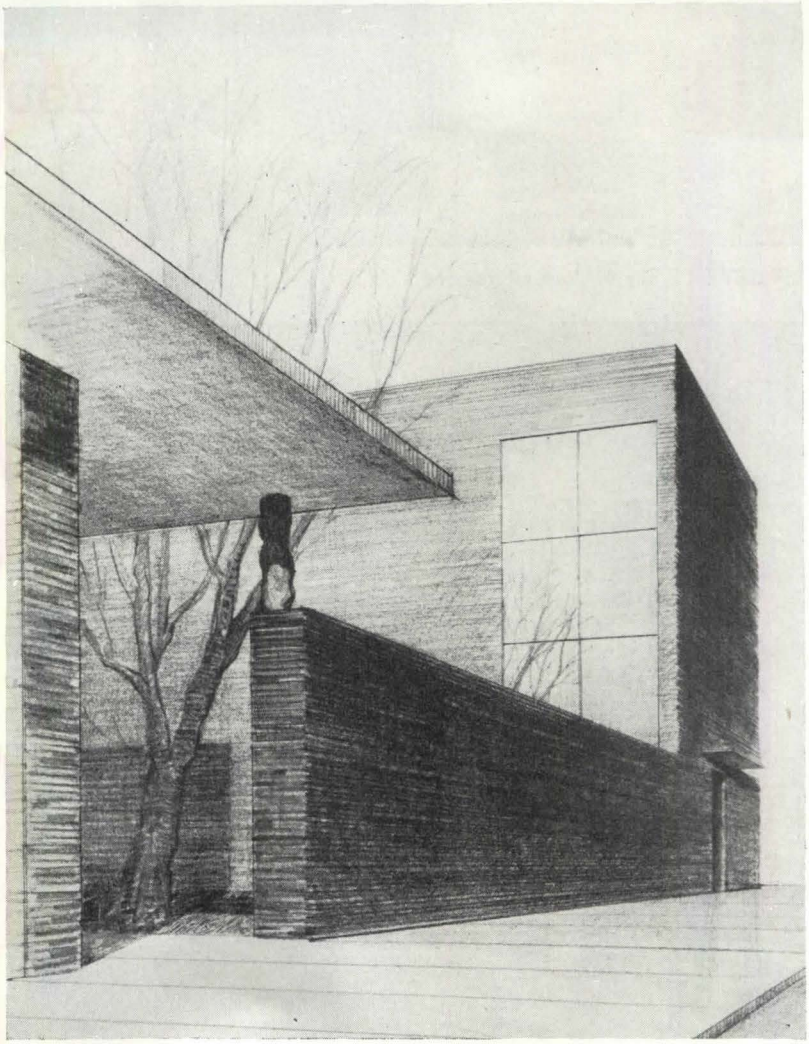
PIETRO BELLUSCHI
Architect



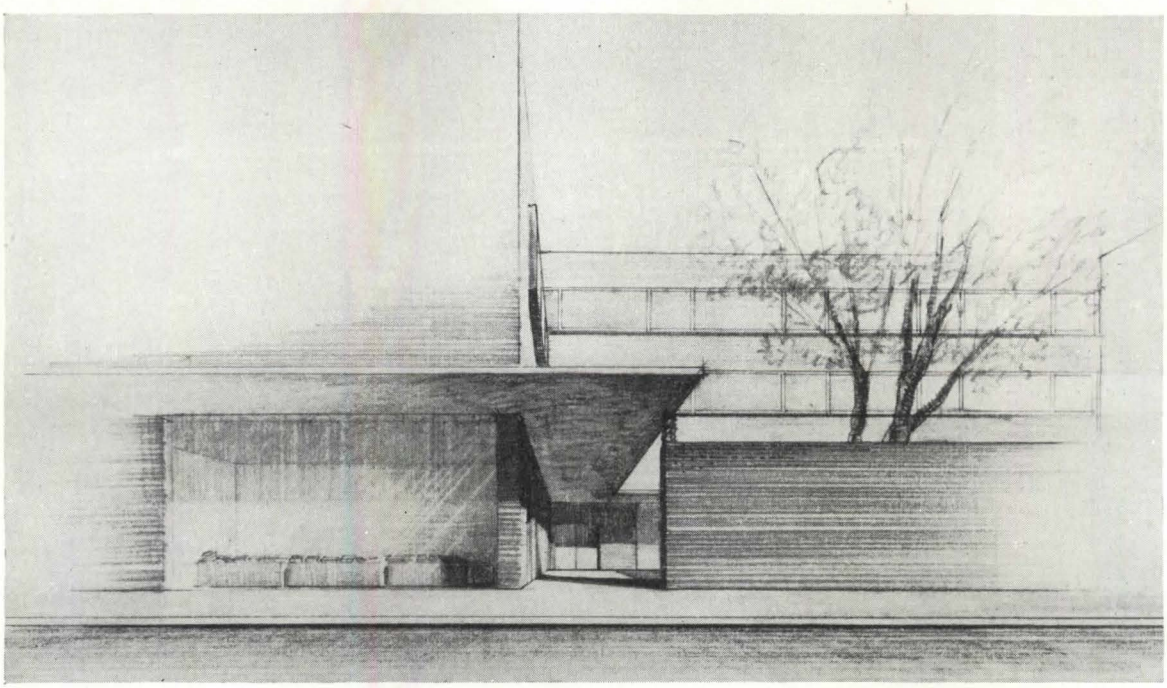
Second Floor



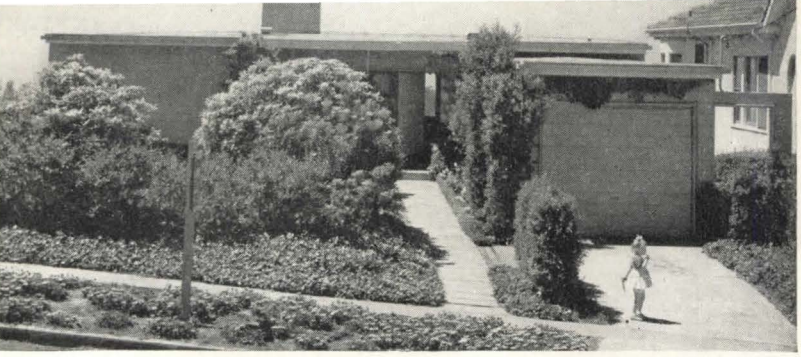
Main Floor



THE HIGH WALL of the courtyard with church in background.



ENTRANCE DETAIL; apartment block at rear.



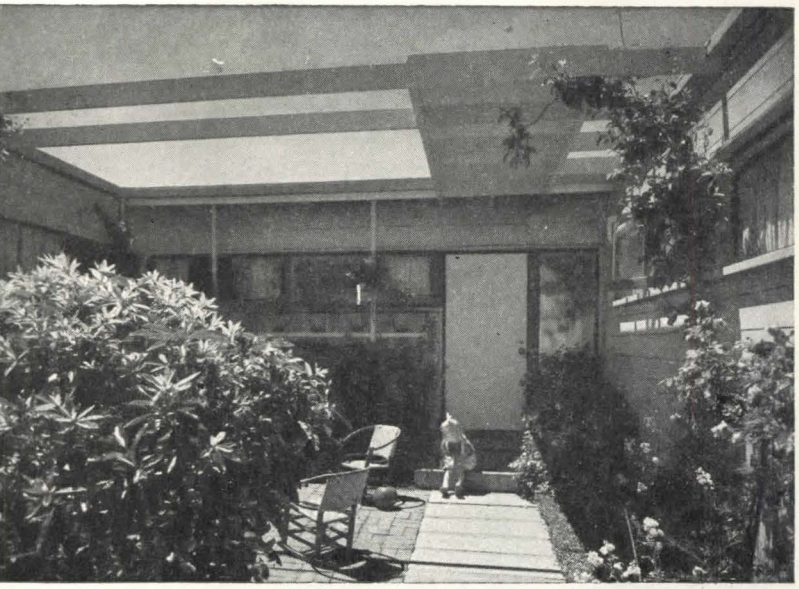
ON THE STREET SIDE, the windows are few and high.

HOUSE, BERKELEY, CALIFORNIA

JOHN EKIN DINWIDDIE, Architect
ALBERT HENRY HILL and
PHILLIP JOSEPH, Associates

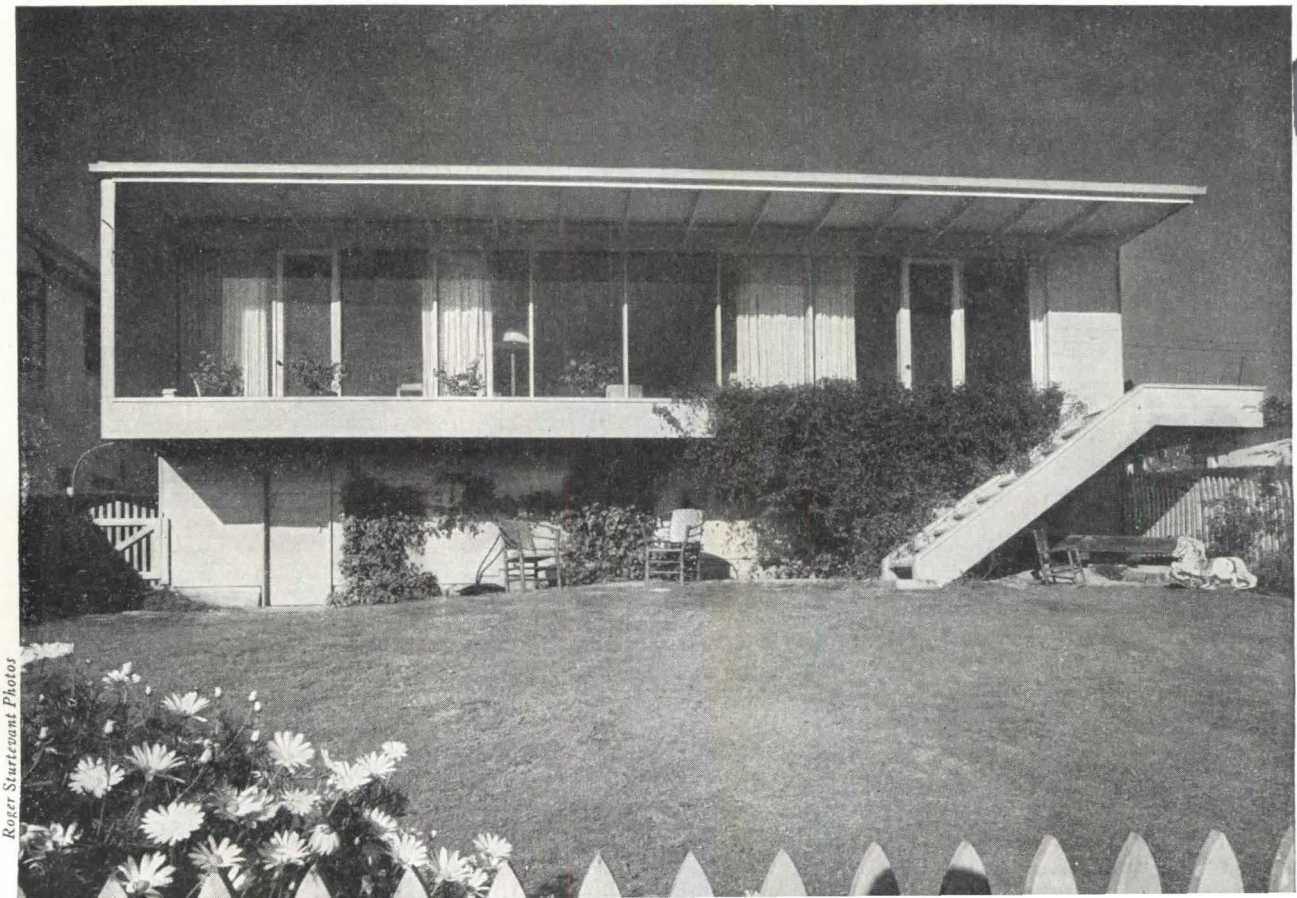
The site is a 50-foot lot sloping away to the vast view of San Francisco Bay. The chief planning problem was to make the most of this outlook while providing privacy for a house in a built-up section. The compact scheme built in a distinctive variation of the familiar U-shaped plan is the result.

Toward the view (at the rear of the lot), the house presents an unbroken wall of windows and glazed doors, opening out to a deep, covered terrace several steps above *grade*. For privacy from close neighbors on the north, the wall of the house extends out the depth of the terrace to form a solid screen. Windows in rooms on the south of the house are of the high, strip variety to guarantee privacy on this side also. Wings of the house extend east toward the street, forming a sheltered entrance court.

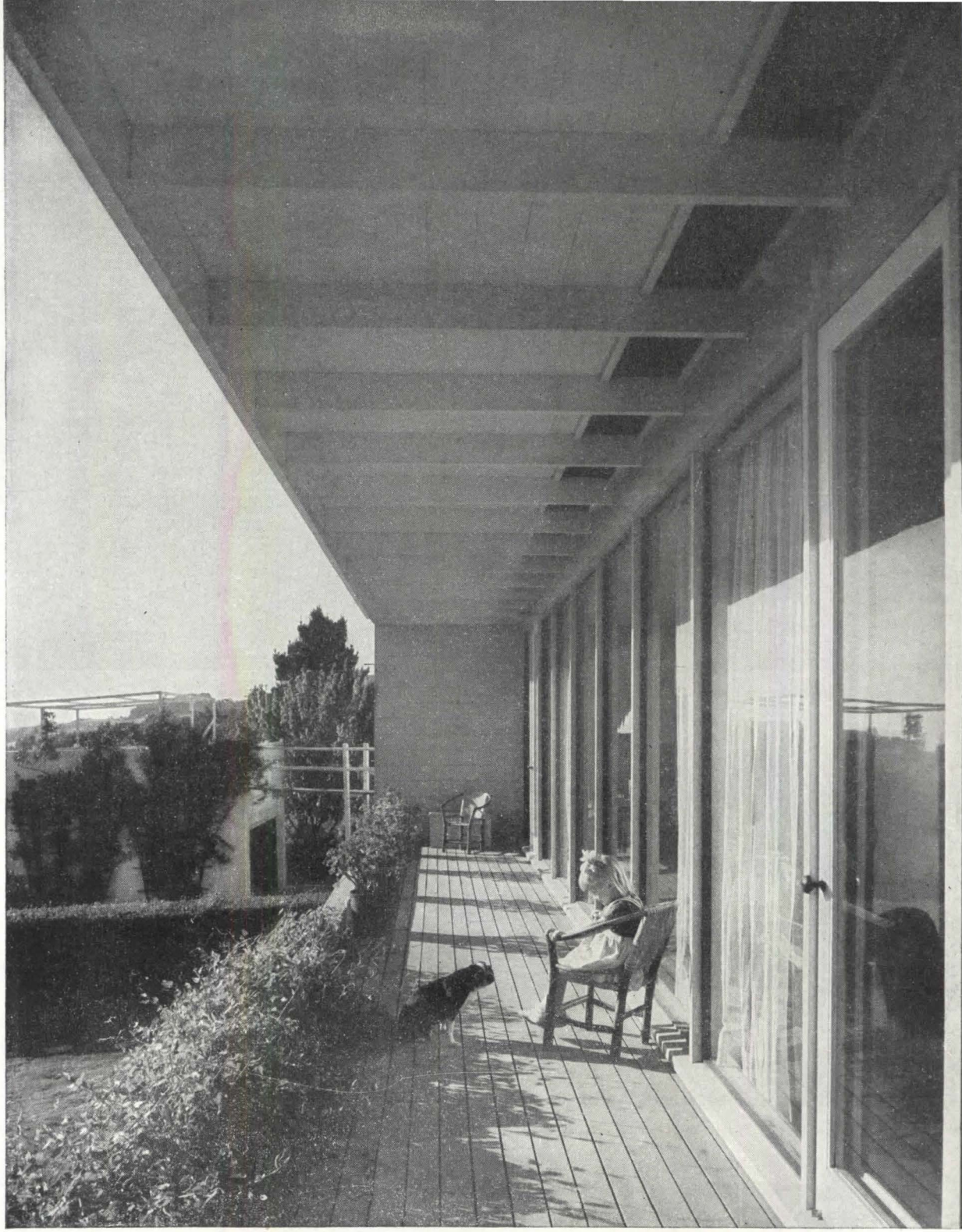


CAREFUL PLANTING gives privacy to the entrance court.

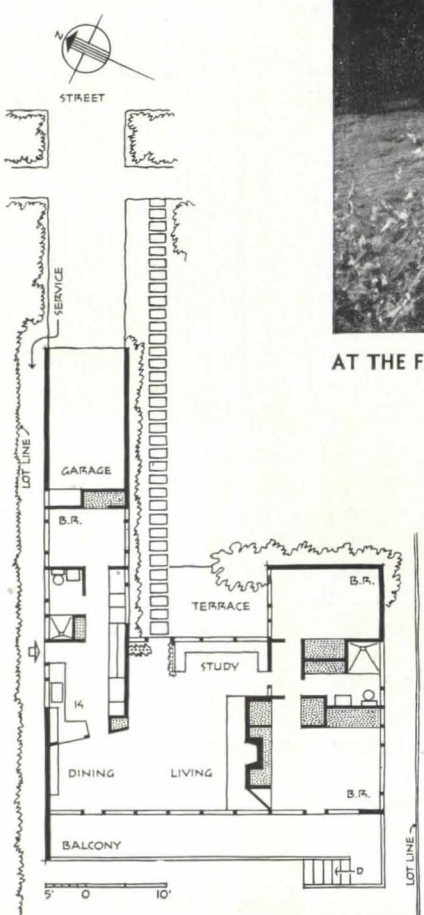
ON THE VIEW SIDE, the house is wide open; an outside door at the lower level opens into ample storage space.



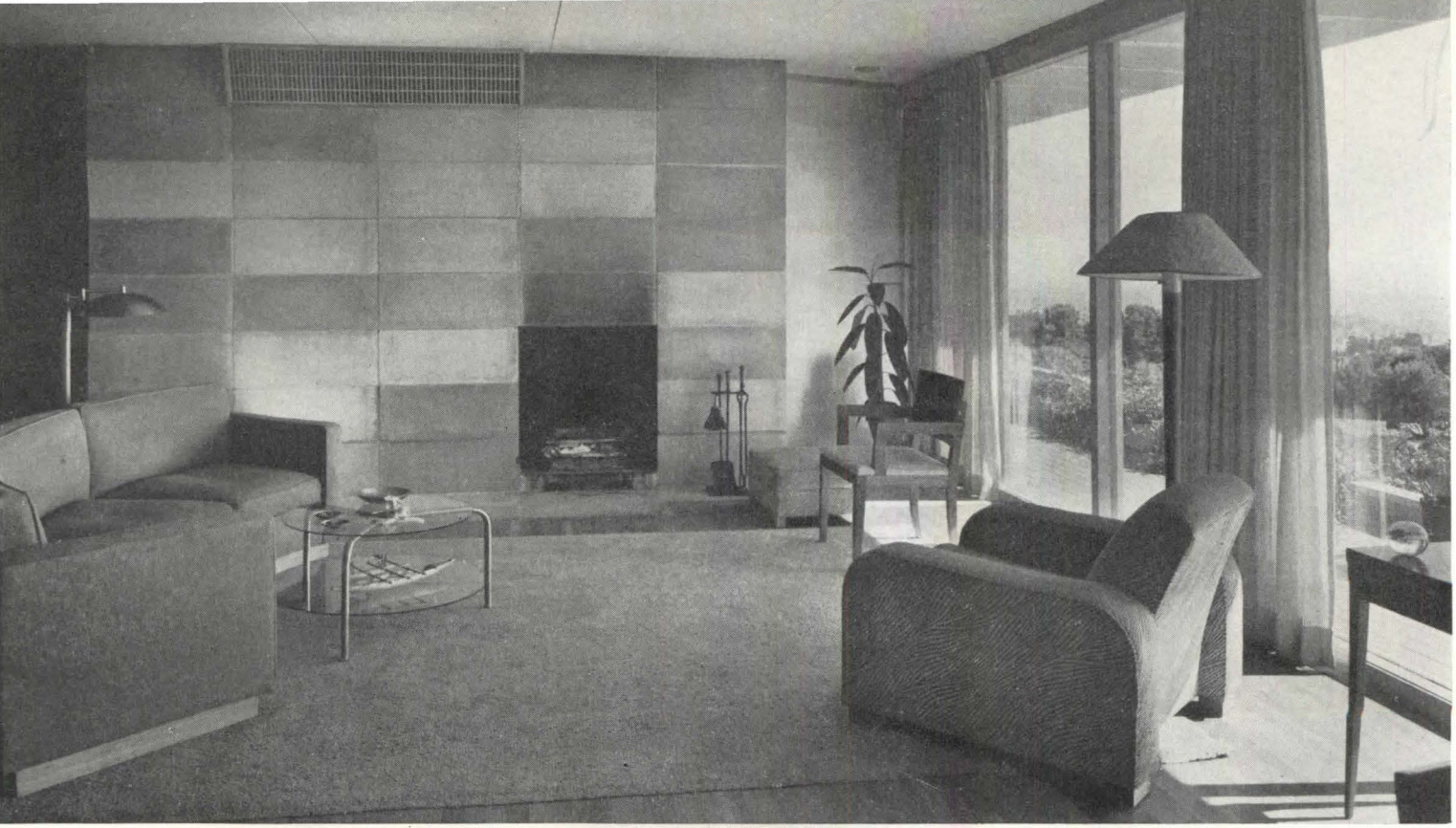
Roger Sturtevant Photos



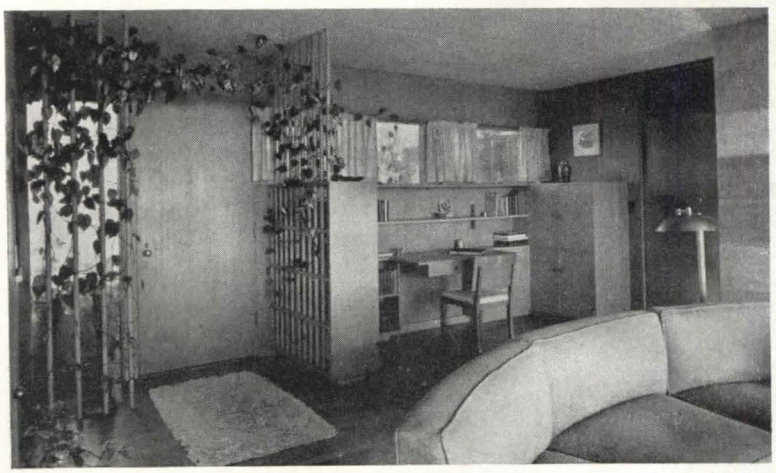
AT THE FAR END of the terrace is the screen wall providing complete privacy from the house next door.



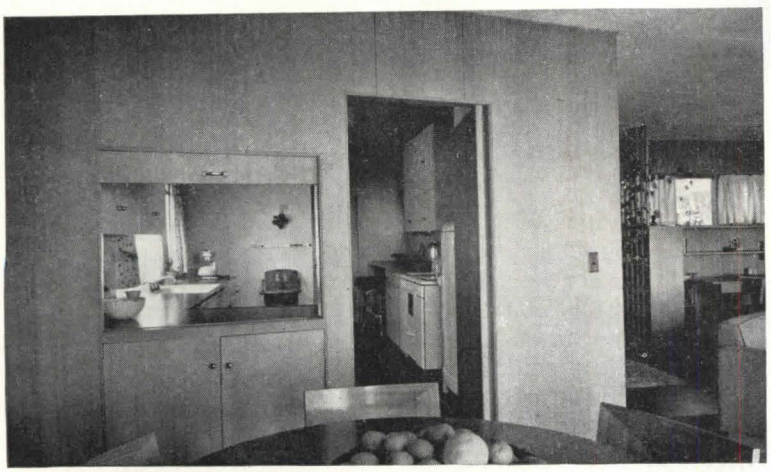
Among the plan refinements are the built-in study unit in a secluded corner of the living area; a pass window and work counter between the dining end of the room and the kitchen; a sit-up serving bar for children's quick meals on the south wall of the kitchen; and the extra room—maid's room, workroom, or guest room—between the kitchen and garage. To interrupt the view as little as possible, a low curb plus plant tubs are used at the edge of the terrace in place of a railing.



Looking toward the concrete block fireplace end of LIVING ROOM; between the masonry and the window wall is a panel of obscure glass. . .



Entrance door at left; study corner (built by the owner), right background.



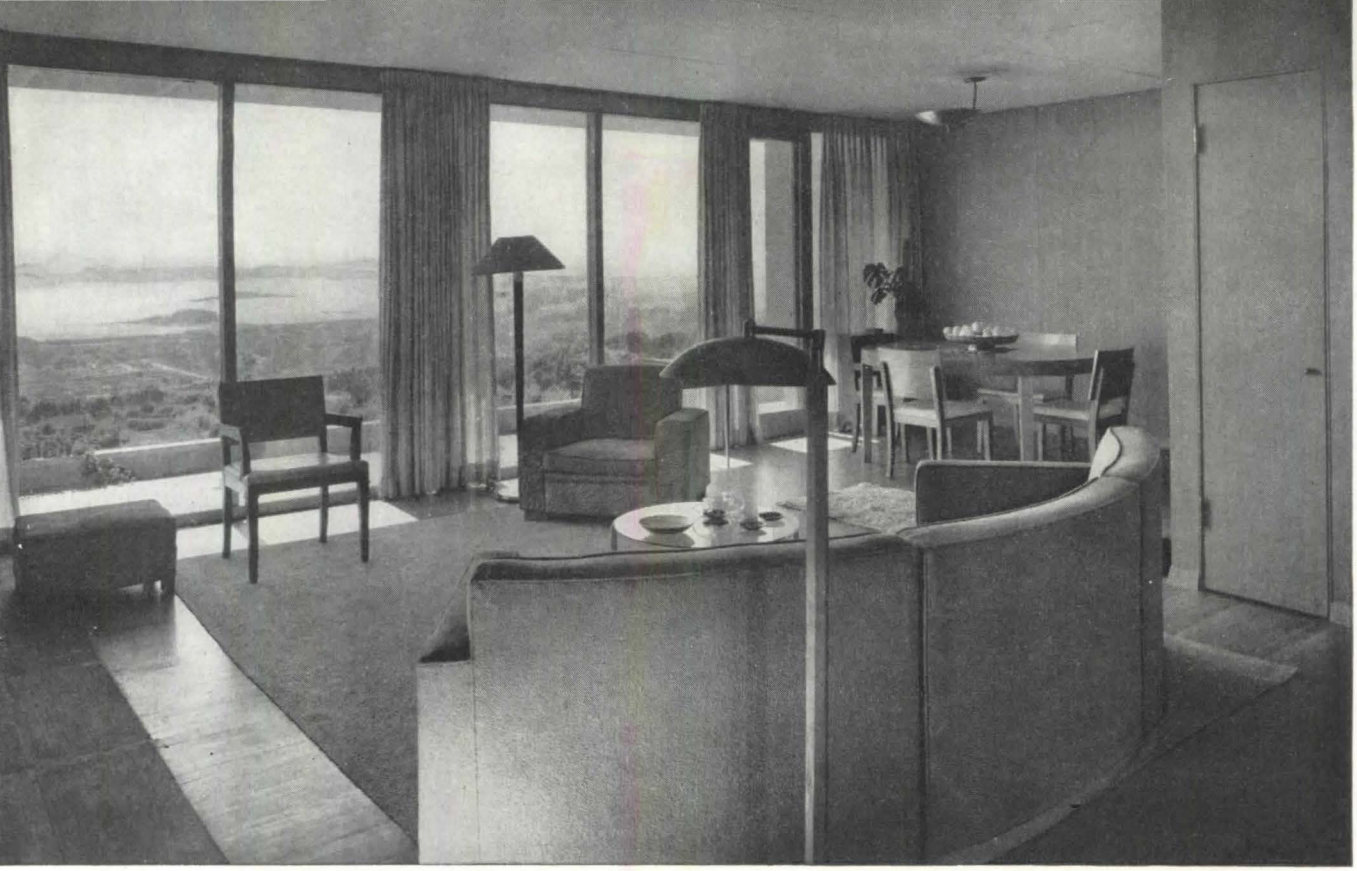
The pass window to the kitchen occurs over a pair of storage cupboards.

HOUSE, BERKELEY, CALIFORNIA

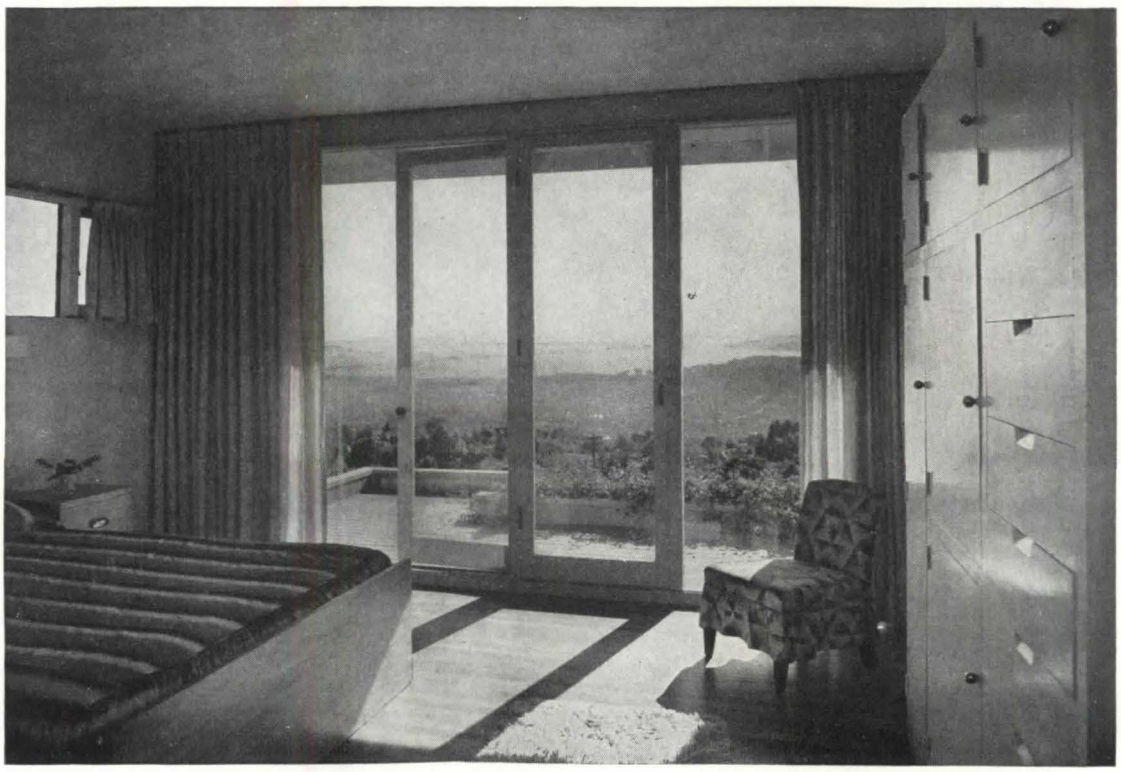
JOHN EKIN DINWIDDIE, Architect
ALBERT HENRY HILL and
PHILLIP JOSEPH, Associates

The combined living-dining room is unusually well arranged for the separation of the two main functions; yet the continuous fenestration provides a sense of a single large area. The fireplace wall is of concrete block and incorporates within it an elaborate mechanism for reception of radio broadcasts.

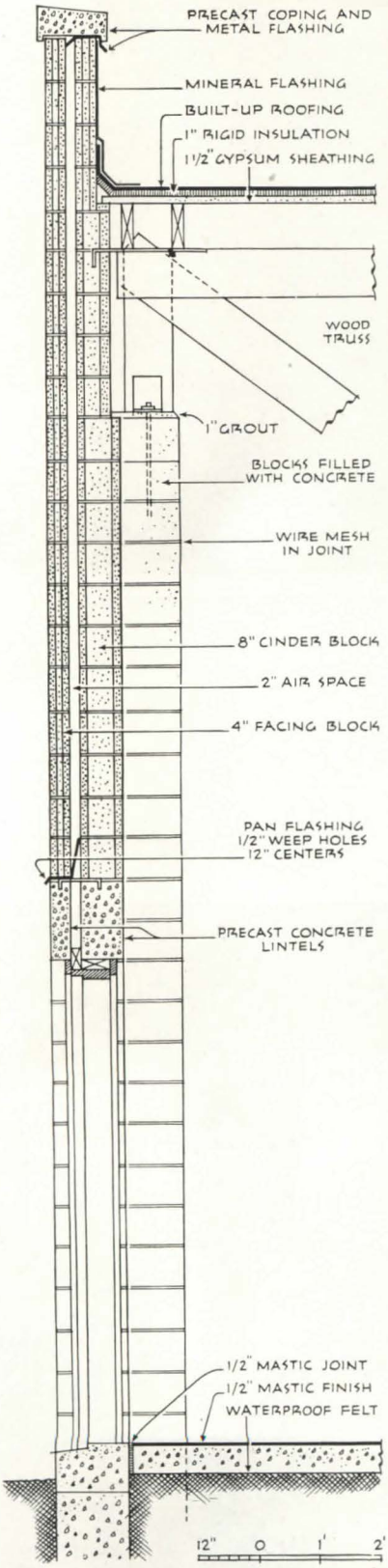
The house is of standard frame construction, with redwood exterior and plywood or painted (or papered) wallboard used for interior finishes. Floors are hardwood throughout, except in the kitchen and service area where linoleum is used. Walls are insulated with 4 inches of batt-type material. Because of the slope of the site, there is ample storage space at the lower level, reached by a door under the terrace.



Toward the dining end, the windows frame a view of the Bay; during late afternoon glare, translucent white curtains are drawn across.



THE OWNERS' BEDROOM shares the view with the main living rooms; notice the storage wall at right.



WALL SECTION: Army Post Office, Long Island City. Alfred Hopkins and Assoc., architects. Cavity continues into parapet; piers support trusses clear of wall.

CAVITY WALL CONSTRUCTION

By BEN JOHN SMALL

THE AUTHOR of this article is an associate (in charge of specifications) in the office of Alfred Hopkins & Associates, architects. This firm has used cavity wall construction for more than a decade, in many millions of dollars of peacetime and wartime structures, from small load-bearing buildings to multiple-story units. Mr. Small adds to this experience considerable study of cavity wall principles as applied by other designers in this country and abroad.

Successful History

Why do architects tolerate wet walls when cavity walls can be designed to work well? With more than forty-five years of experience in Great Britain, Nova Scotia, and Australia to study, and with successful designs in this country that have functioned for at least half that time, it is difficult to understand why the use of cavity wall construction is not more widespread.

The articulate British construction press reports that no case of moisture penetration through properly designed and constructed cavity walls has ever been brought to the attention of their British Research Station. Martin S. Briggs, F.R.I.B.A., in the December 1946 issue of *The Master Builder* said, "A cavity wall, properly built, is as near waterproof as anything can be." In this country there is similar testimony. Many favorable comments will be found in *Technical Bulletin No. 14* published by the Brick Manufacturers Association of New York, Inc. The Southern Brick Manufacturing Association advocates cavity wall construction, properly designed. Fred N. Severud, prominent structural engineer, states, "The two-fold advantage of the cavity wall is, first, that there is enough separation between the inside and outside wall so that each can follow its natural trend, and, second, that the connections in a degree are elastic."

JOHN LOVEJOY ELLIOTT HOUSES: New York City Housing Authority. William Lescaze and Archibald Manning Brown, architects. Multi-story cavity walls are proposed.

In 1944, the U. S. Army constructed the world's largest post office in Long Island City, New York. Its 14-½ acre structure is enclosed with 14" load-bearing cavity walls. The outer wythe is 4" thick, of three shades of integrally buff-colored cement-sand concrete block, and the inner wythe of 8" thick cinder concrete blocks. It is interesting to note that this mammoth structure was ready for workable occupancy within the amazingly short period of 72 days. 390,-000 concrete blocks were used. Another example may be seen at the U. S. Public Health Service 400-bed hospital at Sheepshead Bay, New York *(Pencil Points*, April 1944). An interesting 10" cavity wall on concrete frame structure will be used in the proposed 13-story Nurses' Residence and School at Bellevue Hospital, New York (same issue, *Pencil Points*).

The U. S. Government is currently constructing its first 10" cavity wall penitentiary. The flexibility of cavity wall construction is in this instance demonstrated by the architect's requirement that the inner concrete block wythe be reinforced with steel rods and poured concrete for security purposes.

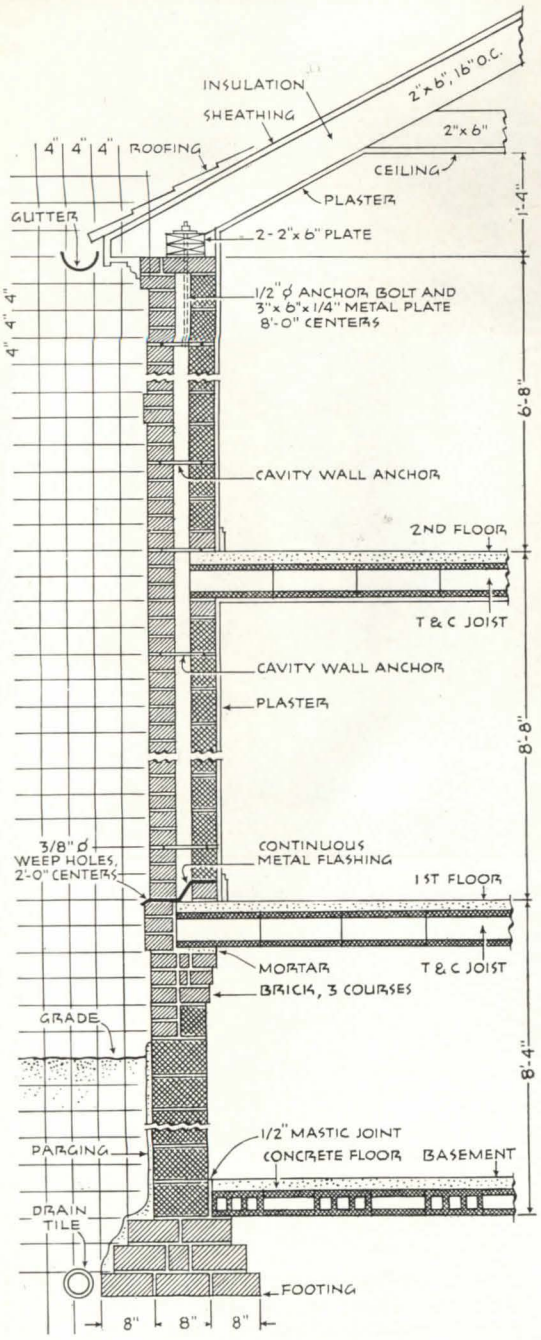
Apartment houses in both England and the United States have successfully used cavity wall construction. The largest block of apartments in Europe, located at Dolphin Square, London, England, rising 9 stories high on a reinforced concrete frame, has cavity masonry walls. In this country an excellent apartment house example is found in the 7-story, Rockliffe Apartments in Montclair, New Jersey, with a 10" cavity wall on a concrete frame.

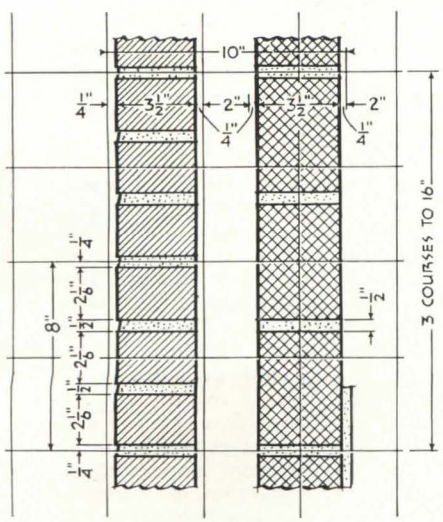
In New York City many of the largest architectural firms have cavity wall designs on their boards for an imposing variety of structures. Certainly experience with true cavity wall construction in this country has now been sufficiently broad to insure impermeable wall assembly design. The records indicate that where local penetrations of water and moisture have occurred in cavity walls they have invariably been caused by faulty design or careless construction.

In view of current uncertain building costs it would be unsafe to attempt to appraise the cost differential between cavity and solid walls with comparable bearing and heat transmission characteristics. However, a large housing project recently effected a considerable saving per apartment by accepting a cavity wall alternate bid.

Types of Assemblies

In the form of construction under discussion, all exterior walls of the structure are designed as separated double walls, an assembly sometimes referred to as "barrier" or "dual" walls. The wall then consists of an exterior shell or wythe, an interior wythe, and a continuous unencumbered vertical air space or cavity between them. The wythes are bonded together only through the medium of cavity wall anchors, which are specially designed metal ties. Anchors are provided with a twist or a V-shaped crimp, located centrally in the cavity, which functions as a drip to prevent the transmission of water or moisture from the possibly permeable exterior wythe to the interior wythe. The purpose of the cavity is to provide a moisture barrier and insulating space which can be effective only if





RESIDENTIAL CAVITY WALL DETAILS: Structural Clay Products Institute. Brick, block, and masonry joists are dimensionally coordinated.

there is no bridge of solid material at any point across the cavity. In order to permit the escape of any moisture which may permeate the exterior wythe and enter the cavity, strategically located small "weephole" apertures, spaced at regular intervals, are provided. Such weepholes serve as drains in the exterior wythe for the expulsion of water which is usually redirected by gravity flow to the exterior by means of sloped flashings.

Exterior wythes may be of any material that is suitable. They might be face brick or stucco on common brick; limestone, granite, marble, and combinations of stone and brick backup; precast concrete slabs; masonry blocks which may be stuccoed, painted, or integrally colored; or stuccoed structural clay tile. Thickness can vary in accordance with structural requirements; the wythe may be load-bearing or non-load-bearing.

The air space or cavity might be from 2″ to 6″ in width; the important thing to remember is that it should extend from above ground level up to and into the parapet wall. The 2″ width is most commonly used. Air spaces have sometimes been filled with various types of insulating and other materials, such as vermiculite, mineral wool, glass wool, bituminous preparations, waterproofed cement mortar, cellular glass, and the like. These are not true cavity walls, and the plugging of the cavity obviously jeopardizes the watertightness of the assembly.

Interior wythes may be of brick directly plastered (without dampproofing) or left exposed; plastered, painted, or integrally colored masonry blocks; plastered or painted precast concrete slabs; concrete, brick, or masonry blocks faced with insulating materials and plaster. Again the thickness will vary depending on the structural requirements.

The interior wythe may be load-bearing or not, depending on the design. A typical insulation assembly for the interior might consist of 2″ by 2″ furring strips, fastened to the masonry on 16″ centers, between which would be placed 1¾″ blanket insulation, covered with a vapor seal, plasterboard, and plaster.

Needless to say, cavity wall assemblies may and should be dimensionally coordinated. Modular masonry products now becoming available adapt themselves well to cavity wall detailing.

One advantage of the cavity wall principle is that it makes possible the use of highly permeable materials such as concrete block. Smooth, gray concrete masonry units are suitable for exterior walls as well as interior, since the surface is receptive to paint. Integrally colored, perhaps specially textured concrete blocks can be used without painting. Cinder concrete blocks are particularly suitable for walls which are to have wood or metal furring, since they receive and hold nails well. Thus the lightweight, acoustical properties and comparative cheapness of such a material become available with no danger of wet walls.

One thing that may be restraining wider use of the cavity wall is a feeling that design possibilities are limited by it. Actually, great flexibility in use is possible. Either the exterior or interior wythe may be load-bearing. In the case of multistory structures the cavity wall may be a self-supporting curtain wall used with a skeleton frame. Always the principle is the same: a double wall with an unobstructed air space.

The Anchor

The exterior and interior wythes must be bonded together in order to develop lateral strength and to exert concerted action under loads. Bonding is best achieved by means of metal cavity wall anchors. (The British call them "cavity irons.") There are available an innumerable variety of anchors. In selecting the appropriate type, one need be concerned with three criteria: Is the metal noncorroding? Does it meet the strength requirements? Is transmission of water between the wythes prevented?

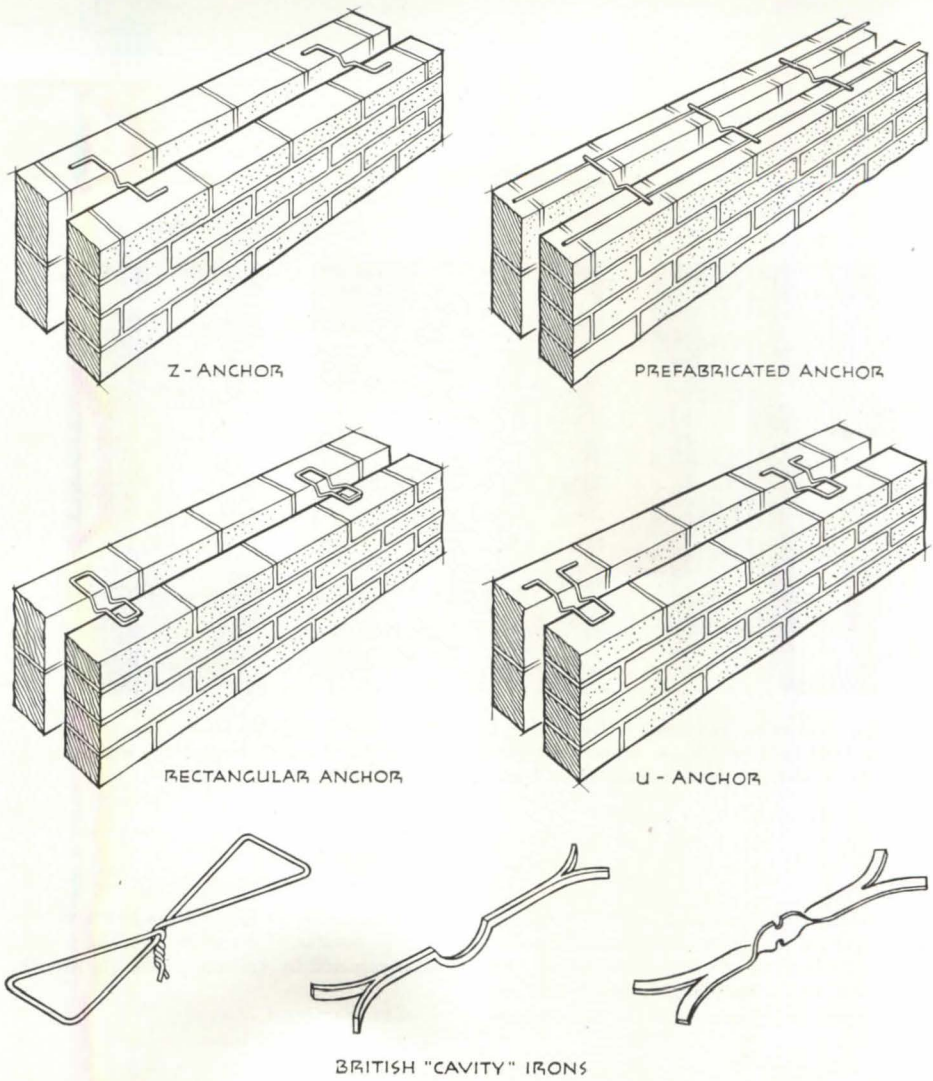
In answer to the first question, satisfactory anchors are made of solid copper, commercial bronze, silicon bronze, monel metal, and steel which has been asphaltum painted, galvanized, or hot-dip galvanized after fabrication. A bimetallic anchor is available consisting of a cold-drawn, high-tensile-strength alloy steel core over which copper is welded. Anchors cement-coated with Portland cement grout can also be obtained, but the slight danger of moisture transmission by capillarity may mitigate against their use. Galvanized anchors in thirty- to forty-year-old installations which were exposed by bomb damage in Great Britain showed little or no deterioration. However, since some nonferrous anchors are only slightly higher in cost than the other types, their use would seem to be preferable.

The determination of strength requirements is an engineering problem, and any unusual situation should be carefully checked. The most popular anchor, satisfactory for most purposes, is the commercial bronze, ¼″ diameter, drip-type Z-rod, 8″ in length with 2″ legs. There are Z-shaped, U-shaped, and rectangular anchors, and the so-called prefabricated anchor which is a grid consisting of No. 10 wires, 6″ apart, laid upon and paralleling each wythe, to which is welded No. 8 wires, 8″ long, spaced 12″ apart. In the not too distant future we shall probably see a new type of anchor precast within a masonry block which simultaneously forms the inner and outer wythe unit.

The third question—passage of moisture—is an important one. Early anchor types served as moisture bridges; some did not contain drips; others served as

perfect shelves for mortar accumulations. Subsequent designs overcame these disadvantages, particularly the Z-rod which, in addition to its drip feature, offers a minimum horizontal area for the depositing of mortar droppings. Regardless of the type used, specifications should include a prohibition against placement of anchors which pitch toward the inner wythe.

With reference to the spacing of anchors, recommendations vary considerably. As an illustration, the New York City Administrative Building Code requires "one to every four square feet." Great Britain's Building Research Station recommends the spacing to be 3′-0″ horizontally and 1′-6″ vertically. The Structural Clay Products Institute recommends generally one anchor every three square feet of wall surface or where the cavity does not exceed 3″ in width, not over 3′-0″ horizontally nor over 1′-4″ vertically, and in addition recommends placement of additional anchors within 8″ of all openings, bottom of beams, joists, or slabs resting on the wall. Regardless of spacing, it is well to stagger all anchors excepting around openings.



VARIOUS TYPES OF CAVITY WALL ANCHORS now available.

The Weephole

On the assumption that water may permeate and run down the back of the exterior wythe, or that condensation may form in the air space, weepholes which function as drains should be provided at flashing levels and at all other horizontal interruptions of the cavity space. For example, at continuous shelf angles, isolated lintels, tops of foundations above grade, and the like, any water within the wall should be redirected to the exterior. If mortar joints are impermeable, it is relatively unlikely that weepholes will show activity; so much the better. Since the labor factor in weephole forming is of small consequence, their use is more than warranted. In brickwork, weepholes are spaced arbitrarily 24″ to 48″ apart horizontally. In concrete block masonry, the practice has been to locate weepholes every 2 or 3 units apart and every unit apart at lintels.

Weepholes may be formed in concrete block masonry in several ways, usually by inserting pencil rods, sash cord, wood lath, or pipe in the mortar joint, to be extracted when the mortar has set. Pencil rods and pipe, because of their ferrous nature, may stain masonry. Wood lath usually swells and becomes difficult to remove. Hence the use of sash cord seems to present more advantages than the others. By permitting the cord to extend generously into the cavity and project beyond the exterior face of the outer wythe for easy removal, one is assured of a clear weephole despite overlooked mortar droppings. Formation of weepholes in brickwork is effected simply by the omission of mortar from the affected vertical joint.

Keeping the Cavity Clean

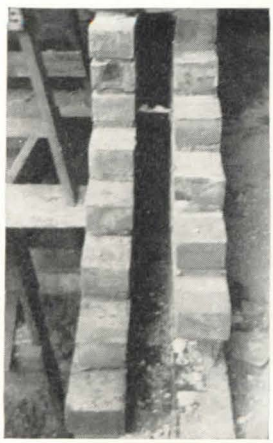
The technique of keeping the cavity and tops of anchors clean during the course of wall construction is quite a simple one. It involves nothing more than the use of a strip of wood, 1″ thick by 2″ wide by several feet long, to which heavy string or wire is attached at the ends. The strip is laid upon the anchors in a manner permitting its 2″ width to bridge the cavity. Before placement of a course of anchors, the strip is raised by means of the attached strings or wires, cleaned of its droppings, and then deposited on the new set of anchors.

To make doubly certain that the cavity is not bridged by mortar accumulations, it should be cleaned at flashing levels or lowest points by means of a field-improvised long-handled rake provided with a 2″-wide steel or wood head. To facilitate such cleaning, the rake is inserted through temporary openings which should preferably be located at corners where walls change in direction.

Inspection of cavities for cleanliness may be made through the same temporary openings or other similar openings left at frequent intervals for this purpose. Masons learn quickly how to lay up the wythes without dropping mortar in the cavity, thereby making the process of cleaning unnecessary. One cannot overemphasize the fact that the effectiveness of the cavity, insofar as impermeability is concerned, varies in direct relation to its cleanliness. Specifications should include a statement somewhat as follows: "The Contractor's attention is particularly called to the fundamental principle of cavity wall construction which depends on a cavity which is perfectly clean and clear except for anchors. Mortar droppings caused by careless workmanship may form a bridge across which water is transmitted to the inner wythe. This must be carefully avoided."

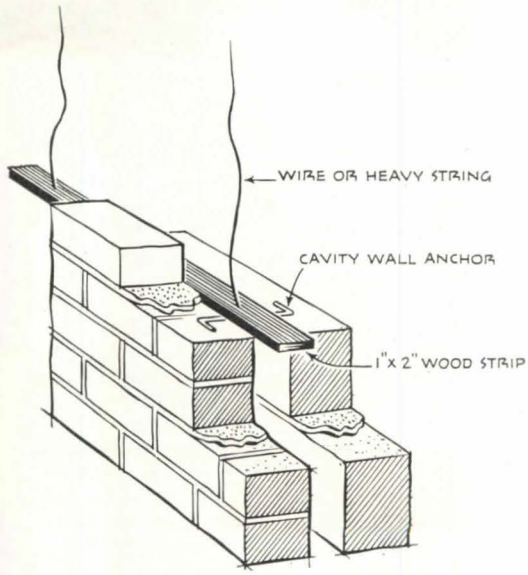
The Mortar

High strength, good plasticity, water retention, and bonding properties are basic mortar requirements for cavity



Brick Mfrs. Assn. of N. Y.

Photo at left shows dangerous mortar droppings in cavity wall improperly protected. Center Photo shows sash cord being removed from weephole. *At right,* weephole formed by omitting mortar in vertical joint. Photos from Brick Mfrs'. Association.



Mortar drippings in cavity can cause leakage through wall. A board pulled up to rest on wall anchors is a simple precaution.

walls. Mortar should have a compressive strength of at least 2500 psi for sufficient resistance to wind pressure. To improve the impermeability of the exterior wythe, concave joints are recommended.

For locations subjected to wind velocities in excess of 80 mph, mortar should be composed by volume of the following:

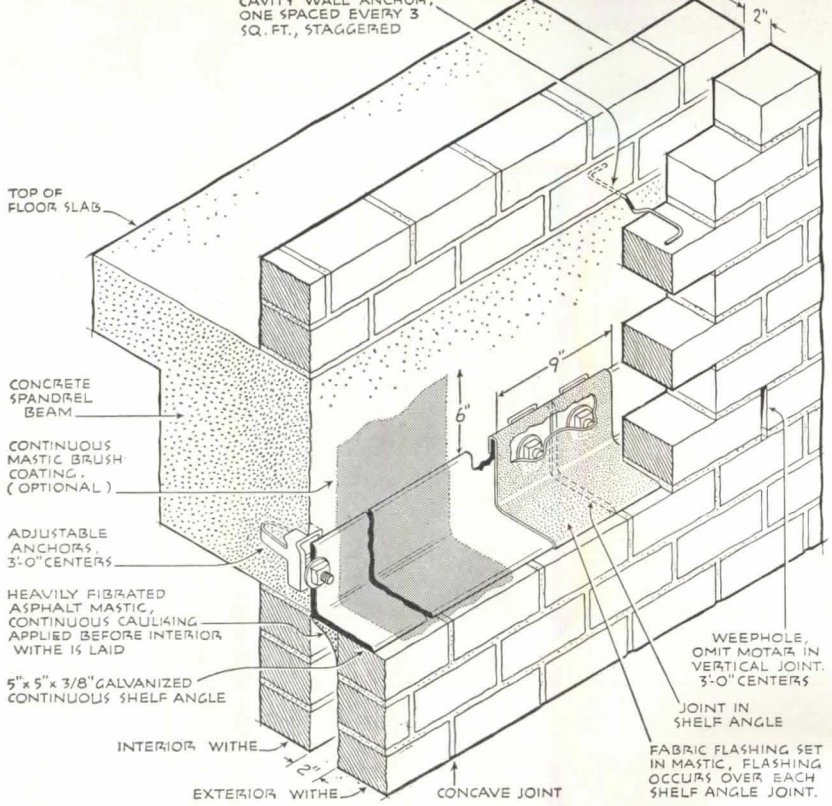
1 part Portland cement
¼ part hydrated lime
not less than 3 or more than 3-½ parts sand

For locations subjected to wind velocities less than 80 mph, the composition, by volume, should be:

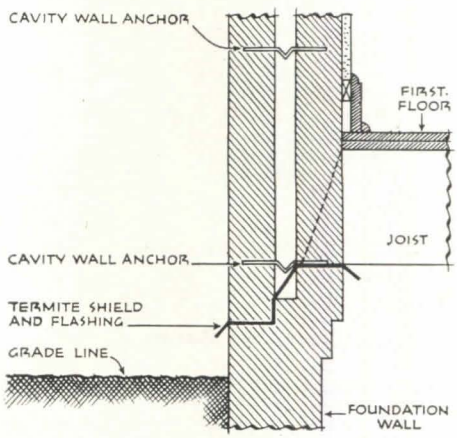
Construction Symbol	Weight	Load									
		Compressive[a]		Tranverse[b]		Concentrated		Impact[1]		Racking	
		Designation	Maximum load	Designation	Maximum load	Designation	Maximum load	Designation	Maximum height of drop	Designation	Maximum load
	lb/ft² face area		kips/ft		lb/ft²		lb		ft		kips/ft
Solid Brick Wall AB from BMS Report No. 5	73.9	*C1*	63.2	*T1*	53.3	*P1*	[c]1,000	*I1*	3.0	*R1*	[c]6.25
		C2	52.5	*T2*	38.0	*P2*	[c]1,000	*I2*	3.0	*R2*	[c]6.25
		C3	65.8	*T3*	53.2	*P3*	[c]1,000	*I3*	2.5	*R3*	[c]6.25
Average			60.5		47.9		[c]1,000		2.8		[c]6.25
			[a]*Kips/ft*		*lb/ft²*		*lb*				
Hudson River Brick Cavity Wall BD from BMS Report No. 23		Upper end, 3.12 in. from the inside face *C1*	62.6	*T1*	22.0	*P1*	[c]1,000	*I1*	3.0	*R1*	4.95
		Upper end, 3.12 in. from the inside face *C2*	61.7	*T2*	30.0	*P2*	646	*I2*	3.5	*R2*	6.03
		Upper end, 3.12 in. from the inside face *C3*	61.9	*T3*	24.0	*P3*	[c]1,000	*I3*	2.0	*R3*	6.00
		Average	62.1		25.3				2.8		5.66
		Upper end on backing only, centered on backing *C1a*	50.9								
		Upper end on backing only, centered on backing *C2a*	48.3								
		Upper end on backing only, centered on backing *C3a*	52.5								
		Average	50.6								

Footnotes
[1] Span 7′–6″.
[c] Specimen did not fail.
[a] A kip is 1000 lbs.

TABLE I. Strength Test data. Bureau of Standards Tests Sponsored by Brick Mfrs.' Association.



COMBINED FLASHING AND STRUCTURAL SUPPORT, for use in multi-story cavity wall construction. Alfred Hopkins and Assoc., architects.



FLASHING AT DAMP COURSE serves also as termite shield in this detail.

1 part Portland cement
1 part hydrated lime
not less than 5 nor more than 6-½ parts sand

Mineral coloring pigment should be considered for mortar used for setting integrally colored masonry block. Masons should be instructed not to cut off excess mortar in a manner which will pull it from contiguous surfaces.

The Flashing

As has been said, in cavity wall construction it is of prime importance to prevent water and moisture from reaching the outer surface of the inner wythe. As in solid wall construction, the heads of windows, doors, ventilating ducts, and all other wall penetrations must be flashed. An infinite variety of methods and materials are used for this purpose.

Flashing should be capable of flexible forming without damage to the material used. In addition, where flashings span the cavity, strength of material is an important consideration. Metallic flashings such as monel metal, solid copper, and light gage copper or lead in combination with other impervious flexible materials serve well, as do flashings of the steel reinforced fabric type.

Where continuous shelf angles are used, galvanized angles bolted to the spandrel face eliminate the necessity of any flashing material whatsoever, excepting for short lengths over the space where such angles abut each other. If an additional measure of protection is desired, galvanized angles may be given one good brush coat of mastic.

By designing so that the face of spandrel beams and columns are flush with the outer plane of the interior wythe, the need for spandrel and similar flashings is eliminated completely. This not only effects a saving in labor and materials, but maintains consistently a clear cavity at the perimeter of the structure.

To prevent the capillary rise of water into the wall from the soil adjacent to foundations, horizontal flashings, known as damp courses, should be installed a short distance above the grade line. These flashings, if metallic, could project beyond interior and exterior wall faces and easily serve as termite shields if their projections are turned down at a 45-degree angle.

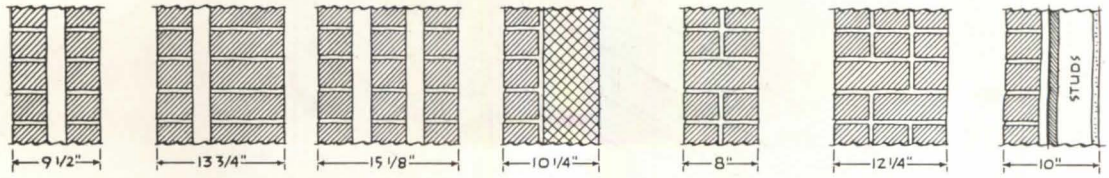
Structural Properties

Comparative compressive strength of cavity and solid masonry walls has been adequately tested, always to the advantage of the cavity system. Table I shows in tabular form a test made under the auspices of the Building Materials and Structures' research project at the National Bureau of Standards. Tests on Hudson River brick cavity walls were published as *BMS No. 23;* tests on solid brick walls as *B.M.S. No. 5.* Brick, mortar, and workmanship were comparable. The bricks averaged 3200 and 2700 lbs per sq in. in compression for the cavity and solid walls respectively, and the 1-1-6 mortar approximately 600 and 750 lbs per sq in. dry and wet cured.

Commenting on these results, the Brick Manufacturers Association, in its *Technical Bulletin No. 14,* states: "The New York City Building Code limits the allowable stresses on such cement lime masonry to 250 lbs per sq in. on solid sections. When the load is applied on the backing only, the 250 lb limitation would apply and this is approximately 12,000 lbs per lineal foot as compared to the 50,600 lbs per lineal foot shown in the test. In actual construction such loading would seldom exceed 4000 lbs. The 125 lb per sq in. limitation would apply if the load were placed on both front and back of wall and the gross area considered. This works out about the same, since the area is more than twice as great but the allowable load per square inch is reduced by one half."

Insulating Properties

If one were to consider heat insulation only, the most useful cavity width would be approximately ¾" to 1". In attempting to achieve such a width the risk of a clogged cavity with its resultant difficulties would be far too great. Where insulation is a critical factor, the interior surface of the inner wythe may be suitably insulated as previously described. It may be well to point out that 10" cavity wall, without applied insulat-



Inside Finish	*10" Cavity*	*14" Cavity*	*Double Cavity*	*10" Brick & Tile*	*8" Brick*	*12" Brick*	*Brick Veneer*
None	.300	.244	.200	.317	.420	.314	
½" Plaster	.290	.236	.194	.303	.395	.300	
Furring, Metal Lath. ¾" Plaster	.225	.191	.163	.233 .250*	.284	.231	.257**
½" Plaster on ⅜" Plaster Bd. Furred	.216	.184	.158	.223	.269	.222	.168***
Wgt. no int. finish	64.0#	100.0#	95.4#		68.5#	105.0#	
Material Quantities Are as Follows:							
Brick	.1232	.1848	.1848		.1232	.1848	
Cu. Ft. Mortar	14.2	25.8	21.6		18.6	27.8	

*Fig. given in A.S.H.V.E. "Guide"
**1" fir sheathing, building paper, metal lath and plaster
***1" rigid insulating board sheathing, ⅜" plaster board, ½" plaster

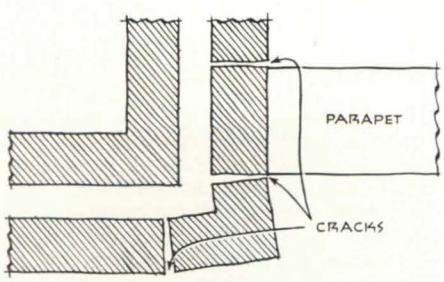
REMARKS: Formula Used:- U = 1/R

Resistance = R, ASHVE "GUIDE" 1940		¾" plaster metal lath	0.23
6" hollow tile	1.57	⅜" plaster board	0.27
4" low density brick	0.80	2" air space	0.91
8" low density brick	1.60	fi 1/1.65	0.61
½" plaster	0.15	fo 1/6.00	0.17

TABLE II. Heat Transmission coefficient "U", for various types of cavity and solid masonry walls.

ing materials, is as good an insulator as 12" solid brick or brick veneer over frame. Normally, the extra cost of furring, lathing, and insulating is not justifiable unless temperature variations are of an extreme nature and fuel costs are high.

Heat transmission coefficients of cavity walls and several standard wall assemblies are indicated in Table II.



CRACKS CAUSED BY THERMAL EXPANSION can be prevented by correct placing of reinforcing rods.

Variants of the cavity wall, called "breathing walls" or some similar name, have been studied here and in Great Britain. The theory is that ventilation at top and bottom of the wall permits free air circulation, equalizes air pressure, and therefore prevents condensation. With this type of construction, however, a great deal of the insulation value of the cavity is lost. Reporting on experiments along this line, the British magazine, *Architectural Design*, in its June 1947 issue says: ". . . if the ventilation is efficiently done . . . the air circulation set up in the cavity is such as to reduce the 'U' value. On balance it is considered desirable to make the cavity as nearly air-tight as ordinary building conditions permit."

Pitfalls

The design and construction of a cavity wall is not something to be entered into lightly. There are pitfalls, not all of which can be covered in an article of this length. For example, adequate provision should be made for thermal expansion of restrained walls in order to prevent fracture of adjacent walls. The introduction of reinforcing rods will do much to prevent cracks caused by thermal changes. Such rods should be installed in the horizontal face joints, keeping ½" from the face to the surface of the rod which must be completely encased in mortar.

The obvious causes of possible local failure have been emphasized. From the viewpoint of preventing water transmission, the problem of keeping the cavity clean and clear probably ranks highest in importance. A clogged cavity obviously negates the function of the air space as an effective water barrier. An ounce of prevention, in the form of a few simple instructions to the mason coupled with adequate inspection, will do much to insure trouble-free dry walls. Study of flashing details and the avoidance of spandrel and column projections into the cavity are items worthy of thoughtful analysis.

Actually, these precautions come down largely to a matter of good, careful construction, together with a full understanding of the principles, the advantages, and the possible dangers in this very useful method of designing and building with masonry.

MANUFACTURERS' LITERATURE

PROGRESSIVE ARCHITECTURE—330 West 42nd Street, New York 18, N. Y.
I should like a copy of each piece of Manufacturers' Literature listed

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

No.	No.	No.	No.
No.	No.	No.	No.
No.	No.	No.	No.
No.	No.	No.	No.

PLEASE PRINT

NAME

POSITION

FIRM

MAILING ADDRESS ☐ HOME ☐ BUSINESS

CITY STATE

8/47

★ *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

1-118. *Emerson-Electric Fans for 1947 (Unit X5749)*, Emerson-Electric Mfg. Co. Reviewed July.

★ **1-123.** *Thermolier, Catalog 6-E*, 31-p. illus. catalog outlining characteristics of unit heating. Construction and operating data for Thermoliers; capacities, dimensions, and weights. Automatic controls, suspension methods, wiring diagrams, and piping connections Grinnell Co., Inc.

1-119. *Night Cooling of Industrial Buildings (Form 1404W)*, Ilg Electric Ventilating Co. Reviewed July.

1-120. *Enjoy Better Living With Radiant Sunny Warmth*, Institute of Boiler and Radiator Mfrs. Reviewed July.

★ **1-124.** *The National Fitters Guide, (Form 488)*, (4x8¾) folder on a simple and accurate method of figuring radiation, and selecting boilers for steam and hot water heating. Heat Loss Calculation sheet, Btu Heat Loss Table, examples of calculating typical problems. The National Radiator Co.

1-121. *How To Live In June All Winter (Bul. S-380-A)*, 8-p. illus. booklet on convector-radiators that can be used with any steam or hot water heat system. Advantages, construction, and installation features. The Trane Co.

1-122. *Tri-Flex Grilles and Registers (Bul. 47TF), AIA 30-J*, Tuttle & Bailey, Inc. Reviewed July.

1-125. *USAIRCO Water Coils (Bul. 67), AIA 30-E*, 11-p. illus. booklet on coils for cooling and heating with water. Technical data on selection; physical data; tables for determining mean temperature differences and air friction. U. S. Air Conditioning Corp.

Doors and Windows

4-98. *Storm Panels and Screens (Bul. 2005)*, 14-p. illus. booklet on an all-weather, all-aluminum combination storm panel and screen. Has a self-storing feature eliminating necessity of removing and storing each season. Ceco Steel Products Corp.

★ **4-99.** *Clark Over Head Doors*, 4-p. illus. folder on steel-reinforced over head doors featuring unusually thin metal muntins. and no exposed hardware. Types available. Clark Door Co., Inc.

4-95. *Aluminum Windows of Alcoa Aluminum*, Cupples Products Corp. Reviewed July.

4-96. *Something New in Windows*, Hines-Frederick Corp., Inc. Reviewed July.

4-97. *Hollow Metal Doors, Frames and Trims*, 4-p. illus. pamphlet on typical door and elevator details, and typical frame details. Specifications for hollow metal work. Trussbilt, Div. of Siems Bros., Inc.

★ **4-100.** *Venetian Screen*, 4-p. illus. (4x9) folder on a window screening stamped from solid, continuous sheet metal; has 18 tiny metal slots per inch reflecting sun's glare, keeps insects out, and provides good ventilation and visibility. Sample on back of folder. Warp Bros.

Electrical Equipment and Lighting

5-85. *Now for Smaller Homes*, 4-p. illus. booklet on a new MO-4 four-pole thermal-magnetic trip multi-breaker for small houses, stores, farms, apartments, etc. Construction and operating details. Cutler-Hammer, Inc.

5-86. *Surface-Attached Holoflux*, 4-p. illus. pamphlet on a lighting unit equipped with curved Controlens which reduces glare; may be installed as single fixture or in continuous rows. Holophane Co., Inc.

5-80. *Leader Modern Lighting*, Leader Electric Mfg. Corp. Reviewed July.

5-81. *A Miracle of Light (Form 107)*, Lustra Corp. of America. Reviewed July.

5-87. *Are You Going to Build, Modernize, or Repair? (Form 2522)*, 22-p. illus. (5x7½) booklet on wiring plans and outlets needed in a house. Explains number needed for each room. Checklist of needs. Pass & Seymour, Inc.

5-82. *A Reference Manual on Electric Home Appliances, Reference Handbook No. 1, 1946 Edition*, Westinghouse Electric Corp. Reviewed July.

Two booklets from Westinghouse Electric Corp. Reviewed July:

5-83. *Farmstead Wiring (B-3874)*, (25 cents per copy—make check or money order payable to Westinghouse Electric Corp.).

5-84. *Putting Electricity to Work On Your Farm (B-3524).*

★ **5-88.** *Modern Electric Household Refrigeration and Home Freezing, Reference Handbook No. 3*, 29-p. illus. reference manual on reasons for refrigeration and home freezing, how they are used, operated, and maintained. Points on space for storing frozen foods, essential points of construction, and systems employed. Definitions of refrigerator terms. Westinghouse Electric Corp.

Finishers and Protectors

★ **6-99.** *Magnesium Anodes for Cathodic Protection (Form DM-CP1)*, 13-p. illus. booklet on the use of magnesium in the form of expendable anodes to stop corrosion of underground and underwater structures. How applied, where, how many, and what kind of magnesium anode should be used. The Dow Chemical Co., Magnesium Div.

6-100. *Suggestions From An Interior Decorator (F-85)*, 23-p. illus. consumer (11¼x8½) booklet giving color schemes and decorator tricks for painting the interior of a house. National Chemical & Mfg. Co.

6-101. *Protexol Fireproofing, AIA 19: A:33 (Circular 108)*, 21-p. illus. pamphlet on Protexol Fireproofing engineered for wood construction. Advantages; suggestions for selecting proper treatment and specifications. Protexol Corp.

6-97. *Prufcoat Protective Coatings*, Prufcoat Laboratories, Inc. Reviewed July.

6-98. *Tamms Agraseal*, Tamms Silica Co. Reviewed July.

Insulation (Thermal, Acoustic)

9-67. *Acoustical Units and Plaster*, American Acoustics, Inc. Reviewed July.

9-69. *Ferro-Therm Steel Insulation*, 14-p. illus. (4¼x10) booklet on use of steel reflective insulation as a barrier for resisting the penetration of radiant heat. Stapled in place it is also fire-, insect-, and termite-resistant. Installation details. data, and specifications. American Flange & Mfg. Co., Inc.

9-70. *Styrofoam (Form PL-51)*, 16-p. illus. booklet giving technical data on the properties of Styrofoam (foamed plastic) as a low-temperature insulation material. Applications, characteristics. physical and thermal properties. The Dow Chemical Co.

9-68. *Building Insulation (A-129),* The Eagle-Picher Co., Insulation Div. Reviewed July.

9-71. *P. C. Foamglas Insulation for Roofs (G423),* 11-p. illus. booklet on Foamglas insulation for use on flat-deck roofs. Application; charts for computing heat transmission; installation procedure and specifications. Pittsburgh Corning Corp.

Load-Bearing Structures

12-121. *Arketex for Modern Homes,* 4-p. illus. folder on ceramic glazed structural tile for both interior and exterior walls. Suggested applications, sizes, colors, and finishes. Arketex Ceramic Corp.

12-116. *Facts You Should Know About Prefabricated Houses,* Better Business Bureau, Educational Div. Reviewed July.

★ **12-122.** *Build the Thermos Wall Way,* 6-p. illus. pamphlet on construction of hollow concrete walls by means of portable forms of aluminum alloy. Construction data, procedure, and details. Prices. Concrete Thermos Wall Co. of America.

12-123. *Fletcher Granite, AIA 8-B-3,* 4-p. illus. folder on granite available for houses, terraces, walks, curbing, and streets. Use, grade, stock, color, finish, and size of types available. Specifications. H. E. Fletcher Co.

Two booklets from Irvington Form & Tank Corp. Reviewed July:
12-117. *Atlas Labor Saving Speed Floor Forms.*
12-118. *Atlas Labor Saving Speed Forms for Walls and Slabs.*

12-124. *Modern Developments in Reinforced Concrete, No. 18,* 19-p. illus. booklet on design of reinforced concrete beams; loading tables and tables of integrals by which coefficients were computed. Portland Cement Assn.

12-119. *Rigidized Metals (Bul. 447),* Rigid-Tex Corp. Reviewed July.

12-120. *Rilco Glued Laminated Wood Arches, AIA 19-B-3,* Rilco Laminated Products, Inc. Reviewed July.

12-125. *Rilco Laminated Wood Rafters and Arches for Every Type of Farm Building (Cat. G),* 15-p. illus. booklet on laminated wood rafters and arches for barns and smaller farm buildings. Details of barn framing, corn cribs, and granaries; also procedure of raising rafters, and types needed for various buildings. Rilco Laminated Products, Inc.

Materials of Installation

13-56. *Casco Gluing Chart,* describing the required properties of glues for various jobs and listing glues recommended for each job. Casein Co. of America, Div. of The Borden Co.

13-55. *Spartan Adhesives,* Sparta Ceramic Co. Reviewed July.

13-57. *Tremglaze Mastic Glazing Compound, AIA 26-B-2,* 12-p. illus. booklet on the use of Tremglaze vs. putty. Installation data, advantages, colors available. Specifications. The Tremco Mfg. Co.

Non-Load-Bearing Structures

14-34. *Insulux Glass Block, AIA 10-F, 1947 Catalog,* Owens-Illinois Glass Co., Insulux Products Div. Reviewed July.

14-38. *Ideas for Brighter Homes With Insulux Glass Blocks (1B67),* 15-p. illus. booklet on design and use of glass block as a masonry wall that transmits light. Construction details, applications in various rooms, typical installation details. Characteristics, design, and sizes of glass block available. Owens-Illinois Glass Co., Insulux Products Div.

14-35. *Glass Blocks (G-41171),* Pittsburgh Corning Corp. Reviewed July.

14-39. *Carrara, The Modern Structural Glass of Infinite Possibilities (G-6554),* 20-p. illus. booklet on Carrara for houses, including bathtub wainscot and kitchen panels. Also panels for store fronts, corridors, walls; in labs, hospitals, department stores, etc. Recommendations and specifications. Pittsburgh Plate Glass Co.

14-36. *Rambusch Block de Cor,* Rambusch Craftsmen. Reviewed July.

14-37. *Q-Panels, AIA 13-1 (Q-22),* H. H. Robertson Co. Reviewed July.

Sanitary Equipment, Water Supply & Drainage

19-143. *Waste King,* 6-p. illus. folder (3½x7) on incinerators for residences in both wall and floor styles. Advantages, operating data. Incinerator Products Co.

Two booklets, one on an automatic electric storage water heater with thermostat control, available in floor and table models; the other on a water softener in sizes ranging from residential and farm units to industrial installations. Booklets include construction operation, specifications, and roughing-in dimensions. Rheem Mfg. Co., Appliance Div.
19-144. *Automatic Electric Storage Water Heater, Series 60, AIA 29-D-2.*
19-145. *Water Softener, Series 2700, AIA 29-D-32.*

19-132. *Prefabricated Insulated Pipe Units (Form 4626),* The Ric-Wil Co. Reviewed July.

19-133. *Toilet Compartments and Toilet Room Environments (Cat. 85, 1947 Edition), AIA 35-11-6,* Sanymetal Products Co. Reviewed July.

19-146. *Water Hammer—Its Cause and Cure (Bul. 120),* 6-p. illus. booklet on the use of sealed air chambers to prevent water hammer in water supply systems. Installation instructions, selector tables for finding right size, and Pressure Flow charts. Wade Mfg. Co.

19-134. *Sizing the Job in Electric Water Heater Sales,* D. W. Whitehead. Reviewed July.

19-135. *Zurn Wall Closet Fittings Supplement No. 46-3, AIA 29C,* J. A. Zurn Mfg. Co., Plumbing Div. Reviewed July.

Specialized Equipment

19-147. *A Message About Confessionals (Bul. 164),* 4-p. illus. (6x9¼) folder on portable, compact acoustic confessionals. Basic units, typical assembly combinations. Burgess-Manning Co.

19-137. *Rex-Weld,* Chicago Metal Hose Corp. Reviewed July.

19-138. *Kaiser Dishwasher,* Kaiser Fleetwings, Inc. Reviewed July.

19-148. *Sanitation Codes Demand Clean Glasses,* 4-p. illus. (5½x8¾) folder on an electric glass washer and sterilizer for restaurants, hospitals, cafeterias, etc. Advantages, operation, size, and dimensions. The Lofstrand Co.

Two booklets on steel sink cabinets and floor and wall cabinets for modern kitchens. Types available, details, dimensions. Midwest Mfg. Co.:
19-149. *Complete Kitchen-Kraft Steel Kitchens.*
19-150. *Kitchen-Kraft Steel Kitchen Cabinets.*

19-139. *Youngstown Kitchens, AIA 35-C-1,* Mullins Mfg. Corp. Reviewed July.

★ Two booklets giving technical data on use of audio-visual equipment in teaching. Detailed designs and layouts of classrooms, libraries, auditoriums, etc. Data on acoustical treatment, suggested lighting and ventilating details, and furnishing and designing an audio-visual center in schools. Visual-Equipment Mfrs. Council:
19-155. *Designs for Visual Education, Part I.*
19-156. *Designs for Visual Education, Part II.*

Surfacing Materials

12-121. *Arketex for Modern Homes,* Arketex Ceramic Corp. (See No. 12-121 under "Load-Bearing Structures.")

19-151. *Suntile,* 8-p. illus. booklet on color-balanced Suntile for walls, floors, and work surfaces in kitchens, bathrooms, and laundries. Now available in modular shapes and sizes, as well as standard. Size, shape, and use charts; color tables. Cambridge Tile Mfg. Co.

19-152. *Plastic Magnesium Oxychloride Flooring,* 6-p. illus. (4x8) folder. Reprint of a BPF Sheet from *Pencil Points.* Technical data on use of plastic magnesium oxychloride cement for flooring. For installation over wood, concrete, and steel subfloors. List of types available and their properties. The Camp Co.

19-140. *Marlite for Interiors,* Marsh Wall Products, Inc. Reviewed July.

19-141. *What You Should Know About Modern Lathing and Plastering,* National Foundation for Lathing and Plastering, Inc. Reviewed July.

19-142. *Vitrolite Glass Facing (V-126),* Libbey-Owens-Ford Glass Co. Reviewed July.

★ **19-153.** *Gypsum Plaster Base Coats and Finishes, AIA 21-A-2 (AP-2),* 13-p. illus. booklet of technical information on gypsum plaster base coats and finishes for building and industry. Types available, application specifications for each. Tables of technical and fire test data. United States Gypsum Co.

19-154. *Zonolite Insulating Concrete Floors, AIA 37-A (Form CA-4),* 4-p. illus. folder on the installation of Zonolite insulating concrete for floors covering radiant heat pipes, and on and above ground, upper story, and basement floors. Advantages, typical floor construction details, recommendations, and specifications. Universal Zonolite Insulation Co.

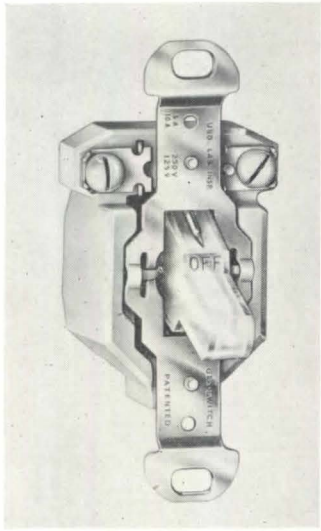
Traffic Equipment

20-40. *Electravator,* Electravator Corp. Reviewed July.

20-41. *Lamson Conveyors (Form 746),* Lamson Corp. Reviewed July.

★ **20-42.** *Elevator Door Details (Form 667),* 6-p. illus. folder on types of elevator doors available —single swing and sliding, freight, and dumbwaiter. Data on hatchway safety gates. Details of each, dimensions, and features. Montgomery Elevator Co.

THIS MONTH'S PRODUCTS



Electric wall switch shines when lights are out. Roberts-Glo. Switch Division.

AIR AND TEMPERATURE CONTROL

Air Changer. An air-cooling fan of aluminum for installation in basements, attics, and kitchen floors. Noiselessly draws cool, fresh night air from outdoors when windows are open. Powered by a ball-bearing ½ hp motor, is 36" in size, operates at about 1½c an hour. Unwanted air filtration is eliminated by an automatic louvered aluminum grill. Eagle-Picher Sales Co., American Bldg., Cincinnati 1, Ohio.

Perma-Steel Awnings. All-year-round stainless steel awnings permanently spot welded and trimmed in choice of ten colors. Construction is of tubular strut type; hanger strip is permanently anchored and caulked to the building. Designed for commercial use; available in size increments of 6", length and width; assembled to measure. Perma-Steel Corp., 2025 Fenkell Ave., Detroit, Mich.

Shafco Suspended Unit Heaters. Compact suspended oil-fired unit heaters, single or multiple, for commercial and industrial buildings. Units are automatic and can be operated separately or in multiple installations. Shafco Distributing Corp., 1354 Book Bldg., Detroit 26, Mich.

DOORS AND WINDOWS

Fabrilite. A fire-resistant, vinyl plastic coated fabric being used on Modernfold accordion doors which slide along on overhead tracks. Available in a wide range of colors, standard or custom-made door widths. New Castle Products, New Castle, Ind.

Automatic Safe-T-Lock. A lock with an automatic safety latch that snaps into place, allowing the door to be opened a little way, and snaps back into position when door is closed. Can be released from inside the room; both safety latch and lock may be opened with a key. Automatic Safe-T-Lock Co., 4600 S. Kedzie Ave., Chicago 32, Ill.

ELECTRICAL EQUIPMENT AND LIGHTING

Cutler-Hammer Multi-Breaker. A small, four pole multi-breaker for use in smaller houses as fuseless circuit breaker protection, and for larger installations as a branch circuit load center. Incorporates both thermal overload and magnetic protection. Carries a 50 ampere maximum solid main rating, individual single poles at 15, 20, or 30 amperes. Cutler-Hammer, Inc., 442 N. 12th St., Milwaukee 1, Wis.

Electric Wall Switch. An electric light switch equipped with a neon light in the handle that lights up when overhead lights are out. Available in many colors. Light will last for two years; electric current for the light costs less than 2c a year. Roberts-Glo, Switch Div., 700 Jamaica Ave., Brooklyn 8, N. Y.

Superior Binding Post. A type DF30 multipurpose electrical connector; five ways of connecting leads, provides complete insulation of post from mounting panels. Current-carrying capacity 30 amperes, can be mounted on any panel up to ¼" thick. The Superior Electric Co., 470 Church St., Bristol, Conn.

FINISHERS AND PROTECTORS

Tuf-Seal. Varnish-type sealer penetrates subsurfaces of wood floors and prevents drying and splintering. For gymnasiums, dance floors, and floors with unusual traffic. Gillespie Varnish Co., Dey St., Jersey City 6, N. J.

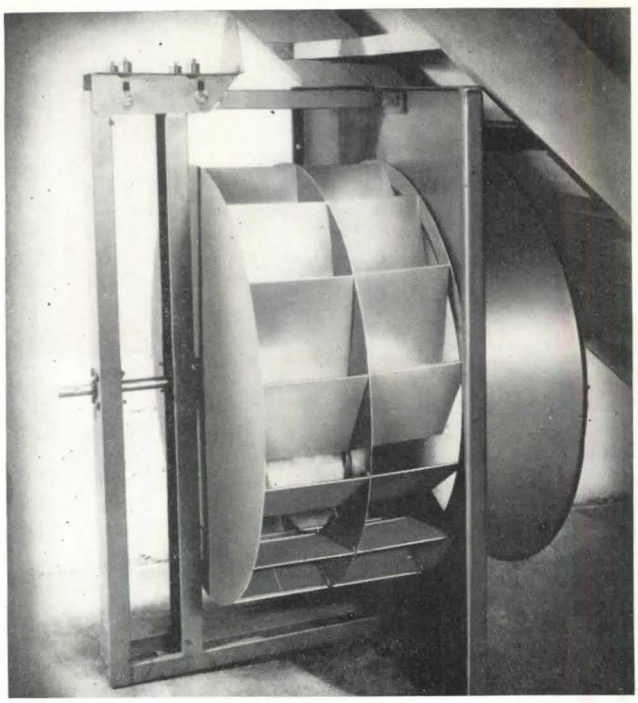
Prufcoat Aluminum. Aluminum paint made with corrosion-proof, synthetic resin vehicle and a special aluminum powder that leafs well. Keeps all moisture and corrosive agents from reaching the surface of the painted article. Prufcoat Laboratories, Inc., 63 Main St., Cambridge, Mass.

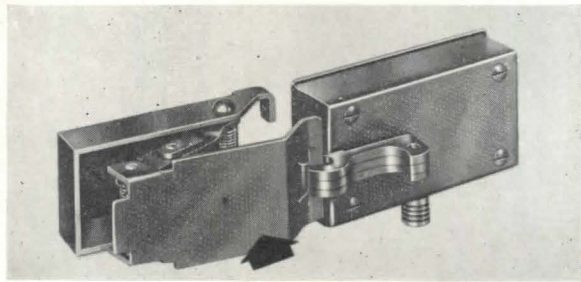
INSULATION

Infra Accordion Insulation. A reflective type insulation of triangular, reflective, non-conductive air cells enclosed in a double layer of thin aluminum foil. Has capacity to emit 1/20th of heat rays; weighs 1 oz per sq ft; 3 cu ft carton, 3½' x 1½' x ½', contains 1,000 sq ft of Infra. Available in 16 and 24" widths. Infra Insulation Corp., 10 Murray St., New York, N. Y.

(Continued over-page)

Air changer manufactured by Eagle-Picher is a noiseless fan for attic or basement installation.





Automatic Safe-T-Lock Co., introduces a safety latch to replace old-fashioned chains.

LOAD-BEARING STRUCTURES

Concrete Thermos Wall Forms. Portable form of aluminum alloy, consists of two 5 ft forms, a corner form, and other accessories for making cavity concrete walls. Forms can be adjusted to various thicknesses. Concrete Thermos Wall Co. of America, George Washington Bridge Plaza, Fort Lee, N. J.

Portable Welder. A self-powered arc welder available as a stationary or trailer unit; has a welding service range from 30 to 260 amperes; a heavy-duty, 4-cylinder air-cooled engine of 265 hp, rear mounted; 10 gal. capacity gas tank. Harnishfeger Corp., 4400 W. National Ave., Milwaukee 14, Wis.

SANITARY EQUIPMENT, WATER SUPPLY & DRAINAGE

Aluminum Shower Cabinet. Made of heavy gage lightweight aluminum; composed of five form sections which slide into interlocking flanges providing a watertight fit. Standard glass door can be added. W. R. Ames Co., 150 Hooper St., San Francisco 7, Calif.

Norge Electric Water Heater. Round upright type of electric water heater will be available in five sizes with capacities of 80, 66, 52, 40, and 30 gal. Completely insulated with 5" of glass wool. Borg-Warner Corp., Norge Div., 574 E. Woodbridge St., Detroit 26, Mich.

Heat Wrap Calrod. A heating unit for electric water heating tanks, consists of one, two, or three ribbons of Calrod held tight against surface of tank by stainless steel channels; conducts heat to water and provides maximum delivery of hot water. Galvanized or monel tanks from 15 to 82 gallon size. General Electric Co., 1285 Boston Ave., Bridgeport, Conn.

SPECIALIZED EQUIPMENT

NA-8 Home Freezer. An 8 cu ft chest-type freezer holding 280 lbs of frozen food. Measures 39½" long, 17½" wide, 20" deep. Equipped with four removable wire baskets, one with thermometer attached; two shelves for fast-freezing up to 35 lbs of food; a warning light for temperature increase. Interior of chest lights up automatically when lid is opened. General Electric Co., Appliance Div., 1385 Boston Ave., Bridgeport 2, Conn.

Hyatt Streamliner. A portable diamond saw for file cutting. Can be operated at 1/5 hp, has self-contained flushing system. Accurate liners to ⅛" may be cut. Hyatt Lapidary Equipment Co., East San Diego, Calif.

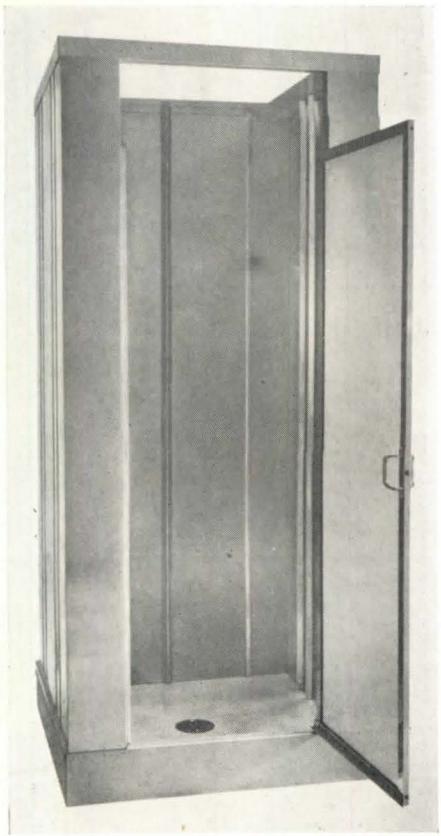
Pantasote. A plastic upholstery material similar to leather; said not to crack, easy to tailor. Available in variety of colors, grainings, and two-tone finishes. The Pantasote Corp. of N. J., 444 Madison Ave., New York 22, N. Y.

Fain Foldinette. A modern cabinet which opens into a complete dining set—a plastic topped, chrome edged 32" x 48" table, and two backed-benches which seat four people. Cabinet closed is 36" x 57" high, can be recessed into 4" standard wall in new construction. Sierra Wood Products, Inc., Pasadena, Calif.

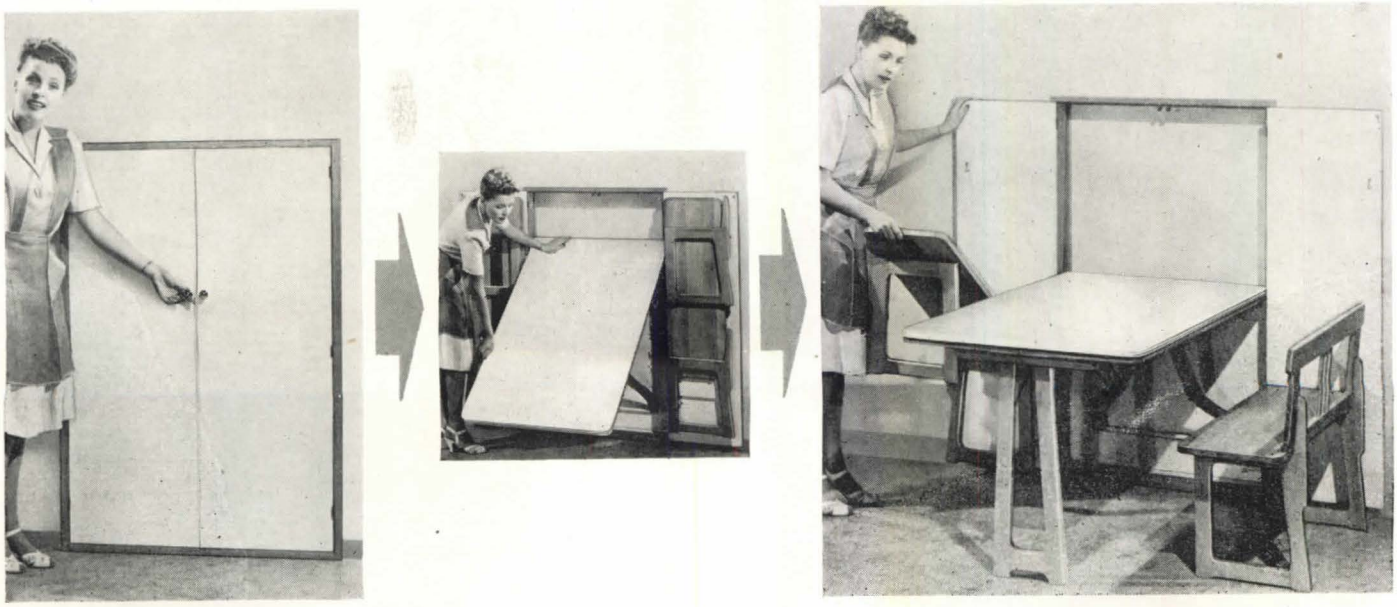
Bilt-In Electric Range. A compact, stainless steel, one-piece cooking unit with a separate standard-size oven that can be built into existing cabinets at any height. Cooking top has three heating units, a 5-qt-deep well cooker. Oven has an automatic temperature control, Telechron Automatic Timer, and Minute Minder. One conduit with three wires provides connection for the cooking unit, the same for the oven. A built-in griddle, extra ovens, and heating units will be available. Thermador Electrical Mfg. Co., S. Riverside Dr., Los Angeles, Calif.

TRAFFIC EQUIPMENT

Car Position Indicator. Lantern-indicator with amber floor numerals which light individually to indicate position of elevator in hoistway; illuminated arrows tell direction car is traveling. A chime sounds whenever either strip lights. Otis Elevator Co., 260 11th Ave., New York 1, N. Y.



Aluminum shower cabinet by W. R. Ames Co., simple in construction, weighing 23 pounds.



Fain Foldinette is a cabinet which opens out to become dinner table and benches. Manufactured by Sierra Wood Products, Inc.

*See Revere Manual:
"Research Solves Problem of Stress Failures in Sheet Copper Construction"

Photographed at Revere Research Laboratories

QUESTION: **Where can you get data on any phase of sheet copper construction?**

ANSWER: **From the Revere Technical Advisory Service, Architectural.**

IN order to help you provide the finest sheet copper construction, Revere Research takes nothing for granted. The *whole subject* is constantly under study in the Revere Research Laboratories; and important new facts are available which enable you to design or install copper gutter linings, flashings and roofs that give *extra* years of service.

An example of the thoroughness of this work is a recent investigation of the holding power of various types of nails. Revere is interested not only in seeing to it that the right specifications of copper are used, but also in every factor, large or small, that will help your jobs give lasting satisfaction.

Whenever you are faced with a problem concerning the design or installation of copper, look first to the Revere manual; and if you do not find the complete answer there, the Revere Technical Advisory Service, Architectural, will be glad to help you. The chances are that they have already had experience with a similar problem. In any case, they'll do their best to help solve yours.

There is no charge or other obligation for this service. Simply call your Revere Distributor or the Revere office nearest to you.

REVERE

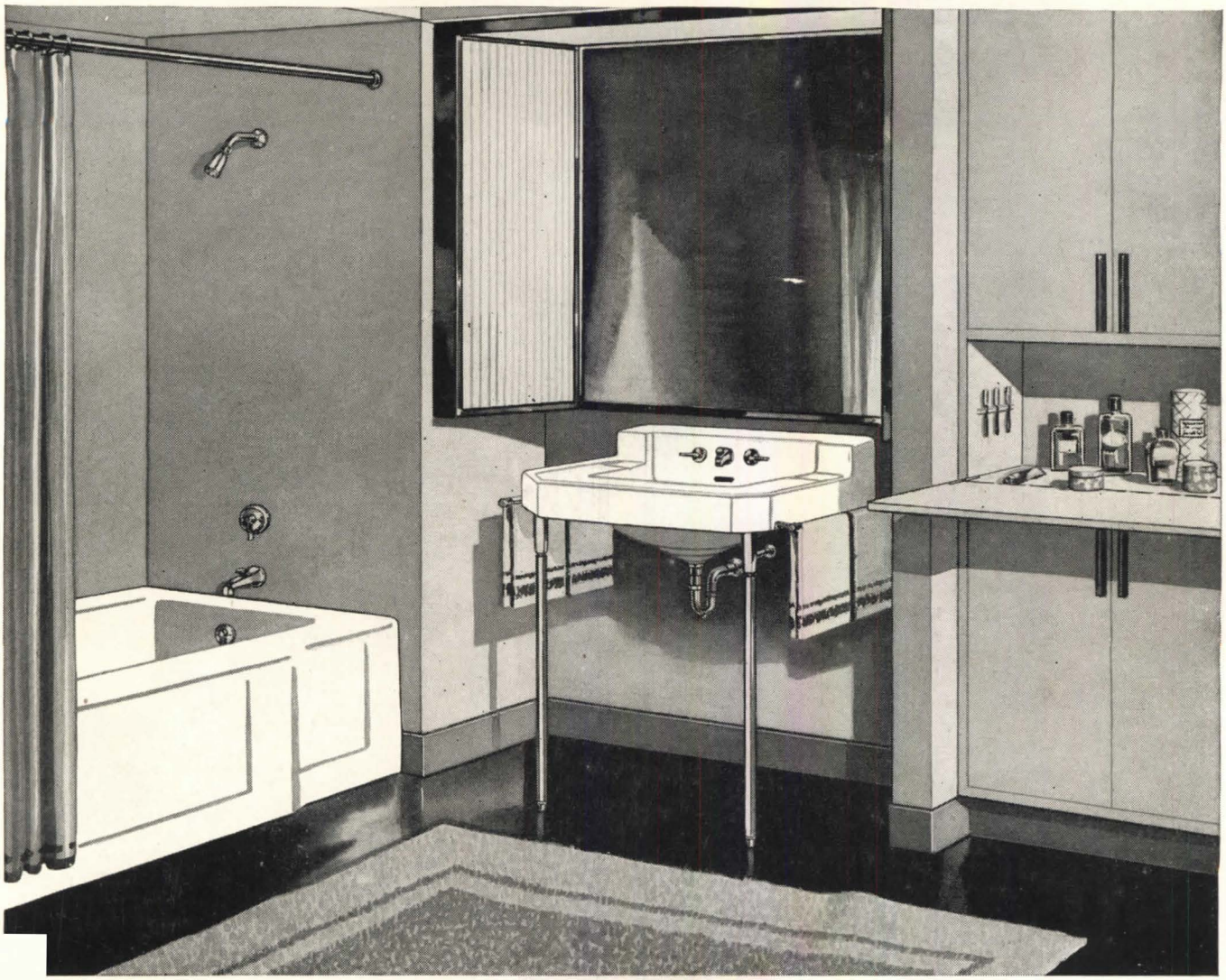
COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, New York

Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.; New Bedford, Mass.; Rome, N. Y.

Sales Offices in Principal Cities, Distributors Everywhere



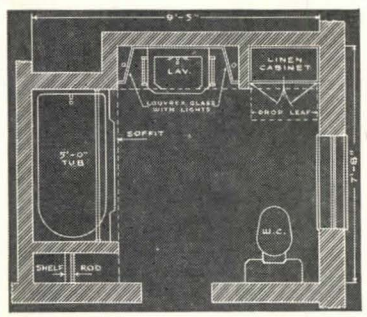
KOHLER QUALITY
creates satisfaction and good will

HOME OWNERS have learned to associate the name "Kohler" with the many advantages that go with first quality—and they have become increasingly aware of the importance of having, in the bathroom, the health-protection of sound sanitation in fixtures that are attractive, inviting to use, and easy to clean, equipped with carefully made, reliable working parts. Hence, when you specify Kohler plumbing you establish confidence and good will among home owners, because you help them invest in lasting satisfaction and added value for their homes.

For the home of average size the arrangement above is both practical and convenient. It includes the Gramercy vitreous china lavatory, with built-in fittings and roomy shelf; the Cosmopolitan Bench Bath, made with durable, pure white enamel on time-tested, non-flexing cast iron—with the Triton shower mixer; and the quiet Wellworth close-coupled closet.

Kohler products, made in one plant under one supervision, are backed by 74 years of experience in manufacturing first quality plumbing. Write for further information.

Kohler Co., Dept. K, Kohler, Wis. Established 1873.



Practical plan for Kohler fixtures in a compact arrangement allowing free access to each — together with handy storage facilities and other conveniences.

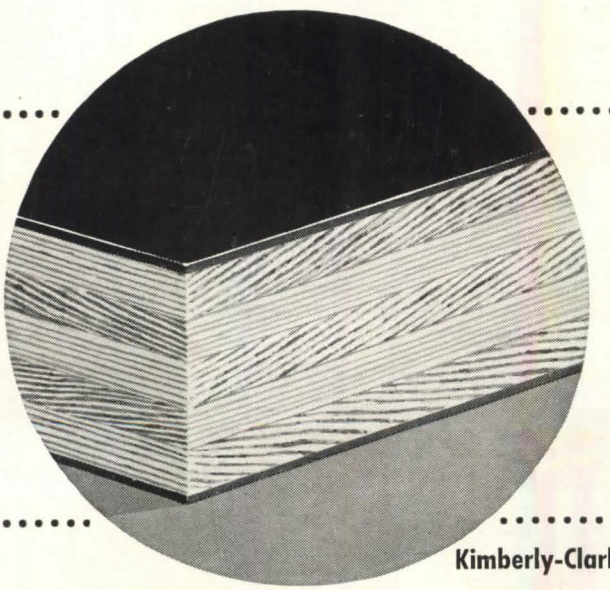
KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS

Kimpreg*...
Plastic Armor for Plywood

LIGHTWEIGHT; WATERPROOF. Kimpreg* plastic surfacing material is an insoluble substance fused to plywood by manufacturers who produce Kimpreg plus plywood, a light, strong material. It repels rain and snow, defies parasites and decay . . . is long-wearing and washable.

ARMOR-SURFACED; WORKABLE. Kimpreg surfaced plywood is a versatile, hardworking product. Certain types are suitable for concrete forms, factory storage bins, inspection or wrapping tables, flooring . . . or wherever a durable surface is required.



PERMANENT; ECONOMICAL. Abrasion-resistant, scuffproof Kimpreg has many possibilities. Mail the coupon today for complete information about this material–and the names of manufacturers making plywood surfaced with Kimpreg. *If you cannot get all the Kimpreg-surfaced plywood you need, please be patient until the resin supply is more plentiful.*

Kimberly-Clark Corp., Neenah, Wis.

Please send me the free Kimpreg book and the names of manufacturers making plywood surfaced with Kimpreg.

PA-847

Name _____

Firm _____

Type of Business _____

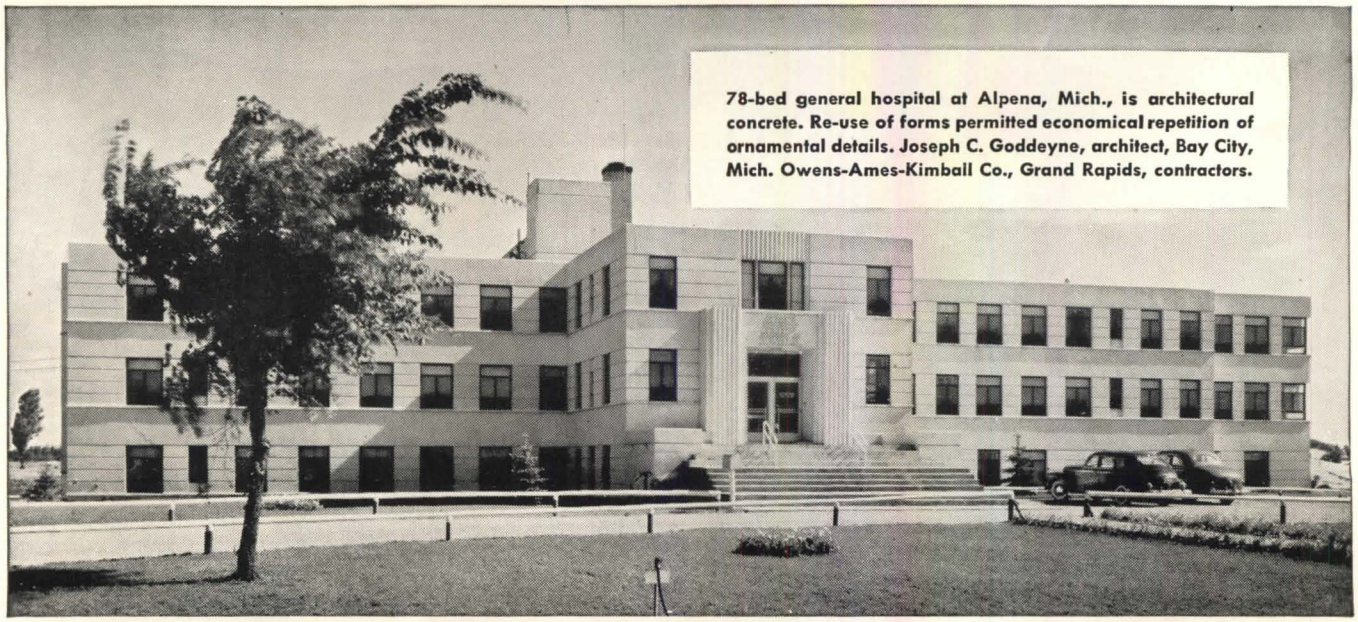
Address _____

City, Zone, State _____

Kimpreg
REG. U.S. PAT. OFF.
PLASTIC SURFACING

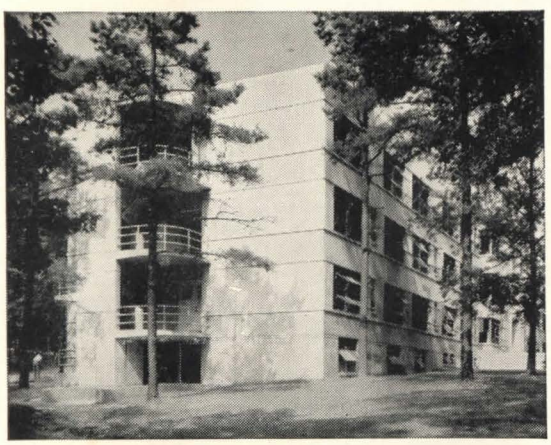
*TRADEMARK

A PRODUCT OF Kimberly Clark RESEARCH



78-bed general hospital at Alpena, Mich., is architectural concrete. Re-use of forms permitted economical repetition of ornamental details. Joseph C. Goddeyne, architect, Bay City, Mich. Owens-Ames-Kimball Co., Grand Rapids, contractors.

ARCHITECTURAL CONCRETE *for* HOSPITALS



Piedmont Sanatorium, Burkeville, Va., is one of several concrete hospitals designed by Williams, Coile and Pipino, Newport News, Va., John T. Wilson Co., Richmond, Contractor.

●

Dormitory No. 10, one of newest of 35 architectural concrete buildings at Texas Tuberculosis Sanatorium, near San Angelo. Smooth walls formed against plywood are finished with white portland cement paint. Leonard Mauldin, architect, and Templeton & Cannon, contractors, both of San Angelo.

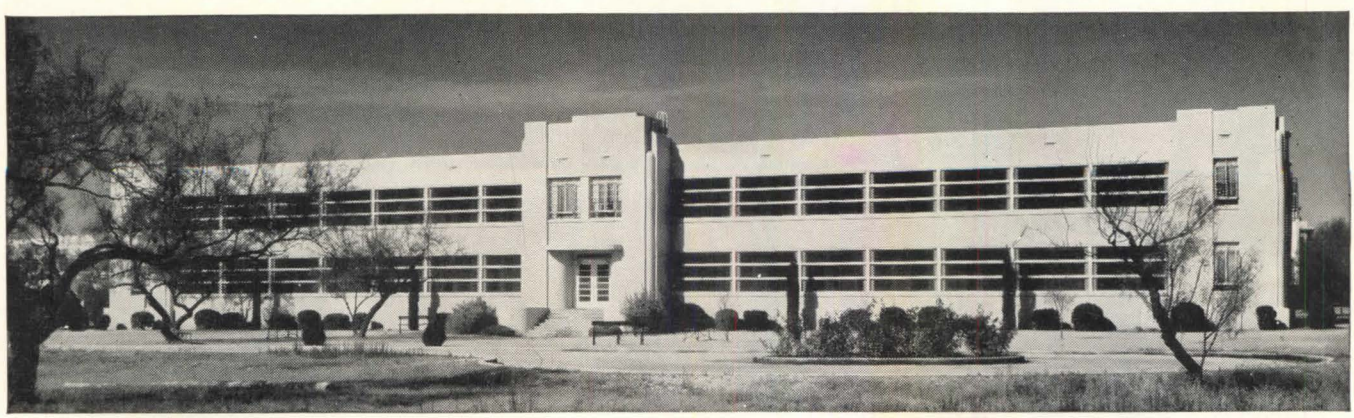
enables architects to stay within limited budgets; design attractive, firesafe, rugged buildings; insure low maintenance expense and low annual cost.

Literature on most recent design and construction practice for architectural concrete mailed free in United States and Canada. See our catalog in Sweet's.

PORTLAND CEMENT ASSOCIATION

Dept. A8-25, 33 W. Grand Ave., Chicago 10, Illinois

A national organization to improve and extend the uses of concrete . . . through scientific research and engineering field work



Something New and Interesting in FORMICA Patterns...

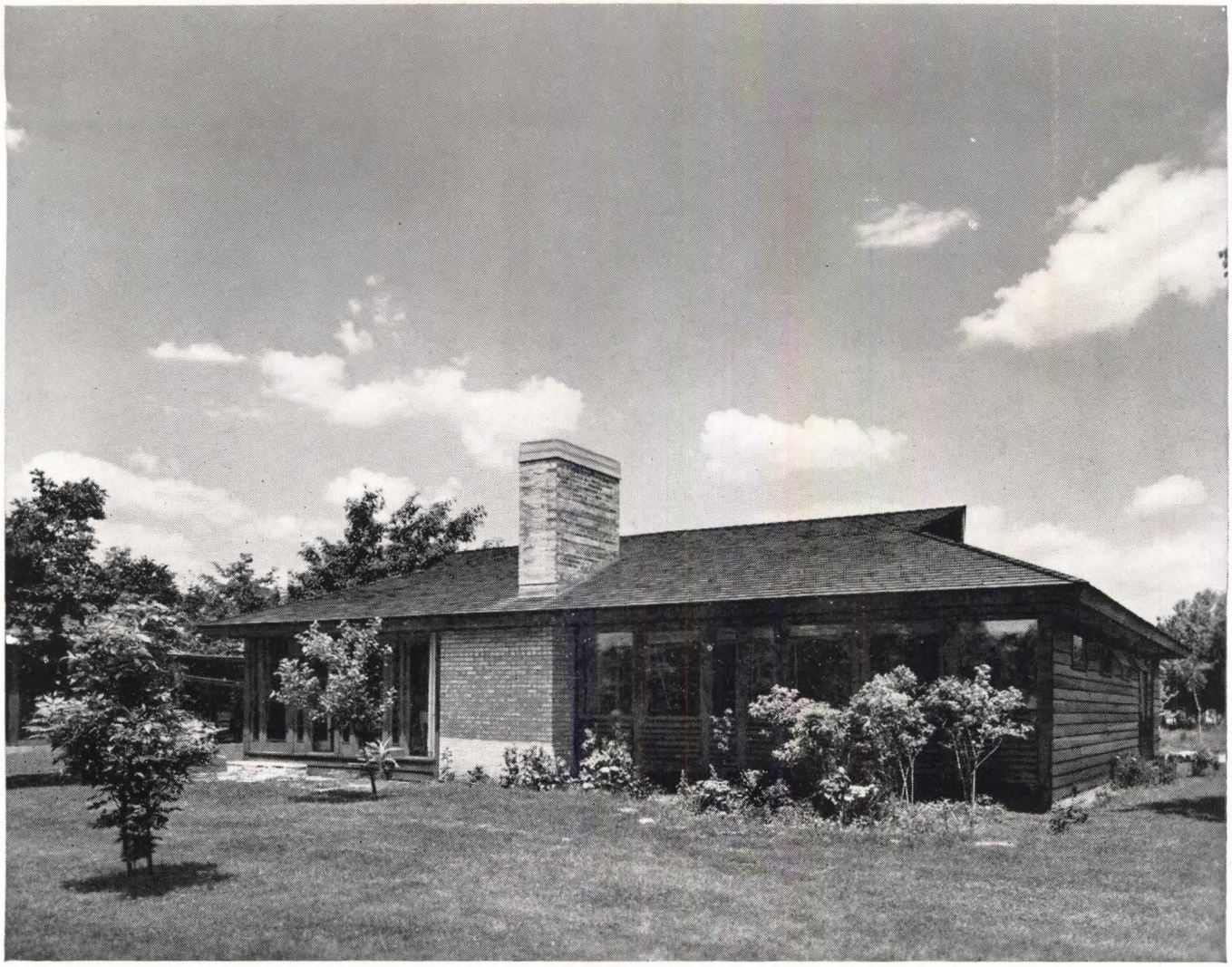
HERE are three new Formica patterns, provided in many shades and colors. They are attractive, novel and serviceable and supplement the linen patterns which were introduced by Formica some twenty years ago. The new line of modern, well harmonized, solid colors are in production and again available

The patterns and colors have all the usual Formica qualities. They do not stain with colored liquids; they are not spotted by solvents like alcohol or by mild acids or alkalies such as are present in fruit, or cleaning solutions; for horizontal surfaces they are available in the cigarette proof grade. And because of the wide range of colors and shades they will harmonize with any decorative scheme.

Reproductions of the entire range of colors are sent on request.

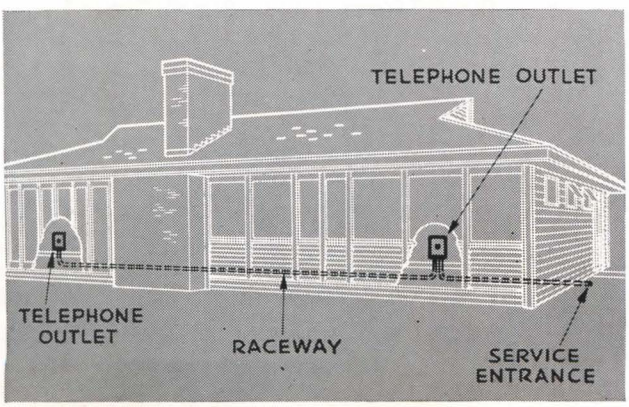
THE FORMICA INSULATION COMPANY
4613 Spring Grove Ave., Cincinnati 32, Ohio

FORMICA
REG. U.S. PAT. OFF.



Schweikher and Elting, Architects

SMALL HOMES, TOO, NEED RACEWAYS FOR TELEPHONE WIRES

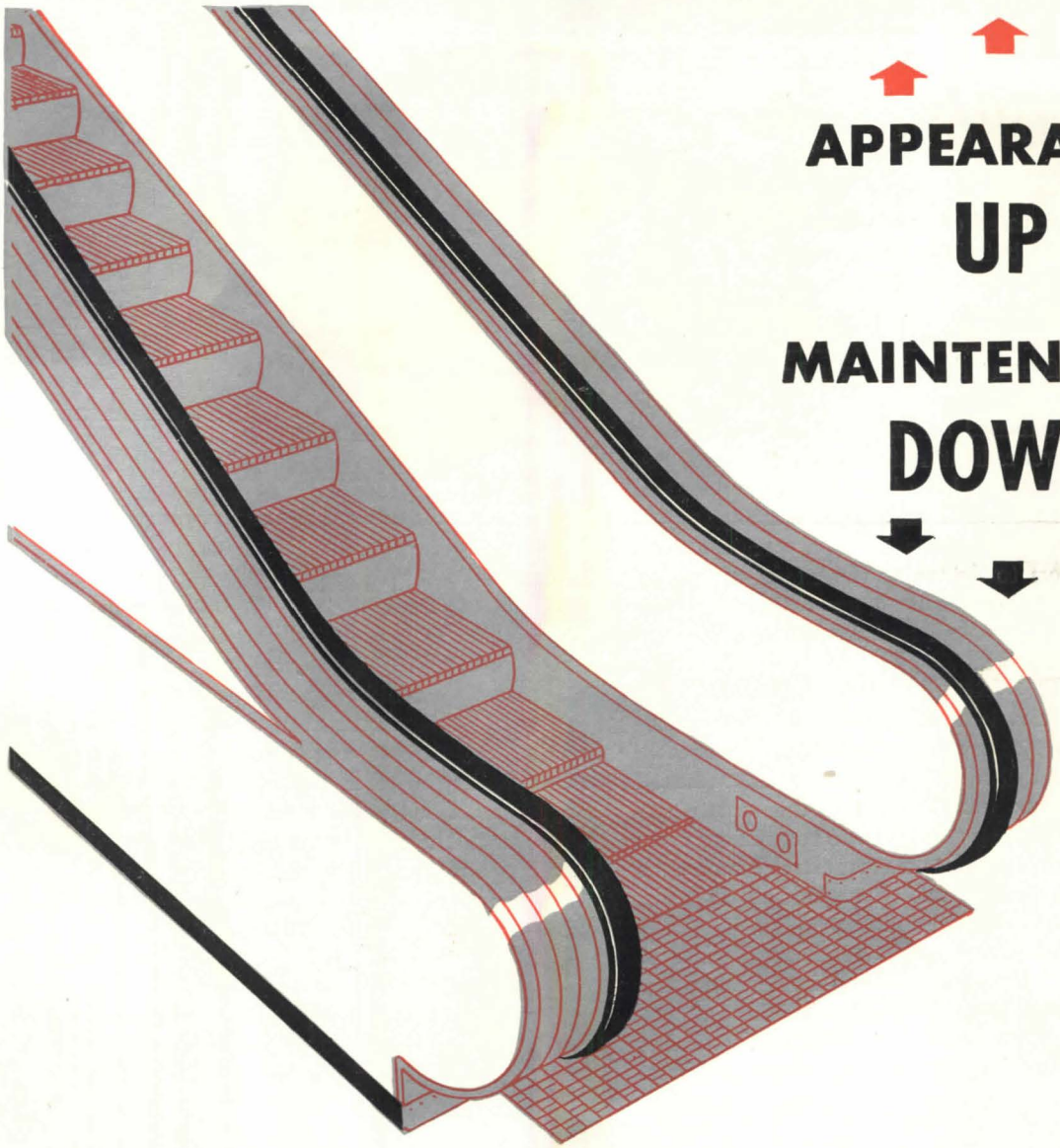


When you pack a lot of livability into a small space, little things mean much in comfort and convenience. A raceway for concealing telephone wires is especially important.

During construction of a one-story home without a basement, for example, the builder can generally assure a good telephone arrangement by (1) providing an entrance raceway for telephone wires; and (2) running a raceway under the floor to convenient telephone outlets. If there is to be an unfinished basement, all that may be needed is the entrance raceway, plus short raceways up within the walls to telephone outlet locations.

Your Bell Telephone Company will be glad to help you plan economical telephone wiring facilities in small homes or large. Call your Telephone Business Office and ask for "Architects and Builders Service."

BELL TELEPHONE SYSTEM



APPEARANCE UP

MAINTENANCE DOWN

WITH ALCOA ALUMINUM!

Used for decorative effect, the smooth, gleaming finish of Alcoa Aluminum blends perfectly with modern design. But there is more than good appearance to recommend the use of Alcoa Aluminum for building interiors or exteriors.

To the building operator it brings freedom from maintenance troubles. Aluminum can't rust, warp or chip. It does not require painting. With patented Alumilite* finish, Alcoa Aluminum retains its good looks after *long* exposure to weather and wear.

*Reg. U. S. Pat. Off.

Its soft, satin-like surface does not readily show finger marks or smudges.

Wherever your plans call for good appearance with a minimum of maintenance, consider Alcoa Aluminum. Alcoa has co-operated with architects on many design and engineering problems. We will be glad to work with you. For information on any application of aluminum, write to ALUMINUM COMPANY OF AMERICA, 1868 Gulf Bldg., Pittsburgh 19, Pennsylvania. Sales offices in leading cities.

MORE people want MORE aluminum for MORE uses than ever

ALCOA FIRST IN **ALUMINUM**

REG. T M

ALCOA ALUMINUM

IN EVERY COMMERCIAL FORM

FLOORING

PERFORMANCE OF RESILIENT FLOORING OVER RADIANT HEATING

Due to the increased use of radiant heating in modern homes and buildings, much attention has been directed to the use of resilient flooring materials in these buildings. As a result, many architects have requested more information on the performance of various resilient flooring materials over heated subfloors.

In order to arrive at specific conclusions and to give the architect unbiased recommendations for flooring installations over radiant heated floors, the Armstrong Research Laboratories have been conducting a series of continuous tests. For more than three years, observations have been made of experimental radiant heated subfloors to determine the effects of varying temperatures on the hardness, composition, and indentation properties of all resilient floorings.

HOW EXPERIMENTS WERE CONDUCTED

The room used in making these tests is approximately 13′ by 22′ in size, having a double window at one end and a door in each side wall. Experimental concrete subfloors were built in four separate sections. Each section was designed to test various types of resilient flooring under the most extreme conditions that might be encountered on suspended, on-grade, and below-grade concrete subfloors.

Since one-inch pipe, spaced 12 inches apart, is most commonly used in radiant heating installations, this size in all-welded pipe was selected for these experimental tests. A controlled temperature, forced hot water system was used for heating. In order to direct

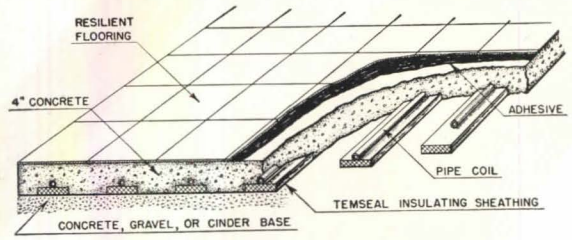


Diagram showing construction detail of one of the experimental concrete subfloors used in Armstrong's resilient floor tests over radiant heating.

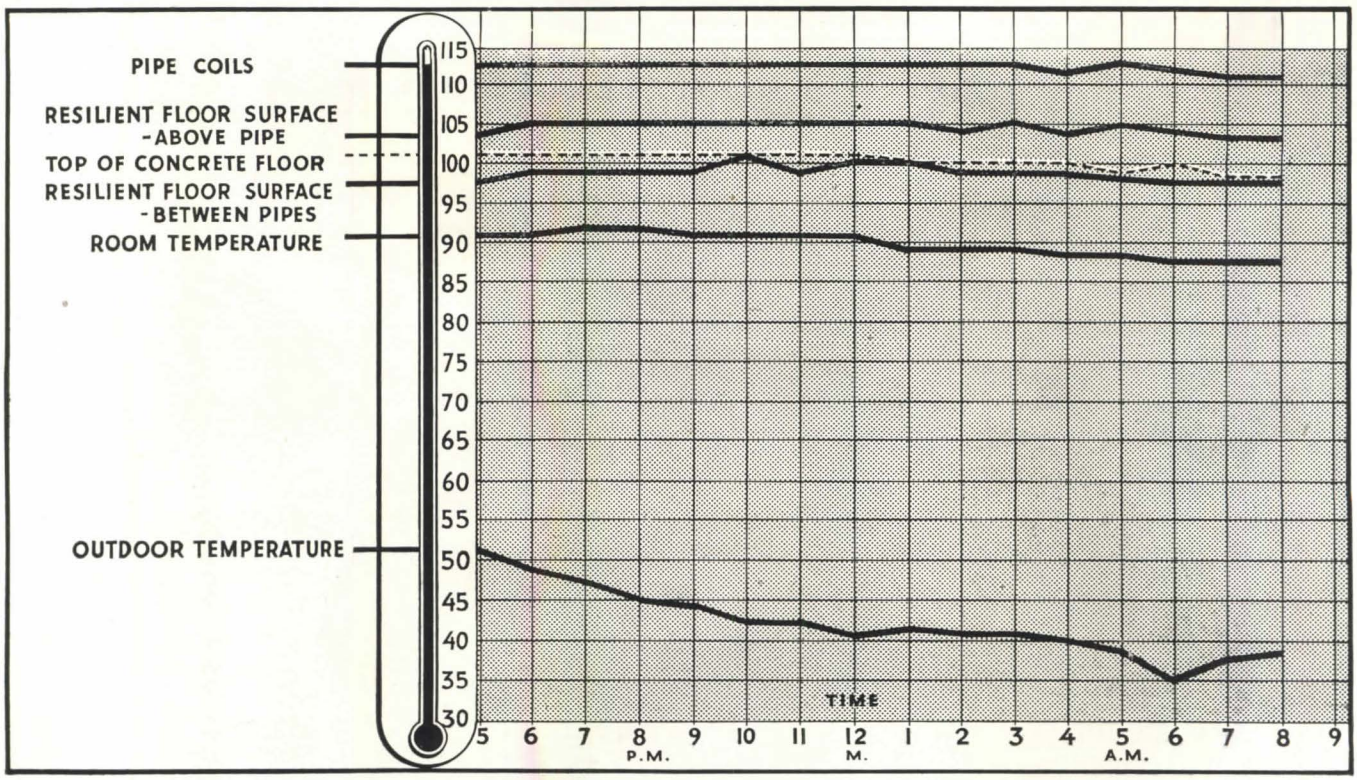
the maximum flow of heat toward the surface of the floor, the heating coils were laid on baffles of 1″ Armstrong's Temseal Insulating Sheathing cut 6″ wide.

Each type of resilient floor was installed according to Armstrong's standard specifications.

Twenty-seven electrical thermocouples were imbedded into the floor construction at strategic points to record temperatures. During the past three years, periodic recordings of the floor and room temperatures were made. The chart to the right illustrates a typical recording of the temperature variations over one 16-hour test period while higher than normal temperatures were being maintained.

OBSERVATIONS

During the winter months of the three years when these tests were made, the outside temperature ranged from 11° to 51°. By maintaining the water tempera-



These are the potentiometer recordings for one sixteen-hour test made during Armstrong's experiments with resilient floors installed over a radiant heated concrete subfloor. During this period, higher than normal room temperature was maintained. It is interesting to note that, while the outside temperature lowered, the temperatures of the resilient floor and the room interior remained fairly constant without increasing the temperature of the heating coils.

ture at 115°, the room temperature varied from 72.5° with the window open to 90° with it closed. The resilient floor temperature varied from 83° to 101° depending upon the room temperature and ventilation. A maximum resilient floor temperature of 105° was recorded directly over the heating pipes. The temperature variance between the concrete subfloor and the resilient floor surface was about 1.5°. It should be noted from these findings that resilient flooring materials do not decrease the heating efficiency of the system to any noticeable extent.

To determine the effect of radiant heat on the indentation properties of the various types of resilient floors, indentation tests were made before and during the period the floors were heated. Using the test loads prescribed by Federal Specifications for each type of resilient floor, it was found that the radiant heated floor temperatures did not increase indentation beyond the specified limits.

Effects of radiant heat on the adhesives used for installing resilient floors also were observed. Since the beginning of these experiments, there has been no failure of the resilient floorings or their respective adhesives.

RECOMMENDATIONS

While job size and locality may control the construction methods used for the radiant heating installation, the following recommendations are suggested to insure satisfactory resilient flooring installations.

Pipe Coils— One-inch pipe, spaced twelve inches apart and laid on insulating baffles, proved successful in these experiments. In this type of installation, the water temperatures generally vary from 100° to 115° F. and the general floor temperatures from 80° to 85°, with the areas directly above the pipes 5° to 6° higher. This has been found to be an ideal combination for the comfort of the room occupants and the service of the resilient flooring. In buildings where greater pipe diameters, wider spacing, or higher water temperatures are to be used, special flooring recommendations may be required. In such cases, the architect is invited to send a full description of the job to the Armstrong Cork Company for individual recommendations.

Water Temperature Limits—It has been found desirable to limit water temperatures in radiant heating systems to 120°. Temperatures above this point are uncomfortable underfoot and, in addition, may result in excessive indentation, particularly in asphalt tile.

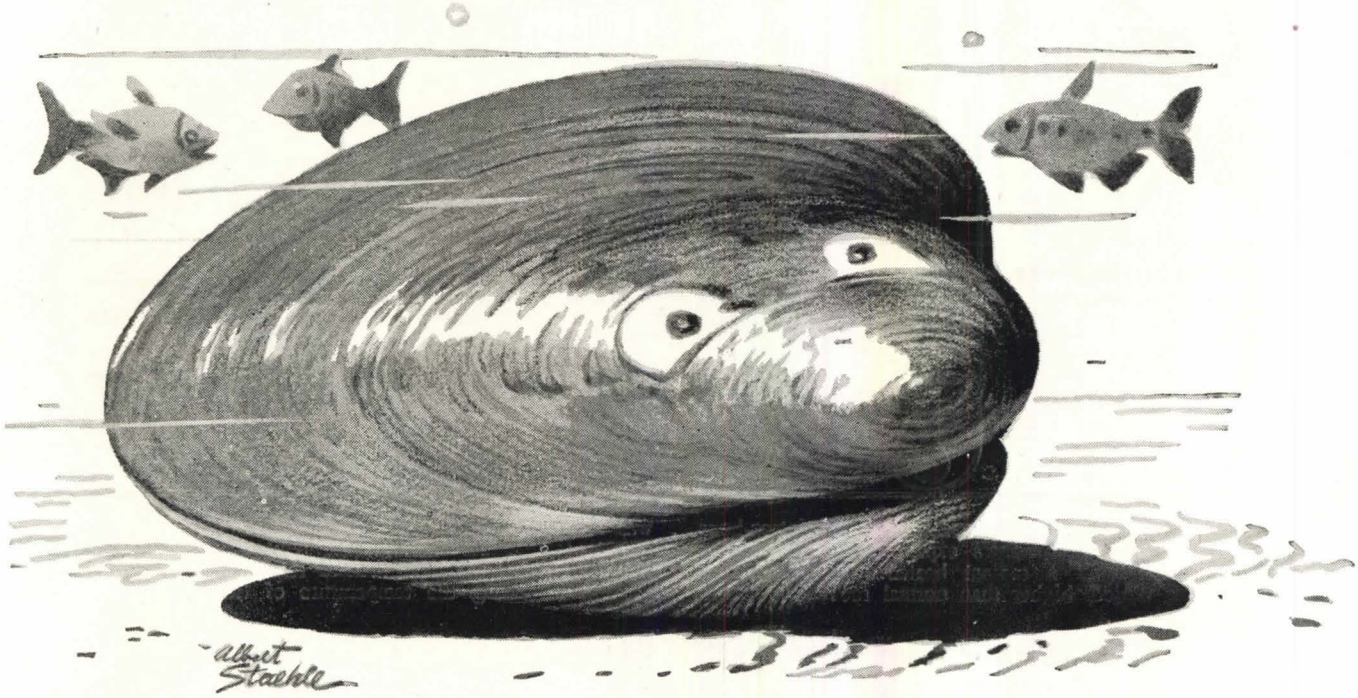
Grade Level or Below Grade Installations— The problem of alkaline moisture rising through the concrete is of primary importance in recommending a flooring for these subfloors. This alkali attacks the binders and adhesives of most resilient floorings. Asphalt tile is recommended for these floors since it is not harmed by moisture or alkali.

Suspended Floor Installations—With radiant heating as well as with conventional methods of heating, linoleum, Linotile, and rubber tile should be used only on suspended floors or grade-level floors with at least an 18-inch, well ventilated air space beneath them. Asphalt tile can be specified also for above grade installations.

Floor Protection—Since radiant heating normally does not create floor temperatures as hot as those resulting from the direct rays of the summer sunlight, the usually prescribed furniture rest devices are considered adequate protection against indentation for all Armstrong's floorings.

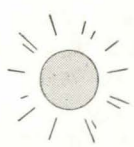
Special Flooring Problems—For help in solving a specific radiant heat flooring problem, or information of any kind on Armstrong's floors, contact any Armstrong office or write to Armstrong Cork Company, 8908 State Street, Lancaster, Pennsylvania.

What keeps the weather clement for a clam can keep your clients happy, too!

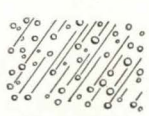


Over 90 years of successful roofing experience has demonstrated the sound value of the gravel or slag wearing surface of a Barrett Specification Roof:

1. It holds in place the heavy-poured (not mopped) top coat of coal-tar pitch—providing a doubly thick waterproof covering.



2. It provides protection against the sun's actinic rays which otherwise dry out the valuable oils in roofing bitumens.



3. It protects the roof against mechanical damage, hail and wind, wear and tear.

4. It interposes a surface of fireproof rock between the building and flying embers—makes a roof that carries Fire Underwriters' Class A Rating.

Rain or shine, the Clam doesn't care. He's happy all the day. Whenever trouble looms he pulls his roof up over him . . . he's safe inside his *armored wearing surface.*

The Barrett Specification* Roof, with its armored wearing surface of gravel or slag, provides comparable protection for building structures. It's so tough and long-wearing it can be bonded against repairs and maintenance expense for as long as 20 years.

Built up of alternate layers of coal-tar pitch and felt, topped by a thick *pouring* of pitch to *anchor* the gravel or slag wearing surface, it is the toughest, longest-lasting built-up roof made. It is waterproof, fire-safe, sun-resistant, and *armored* against mechanical damage.

As a service to your clients, recommend Barrett Specification Roofs on the buildings you design. The Atomic Bomb Plant at Oak Ridge, Tenn., the Empire State and R.C.A. buildings in New York, and many other famous American buildings — all Barrett-roofed — confirm the soundness of your recommendation.

Barrett Specification Roofs*

THE BARRETT DIVISION
Allied Chemical & Dye Corporation
40 Rector Street, New York 6, N. Y.
2800 So. Sacramento Avenue, Chicago 23, Ill.
Birmingham, Alabama
In Canada: The Barrett Company, Ltd., 5551 St. Hubert Street, Montreal, Que.

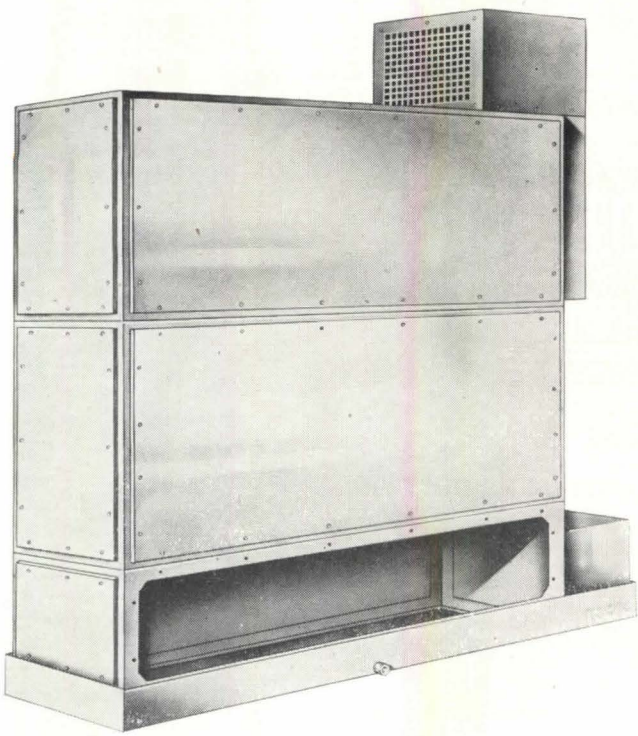
*Reg. U. S. Pat. Off.

WORTHINGTON

Air Conditioning and Refrigeration Report

Worthington Pump & Machinery Corporation, Harrison, New Jersey

SAVE 90% WATER COST



NEW EVAPORATIVE CONDENSERS WITH MANY FEATURES FOR EFFICIENCY

Corrosion Minimized — Greatly improved protective treatment guards against costly corrosion. All parts exposed to moisture are of zinc-coated steel, bonderized and coated with a rubber-base enamel containing special rust-inhibiting powder.

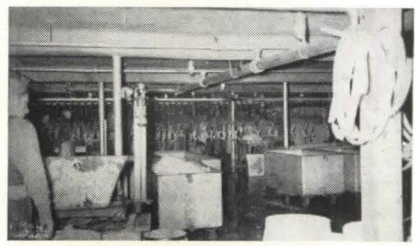
Easy to Clean, Stays Clean Longer — Prime surface, with no fins to clog. Accessibility through panel construction to every part makes cleaning simple and fast.

Water Treatment Device — Available for use where water is unusually hard or where corrosives are present.

Made in five sizes, Worthington Series ECZ Evaporative Condensers combine practicability with heavy-duty durability to join the long list of Worthington "firsts" for efficient, low-cost refrigeration. *Worthington Pump and Machinery Corp., Harrison, N. J. Specialists in air conditioning and refrigeration for more than 50 years.*

A7-6

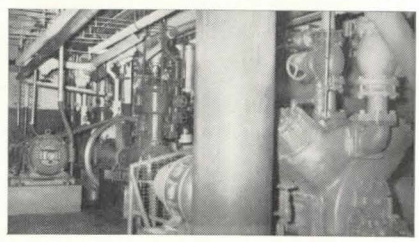
WORTHINGTON *Air Conditioning and Refrigeration*



Before It's "Southern Fried" It's "Worthington Refrigerated"

Typical of many up-to-the-minute firms supplying the nation's food, the Jewell Poultry Company of Gainesville, Ga., makes Worthington refrigeration an important factor in its processing. Above is the main processing room, where 100,000 lbs. of chicken are prepared daily.

A part of the Jewell Company's storage space, with cartons of chickens ready for shipment. The workers' heavy clothing and the iced-up pipes indicate the low temperature that must be permanently maintained by Worthington equipment to prevent spoilage.



Refrigeration equipment at the Jewell Company. In the right foreground is a Worthington Freon-12 Condensing Unit. In the left rear are three Worthington Vertical Ammonia Compressors. Worthington units of these types are widely used throughout industry.

Why Integration?

You get refrigeration and air conditioning at its best when all parts of a system "pull together" smoothly. And remember that Worthington, as makers of so many "inner vitals" — compressors, condensers, turbines, pumps, valves, fittings, etc. — is better able to *integrate* these essential parts into a trouble-free, economical refrigeration or air conditioning system . . . It's another reason why *there's more worth in Worthington.* See your nearby Worthington Distributor for details.

FROM THE TECHNICAL PRESS

JOHN RANNELLS

BUILDING RESEARCH HERE AND ABROAD

THE A.I.A. PROGRAM

The Architect Looks at Research. Bulletin of the American Institute of Architects, *1741 New York Ave., N. W., Washington 6, D. C. Mar. 1947.*

"The newly established Department of Education and Research of the American Institute of Architects takes a broad view of research for the purpose of formulating long-range policies and also a program of immediate objectives in research service to the membership." This sounds very good, but let's see how it is to be developed.

After some rather pompous classification of research under the headings of "Free Fundamental Research," "Objective Research," and "Applied Research," this high endeavor collapses into "horizontal" and "vertical" patterns suggested by "the broad view of research." For example, the examination of a certain detail in all building types "horizontally" is suggested; or a "vertical" analysis of a building type "for a certain activity or function." This is quite a comedown from "a broad view of research for the purpose of formulating long-range policies."

It is not enough to note that "America is research-minded," or "Research has reached a new high in general popularity." A serious approach to research demands the tackling of the pressing problems.

The British have been engaged in this for some time now and their experience is worth noting. "Research now includes general sociological and economic studies aimed at formulating in the first place the needs for building in such a way that the right technical problems are presented and then *further research* and development for solving those problems with full regard to the human and economic aspects of the building industry." ("The Organization of Building Science Research," reviewed in December 1946 PROGRESSIVE ARCHITECTURE.)

After reviewing the research facilities of the Bureau of Standards, the American Society for Testing Materials, the Underwriters' Laboratories, etc., the Department of Education and Research of the A.I.A. concludes that it is not possible, because of lack of funds, to take an active part in research (testing) work and they resign themselves to being a "composite of listening post and reporting agency, clearing house and coordinating center, and instigator of needed activities."

If only they *would* be the "instigators of needed activities!" Architects are the natural coordinators of work in all fields related to construction and they should be right in the middle of any program which involves planning.

The A.I.A. Department of Education and Research *could* take the lead in coordinating building research. They certainly *should* take the lead in this leaderless field. This would not require funds, but it would require understanding of the problems needing solution and it would require leadership. Unfortunately, this first report of the Department of Education and Research of the A.I.A. indicates that the necessary leadership has not yet appeared.

Building Type Reference Guides: No. I, The Public School Building; No II, The Hospital Building. Bulletin of the American Institute of Architects, *1741 New York Ave., N. W., Washington 6, D. C. Mar. 1947, May 1947.*

These "Guides," first fruits of the newly established Department of Education and Research of the A.I.A., are good but spotty discussions of school

(Continued on page 90)

GOLD BOND

ACOUSTIMETAL

"ACOUSTIMETAL" is the last word in sound conditioning! It provides maximum noise reduction and high light reflection. It's practically indestructible, and of course, it's *fireproof* to fit new building code specifications.

"Acoustimetal" is adaptable to remodeling as well as new building. The perforated Acoustimetal Pan, containing spacer-grid and sound absorbing Acoustipad, is quickly and simply snapped into the patented T-Bars mounted on the ceiling. Ideal for use with modern troffer type lighting. The satin-smooth baked enamel finish is smart in appearance and can be washed repeatedly and repainted again and again without loss of sound absorption. The 12″ x 24″ pans are quickly removable, for repair to wiring, piping, and air ducts. True, Acoustimetal costs more than ordinary inflammable sound conditioning, but the savings in maintenance more than cover the difference. For complete details, write for our new illustrated Acoustimetal folder!

You'll build or remodel better with
Gold Bond

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.

REVIEWS

(Continued from page 88)

and hospital planning. Except for the material contained in the attached bibliographies, these articles would not be of much assistance to architects planning either of these types of buildings.

BRITISH EXAMPLES

Scientific Research on Alternative Methods of Construction for Permanent Houses. F. Fitzmaurice, Deputy Chief Scientific Adviser, Ministry of Works. Journal of the Royal Institute of British Architects. *Apr. 1947, May 1947.*

The need for large-scale housing construction in a period of acute shortage of materials and labor made it imperative to adopt scientific methods for development of new types of houses. Based on performance standards established by the various study committees under the Ministry of Works, several prototype houses were constructed and evaluated. Then test runs of about 50 houses each were constructed under close scientific supervision.

Part I of this report covers the general problems—the establishment of adequate standards and the achievement of moderate costs. The effects of mechanization are investigated thoroughly, both factory prefabrication of building components and use of machinery on the site, with special emphasis on the interrelation of design and field assembly and the need for coordination of dimensions and control of dimensions in production of components. "Whether or not a 'module' is to be adopted is a purely secondary consideration."

Part II is a detailed study of the results of test runs of eight house types, all of which show substantial savings over traditional brick wall houses without sacrificing qualities of strength, heat, insulation, soundproofing, etc. It is interesting that one of the wood-framed houses is very economical despite the high cost of wood in England. This is achieved through the use of large prefabricated panels very carefully engineered so that the total amount of wood used is no more than that required in a traditional brick wall house.

Housing and The Architect. J. H. Forshan. Paper read before the Royal Institute of British Architects. Journal of the Royal Institute of British Architects, *66 Portland Place, London W. 1, England. Apr. 1947.*

A general review of public housing in England by the chief architect and housing consultant of the Ministry of Health.

The British have no intention of letting their housing go bad as so much of ours inevitably does. This paper is especially good in its site planning and regional plan aspects. The discussion, so vital a part of all papers read before the R.I.B.A., shows again the breadth of thinking of British architects on problems affecting the future of their towns and cities.

TECHNOLOGY AND DESIGN

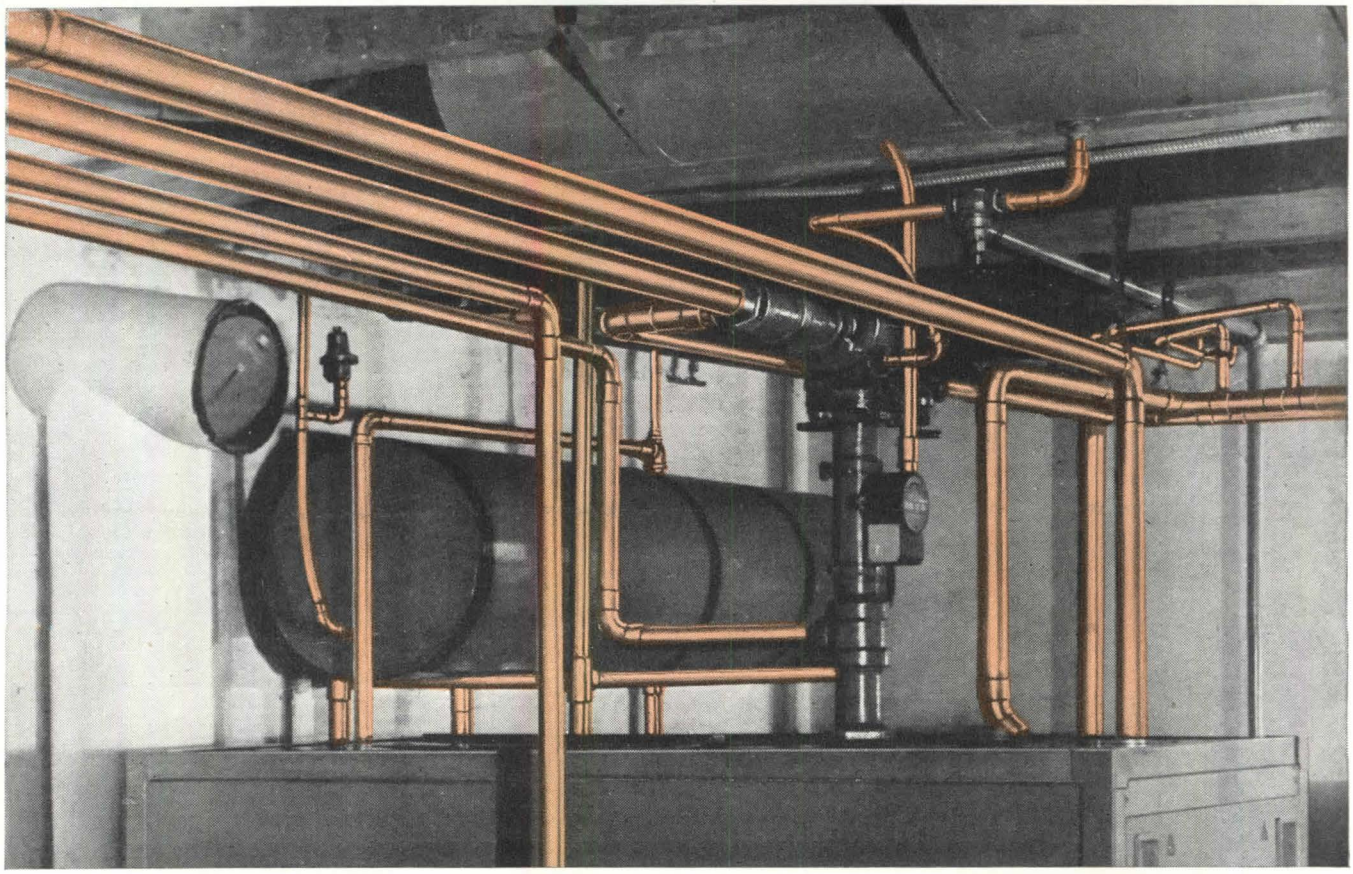
What are the Effects of Technological Changes? Douglas Haskell. Address to the 1947 convention of the American Institute of Architects. Journal of the American Institute of Architects, *1741 New York Ave., N. W., Washington 6, D. C. June 1947.*

Mr. Haskell suggests that the importance of technological change is not so much its effect on finished designs as on design *method;* also that the cultural surroundings brought about by technological changes form a background for young designers which is *older* by one generation than the background of the older men whose schooling was based so largely on visual patterns.

But "the current difficulty is that of reconciling technology with esthetics," for industrial technology produced the most effective new materials and structural forms. And yet, while the engineers were working with the essentials of man's physical environment, the architects were still concerning themselves with "pleasing the eye."

In time the architects (enough of them)

(Continued on page 92)



THROUGH THE YEARS...

Copper costs less

IN HOMES large and small, hot water heating lines, hot and cold water lines and other pipe lines cost less *by the year* when they're copper.

The cost of a copper tube system installed very often approximates that of ordinary piping. This is because installation may be expedited with solder-type fittings. Because soft annealed copper tube is available in long lengths and may be bent around obstructions, fewer fittings are required. Because threading is eliminated and no allowance need be made for rust-clogging, copper tubes may be of relatively smaller diameter and lighter weight.

Anaconda Copper Tubes are made from specially deoxidized, 99.9+% pure copper, furnished soft in 60-foot coils, also hard and soft in 20-foot straight lengths. Types K and L Tubes, trade-marked "Anaconda," are available from wholesale distributors throughout the country.

Publications B-1 and C-2 discuss copper tubes for general plumbing, and for heating lines, respectively. Copies will be mailed on request. 4715

ANACONDA
from mine to consumer

Anaconda

COPPER WATER TUBES

THE AMERICAN BRASS COMPANY

General Offices: Waterbury 88, Connecticut

Subsidiary of Anaconda Copper Mining Company

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

REVIEWS

(Continued from page 90)

came to realize that the truth and directness of "engineering" forms had superior virtues in themselves and that the virtue lies in the design method. For "architecture is forever a technological art in which technology supplies the working method which art rounds out into a complete expression."

As we take more environmental factors into account (daylighting, artificial lighting, air conditioning, sound control) we need greater simplicity and interchangeability of component parts. Thus, judging a modern design in terms of the drawings alone may give an impression of severity although the living experience in the building may be completely free and pleasant. "The glass wall, for example, is at its best with radiant heat, and the spatial freedom given by the visual transparency is reinforced in a mysterious manner by the exhilaration of an invigorating climate." Modern architecture is taking on more dimensions than a two-dimensional drawing can show and the architects must keep up with their expanding world if they are to continue to be architects. This paper was one of a group by the "younger" men on the subject, "Contemporary Trends in Architecture," which are recorded in the June *Journal of the A.I.A.*

BOOKS

SPEAKING FRANKLY

Architecture and Art for All Men. *Talbot Hamlin. Columbia University Press, 2960 Broadway, New York, N. Y., 1947. 255 pp., illus. $3.50*

Talbot Hamlin's publisher states on the dust jacket of his new book that Mr. Hamlin combines in his writing the practical experience of a working architect and the theoretical and historical knowledge of a scholar, blended with the sensitivity of the artist. Talbot Hamlin did enjoy a reputation something such as that, as author of *Architecture Through the Ages.* Even allowing for the publisher's typical license to overstate, it is difficult to acknowledge this book as coming from the pen of an author who is capable of analyzing history as Mr. Hamlin has so capably done in *Architecture Through the Ages,* a book which is generally considered by architectural historians as one of the finest short histories of architecture so far published.

Mr. Hamlin's publishers further add that *Architecture for All Men* was largely written aboard a twenty-four foot motor cruiser in the Florida inland waterway. "The subject retains its interest," says Mr. Hamlin, "during days of stormy runs, nights of winter cold, and interludes of warm and pleasant seas. The final pages achieve their form in a country of pelicans and palm trees, of lush and unreal Spanish palaces, and also of much stimulating and very modern architecture."

After reading such sentimental fluff on the jacket and more within this same book, one feels that perhaps there is something to be said for the professor's customary ivory tower as an environment for contemplative literary achievement and critical analysis and synthesis. Mr. Hamlin seems to have lost the necessary critical discernment between the imitated Spanish palaces and the stimulating and very modern architecture, in his environment of pelicans and palm trees.

Since *Architecture for All Men* is evidently intended for the layman and not particularly for the architect, critical analysis is needed even more than if the book had been written on a more technical plane for the architect. As it is, the book is contradictory and confusing. It should make clear the meaning of architecture, and by that I mean progressive contemporaneous architecture, if it is to have real value today. Mr. Hamlin condemns eclecticism and discusses it learnedly and conclusively, yet he goes into ecstatic frenzies of praise for many buildings that are eclectic both in concept and execution.

He calls attention to the Nebraska State Capitol almost as many times as he uses

(Continued on page 94)

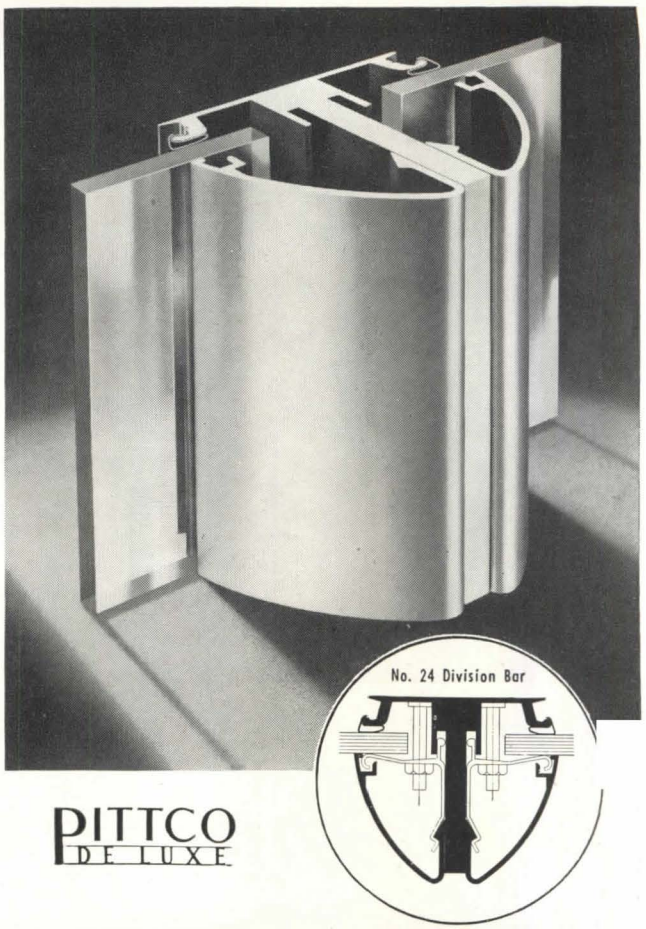
STURDY CONSTRUCTION

. . . in both lines of Pittco Metal

● In addition to the two bars shown here, the Pittco line of Store Front Metal features a flush-type division bar for use where the architect does not want a protruding surface. It can be used with both the De Luxe and Premier lines and may be backed up with *five* different *reinforcing* members ranging in weight from light to extra heavy. The two bars shown here can be used alone or with reinforcing steel tubes. From this wide selection of sturdy supporting members, architects can easily satisfy all ordinary structural requirements for vertical bars in modern store front work. Where unusual conditions demand special supporting members, our engineers will gladly help in their design.

Pittco Division Bars can meet successfully the most exacting demands of both engineer and designer. They have been planned and produced with the same careful attention to detail that has made both De Luxe and Premier mouldings and sashes so popular with architects and owners who appreciate distinctive, sales-winning store fronts.

All members of the Pittco De Luxe line are formed by the extruded process to assure utmost rigidity, sharp outlines and a satin-smooth finish. Pittco De Luxe is first choice for top quality installations. Pittco Premier is lighter in weight and more moderately priced than its distinguished companion line. It is easier to install than any other metal construction. These practical advantages plus its graceful contours make Pittco Premier ideal when style and economy are of equal importance.



PITTCO DE LUXE

PITTCO PREMIER

PITTCO
STORE FRONT METAL

"PITTSBURGH" stands for Quality Glass and Paint

PITTSBURGH PLATE GLASS COMPANY

REVIEWS

(Continued from page 92)

the term, "as it were," and that is pretty often. He believes that the Nebraska State Capitol is the finest government building in America. Without discussing such buildings as the Fresno City Hall in detail in this review, it occurs to me that it might have been more valuable to "all men" (Mr. Hamlin's audience for this book) to call attention to the pathetic plight of government building by a grudging admission that the Nebraska State Capitol is merely one of the best of that group of bad buildings.

Because the author speaks more often of the Nebraska State Capitol than any other building, "all men" could fairly assume that it is his favorite building, and because of that it might be well to briefly analyze it here. Most critics have never considered it more than a brave attempt by the eclectic Goodhue to free himself from the eclecticism of his past and create a building without reference to past styles. Therefore, it is an epoch in Goodhue's life, but not in architecture. The result is a building of exquisite proportions when viewed as a sculptured mass, but, as an expression of its several functions, the materials used, and of the building techniques of the present day, it lacks significance as modern architecture. Goodhue created a fine proportion in his building by composition rules based on a knowledge of the Classical and Medieval periods of which he had been so fond in his earlier life. Perhaps, if he had lived longer, he would have created good architecture, but at his death, even in the Nebraska State Capitol, he had not been able to free himself from the eclectic foibles of his youth.

A study of the plan of the Capitol reveals frightful compromises to symmetry and the major and minor axes. The plan of the tower is forced to gain prominence in the mass, and the position of the elevators, one in each corner, is a compromise to gain monumentality and inexcusable to the modern architect.

He says, ". . . in the Nebraska Capitol the architect has integrated his construction and his effect as closely as he has integrated utility and effect." Such talk is hardly pardonable, even for one spellbound by a twenty-four foot motor cruiser and tropical palms.

Mr. Hamlin's praise for the Columbia University Library and the national Capitol in Washington is hard to understand from a man of his scholarship. He speaks of suddenly changing his pace as he walks by the imposing simplicity of the old Columbia Library. I walked by that building at least twice a day for a year and a half, and I often stopped too, but it was only to shudder at the banality of the monster.

(Continued on page 96)

REVIEWS

(Continued from page 94)

The chapter on "Architecture and the Community" is one of the best in the book, and his plea for a harmonization of all the work in the community would be helpful to a general audience toward a real integration of architecture with modern life. However, the book's illustrative material is uninspiring and poorly selected.

Rather than discuss the work of Delano and Aldrich, Paul Cret, and Frank Lloyd Wright with so much enthusiasm in the same paragraph, time after time, it would have been more helpful to examine each man's work critically. Perhaps the refusal in this book to separate critical opinions of the intellect from sentimental and emotional reactions can be justified in part by the fatherly attitude of the book. That kind of thinking, though, mixed up with all the very good things of the book, does not make a very good book, but a very dull and confusing one, at least when the book is intended as an interpretation of architecture for all men.

HENRY L. KAMPHOEFNER

DRAUGHTSMANSHIP

R. Fraser Reekie. Edward Arnold & Co., London; Longmans, Green & Co., Inc., 55 Fifth Ave., New York, N. Y., 1946. 202 pp., illus. $3.00

This is one of the very few comprehensive books on architectural drafting. The author has managed to get so much useful material into compact form that experienced draftsmen will value this as a reference book while the beginning student will find it crammed with information which he will want to absorb. It is geared primarily to the beginner's needs.

The British conventions are less noticeable than one would expect, although an occasional word has a sprightly look (Automatic Alarum, Earth Point, Lintol). The author must be a very fine teacher, for the text is packed with clear *examples* without burdening the reader with theory. The hundreds of drawings are beautifully clear and open in an unobtrusively individual style that in itself should go far to encourage the student to develop his own abilities.

The book is innocent of an index (how could the publisher dare?) but its chapter organization is clear enough:

I. Equipment (and technique).

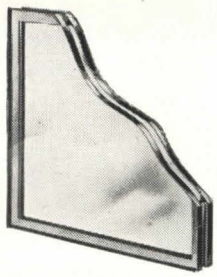
II. Line Drawing (with geometry, orthographic projection auxiliaries, developments).

III. Lettering (based on Roman proportions but not neglecting stencils and mechanical aids).

(Continued on page 98)

How to Install *Thermopane*

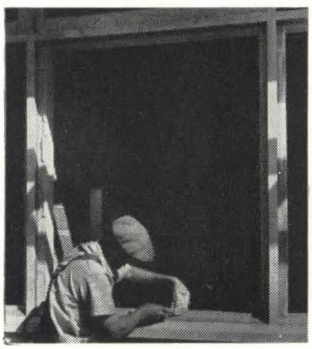
REG. U.S. PAT. OFF.



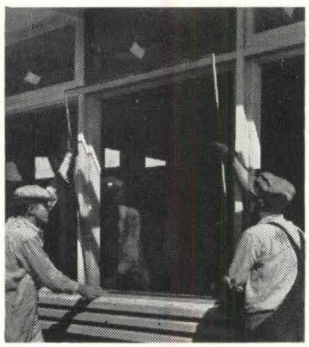
CUTAWAY VIEW OF *THERMOPANE* UNIT

Because *Thermopane* is being used more and more in buildings of all types, you will welcome this step-by-step explanation of *Thermopane* installation. It requires no special skills or special tools. For more complete glazing details than illustrated below, check your Sweet's File or write us.

IN WOOD SASH



1. Be sure opening is square so unit will not bind. Bed sash with high-grade glazing compound free of corrosive agents before the *Thermopane* is inserted.

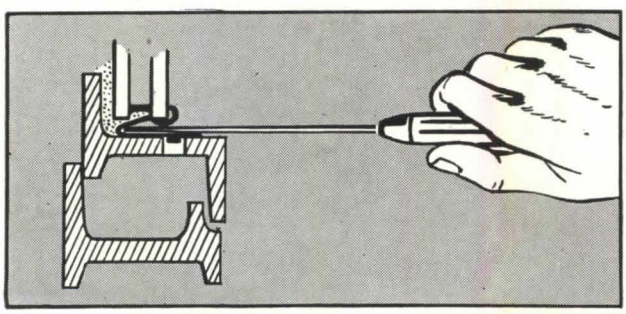


2. Place unit on approved setting blocks located in from each corner and centered ¼ the length of the unit. Press in evenly. Allow equal clearance between edges of glass and sash.

3. Fill voids on all edges with glazing compound to prevent air infiltration and water leakage. Do not use blocks at sides or top of *Thermopane.*

4. Cover perimeter with glazing compound before applying face stops. To avoid point pressure, do not toenail unless sash is rabbeted to receive stop.

IN STEEL SASH



Specially-designed L·O·F phosphor bronze clips are now available from L·O·F Distributors for installation in steel sash.

1. Bed sash with glazing compound.
2. Insert *Thermopane* unit.
3. Put clip on end of putty knife.
4. Insert clip between edge of *Thermopane* unit and steel section until clip lug snaps into hole.
5. Fill all edge voids.
6. Face finish with glazing compound.

STANDARD SIZES

Thermopane is made in more than 60 standard sizes, readily adaptable for new construction or remodeling —for Picture Windows, Window Walls, double hung wood window units and residential steel casements. Your L·O·F Distributor has most of the Picture Window standard sizes in stock. Libbey·Owens·Ford Glass Company, 2787 Nicholas Building, Toledo 3, O.

LIBBEY·OWENS·FORD
a Great Name in **GLASS**

ONLY L·O·F MAKES *Thermopane*

REVIEWS

(Continued from page 96)

IV. Scale Drawing (various types from maps to details).

V. Conventional Indications and Representations (structural, small scale plans, details, electric, plumbing, etc.) with a valuable check list for the material to be considered in making working drawings.

VI. Tracing and Reproduction of drawings.

VII. Projections (Isometric, Oblique, Perspective). The general perspective method is very clear for so brief a presentation; the "interior" rather confusing.

VIII. Rendering (including quite a comprehensive coverage of shades and shadows and the essentials of various techniques).

IX. Freehand Sketches (just the bare bones of technique).

JOHN RANNELLS

PILLAR TO POST. HOMES SWEET HOMES.

Osbert Lancaster. Transatlantic Arts, Inc., Forest Hills, N. Y., 1947. 80 pp.; 78 pp.; illus. by the author. $2.25 each

Weighty and learned textbooks may come and go, but *Pillar to Post* and *Homes Sweet Homes* would seem to go on forever. Lancaster admirers will be pleased to learn that the former book has just gone into its eighth printing, and the latter into its sixth. Sharp in wit, concise in information, both books still provide one of the quickest and most pleasant ways to review the main stylistic development of English residential design. The transition from Egyptian to "Twentieth-Century Functional," via "Perpendicular," "Kensington Italianate," "Public-House Classic," "Art Nouveau," "Pseudish," and numerous periods with similar Lancasterian classifications, is traced in *Pillar to Post;* while *Homes Sweet Homes* takes the reader inside the houses of these successive periods. The two books should be read one after the other for both the best in learning and enjoyment. The author's own drawings face each page of descriptive text, for ready reference and pleasure.

C.Z.

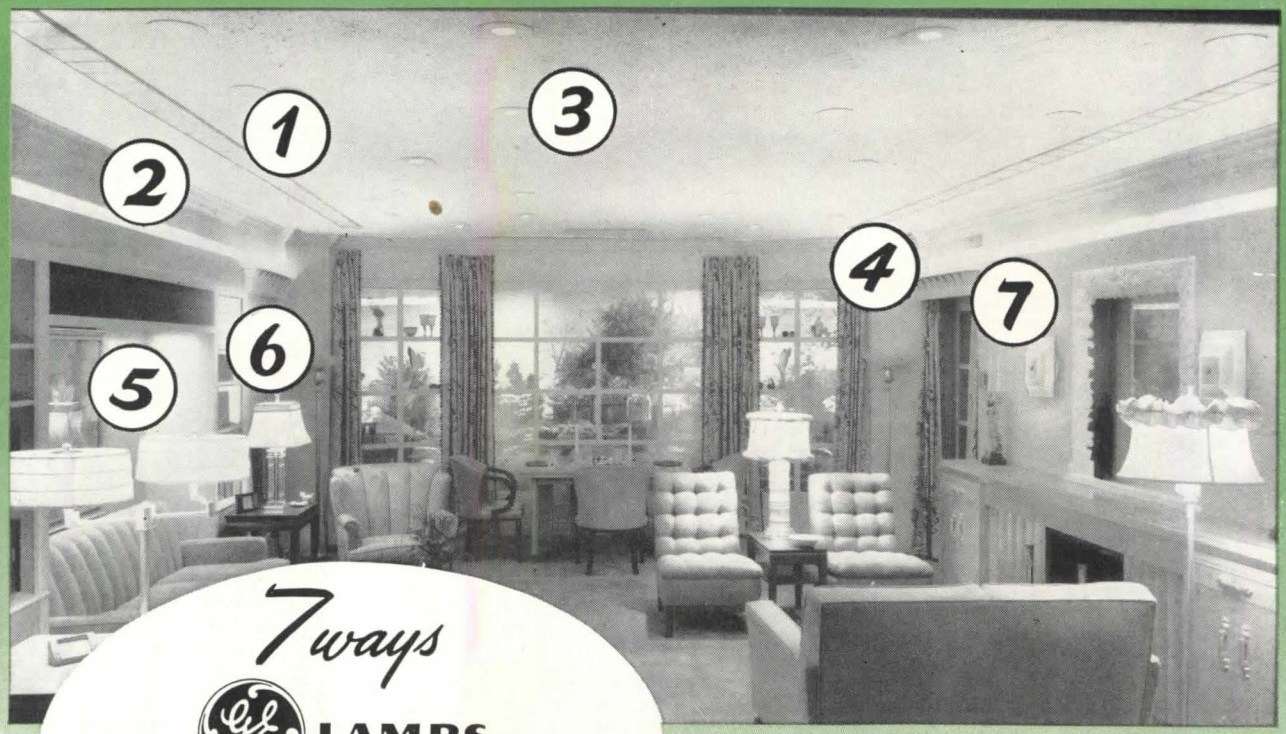
A.S.H.V.E. GUIDE

1947. American Society of Heating & Ventilating Engineers, 51 Madison Ave., New York, N. Y. 6" x 9", 912 pp. of text, nearly 300 pp. of catalog data, indexes, etc. $6.00

This latest *Guide* is the 25th annual edition. It demonstrates again that the heating and ventilating engineers as a profession keep up to date. The *Guide* is a wonderfully comprehensive text on all of the subjects covered, constantly revised to conform to present practice.

JOHN RANNELLS

FOURTH IN A SERIES FEATURING DISPLAYS AT THE G-E LIGHTING INSTITUTE



7 ways G-E LAMPS Make a Living Room Livable

This living room is a laboratory for architects. It abounds in new, practical lighting ideas. Into this room are gathered an array of modern light sources which can be used singly or in combination to create atmospheres of comfortable living. Here, in the G-E Lighting Institute Horizon House, architects may study new uses for G-E Lamps, fluorescent and filament, for easier seeing and for decoration.

1. G-E Slimline lamps recessed in the ceiling in continuous lines are shielded by etched plastic tiles and are engineered to illuminate side walls.
2. G-E Slimline lamps in coves along side walls bathe the ceiling with cool over-all lighting.
3. G-E projector spotlamps and floodlamps are recessed in the ceiling at strategic points to provide both concentrated downlight and dramatic highlighting for furniture groups.
4. G-E Fluorescent lamps in door and window valances add light, glamour and loveliness.
5. The soffit above the sofa contains two rows of G-E Slimline lamps to provide flexible and comfortable reading light.
6. Bookcase lighting is supplied by G-E Slimline lamps placed vertically within side trim.
7. G-E Circline lamps are used in the wall brackets. They are shielded by pleasing and decorative glass.

Whatever the lighting needs of your client, specify G-E Lamps, the ones that benefit from unending research to . . .

Stay Brighter Longer!

G-E LAMPS

GENERAL ELECTRIC

Write for free copy of "Horizon House", a descriptive booklet of architectural and installation details of this room. Address General Electric, Nela Park, Dept. AF1, Cleveland 12, Ohio.

JOBS AND MEN

MEN WANTED

DESIGNER-DELINEATOR with imagination; SEVERAL EXPERIENCED DRAFTSMEN who have not learned too well how things were done yesterday; STRUCTURAL ENGINEER with experience in concrete work—wanted by firm doing general architectural, interior, and industrial design; neighborhood planning; and large-scale housing. Good pay and working conditions. William and Sylvia Wilde, 415 E. 5th St., Tucson, Ariz.

EXPERIENCED DRAFTSMAN AND DESIGNER—wanted by recognized, well established office in beautiful midwestern city. Capable of handling school and institutional projects from sketches to completion. Splendid opportunity and permanent position for right man. State age, experience, salary expected, and other pertinent data. Telegram preferred. Box 44, PROGRESSIVE ARCHITECTURE.

SEVERAL ARCHITECTURAL DRAFTSMEN, ARCHITECTURAL ENGINEER, SPECIFICATION WRITER—wanted by firm doing hospital, school, commercial, and residential work. 44-hour week. State education, experience, age, and salary expected. Otis & Grimes, 312 Tyler Bldg., Louisville 2, Ky.

ARCHITECTURAL DRAFTSMEN—capable of developing working drawings in small office doing general practice. Good opportunity. Give full particulars, age, education, experience, and salary. Clarence Warren Doll, A.I.A., Donnell Bldg., Mattoon, Ill.

EXPERIENCED ARCHITECTURAL DRAFTSMAN—with good habits and interested in a future. Living apartment assured. G. H. Bugenhagen, Architect, Minot, N. D.

ARCHITECT—man with broad general experience, capable of developing complete working drawings from preliminary sketch. Design ability desirable. Work varies. State age, experience, salary expected, and when available. Send recent photograph. Atlee B. and Robert M. Ayres, 3002 Transit Tower, San Antonio, Tex.

INSTRUCTOR IN ENGINEERING DRAWING AND DESCRIPTIVE GEOMETRY—require degree from accredited engineering school in engineering or architectural fields. Prefer teaching experience. $2400 for 9-month school year. Opportunity for advancement. Must be ready to start September, 1947. C. H. Black, School of Mines and Metallurgy, University of Missouri, Rolla, Mo.

MECHANICAL ENGINEER—to do heating, plumbing, ventilating design, and drafting. Good salary, excellent working conditions. Write Box 308, Santa Fe, N. M., stating educational and experience background and salary requirements.

ARCHITECTURAL DESIGNER—needed by well established architectural-engineering firm engaged in community planning, hospital planning, and other diversified work. Excellent working conditions in ideal climate. Write Box 308, Santa Fe, N. M., stating qualifications in detail and salary requirements.

CHIEF DRAFTSMAN—wanted to handle drafting room. Must be experienced in all phases of architecture, such as hospitals and commercial buildings. Submit references, salary expected, and samples of work to Michael J. DeAngelis, 1403 Temple Bldg., Rochester 4, N. Y.

YOUNG ARCHITECT—highly experienced, capable of taking charge of office. Must be graduate of accredited school, good designer *and delineator*. Excellent opportunity, permanent, and an interest in the firm. W. H. Schumacher, A.I.A., 906-12 Petroleum Bldg., Oklahoma City, Okla.

SKILLED FURNITURE DRAFTSMEN—excellent opportunity in old, established firm. New factory, new equipment, permanent

(Continued on page 102)

Q. *What is an effective way of preventing heat loss through the stairway to an attic?*

A. *See Balsam-Wool Application Data Sheet, Section D, No. 3.*

Q. *Which is the more practical of the two ways of calculating heat transmission coefficient in wall construction?*

A. *See Balsam-Wool Application Data Sheet, Section A, No. 3.*

Q. *How does one calculate the amount of insulation needed to prevent condensation moisture on inside surface of walls and roofs?*

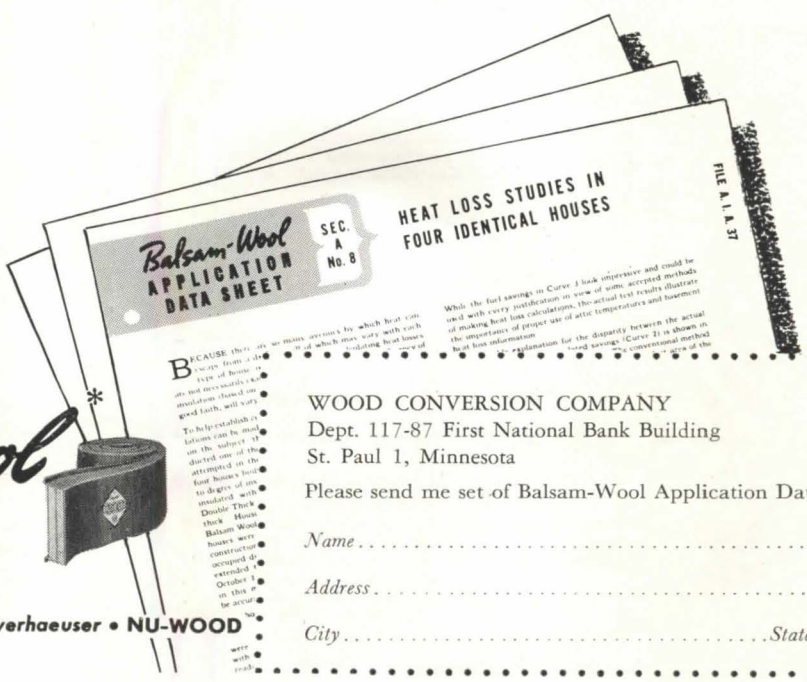
A. *See Balsam-Wool Application Data Sheet, Section A, No. 7.*

HARD-TO-GET FACTS

. . . now easily available

Balsam-Wool Data Sheets

Quick, easy, authoritative answers to tough insulation application problems—you'll find them in Balsam-Wool Application Data Sheets! These sheets combine the results of laboratory and field research—place hard-to-get facts at your finger tips. Sheets are conveniently assembled in an A.I.A. file folder. Mail the coupon today for your set of Balsam-Wool Data Sheets—they are yours for the asking without obligation.



Balsam-Wool*

SEALED INSULATION

*REG. U. S. PAT. OFF.

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

WOOD CONVERSION COMPANY
Dept. 117-87 First National Bank Building
St. Paul 1, Minnesota

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

Name . . . . . .

Address . . . . . .

City . . . . . *State* . . . . . .

JOBS AND MEN

(Continued from page 100)

position in growing concern. Biggs Antique Co., 900 W. Marshall St., Richmond, Va.

ARCHITECTURAL DESIGNER — fully experienced on theatres, stores and industrial work. Must be capable of executing working drawings and details and of directing such effort. Permanent connection can be offered to qualified applicant in large architectural-engineering organization. Send record of experience and samples of work. Marr and Holman, 701-703 Stahlman Bldg., Nashville, Tenn.

STRUCTURAL ENGINEER—with good experience who can design and make drawings for structural and reinforced concrete. Permanent position can be offered to properly qualified applicant in large architectural-engineering organization. Send record of experience and samples of work. Marr and Holman, 701-703 Stahlman Bldg., Nashville, Tenn.

MECHANICAL ENGINEER—fully experienced in making designs, working drawings, and writing specifications for heating, plumbing, and air conditioning. Permanent connection in large architectural-engineering office can be offered to properly qualified applicant. Send record of experience and samples of work. Marr and Holman, 701-703 Stahlman Bldg., Nashville, Tenn.

INSTRUCTORS—architectural design, structural design, building materials and equipment, and freehand drawing instructors needed at architectural schools for Fall sessions. Those interested apply to Professor Paul Weigel, Chairman of the Committee on Employment for the Association of Collegiate Schools of Architecture, Kansas State College, Manhattan, Kan.

DESIGNERS AND DRAFTSMEN—architectural and structural, needed on A and E contract on Guam. Minimum of five years' experience. Give education, experience, and references in letter of inquiry. Pacific Islands Engineers, Second Floor, Ferry Bldg., San Francisco, Calif.

FULL-TIME DRAFTSMAN, PART-TIME DRAFTSMAN—needed by Houston, Texas, architect working on residential and small buildings. (Part-time at night.) Applications must show complete experience, salaries, and salary expected. Will be confidential. Box 42, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DRAFTSMEN—capable of executing complete working drawings and details, preferably with church or school experience. Also JUNIOR DRAFTSMAN, college graduate. Steady employment, small growing office in metropolitan New York area. Give full particulars in first letter. Box 45, PROGRESSIVE ARCHITECTURE.

(Continued on page 104)


THREE HINGES make'em SWING EASY
STANLEY
CLICK
VISIBLE Mark of Good Construction
THE STANLEY WORKS
NEW BRITAIN, CONN.
STANLEY
REMEMBER . . . . . THREE HINGES TO A DOOR

JOBS AND MEN

(Continued from page 102)

JUNIOR DRAFTSMAN—aptitude designing; versed English, French, Renaissance orders; modern trend unessential. Diversified practice, office, board, field work. Ambitious, apply himself; convert ideas into neat drawings—schools, hospitals, churches, houses; good letterer. Future, medium sized architect's office, New York City. Salary open, advancement commensurate with ability. Application full particulars. Box 11, PROGRESSIVE ARCHITECTURE.

JOBS WANTED

YOUNG MAN — desires position with architect. B. S. in architectural engineering, M. S. in civil engineering, University of Illinois. Is interested in the design possibilities of unusual and refined structural systems. Available October 15. Complete information on request. Edward C. Colin, 410 Chalmers St., Champaign, Ill.

SCALE MODEL BUILDER — wants freelance work. New materials and precision methods used. 20 years' experience. Reasonable rates. Address John Steinichen, R.F.D.#9, Box 193, Atlanta, Ga.

ARCHITECT-ARTIST AND DELINEATOR—of long experience, offers services for freelance architectural renderings and perspectives, bird's-eye views of architectural treatment of engineering structures such as highways and bridges. Theodore A. de Postels, A.I.A., Studio at 644 Riverside Drive, New York 31, N. Y. AUdubon 3-1677.

ARCHITECTURAL PERSPECTIVE STUDIO—perspectives, bird's-eye views, composite factories' aero-views, interiors, in different media. Architectural Perspective Studio, 21 E. Van Buren, Chicago, Ill.

DESIGNER-ARCHITECT — European and American training and 30 years' diversified experience. Desires association or partnership where high artistic qualities in modern planning are wanted. Can go anywhere. Box 43, PROGRESSIVE ARCHITECTURE.

ARCHITECT—licensed, 30 years old, possessing very exceptional architectural abilities and experience; talented designer, draftsman, and detailer; also capable of specifications, supervision and structural. Desires to leave metropolitan Chicago and associate with progressive small office, preferably in Southwest. Box 46, PROGRESSIVE ARCHITECTURE.

SALES REPRESENTATION—steel products, steel kitchens, steel furniture, and plastic material for home construction, commercial, and industrial buildings. Wanted for Pacific Northwest by engineering draftsman with broad technical, economical, and artistic knowledge. 15 years' private experience, 3 years with U. S. Government department. Box 47, PROGRESSIVE ARCHITECTURE.

Roddiscraft

The architect's door and plywood

Built Like an Architect Works

The same pattern of skill and care with which an architect works is applied by Roddiscraft in the fabrication of hardwood flush doors and plywood. Skilled craftsmen, working with the finest materials, fashion doors and plywood which, when applied, reflect your skill and ability.

For more than fifty years, Roddiscraft products have been closely identified with architects. Today architect-specified Roddiscraft doors and plywood are the showpieces of many leading architectural firms.

Roddis controls its materials from timber tract to finished product. We know what's inside and out. Roddiscraft quality is more than veneer deep.

Nationwide Roddiscraft Warehouse Service

Cambridge 39, Mass. . 229 Vassar St.	Long Island City, New York . . . . . Review & Greenpoint Ave.
Chicago 8, Ill. . 1440 W. Cermak Road	
Cincinnati 2, Ohio . . 457 E. Sixth St.	Los Angeles 11, Calif. . 2860 E. 54th St.
Dallas 10, Texas . . 2800 Medill St.	Marshfield, Wis. . . . 115 S. Palmetto St.
Detroit, Mich. . 11855 E. Jefferson Ave.	Milwaukee 8, Wis. . . 4601 W. State St.
Kansas City 8, Mo. . 2729 S.W. Blvd.	New York City, N. Y. 920 E. 149th St.
Louisville 10, Ky. . 1201-5 S. 15th St.	San Antonio, Texas . . 727 N. Cherry St.

DEALERS IN ALL PRINCIPAL CITIES

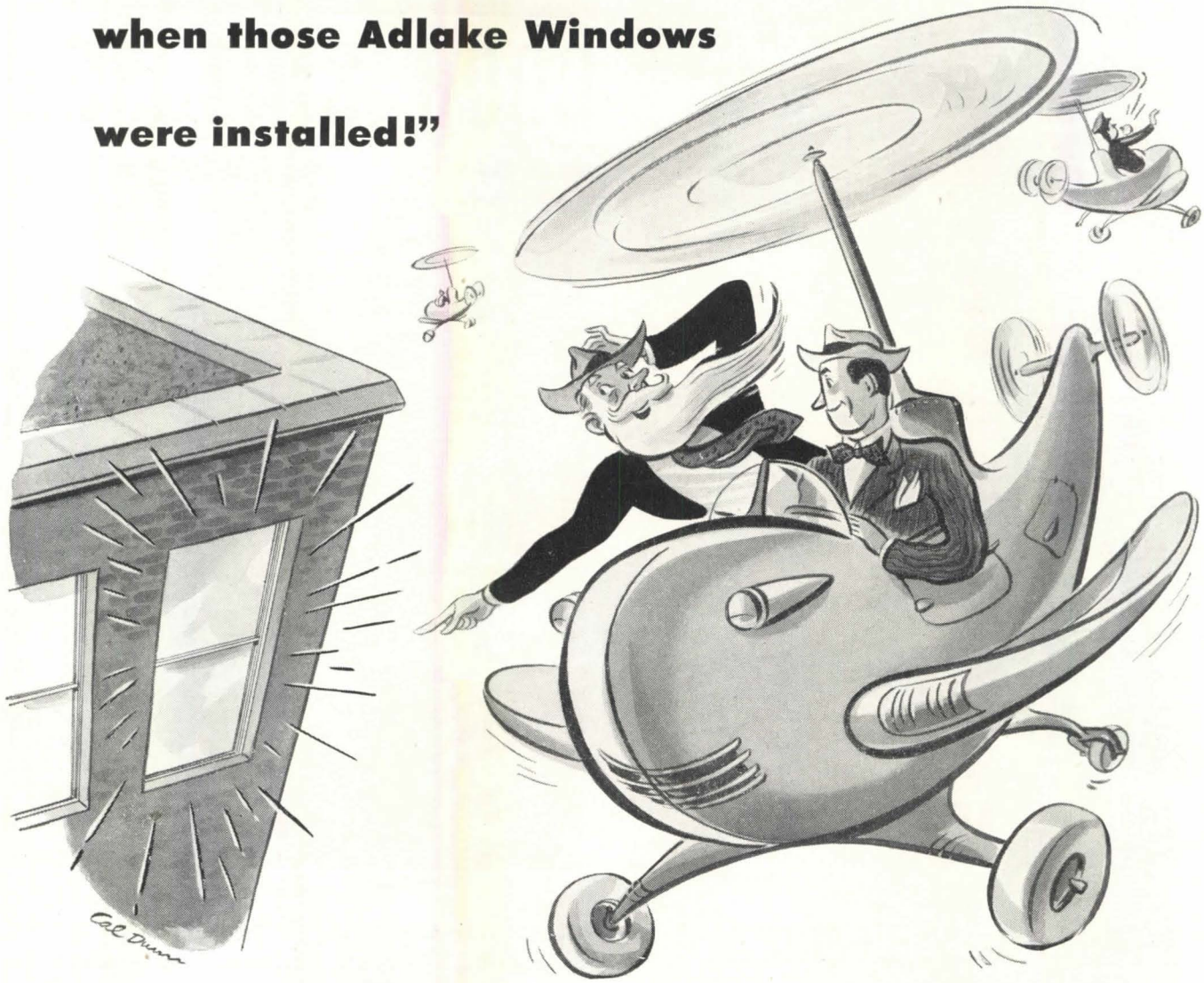
Roddiscraft

Roddis Lumber & Veneer Co.

MARSHFIELD, WISCONSIN

"I was just a boy back in '47...

when those Adlake Windows were installed!"



BUILT FOR A LIFETIME of service, designed for lasting beauty—*Adlake* Aluminum Windows are today's best window investment!

Only Adlake combines non-metallic weather stripping and serrated guides to stop excessive air infiltration and give you finger-tip control. What's more, its lustrous aluminum sash requires no painting or maintenance. No warp, rot, swell, stick or rattle—*ever*.

Truly, the Adlake Aluminum Window fulfills your every architectural requirement! Complete information and data will be mailed you on request. Drop us a postcard today... there's no obligation, naturally. Address: The Adams & Westlake Company, 1103 N. Michigan, Elkhart, Ind.

THE

Adams & Westlake

COMPANY

Established 1857 • ELKHART, INDIANA • New York • Chicago

Adlake TRADE MARK

Furnishers of
Windows to the Transportation Industry
for Over 30 Years

PRESTILE

"Its Plastic Beauty is Baked In"

Eleven Million PresTile "Salesmen"!

TO MILLIONS of homes all over America — 11,674,703, to be exact — PresTile brings its message of beautiful, practical walls, quickly and inexpensively set up.

PresTile advertising appears in Better Homes & Gardens, American Home, House & Garden and Small Homes Guide. All of it is designed to make prospective home builders and remodelers familiar with PresTile advantages.

This means ready acceptance when you specify this tileboard of recognized quality!

To our Dealers: *Much as we'd like to hurry up production of PresTile to meet the overwhelming demand, we will not skimp on quality and care needed to produce a better tileboard. However little you may receive, be assured it's the best that can be made.*

Prestile Manufacturing Company
2860 Lincoln Avenue • Chicago 13, Illinois

H&H AUTOMATIC DOOR SWITCHES

Automatically control the lights by opening and closing of doors as in closets, storage and refrigeration chambers, vaults etc. Numbers illustrated here are designed to switch on lights when door is opened; others available for lighting when door is closed. No. 6553 comes complete in an approved box with 23/32″ and 1/2″ knockouts and clamp for flexible metallic conduit. No. 2022 is mounted in a steel box, porcelain lined. No. 6550 is mounted in a porcelain base; fits all standard door switch boxes. Ratings: 6 Amps., 125 V.; 3 Amps., 250 V. Striker plates furnished with each switch.

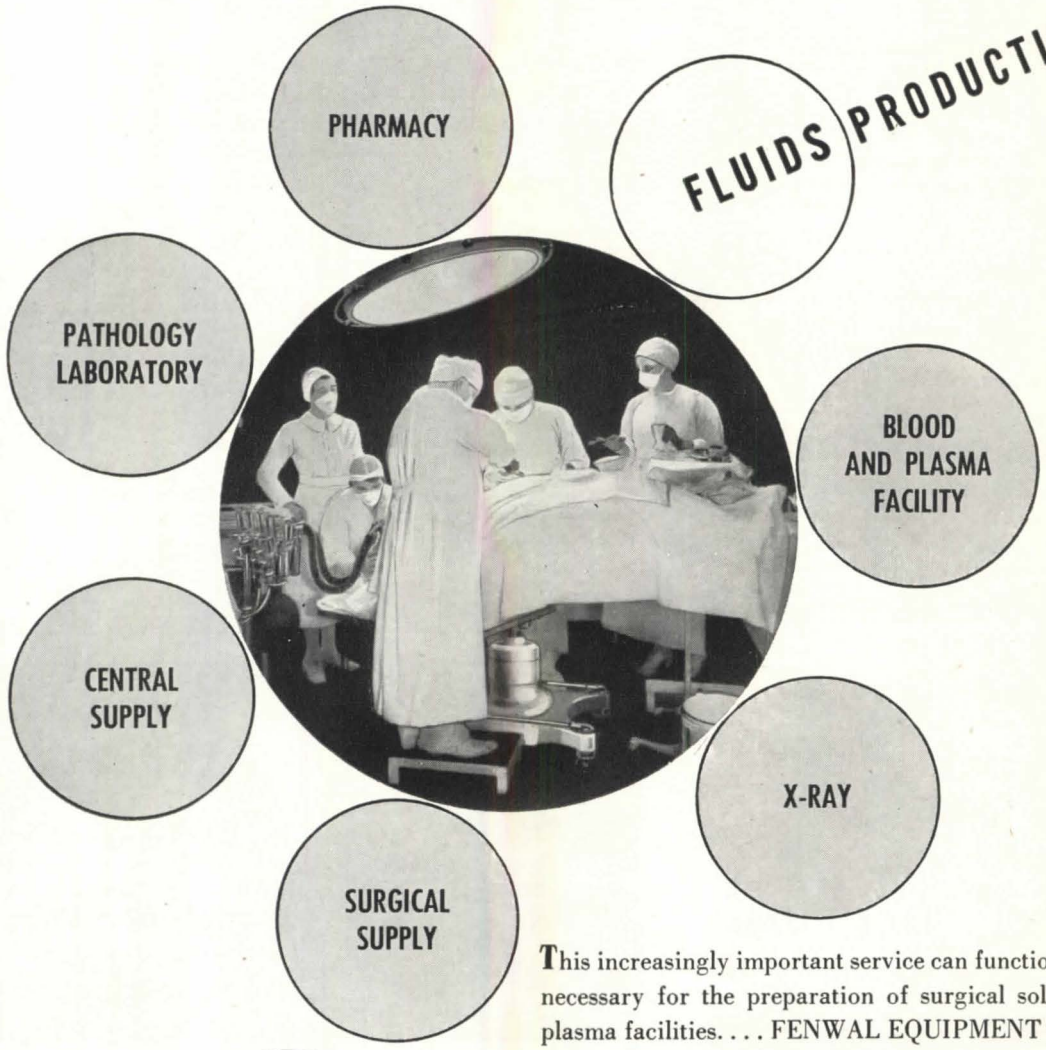
Write for specification-data on the *complete* line.

HART & HEGEMAN DIVISION

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

Centralization means economy

Few hospital departments which form the chain of services that focus on the surgery, can offer an economy potential comparable to the



This increasingly important service can function to centralize equipment necessary for the preparation of surgical solutions, whole blood and plasma facilities. . . . FENWAL EQUIPMENT permits independent production control by the hospital.

The Fenwal technic of producing sterile fluids is appreciably less difficult than that of collecting blood and producing plasma. . . . FENWAL EQUIPMENT can be operated accurately and safely by any trained attendant.

Negligible space is required for a Fenwal installation, a *major* proportion of which is essential to the blood bank facility as well. Centralization can thus mean important economies in time and labor *plus* the savings in Solution costs that will many times exceed the outlay for equipment and supplies.

Fenwal

ORDER TODAY *or write immediately for further information*

MACALASTER BICKNELL COMPANY

243 Broadway Cambridge 39, Massachusetts

A BUSY BU LD NG IN DALLAS SPEEDS UP ELEVATOR SERVICE

Otis Engineers End Traffic Congestion With Automatic Dispatching, Shorter Round Trips

Lobby congestion ended—waiting time cut by more than half — trips dispatched at regular intervals — these are the results of the elevator modernization in the Medical Arts Building.

DAILY TRAFFIC 19,700 PLUS. A traffic survey by the Otis Elevator Company showed that 19,700 persons entered and left the elevators at the main floor every day. In addition, elevators were used constantly for inter-floor traffic between offices, laboratories and the hospital at the top of the building. Waiting time was excessive, both up and down trips were irregular and full cars often had to bypass waiting passengers. Two banks of elevators, each located in different sections of the building, served all 19 floors.

ENGINEERS MAKE RECOMMENDATIONS. Otis engineers recommended an immediate conversion to modern Peak-Period Control and to high-speed, power-operated doors. They also recommended that one bank of elevators be reserved for local traffic, the other for express travel.

Controls are now arranged so that the scheduling of the elevators is independent of the human element. By simply pressing a button on the lobby control panel, the starter instantly adapts the elevators to changing traffic conditions.

WAITING TIME CUT 42 SECONDS. As a result of proper scheduling and shorter round trips, congestion in the lobby has been eliminated and the average interval between cars reduced from 72 seconds to less than 30. Tenants, visitors and owner praise the greatly-improved service.

DALLAS 19-STORY MEDICAL ARTS BUILDING, *one of the nation's first structures to combine doctors' and dentists' offices, laboratories and complete hospital facilities under one roof.*

PORTION OF LOBBY *showing recently-modernized elevator doors. Bronze plaques on doors depict Pasteur, Hippocrates and other immortals of medicine.*

GOOD SUGGESTION FOR BUILDING OPERATORS. If the elevator efficiency of your building is hampered by inadequate dispatching methods or outdated equipment, why not let a trained Otis modernization expert help you, too? His experience and services are yours at no obligation . . . just call your nearby Otis office.

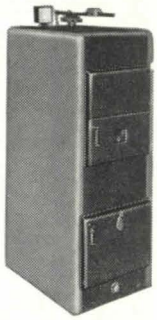
OTIS ELEVATOR COMPANY

NRC . . . leads the show in heating!

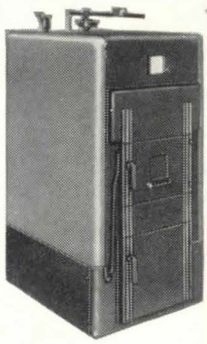
Here are your star performers for the sales seasons ahead. This newest line of National Heat Extractors is the result of more than seven years of intensive research.

The features your customers want most—economical heating, long efficient service, smart appearance, easy convertibility to any fuel—have been engineered into this new, sturdy generation of an already distinguished family.

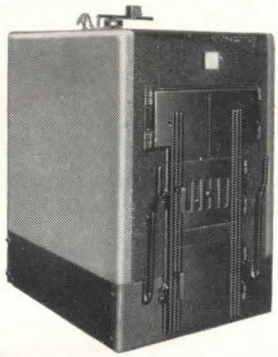
Models to fit every need from small homes to large commercial installations.



"100" SERIES. Smart and compact for small home installation in kitchen, basement or utility room.

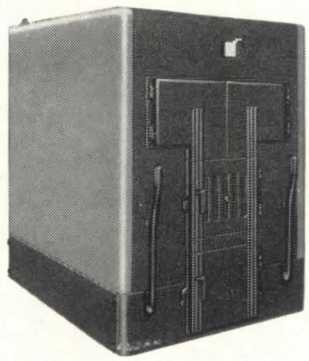


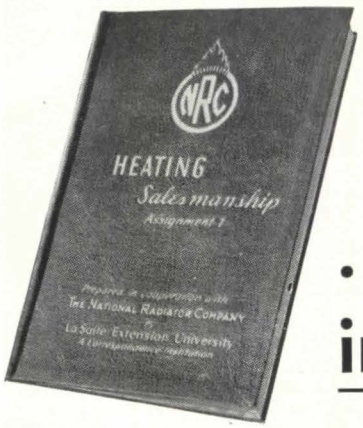
"200" SERIES. Big boiler performance for homes of medium size and some commercial installations.



"300" SERIES. For larger homes, small apartments and various commercial installations where more heat is needed.

"400" SERIES. The "400" and "500" are designed for very large installations where plenty of heat is required to serve many purposes. Characteristic HEAT EXTRACTOR construction.





. . shows the way in selling!

To help you make more sales faster than ever before, NRC offers you its now famous training in "Heating Salesmanship." Received enthusiastically by practical heating and plumbing men across the country, its down-to-earth sales methods are already leading thousands in your industry to greater success. The five assignments, designed specifically for you who sell or install heating equipment, cost only $12.50. An additional assignment for Wholesaler salesmen is only $4.00 extra. Call your nearest NRC office or

WRITE TO: The National Radiator Company, 221 Central Avenue, Johnstown, Pennsylvania. Complete information will be given to you without obligation.

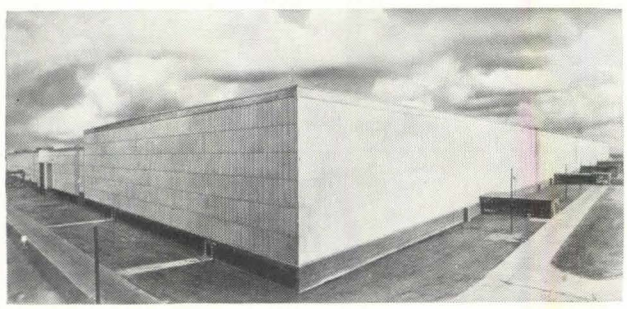
The NATIONAL RADIATOR Company

JOHNSTOWN, PENNSYLVANIA

CORRUGATED TRANSITE* ... as modern as tomorrow

*Transite is a registered Johns-Manville trade mark

From smart shops on Main Street to gigantic "shops" of industry, Corrugated Transite is being used to streamline construction and reduce costs. Transite sheets can't rot . . . can't rust . . . can't burn



The corrugations in Transite increase the unusual strength of the asbestos-cement sheets—thus allow minimum framing. But the corrugations also serve as an important element of design in modern construction.

• The surprising news about Johns-Manville Corrugated Transite is not the fact that it is fireproof and weatherproof . . . or that it needs no preservatives, and practically no upkeep. Those and other advantages have already become widely appreciated through the years.

But look at the striking lines of the store front above . . . and the attractive, streamlined simplicity of the industrial giant shown at left. In both cases, versatile Transite provides *attractiveness* as well as utility. Yes, architects, engineers, and builders are discovering that Corrugated Transite lends itself effectively to modern design.

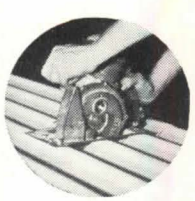
Use it on roofs or sidewalls . . . on both new or remodeled structures. Transite sheets are easily applied . . . cover large areas quickly because of their size . . . and can be completely salvaged when alterations are necessary.

Send for new brochure. Johns-Manville, Box 290, N. Y. 16, N. Y.

• • •

Because of unprecedented demand, there may be times when we cannot make immediate delivery. Please anticipate your needs.

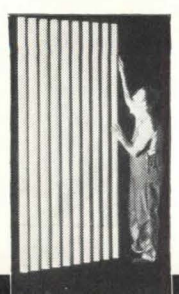
EASY TO BOLT TO STEEL



EASY TO SAW

EASY TO DRILL

EASY TO NAIL TO WOOD



JM PRODUCTS

Johns-Manville *Asbestos* **CORRUGATED TRANSITE**

INDEX TO ADVERTISERS

Advertising and Executive Offices
330 West Forty-Second Street, New York 18, N. Y.
JOHN G. BELCHER, *Publishing Director*
FRANK J. ARMEIT, *Production Manager* • JOHN ANDREWS, *Promotion Manager*
Advertising Representatives
DOUGLASS G. PILKINGTON, *District Manager*, 22 West Monroe St., Chicago 3, Ill.
D. B. WILKIN, *District Manager*, 1133 Leader Building, Cleveland 14, Ohio
EDWARD D. BOYER, JR., *District Manager*, 330 West 42nd St., New York 18, N. Y.
HAROLD D. MACK, JR., *District Manager*, 330 West 42nd St., New York 18, N. Y.
DUNCAN A. SCOTT & CO., Mills Building, San Francisco, Calif.
448 South Hill St., Los Angeles 13, Calif.

Other Reinhold Books

HOSPITALS — INTEGRATED DESIGN
By J. Rosenfield
308 pages, 9 x 12, illustrated — $10.75

THERMAL INSULATION OF BUILDINGS
By P. D. Close
104 pages, 6 x 9, illustrated — 2.00

City Planning

NEW CITY PATTERNS
By S. E. Sanders and A. J. Rabuck
200 pages, 8½ x 11½, illustrated — 8.00

THE ART OF BUILDING CITIES
By C. Sitte
130 pages, 8½ x 9½, illustrated — 6.00

HOUSING AND CITIZENSHIP
By Maj. G. H. Gray
250 pages, 8½ x 11½, illustrated — 7.50

THE HOUSING MARKET IN NEW YORK CITY
By H. S. Swan
204 pages, 6 x 9 — 2.00

CITIES OF LATIN AMERICA
By F. Violich
376 pages, 6 x 9, illustrated — 3.75

THE CITY, Its Growth, Its Decay, Its Future
By E. Saarinen
379 pages, 6 x 9, illustrated — 3.75

Art and Architectural

DON GRAF DATA SHEETS
779 pages, 4 x 7, illustrated — 6.00

THIS BUSINESS OF ARCHITECTURE
By R. B. Wills
210 pages, 5¾ x 8½, illustrated — 3.00

COLOR IN SKETCHING AND RENDERING
By A. L. Guptill
350 pages, 9 x 12, illustrated — 12.50

DRAWING WITH PEN AND INK
By A. L. Guptill
444 pages, 9 x 12, illustrated — 10.00

PENCIL BROADSIDES
By T. Kautzky
24 plates, 9 x 12 — 3.00

FUNDAMENTALS OF PERSPECTIVE
By T. DePostels
20 plates, 9 x 12 — 3.00

THE DESIGN OF LETTERING
By E. Weiss
192 pages, 9 x 12, illustrated — 5.50

PERSPECTIVE CHARTS
By P. J. Lawson
8 charts, 21 x 24 with instructions — 2.50

In Preparation

APARTMENT HOUSES
By J. Abel and F. Severud — Price Undetermined

SHOPS AND STORES
By M. Ketchum, Jr. — Price Undetermined

SEARCH FOR FORM
By E. Saarinen — Price Undetermined

NEW BOOKS BY REINHOLD

UN HEADQUARTERS

By Le Corbusier . . . .

U. N. Headquarters, by Le Corbusier, is in effect a complete report by this world-renowned architect of the entire story of the selection of the United Nations site. Le Corbusier was appointed by his country, France, as an expert in architecture and urbanism attached to the United Nations Headquarters Commission. The latter part of the book, written during the heat of the conflict, so to speak, carries the story right up to the final approval of the Manhattan site offered by Mr. Rockefeller. The whole book is an important historic document as well as an expression of the author's urbanistic philosophy.

It is illustrated in the author's characteristic technique.

80 pages, 7½ x 10 inches, $3.50

YOU WANT TO BUILD A SCHOOL?

By John Lyon Reid and Charles Wesley Bursch . . .

The emphasis of this book is on the group effort of the school planning-building program. Included is a discussion of everyone involved in the planning of a school from the pupil to the architect, even including the taxpayer. There are sections covering the following: Determining the Need for a New School; Master Planning for an Entire District; Preliminary Planning of a School Plant; and How to Use the School. This book is of equal importance to the architect as to the superintendent of schools, school boards, principals, engineers, and all others involved in schoolhouse planning.

About 150 pages, illustrated, 6½ x 9 inches, $3.50

REINHOLD PUBLISHING CORPORATION

330 West 42nd Street, New York 18, N. Y.

Also Publishers of Chemical Engineering Catalog, Metal Industries Catalog, Materials & Methods, Progressive Architecture, Advertising Management for American Chemical Society Publications.

OBSERVATIONS

THERE ARE SEVERAL INTERESTING POSTSCRIPTS TO AN OBSERVATION OF SOME MONTHS AGO, wherein I told of a pleasant time spent in a beer joint with Tom Pratt of Pittsburgh, Walter Gropius of Harvard and Dessau, and several others. P.S. No. 1: the place was raided just after we left. P.S. No. 2: spies in Pratt's office report that he blanched when he read my story and muttered, "My God, is nothing sacred to that man?"

●

ON THIS PAGE, TOM, NOTHING. IF YOU WANT TO WORSHIP OUR SACRED COWS, THE PROPER PLACE IS THE EDITORIAL PAGE. Back here we let our hair down, pull no punches, respect no persons, thumb our noses, make faces, gibe, flout, fleer, and gleek.

In fact, I wonder why we worry so much about being polite. The French, those masters of diplomacy and suavity, seem now to be surpassing us in use of the direct, disrespectful statement. For instance, *Techniques et Architecture* says, of the U.N. design arrangement: "On avait espere un concours international, mais dans un geste magnanime, J. D. Rockefeller junior a offert le terrain et son architecte, W. Harrison."

●

THERE IS MUCH SAID IN THIS ISSUE ABOUT THE USE OF FORMS FOR ESTHETIC REASONS. Sometimes, of course, an odd form is *needed* for reasons of function. An architect told us recently of a long meeting with a board of directors (his client in the aggregate), with the architect hotly defending a curved office partition. "I *need* that curved wall," he insisted. "It's the only way I can get the space that's required. It's absolutely essential. I *need* it."

Finally, when it was obvious they were getting nowhere, the president of the board turned to the others and said, "Look, gentlemen, let's drop the subject. He *needs* that curved wall."

"I never felt so defeated in my life," said the architect to us. "It was as though I had been insisting that I was Napoleon, and the guard had finally said, "All right, all right, so you're Napoleon."

P.S. The entire board is completely happy with the finished job, especially the curved wall.

●

I RECENTLY VISITED THE UNIVERSITY OF VIRGINIA AND SAW JEFFERSON'S WORK THERE FOR THE FIRST TIME. I was charmed by the total effect of the quadrangle, and intrigued by the naiveté of the detail. By comparison, the later eclectic work on the campus is cold and mechanical. "There have been many attempts to imitate Mr. Jefferson," I was told, "but only one sort of person can do it well—a second year student in the architectural school." Unfortunately, more attempts to imitate Mr. Jefferson appear imminent.

●

I'M AFRAID THAT THE QUESTION, What is a Planner?, HAS BECOME INVOLVED IN THE SORT OF DOUBLE-TALK THAT I WAS COMPLAINING ABOUT SOME MONTHS AGO. Too many people are making a distinction between planning and architecture, some for honest reasons of convictions, some for political purposes, and some in order to rationalize an existing bad situation.

From various sources I hear an argument like the following:

Town planning was led astray by the City Beautiful people. Planning involves sociology, economics, ethnology, geography, geology, politics, and various other technical matters. Traffic studies must be made. The ultimate planner is simply the coordinator. He can be an architect, or he can be a sociologist, or any professional who is one of the town planning team. An architect will be needed to make drawings, of course.

I don't believe it. Planning a city is an extension of the planning process, but the procedure, except for its scale, is no different from planning a house, or a bank, or a hospital. It requires special knowledge of many kinds. It must go through the phases of endless technical studies, but it reaches the ultimate point of physical, three-dimensional expression. I don't care whether the coordinating designer is called an architect or a planner or a commissioner —he *must* have the training of an architect.

Compare the argument quoted above with this comment I heard recently from a hospital administrator:

Hospital planning was led astray by an over-emphasis on "esthetics." Planning a hospital involves a knowledge of medicine, nursing, hospital administration, physical and mental therapies, psychology, and human relations. Careful circulation studies must be made. The ultimate planner is simply the coordinator. He can be an architect, a hospital consultant, an administrator, or any of the hospital planning team. An architect will be needed, of course, but only to make drawings.

You've probably seen hospitals designed by hospital administrators. I've seen several city plans recently, designed by economists. It's a funny thing, but you can't guarantee that either an operating suite or a cross-town traffic artery will be fully satisfactory unless you study materials, construction methods, scale, harmony, and all the other things that go to produce architecture, at the same time that you study costs and circulation and use.

The reason that I'm hot about this is that I've just seen a report of the Committee on Personnel Education and Standards of the American Institute of Planners. I know and respect most of the committee members; the organization is an important one. Yet they say in the report:

". . . . it is well to state specifically that today's planner need have no outstanding genius or talent for 'design' in the esthetic, artistic, or engineering sense, though his planning education must provide him with some training and substantial perception in these fields."

Just as architects let "engineering" go to a new professional group in the nineteenth century, they are letting city planning slip from their grasp. I don't mean to imply that any architect could plan a town. It's too late for that sort of wishful thinking. But I do say that every town planner must be an architect.

I expect to catch hell for that statement, from several sources. For example, the schools of "planning" will object. Okay —a recent graduate of one of the best of those schools just left my office. She is, by all the A.I.P. definitions, a planner, and a good one. She is soon to visit a town where several buildings that we are considering publishing have recently been completed, and I asked her to take a look at them and tell me if they're as good as they sound. "Oh," she said, "I'm not competent to judge *architecture*. I'm a planner."

Maybe I'm wrong, but it sounds to me as though the meanings of words have been twisted around to justify a new offshoot of the design professions. And once again, the architects can't blame anyone but themselves. Is it incompetence, bashfulness, or just plain lethargy? Architects, arise!