PROGRESSIVE
ARCHITECTURE
PENCIL POINTS]



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# BRASIL STILL BUILDS

Four years ago a book titled *Brasil Builds* caused a great furore in design circles in this country. We were familiar with advanced work that had been done in Europe, and we were beginning to be pleased with our own progress, particularly in technical and engineering matters. Here was shown to us South American work so free and yet so sure, based on a knowledge of reinforced concrete design apparently so superior to ours, covering so many types of structures, that it made us sit up and take notice. The inevitable copying began, but many designers profited from seeing a fresh method of approach rather than using—or criticizing—the literal results. Engineers as well as architects became interested in Brasilian work, and A. V. Boas of the Portland Cement Association visited Brasil and wrote a series of reports for the *Engineering News Record*. He found, among other things, that the designers were largely young men, that they were trained as architects *and* engineers, that they considered our structural design textbooks too elementary, and that neither climate nor workmanship could be claimed as advantages—only ability and imagination. There is a difference in the building code situation: without much change from our allowable stresses and loads, design is permitted on an ultimate strength calculation, a procedure which takes advantage of tensile steel stresses and results in appreciable savings in cost.

No comprehensive report on Brasil has been made since that time, and PROGRESSIVE ARCHITECTURE considers itself fortunate to be able to present in this issue those designs which the outstanding Brasilian architects consider their best recent work. It is our aim, as much as we are able, to document progress in architecture wherever it may appear. Unfortunately, we could not give space to all the material that was made available to us, and we hope that the rest of it will appear elsewhere. What we do present should prove, we feel, that Brasil is still building and planning to build, and that the promise earlier work made is being realized.

The Editors

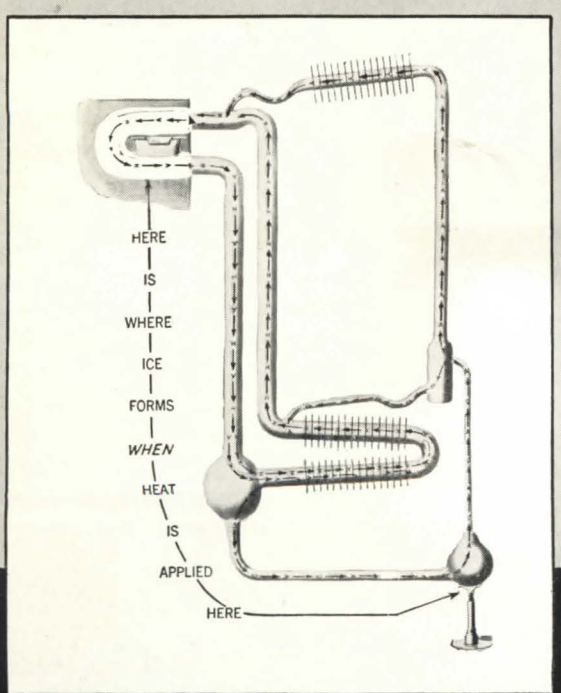
# Famous Silent Refrigerator now offers

## 1947 Servel Gas Refrigerator brings tenants and owners great new features, plus silence and dependability

Yes, the great new 1947 Servel Gas Refrigerator is even finer than the Servels that have already won the praises of more than 2,000,000 families. The 1947 Servel contains a big Frozen Food Locker that stores up to 60 packages of frozen foods. This famous refrigerator offers moist cold and dry cold for garden vegetables and meats. A specially designed flexible interior provides extra roominess. Plastic Coated shelves are rust- and scratch-resistant. All these new conveniences—plus Servel's permanent silence—are the reasons tenants will say, "There's nothing to match the 1947 Servel!"

Owners, too, will appreciate the lasting dependability and economy of the 1947 Servel. They know from experience that the Gas Refrigerator not only stays on the job year in and year out, but its low operating cost remains low for the life of the refrigerator. That's because the freezing system of the 1947 Servel, like that of every previous Gas Refrigerator, has no moving parts to wear or break down.

These exclusive advantages—new, convenient features, plus famous silence and dependability—explain why you're sure to please tenants and owners when you specify the 1947 Servel for the new apartment buildings and homes you design, build or manage. Plan now to provide outlets for Gas Refrigeration in your current designs and construction work. For specification data on the great 1947 Servel Gas Refrigerator, consult Sweet's Catalog. Or write today to Servel, Inc., Evansville 20, Indiana.



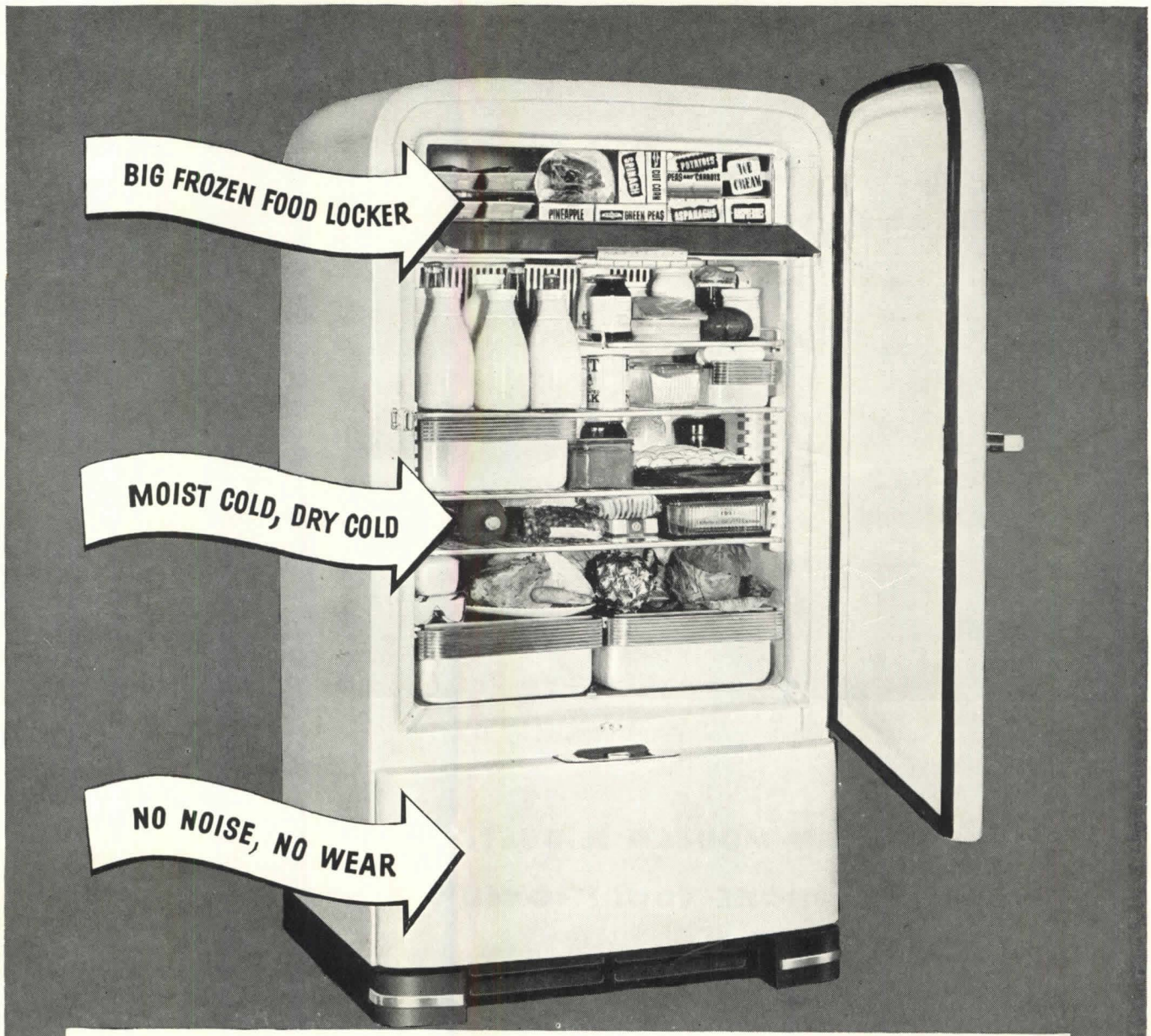

### WHY SERVEL STAYS SILENT, LASTS LONGER

**Different from all others, the Servel Gas Refrigerator has no moving parts in its freezing system. It operates on the continuous absorption principle of refrigeration. In a Servel, the refrigerant is hermetically sealed in a set of vessels connected by pipes. A tiny gas flame is applied to the lowest vessel. As a result of the evaporation properties of the refrigerant and the law of gravity, ice forms in an upper vessel. No machinery—motor, valves, pumps and compressors—is needed. That's why Servel has no moving parts to get noisy, none to wear . . . why it stays silent, lasts longer.**

STAYS SILENT
LASTS LONGER

Servel

# more convenience . . . more value




**BIG FROZEN FOOD LOCKER**

Up to 60 packages of frozen meats, poultry, vegetables, fruits, biscuits can be stored in Servel's big convenient Frozen Food Locker. It helps housewives save hours of shopping time, plan new and delightful menus in every season.

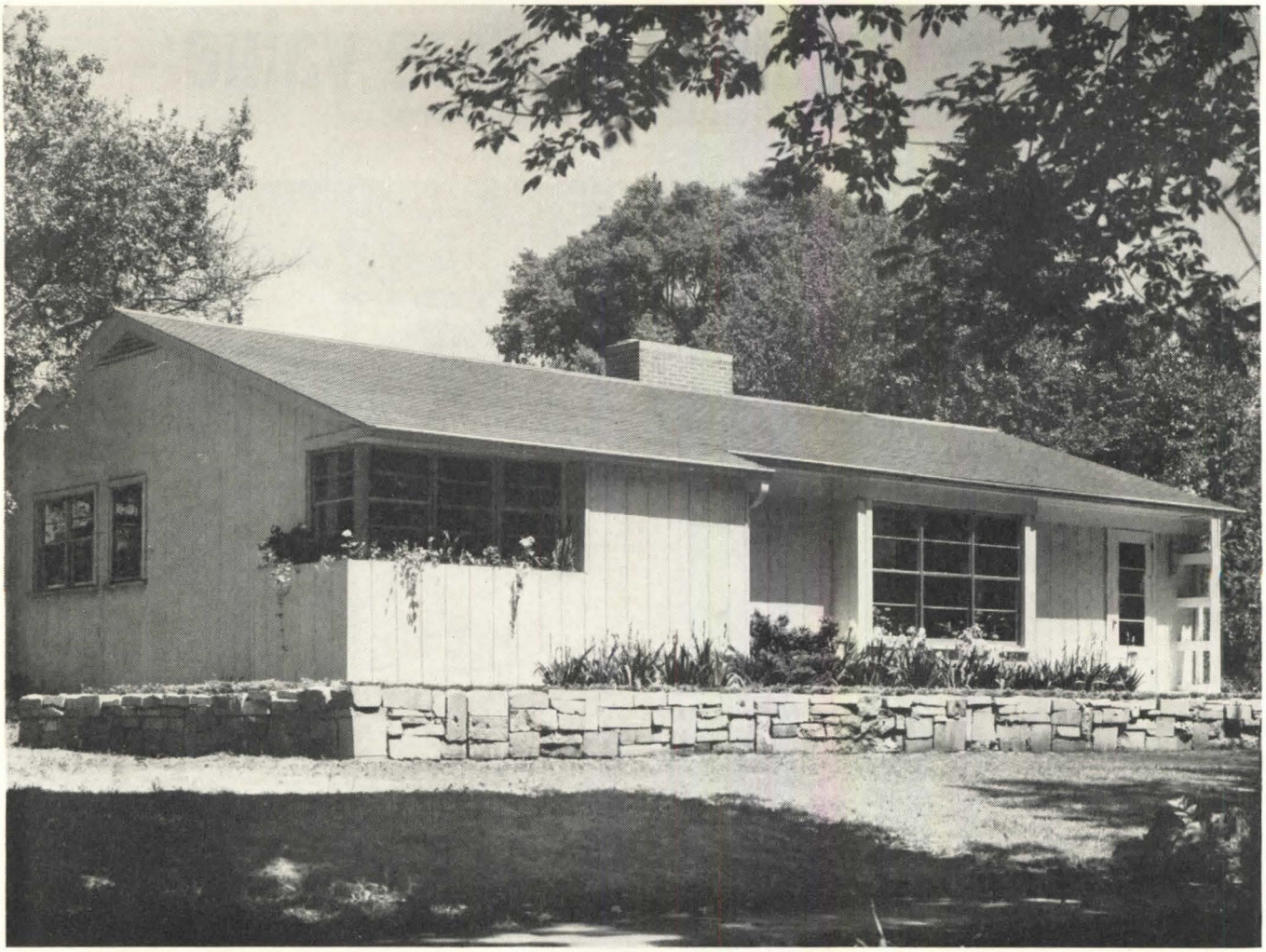
**MOIST COLD, DRY COLD**

Servel's big dew-action fresheners are ideal for keeping garden vegetables and fruits. Salad greens actually crisp up, perishables stay safe and appetizing. And fresh meats keep tender for days in the Servel meat keeper.

**FLEXIBLE INTERIOR**

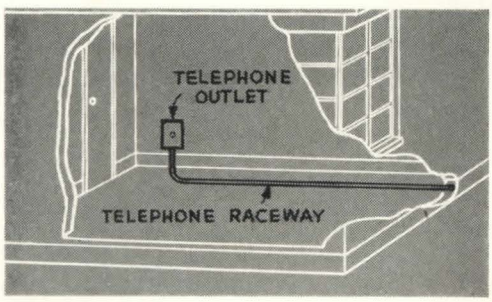
The 1947 Servel offers an amazingly practical flexible interior. For extra roominess, shelves are adjustable to eleven positions. And they're Plastic Coated for the utmost in rust- and scratch-resistance.

*The GAS Refrigerator*



*Granville Keith, Architect*

## EVEN MODERN MIDGETS SHOULD BE "TELEPHONE CONDITIONED"




What the up-to-the-minute home misses in size, it makes up for in planning. For one thing, a raceway for concealing telephone wires is provided for *in the plans.*

When there is no basement, the telephone installer generally cannot run wires up through the floor to the telephone location. But a simple wiring channel *installed before the floor is laid,* avoids attaching telephone wires in plain sight on baseboards and around window and door frames.

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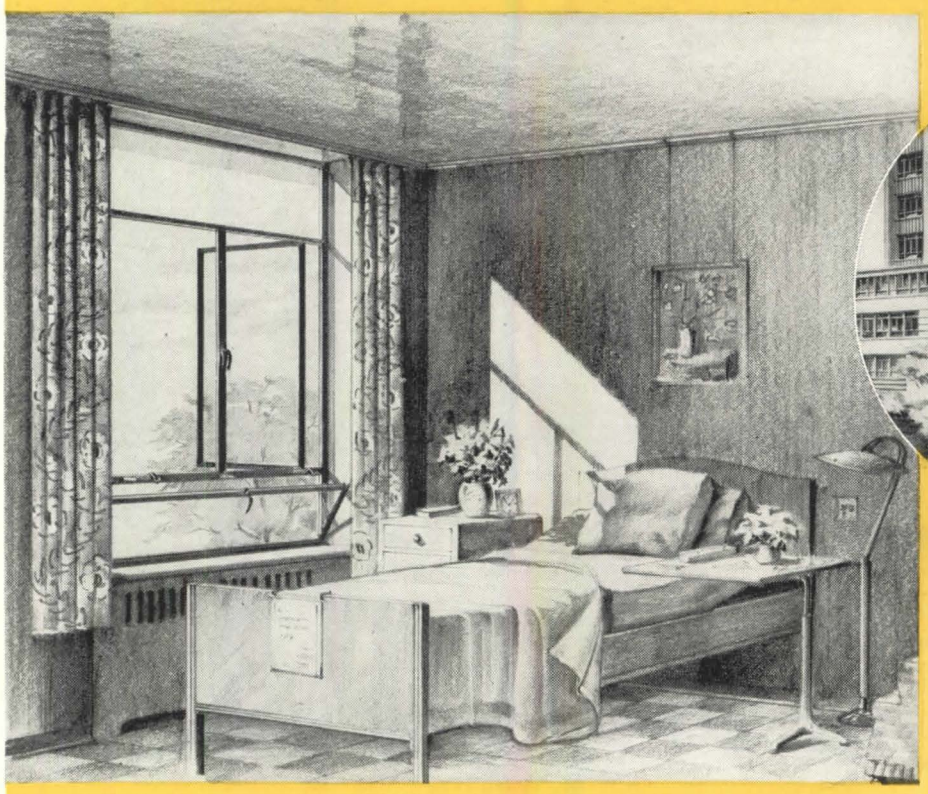
# NEW FENCRAFT FAMILY* OF WINDOWS



*Casement . . . Projected . . . Combination

*Suggestion:*

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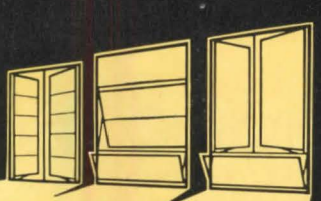
*Fenestra*



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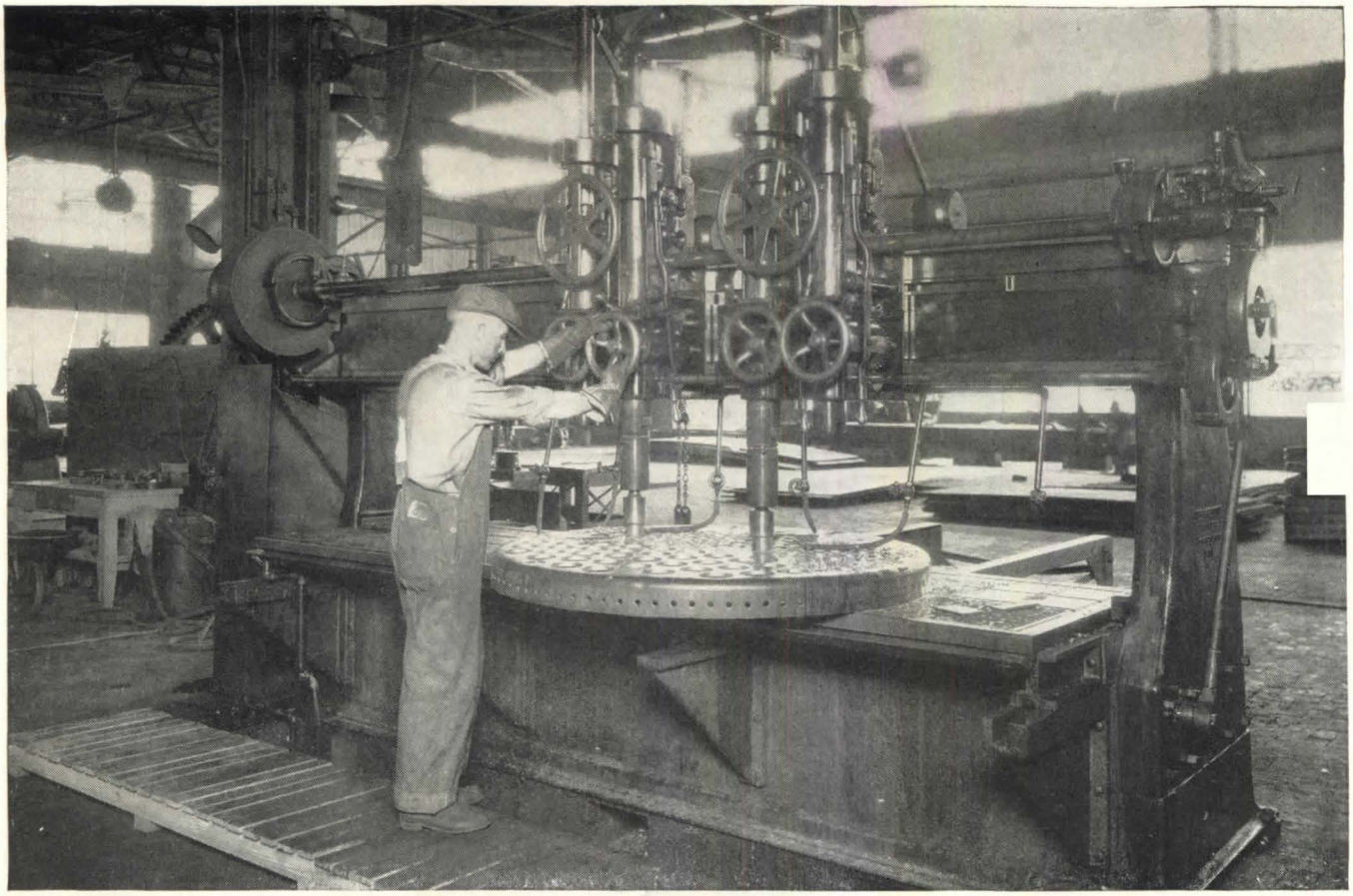
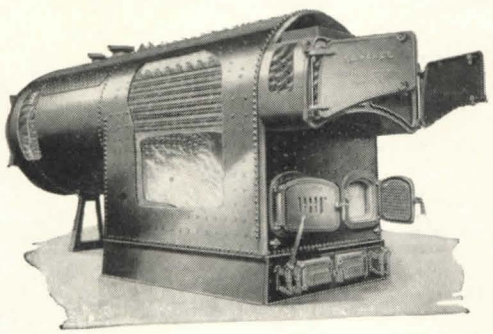


"HAND TAILORED" OF STEEL

# KEWANEE

## HEAVY DUTY STEEL BOILERS



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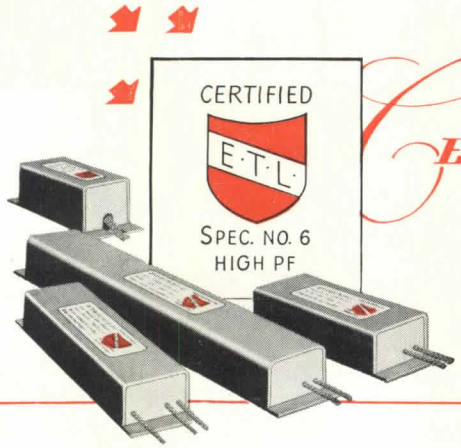


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# VIEWS

## REGARDING OUR FEBRUARY ISSUE

### THE COVER

*Dear Editor:* I have found that having a condensed form on the cover of the contents of PROGRESSIVE ARCHITECTURE is a great aid in locating material.

ROBERT L. BEALS
Fargo, N. Dakota

*Dear Editor:* From a library point of view your new cover is excellent, giving as it does at a glance all the basic data needed for the mandatory records . . . not to mention reference use.

FLORENCE WARD STILES
Arthur Rotch Memorial Library
Massachusetts Institute of Technology

### RASKIN ON HOUSING

*Dear Editor:* The article by Eugene Raskin in the Feb. '47 issue is, to say the least, half-baked and *not slightly tinged with pink.* The bldg. program is very much akin to the meat shortage situation—but strange to say—the political angles of housing are greater than a real desire for correction.

The article referred to devotes approx. half the allotted space to a half-hearted review and fouled-up analysis of (1) Strikes, (2) Shortages, and (3) Controls, also (4) Restrictions—however—approx. half the article is devoted to propaganda for govt. financed housing . . . There's only one part of this article I can agree with in the main—that is the closing—*"Where's the Housing?" go ask Uncle.* But ask him *also* how soon he is going to get out and *quit bungling!* Let's prevent a housing march on Washington.

CONRAD T. KETT
Sausalito, Calif.

*Dear Editor:* It seems to me that Mr. Raskin has failed to correctly analyze the problem and hence has arrived at a fallacious solution. Actually the situation as it exists today may be summarized as follows:

*a.* All existing dwelling units are presently under satisfactory rental controls. *b.* A vast number of additional units is required, but the present-day cost of producing them exceeds the rentals that average people can pay for them. Hence it is impossible to produce the required new units at a profit. This has resulted in the present stalemate . . . This country has plenty of raw materials. But these will not find their way into manufactured articles until a profit can be obtained from so doing. The profit motive is, always has been, and always will be paramount. Having the Government (i.e., the people) stand the loss will never solve the problem . . . the Government, no more than any private individual or corporation, can ever profit by assuming losses that can only lead to greater losses. Take the cork out of the top of the bottle and we will all be able to drink. More! We'll be able to refill the bottle time and time again until everyone's thirst has been slaked.

GEORGE FRED PELHAM, II
New York, N. Y.

*Note from Author: Mr. Pelham's rather widely accepted "solution" was not included in the three offered in my article because it is no solution at all. We have always built housing by his method and it doesn't work. We have always built for the upper incomes, allowing the resulting vacancies to filter down through the various brackets until, reaching the lowest, one more hovel becomes available. To use Mr. Pelham's metaphor of the bottle—what you have at the bottom, cork or no cork, is dregs. And not enough of those.* E.R.


*"Pendleton is in charge of small homes."*

### THAT GELLER HOUSE

*Dear Editor:* Quibbles: To be a "full presentation" the Geller house should have had a couple of sections as well as the plans. Who takes the high room and who takes the low room in the Guest House? Is there a storage attic over the children's bedrooms or is all that cubage wasted? Breuer must have swallowed a couple of large, wedge-shaped chunks of scruples—but it *is* a strong design . . . Views of the living room demonstrate the possibilities for deceit in the wide-angle lens . . .

JOHN RANNELS
New York, N. Y.

*Dear Editor:* Let me congratulate PROGRESSIVE ARCHITECTURE on its terrific handling of the Geller house. I had the privilege (*thrill* would be a more accurate word) of going through the house last November. It's just the best piece of architecture, in my opinion, that I've ever visited. I'm glad you were able to give it all that space and emphasis.

JOSEPH N. BOAZ
Oklahoma City, Okla.

*Dear Editor:* I have looked over your illustrations of the Geller house. I am a busy architect and usually let such things go without comment. However, my ire has been rising slowly during the last two years as I observe the awful things that you and the other magazines have been publishing under the ancient and respected name of "Architecture." Today, when I saw this monstrosity, I really boiled over. . . . In my younger days I used to work for Frank Lloyd Wright and have a fair knowledge of what his modern architecture is. Certainly the work that you publish is not modern. It is rather stripped building lacking every vestige of the amenities for graceful living that the architect seeks to promote. In my humble opinion all of this stuff is really an insult to the architectural profession. I hope that you publish this letter.

DON BUEL SCHUYLER
Tuscaloosa, Ala.

*Dear Editor:* The new cover is in perfect taste, extremely useful and in every way a professional job. And so is the material between the covers, especially the 17-page section on the Geller house.

WILLIAM T. ARNETT, Director
School of Architecture and Allied Arts
University of Florida

### THE HOUSING STUDY, TOO

*Dear Editor:* I enjoyed reading the February issue. The lengthy and fuller treatment of subjects such as the house by Breuer and the Housing Study is to my liking. I prefer a fuller presentation of a few items rather than touching lightly on many—where their force is lost by dilution.

CHARLES BURCHARD
Cambridge, Mass.

**(Continued on page 10)**

# Special Raymond Equipment...

## FOR DRIVING ALL TYPES OF PILES

During almost half a century of world-wide experience Raymond has developed special types of land and water equipment to meet all kinds of pile driving and construction requirements.

Today approximately 70 of our complete pile driving rigs are located in various parts of the country. This means a substantial saving to the client in time and shipping charges.

Raymond rigs are manned by experienced Raymond men—men who know their equipment and their jobs. These are among the great advantages of calling upon the Raymond organization for large or small projects.


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

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*Branch Offices in Principal Cities of United States and Latin America*

**140 CEDAR ST., NEW YORK 6, N. Y.**

# VIEWS

(Continued from page 8)

*Dear Editor:* Your magazine is really living up to its name—and I like the thoroughness of your presentations. So many magazines now give a great *many* things, but do not give an adequate idea of any *one*.

BRUCE GOFF, Professor
School of Architecture
University of Oklahoma

### DISTURBED BY LE CORBUSIER

*Dear Editor:* Le Corbusier's piece in the February issue makes disturbing reading. It is not the way to "make friends and influence people." The pompous, exaggerated, frightening language is not good pedagogy and will not contribute to the understanding of modern architecture. Some of the reasoning reminds me of Adolf, Talmadge, and Bilbo. There seems to be little room left for democratic feeling.

*Pompousness and exaggeration*: "modern architecture rises to the assault and annihilates"; "its forward march"; "backward academies"; "mobilize the fortresses of tradition"; "C.I.A.M. acts as a magnetic pole to all young professionals the world over"; "The *sunbaffle?* It is a new architectural resource."

*Bilboism, at least*: "An heroic page in the chapter of inventions was inaugurated by the white race"; "The engineers . . . were Latins and Anglo-Saxons, Teutons and Slavs." (That leaves me and a few hundred millions out.)

Le Corbusier is a great artist and has contributed much by his *work*, but apparently he does not design as well with *words*.

ISADORE ROSENFIELD
Hospital Consultant
New York, N. Y.



### OBSERVATIONS—NOT CLEAR?

*Dear Editor:* I wouldn't be too surprised if half the architects in the U.S.A. wrote you, condemning to a greater or lesser degree the stand PROGRESSIVE ARCHITECTURE has taken concerning the architect's place in the building industry. I was shocked, to say the least, when I read your opening comments in "Observations," in the Feb. '47 issue. Architects cannot divorce themselves from the building industry any more than a pastor of a church can get along without his congregation. . . . To be sure, the architect should take the initiative in designing and coordinating the building or rebuilding of the world. However, if he doesn't, he certainly isn't dropped from the industry. He is merely ignored by the other branches of the industry. . . .

Now some roses: I'm behind you 100% on your statement of policy in regard to the information shown on the P.A. pages each month. To illustrate one job complete is worth much more to the average architect than "quickies" of five or six jobs. Let's have some more like the Feb. issue.

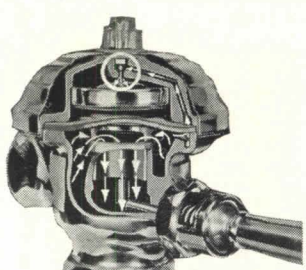
CHARLES S. ASH, JR.
Kansas City, Kan.

*Dear Editor:* It was gratifying to read your Observation on the role of the architect in relation to the building industry.

Like yourself, I was in disagreement with Edmunds' recent "tail to the kite" speech before the New York Chapter where he presented a point of view which he has been expounding all over the country. I am sure other A.I.A. members do not go along with this point of view. I feel that while the architect cannot stand apart from others in the building industry, he must not leave unsolved the grave problems and responsibilities of the industry to the public.

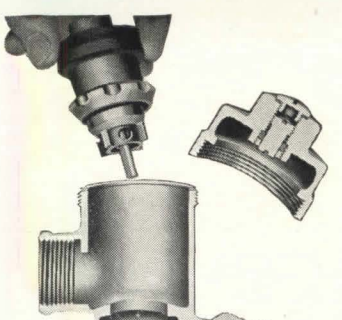
It is undeniably true that the "building industry" does not always operate in the public interest, nevertheless we must not consider the industry as one homogeneous group. Most of the small contractors, materials suppliers, real estate operators, etc., have interests that are not contrary to the needs of the public; but unfortunately the large operators and manufacturers use their position of monopoly, or near monopoly, for practices that are not always socially beneficial and too often they impose their programs on their smaller competitors.

(Continued on page 12)



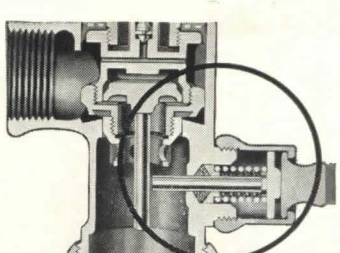
**Self-Cleansing By-Pass**

safeguards against prolonged flushing due to foreign matter in the water.



**Single-Step Servicing**

the feature that reduces maintenance time to the very minimum.



**Self-Tightening Handle Packing**

for real protection against leakage . . . requires no periodic tightening.

# 5 points of Watrous Superiority of Value to You and Your Clients

Here are quick facts on five of the important features that combine to make Watrous Flush Valves the quality leaders. These features are found in both the Watrous Majestic diaphragm type and the Watrous Imperial piston type.

Note how simple and practical these features are. They are responsible for the water economy, reliability of service and low maintenance cost that make the selection of Watrous Flush Valves a constant source of satisfaction.

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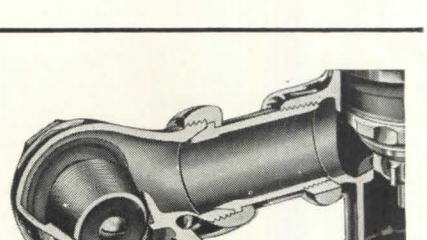
**THEY PAY FOR THEMSELVES IN THE WATER THEY SAVE**



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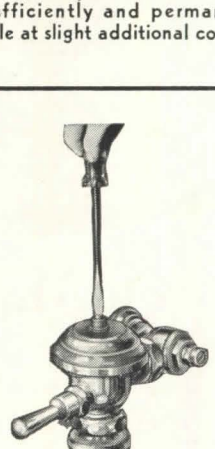
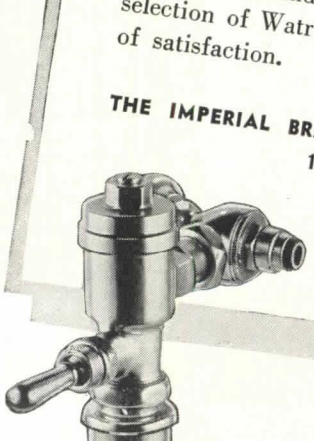


**Water-Saver Adjustment**

makes it possible to obtain maximum water savings on every fixture.



For complete information on Watrous Flush Valves write for Catalog No. 448-A. Also ask for Bulletin No. 477 giving a summary of "Architects' Views on Flush Valve Applications".

**Watrous Flush Valves**

# VIEWS

(Continued from page 10)

We architects must formulate a program in the interest of the community and we must take the initiative in winning over the various other branches of our industry, so that planning efforts effect a combined responsibility that will lead to community betterment.

MAXFIELD F. VOGEL
Robin & Vogel, Architects
New York, N. Y.

### ARCHITECTURAL ADVERTISING

*Dear Publishing Director:* Mr. Creighton makes mention of the fact that the architectural profession have a constant gripe about the advertising which is directed towards them and that they resent that this advertising is written as though they were consumers rather than designers (January PROGRESSIVE ARCHITECTURE, "Observations.") We have been advertising to architects for a good many years and, of course, a certain number of these gripes have come to us also. However, the proportion of gripes with relation to your entire readership is extremely small. We admit that advertising directed to the readers of architectural publications, who, incidentally, are not all designers, by any means, must be different in certain respects to advertising directed to other types of readers. However, to admit that your readers are not consumers and therefore not subject to certain selling appeals which apply to everyone, is to admit that as soon as they subscribe to an architectural publication they cease to react as normal human beings. This we do not admit.

We maintain that there are many ways to convey a message to your readers and if you will look back over our past campaigns you will find that we have employed practically all of them including the pet format being sponsored by Mr. Creighton. If all your advertisers should adjust their advertising to Mr. Creighton's thinking, believe me your advertising pages would lose interest and your advertisers, your readers, and yourselves would be the losers.

Advertising in your pages is only one way of reaching the architectural and building professions; the other principal way is by means of literature. Mr. Creighton proposes each advertisement use details in order to amplify an illustration covering the use of a particular product. To our way of thinking, advertising in your pages can best be expected to promote a product, a Company name, or a style trend, or a combination of these three. We believe that as an advertisement becomes more complicated by including more elements, it becomes less effective. We recognize fully the importance of supplying the architectural and building professions with details showing the actual uses of our product. If you would ever take time to review our architectural literature you will find that we have done this to an unusual degree. By putting this material in literature form we are able to treat the subject fully and to put it in the architects' hands in a way where all the material is kept together and is available for ready usage. In order for Mr. Creighton's idea to be effective, an architect would have to tear out the advertising pages and file them for future reference. Such a procedure is highly impractical and highly inefficient.

E. L. PATTON, Manager
Advertising—Sales Promotion
Glass Division,
Pittsburgh Plate Glass Co.

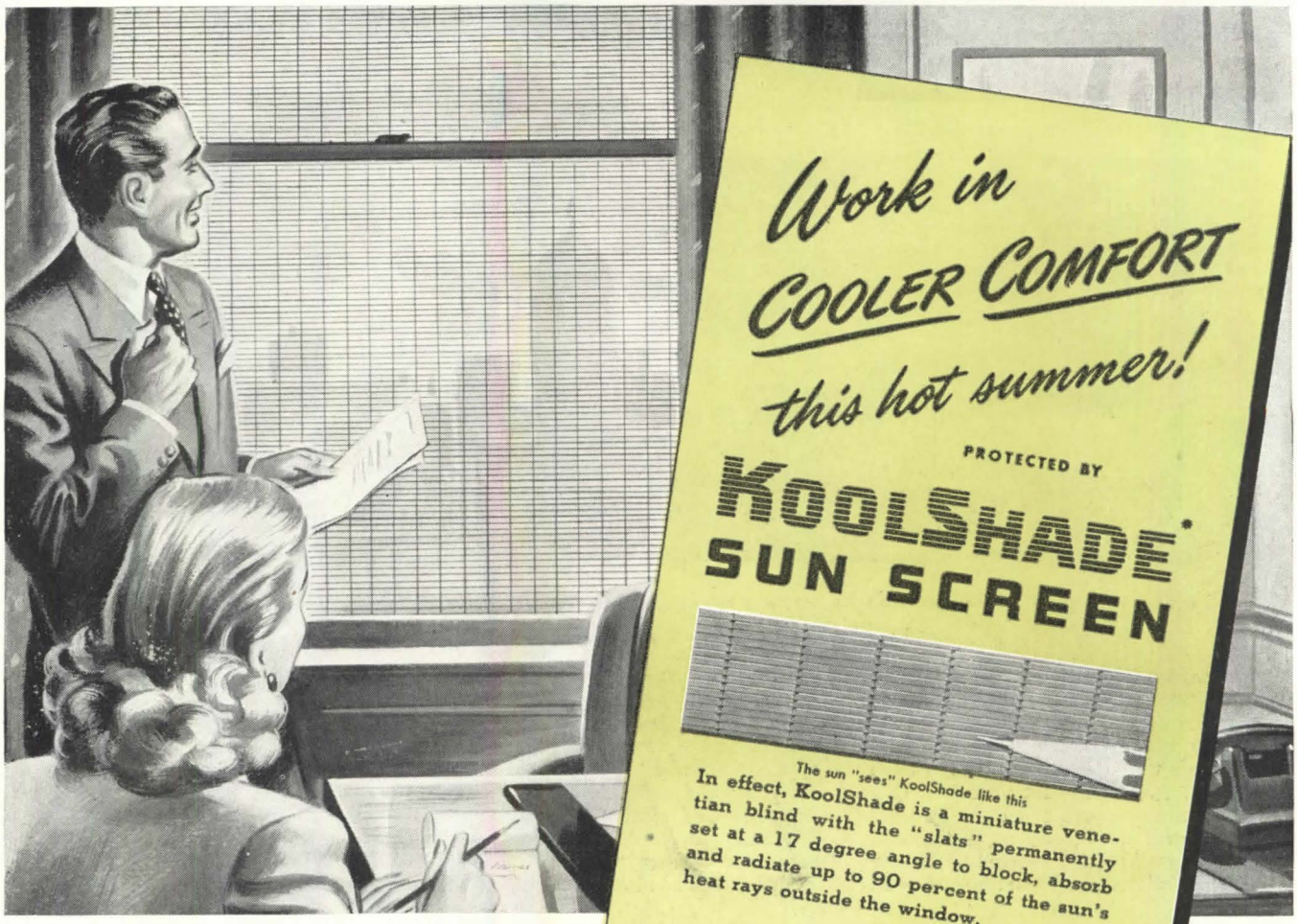
### THE OTHER SIDE

*Dear Editor:* I have been working for publications long enough to know that an editorial writer never knows when his pet indignation will backfire because of an expensive ad. . . . if you are so high-pressured by the new architecture, why not pick on the advertisers? This brings me to fever pitch on *my* particular gripe.

*All architectural magazines* feed the profession and the public with the corniest layouts, poor photographs, stupid drawings—in their advertisements.

They are insulting to the intelligence and taste. They are the poorest front for good products. We rarely clip one for the files. You know the answer. The advertising man sells to the public. The public is not educated to modern because the advertising man can't sell it. It's *your fault*—go pick on them for awhile.

ALFRED BENDINER
Philadelphia, Pa.

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- *Easy and inexpensive to install—will not rot, rust or rattle.*
- *Fits neatly and smoothly into modern architectural design.*
- *Durable bronze KoolShade also effective as insect screen.*

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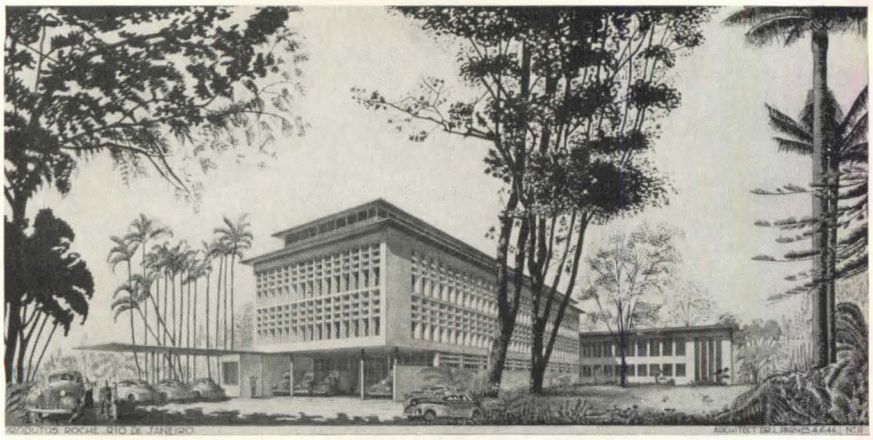
# THIS MONTH



This Rio de Janeiro plant for Hoffman-LaRoche, Inc., is a recent design by Dr. Louis Parnes.

DR. LOUIS PARNES

Basic material for the portfolio of Brasilian work presented in this issue was assembled for us by **Dr. Louis Parnes** during a recent South American trip. His training and experience have been truly international. He received his M. A. in architecture from the Federal Polytechnical University in Zurich, and a few years later the degree of Doctor of Technical Sciences, studying also at Berlin, Paris, and Rome. The years 1930 and 1931 he spent as assistant to the distinguished Professor Salvisberg at Zurich, and working in the Paris office of Le Corbusier. From 1931 to 1940 he practiced independently, designing structures of many different types in England, Yugoslavia, Argentina, and Brasil, as well as in his native Switzerland. Dr. Parnes has been in New York since 1940, working with a company engaged in the construction of industrial plants during the war. Since the end of the war he has been associated with Chapman & Evans, architects, in the development of a housing project in Rye, New York. He also has designed for Hoffman-LaRoche, Inc. His design of a plant in Rio de Janeiro for this company is shown at upper left. A member of the A.I.A., the Swiss Institute of Architects, and the International Society of Architects, Dr. Parnes has also recorded his design principles in his book on department stores, which has been translated into several languages.

Another Swiss architect represented in this issue, **John Hans Ostwald**, designed the house in Berkeley, California, shown on page 68. He attended the Federal Polytechnical University in Switzerland, receiving his Architect's Diploma and the degree of Doctor of Technical Sciences in architecture. His experience includes work with Werner Moser, Zurich, Merkelbach & Karsten, Amsterdam, and Richard Neutra, in this country. During the war he was a member of the architectural staff of the Standard Oil Company in San Francisco, California, and now conducts his own practice in Berkeley.

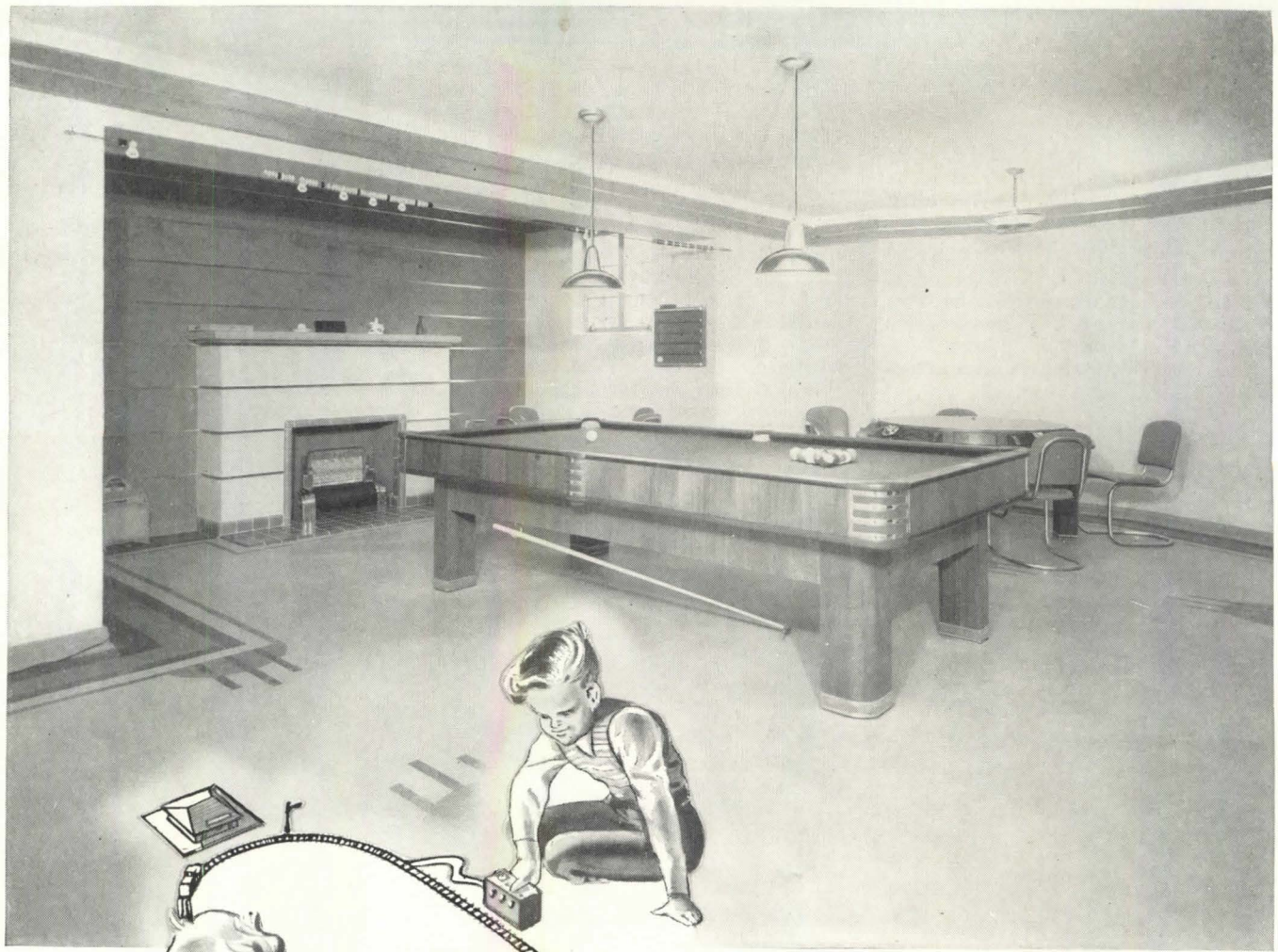
Associated with Ostwald on the Berkeley house was the firm of Anshen & Allen, architects of San Francisco. The careers of **S. Robert Anshen** and **William Stephen Allen** have paralleled each other, with both attending the University of Pennsylvania, receiving their M.A.'s in architecture in 1936, and travelling around the world on fellowships awarded them in the same year. Upon arrival in San Francisco from Japan near the end of their tour, they found the city so pleasing that they decided to remain there, establishing their firm for general practice in 1940.

(Continued on page 16)

## NEXT MONTH

● Encouraged by the response of our readers to the first (and experimental) Critique, which comprised the November 1946 issue on hospitals, we will apply this provocative sort of constructive criticism next month to another building type, the retail store. Aided by a panel of store design experts including Kenneth Welch, John Matthews Hatton, and Walter Sanders, the editors have evaluated nine stores. The types range from a large city department store to a suburban shopping center and individual shops; and the geographic range is from Boston, Massachusetts, to Bogota, Columbia. The architects to be represented are Toombs & Creighton, architects of Atlanta, Georgia; Ketchum, Gina & Sharp, architects of New York, N. Y.; Ross-Frankel, Inc., designers of New York, N. Y.; Gruen & Krummeck, designers of Hollywood, California; Carson & Lundin, architects of New York, N. Y., with Harry E. Davidson & Son, architects of Boston, Massachusetts; Gunnar Peterson, architect of Falmouth, Massachusetts; and Frederick L. R. Confer and Raymond G. Willis, architects of Oakland, California.

● The May Materials and Methods section will feature an important article entitled "The Solar House: Analysis and Research," by F. W. Hutchinson, Professor of Mechanical Engineering at Purdue University, constituting the first conclusive, factual report on the effect of glass walls on heating requirements. Closely related to the main theme of the Critique on store design will be an article, "Machines for Selling," based on a portfolio of modern store designs by the Kawneer Company. Primarily concerned with store fronts, mostly from the office of Ketchum, Gina & Sharp, its purpose is to translate into understandable terms some of the modern store design principles, and to show in detail many novel situations now arising in contemporary practice.



# *It's fun to play in the basement*

## when the floor is so cozy and dry

A basement is a great place for the family recreation room—if you can beat the cold and dampness which works its way up through below grade, non-waterproofed concrete floors.

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## THIS MONTH

(Continued from page 14)

Only during the war did their paths diverge, with Anshen serving as technical director of the Housing Authority of the City of Vallejo, while Allen was on active duty with the U.S.N.

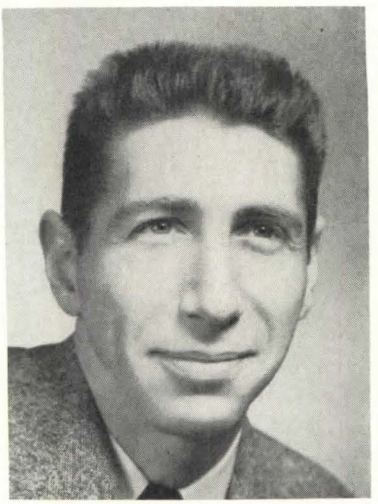
The house in Lincoln, Massachusetts, presented on page 65, comes to us from Carl Koch, whose work is known to our readers. (For biographical note see October 1946 PROGRESSIVE ARCHITECTURE.)

The article, "Home Freezers," concluded in this issue, page 75, was written by Philip F. Hallock and Gerald J. Stout. (For biographical note on Hallock see March 1947 PROGRESSIVE ARCHITECTURE.)

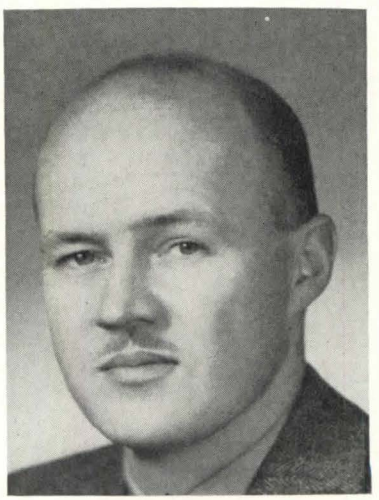
Stout brings to the discussion knowledge gained from many years of instructing classes in horticulture. He attended Ferris Institute and Central State Teachers College in Michigan, receiving his B.S. in 1924 and his M.S. in 1926 from Michigan State College, and then his Ph.D. in 1934 from Ohio State University. He joined the horticultural faculty of Massachusetts State College in 1926, leaving that school for Pennsylvania State College in 1929, where he remained until 1947. He is now Associate Professor of Horticulture at University of Florida.

(Continued on page 18)

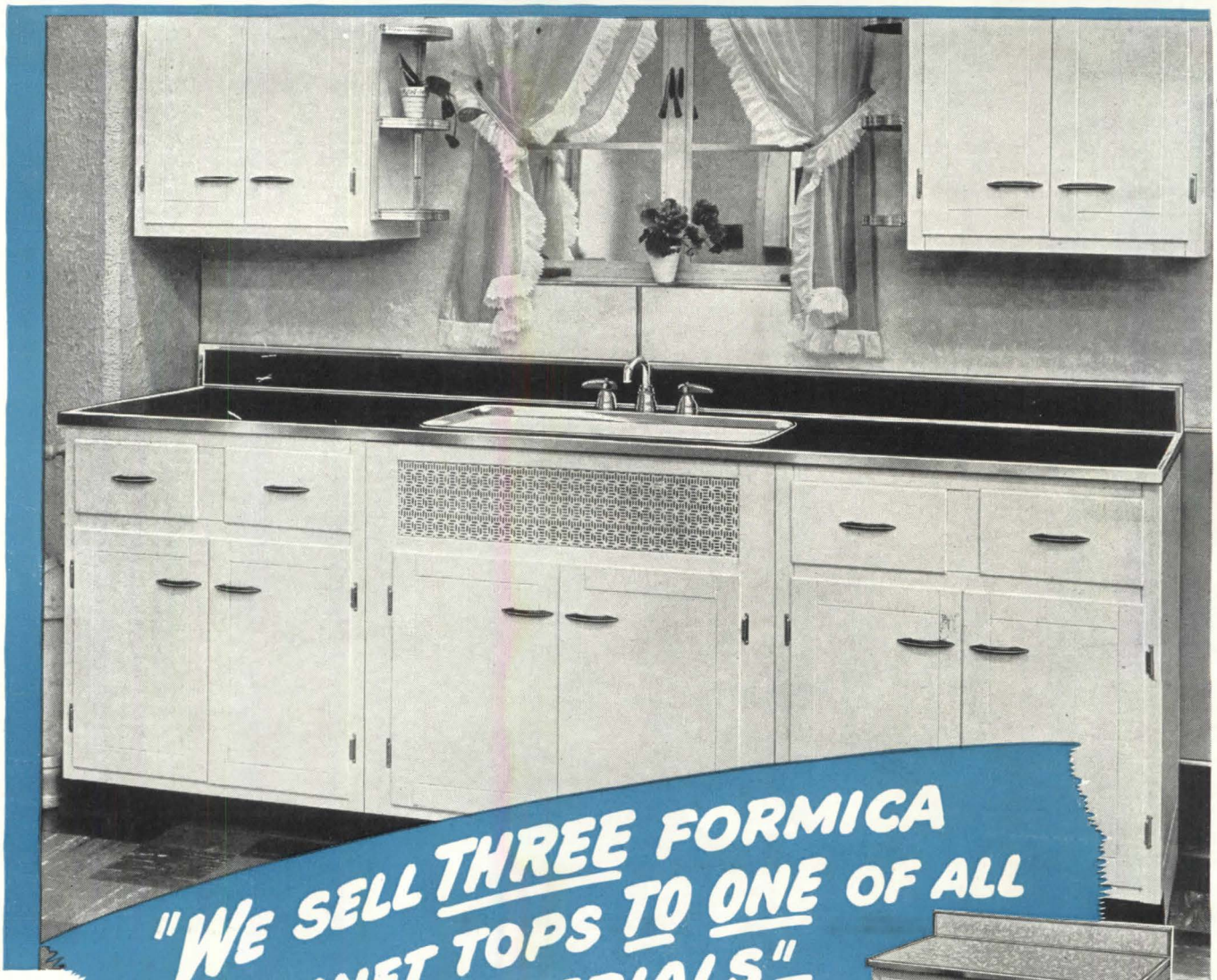
JOHN HANS OSTWALD



S. ROBERT ANSHEN



WILLIAM STEPHEN ALLEN



# "WE SELL THREE FORMICA CABINET TOPS TO ONE OF ALL OTHER MATERIALS"—

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The rather startling statement that Formica kitchen cabinet tops displayed with other materials on the same sales floor are now outselling all other materials combined by three to one, has been made not only by one producer of such tops, but by several.

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Formica supplies one-sixteenth sheet in black, or attractive colored patterns to producers of tops and they assemble the tops in accordance with their own or Formica specifications to water resistant plywood, by the use of water resistant glue, and trim the tops with metal moldings.

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## THIS MONTH

(Continued from page 16)

Contributing to the Materials and Methods section this month also is M. A. Smith, author of the article, "Improved Design of Broadcasting Studios," on page 80. A graduate of Illinois Institute of Technology, Smith has been very active in the field of acoustics. He is a charter member of the Acoustical Society of America, a director of the Acoustical Materials Association, and has written many articles on the subject for technical journals. In 1943 and 1944 he worked with the U. S. Office of Education Program, lecturing on acoustics in engineering science and war training. He is now associated with the United States Gypsum Company as an acoustical engineer.

### NOTICES

FRANK P. GATES and RAYMOND BIRCHETT have formed a partnership of architects and engineers in Jackson, Miss., and Vicksburg, Miss.

W. THOMAS SCHAARDT, Architect, has opened an office at the Meadowbrook Bldg., Sunrise Highway, Bellmore, N. Y.

An architectural office has been opened by LEON N. FAGNANI at the Pennsylvania Railroad Bldg., Wilmington, Del.

ERNEST PICKERING is now Dean of the College of Applied Arts at University of Cincinnati, Cincinnati, Ohio.

PAUL SCHWEIKHER and WINSTON ELTING have located offices for the practice of architecture and industrial design at Meacham Rd., Roselle, Ill.

LEWIS G. ADAMS and FREDERICK J. WOODBRIDGE have formed a partnership with architectural offices at 204 E. 39th St., New York, N. Y.

ALBERT W. KIRSCHENBAUM, Architect-engineer, has opened an office at 53 W. Jackson Blvd., Chicago 4, Ill.

ERARD A. MATTHIESSEN, Architect, has formed a new firm in partnership with VERNER W. JOHNSON with main offices at Rippowan Village Rd., Stamford, Conn., and a branch office at 17 E. 42nd St., New York, N. Y.

LOUIS HATKOFF, Architect, has moved to new quarters at 1050 Avenue of the Americas, New York, N. Y.

MENDELSOHN, DINWIDDIE and HILL have dissolved their partnership. ERIC MENDELSOHN and ALBERT HENRY HILL have associated at 627 Commercial St., San Francisco, Calif. JOHN EKIN DINWIDDIE will continue his practice at the same address, 233 Sansome St., San Francisco, Calif.

JAMES D. and EUGENE W. BEACHAM have joined architectural practices under the name of BEACHAM ASSOCIATES, at Peoples National Bank Bldg., Greenville, S. C.

JAMES COLTON has opened an office for the practice of architecture at 33 W. 42nd St., New York, N. Y.

GEORGE WALLACE CARR and CLARK C. WRIGHT have formed a partnership for architecture and engineering at 333 N. Michigan Ave., Chicago, Ill.

RICHARD E. LAWRENCE and EUGENE W. DYKES have announced the formation of an architectural firm in Canton, Ohio.

ARTHUR F. SCHWARZ, JR., has rejoined MAURAN, RUSSELL, CROWELL & MULGARDT, Architects, of 1620 Chemical Bldg., St. Louis, Mo., and is now a member of the firm.

DONALD CHARLES MACLURCAN has entered into partnership with the firm of FOWELL AND MANSFIELD, Architects, of Sydney, Australia.

IRA J. BACH has been appointed Executive Director of the newly organized Cook County Housing Authority with offices at 203 Wabash Ave., Chicago, Ill.

MILTON CAVAGNARO, LEO HOLUB and RUTH GERTH (formerly of New York) have formed a "design development" group with offices at 45 Castle St., San Francisco, Calif.

HARVEY P. CLARKSON and SERGE P. PETROFF have announced a partnership with architectural offices at 26 E. 55th St., New York, N. Y.

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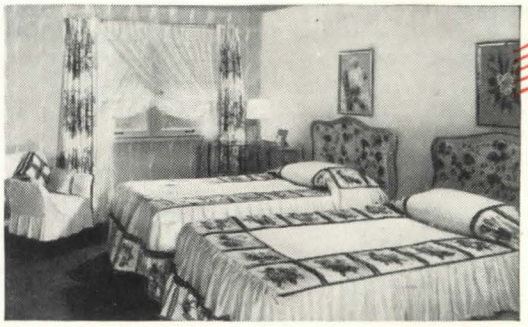

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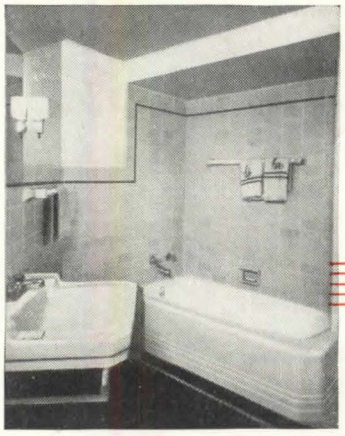

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# PROGRESS REPORT

**Correlation of the research findings of active technical groups in the construction field** is promised by a new Building Construction Research Board, to be set up by National Research Council of the National Academy of Sciences as a clearing house of information about materials and techniques. The Board was sought by the Construction Industry Advisory Council, composed of more than 100 trade and professional associations brought together by United States Chamber of Commerce, and will be supported by contributions from the industry.

There can be progress in construction research if such a board is shielded from those shrewd self-seekers who have for so long divided the industry to dominate profitable segments. Essential to a clearing house of this type are unassailable standards of accuracy, free flow of information about tests, ideas, and possibilities. A mark to aim for is the concentration of British research in the *Building Research Station* which conducts with authority a broad program to improve human shelter (February PROGRESSIVE ARCHITECTURE, p. 76). The informative official bulletins from England attest the value of the *Station's* approach, but we must admit that such (coordinated) frankness is not the American way.

The secretiveness of National Bureau of Standards about some of its most significant findings is only too familiar to dubious buyers or questioning editors. The latter are not helped either by our postal regulations, which tend to classify any reference to products or manufacturers as advertising—thus imposing a premium on "spot" bulletins and technical releases. Thus the new Board can make another contribution to dissemination of research, if the full power of its associated sponsors can be directed to free the channels of information.

**For the Board, no direct laboratory activity is contemplated.** But research efforts already are being pushed in many sections of the construction field. To effect savings in building costs which can benefit the public, the Department of Commerce Office of Technical Services has granted to Modular Service Association $65,900 to "expand and intensify research in methods of coordinating the dimensions of building products . . . to eliminate need for cutting and fitting materials on the building site." The same Government body has been approached by Tyler S. Rogers, president of Producers' Council, to allocate $20,000 for studies "to reduce the cost of erecting small industry-engineered homes" through the project jointly sponsored by the Council and National Retail Lumber Dealers Association. As the latter *were* designed in conformity with modular principles, these two projects are tangibly related. Though the modular design of the small houses has been somewhat censored by interested parties, in the course of development, the results will doubtless be aired in time through the central point provided by the new Research Board. Meanwhile, other divergent research programs can be expected to stay aloof and their results will, as ever, meet the full range of fates, from suppression to the waste of inane "public relations" exploitation.

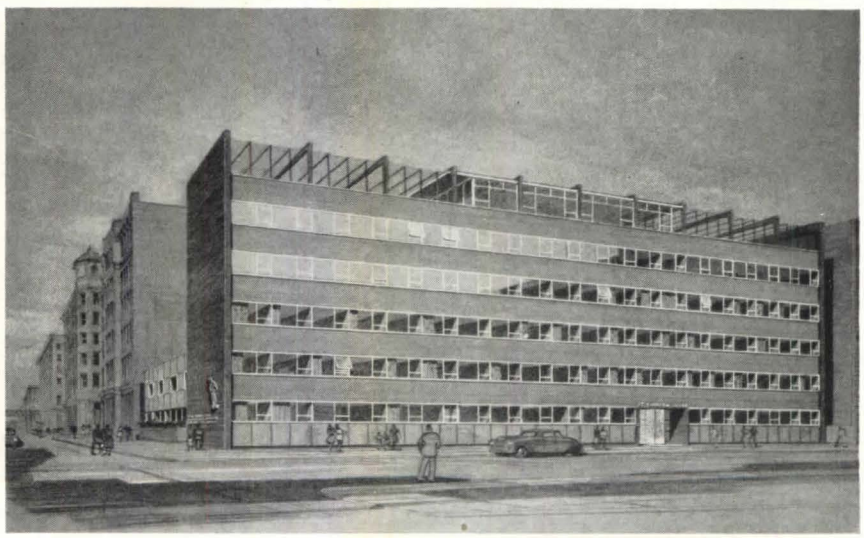
**Aside from study of materials and construction elements, building codes are receiving some attention.** A new amendment to New York's city code requires furring of exterior masonry walls of dwellings, when plaster or other non-impervious materials are applied. The ruling states that "a hollow wall of masonry shall not be deemed a solid masonry wall," thus admitting the cavity wall as an approved wall section —at the same time banning the practice of omitting furring (one of the poorest of building "economies.")

Codes for plumbing, generally the most cumbersome of local regulations, also will benefit in time from a current National Bureau of Standards project sponsored by NHA and the Office of the Housing Expediter. Unbiased research in this field (the committee will observe tests through clear glass or plastic piping!) may be really startling.

Meanwhile NBS has compounded the confusion of wartime building rules, regulations, special indices, etc., in merging them as *BMS*107 - *Building Code Requirements for New Dwelling Construction.* Private industry need not be too abashed by its own shortcomings when Government solemnly specifies *(BMS*107, *Plumbing Section)* that "plumbing shall conform to generally accepted good practice . . . (and to) . . . emergency plumbing standards for defense housing," etc., etc.

**A practice of trade associations, commendable if it ends with true centralization of information, is typified by a project of Structural Clay Products Institute.** Also financed by the Department of Commerce Office of Technical Services, which granted $103,100, six research groups at leading universities and technical laboratories will study masonry construction and costs, under direction of S.C.P.I. Suitable specifications, effect of brick texture on bond, size variation, and causes of brick defects will be investigated at University of Texas, Virginia Polytechnic Institute, Iowa State College, University of Illinois, New York State College of Ceramics, and Bureau of Standards.

**The several disastrous hotel fires in recent months shocked into action some architects as well as officials in major population centers.** The A.I.A. Department of Education and Research, directed by Walter A. Taylor, will study underlying causes of such fires, in collaboration with building code, fire prevention, and hotel management groups. The object is to set up improved safeguards and to evaluate fire-safeness as well as fireproofness. Although it is surmised that ill-considered additions or "modernization" may have made firetraps of some hotel structures, the architects investigating can serve the cause of good design if they frustrate the usual stampede to impose absurdly rigid fire laws.



Needs of St. Barnabas House, temporary shelter in downtown Manhattan which has given care and refuge to more than 100,000 women and children in the 83 years of its operation by New York Protestant Episcopal City Mission Society, were carefully weighed by Ketchum, Gina & Sharp, New York architects, in designing this $500,000 structure to replace three outworn buildings now used for the Society's social service program. Sunlight and air, efficiency and comfort of the new building will succeed the dingy cubicles, dank air shafts, and present crowded quarters recently described by the Rt. Rev. Henry Knox Sherrill, Presiding Bishop of the Protestant Episcopal Church in the United States as "the most inadequate place you could imagine." He inspected a model of the new building, for which funds are being raised.


# THESE ARE THE TOOLS OF ENGINEERED AIR CONDITIONING

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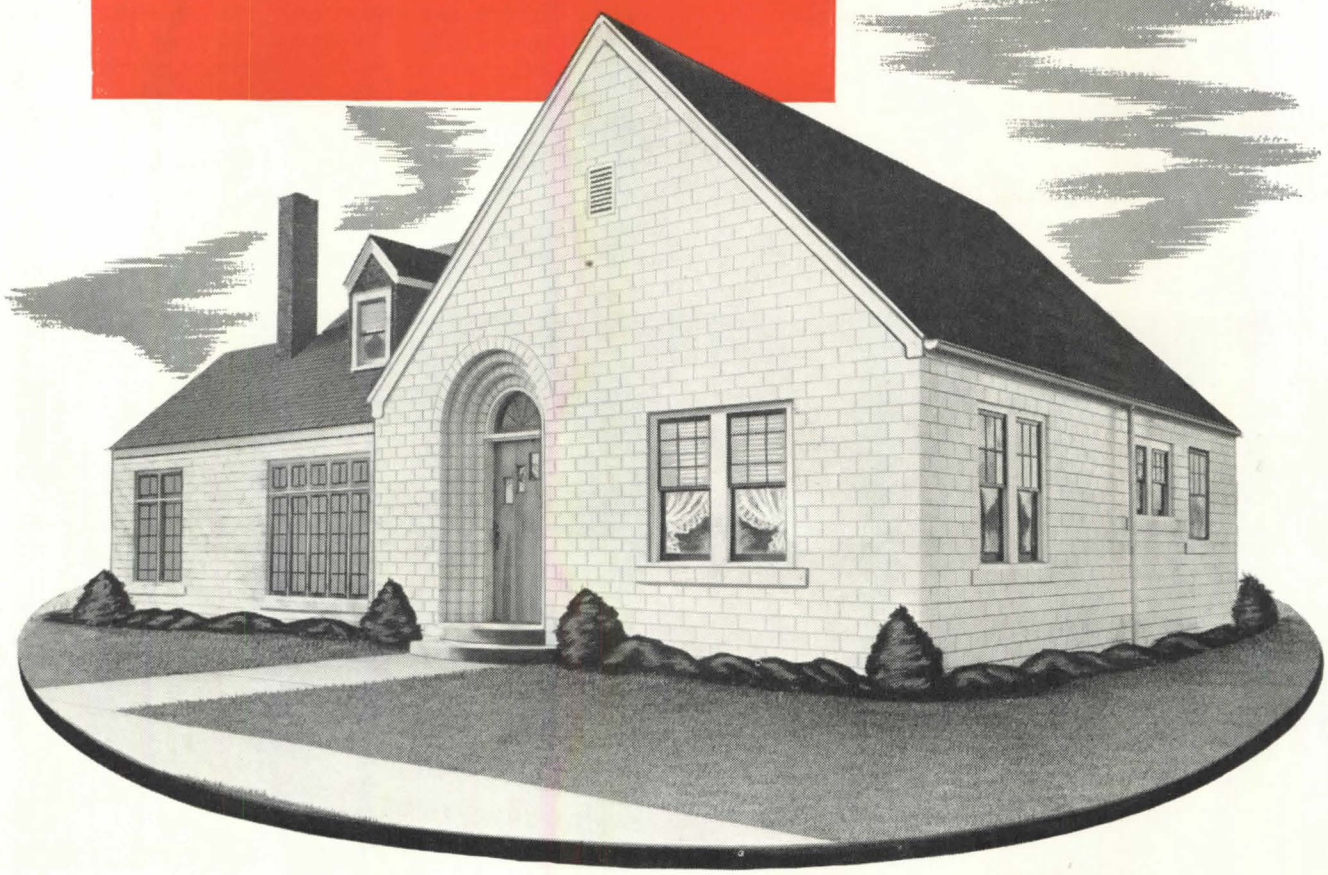

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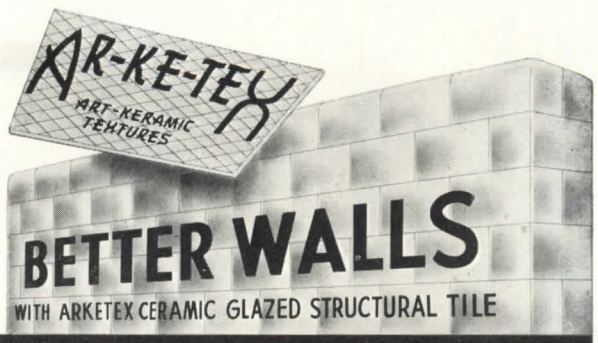


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*more beauty*
*longer life*
*unlimited design*

Why limit yourself to ordinary types of flooring? Shown here are a few examples of residential Medusa White Terrazzo—the flooring that sets a new decorative note in the modern home. Here is the material that gives you the advantage of custom design with unlimited possibilities of patterns and a wide variety of colors.

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Due to its marble chip content, terrazzo is ideal for floor type radiant heating. The installation of terrazzo over heating pipes—buried in the concrete directly below—not only assures warm floors but makes practical ones too. Terrazzo provides sanitary, vermin proof, enduring surfaces that require no costly maintenance—that clean easily with soap and water.

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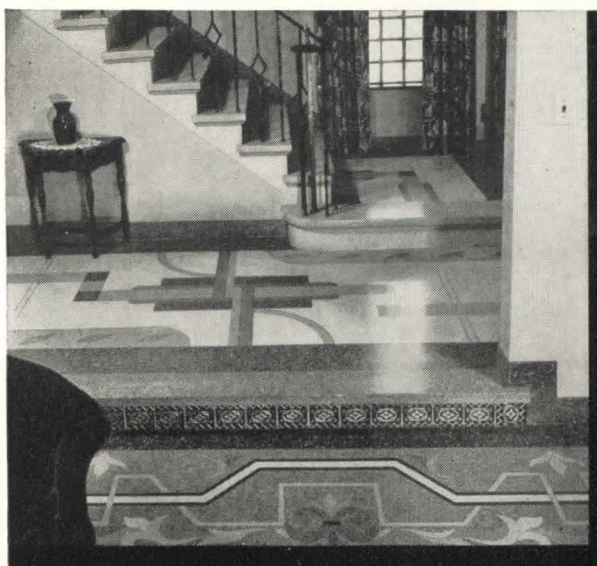
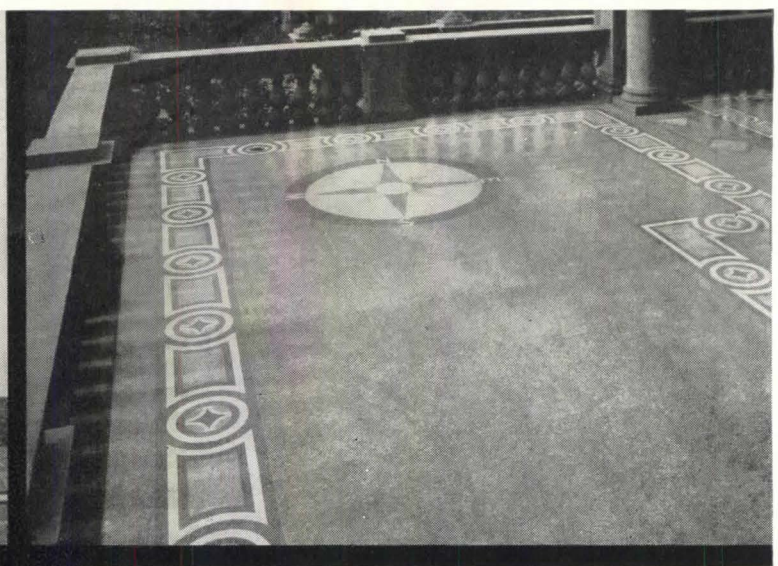
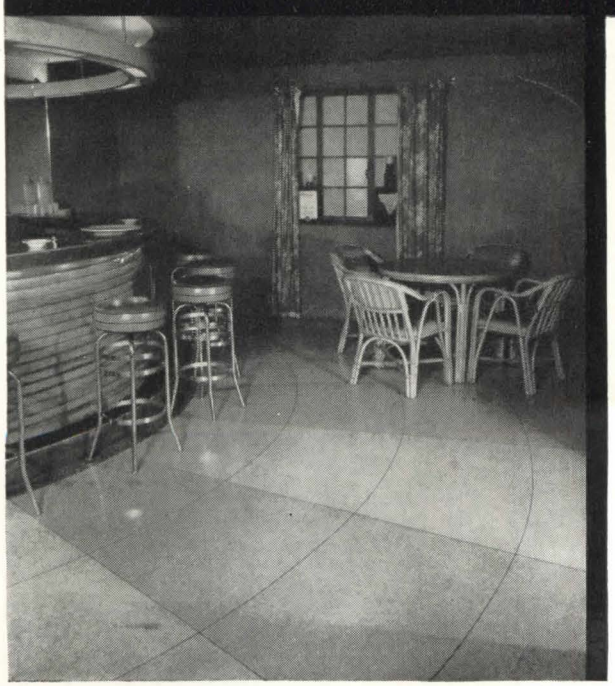
When you specify terrazzo, be certain your exact desires of patterns and colors can be carried out easily. Specify Medusa White Portland Cement—the cement with the successful 40 year service record for outstanding terrazzo. Pure non-staining Medusa White as a matrix, sets forth the colored marble chips in such a manner to give maximum color values in the finished floor. And, by adding color pigments to Medusa White, delicate shades for blending or contrasting backgrounds can be obtained.







Plan now for residential terrazzo—in recreation rooms, hallways, vestibules, porches, bathrooms, and wherever rich beauty and long service qualities are desired. Specify Medusa White—the original white portland cement for better terrazzo—rich in beauty—long in wear.

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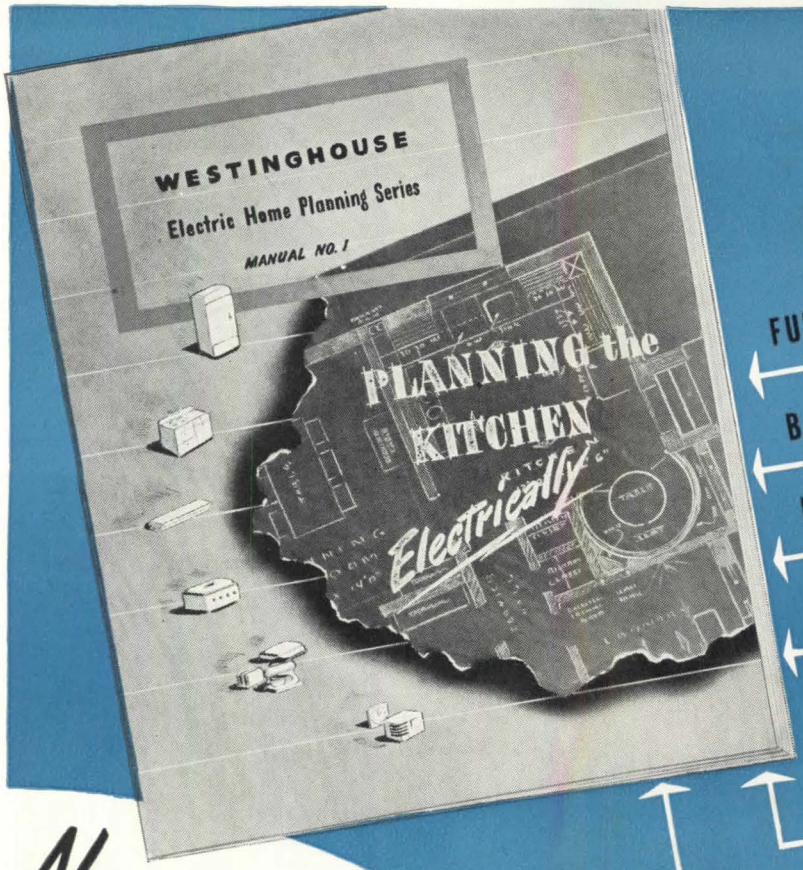
*Also made by Medusa Products Co. of Canada, Ltd., Paris, Ontario*

"FIFTY-FIVE YEARS OF CONCRETE PROGRESS"




## WHAT IT CONTAINS

- FUNDAMENTALS OF KITCHEN PLANNING
- BASIC KITCHEN LAYOUTS
- DESIGN DETAILS
- KITCHEN LIGHTING
- ELECTRIC OUTLETS AND CIRCUITS
- APPLICATION TO SPECIFIC HOMES
- KITCHEN EQUIPMENT

# Now-a new book that makes kitchen planning easy!

This new book explains fully the principles of kitchen planning. Eliminates hours of detailing by using the 64 standardized layouts that are adaptable to practically any kitchen. Basic kitchen layouts are clearly indexed so that you may quickly find a design to meet specific requirements.

All layouts are detailed to scale, permitting quick tracing. Elevations and a complete list of materials are included for each design. Four pages of details are given, showing location of doors and windows to assure clearance of kitchen equipment, furring above cabinets, etc.

Efficient methods of lighting and ventilating kitchens are also included. Proper circuits and required number of electrical outlets are specified. Detailed product data, is given along with dimensions and brief specifications. The most unique and practical design book ever produced on kitchen planning. Costs $1.00. Other booklets that may help you are "4 Degrees of Electrical Living" (Free), and "Home Wiring Handbook" ($1.00).

J-91549

Westinghouse

PLANTS IN 25 CITIES... OFFICES EVERYWHERE

**BETTER HOMES DEPARTMENT**

Westinghouse Electric Corporation
P. O. Box 868
Pittsburgh 30, Pa.

Gentlemen: Please send booklets that are checked:

- ☐ Kitchen Planning Manual ($1.00 enclosed)
- ☐ 4 Degrees of Electrical Living (Free)
- ☐ Home Wiring Handbook ($1.00 enclosed)

Name_____

Street_____

City_____ Zone_____ State_____

# Decorative Glass... FOR A "GRAND ENTRANCE"

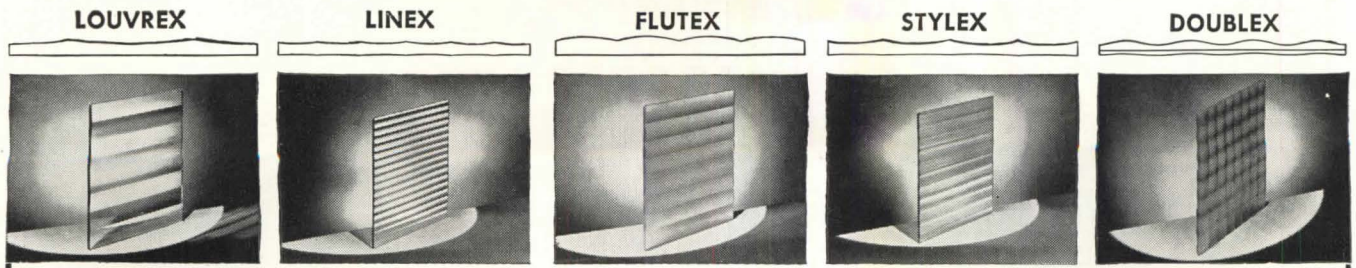
In the Extacee Showrooms, designer Virginia Connor Dick used a screen of Blue Ridge Louvrex as an effective background for showing fine lingerie.

**For customer or client, the reception room or showroom sets the mood for business. Decorative Glass helps to create the effect you want.**

**Its sparkle combines friendliness with dignity, luxury with good taste. Clean-cut patterns blend with any setting—modern or period. It solves many decorative problems for skilled designers.**

**Blue Ridge Decorative Glass is made in 20 patterns to meet design needs for homes, offices or public buildings. It may be plain or Satinol-finished for complete privacy *plus* ample light transmission. Available through your nearest L·O·F Glass Distributor. Libbey·Owens·Ford Glass Company, 1047 Nicholas Building, Toledo 3, Ohio.**

*"Design it with one of the 5 EX's"*




L O F

**BLUE RIDGE *Decorative* GLASS**

*FOR SOFT, DIFFUSED LIGHT · SMART DECORATION · COMPLETE PRIVACY*

BLUE RIDGE GLASS CORP. MANUFACTURERS OF QUALITY GLASS KINGSPORT, TENN.

# Why are some roofs like a "pig-in-a-poke?"

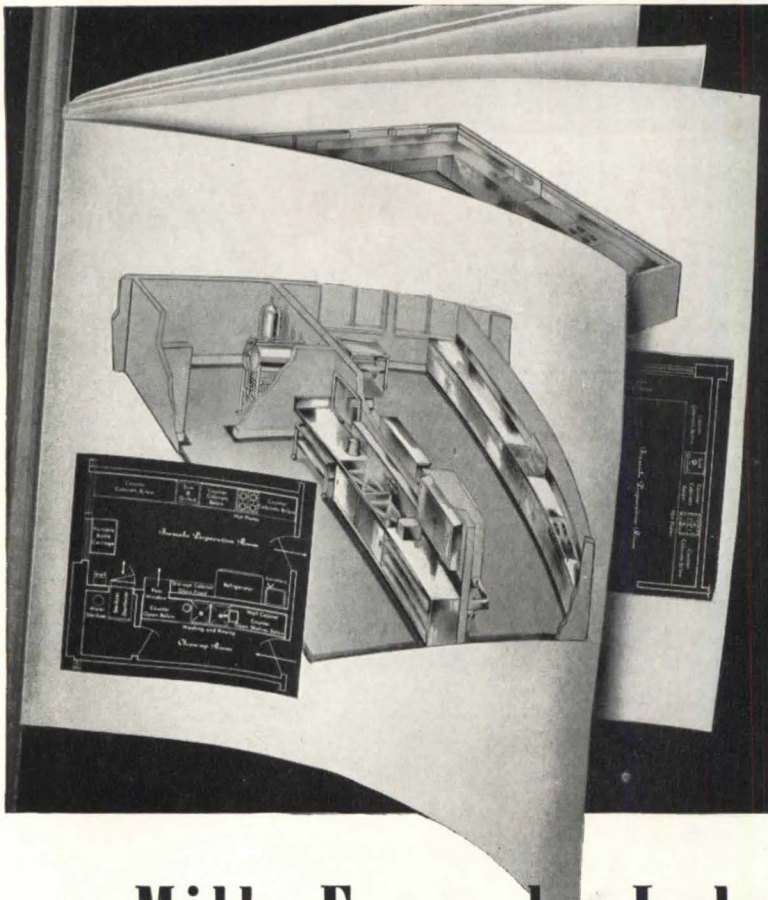
## —because the buyer doesn't always know whether he's getting a quality product or a white elephant

Be certain that the roofing materials you specify will turn out to be a good investment for your clients . . . long-lasting, economical, durable, water- and weather-proof materials. Be certain that your specifications will produce results that will give complete satisfaction. Be certain that roof-failure will not occur because you specified the wrong products.

The way to *be certain* is to specify Koppers Old Style Pitch and Approved Tarred Felt on all your built-up roofing jobs. These materials have made records in past years for their wearing qualities and general satisfaction. The reason coal-tar pitch roofs are still as good today as they were years ago is because no better roofing materials have as yet been discovered. Koppers Company, Inc., Tar and Chemical Division, Pittsburgh 19, Pennsylvania.

**KOPPERS** *roofing*
**KOPPERS** *waterproofing*

K
KOPPERS



# A Challenge is met...

**Mass spread of diarrheal diseases of the newborn, potentially traceable to inefficient and outmoded procedures and facilities designed to insure the sterility of foods and supplies, can be effectively reduced . . . often eliminated, with the new "American" developed**

# Milk Formula Laboratory Service

### PRESENTS A COMPLETE PROGRESSIVE ROUTINE

Provides unprecedented efficiency, speed and safety. Used containers and supplies, when returned to the clean-up room, are conveniently washed, aseptically conditioned for prompt delivery to the sterile Formula Preparation Room where formulas may be prepared and stored for use as required.

### MEETS ALL CAPACITY NEEDS

Units of equipment which include special bottle washing units, sterilizer-disinfectors, precision water sterilizers, work counters, storage cabinets, bottle warmers, portable carriages and allied units are designed to accommodate capacity requirements of from 72 bottles per day up to unlimited needs.

### CONSULT OUR PLANNING SERVICE...

staffed by able technicians thoroughly qualified to assist you in planning an installation best suited to your available facilities . . . a gratis service.

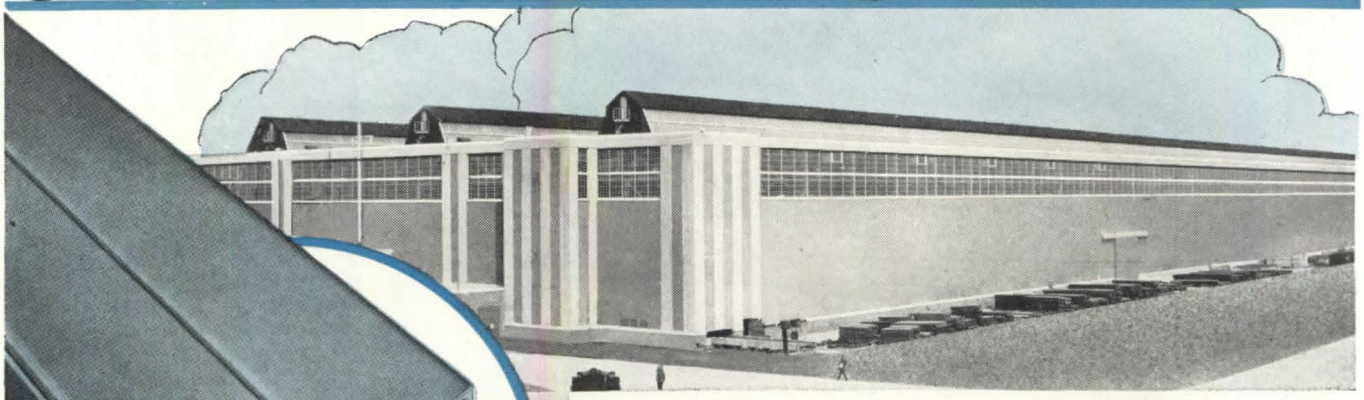
*WRITE TODAY for complete details*

## AMERICAN STERILIZER COMPANY

Erie, Pennsylvania

**DESIGNERS AND MANUFACTURERS OF SURGICAL STERILIZERS, TABLES AND LIGHTS**

# STEEL DECK...





## for ROOFS and SIDEWALLS

Steel Deck is becoming the most versatile of permanent building materials . . . it is now extensively used for roofs, exterior sidewalls, ceilings, partitions, and permanent concrete floor forms in industrial, commercial and residential buildings. Mahon Steel Deck, due to its basic design with narrow vertical-leg stiffening ribs, lends itself to a greater range of uses in building construction. See Mahon Insert in Sweet's File for specifications and latest construction details, or have a Mahon representative familiarize you with the utility and economy of Steel Deck in modern construction.

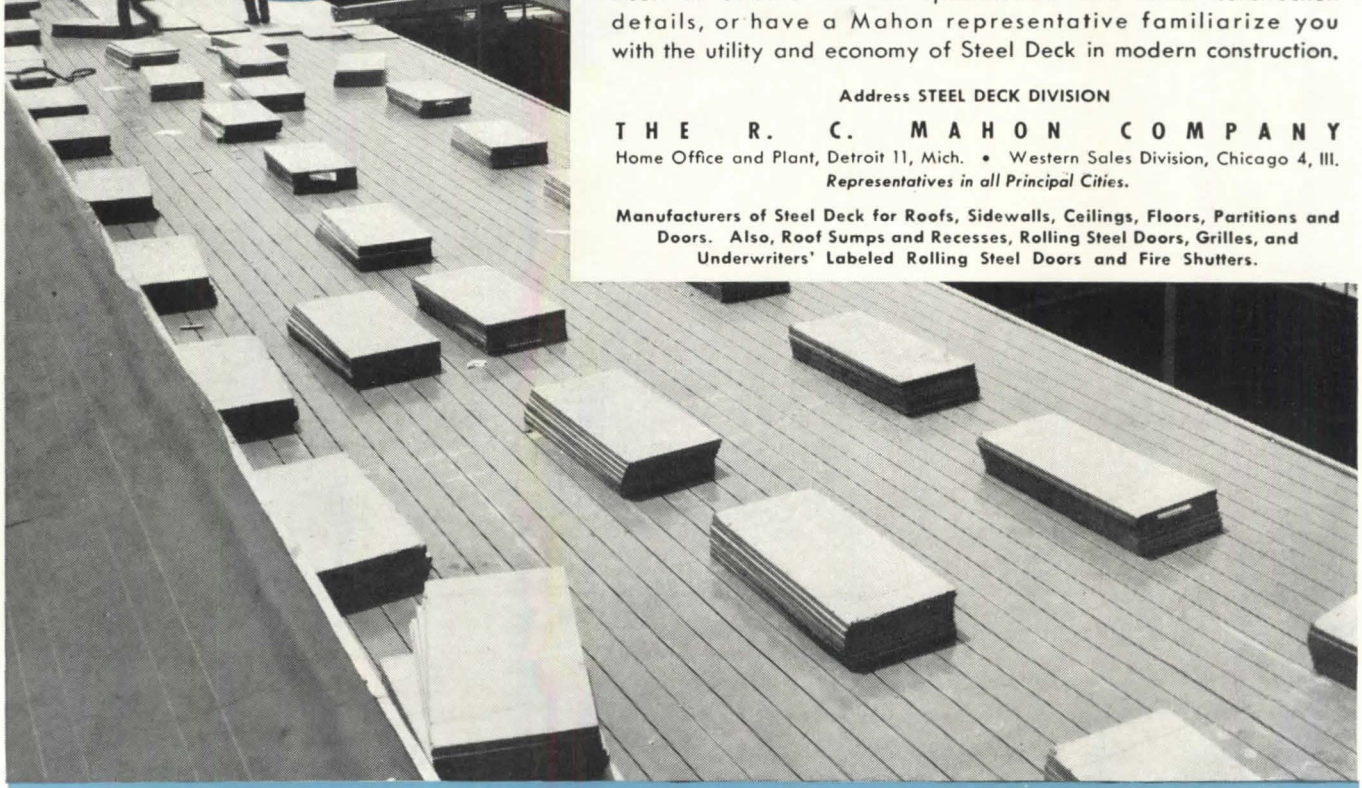
**Address STEEL DECK DIVISION**

**THE R. C. MAHON COMPANY**

Home Office and Plant, Detroit 11, Mich. • Western Sales Division, Chicago 4, Ill.

*Representatives in all Principal Cities.*

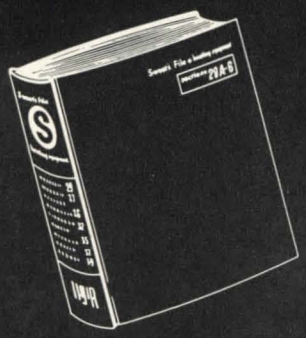
**Manufacturers of Steel Deck for Roofs, Sidewalls, Ceilings, Floors, Partitions and Doors. Also, Roof Sumps and Recesses, Rolling Steel Doors, Grilles, and Underwriters' Labeled Rolling Steel Doors and Fire Shutters.**



**Above are illustrations showing a Typical Mahon Steel Deck Sidewall application, and Insulation and Roofing Material being applied to Mahon Steel Deck Roof.**

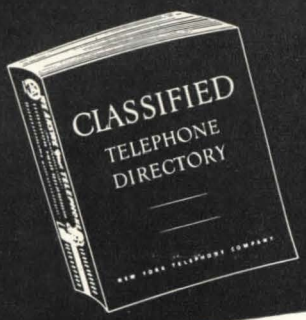
# MAHON

# To help you plan General Electric Heating Installations —



## FOR SPECIFICATIONS

You'll get full information on GENERAL ELECTRIC GAS AND OIL HEATING in Sweet's, Section 29A-6




## FOR PRICES

Ask your General Electric Dealer. He's listed under "Heating Equipment" in your Classified Telephone Directory.

**IMPORTANT** To Architects:

Production is picking up. We hope it won't be long before you can give your clients the added quality of General Electric Heating. And, remember, General Electric equipment is *priced competitively in the better grade heating field.*

*Automatic Home Heating*

**GENERAL ELECTRIC**

*General Electric Company, Air Conditioning Department, Section 7504 Bloomfield, New Jersey*

**OIL-FIRED**

G-E Boiler for steam or hot water heat

G-E Warm Air Conditioner

G-E Conversion Oil Burner

**GAS-FIRED**

G-E Boiler for steam or hot water heat

G-E Warm Air Conditioner

# Use BRIXMENT—and Get Better Brickwork!

In bricklaying, as in everything else, there is a *right* way, and a *wrong* way. An example of each is shown below. Study them — *then read how Brixment helps the bricklayer do it the right way.*

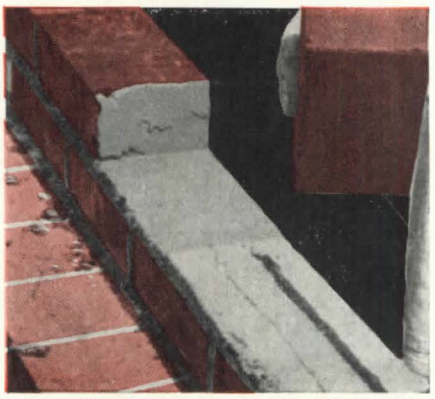
**No. 1 OF A SERIES—**

## THE RIGHT WAY AND THE WRONG WAY—IN BED JOINTS

*Mortar for the bed joint should be spread thick. The furrow in the mortar should be made shallow, not deep. Then there will be enough excess mortar in the bed joint to completely fill the furrow when the brick are bedded to the line. This will give full bed joints.*

A thick bed of mortar should be spread on the wall.

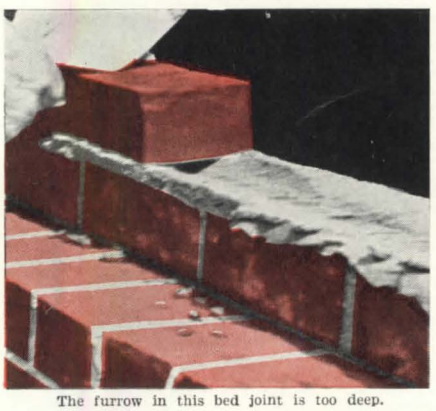
The furrow in the mortar should be shallow, not deep.



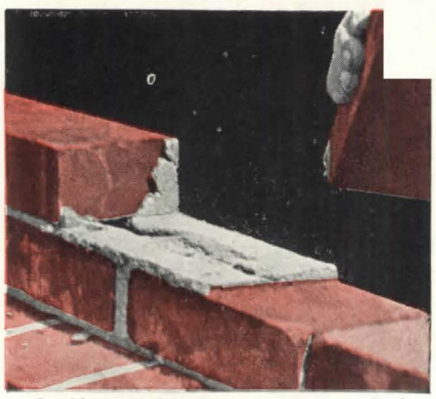
Then the excess mortar will fill the furrow and insure full bed joints.

*If the mortar for the bed joint is spread too thin, or if the furrow in the mortar is made too deep, there will be insufficient mortar in the bed joint to completely fill the furrow, when the next course of brick is bedded. This will leave a channel along which water, entering from some open joint, may travel until it finds a passage to the inside of the wall.*

mortar in this bed joint is spread too thin.



The furrow in this bed joint is too deep.



In either case there is not enough mortar in the bed joint to completely fill the furrow.

**BRIXMENT** mortar helps the bricklayer do better work. It is more *plastic*. It stays plastic longer on the wall, and when the bricklayer beds the brick, he does not need a deep furrow or excessive tapping, to place it "to the line."

Brixment mortar has greater plasticity, 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.

**LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY**

# The PLANNING BOARD

*The Truscon Planning Board says, "Right now, February 15, our shipping schedules read like this: Industrial Pivoted and Projected Windows, 20 to 26 weeks; Architectural Projected Windows, 18 weeks; Open Truss Steel Joists, 8 to 10 weeks; Ferrobord Steeldeck, 18 weeks; Metal Lath Products contingent upon our ability to secure raw materials; Bank Vault Reinforcing, 8 to 10 weeks. Our suggestion is that you keep in close touch with your Truscon representative and work with him on your specifications."*

## Six Different Truscon Steel Building Products in this Job

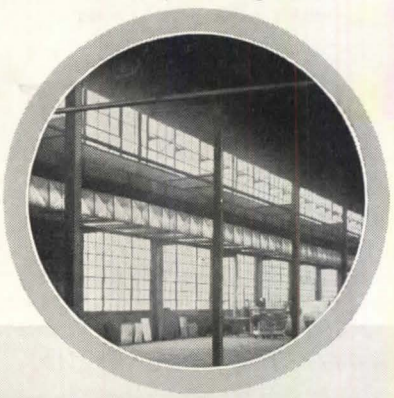
The Armstrong Furnace Company has just completed a fine new building in Columbus, Ohio, for the greatly expanded manufacture of its warm air furnaces. This well-designed structure is just about 100% steel. as far as the practical application of this material goes. R. W. Setterlin & Sons were the contractors. Truscon fabricated the structural steel members to exact specifications. Truscon "O-T" Open Truss Steel Joists permitted fire-resistant ceiling construction, especially since it was used with Truscon "Ferrobord" Steeldeck for the Roofing. "O-T" Steel Joists are very simple to install, being completely shop fabricated and reaching the job ready for placing. The "Ferrobord" Steeldeck then can be applied easily and quickly. It's adaptable to flat, pitched or curved roofs.

The Armstrong Furnace Company also makes generous use of nature's free light and air, through Truscon Commercial Projected Windows with Rack and Pinion Operators in the factory, and Truscon Architectural Projected Windows in the office building. The Commercial Projected Windows were used to reduce the hazard of accidents by trucks moving materials. The material handling trucks move very close to the inside wall of the building and any part of the window ventilator extending inward would create a potential accident risk. Thus the projected window with the ventilator projecting outward eliminates this hazard.

Efficient erection and completed enclosure of the structure was speeded considerably by the precision-made units fabricated in the Truscon factory, each item being made to fit without on-the-job retailoring.

If you are planning any kind of structure, it will be to your benefit to ask your Truscon representative to show how Truscon's complete line of steel building products and service can make your job easier and simpler. Truscon is the world's largest manufacturer of a complete line of steel building products.

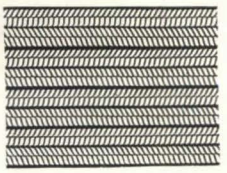
*Truscon Commercial Projected Windows from Interior of Armstrong Plant*



*Exterior View of the Armstrong Furnace Company, Columbus, Ohio, Showing Truscon Architectural Projected Windows in Office Building.*

*Truscon Structural Steel in Armstrong Plant*

## Metal Lath Products



*Truscon Doublemesh *Herringbone Metal Lath *Reg. U. S. Pat. Off.*

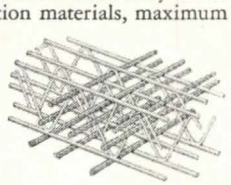
The recent series of fire tragedies in public buildings throughout America has pointed strong attention to fire-resistant construction. Truscon Metal Lath products are recognized by authorities for their fire-resistive qualities, especially for schools, hospitals, theaters, hotels and other buildings in congested areas. Truscon has a wide range of types of metal lath, corner beads, stucco mesh, corner reinforcements, hollow partition studs, base screeds, cold rolled channels and other products related to the plastering trades. All Truscon Metal Lath products are manufactured in accordance with U. S. Department of Commerce Simplified Practice Recommendation R 344. Write for free catalog showing the complete line, or refer to SWEET'S.

### *Truscon Adds New Metal Lath Accessories*

*Within the past few weeks Truscon has added equipment to fabricate short and wide flange bull nose corner beads, special base screeds, picture mold and casings. The addition of these products will enable Truscon to furnish a more complete line of Metal Lath Accessories. More about this later.*

## Bank Vault Reinforcing

Where protection against unauthorized entry into a single room or an entire structure is paramount, use Truscon Welded Reinforcing. It assures maximum economy in the placing of construction materials, maximum efficiency of materials in resisting penetration, and No. 10 insurance rating.



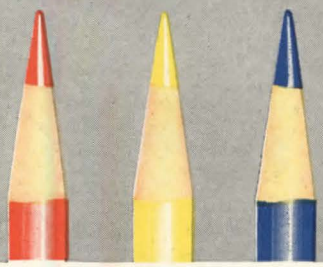
Truscon Welded Bank Vault Reinforcing consists of welded steel units placed parallel to each other with their chord members forming a barrier of steel near the inner and outer faces of the walls, floor and ceiling slabs. The web members of the welded units provide reinforcement through the thickness of the concrete. Loose bars threaded through the welded units form rectangular barriers of steel at both inner and outer faces of walls, floor and ceiling slabs as well as providing a transverse barrier through their centers. All walls are securely bonded together at the vertical corners by means of specially formed dowel bars. Write for new folder giving complete description of Truscon Welded Bank Vault Reinforcing.

## New Literature

A new 32 page catalog on Truscon's complete line of steel doors is now available. Includes illustrations, installation details and specifications. Write for your copy today.


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

COLORED PENCILS OF UNSURPASSED QUALITY



GENERAL'S

*Multichrome*

COLORED PENCILS


50 BRILLIANT COLORS

*Created by Master Craftsmen for discriminating Artists*

428 §†° Crimson
412*†° Canary Yellow
450½†° Warm Sepia
426½ §†° True Blue
405†° Scarlet Red
412½*§†° Cadmium Yellow
420° Dark Grey
425*†° Cobalt Blue
444 §†° Dark Vermilion
452†° Yellow Ochre
421 Slate Grey
424*†° Turquoise Blue
445*†° Vermilion
453 Burnt Sienna
419*†° Light Grey
431 Hookers Green
427° Rose Madder
429†° Sanguine
411 §†° Violet
407 §†° Grass Green
406 Burnt Carmine
447†° Red Ochre
417 Lavender
432 §†° Emerald Green
410*° Pink
436 Raw Umber
422° Heliotrope
435*†° Green Bice
437† Madder Lake
446° Bistre
418 Orchid
435½ Sap Green
440 Dark Flesh
451 §†° Vandyke Brown
403 §†° Indigo Blue
433° Light Olive
439° Light Flesh
438° Burnt Umber
423° Monastral Blue
434° Dark Olive
408*§†° Orange
450 Sepia
426 Ultramarine Blue
449 Ivory Black
414*§†° White
413° Chrome Yellow
441° Gold
442 Copper
443*° Silver
415*§†° Black

# Multichrome

## COLORED DRAWING PENCILS

### *50 BRILLIANT COLORS*

### STRONG-SMOOTH-VIVID PERMANENT

Years of research were required on the part of General's color experts to produce the 50 beautiful colors in MULTICHROME pencils. They are made of the finest pigments produced—are permanent to a remarkable degree and moisture proof.

The strength and smoothness of the leads, the unusual variety and lasting brilliance of the colors all contribute to the superlative quality built into MULTICHROME.

Artists, architects, engineers, draftsmen and photographers will appreciate these pencils.

Attractively packaged in easel-backed boxes of assorted colors for convenience when using, also packed three dozen of one color to the box.

No. 400A set of 12 colors marked §
No. 401A set of 24 colors marked †
No. 402A set of 36 colors marked °
No. 448A set of 48 colors, all shown at left except Copper and Ivory Black.

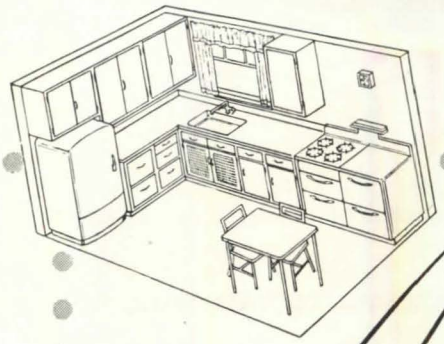
Colors marked * recommended for marking blue prints.

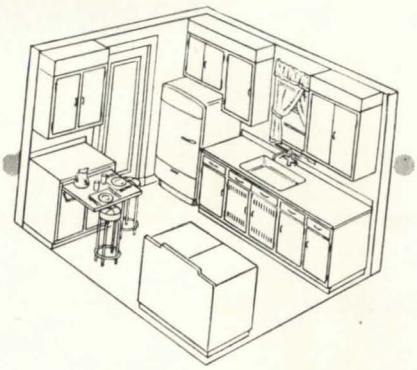
## General Pencil Company

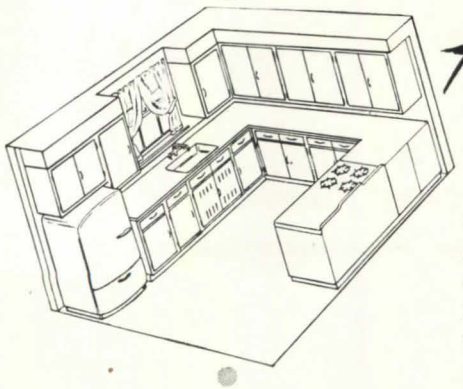
67-73 FLEET STREET TRADE MARK JERSEY CITY 6, N. J.

*Makers of Fine Pencils since 1889*

No. 448 A
The set of 48 colors
Illustrated







# *Any* size or shape of kitchen can be a Curtis Kitchen!

Unlimited flexibility in planning kitchens of any size or shape—that's why Curtis sectional kitchen cabinet units help you provide kitchens which fit the owner's needs *exactly.*

There are 21 basic unit types of Curtis wall and counter units—and a total of 75 sizes, not including special cabinet accessories. Yet all dimensions of units are standardized to fit in with other standard kitchen equipment—and all Curtis units fit together to present a modern, streamlined and handsome appearance.

Naturally, Curtis kitchen cabinet units are made of *wood*—for Curtis' experience with thousands of individual kitchens has shown that wood cabinets provide *lasting* satisfaction. All units are furnished prime coated—ready to finish in any color to suit the owner's taste and preference. Let us send you our new 24-page color book "It's Fun to Plan Your Own Kitchen"! Or see your Curtis dealer soon for your copy. Modern, beautifully styled hardware is furnished for each cabinet, to be applied on the job.

*Curtis kitchen units are designed and constructed to permit installation with the minimum of labor. Expert machining and workmanship produce units which, when bolted together, are firm, square, and perfectly aligned. These cabinets are made like fine furniture—with a combination of quality features found in no other type of cabinets, but true of all Curtis Woodwork for over 80 years. The kitchen here shows a typical installation of Curtis stock wood cabinets.*

1866 CURTIS WOODWORK

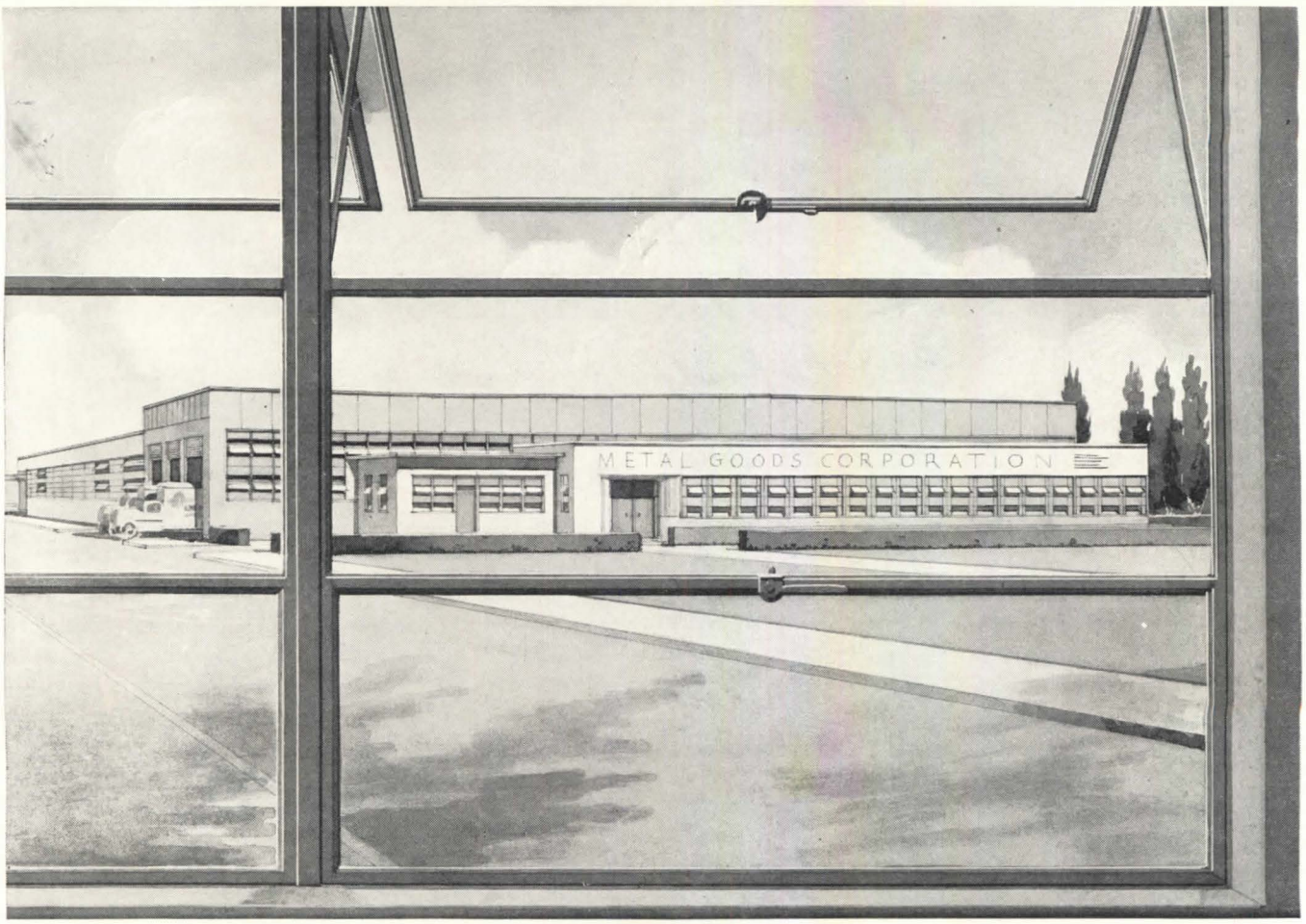
CURTIS COMPANIES SERVICE BUREAU
PA-4K Curtis Building, Clinton, Iowa
Gentlemen: Please send me your new color book on Curtis Wood Kitchen Cabinets.

*Name*.....

*Address*.....

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

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

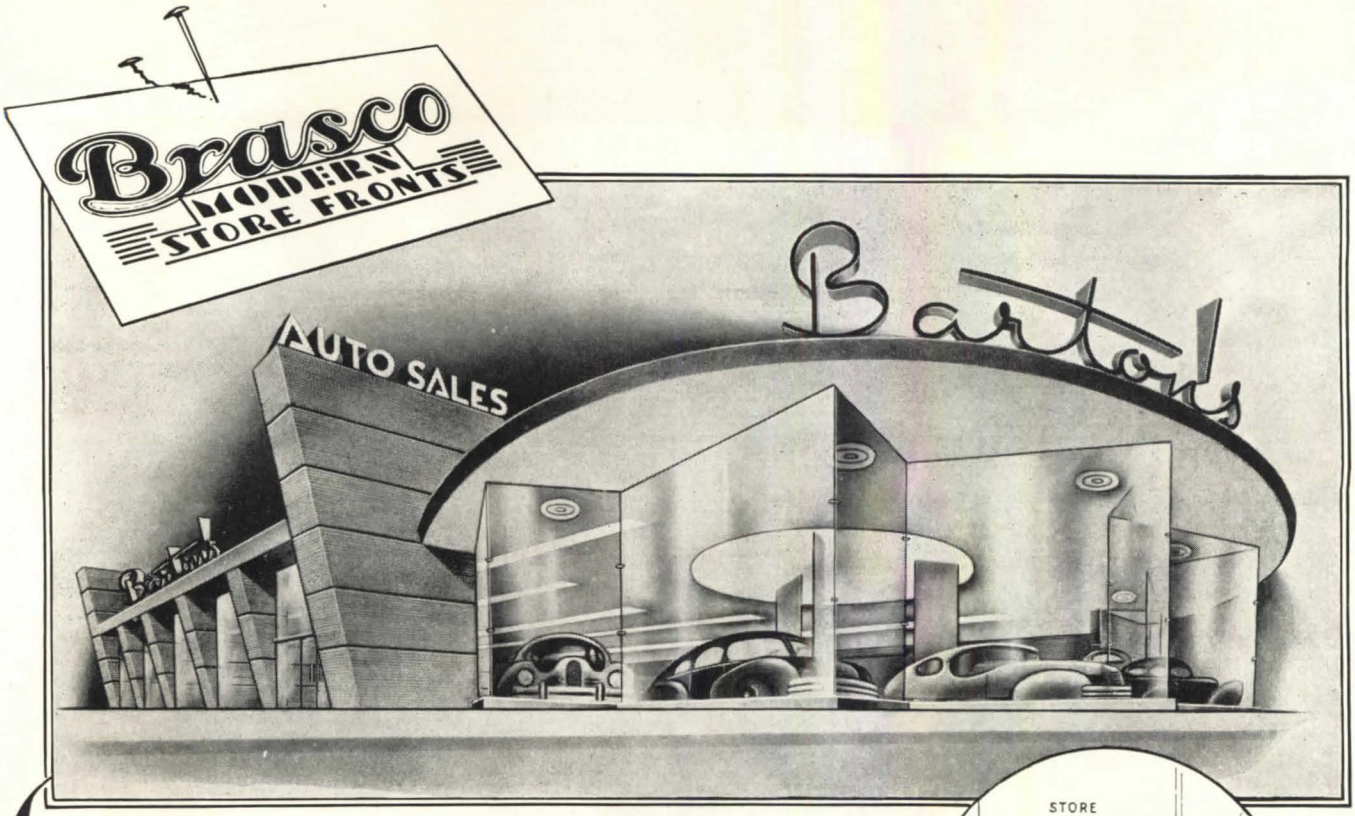



Factory-Office Building of the Metal Goods Corporation, Dallas, Texas. Factory equipped with Lupton Pivoted Windows. Office equipped with Lupton Architectural Projected Windows. Architect: Frank Cann. Engineers and Contractors: Frazier-Davis, St. Louis, Mo.

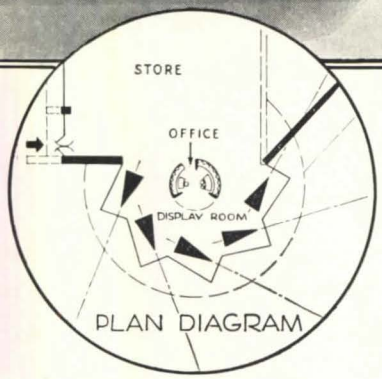
Streamlined industrial production depends on many things . . . proper daylighting; healthful, well-ventilated atmosphere; pleasant working surroundings. At the Metal Goods Corporation, Lupton Metal Windows promote efficiency by supplying these ideal conditions. In the factory section, Lupton Pivoted Windows, mechanically operated, provide a constant, well regulated, supply of fresh air. Modern appearance is secured for the office section with Lupton Architectural Projected Windows. There is a Lupton Metal Window for every type of building. Write for the new 1947 Catalog or see our Catalog in Sweet's.

MICHAEL FLYNN MANUFACTURING CO.
700 East Godfrey Avenue, Philadelphia 24, Penna.
*Member of the Metal Window Institute*

# LUPTON METAL WINDOWS




# ALL SET.. *FOR SALES*




. . . . DESIGNED for dominance, today's unique store fronts are *more* than eye-compelling. Direct vision within enlarges the scope of window shopping, invites immediate entry for a close-up of the enticing array of wares viewed from the sidewalk.

With complete Brasco Store Front Construction the architect's ingenuity knows no bounds. Practically any modern design can be executed in stainless steel or aluminum without resorting to special fabrication. Installation headaches are eliminated . . . important savings realized in time and money.

Brasco's rich beauty adds distinction to the entire front. Heavy-gauged members, soundly engineered, provide lasting strength under every stress of weather and traffic. Exclusive patented features afford ample glass protection. As thousands of successful store front installations testify, you can build it best with Brasco.

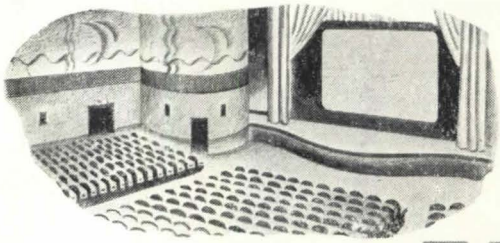
*A Complete Line for Every Design*

•

## BRASCO MANUFACTURING CO.

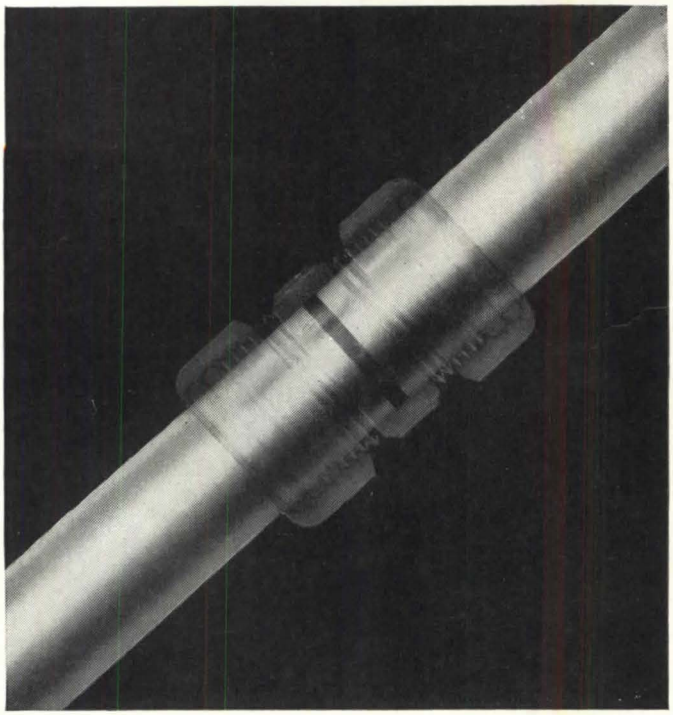
**HARVEY · (Chicago Suburb) · ILLINOIS**

*National Distribution Assures Effective Installation*



*for Theater Wiring*

# THE MODERN WAY IS THE ELECTRUNITE WAY



*Simple compression-type fitting eliminate any need for thread-cutting with ELECTRUNITE E.M.T. Each coupling contains two locking nuts, which, when tightened with wrench or pliers, make a strong, vibration-proof joint. The protective zinc coating remains unbroken by threads, unmarred by pipe wrench teeth.*

## ELECTRUNITE E.M.T. PROVIDES PROTECTION OF STEEL—PLUS AN *UNBROKEN* COATING OF ZINC

No need to worry about corrosion troubles when you specify Republic ELECTRUNITE E. M. T., the *original* lightweight rigid steel raceway that provides continuous, unbroken corrosion protection throughout the entire raceway installation.

Unlike other types of conduit, modern ELECTRUNITE E. M. T. never requires thread-cutting or turning into the fitting. Hence, its tightly adherent zinc coating remains unbroken at coupling and box connector—unmarred, too, by biting pipe wrench teeth.

This is but one of the many reasons why easy-to-install ELECTRUNITE E. M. T. merits the Underwriters' Laboratories inspection seal, indicating that it provides adequate mechanical and electrical protection . . . reason also why it is approved by the National Electrical Code for exposed, concealed and concrete slab construction.

REMEMBER: You can be sure that any wiring job is safe when it's run through dependable, long-lasting raceways of ELECTRUNITE E.M.T. Like more information? See your Steel and Tubes Representative or write to:

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**SEE SWEET'S FILE**
or write us for detailed information on these Republic Steel Building Products:

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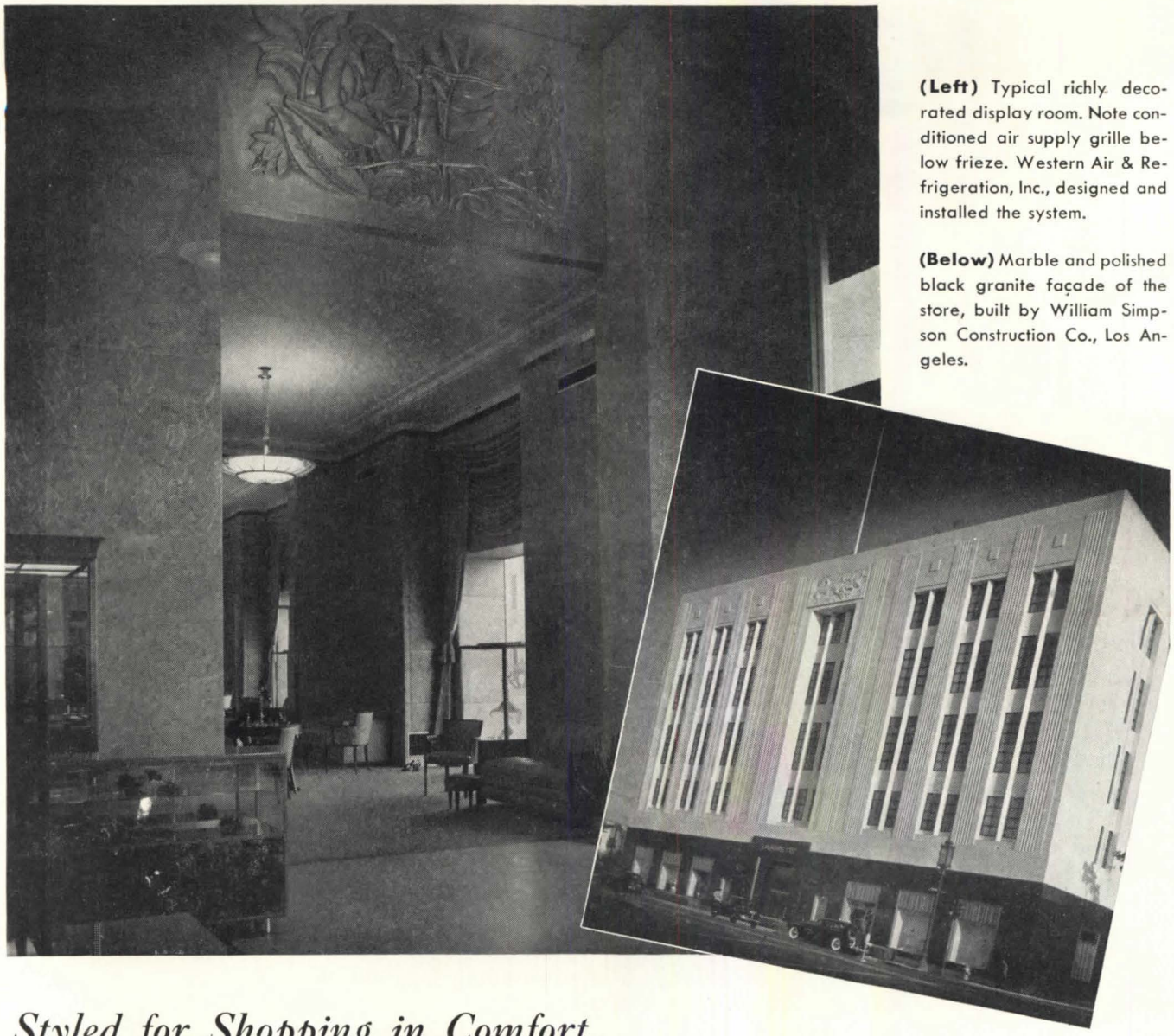
LIGHTWEIGHT THREADLESS RIGID STEEL RACEWAY



**(Left)** Typical richly decorated display room. Note conditioned air supply grille below frieze. Western Air & Refrigeration, Inc., designed and installed the system.

**(Below)** Marble and polished black granite façade of the store, built by William Simpson Construction Co., Los Angeles.

# *Styled for Shopping in Comfort . . .*

## AIR CONDITIONED WITH "FREON" SAFE REFRIGERANTS

**When more than** eight years ago the luxurious, completely air conditioned I. Magnin store was opened in Los Angeles, California, thousands welcomed a new shopping center which, today, is still an outstanding example of modern classic architecture . . . smartly styled for the comfort of customers and the store personnel.

In designing the structure, Myron Hunt and H. C. Chambers, architects of the building, and Timothy L. Pflueger, architect of the interiors, predicated their plans upon air conditioning throughout.

All six floors of the store, including offices and work rooms, are conditioned with thirteen cooling units installed in ceiling spaces. These use chilled water provided by five 40-ton Westinghouse compressors located with the balance of the refrigerating plant in the central equipment room in the basement. "Freon" refrigerants are used exclusively because they are safe, non-toxic, non-flammable and highly efficient.

The equipment is controlled by thermostats and maintains a steady supply of cool and clean fresh air that (to quote store officials): "*. . . makes shopping and working in Magnin's a pleasure even on the hottest day. The system has been very satisfactory . . . has required no major repairs since installation and the safety factors make it ("Freon-12") a most desirable refrigerant.*"

Fine architectural structures entirely air conditioned with "Freon" may be seen in almost every city in the country . . . a tribute to the performance of these safe and dependable refrigerants. Your clients will appreciate your recommendation of modern, compact, space-saving equipment designed to utilize "Freon" refrigerants. Kinetic Chemicals, Inc., Tenth and Market Streets, Wilmington 98, Del.

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**FREON**
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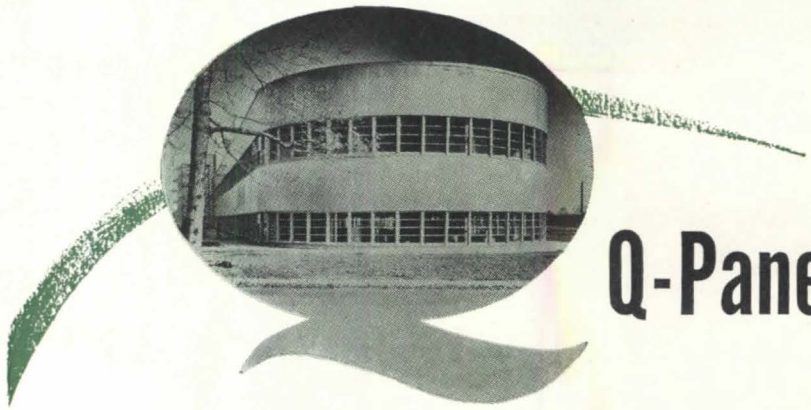
*safe refrigerants*

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



# Q-Panels available now

AND LOOK WHAT ARCHITECTS ARE DOING WITH THEM!

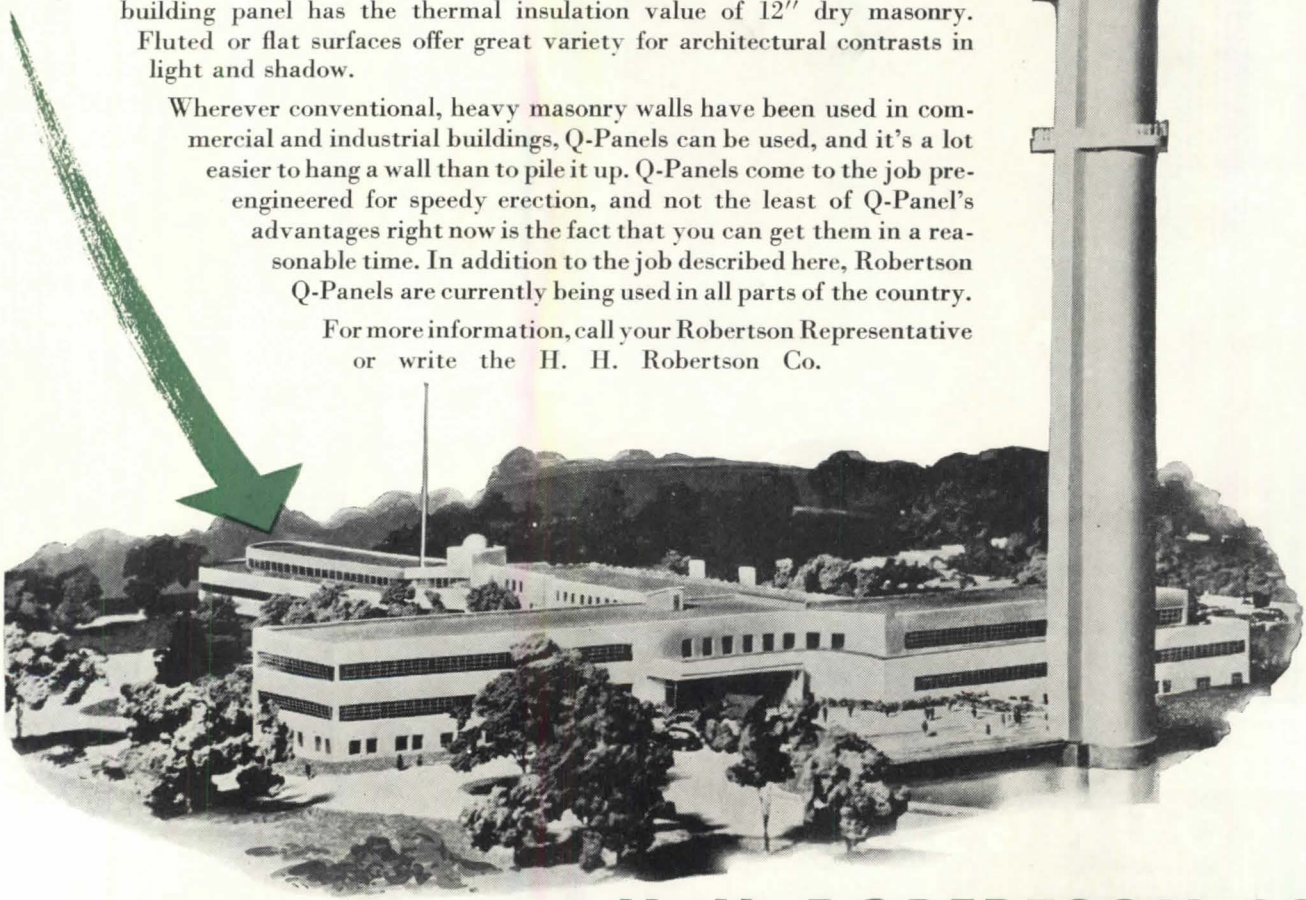
● The scale model below shows how Giffels & Vallet, Inc., L. Rossetti, Engineers and Architects, visualize the new electronics laboratories now under construction at Nutley, New Jersey, for the Federal Telecommunication Laboratories, Inc. The 300′ tower is in itself a microwave experimental laboratory.

Like the completed section shown above, the finished project will be Robertson Q-Floors and Robertson Q-Panels throughout. The tower will be faced with specially designed aluminum fluted Q-Section.

The Q-Panels are 2′ wide consisting of a fluted aluminum section and a flat steel plate enclosing 1½″ of insulation. Q-Panels weigh less than 5 lbs. per square foot and can be erected so fast that a crew of only twenty-five men have put up an acre of wall in three days. Yet this advanced wall building panel has the thermal insulation value of 12″ dry masonry. Fluted or flat surfaces offer great variety for architectural contrasts in light and shadow.

Wherever conventional, heavy masonry walls have been used in commercial and industrial buildings, Q-Panels can be used, and it's a lot easier to hang a wall than to pile it up. Q-Panels come to the job pre-engineered for speedy erection, and not the least of Q-Panel's advantages right now is the fact that you can get them in a reasonable time. In addition to the job described here, Robertson Q-Panels are currently being used in all parts of the country.

For more information, call your Robertson Representative or write the H. H. Robertson Co.



*George A. Fuller Co., New York City, Contractors*

## H. H. ROBERTSON CO.

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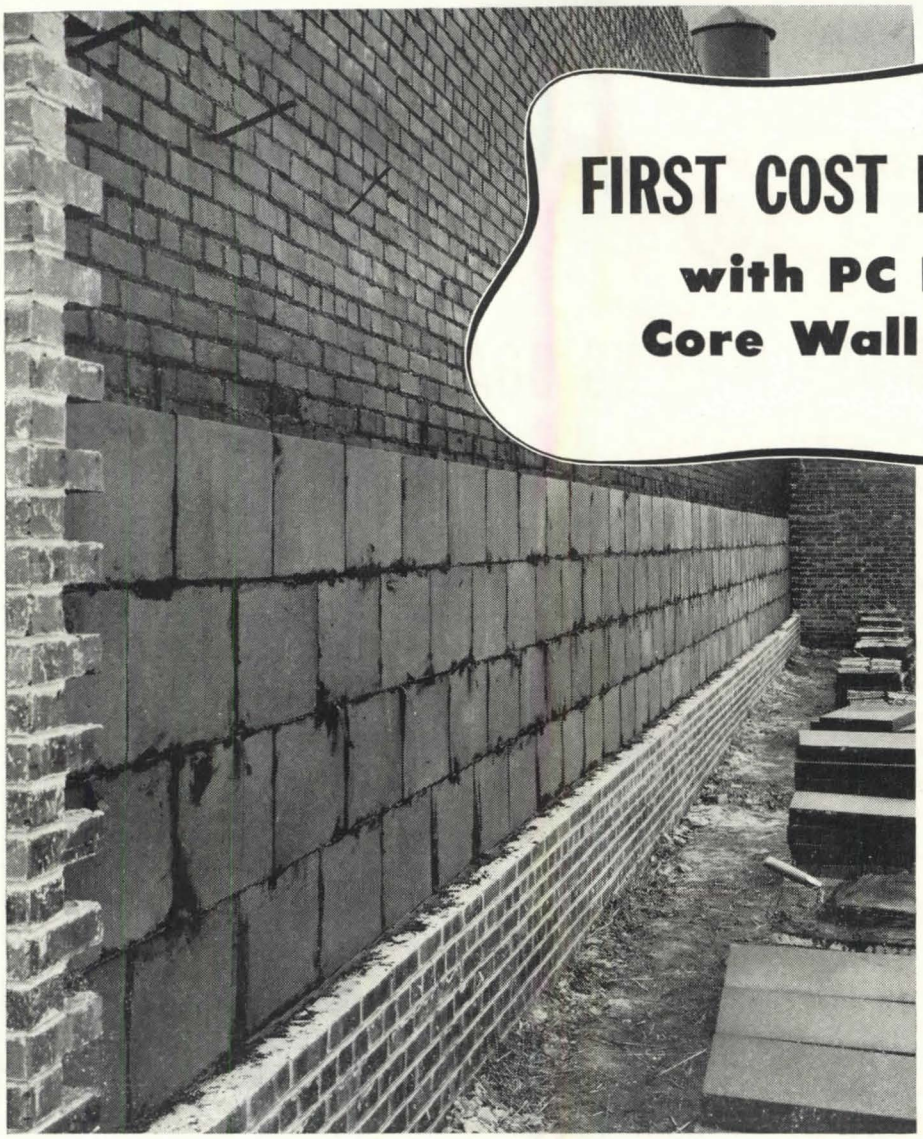

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Because, being glass, PC Foamglas is waterproof, fireproof, verminproof, and impervious to most acids. It withstands high humidities, helps to maintain predetermined temperature levels, to minimize condensation.

Because repairs, maintenance, replacement—due to failure of the material—are virtually unknown. When you insulate with PC Foamglas, you insulate FOR GOOD.

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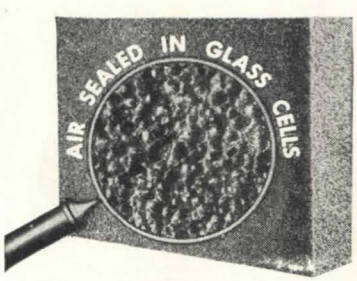
· *Also Makers of PC Glass Blocks* ·

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

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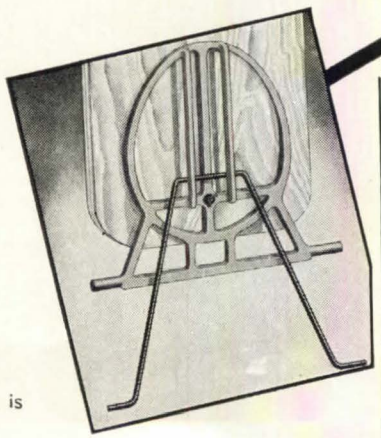
*Floor Space Does Double Duty With the New, Improved*

**Eubank** PATENTED

# SWIVEL-TYPE CABINET IRONING BOARD

**HOMES built on contract—or for speculative sales—will be smaller today, on the average, than the same market demanded pre-war. That means every foot of space must be utilized to the fullest. Eubank's Swivel-Type Cabinet Ironing Board goes a long way toward solving the problem. It can be installed — and used — where the conventional cabinet board would be utterly impractical. Ideal for apartments, bungalow courts, pre-fab units — for modernizing older, larger homes, too.**



**The secret's in the swivel! Eubank's patented cast-aluminum support allows board to swing through a wide horizontal arc for flexibility in use . . . for taking advantage of the best light. Holds board firmly upright in cabinet (even when door is opened); keeps it steady when in use. Eliminates sagging. Built to last! Not one has ever failed under normal use conditions!**

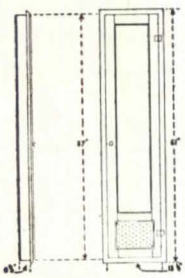
**CAN BE INSTALLED WHERE SPACE IS AT A PREMIUM**

**Here's a typical example of the way the Eubank Swivel-Type Cabinet Ironing Board adds convenience to a smaller home. The attractive cabinet is installed in one corner of the kitchen. When closed, it's out of the way.**

**Opened, the board swivels away from counter toward window. There's plenty of room for work, and it gets full advantage of best light. Conventional cabinet boards would be out of the question here!**

### CHECK THESE FEATURES

- Swings through wide arc; ideal where space is limited—in hall, kitchen, small utility room.
- Attractive cabinet requires a rough opening only 14" x 57¼" x 3-¾"; recesses in wall.
- For old or new homes, apartments, courts. Easily installed before or after plastering.
- No projecting parts to tear fabric; firesafe iron storage with aluminum door ventilator.
- Patented cast aluminum support; strong, sturdy. Not one has ever failed in normal use.
- Available NOW for immediate delivery. See your lumber dealer.



Installation Specifications
Rough Opening
14"x57¼"x3¾"
Set Cabinet 23" from floor

Eubank
AMERICA'S MASTER CABINET BUILDERS
QUALITY PRODUCT
INGLEWOOD, CALIFORNIA

**Built by**
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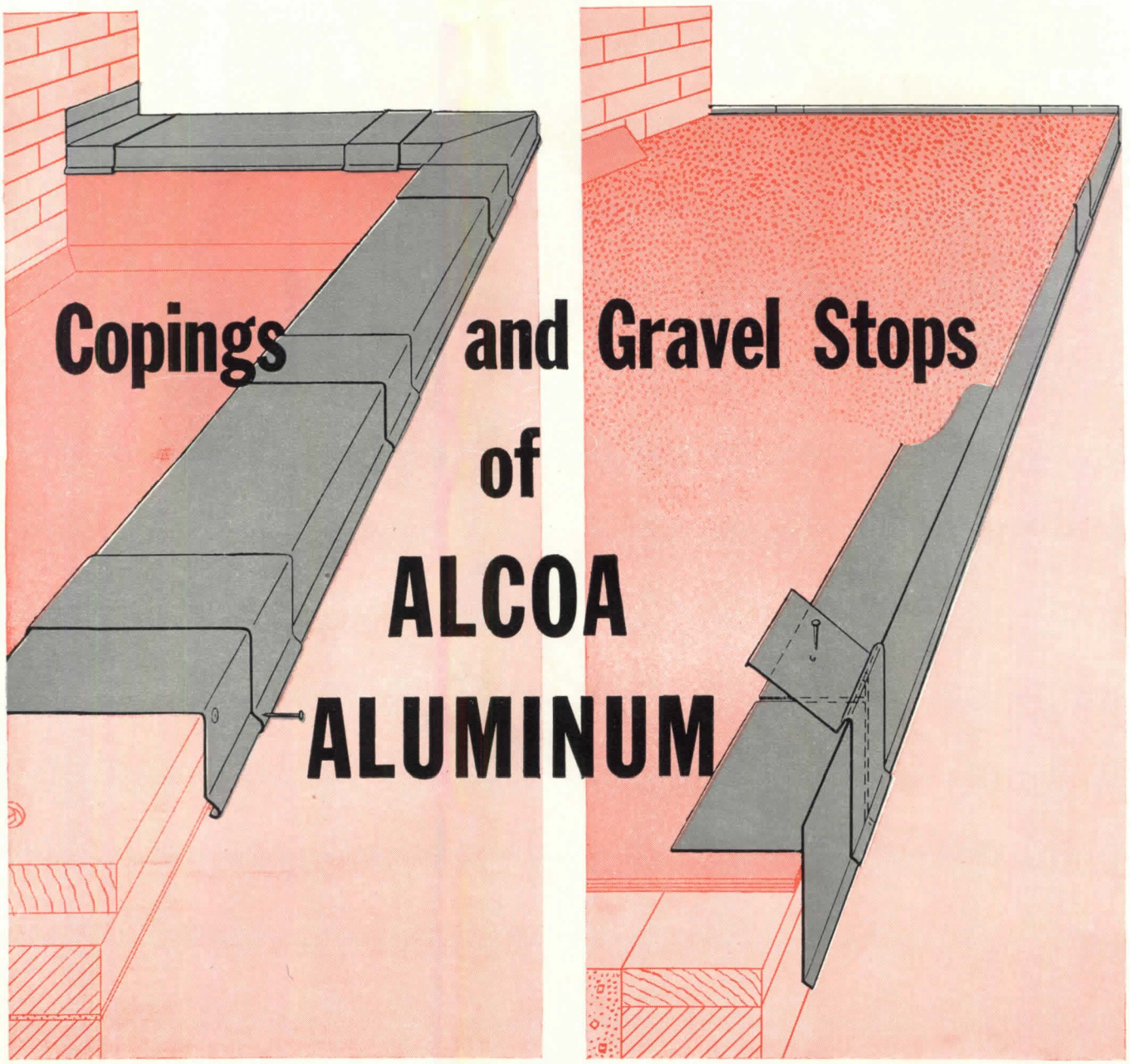

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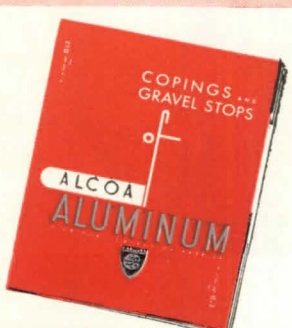
Strong, lightweight, corrosion-resistant, easy to work. These inherent characteristics of Alcoa Aluminum make it particularly adaptable for copings and gravel stops. Long sections may be installed quickly by one man. It may be used with any type, any width of wall. Alcoa Aluminum can never rust, rot or warp. It will not stain surrounding materials; never requires painting.

For detailed information on standard copings readily available, consult the booklet illustrated at the right (A.I.A. File No. 12-L-2). For copies, write to ALUMINUM COMPANY OF AMERICA, 1868 Gulf Building, Pittsburgh 19, Penna.

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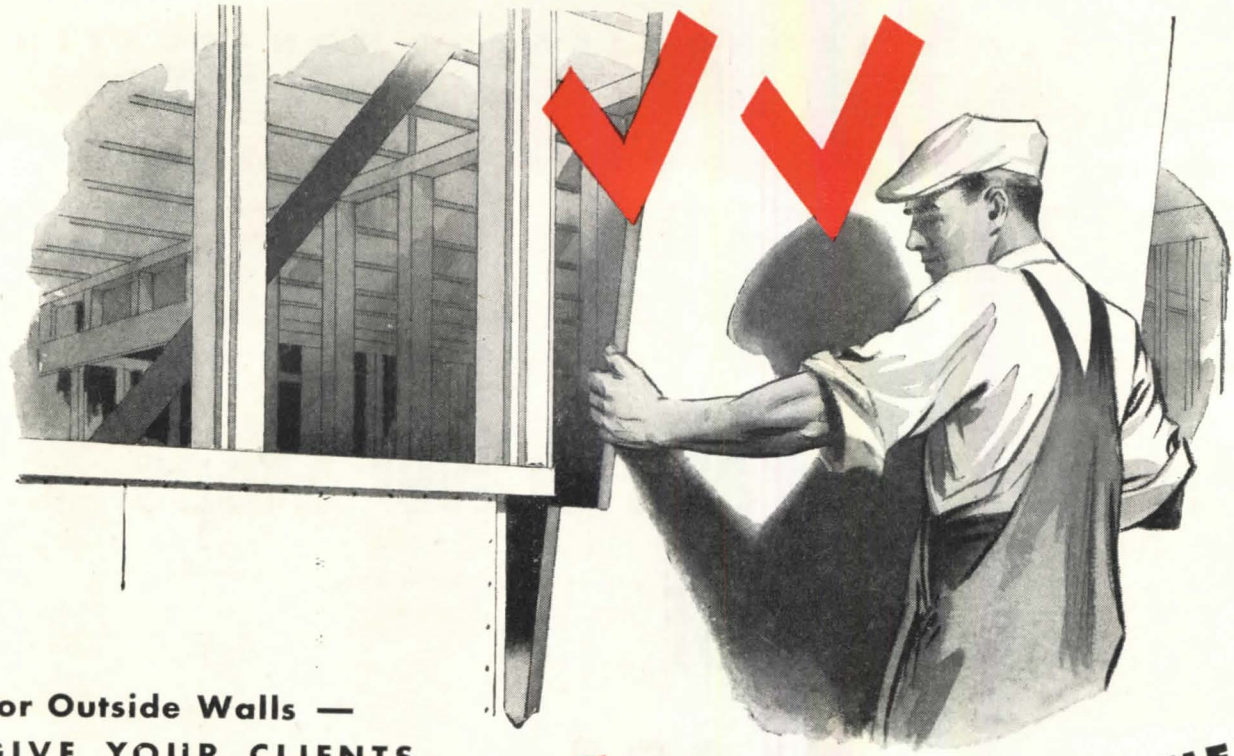
IN EVERY COMMERCIAL FORM



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# Double FOR THEIR MONEY!

Specify double-duty Insulite Sheathing. It does *two* things for the price of one:
(1st) *Sheathes* (2nd) *Insulates*
One product—double usage!—double service for the money!

In this day of excessive construction costs, here at least is one place where you can tell a client "You get *two* uses for the money you spend."

Tests prove Insulite Sheathing provides bracing strength superior to ordinary wood sheathing horizontally applied. Its insulation value over wood is common knowledge.

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

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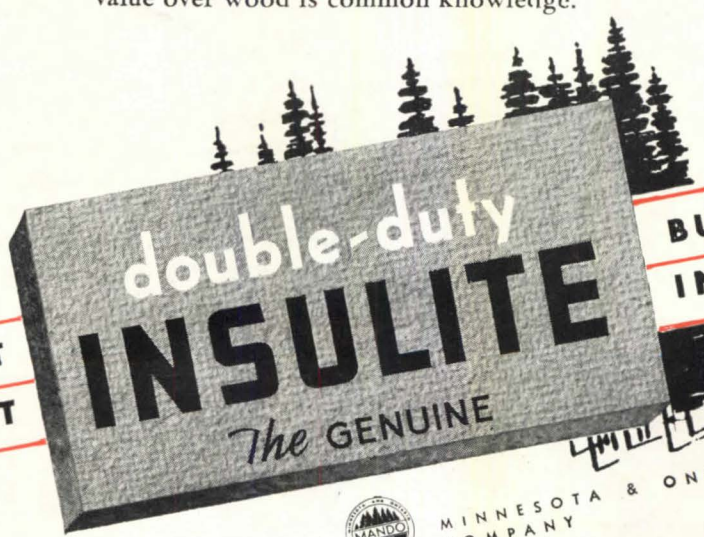


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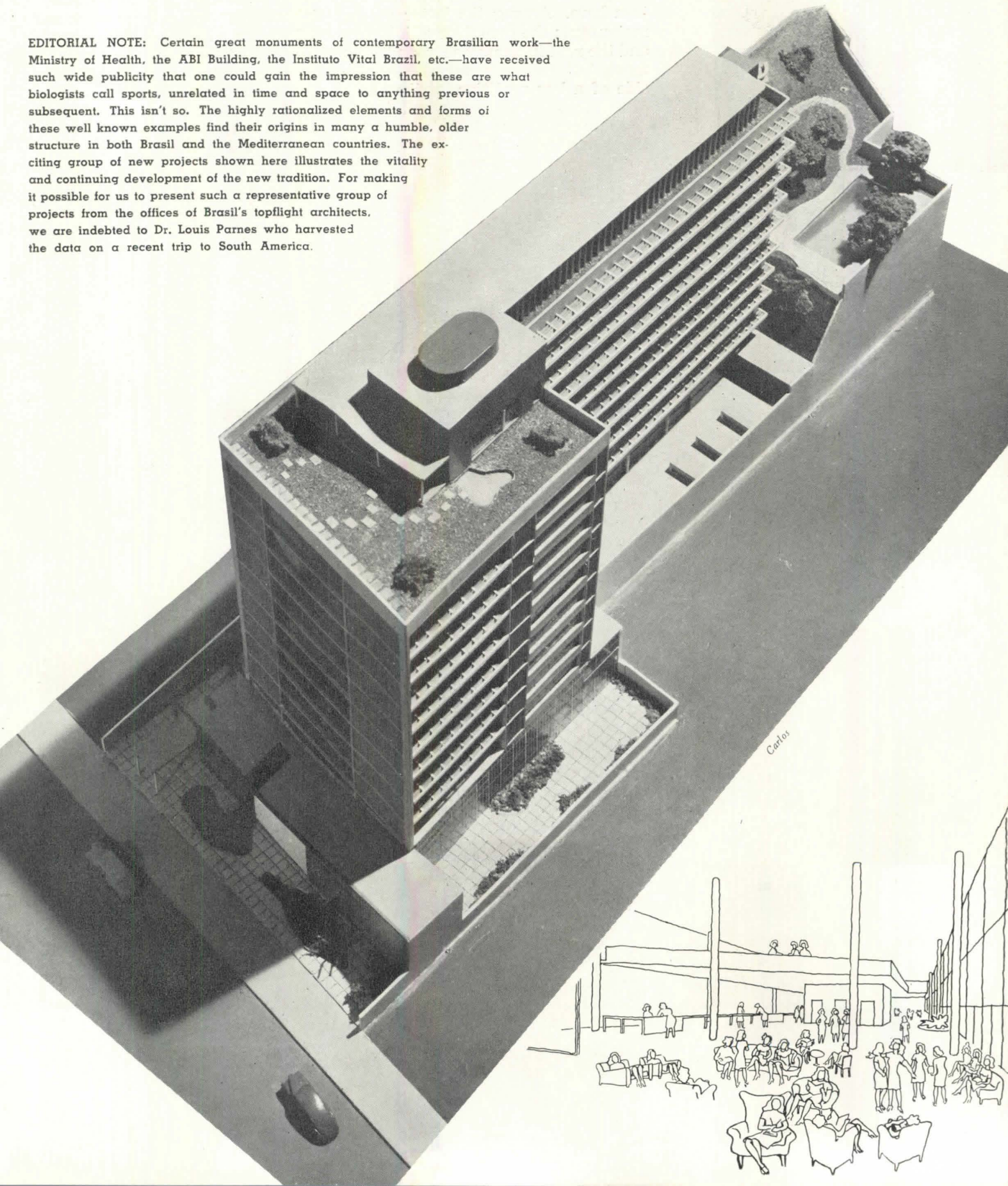
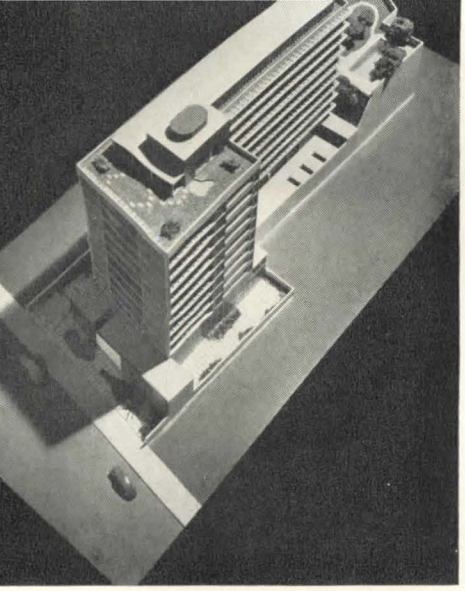
# RECENT BRASILIAN WORK

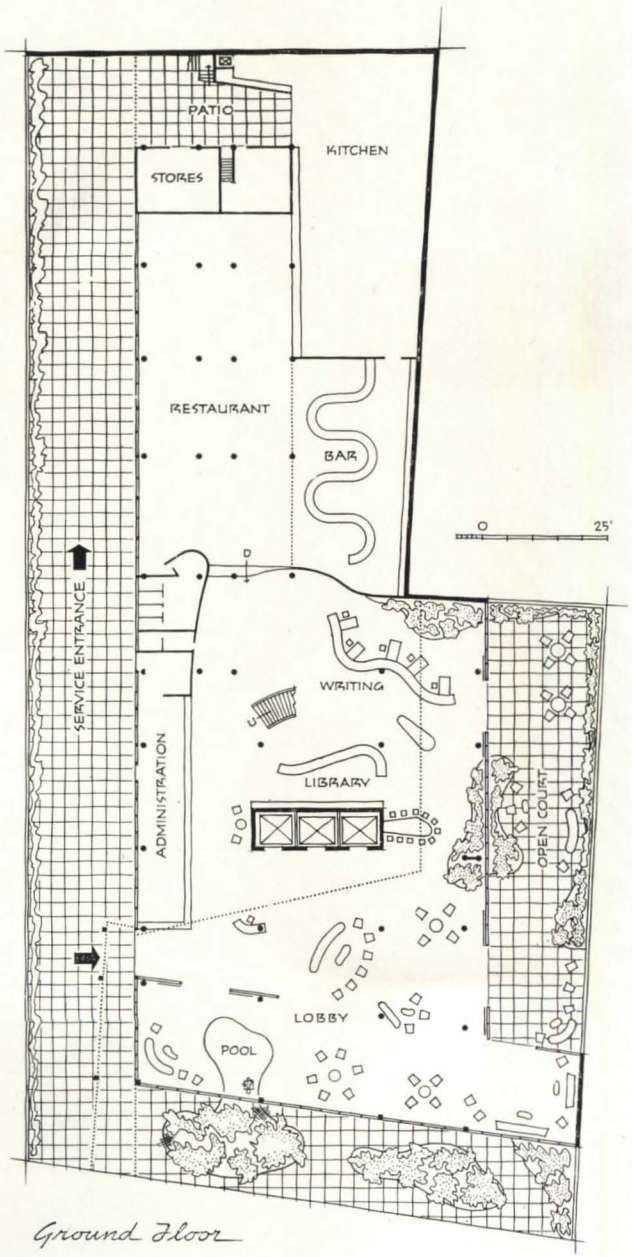
EDITORIAL NOTE: Certain great monuments of contemporary Brasilian work—the Ministry of Health, the ABI Building, the Instituto Vital Brazil, etc.—have received such wide publicity that one could gain the impression that these are what biologists call sports, unrelated in time and space to anything previous or subsequent. This isn't so. The highly rationalized elements and forms of these well known examples find their origins in many a humble, older structure in both Brasil and the Mediterranean countries. The exciting group of new projects shown here illustrates the vitality and continuing development of the new tradition. For making it possible for us to present such a representative group of projects from the offices of Brasil's topflight architects, we are indebted to Dr. Louis Parnes who harvested the data on a recent trip to South America.



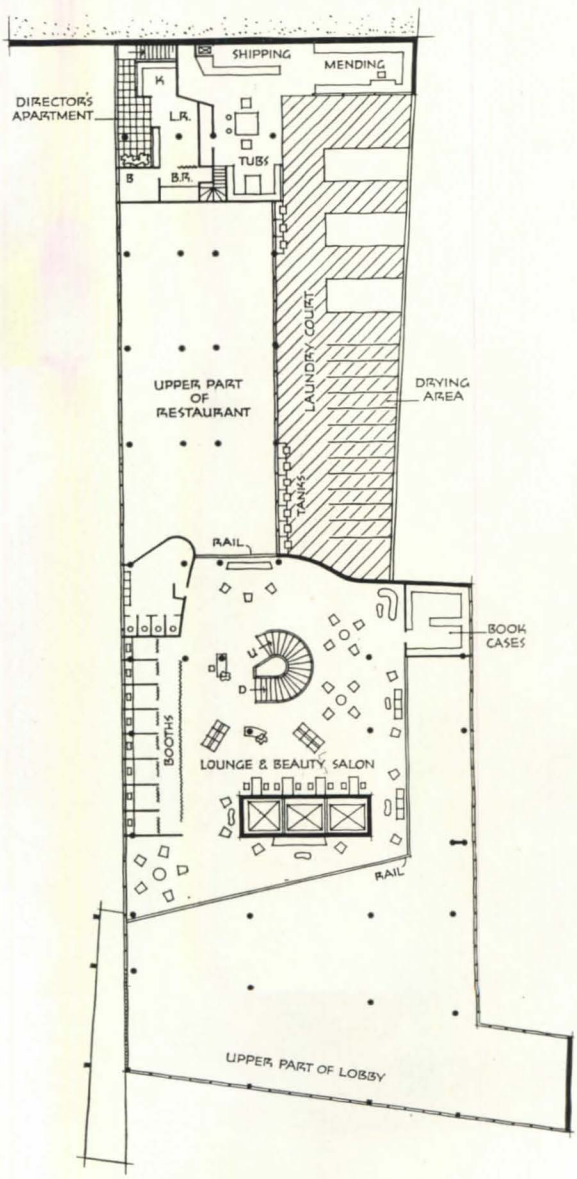


# WOMEN'S RESIDENCE

This multistory residence for working girls includes some facilities that seem meager compared with their counterparts in North America and others that are considerably more luxurious than those of similar buildings here. Among the latter are the elaborate, ground-floor lounge and restaurant; the gym floor adjoining a roof garden with a swimming pool; and the roof infirmary surrounded by gardens. The bedrooms, on the other hand, with two beds on each side of a cubicle, arranged head to foot either side of a low partition, strike one as rather sparse accommodations. In design and structure, the building follows the adventurous approach that one associates with Brasilian work today—reinforced concrete, light sections, fixed vertical, sun fins outside the windows on the north wall, and a straightforward composition of masses.



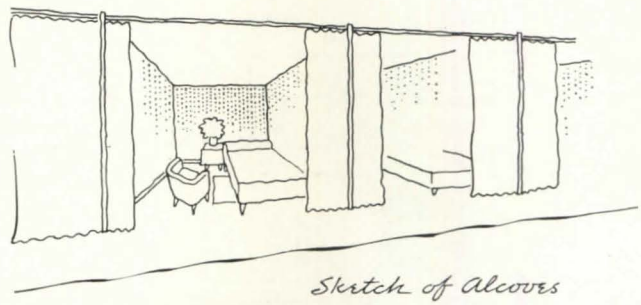

Ground Floor



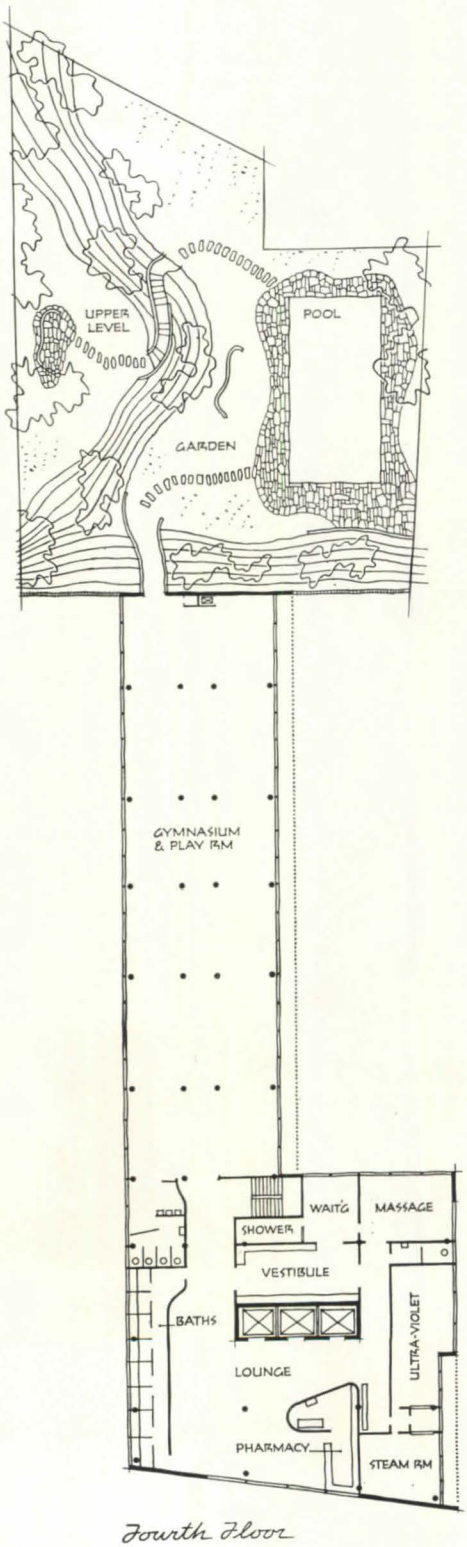

Balcony Level

# CLUB RIO DE JANEIRO

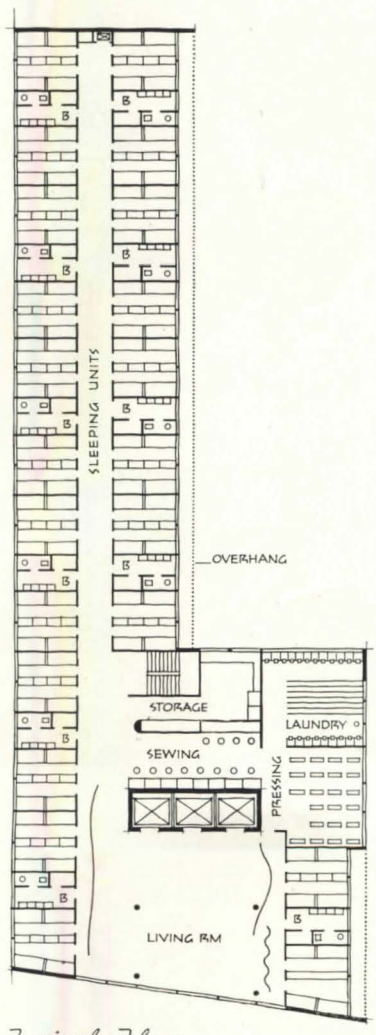
MARCELO, MILTON, and MAURICIO ROBERTO, Architects



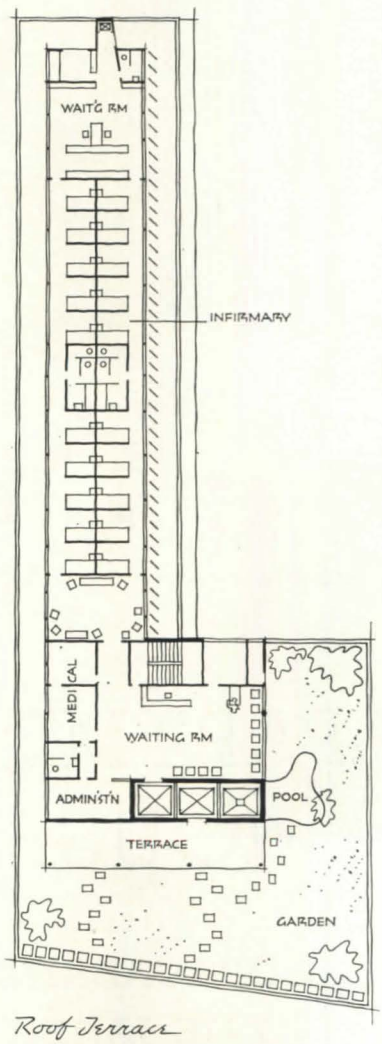

**CURTAINED CUBICLES accommodate infirmary patients.**



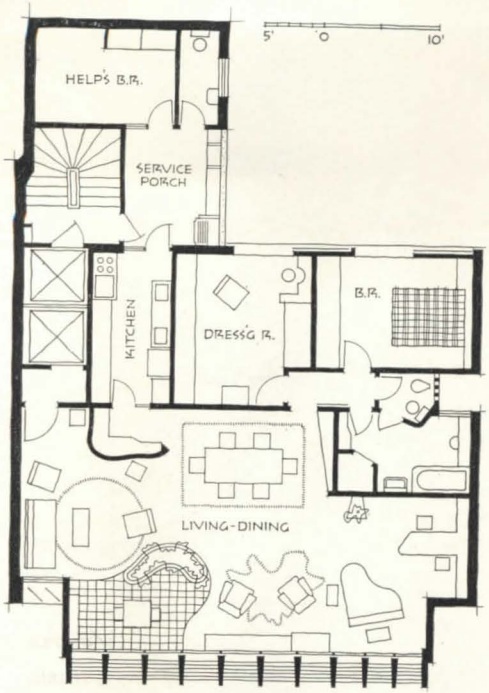

Fourth Floor




Typical Floor




Roof Terrace




Typical Floor Plan

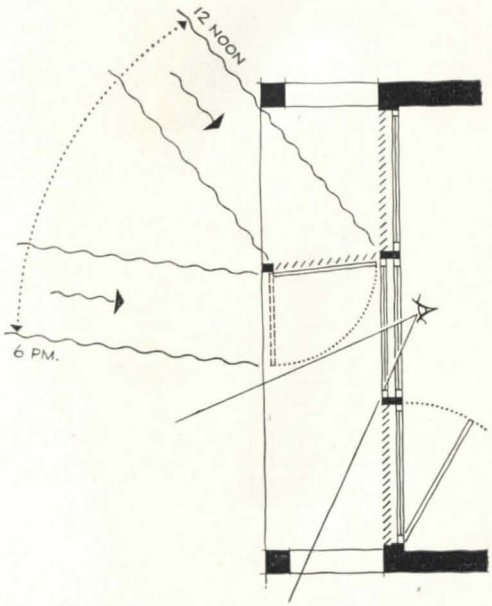
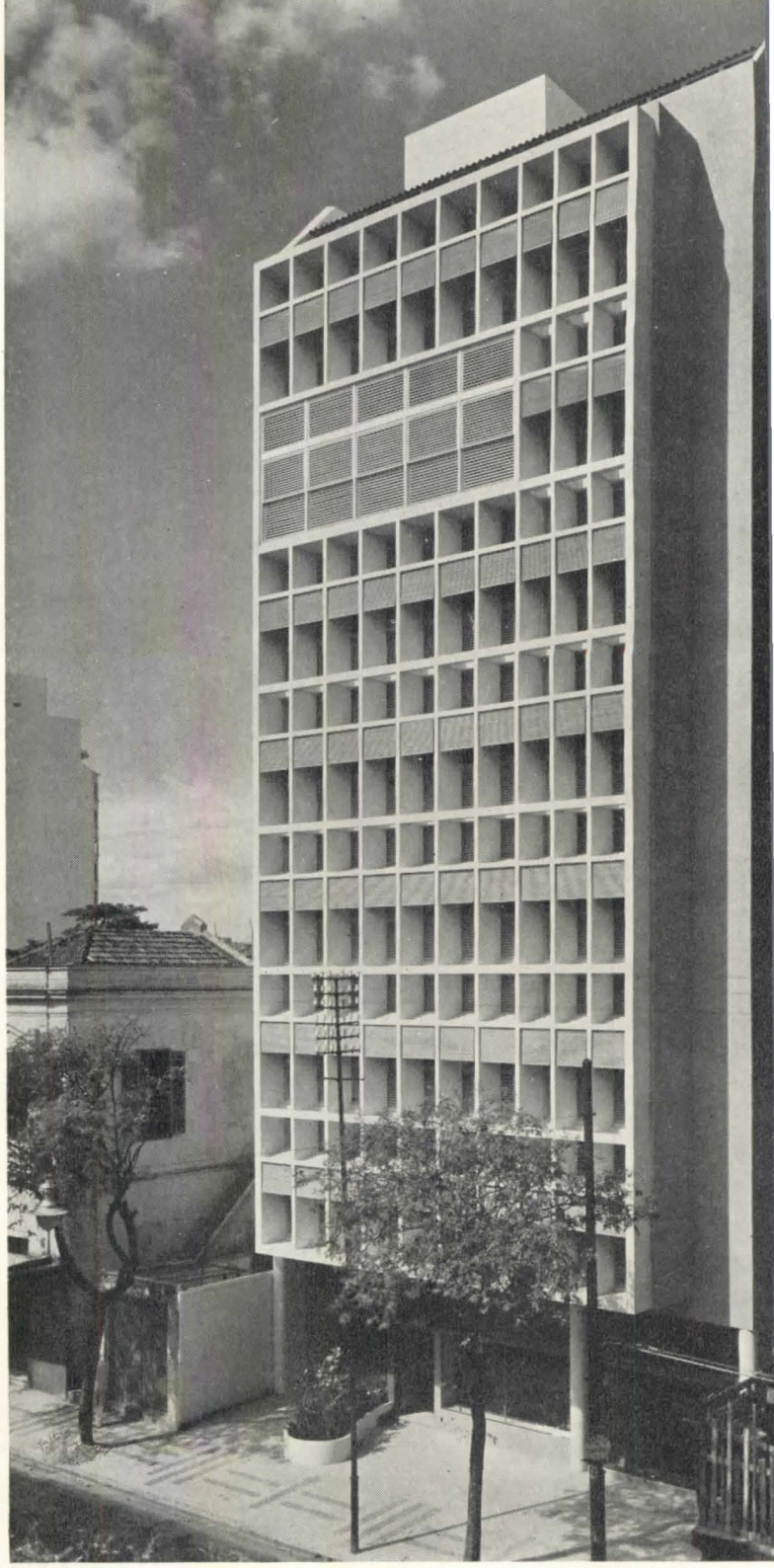



Diagram showing Sun Angles

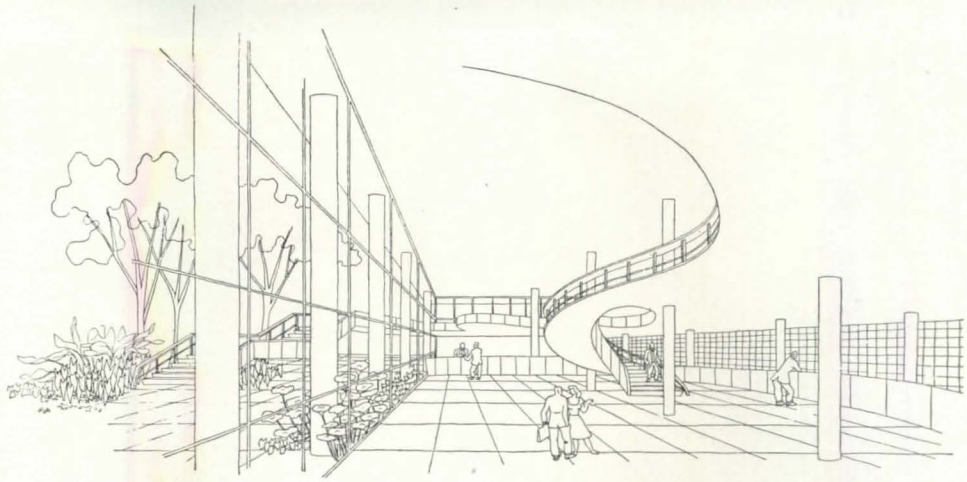


# APARTMENT HOUSE

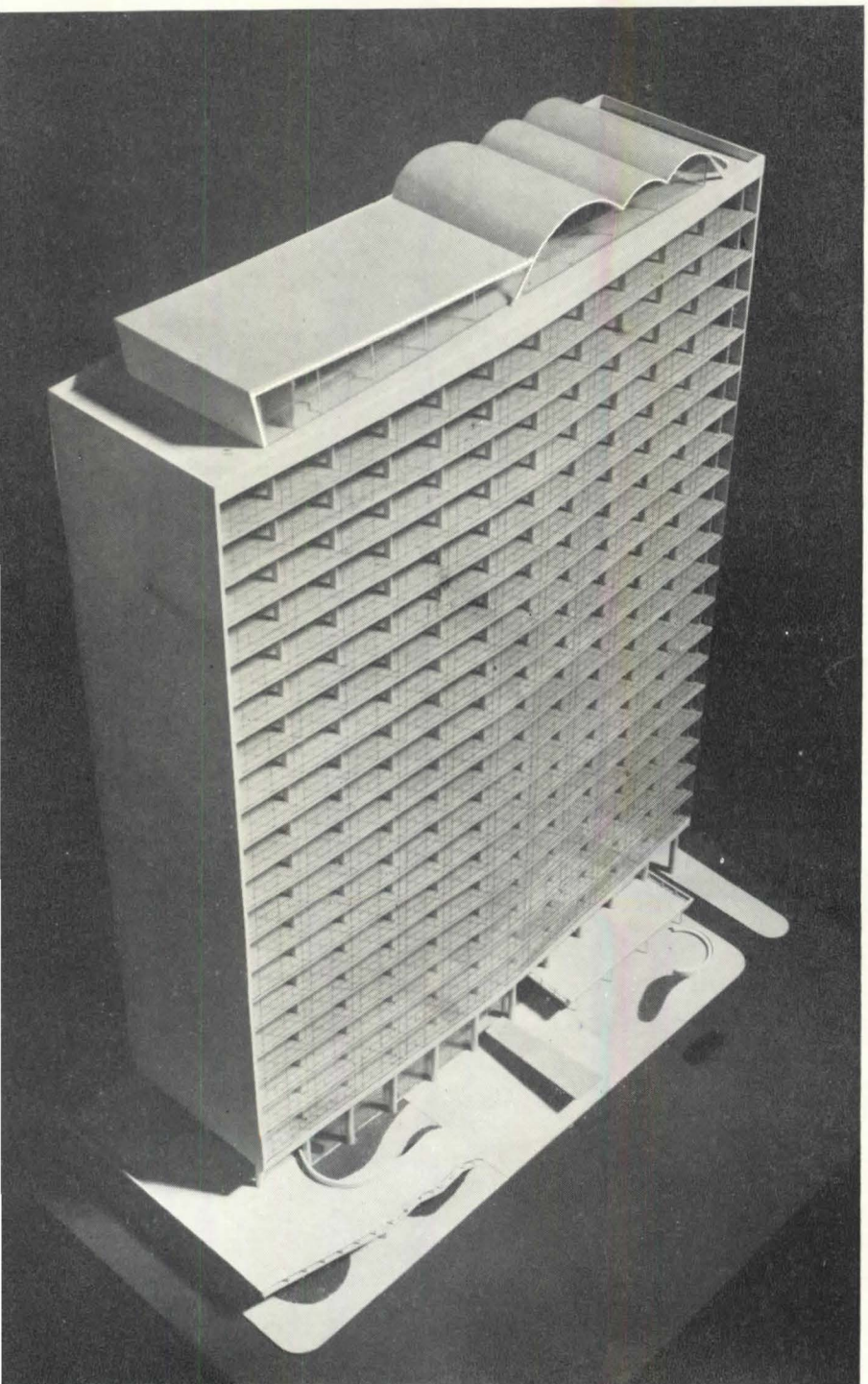
## COPACABANA RIO DE JANEIRO

MARCELO, MILTON, and MAURICIO ROBERTO, Architects

The devices on the front of the building for controling sunlight and sky glare are, perhaps, the most notable details of this reinforced concrete apartment house. As shown in the section, an open framework allows a view outward and downward from the living rooms; fixed, horizontal louvers of asbestos cement reduce sky glare, and a movable wood jalousie is hinged at the outer frame so that, when lowered, it cuts off late afternoon sunlight. Above the window head another series of fixed louvers extends up to the ceiling line.



SKETCH OF
GROUND-FLOOR LOBBY.

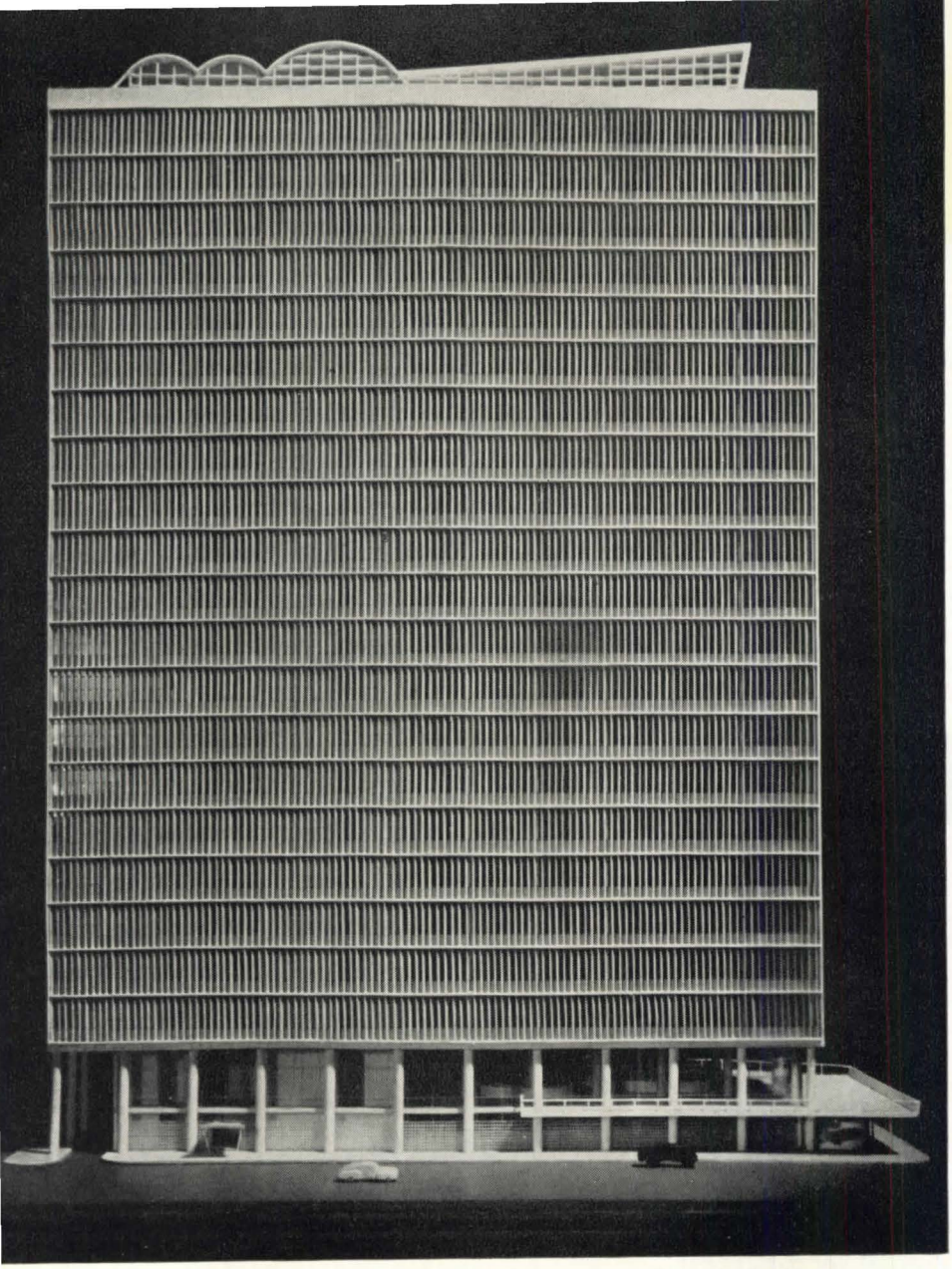


# OFFICE BUILDING

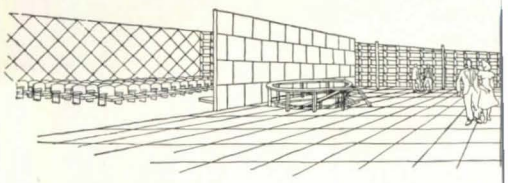
## PORTO ALEGRE

AFFONSO EDUARDO REIDY
and J. MOREIRA MACHADO,
Architects

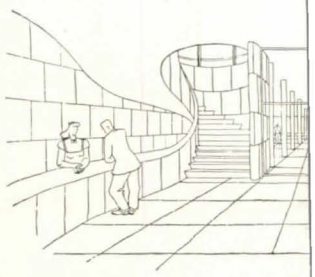
The winner of a design competition, this reinforced concrete office building for the Rio Grande do Sul Railway is designed for the greatest flexibility of plan arrangement, depending on the particular office needs of the various floors. Only one central row of columns occurs between the columns of the two long exterior walls. The structural design includes columns set back from the building envelope above ground-floor level, and north and south walls sheathed with a maximum area of glass; tiers of vertical-fin "sunbreakers" occur in a concrete frame (extension of the floor slabs) outside the sunny north wall.



NORTH SIDE of building.



PENTHOUSE FLOOR: Movie theater, at left;

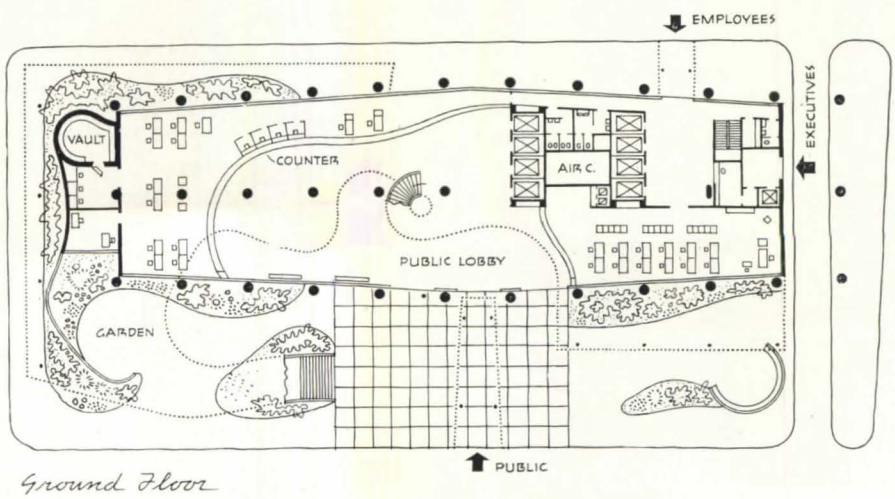


21st FLOOR: Looking toward

# OFFICE BUILDING

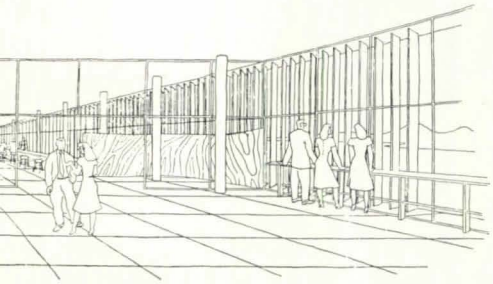
## PORTO ALEGRE

On the ground floor, public business offices border the dramatic entrance lobby, arranged with total freedom from the limits of the structural frame. Exhibit space occurs on a mezzanine level, opening out to a terrace, from which a staircase leads back down to the building entrance. Departmental offices occupy floors two to twenty. Restaurant and bar are on the twenty-first floor, and the penthouse consists of a lively composition of concrete forms enclosing an auditorium and lounge, surrounded by a terrace.

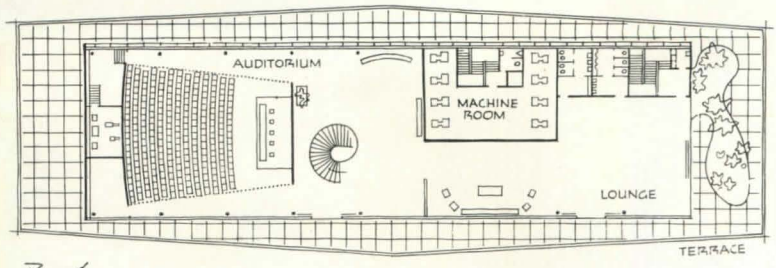



Ground Floor

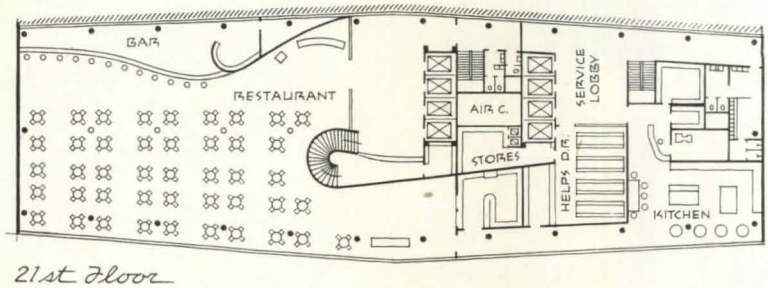
lounge and terrace, right.



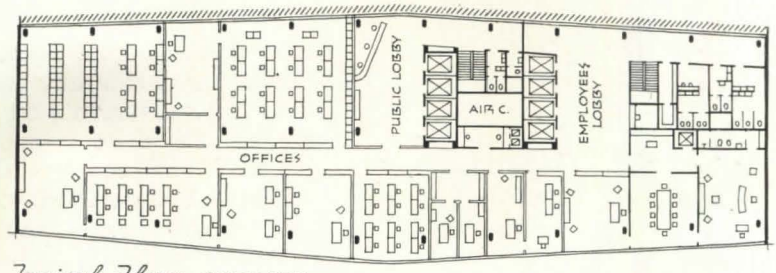
bar and restaurant.




Roof

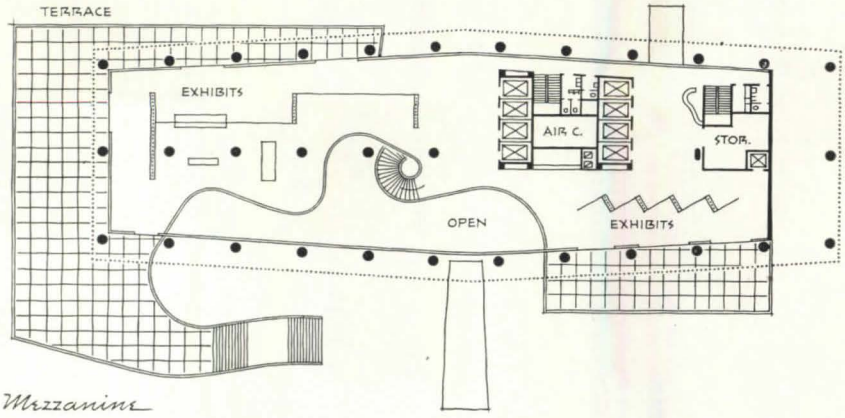



21st floor



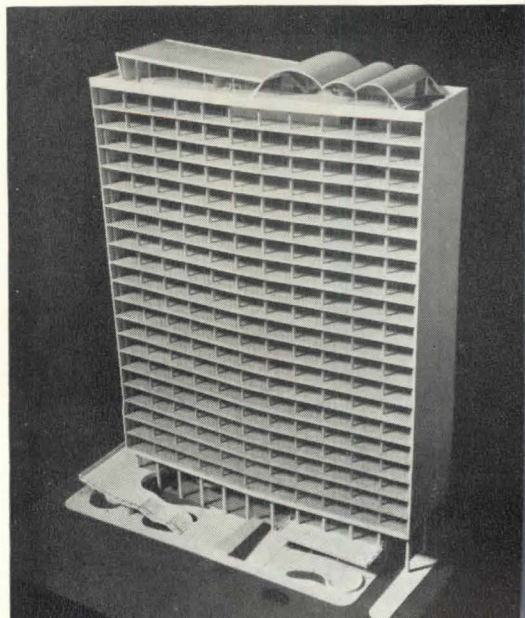

Typical floor 2ND TO 20TH

AFFONSO EDUARDO REIDY
and J. MOREIRA MACHADO,
Architects




Mezzanine

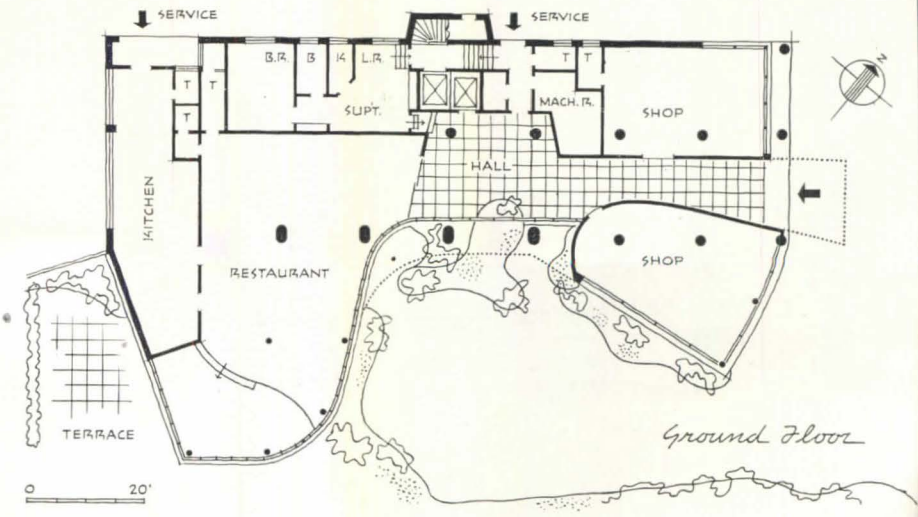
SOUTH FACE.



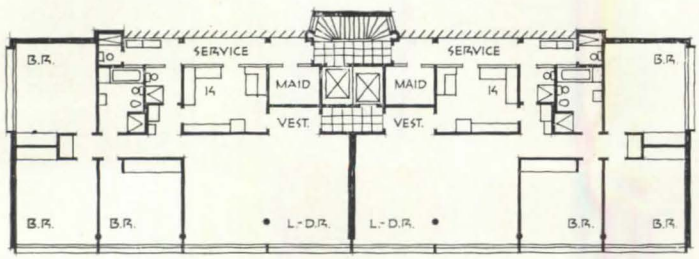
# APARTMENT HOUSE, GUARUJA, SANTOS

HENRIQUE E. MINDLIN
Architect

Above the ground floor, with its main lobby, restaurant, and two shops bordering a side entrance to the building, are ten floors of apartments. The two apartments on each floor are separated (between the two living rooms) by a soundproof partition. Along the north wall, shaded by concrete sun fins, are the service hall and staircase; maids' rooms and kitchens open off this corridor. The two apartments use the same plan, one being the exact reverse of the other in layout. The concrete structural frame of the building is clearly expressed on the exterior, with floor slabs projecting beyond the window line and vertical members between the slabs echoing the location of columns within the building envelope.



Sacha

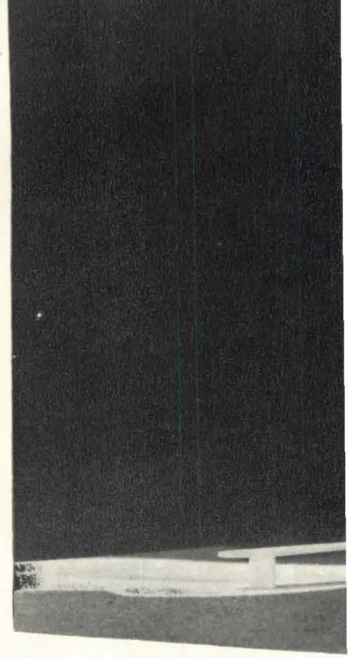



Typical Floor

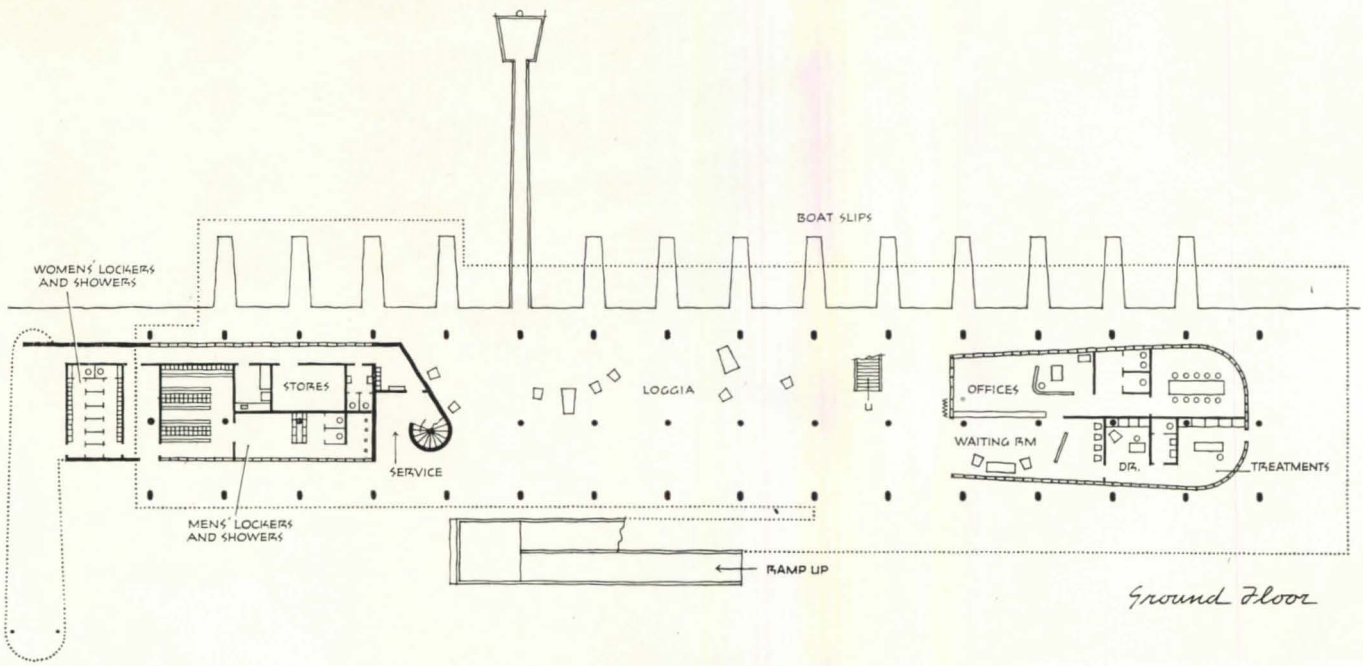
# YACHT CLUB, BOTAFOGO

OSCAR NIEMEYER, ARCHITECT

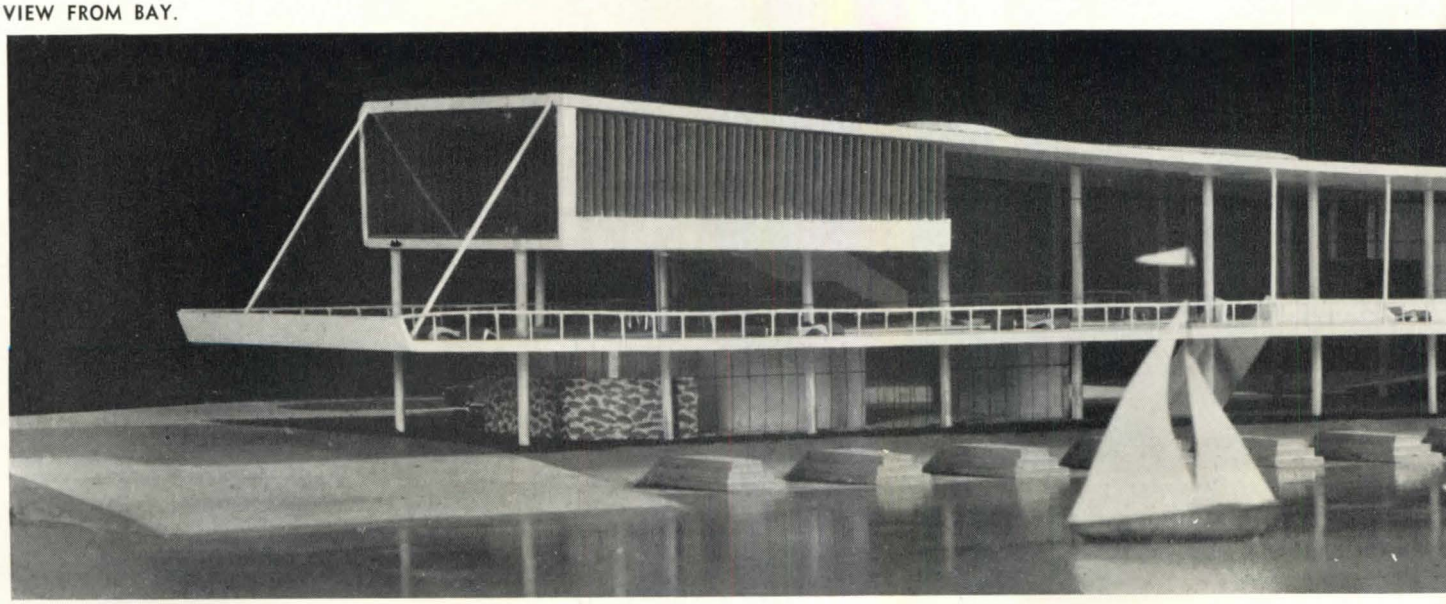
The Botafogo Yacht Club is a typically vigorous instance of this architect's work. Imaginative and bold in concrete structural design, it is also a notable example of independent space planning, with forms freely used to achieve suitable use areas that are interesting both in themselves and in their inter-relationships. The reverse slope of the roof serves esthetic as well as functional ends. What might have been a monotonous length of facade becomes an ever-changing composition; and within, at one end of the building, a high ceiling is provided above the large dine and dance room, while at the other, this added height is used for a deep balcony, planned as a secluded reading room, the underneath space becoming a sheltered porch extension of the main lounge.

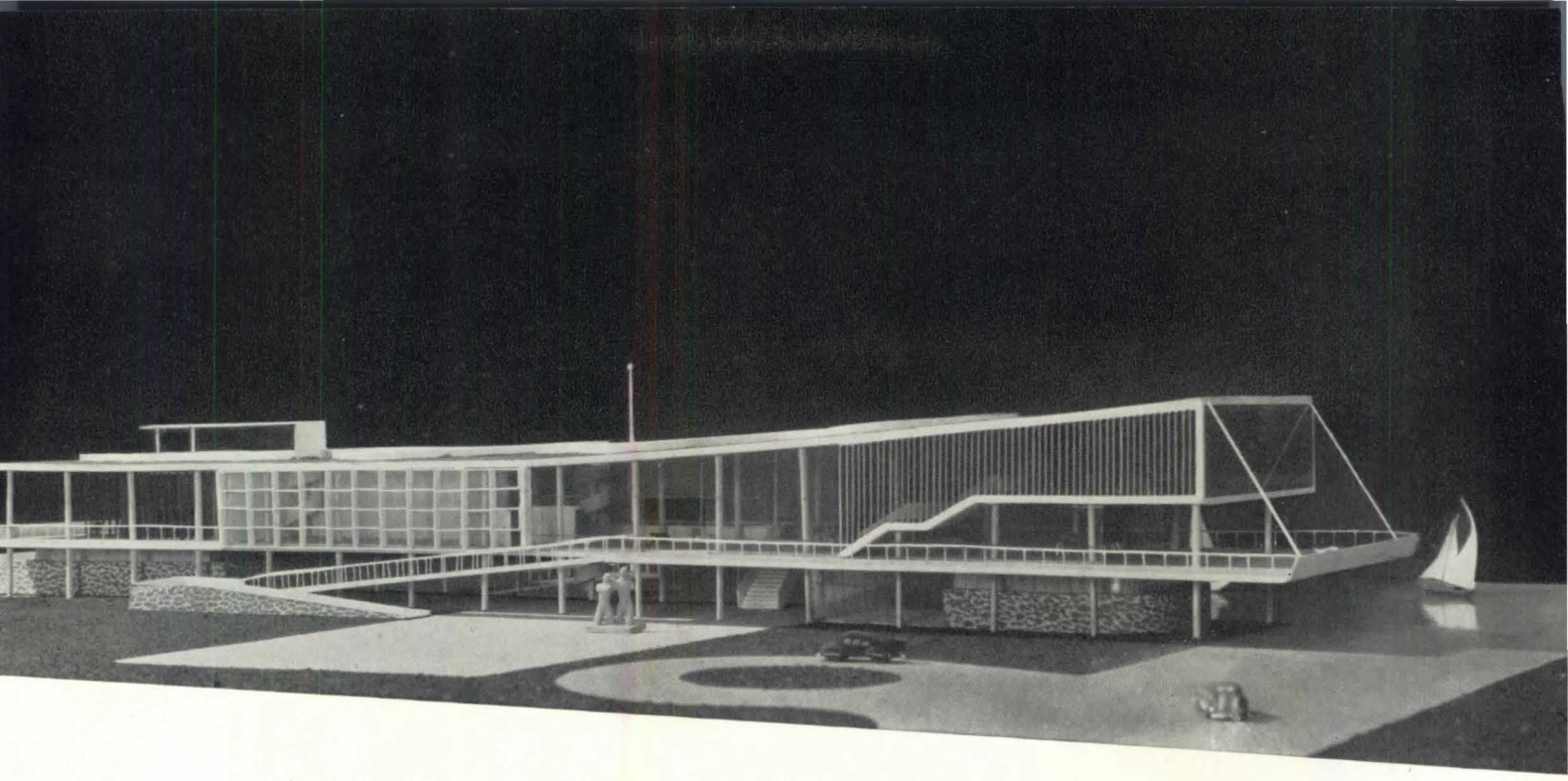


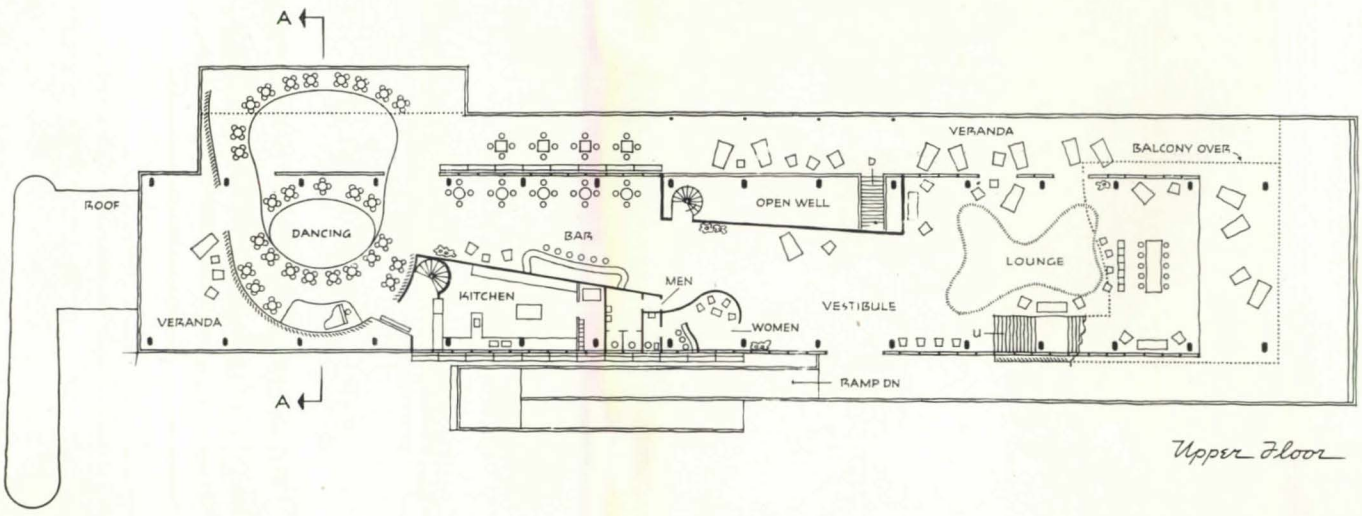
APPROACH ELEVATION.




VIEW FROM BAY.

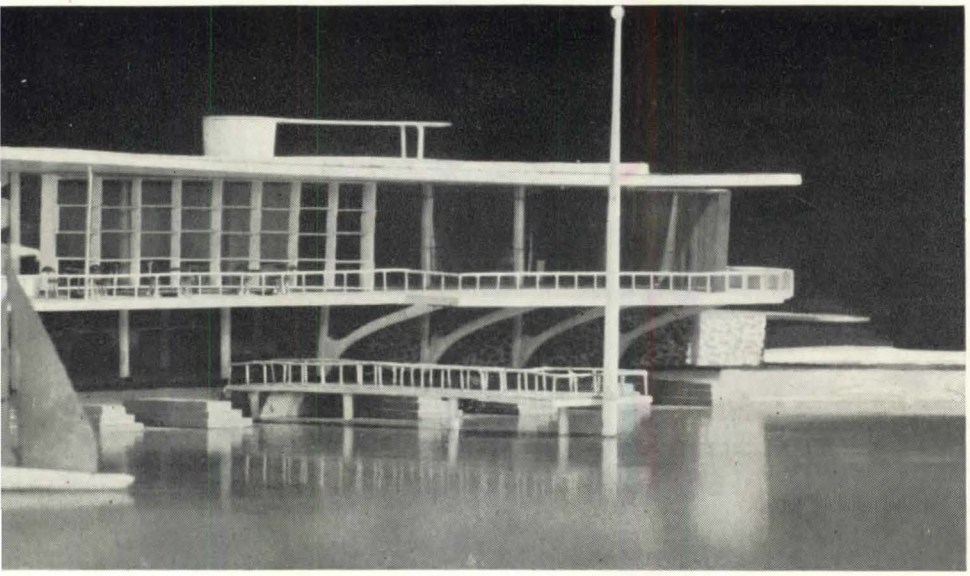


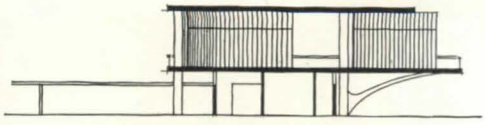




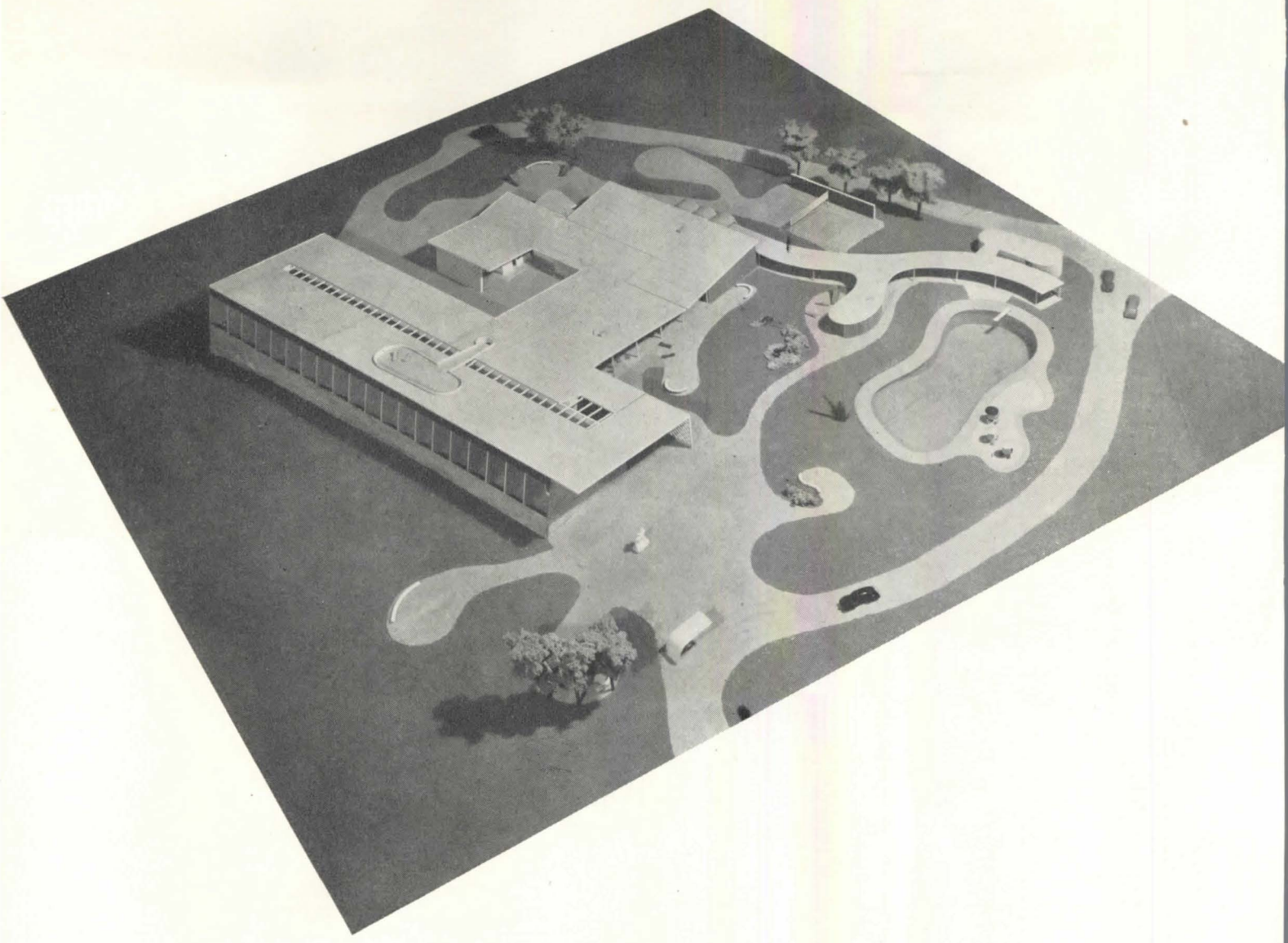

Upper floor

*Photos by Jerry*





Section A-A

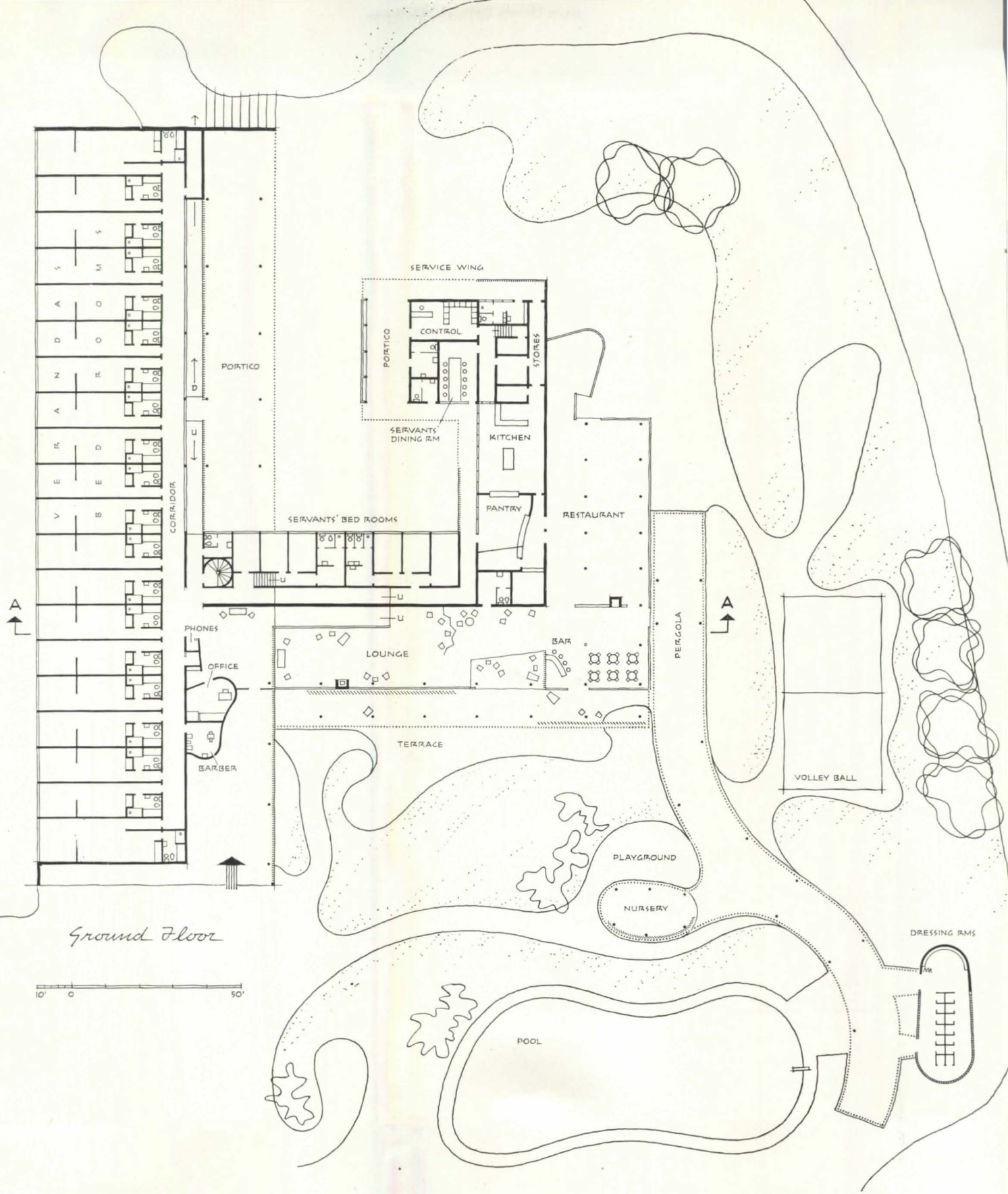


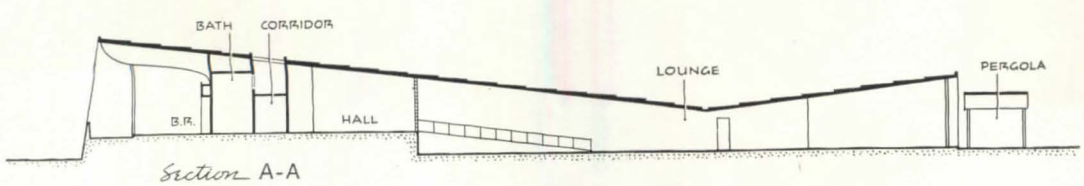
# HOTEL DE MONTANHA

OSCAR NIEMEYER
Architect

A small resort hotel, this project is essentially a one-floor scheme arranged on levels that respect the contours of the site. From the entrance lobby, a ramp leads down to the lounge and so on out to the bar and restaurant; a covered walk follows a curved path to a children's playground and a bath house adjoining the swimming pool.

Each guest bedroom has a deep veranda beyond the room itself to shield the brilliant sunshine. Above the bedroom corridor, the roof is lowered, exposing the roof framing at this point and forming a light channel that brings light and ventilation to the bathrooms by means of clerestories. Service facilities and guest accommodations throughout are skillfully separated.


SERVICE WING
PORTICO
CONTROL
STORES
SERVANTS' DINING RM
KITCHEN
PANTRY
RESTAURANT
SERVANTS' BED ROOMS
BEDROOMS
CORRIDOR
PORTICO
PHONES
OFFICE
BARBER
LOUNGE
BAR
TERRACE
PERGOLA
VOLLEY BALL
PLAYGROUND
NURSERY
DRESSING RMS
POOL
A
A
Ground Floor
10' 0 50'


BATH
CORRIDOR
LOUNGE
PERGOLA
B.R.
HALL

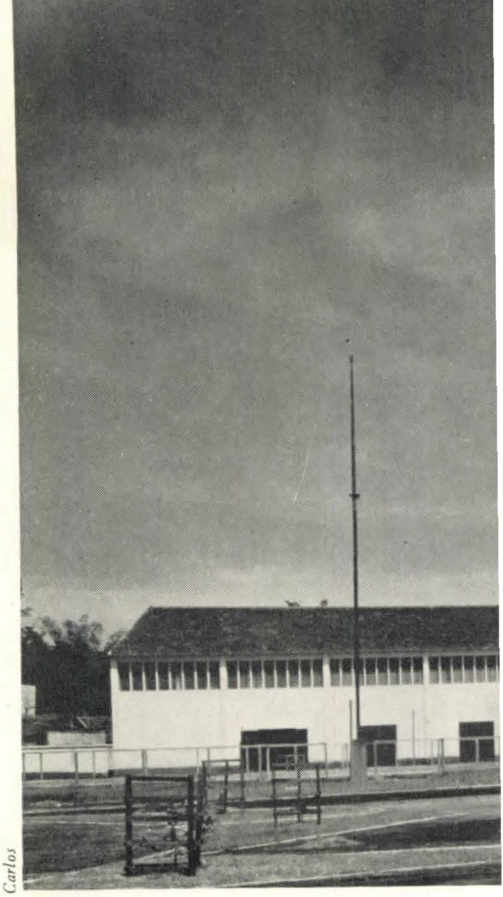
Section A-A

# PUBLIC SCHOOL

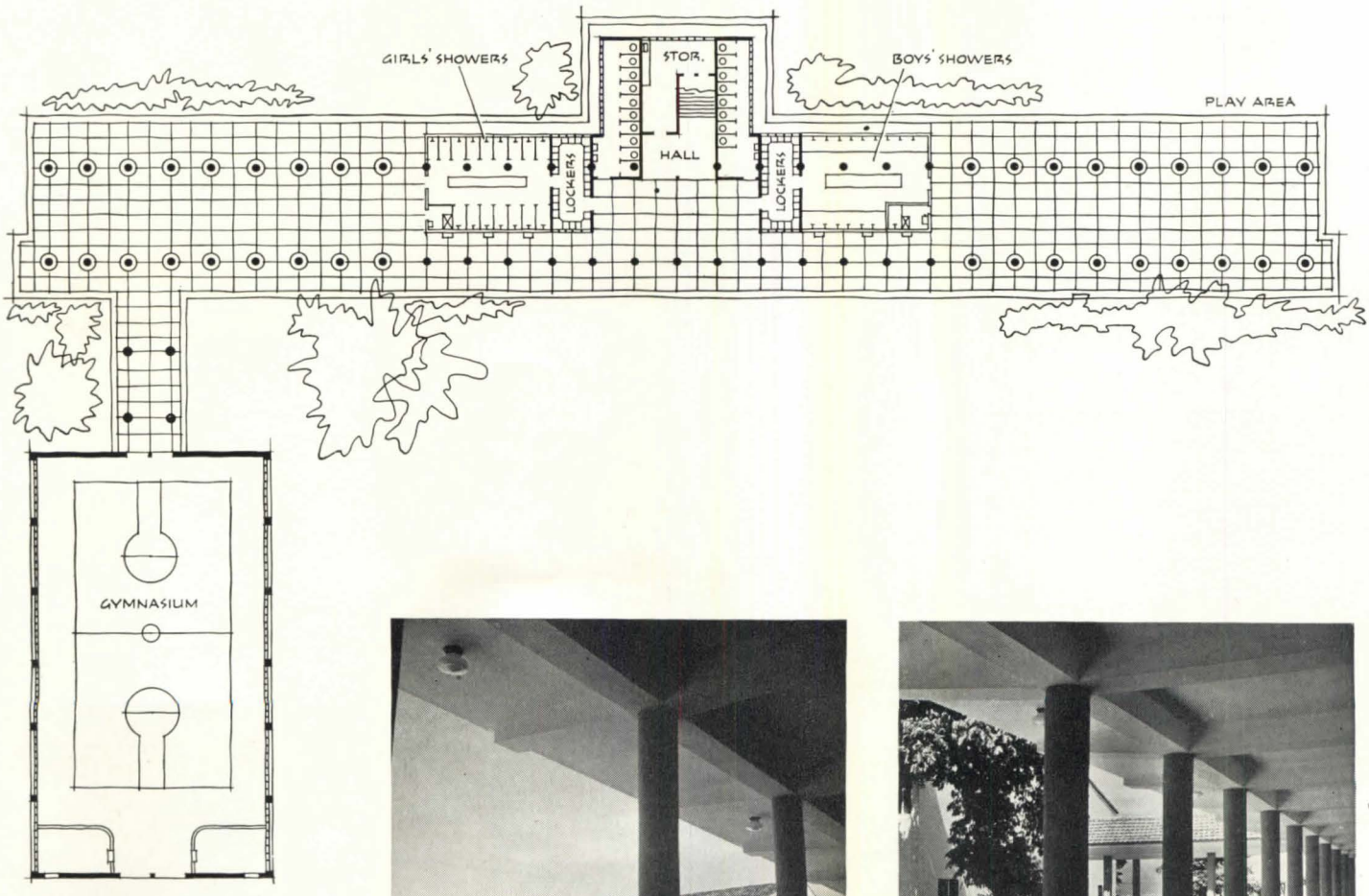
## NITEROI

ALVARO VITAL BRAZIL, Architect

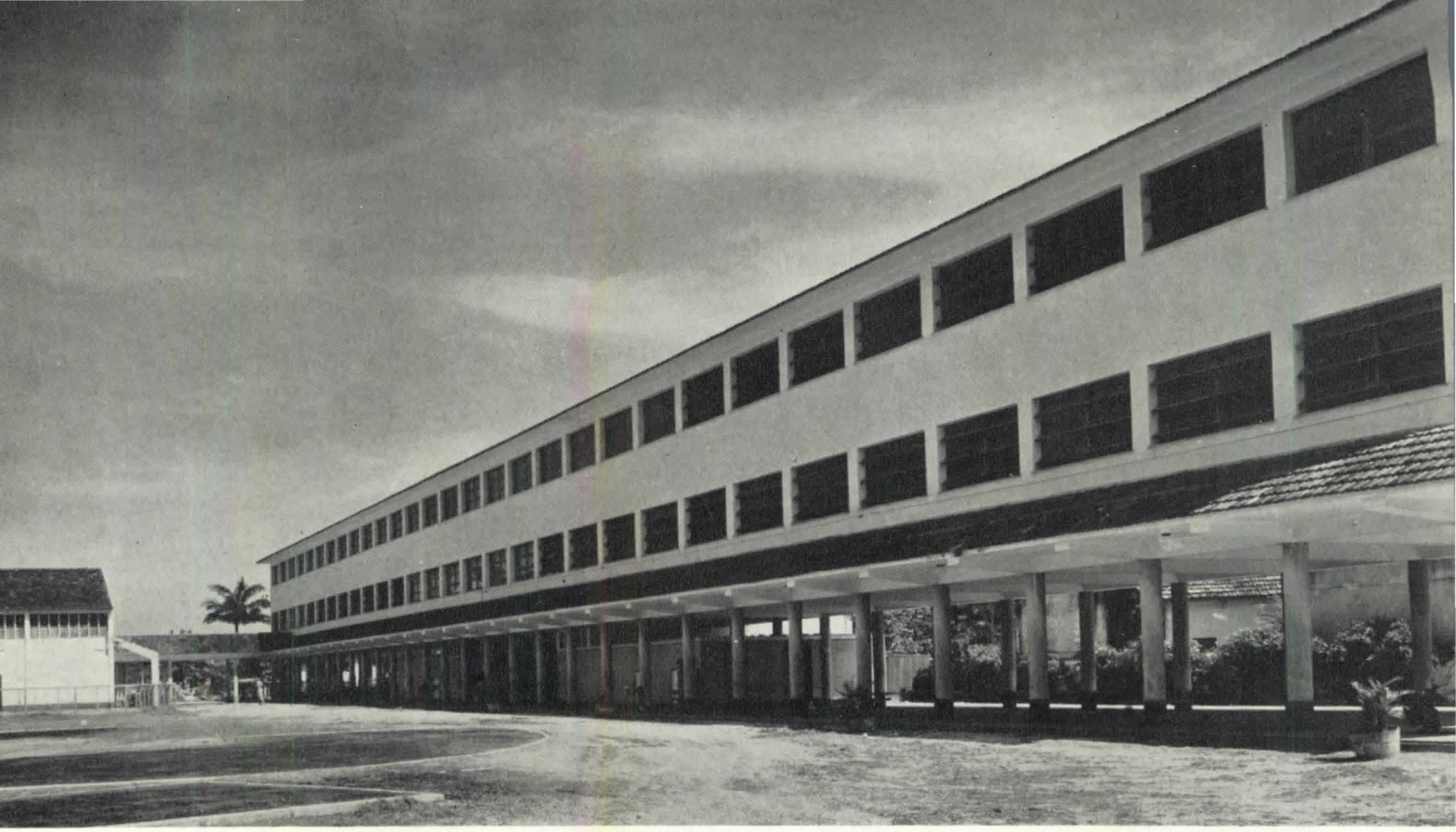
For a hot, sunny climate, this public school building appears to be an excellent design solution. Toward the midday sun source (north), the upper floors of the building present a wall barrier pierced by small openings, for adequate light and ventilation. All classrooms are aligned on the opposite side of the building, with wall-to-wall fenestration and transom openings into the north corridor to provide cross ventilation. Stairs and toilets are organized in a projecting block in the center of the north wall. An exceptional plan provision is the open ground floor, providing sheltered rest and play areas for boys and girls at either side of the central circulation block, in which locker and shower rooms are included. A covered walk connects the gymnasium to the classroom building.

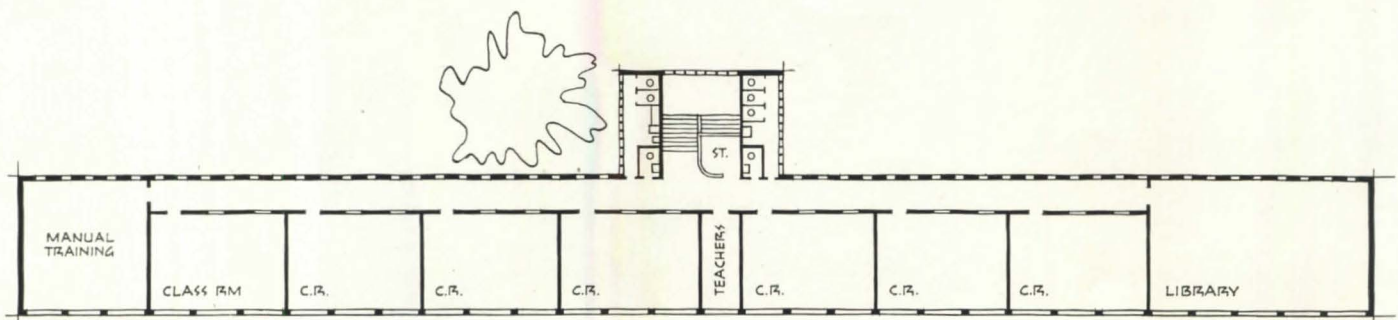


Carlos

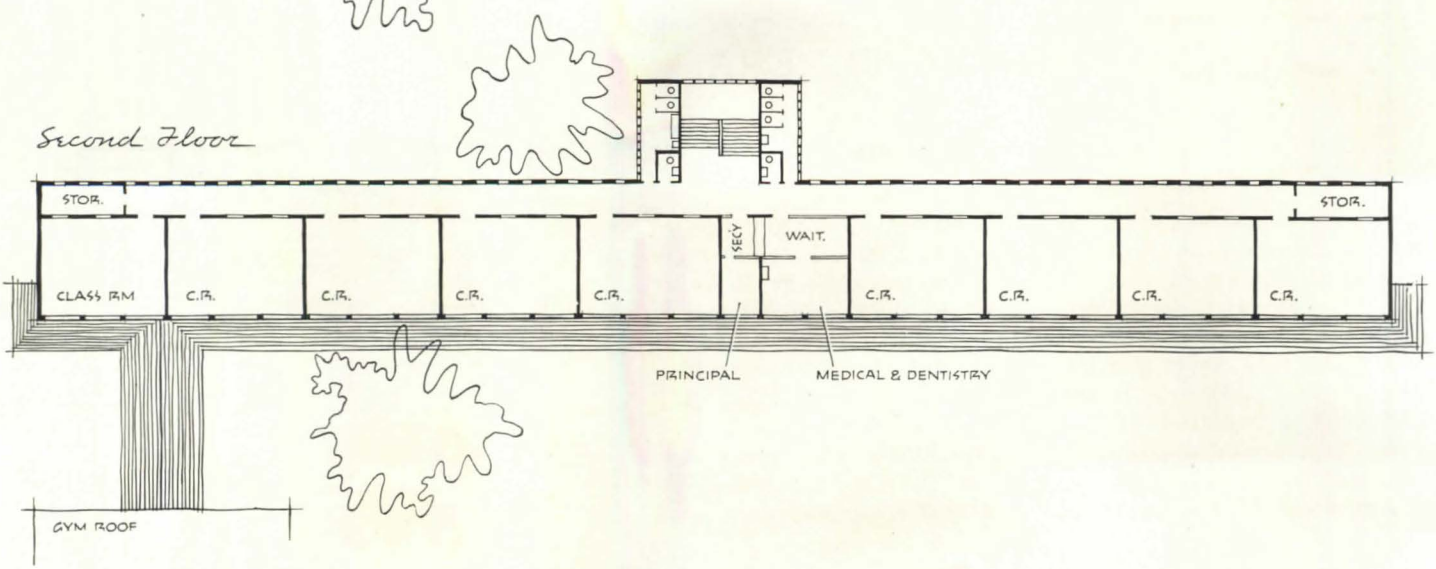



Ground Floor

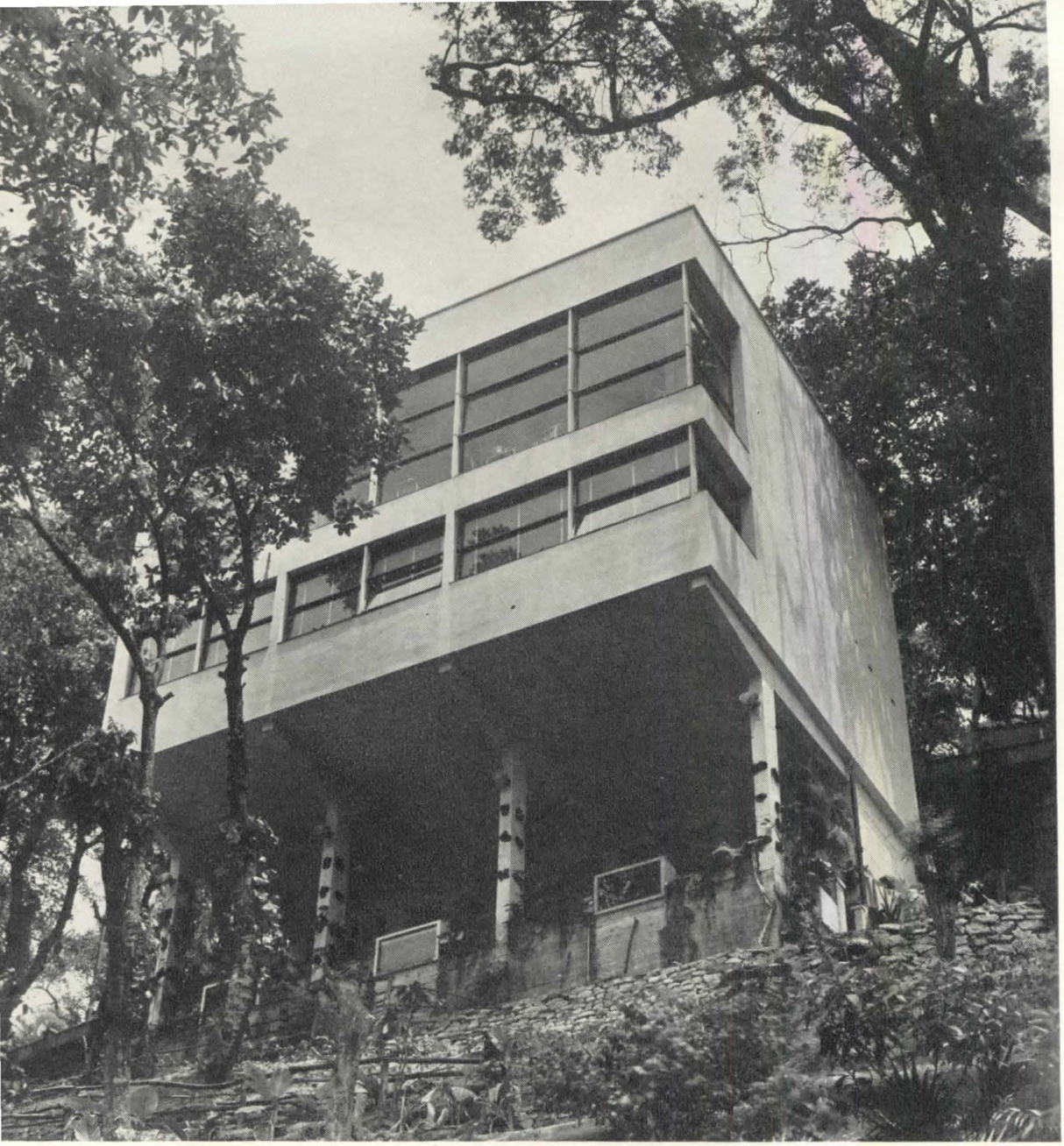





Third Floor




Second Floor

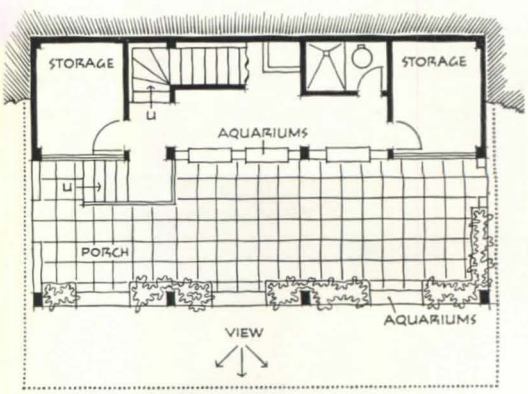


*All photos by Carlos*

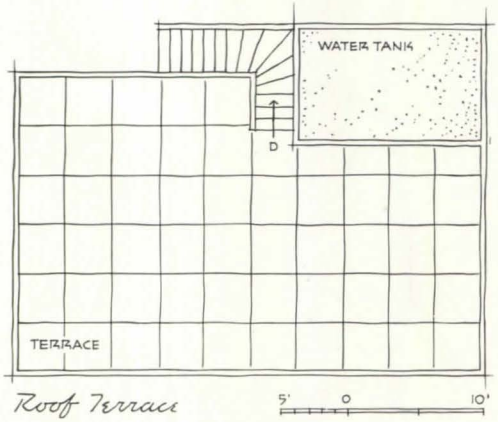
# HOUSE, SANTA TERESA

ALVARO VITAL BRAZIL, Architect

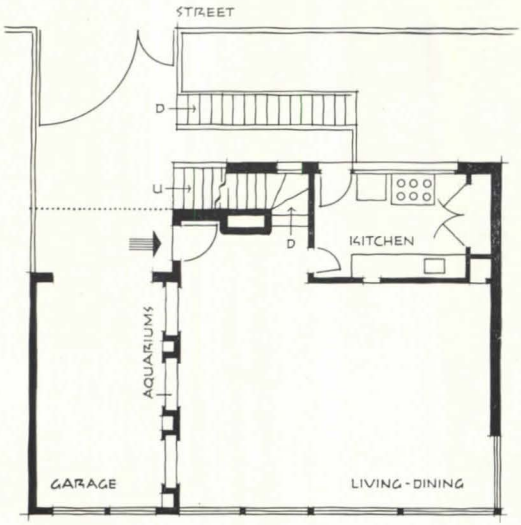
For his own house, the architect chose an extraordinary site—a precipitous slope in the hills above Rio. From the roadway approach at the top of the ravine, the house appears to be a small, one-floor cottage; from below or from the side, the three floors, literally perched on tall columns set back from the building line, form a striking vertical mass. Toward the southern view, continuous fenestration is employed; at the lowest level, a recessed living terrace looks out on the semi-tropical vegetation of the hillside. The living-room level and the terrace floor are considerably higher than the intermediate bedroom floor. Structure is of reinforced concrete.



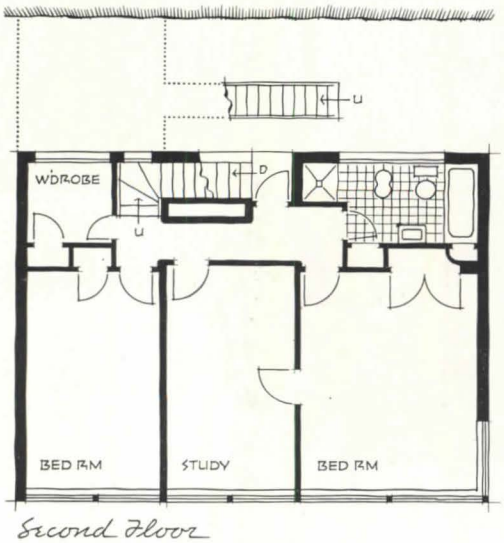

First floor



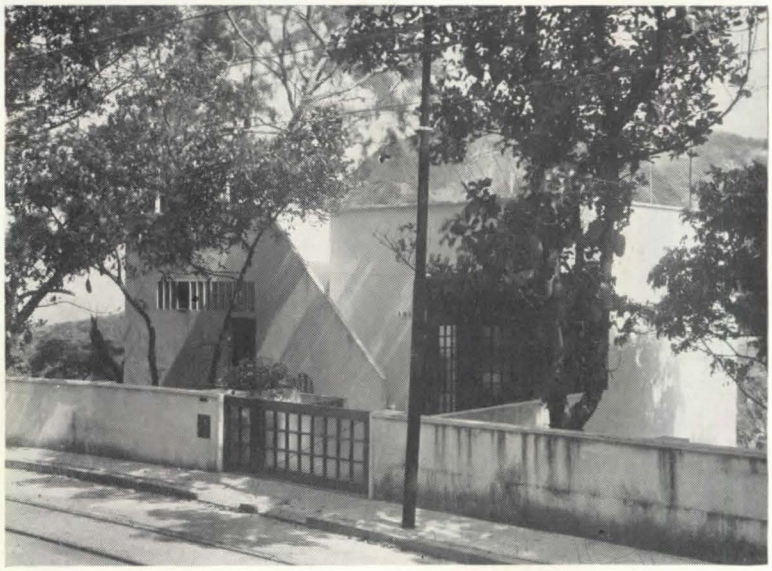

Roof Terrace




Third Floor



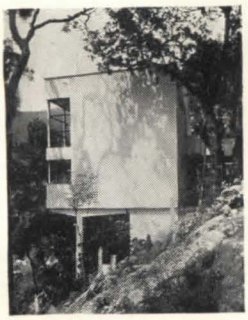

Second Floor



ENTRANCE LEVEL.

LIVING ROOM.

GARDEN TERRACE.



# HOUSE

**SANTA TERESA**

ALVARO VITAL BRAZIL,
Architect

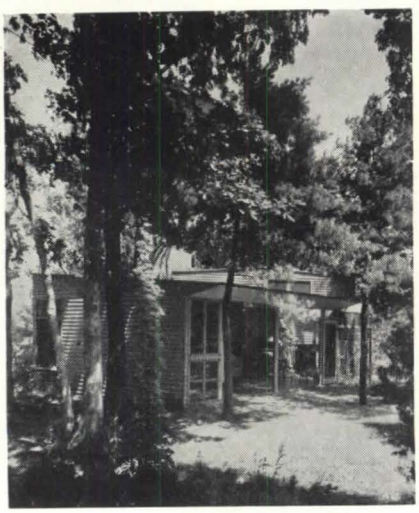
The owner's hobby has given rise to a remarkable decorative element, repeated throughout the house—the use of colorful aquaria, within partitioning. Photographs on this page show both sides of the wall between the living room and garage; aquaria also appear in the wall and rail of the ground-floor terrace (see photo, preceding page). As a whole, the house is an interesting example of design to conform with the site condition, as opposed to the approach where a site is made over to lend itself to a preconceived design.

*Other new work from Brasil will appear in subsequent issues of* PROGRESSIVE ARCHITECTURE.

DOWNHILL VIEW of the house—from the southeast. The southern wall of the living room is mostly glass.

*All photos by Ezra Stoller*

# HOUSE, LINCOLN, MASSACHUSETTS



CARL KOCH, Architect

Placed on a wooded New England hillside, this country home is planned on three levels—the entrance-living room level; a lower floor on the downhill side where an unusual kitchen-dining room and a laundry are located; and the bedroom floor above this latter area. Connecting the one- and two-story portions of the house, at the corner where they meet at an obtuse angle, is a most extraordinary plan feature—an irregular-shaped greenhouse (the owner is an expert gardener) which brings a lush, planted hillside right into the house, opening up into rooms on two sides. The projecting roof form above the southern windows of the living room is designed to keep sunlight at a desirable level throughout the year. In plan and amenity, the house is more successful than in unity of overall design—due chiefly to the large scale of the greenhouse fenestration and the different shapes and levels of both windows and roofs.

FLAGSTONE STEPS lead up from the kitchen garden to the living room above.

THE CEMENT FLOOR of the living room is left exposed.

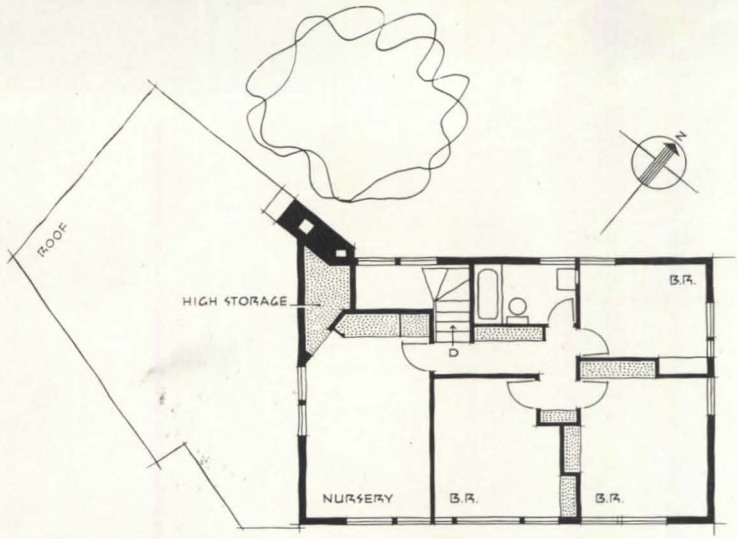
LOOKING TOWARD the south window wall and greenhouse.

# HOUSE

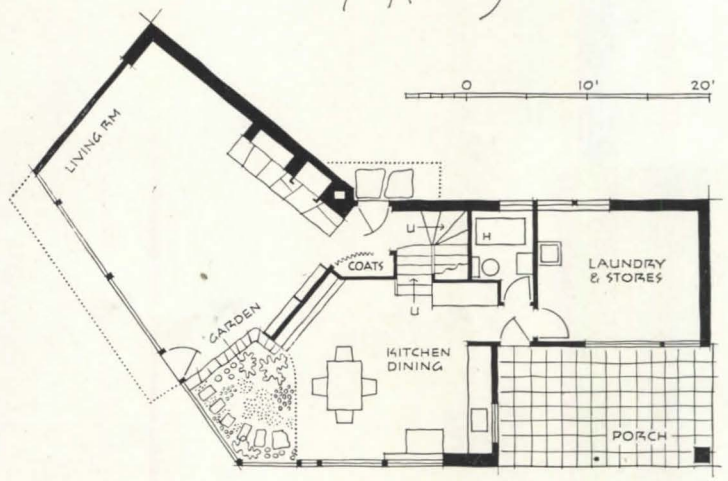
**LINCOLN, MASSACHUSETTS**

CARL KOCH, Architect

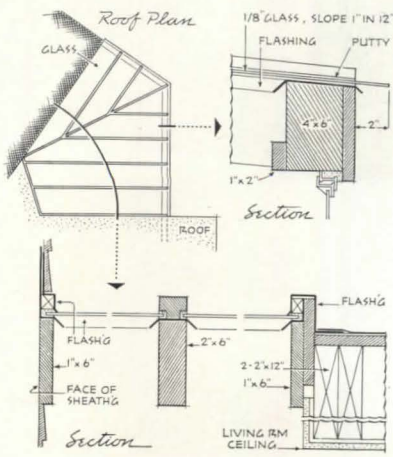
The shape of the plan is the result of two main factors—accommodation to the site contours and the wish to face the different rooms for varying degrees of sunlight penetration. The combined kitchen and dining room has proved so successful that, as the architect tells us, "almost all who see it say they want a similar arrangement." In the evening, a spotlight is thrown on the dining table area, veiling the kitchen portion of the room. The need to keep within a restricted budget resulted in one or two slight plan compromises. The entrance-hall area, for instance, is more cramped than it would have been, had the budget been unlimited. The house is mainly of standard frame construction, built on a concrete slab. The kitchen-laundry portion, however, is of cement block. Panel floor heating is used throughout.




Second Floor



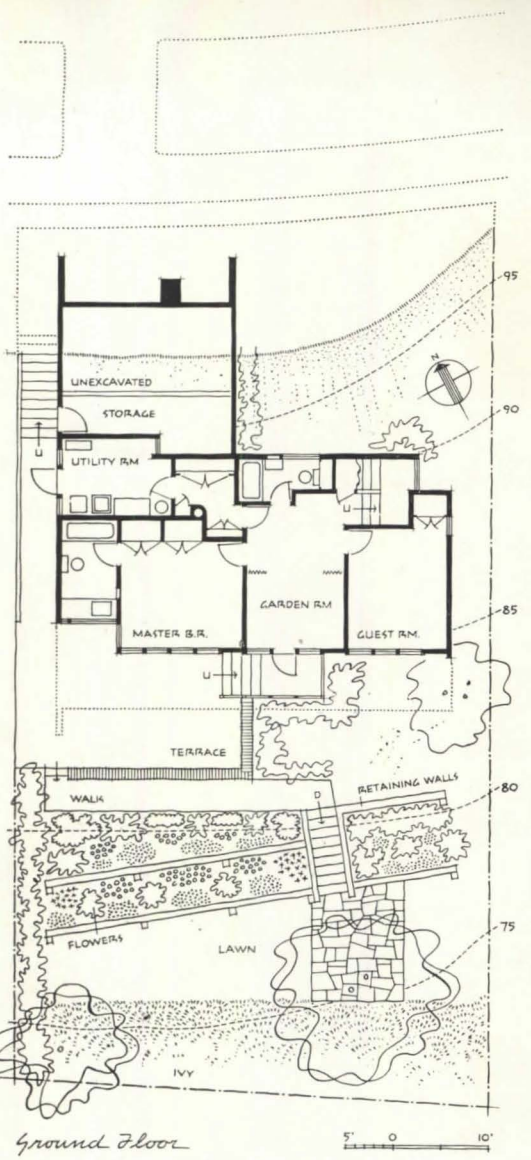

Ground Floor

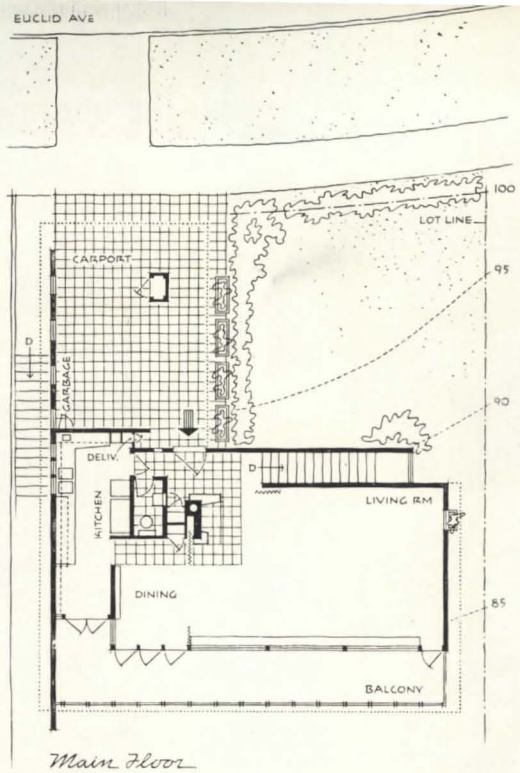



**CALLAS, maidenhair fern, and various exotics grow in the greenhouse. The architect reports that the glass roof is "surprisingly leakproof."**

*All photos by Dean Stone*

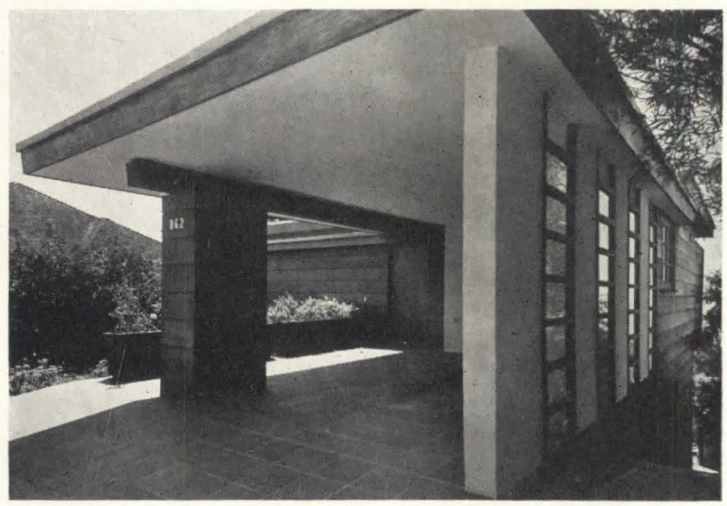
# HOUSE, BERKELEY, CALIFORNIA



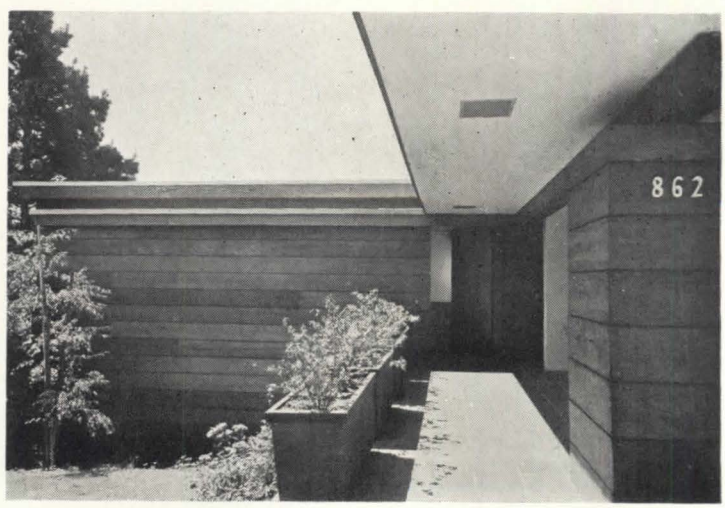




JOHN HANS OSTWALD, Architect
and ANSHEN & ALLEN, Architects

Factors determining the design of this house were: a 50-foot lot, with neighbors quite close at either side; a steep slope with an unhindered view of San Francisco Bay at the rear; the living requirements of a widow with one permanent guest. To achieve privacy, the house is shielded from its neighbors and the street by almost solid walls, so that one does not observe neighboring houses from the inside or from the balcony. The western wall of the house includes much glass, bringing its own problem of glare from sunlight on the Bay. This has been solved by introducing a very deep roof overhang beyond the line of glass, with a built-in pocket for rolls of adjustable reed blinds at the outer edge.



**THE CAR SHELTER** and entrance area are paved with quarry tile.



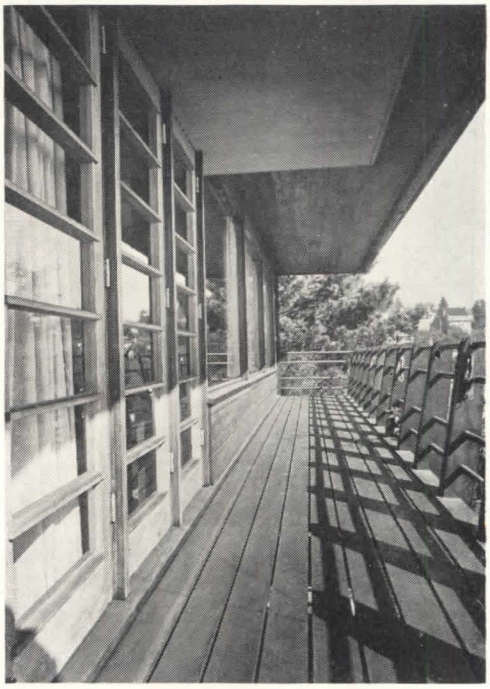

**A DEEP OVERHANG** shelters the passage to the front door.

THE END WALL FIN screens the house next door; bamboo blinds control the sun.

# HOUSE

## BERKELEY, CALIFORNIA

THE DINING AREA is defined by a lowered ceiling which is extended out beyond the wall line of the building. Redwood siding is the wall finish.



**DOORS AT LEFT** open into the dining area. Vertical members of rail, redwood; horizontal members, oak.

JOHN HANS OSTWALD, Architect
and ANSHEN & ALLEN, Architects

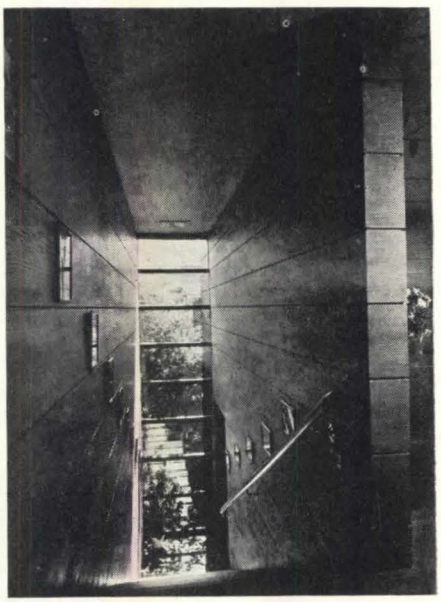
**IN ADDITION** to the roll blinds at the outer edge of the roof line, interior curtains assist light control. The ceiling is of insulating fiberboard, with joints covered by redwood battens.

# HOUSE

**BERKELEY, CALIFORNIA**

JOHN HANS OSTWALD, Architect
and ANSHEN & ALLEN, Architects

**VIEW INTO LIVING ROOM** from entrance hall.



**LOOKING DOWN** the staircase to the bedroom and garden level.

**THE KITCHEN** is all wood, including ceiling.

**LOOKING OUT** from the kitchen to the deck terrace.

(Details on following page)


Hedrich-Blessing Studio

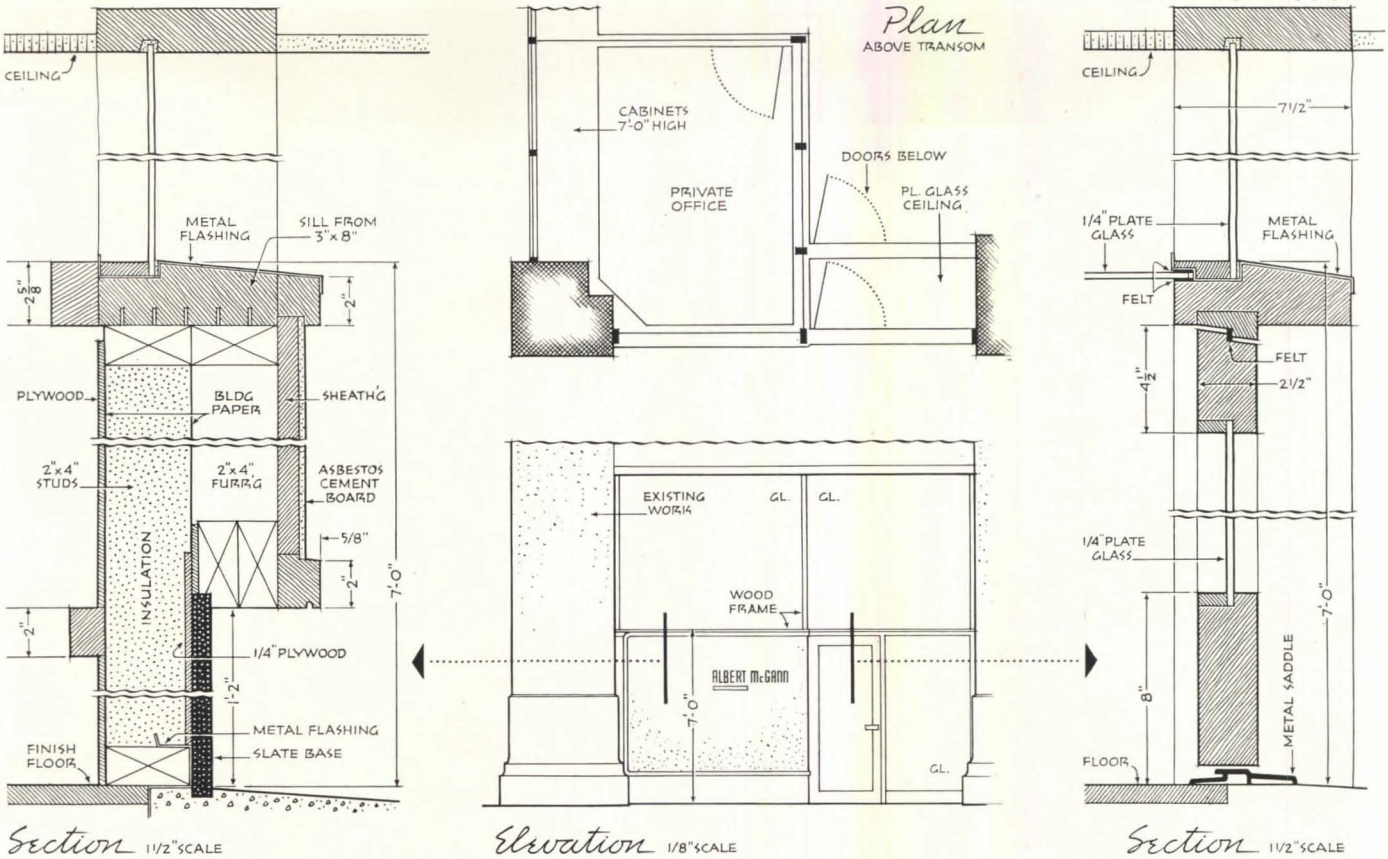
## OFFICE ENTRANCE

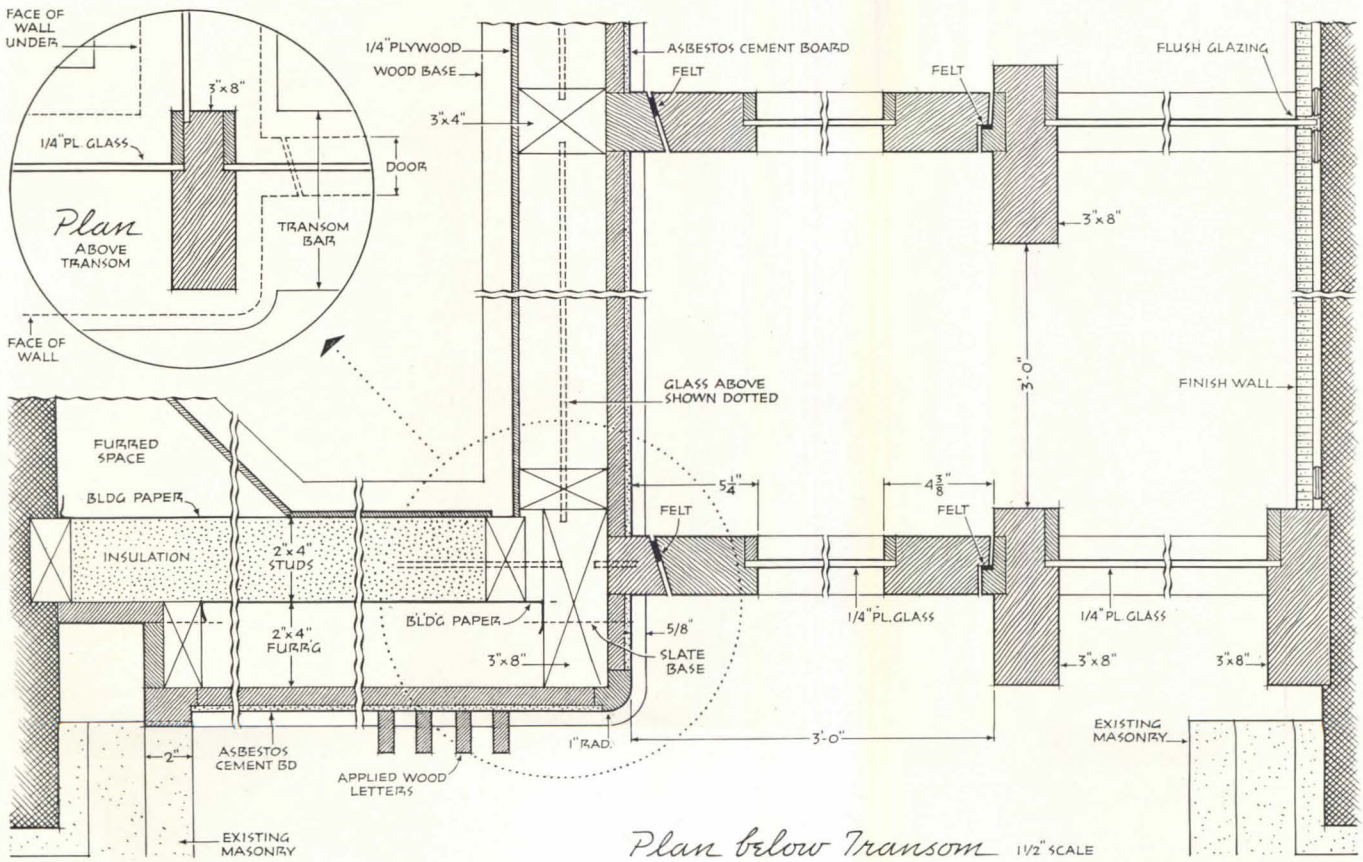
**ALBERT McGANN SECURITIES CO.**

**KETCHUM, GINÁ & SHARP, Architects**

**MAURER & MAURER, Associate Architects**

(Photo on preceding page)




# OFFICE ENTRANCE

**ALBERT McGANN SECURITIES CO.**

**KETCHUM, GINA & SHARP, Architects**

**MAURER & MAURER, Associate Architects**

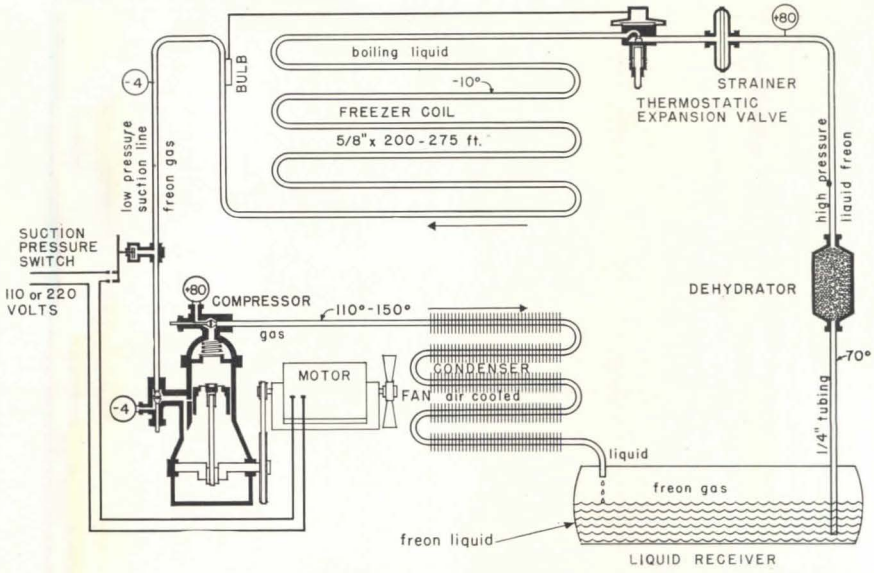



*Fig. 9.* Working diagram of condensing unit showing Freon circuit, pressures in system, functioning of condenser, receiver, expansion valve, control switch. (Courtesy *Home Freezer Handbook*)

# HOME FREEZERS

By PHILIP F. HALLOCK[1] and G. J. STOUT[2]

## PART II: BUILT-IN-PLACE HOME STORAGE AND FREEZING EQUIPMENT

**(Part I, on planning location, appeared in March 1947)**

Custom construction of home storage and freezing equipment has not yet attained popularity; few builders have been familiar with the proper construction methods and much equipment has been difficult to obtain. When its advantages are more generally known, freezers and storages may become as familiar on architects' drawings as laundry facilities. Some advantages of the built-in type of equipment are: considerable saving in initial cost may be effected when much freezer space is needed, although there is little or no saving over buying a small freezer if only a small amount of freezer space is required; advantage can be taken of the particular space available for the purpose; freezers of correct size for the particular circumstances may be provided easily.

### Vertical vs. Horizontal Freezers

Advocates of vertical freezers claim that not only does this type require less floor space but it is also more convenient. These advantages exist to a degree. On the other hand, the chest or horizontal type is easier and cheaper to build, has a lower operating cost and longer life, needs defrosting less frequently (vertical type about every 6 months, horizontal, every 12 to 18 months), and there is less trouble with frost accumulation around the door seal gaskets. It is nearly impossible to make by hand the absolutely tight door required. Horizontal cabinet lids give less trouble; but if the freezer is built inside a refrigerated storage room, a vertical cabinet will perform satisfactorily.

### The Freezer Box

The freezer box consists essentially of two horizontal boxes, one enough larger than the other so there is space for insulation between the walls *(Fig. 14)*, with at least as much insulation in the bottom as in the side walls. The boxes may be of waterproof plywood, cement-asbestos board, tongue-and-groove lumber, or any other reasonably tight material. If built against a masonry wall, the masonry surface may be utilized for part of the outer box wall; a well drained concrete floor may be similarly employed. In such cases, masonry is coated with odorless asphalt to seal against moisture penetration. The inner wall or box must *not* be made moisture-tight, but the entire outer wall needs to be built as nearly vaporproof as possible. One or two layers of 15- or 35-lb odorless asphalt building paper, between the outer wall and the insulation, with all joints cemented with odorless asphalt (either hot application or emulsified type), will suffice. If the outer wall is of plywood or building board, it can be vapor-proofed by painting the inside with two coats of emulsified asphalt; care must be taken to seal all corner cracks or openings thoroughly with the same material.

The simplest way to obtain a satisfactory top and lid assembly is to buy it from a manufacturer. Insert or hinged lids are

[1] *Philip F. Hallock, Architect, State College, Pa.*
[2] *G. J. Stout, Ph.D., Food Technologist, Pennsylvania State College, State College, Pa. All drawings were prepared by Mr. Hallock. Those noted as "From Home Freezer Handbook" are reprinted with permission from that volume, published November 1946 by D. Van Nostrand Co., New York, N. Y.*

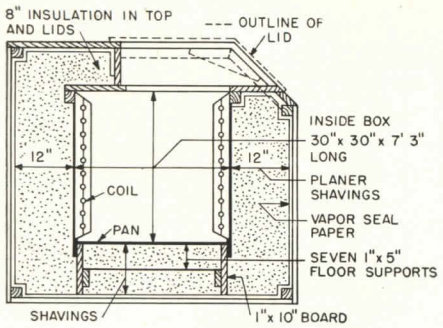



*Fig. 10.* Section, typical freezer chest. (Courtesy *Pa. Agr. Exper. Sta.)*

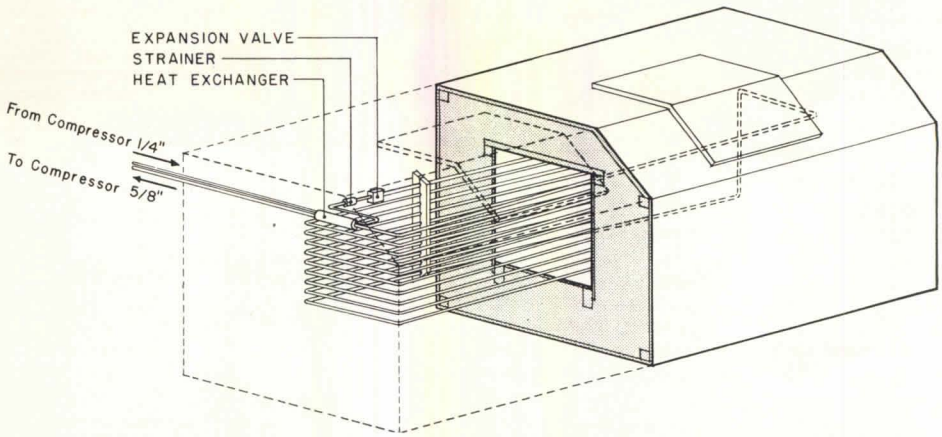



*Fig. 11.* Isometric, freezer chest, showing arrangement of freezer coil, location of expansion valve, strainer, heat exchanger. (Courtesy *Pa. Agr. Exper. Sta.)*

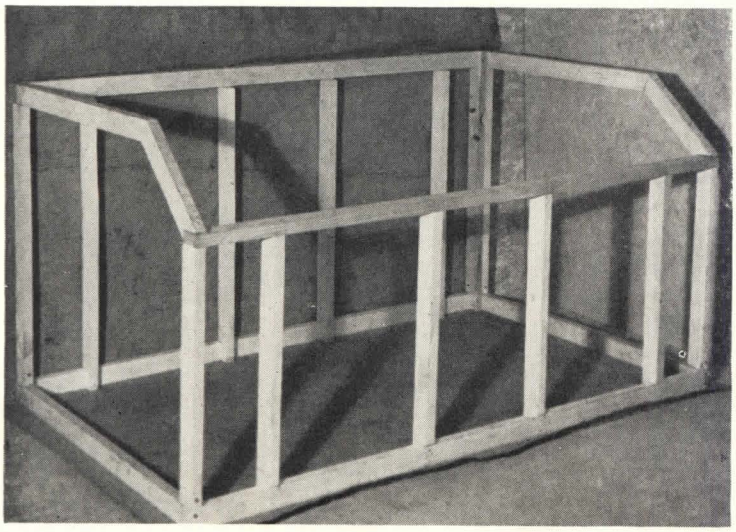


*Fig. 12.* First step in constructing a freezer chest: outside framing of 2"x2" stock. Front and back verticals align with jambs of opening. (Courtesy *Home Freezer Handbook)*

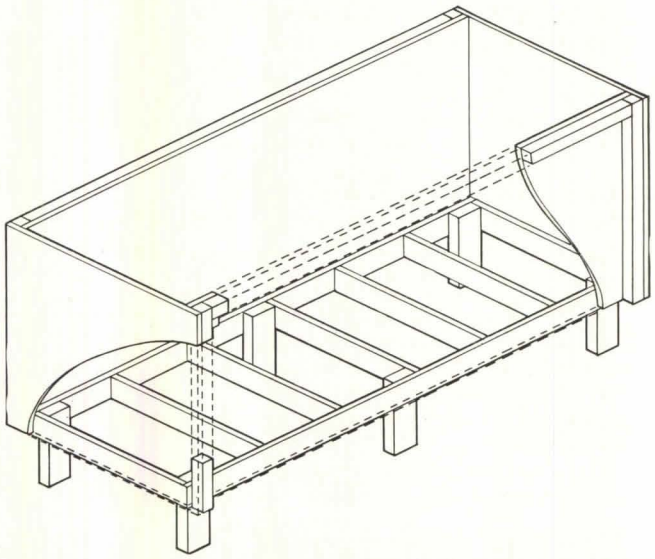


*Fig. 13.* Construction of inner box: legs, 2"x4"; floor framing, 1"x4" stock; side pieces, 1"x4" or 2"x4". Side panels may be plywood, cement-asbestos board, or D. M. sheathing. If made of moisture-proof material, bore one ¼" hole for each sq ft of surface. (Courtesy *Home Freezer Handbook)*

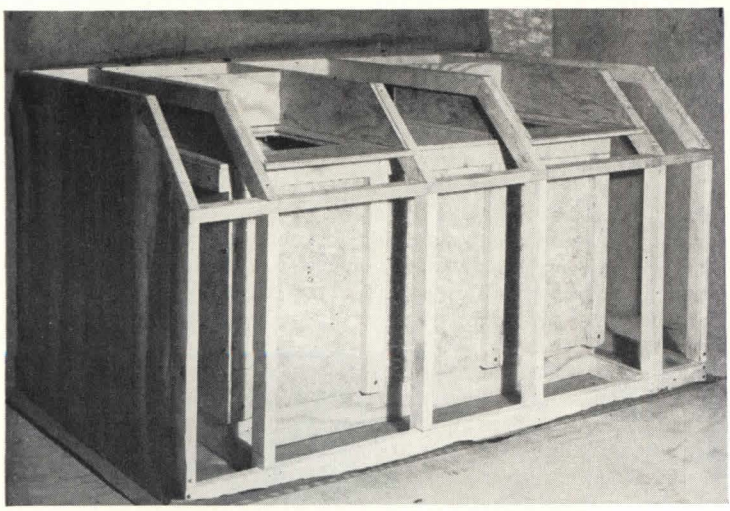


*Fig. 14.* Inside box and exterior frame assembled; jambs of openings, also top supports, installed. Sides are ready for vapor seal and enclosing material; then insulation is packed between walls. (Courtesy *Home Freezer Handbook)*

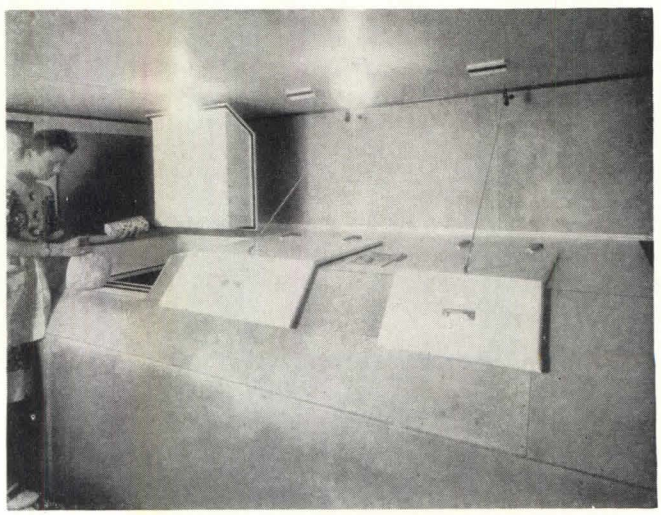


*Fig. 15.* 40 cu ft freezer chest, with 8 cu ft of above-freezing cold storage space in right-hand compartment; cabinet insulated with 12" of expanded mica. (Courtesy *Home Freezer Handbook)*

then included and no special fitting is required. On the other hand, these are rather expensive. If custom-built, problems may be reduced by using one large lid, or at most two, of the overlap kind which fits flat on top of the box with gaskets between lid and freezer wall. Another method, better adapted to large freezers, is to use two or more lids of the type shown in *Fig. 15*. These must be vapor-sealed on the warm side and all top construction must be treated the same way, with no break in the seal between side wall and top. Various kinds of gasketing materials are available. Hollow rubber gaskets seem preferable.

It is most important to use enough insulating material, whatever the type. Sometimes, in factory-produced models, outside dimensions of the box must be limited to enable the finished box to pass through an ordinary door. Occasionally this may result in reduction of thickness of insulation in order to obtain greater interior capacity. In custom-built freezers there is no such limitation; the desirable 9″ to 18″ can be installed on the job. If cork, glass wool, rock wool, expanded mica, or shredded redwood bark is used, 9″ is the minimum for freezers larger than 30 cu ft. For very large freezers, if space is not a limiting factor, some inexpensive insulation, such as planer shavings (not sawdust), buckwheat hulls, or similar material can be employed; not less than 12″, often as much as 15″ or 18″, of such products is desirable.

## The Evaporator or Cooling Coil

There are two common types of evaporators, the bare pipe or tubing type, and the plate type. A third, with fins and tubes plus a fan to force air over them, is used for some purposes but is not satisfactory in this kind of freezer.

**Bare pipe or tubing.** Soft copper tubing, ⅝″ outside diameter, is most commonly used; it is simple to bend to proper shape. All joints should be made by an experienced workman. The method of installing the coil itself is illustrated in *Fig. 11*. Materials for this type of unit are low in cost, but considerable labor is involved. Two mechanics should be able to install the complete coil in a large freezer box in one day.

**Freezer plates** greatly simplify installation, though they are higher in first cost and the result is of no better quality. Several manufacturers produce suitable plates. There is little choice between different makes; but the "eutectic" type does not appear to be worth the extra cost. In a long freezer box, two plates are sufficient, one placed on each side, and each nearly as large as the side wall against which it is placed.

## The Condensing Unit

If the freezer is built and insulated according to these directions, it will operate satisfactorily in conjunction with a smaller condensing unit than is used on commercially built freezers of the same size. If large quantities of produce are not to be frozen at one time, a 40-cu ft freezer may operate very well on a ¼-hp condensing unit; operating cost will be less with this machine than with larger size. The following table gives sizes of condensing units generally required.

| Cu Ft Freezer Capacity | Well Insulated, Light Usage; Hp Required | Lighter Insulation, Heavier Usage; Hp Required |
|---|---|---|
| 30 | 1/5 - 1/4 | 1/4 - 1/3 |
| 40 | 1/4 - 1/3 | 1/3 - 1/2 |
| 50 | 1/4 - 1/3 | 1/3 - 1/2 |
| 70 | 1/3 - 1/2 | 1/2 - 3/4 |
| 90 | 1/2 | 3/4 |
| 120 | 1/2 - 3/4 | 3/4 - 1.0 |
| 200 (walk-in freezer as part of combination) | 3/4 - 1.0 | 1.0 - 1.5 |

Any good make of condensing unit will be found satisfactory. It is probably best to choose one which can be serviced locally. The machine should be specified to operate at a suction temperature of −10F. Air-cooled types are generally preferred; water-cooled units are sometimes used where city water is not metered. The motor should have a thermal overload protector. Condensing units with motors of ⅓ hp or smaller may be operated on 115-v current; larger sizes, 230-v, of correct cycles and phase. A suction pressure control switch should be included with the condensing unit.

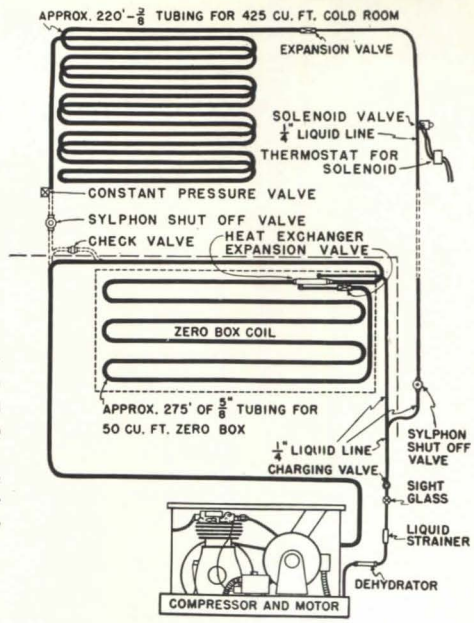



*Fig. 16.* Circuit connections and controls required to add a 425 cu ft cold storage room to a freezer chest. Connections below dash line show complete freezer installation. (Courtesy *Pa. Agr. Exper. Sta.*)

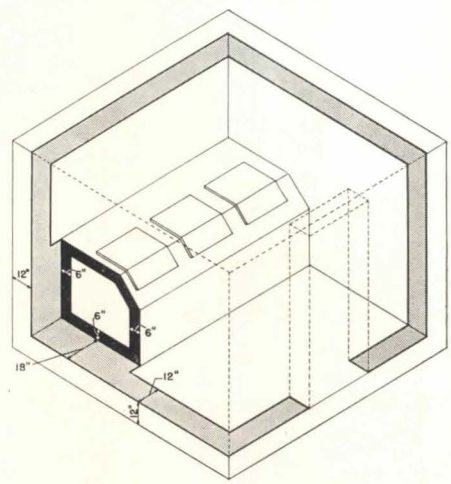



*Fig. 17.* Thickness of loose-packed insulation required for a freezer chest-cold storage combination. (Courtesy *Home Freezer Handbook*)

## Additional Equipment, Accessories

The connections between the condensing unit and the freezer box are shown in *Fig. 9*. Essential additional items are:

**Expansion valve,** of thermostatic type, should be adjustable. The bulb should be located near the point where the suction tubing leaves the box, the valve itself within the freezer in such a position that it can be reached easily for adjustment or servicing. In purchasing, specify ½-ton capacity Freon-12 valve for ¾-hp units or smaller.

**Refillable type dehydrator,** using silica gel or activated alumina to absorb moisture from the liquid refrigerant. Small machines may use the 4-oz sizes; large ones should have a ½- or 1-lb charge of absorbent material. The dehydrator is located in the liquid line, nearly vertical, with outlet at the top.

**Liquid line strainer** is placed in the line just ahead of the expansion valve to keep foreign material from clogging the valve. Sometimes another, of larger size, is also used in the suction line to keep scale, etc., from getting into the compressor.

**Heat exchanger** should be installed inside the freezer box. Its purpose is to reduce the amount of frosting back of the suction line and to improve efficiency generally. A commercial type should be purchased *(Fig. 11)*.

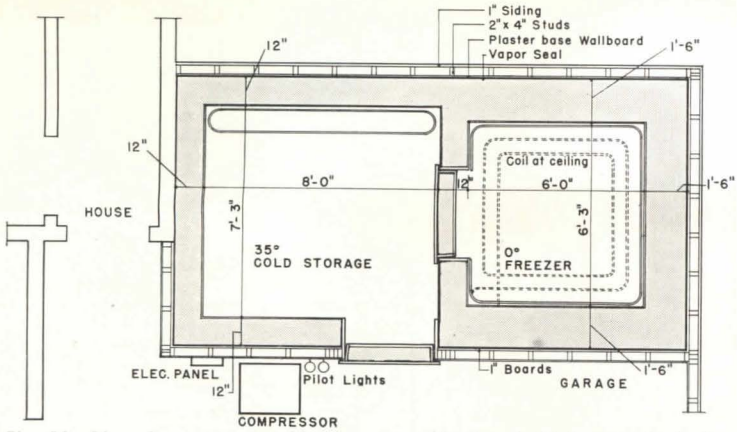



*Fig. 18.* Plan, freezer room-cold storage combination built in an attached garage; 225 cu ft freezer, 350 cu ft cold room. (Courtesy *Pa. Agr. Exper. Sta.*)

Besides the essential items listed, some indicating equipment is sometimes added for convenience:

**A "high side" pressure gage** may be connected to show the pressure against which the compressor is pumping. It is best shut off when not being observed since gages sometimes leak.

**A "low side"** or suction pressure compound gage should be connected to the evaporator side of the system. Since the "cut-in" and "cut-out" pressures as determined by the control switch really regulate temperatures within the freezer, accurate regulation of the entire equipment is more easily obtained if a gage is permanently installed.

**A thermometer with a long capillary tube and bulb** may be installed to indicate, from the outside, temperature within the freezer; a decided convenience but not essential.

No thermostat is needed for satisfactory temperature control. Cut-out pressure should be approximately zero; cut-in pressure can be changed slightly so as to secure proper cycling and correct temperature within the freezer box—generally speaking, from 8 to 12 lbs.

## Combination Storage and Freezer

Some cold storage, at a temperature above freezing, is often desirable in addition to zero or freezer storage. Cold storage space not only serves many useful purposes (chilling and ageing meats, and storing milk, eggs, beverages, and fresh products of all kinds; sometimes fur coats and woolens), it can also provide a refrigerated anteroom which eliminates many troubles experienced with doors on reach-in or walk-in freezers. Since reach-in or walk-in types are almost mandatory when a large freezer (150 to 300 cu ft) is needed, the cold storage anteroom here becomes essential.

*Fig. 18* shows such a combination. The freezer room is refrigerated exactly as a "chest" freezer would be, except that the coil must not interfere with the door. Two or three loops of tubing are installed on the ceiling and the remainder is looped back and forth around the room, with about 4" between loops. In the cold room, on the other hand, the coil must be so located that a drain can be placed under it to catch condensation. A finned coil is satisfactory; in some cases bare copper tubing is applied, in several loops like a large flat coil spring, on one wall. A sheet metal trough can gather the condensation.

Both cold room and freezer may be operated from the same condensing unit if connections are properly made. However, the cold room control must be separate from that of the freezer, which requires some additional equipment *(Fig. 16)*:

**A pressure-regulating (pressure reducing) valve** should be installed so that temperature of the cold room coil is maintained higher than that of the very cold freezer room coil.

**A check valve** is needed to prevent warmer gas from the cold room coil from backing up into the freezer coil when the unit is not operating.

**A thermostat** is needed in the cold room. It should be of refrigeration type, adjusted so the circuit closes when the room temperature rises above a certain point.

**A solenoid valve** is located in the liquid line to the cold room coil. When the thermostat closes the circuit, this valve opens and allows refrigerant to flow to the coil. When the desired low temperature is reached and the thermostat again opens the circuit, the solenoid valve closes and the coil defrosts.

In addition to these items, a thermostatic expansion valve and liquid-line strainer are used to control refrigerant flow as in the freezer room.

**Doors** for large freezers are quite different in construction from those for small freezers. Generally it is preferable to buy them ready-built; they are shipped complete with door frame and all hardware installed, which assures a good fit. Although first cost is slightly higher than for home-built equipment, the extra expense is probably justified in the long run.

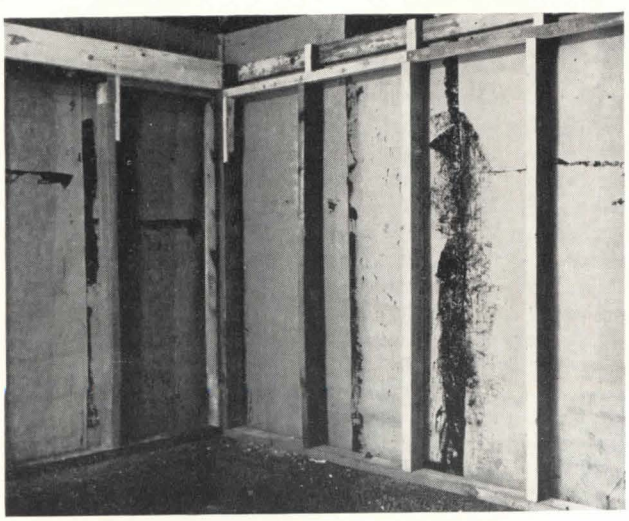


*Fig. 19.* Cold storage room being built against existing poured concrete walls; vapor barrier paper is applied to concrete with hot asphalt, joints similarly sealed. If concrete were sufficiently smooth two coats of hot asphalt, mopped on, would suffice without paper. (Courtesy *Pa. Agr. Exper. Sta.*)

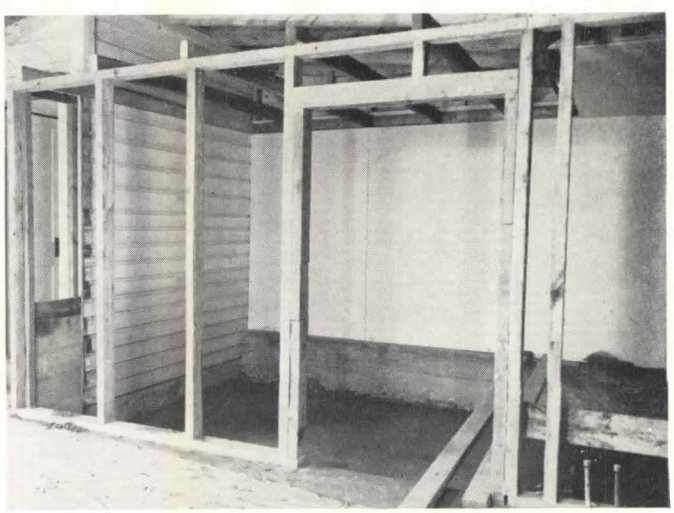


*Fig. 20.* Construction of unit shown in Fig. 18: concrete subfloor poured low to maintain finish floor at level of present garage floor. Building board is placed over new studding, existing house siding used where it occurs; both are vapor-sealed before placing insulation. (Courtesy *Home Freezer Handbook*)

## SAMPLE SPECIFICATIONS for insertion into general construction and sub-contract specifications.

## 50 CUBIC-FOOT CUSTOM-BUILT FREEZER

### CARPENTRY

1. **FREEZER, 50 cu ft (detail drawing No.**.....)

**A. Material**—Lumber: No. 1 dim. fir s4s.
Sheathing: ¼" & 3/16" cement-asbestos wallboard & ½" fir plywood g1s.
Insulation: Planer shavings.
Gaskets: ⅜" round, sponge rubber with grease proof cover.

**B. Inner Box**—Frame: 2" x 2" assembled with brass screws.
Floor Joists: 1" x 4".
Legs: 2" x 4".
Sheathing: 3/16" wallboard assembled with screws.
Coil Supports: 6, 1" x 2½" with ¾" holes. Rip lengthwise through holes to receive coil by ref. eng.

**C. Outer Box**—Frame: 2" x 2".
Lid Jambs: 1" x 8".
Sheathing: ¼" wallboard.

**D. Insulation**—After vapor seal is placed by roofing contractor, assemble "B" & "C" and pack planer shavings between inner and outer sheathing.

**E. Lids**—Frame: 2" x 2".
Sheathing: ½" plywood.
Gaskets: 3 rows.

### ROOFING

1. **FREEZER, 50 cu ft (detail drawing No.**.....)

**A. Vapor Seal**—One thickness Sisalkraft paper laid in hot, odorless asphalt with all joints sealed.

### SHEET METAL

1. **FREEZER, 50 cu ft (detail drawing No.**.....)

**A. Sheet Iron Pan**—One piece 28 ga g. i. with 1" sides and with corners soldered.

### HARDWARE

1. **FREEZER, 50 cu ft (detail drawing No.**.....)

**A. Hinges**—Two pair, 6" with ½" offset, cadmium plated.

**B. Pulls**—Two, cadmium plated.

### REFRIGERATION

1. **FREEZER, 50 cu ft (detail drawing No.**.....)

**A. Assembly**—Install equipment according to diagram No.....

**B. Condenser**—⅓ hp, air-cooled, 2-cylinder open type condensing unit. 115-230v motor (phase for current available). Unit for use with freon-12 and low suction temperature. Equipped with motor overload protection and suction pressure control switch.

**C. Thermostatic Expansion Valve** — Adjustable super-heat type, ½ ton capacity, with ¼" inlet fitting, and ⅝" outlet with flare nuts.

**D. Dehydrator**—For liquid line, ½ lb. silica gel or activated alumina, refillable type. ¼" fittings and flare nuts.

**E. Strainer**—(liquid line), ¼" connections and flare nuts.

**F. Heat Exchanger**—Small capacity refrigeration type with either flare or solder type fittings.

**G. Tubing**—275 ft ⅝" o.d. soft ref. type heavy copper tubing, outside tinned. 20 ft ¼" o.d. liquid line.

**H. Miscellaneous**—Unions, couplings, flare nuts, etc., as required to complete the installation.

**I. Freon-12**—8 lbs.

**J. Thermometer**—Graduated to read — 10F with capillary tube and bulb.

**K. Pressure Gauges**—300 lb for high side and 90 lb compound type for suction line.

## REFRIGERATION EQUIPMENT required for a combination walk-in type cold room with 50 cu ft freezer inside.

**A. Condenser**—¾ hp air-cooled, 2-cylinder, open type condensing unit, of correct phase and voltage, (usually 230), for current available, for use with freon-12 for low suction temperature application. Equipped with suction pressure control switch and motor overload protection.

**B. Thermostatic Expansion Valves** — Two, same specifications as for freezer alone.

**C. Strainers**—Two (liquid line), of same specifications as for freezer alone.

**D. Dehydrator**—For liquid line, capacity 1 lb silica gel or activated alumina, refillable type. ¼" connections with flare nuts.

**E. Heat Exchanger**—Small capacity ref. type for location within a freezer box. Either flare fittings or solder type.

**F. Tubing**—450-500 ft ⅝" o.d. soft ref. type tinned copper tubing, heavy weight. 50 ft ¼" tinned copper tubing for liquid lines.

**G. Solenoid Valve**—For liquid line to cold room, fittings for ¼" tubing, 120 volt, ⅛" orifice for use with 40 lb back pressure.

**H. Check Valve**—For ⅝" suction line with flare nuts.

**I. Thermostat**—For cold room, with tube and bulb, ref. type for 120 volts with temperature range of 30 to 50F.

**J. Strainer**—For ⅝" suction line, with flare nuts.

**K. Pressure Regulating Valve**—⅝" with flare nuts. (Used in suction line from cold room coil.)

**L. Refrigerator Door**—30" x 72" x 6" insulation, complete with frame and hardware.

**M. Miscellaneous**—Remote type thermometer and pressure gauges may be included.

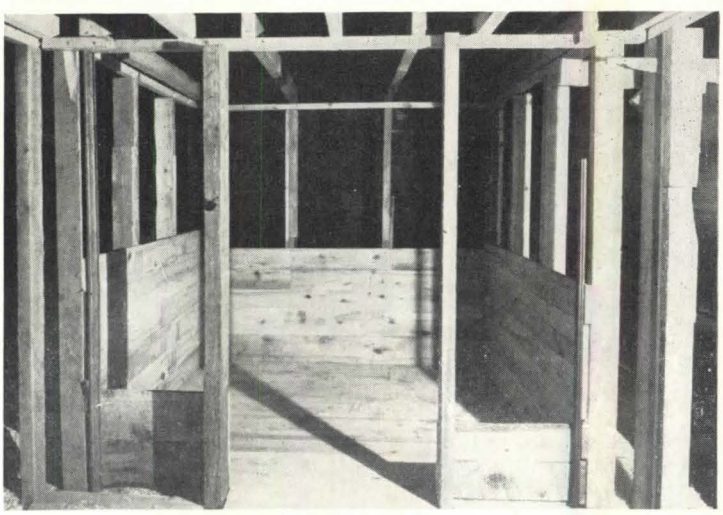


*Fig. 21.* Same unit as in Figs. 18 and 20, inner box partly lined, ready for packing in the planer shavings. (Courtesy *Home Freezer Handbook*)

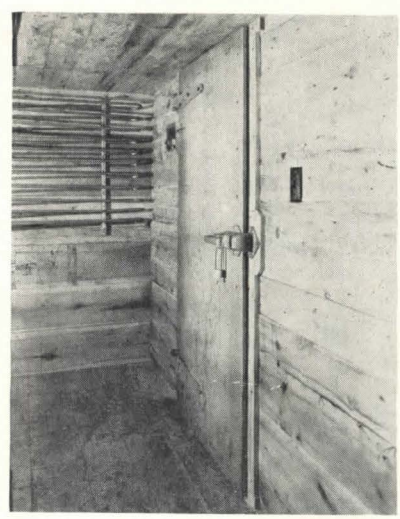


*Fig. 22.* Same unit, completed; note freezer room door, built on the job. (Courtesy *Home Freezer Handbook*)

# IMPROVED DESIGN OF BROADCASTING STUDIOS

By **M. A. SMITH**, *Acoustical Engineer, United States Gypsum Company*

In all these sound businesses the architectural problems are practically identical and, speaking broadly, fall into the following classifications: **1**, distribution of available space between studios, control rooms, offices, public spaces, access corridors, etc.; **2**, acoustical defenses against extraneous noise and cross-talk between studios; **3**, tempering of "room effect" by using sound absorbents and diffusing surfaces so that speech and music are heard in the room and on the broadcast as ideally as possible; **4**, design to make the performer feel at ease, perhaps even to stimulate him esthetically to his best performance.

One and four are entirely the province of the architect. Two and three require the combined talents of the architect and the acoustical expert.

## Studio Sizes

Since in an audience participation program the audience provides a useful amount of absorption, the number in the audience is important in calculating reverberation times. The possibility of an audience varying in size has suggested the use of variable absorptions in studio walls. Many devices have been used to secure this result (**Figs. 4, 5**). In other cases, suites of studios are provided, in which each studio is acoustically designed to accommodate a definite number of people. If fifty arrive, they are shown into Studio "A"; if one hundred, into "B"; if three hundred, into "C."[1]

## Sound Insulation

In designing for proper sound insulation, the architect can use methods described in BMS17,[2] which contains many examples of both fireproof and non-fireproof partition and floor constructions, with varying sound-insulative abilities suitable for all but the most extraordinary acoustical demand. The effectiveness of sound insulation is measured by that of its weakest part. Great care must be exercised that doors, windows, and similar openings in the studio boundaries provide a transmission loss as close as possible to that of the sound-insulative construction. Conduits, plumbing, ventilating ducts, and similar devices that pierce the sound barriers pick up vibrations; if they are not cushioned by hair felt or rubber pads where they contact the insulative construction, they will very likely nullify the sound insulation. Lining the interior of ventilating ducts (either according to established formulas or the rule of thumb that they should be lined with an absorbent having a noise reduction coefficient of 50 or better for at least ten times their diameter) should provide proper protection at this point. Windows made of three panes of plate glass of varying thickness, set in felt stops, have proved quite effective and also develop an insulative value equal to that of the partition. Doors are a little more difficult. Sound-insulative doors, particularly those designed by Dr. Paul E. Sabine of the Riverbank Laboratories, approximate the insulation provided by most partition structures. Occasionally it will be necessary to resort to a

[1] See R. M. Morris and George M. Nixon, October 1946, (Volume 8, No. 2) *Journal, Acoustical Society of America*, for a discussion of this subject.

[2] BMS17, *Sound Insulation of Wall and Floor Constructions*. Superintendent of Documents, U. S. Gov't Printing Office, Washington, D. C., 10c

**In a single week of 1946, the agenda of the Federal Communications Commission contained grants for 10 new television studios, 15 "conditional construction permits" and 8 full grants for amplitude modulation stations; and the FCC accepted 10 new applications for frequency modulation, while they were issuing 16 grants for new frequency modulation stations. The demand for phonograph records, transcriptions, sound-slide and sound motion pictures for industrial use has so increased the number of sound recording establishments that they outnumber radio stations in the larger cities. FIG. 1, left, shows a studio, United Broadcasting Company, Chicago.**

vestibule-like sound lock construction, employing a small entrance vestibule, heavily treated with sound absorbents, with two 2" or 3" solid wood doors which must be forcibly pulled against rubber stops in order to latch them.

Acoustical treatment of public spaces, corridors, and offices will reduce the acoustical "load" on sound-insulative constructions at studio boundaries. Franklin Y. Gates of Salt Lake City has been able so to adjust loudness levels within and without studios that studio doors present no problem, and are *not* closed during broadcasts.

Good sound insulation requires care in design and, particularly, close supervision as the work is being installed in order to be certain that what may seem minor items in drawings and specifications, to workmen or contractors, are followed explicitly.

## The "Room Effect"

Any room in which sound is picked up by a microphone for recording or for broadcasting by either FM or AM, or, for that matter, for the sound portion of a television program, is a vital acoustical link, as important as the excellence of the electrical equipment or the skill of the technicians who operate it.

A room does several things to sound: 1, it enhances loudness; 2, it continues the sound for a considerable but controlable period of time after the original sound ceases (reverberation); 3, the volume of air in a room whose dimensions are ill chosen may resonate when stimulated by certain pitches to create added loudness at those pitches, producing eerie effects; 4, if poorly shaped or with concave surfaces, the room may focus sound undesirably; and 5, it creates peaks and valleys of loudness which shift their position with each change in pitch. Of these the first is an asset, as is the second when controled; the third is usually experienced in rooms of small dimensions with square or nearly square floor plans. (By heavily damping such rooms with acoustical absorbents on walls and ceilings, resonance is usually reduced to a point where speech can be satisfactorily picked up, but the reverberation time in such rooms is then too low to provide the brilliance exhibited by a good musical organization; music becomes lifeless and colorless.) The fourth is within the designer's control; but the last, known to acoustic engineers as the "standing wave pattern," is full of acoustical gremlins, for which until recently there has been no satisfactory acoustical D.D.T.

Most of these effects on sound were noted in Vitruvius' famous *Handbook on Architecture*. Unfortunately, in the intervening 2,000 years neither architects nor scientists have made much attempt to further his studies. However, in the last 40 or 45 years not only have the problems been rediscovered, charted, mapped, and measured, but answers to practically all of them have been so well determined that each is subject to either precise mathematical or empirical solution and, like a good automobile, a well designed studio should run as desired when it comes off the production line. Through years of playing and listening, musical organizations—and even the untrained public—have become, subconsciously perhaps, capable of distinguishing between rooms which are acoustically acceptable and those which are not. And, since most musical performances take place in rooms, the "room effect" of rooms with acceptable acoustics has become a part of the performance; we must include in studios those room effects which thus aid the musical performance.

In early studios reverberation times were held to much shorter intervals than those considered good for concert halls. Today the tendency is toward longer reverberation times in studios; they are set separately for each of six (sometimes seven) pitches at octave intervals. The absorption characteristics of acoustical materials rarely provide ideal absorptions at each pitch needed to accomplish the desired result with a single material. By selecting two or more absorbents so that shortcomings at some pitches in one are "balanced" by another, the designer can usually adjust the areas of each to produce ideal times at the desired octaves.

Physically speaking, there is a great deal of difference between an acoustically good concert hall and a broadcasting or recording studio. In the latter, listening is not done by a *pair* of human ears tempered by a discretional nervous system, but by a device—the microphone—which has but one ear, "hears" better in some directions than others, is not as sensitive to weak sounds as the human ear (since it has a higher "threshold of audibility") and requires, of necessity, electronic amplification of its product to broadcast levels. A similar amplification takes place in the receiving set. Any errors due to frailty of the listening device or acoustics of the studio are twice magnified. In short, a room in which human beings hear with maximum comfort and appreciation is rarely good enough for a microphone if we are to hear, over the air or from a record, what we should hear. It is common practice to locate microphones closer to some instruments or voices than to others. Orchestras may be rearranged for broadcast purposes to make up for room deficiencies, and the conductor, with two good ears some five or six inches apart, can rarely hear what several microphones, perhaps yards apart, are hearing. The conductor with broadcasting experience is *not* expected to suppress the brasses or elevate the strings according to the score or his personal temperament; in some mysterious manner he must adjust the production to the difficulties of the room and the inabilities of non-aural listening. Ironically, if he is successful he produces something that he doesn't like musically, in order that radio listeners may hear something he does like. He is not given an opportunity to listen to both what is going over the air and what he is actually producing within the room. Obviously, such mental gymnastics, even aided by the boys in the control room (who can listen to the broadcast as it is being put on the air) are not within the abilities of many, if indeed any, conductors.

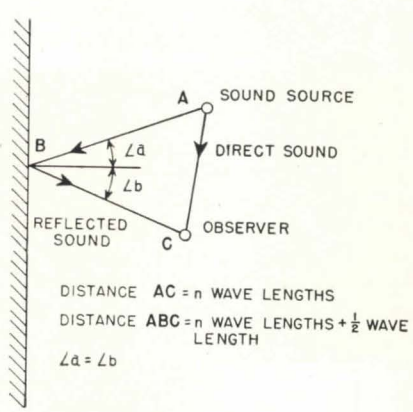



**FIG. 2: Interference between two sound "rays."**

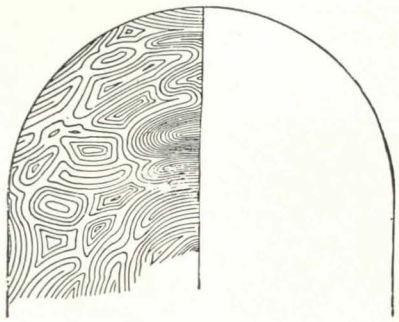


FIG. 3: Standing wave pattern under a proscenium arch in a plane perpendicular to the stage. (Reprinted with permission from Wallace Sabine's *Collected Papers on Acoustics*, Harvard University Press.)

## The Standing Wave Pattern

Sound manifests itself at any point in a room as a series of alternations in air pressure, the frequency of the change fixing the pitch and the extent of the pressure differences, the loudness. In **Fig. 2** the ray of sound reaching C directly from the source arrives there in the compression stage. If we assume that a reflection from **B** reaches **C** in the rarefaction phase and the two sounds are of equal loudness, *nothing* will be heard at **B** because the compression and rarefaction, opposite in phase and equal in pressure difference, will cancel each other. Actually, the picture is much more complex since at a given moment, not two but many sound rays may reach any specific point in the room and increase or decrease the loudness at that point; the result usually does not have the same loudness as the original sound. There is, then, a sufficient tempering of sound at every point in every room to create loudness differences. In any room of normal design if one moves his head right or left while a single pitch is being sounded continuously, these loudness differences are easily observed. The amount of motion required to experience this is small (a few inches) with high pitched sounds and considerably greater (several feet) with low pitched ones having longer wave lengths.

The changes under a proscenium arch in Europe due to these interferences were measured and plotted by Professor Wallace Sabine some forty years ago. **Fig. 3,** from his *Collected Papers*[3], shows the standing wave pattern in a plane under the arch perpendicular to the stage. Professor Sabine reports from forty- to fifty-fold differences in energy between the loud and less loud areas shown in the diagram. The diagram shows a specific pattern for a specific pitch; with higher pitches and shorter wave lengths, the points of greatest loudness would produce a totally different pattern; with lower pitches, still other patterns—all in this instance tempered by the concentrating effect of the concave surfaces.

Changes in loudness (which can be measured) at microphone positions vary with shifts in pitch, and are sufficient not only to alter the true output in respect to loudness differences between successive notes, but also to alter the *quality* of specific instruments as they are heard at the receiver. The same violin may sound like a Stradivarius at some pitches and like a pawnshop fiddle at others, without any shortcomings in the transducing electrical equipment. Yet, to the conductor and auditors in the room the music may seem excellent.

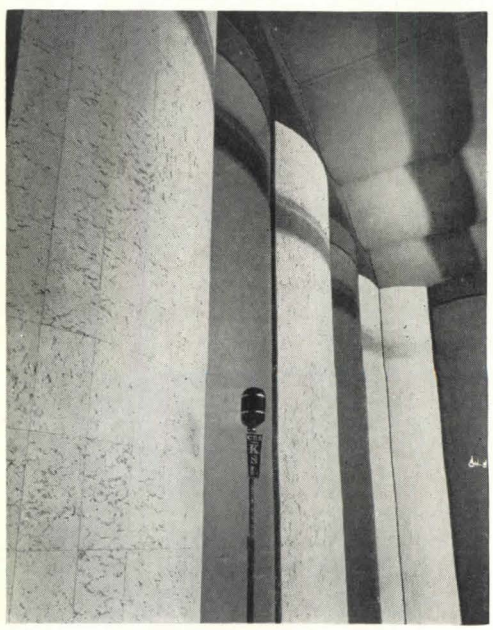
## Polycylindrical Orthogonal Construction

One can appreciate that if sound reflection from walls is diffuse rather than ray-like and directed, the standing wave pattern may disappear or be so modified that differences in loudness from point to point will be too small to be of consequence. Studios have been designed with walls which lean toward each other or in which no two walls or surfaces are parallel. Some designers have used surfaces composed of a series of stepped planes, sawtooth-like, to secure better dispersion of sound. Five or six years ago the ability of cylindrical surfaces to diffuse sound encouraged several investigators to apply cylindrical segments to walls and ceilings of radio studios. Early attempts to secure such diffusion employed plastered surfaces. To some of these, acoustical absorbents were applied as they would be to a flat wall to secure the necessary reverberation times. Later, diffusing cylinders were tried in which plywood or hardboard was supported on segmental braces of wood spaced at varying distances. The sections of such cylinders resonate to sound frequencies produced in the room instrumentally or vocally. By properly dimensioning the cylinders, varying their diameters, and placing the supports (which are perpendicular to their longitudinal axes) at random distances, it was possible to produce a construction which not only did an excellent job of diffusing sound but also provided a useful amount of absorption that changed but little with changes in pitch. Studios of this character produced very brilliant broadcasts and their qualities for musical programs were excellent. Likewise, they did a very tolerable but not quite as good a job on speech as typical announcing studios whose reverberation times were lower.

In the last year or two several studios have been built in which polycylindrical construction has been applied to the walls alone, disposing the cylinders horizontally on one pair of opposite walls and vertically on the other pair, producing the so-called "polycylindrical orthogonal" design. But on the ceiling a selected area of commercial acoustical absorption (whose absorption curve across the frequency band is high in the treble, low in lower pitches, with medium absorption at upper pitches) is used to complement the practically "flat" curve of absorption of the cylinders. This produces reverberation times in the treble and high frequencies which closely approximate the ideal curve desired by broadcasting engineers.

In such studios really remarkable results have been obtained. In one of the first to be built, a speech studio was included in the suite on the supposition that these newer studios would not be quite as good for speech as they were for music, but

FIG. 4: Studio, Station KSL, Salt Lake City. Absorptive and resonant surfaces on alternate cylinders.



[3] Wallace C. Sabine, *Collected Papers*, Harvard University Press, 1922.

practice has shown that they are equally good for either. The speech studio in the group mentioned has never been used.

In one studio of this character in Minneapolis a test, which may not be completely conclusive because of the apparatus used, was conducted by moving a microphone from one wall of the room to the other, and at short intervals making observations of the loudness of a single pitch sounded in the room. At no point in the line from wall to wall was there discovered a loudness difference greater, plus or minus, than one-half decibel. From the brilliant, sparkling records made in this studio by instrumental organizations one can hear the ensemble as one does in listening to a good concert in a good concert hall, and yet one can select and follow the course of a single instrument. It is likewise possible to pick out the individual voices in choral organizations just as one does in a good audience room; and there is no question about a definite increase in the fidelity with which the quality of the various instruments of the orchestra is reproduced; in short, a violin sounds like a violin at all pitches.

Musically trained people get a considerable thrill out of listening to speech in a studio of this character, and a still greater one when they listen to music. At first there is a sense of too much reverberation but this seems to disappear in the brilliance and sparkle of the upper register. Performers are stimulated to their best efforts as they listen to their production. The most satisfying comment, to the acoustical designer, is the statement by orchestra leaders that they hear on the records what they heard in the studio while performing. In most of these newer studios but one microphone is used because, for all useful purposes, the loudness of sounds created in the room is of equal intensity at any point in the room.

## Cylinder Action and Construction

Absorption developed in polycylindrical construction does not result from porosities, similar to those which exist in sound absorbing tile, since the cylinders have no porosity; nor is there any need for placing an absorbent pad back of their surfaces. The well known acoustical phenomenon, resonance, is utilized to provide absorption. The cylinders are roughly tuned to respond and resonate to sounds created in the room. The act of resonance requires power, which is supplied by the stimulating sounds. Internal damping, depending upon the span and method of mounting the cylindrical surfaces, absorbs the energy which vibrates the cylinder walls, converting it to heat as a function of the resilience and stiffness characteristics of the surfacing material.

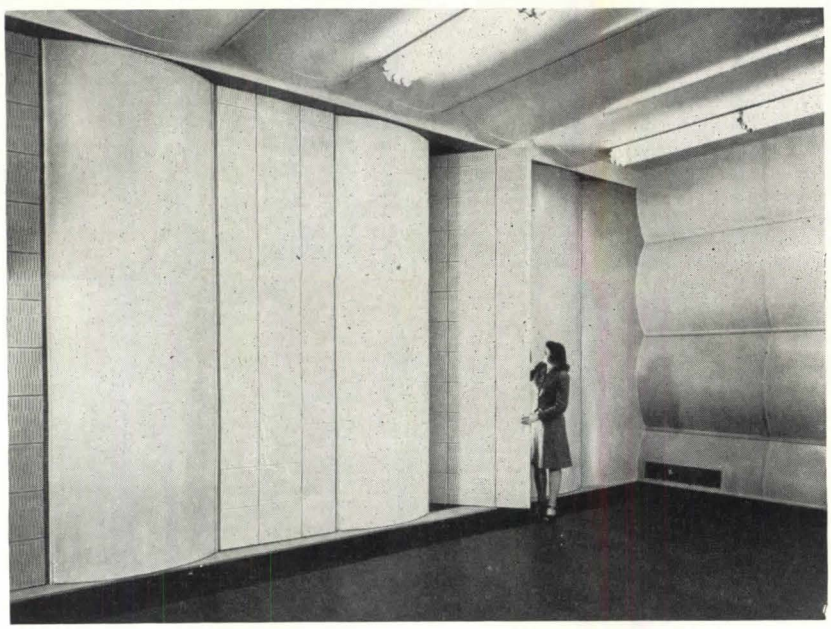
Originally plywood in thicknesses from ⅛" up to about 5/16" was used for these cylinders. The thinner cylinder walls seemed to show better absorption characteristics and were much more easily handled by the installing contractor. Mr. Gates has found that treated hardboard provides a little more absorption and some construction advantages over plywood. Regardless of which material is used, the cylindrical surfaces are fully paintable at any time, practically without limit and without appreciable change in absorption characteristics.

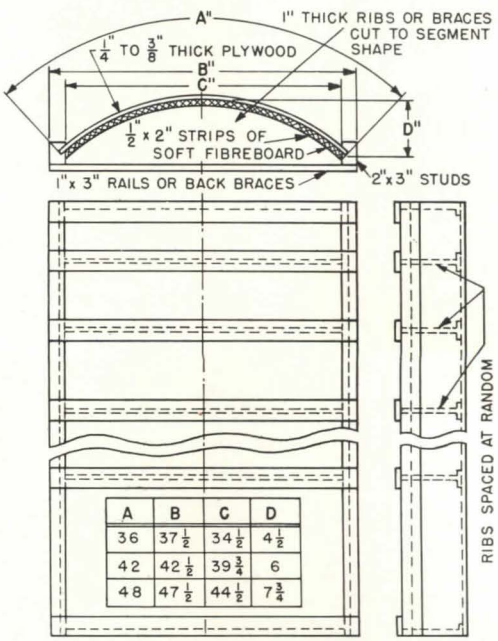
## Potentialities and Requirements

Undoubtedly the appearance, shape, and comfort of the radio studio have a psychological effect on performers. These polycyclindrical orthogonal constructions present an interesting problem to the architectural designer. It is possible to secure many striking color effects. The gradation of light on the cylinders usually makes a most appealing pattern, and where walls and windows pierce the construction, accents in contrasting colors on the "cut ends" of the cylindrical segments make an ever-changing picture for the performer. Where acoustical absorbents as previously described are used on the ceiling, the floor can be asphalt tile, rubber tile, linoleum, or similar materials. Where the ceiling absorption is cylinders, it is necessary to augment it with a rug plus a rug pad on the floor to provide proper absorption.

Some designers have been experimenting with spherical rather than cylindrical segments on walls, and it is quite reasonable to expect that the convexity of the spheres may give even better diffusion than orthogonal cylindrical construction, although it would be much more difficult to produce absorption through resonance in such constructions.

FIG. 5: Another studio, Station KSL. Rotatable cylinders have one surface resonant, the other absorptive. Franklin Y. Gates, Acoustic Engineer; Young and Ehlers, Architects.






| A | B | C | D |
|---|---|---|---|
| 36 | 37½ | 34½ | 4½ |
| 42 | 42½ | 39¾ | 6 |
| 48 | 47½ | 44½ | 7¾ |

FIG. 6: Cylinder construction (adapted from *RCA Broadcast News*).

## THIS MONTH'S PRODUCTS

### AIR AND TEMPERATURE CONTROL

**Chromalox Air Duct Heater, Type TDH.** For high-temperature recirculating air systems, air temperatures up to 1050F maximum. An assembly of Chromalox electrical tubular heaters mounted in a steel frame. Thermostat provides protection against overheating. Rated at 230 volts, 6 to 30 kw. Edwin L. Wiegand Co., Pittsburgh 8, Pa.

**Duct-Type Weathermaster System.** Year-'round air conditioner for hotels, apartments, offices, hospitals. Available in cabinet-type or furred-in units to harmonize with interiors. Carrier Corp., Syracuse, N. Y.

**Springfield Type M Boilers.** Water tube boilers ranging from 6,000 to 17,000 lbs of steam per hr. Standardized dimensions for various size units. Springfield Boiler Co., Springfield, Ill.

**Wing Turbine Unit Heater.** Has fan driven by all-steel steam turbine. No electric motor or power needed. Fan stops when steam pressure stops. L. J. Wing Mfg. Co., New York, N. Y.

### DOORS AND WINDOWS

**Aluminum Combination Storm Window and Screen.** Permanently installed combination storm window and screen of extruded aluminum. Inserts can be easily changed, removed for washing. Sliding panel and louvers at bottom provide ventilation. Eagle-Picher Co., Cincinnati, Ohio.

**Aluminum-Frame Storm Windows.** For metal residence casements; when installed allow full use of casement ventilators; controled ventilator may be included in storm panel. Has rubber weathering seal. Ceco Steel Products Corp., Chicago 50, Ill.

**Copco Utility Window.** Steel, with vent opening inward to any angle desired; spring locking device. For basements, garages, etc.; masonry or frame openings. Copco Steel and Engineering Co., Detroit 27, Mich.

### ELECTRICAL EQUIPMENT, LIGHTING

**"Blacklight" Luminous Signs.** Vion (plastic) sign seemingly without a source of light is illuminated by black light from a fluorescent low-wattage lamp which has a special filter and emits near-ultraviolet radiance. Uses 110-125 volts, can be plugged into any outlet. Vion Corp., New York, N. Y.

**Indirect Bolite Bulb.** Any lamp can be made into an indirect lighting unit by use of a 200-watt Indirect Bolite bulb which diffuses light without a separate diffusing bowl. New bulbs may be used in conventional lamps by changing shade supports; new supports may be obtained when buying Bolite bulb. Sylvania Electric Products, Inc., Salem, Mass.

### INSULATION

**Cemex.** Structural, fireproof insulating slab made of treated long wood fibers coated and bonded with Portland cement and compressed to desired thickness, then air dried and cured. Can be sawed like wood. For insulating walls, floors, roofs; also as plaster base, etc. Structural Insulation Corp., Chicago 1, Ill.

### MATERIALS OF INSTALLATION

**Fairprene (No. 5118) Adhesive Cement.** Thermoplastic elastic waterproof composition for bonding Buna-N rubber and vinyl film or sheet to rigid surfaces—steel, aluminum, wood, concrete, glass. Affected by high temperature (160F), regains strength when cooled; resists oxidation. Dries completely in two hours. Du Pont Fabrics Div., Fairfield, Conn.

### SPECIALIZED EQUIPMENT

**"Defrost-All."** Electric ranges incorporating a "Defrost-All" which thaws quick-frozen food in a fraction of the usual time, retaining flavor and food values. Estate-Heatrola Div., Noma Elec. Corp., New York, N. Y.

**Freez-All.** Refrigerator-type home freezer with three large food storage drawers; food can be segregated for easy selection. Storage space: 8 cu ft, 400 lbs frozen food. White cabinet. Portable Elevator Mfg. Co., Bloomington, Ill.

**MP Wall Units.** For visible stock storage in stores, made of Plexiglas or Lucite in drawer form. Drawers lock in place automatically. Units can be arranged in full wall displays. Merchandise Presentation, Inc., New York 22, N. Y.

**Norge Refrigerator.** 9 cu ft with "across-the-top" frozen food storage compartment which holds 35 lbs. Removable, adjustable glass shelves, sliding tray for ice cubes or meat, vegetable storage drawer. Norge Div., Borg-Warner Corp., Detroit, Mich.

**Power-Leg Washing Machine.** Wringer mounting prevents tipping when wringer is swung out; also has anti-air-lock pump and new transmission. Norge Div., Borg-Warner Corp., Detroit, Mich.

**Wall Safe.** Has 3-tumbler combination lock, insulated walls, electrically welded heavy steel plates for fire and theft protection. Can be installed flush with wall. Meilink Steel Safe Co., Toledo, Ohio.

### SURFACING

**Checkwood.** Wall covering of one-inch jewel-cut squares of plywood bonded to fabric backing. Sheets 24" square. Can be applied to flat, curved, angular surfaces; paintable. Flexwood Div., U. S. Plywood Corp., New York, N. Y.

**Aluminized Steel.** Formed by application of molten aluminum to both sides of sheet steel. Resists corrosion, also high temperatures (900F to 1600F) without scaling or discoloration. Can be welded, bent without peeling or flaking. Not recommended for direct paint application, but does hold paint better than galvanized steel. The American Rolling Mill Co., Middletown, Ohio.

**Lopo-Trim.** Hollow steel quarter round with projecting prongs, can be used as baseboard trim, wiring raceway, etc. Prongs pushed behind baseboard hold trim without nailing. Elbows for corners are available. Neutral gray finish, paintable. National Electric Products Corp., Pittsburgh, Pa.

**Detron.** Metallic-plastic-lacquer wall covering on canvas backing, available in 13 new textural color effects. Washable with soap and water. Installed like ordinary wall paper, comes in double roll units. Frederic Blank & Co., Inc., New York, N. Y.

### THAT JANUARY ISSUE—

This is the first chance we've had to thank editorially the manufacturers of building materials and equipment who helped make our January listings of available products valuable to architects. Without their wholehearted cooperation we couldn't have done the job. In two or three cases we made errors—

For instance, somewhere in the process of tabulation the name of the Milcor Steel Co., Milwaukee 4, Wis., was metamorphosed into "Wilcox" Steel Co., and no amount of careful proofreading could thereafter change it back (January, p. 72). Again, *Cemex*, a wood-fiber and Portland cement board (see adjoining column) was attributed to the wrong manufacturer; the Structural Insulation Corp., Chicago 1, Ill., should have received credit. The most serious fault was, probably, omitting to mention Frederic Blank & Co. (New York 17, N. Y.) as manufacturers of *Fabron* and *Detron* wall coverings. Fabron, a fabric-plastic-lacquer surfacing on canvas backing, is installed like wallpaper and has many obvious advantages. Since some restrictions on basic materials have been lifted its manufacture has speeded up; it is becoming available in new patterns and colors. (For Detron see adjoining column.)

### AIR DIFFUSION

One reason for publishing our February article on air diffusers was to combat the common misconception that almost any type of grilled outlet would suffice to introduce treated air into a space.

Obviously, modern methods of air distribution are more scientific than that. There must be control over quantity and direction of air flow; then, control of speed of flow and of the sound produced. Beyond that — well, there's a parallel in the lighting field, where we have progressed from light distribution by means of single, isolated points (incandescent bulbs and fixtures) to distribution by linear sources (fluorescent tubes and fixtures); and where progress points to eventual use of entire luminous surfaces (gridded ceilings, all-over paneling with translucent plastics, etc.). Isn't such a method desirable for air distribution?

"Yes," we replied, and then received news of several new developments: both *Minneapolis-Honeywell* and *Tuttle and Bailey* have new directional grilles, whose vanes direct air flow as desired. *Air Devices* (New York, N. Y.) has a rectangular, louvered ceiling outlet in which the spaces between louvers are subdivided by vanes to assure complete coverage of the desired area, and for which draftlessness, noiselessness, complete mixing of treated and room air, and minimum headroom requirements, are claimed. Then along came *Barber-Colman* with their new *Line-O-Flo* system, in which air is discharged through a 4-ft-long slot; distribution is claimed to be equalized throughout its length; units can be mounted end-to-end, and combined with fluorescent lighting fixtures. There isn't as yet a manufactured product called a "breathing ceiling," one of whose functions would be air distribution over its entire surface. We *have* seen custom-designed installations using perforated acoustic tile below an all-over plenum chamber.

We'll have to dig into this subject and see if it merits another article.

# 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.*

| | | | |
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| No. | No. | No. | No. |
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★ *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

Three booklets on a "packaged"-heating system; humidifies, filters, heats air; any type of fuel (automatic with oil or gas). Thermostat control; parts replaceable; cooling can be added. Also a booklet on a slide rule for determining heat loss in buildings, cost per heating season, size of stoker and fan needed, etc. American Foundry and Furnace Co.:

**1-101.** *The Climatemaker Slide Rule.*
**1-102.** *Gas or Oil Fired (Series 40 Ogah) Unit Heater (Section 6A).*
**1-103.** *June-Aire Oilfired Air Conditioner.*
**1-104.** *June-Aire Winter Air Conditioning.*

★ **1-105.** *Line-O-Flo,* 2-p. illus. sheet on a new air distributing device which diffuses air through a 4-ft long slot (in contrast to conventional one-spot diffusers). Can be combined with fluorescent light fixtures, installed in continuous strips or single units. Barber-Colman Co.

**1-95.** *Dependable Automatic Oil Heater,* illus. consumer folder on a residential oil burner conversion unit. Catskill Metal Works, Inc.

Two folders on heavy duty rotary oil burners for commercial and industrial use. Diagram of piping arrangement, description, sizes, capacities. S. T. Johnson Co.:
**1-106.** *Data No. 30 AVH-LFS & MF.*
**1-107.** *Data No. 20 AVH-2.*

**1-96.** *Minneapolis-Honeywell Presents the New '47 Chromotherm,* Minneapolis-Honeywell Regulator Co. Reviewed March.

★ **1-109.** *Frigid-Freeze,* 4-p. illus. folder on prefabricated walk-in freezing, hardening, and storage rooms. Has thermo-indicator on outside panel, alarm system to prevent spoilage, automatic defroster. Operating characteristics, models available, specifications. Refrigeration Corp. of America—Div. of Noma Electric Corp.

**1-97.** *Panelaire, The Warm Air Panel Heating System,* Sheet Metal Publication Co. ($1.00 per copy—make check or money order payable to Sheet Metal Publication Co.) Reviewed March.

**1-98.** *Evaporative Condensers (Bulletin 87),* United States Air Conditioning Corp. Reviewed March.

**1-99.** *U. S. Airco Unit Coolers (Bulletin 90),* 5 pp., illus. Data and dimensions on low temperature coolers for industrial and commercial use. Detail drawings. United States Air Conditioning Corp.

★ **1-110.** *Webster Type WI Extended Surface Radiation (Bulletin B-1550A, supersedes Bulletin 1550),* 8-p. illus. booklet on characteristics of a new extended surface radiation system (1⅛" copper tubing with aluminum fins) which is now available in limited quantities. Construction details, uses, installation, dimensions, ratings. Warren Webster & Co.

**1-100.** *Steam-Pak, Facts and Figures (No. 1D-46-1),* York-Shipley, Inc. Reviewed March.

### Doors and Windows

**4-80.** *Hollow Metal Doors, Jambs and Trim (15a-1),* Aetna Steel Products Corp. Reviewed March.

**4-84.** *Automatic Storm Window Regulator,* 2-p. illus. sheet on a storm sash regulator which automatically raises and lowers storm window as inside sash is operated. Award Mfg. Co.

**4-85.** *Balch Exit Door Release,* 4-p. illus. booklet on a unit that automatically releases exit doors on the inside as the person approaching steps on a platform. Door automatically locks again upon closing. Balch Glass Exit Door Release.

**4-86.** *Howie Fire Prevention,* 3-p. illus. pamphlet on Kalamein doors, frames, trim, tin clad doors, etc. Brief descriptions, installation details, standard frames, partitions, dumbwaiters. John D. Busch & Sons, Inc.

**4-81.** *The Perfected Sash Balance (Form 42-SB-2), AIA 27-A-1,* Grand Rapids Hardware Co. Reviewed March.

**4-82.** *Steel Windows and Biltin Sub-Frames in Glass Block (No. 105),* Hope's Windows, Inc. Reviewed March.

**4-87.** *Lemco Residence Steel Casements,* 8-p. illus. booklet on bonderized steel casement windows for residential, institutional, commercial buildings; standard types and sizes of screens, casements, packaged windows, and awning windows. Installation details, order numbers. Lundell-Eckberg Mfg. Co., Inc.

**4-83.** *Revolving Doors (1946 Cat.), AIA 16-G,* Revolving Door Div., International Steel Co. Reviewed March.

### Electrical Equipment and Lighting

**5-65.** *Luminous Tube Transformer Handbook (Bulletin LT-156),* 14-p. illus. booklet on heavy-duty, cold cathode, window-suspension type, Acme core and coil, and weatherproof transformers. Fluorescent tube footage chart. Acme Electric & Mfg. Co.

★ **5-66.** *Lighting to a "T," AIA 31-F-1,* 20-p. illus. brochure on cold cathode fluorescent in planning illumination. Charts giving tubing footage calculations for factories, offices, restaurants, schools, stores. Installation details, engineering data. Cutler Light Mfg. Co.

**5-59.** *Viz-Aid Commercial Fixtures, AIA 31-F-2 (Bulletin 10-B-1—supersedes Bulletin 10-B),* Day-Brite Lighting, Inc. Reviewed March.

**5-60.** *Lightmore Fluorescents,* Lightmore Appliance Corp. Reviewed March.

From Lloyd Products Co. Reviewed March:
**5-61.** *"Flex-Loc."*
**5-62.** *Lloyd's New Flexible Lamp Holder.*

**5-63.** *Fluorescent Lighting Fixtures (Cat. 286),* Mitchell Mfg. Co. Reviewed March.

**5-64.** *Hazard Aluminum Building Wire (Tech. Bulletin H407, H407A); Price List (Bulletin 302-A1),* The Okonite Co. Reviewed March.

**5-67.** *Data for Designing Interiors Illumination,* 8 pp., illus. Folder containing charts giving technical and engineering data on popular types of luminaires, lamps, and ballasts. Tables on illumination calculation and coefficients of utilization. Westinghouse Electric Corp.

**5-68.** *Ballasts for Fluorescent Lamps,* 4-p. illus. booklet on selecting ballasts for single-, two-, and multiple-lamp, high and low power units, also plug-in type. The Wheeler Insulated Wire Co.

### Finishers and Protectors

**6-85.** *Wolmanized Lumber,* American Lumber & Treating Co. Reviewed March.

**6-86.** *Color Harmony Manual, (Large Chip Ed.),* Container Corp. of America. ($125.00 per copy — make check or money order payable to Container Corp. of America.) Reviewed March.

**6-89.** *Sight Perfection (Form 309),* 8-p. illus. folder on the use of color in industrial buildings. Color charts and plans. The Glidden Co.

**6-87.** *Termite Control,* Hill Termite Control Systems. Reviewed March.

# MANUFACTURERS' LITERATURE

**6-90.** *How to Use Color on Concrete Block*, 6-p. illus. (3½ x 6½) folder on coloring concrete block with "Bondex" waterproof cement paint. Six color suggestions; color combinations. The Reardon Co.

**6-88.** *Lignophol Quick Drying*, L. Sonneborn Sons, Inc. Reviewed March.

### Insulation (Thermal, Acoustic)

**9-61.** *Ferro-Therm Steel Insulation for Refrigerated Construction*, 10-p. illus. folder on steel insulation for cold storage. Engineering data, test charts and data, detailed construction drawings. American Flange & Mfg. Co., Inc.

★ **9-62.** *Foamglas . . . Insulation for Low-Temperature Rooms*, 6-p. illus. booklet on block-type insulating material, impervious to vapor and moisture. Characteristics, application, and installation data. Also chart for determining insulation thickness. Armstrong Cork Co., Building Materials Div.

From Burgess-Manning Co. Reviewed March:

**9-58.** *Acousti-Booth, Model 210 (Bulletin 166).*

**9-59.** *Acousti-Booth Industrial Model 211 (Bulletin 450).*

**9-63.** *Kimsul Insulation Application Data File, AIA 37 B (Form KLF-6)*, 11 sheets on installing blanket insulation in walls, ceilings, floors, attics, etc., in both new and existing frame construction. Application details. Kimberly-Clark Corp.

**9-60.** *New Gold Bond Hollow Wall System, AIA 20-B-11*, National Gypsum Co. Reviewed March.

★ **9-64.** *Cemex-Incombustible Structural Insulation*, 4-p. illus. folder on characteristics of Cemex (made of Portland cement-bound wood fibers) which is incombustible, absorbs heat and sound. Application details, weights, and sizes. Structural Insulation Corp.

### Load-Bearing Structures

**12-107.** *Architectural Catalog, 1946.* 10-p. illus. booklet on "Douglas Fir Plywood." Physical properties, characteristics, advantages, application. Selection chart for grades and types, insulation table, exterior uses, and finishing data. Douglas Fir Plywood Assn.

**12-104.** *Structural Details*, Indiana Limestone Corp. Reviewed March.

**12-108.** *Steel Buildings for Every Industrial Purpose (Cat. No. B-37), AIA 13*, 10-p. illus. booklet on the construction of steel buildings for airplane hangars, garages, plants, mills, etc. Plan suggestions, lists of standard steel sections. International Steel Co.

**12-105.** *Modern Homes by Modern Methods*, Prefabricated "Home" Manufacturers Institute. Reviewed March.

**12-109.** *Plastiment, "The Concrete Densifier,"* 6-p. illus. folder explaining the effect "Plastiment" has on concrete when added during the mixing stage. Aids in making concrete watertight, increases strength and density. Characteristics, advantages, applications. Suggested specifications. Sika Chemical Corp.

**12-106.** *Open-Truss Steel Joists, AIA 13-G (Cat. E-170)*, Truscon Steel Co. Reviewed March.

### Materials of Installation

**13-51.** *Pyramid Mouldings in Stainless Steel (Form W3)*, 6-p. illus. folder on stainless steel moldings for use around sinks, counters, stair nosings, door trim, wall-board moldings, etc. Details, order numbers. Pyramid Metals Co.

### Non-Load-Bearing Structures

**14-19.** *The ABC's of Modern Plastics*, Bakelite Corp. Reviewed March.

★ **14-22.** *Handbook of Gold Bond Building Products—1947*, 75-p. illus. booklet containing six sections—plaster bases, partition systems, gypsum plaster and lime, gypsum boards, insulation products, sound control products. Includes advantages, characteristics, application and operating data. Specifications and detail drawings. National Gypsum Co.

**14-23.** *Design for Die Casting*, 6-p. illus. booklet to aid design engineers in using zinc alloy die castings in product design. Includes advantages, principles, rules, and selection chart. The New Jersey Zinc Co.

**14-20.** *Penmetal Lath and Plastering Accessories, AIA 20-B-1 (Cat. 476-L)*, Penn Metal Co., Inc. Reviewed March.

**14-21.** *Snead Mobilwalls*, Snead & Co. Reviewed March.

**14-24.** *Metal Lath and Accessories (No. B-430)*, 6-p. illus. booklet on metal lath, a plaster base for walls and ceilings. Includes advantages, types of lath available, uses; accessories for installing. Truscon Steel Co.

**14-25.** *Porcelain Enamel on Steel in Architecture*, 32-p. illus. brochure on porcelain enameled steel for interior and exterior use in factories, houses, restaurants, office buildings, etc. Characteristics, application data, check list. United States Steel Corp.

### Sanitary Equipment, Water Supply & Drainage

**19-100.** *Presenting the 1947 Crane Plumbing and Heating Line*, 24-p. illus. booklet showing fixtures, fittings, and suggestions for kitchen, bathroom, powder room equipment and design. Also heating equipment and accessories available. Crane Co.

**19-90.** *Plenty of Hot Water for Less Than 4¢ a Day (WHC-455)*, Duo-Therm, Div. of Motor Wheel Corp. Reviewed March.

**19-101.** *The Home Appliance That Turns Hard Water Into Soft Water (2816)*, 6-p. illus. booklet on house water conditioner using zeolite. Advantages, specifications. The Permutit Co.

★ **19-102.** *Revere Tube and Pipe*, 22-p. illus. booklet containing four sections—copper water tube; Dryseal copper tubes; copper tube, other types; S.P.S. pipe. Includes advantages, characteristics, applications, specification charts. Revere Copper and Brass, Inc.

**19-91.** *Weisteel Compartments (Cat. 18)*, Henry Weis Mfg. Co., Inc., Metal Compartments Div. Reviewed March.

**19-92.** *Water Supply and Booster Systems, AIA 29-D-5 (Bulletin 1500)*, Yeomans Brothers Co. Reviewed March.

### Specialized Equipment

**19-93.** *Laundry Equipment for Hospitals of Every Size (D-2)*, American Laundry Machinery Co. Reviewed March.

Two booklets on gas heated or electric clothes dryers for laundries. Sizes, construction and operating data. Specifications. Chicago Dryer Co.:

**19-103.** *Chicago Gas Heated Cabinet Clothes Dryer, AIA 35d (Bulletin G2460).*

**19-104.** *Chicago-Francis Electrically Heated Cabinet Clothes Dryer, AIA 35d (Bulletin G2480).*

**19-94.** *Does Your Home Have a Place for Living?*, General Electric Co., Home Laundry Equipment Div. (10 cents per copy—make check or money order payable to General Electric Co.) Reviewed March.

**19-105.** *Today's Master Architect and The Modern Bank*, 6-p. illus. folder on bank design and equipment. Outline of necessary layout, ventilation and illumination facilities. Detailed layout of typical bank. Herring-Hall-Marvin Safe Co.

**19-95.** *Duraline*, Lennox Metal Mfg. Co. Reviewed March.

★ **19-106.** *Mobilcore*, 4-p. illus. pamphlet on a unit which combines kitchen and bathroom facilities, plus electrical and plumbing supplies. Detailed drawing of installation, application data. Timber Structures, Inc.

★ **19-107.** *Fold-A-Way Gymnasium Stands (Type XL)*, 4-p. illus. folder on gymnasium stands that fold into compact units for storing and clearing of floor. Brief description of types available; application; chart and outline for determining seating capacity needs. Table of dimensions and sizes of folding stands; specifications. Universal Bleacher Co.

### Surfacing Materials

**19-96.** *Arketex, AIA 3-F-21 (Cat. S-45)*, Arketex Ceramic Corp. Reviewed March.

**19-108.** *Armstrong's Quaker Wall Covering (No. F-359)*, 4-p. illus. booklet on installation of felt-backed wall covering. Samples of colors and patterns, installation details. Armstrong Cork Co., Floor Div.

**19-97.** *Choose Your Roof for Rain and Shine*, Asphalt Roofing Industry Bureau. Reviewed March.

**19-98.** *Plan With Plymetl (1d-1)*, Haskelite Mfg. Co. Reviewed March.

**19-99.** *Architects Floor Manual, AIA 231*, Midland Chemical Lab's., Inc. Reviewed March.

**19-109.** *Vikon Tile*, 4-p. illus. folder on colored tile (enamel baked on metal) for kitchens and bathrooms. Installation data, sizes, and colors available. Vikon Tile Corp.

### Traffic Equipment

**20-36.** *Utilize the Air Rights of Your Ceilings (Form 645)*, Lamson Corp. Reviewed March.

**20-37.** *New Power Jacklift*, 8-p. illus. booklet on an electric lift truck. Operated and maneuvered by handle control; brakes operated by handle trigger. Types available, specifications, outline dimensions. Lewis-Sheppard Products, Inc.

# What about built-in gutters?


...Turn to page 62 in Revere Manual* of Sheet Copper Construction

## COPPER and COMMON SENSE

SELDOM has a publication by a manufacturer received as wide a welcome as Revere's 96-page manual on sheet copper construction. The chances are you already have a copy, but if not, write for it now while there are still a few available. On questions of sheet copper construction you will find it gives the answers—complete.

On box gutter linings for built-in gutters, for example, there are six pages of details and text. Here, as elsewhere throughout the book, you get the latest, most authoritative facts on the best ways so far developed for designing and carrying out sheet copper construction. It is based on Revere's famous program of sheet copper research in which wholly new facts were discovered which reduce this type of construction to a matter of engineering design.

Checked and endorsed by leading architects and experienced sheet metal experts, the charts, details and information in this booklet are designed for practical men to use in solving their day-to-day problems.

Here is a simple, direct guide to longer lasting, more trouble-free sheet copper construction. It will always pay you to turn to this booklet first. Complimentary copies have been sent to all holders of Sweet's Architectural File, and, through Revere Distributors, to the majority of the sheet metal contractors throughout the country. For any further help you may wish, call on the Revere Technical Advisory Service, Architectural. Revere products are sold by Revere Distributors in all parts of the country.

**Entitled "Research Solves Problems of Stress Failures in Sheet Copper Construction."*

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# New Store Front ideas

## based on common sense, research and imagination

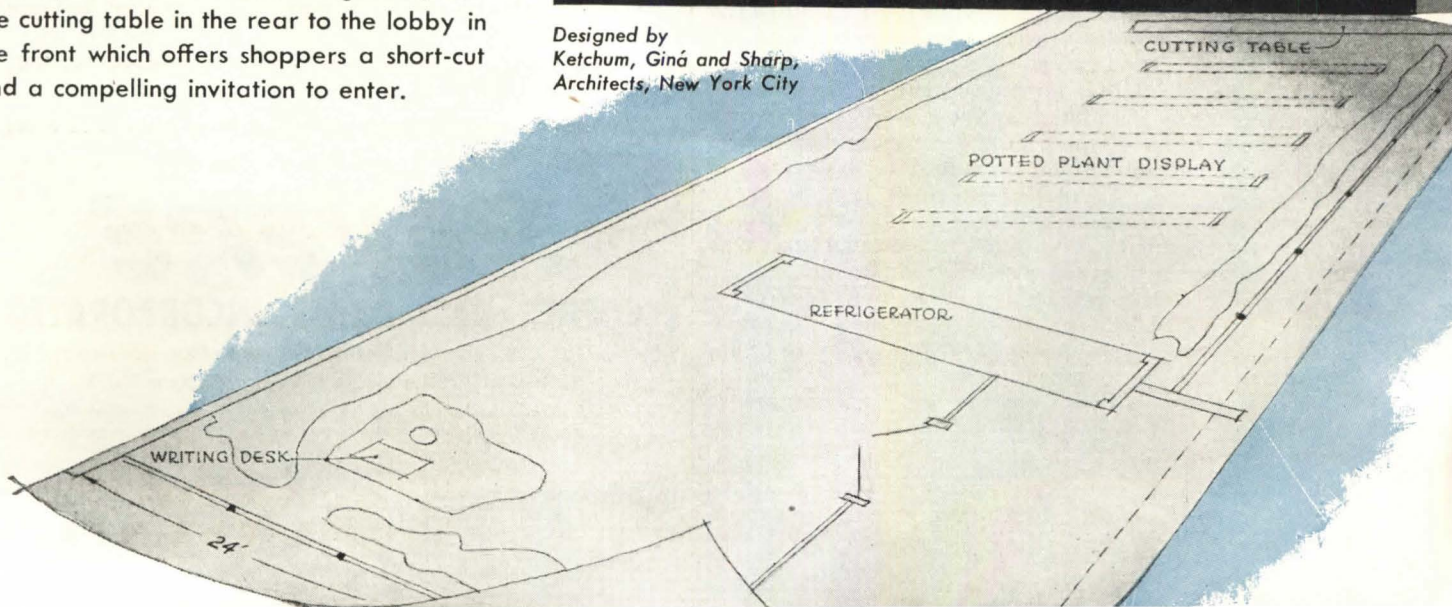

Today's new and realistic trend in store design is based on common sense, research, and imagination.

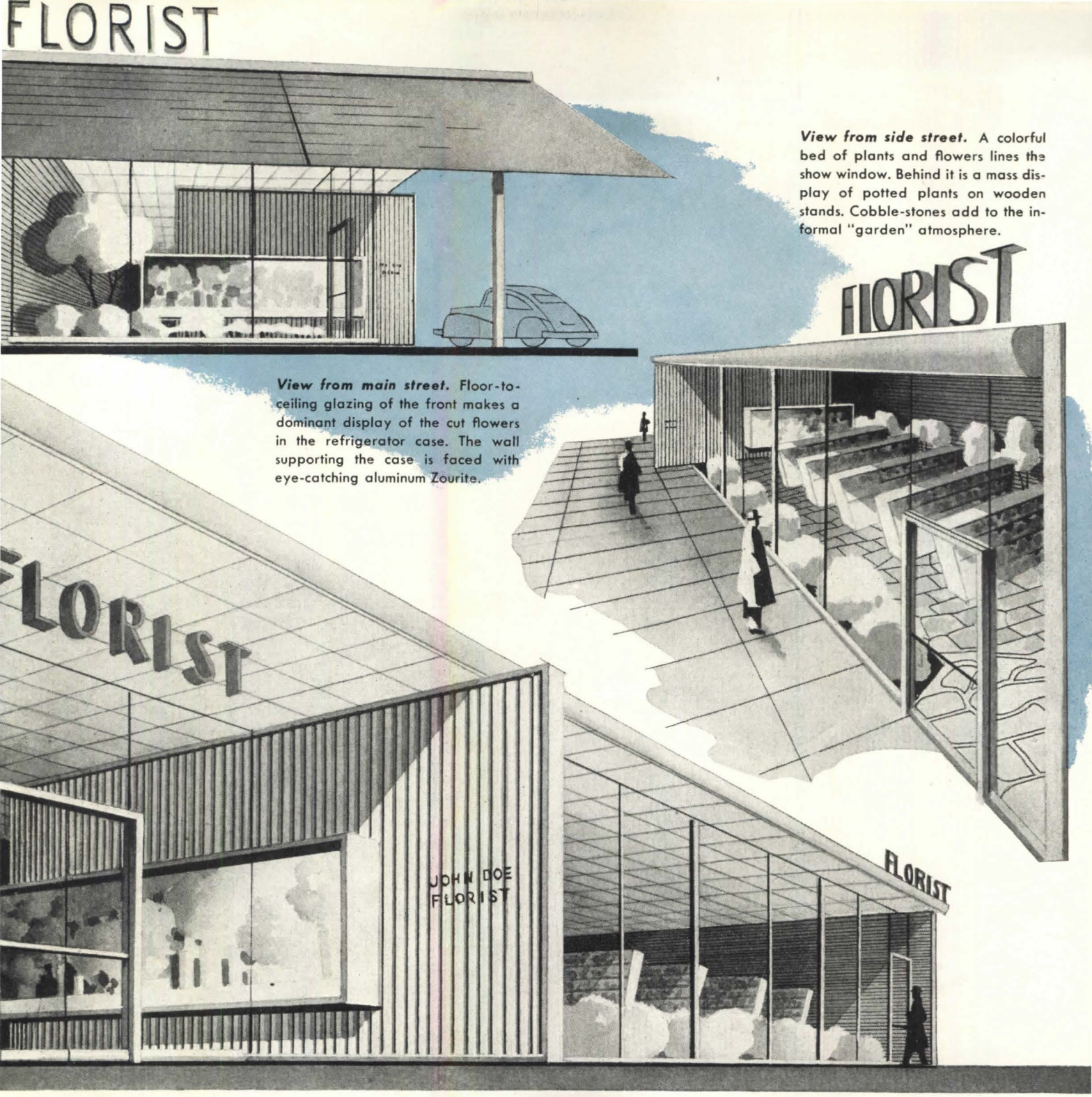
Outstanding architects agree that a modern store front has three basic functions—it must attract and stop customers, it must show them merchandise, and then it must pull them inside to buy.

These requirements are successfully fulfilled by the flower shop pictured here. As the plan below shows, the front has been designed to meet the merchandising demands of the store itself.

Every element has been thought out, from the cutting table in the rear to the lobby in the front which offers shoppers a short-cut and a compelling invitation to enter.

*Designed by*
*Ketchum, Giná and Sharp,*
*Architects, New York City*






***View from side street.*** A colorful bed of plants and flowers lines the show window. Behind it is a mass display of potted plants on wooden stands. Cobble-stones add to the informal "garden" atmosphere.

***View from main street.*** Floor-to-ceiling glazing of the front makes a dominant display of the cut flowers in the refrigerator case. The wall supporting the case is faced with eye-catching aluminum Zourite.

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To construct store fronts which are striking in appearance and in sales-building power, leading contemporary designers analyze a store's merchandising needs as well as its structural demands.

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**NEW features in construction.** With the K-47 Line you can use flush-glazing, full-vision doors, floor-to-ceiling lights of glass and many other elements of modern design.

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FLOORING

# PRACTICAL METHODS OF ESTIMATING RESILIENT FLOORING

Many architects find it helpful during early planning stages to get rough cost estimates from flooring contractors. In doing so, they have found that a general knowledge of the material estimating techniques used by flooring contractors is helpful in obtaining the desired information quickly.

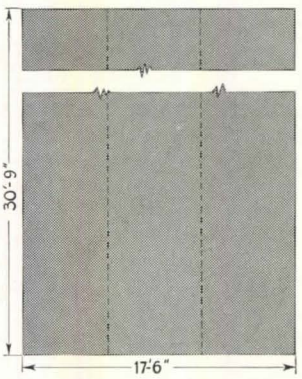
There are many acceptable ways to estimate flooring requirements. Of the various methods that have come to our attention over a period of many years, those outlined here offer the most practical combination of accuracy and simplicity.

## 1. PLAIN OR MARBELLE LINOLEUM

Since linoleum is sold by the square yard, estimates should be made in those terms. To estimate the number of square yards contained in a given area, first find the number of 6-foot-wide pieces required to cover the width of the area and the length of each piece. *Then multiply 2/3 of the average length in feet by the number of pieces required.* The result will be the total number of square yards needed for the floor area. In using this method, it is necessary to reduce all inch measurements to their decimal equivalent of a foot. To illustrate, a table of those decimal equivalents and a step-by-step solution of a typical estimating problem is given below.

*Decimal Equivalent Table*

| | | | |
|---|---|---|---|
| 1″—.08 | 4″—.33 | 7″—.58 | 10″— .83 |
| 2″—.17 | 5″—.41 | 8″—.67 | 11″— .92 |
| 3″—.25 | 6″—.50 | 9″—.75 | 12″—1.00 |




*Material Needed*

3 pieces 6′0″ x 30′9″

Figuring Square Yardage

2/3 x 30.75 x 3 pieces
equals 61.5 sq. yds.

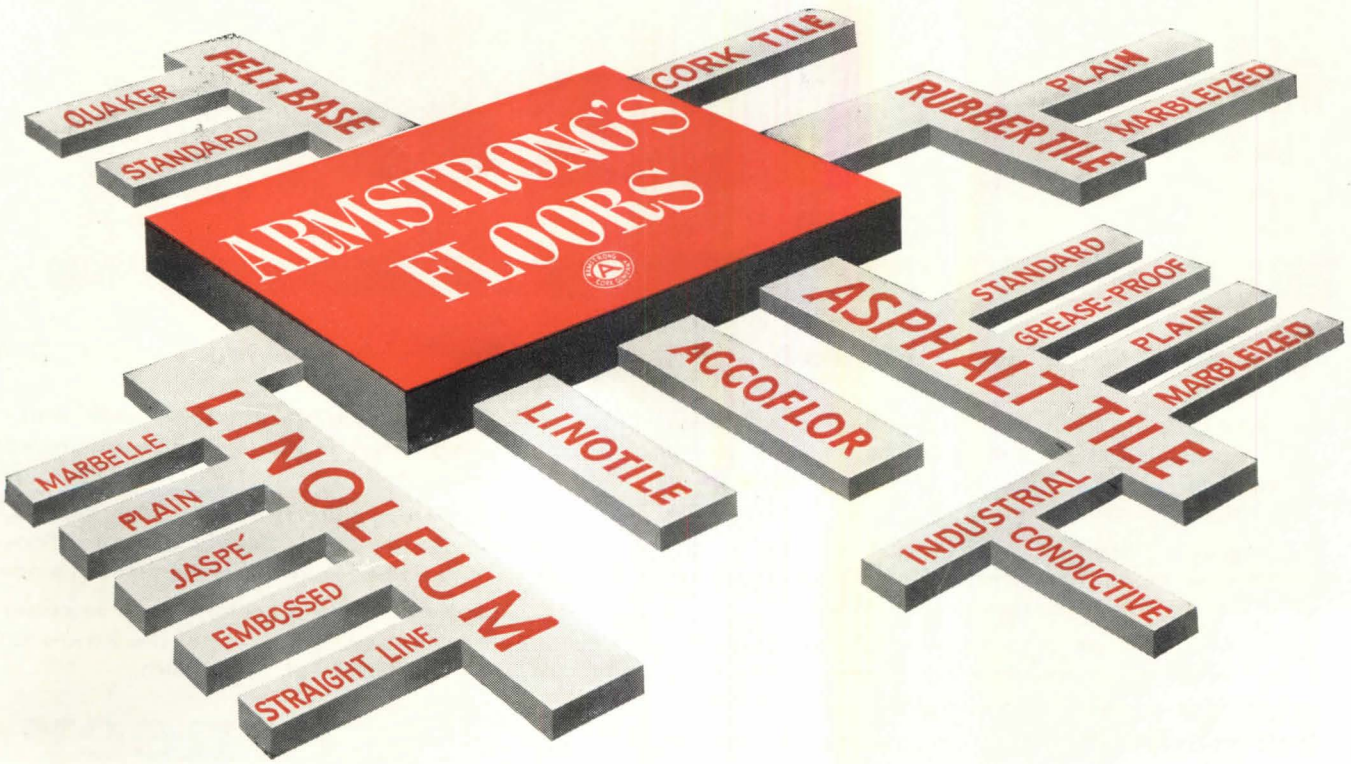
*Answer*

3 pieces 6′0″ x 30′9″
equals 61½ sq. yds.

Generally speaking, it is best to figure in six-foot widths as any extra material can be utilized in closets, offsets, and other small areas. Where a half strip or less is needed to cover an area, it is practical to estimate one six-foot width at half the room length.

## 2. PATTERN GOODS

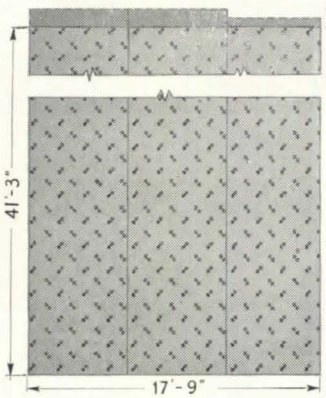
The procedures for estimating pattern goods and plain linoleum differ only in the methods for calculating the lengths of pieces needed. The difference arises because, in pattern goods, the designs must be matched. In Armstrong's Linoleum, pattern repeats vary from 6 to 54 inches; however, the 18-inch pattern repeat is most commonly used. Using the 18-inch design repeat as a guide, the table and diagram shown



below demonstrate a typical calculation of the length of the pieces needed. Once those figures are determined, the square yardage can be estimated according to the method used for plain linoleum.

*18 inch Pattern Repeat Table*

| | | | | |
|---|---|---|---|---|
| 1'6" | 10'6" | 19'6" | 28'6" | 37'6" |
| 3'0" | 12'0" | 21'0" | 30'0" | 39'0" |
| 4'6" | 13'6" | 22'6" | 31'6" | 40'6" |
| 6'0" | 15'0" | 24'0" | 33'0" | 42'0" |
| 7'6" | 16'6" | 25'6" | 34'6" | 43'6" |
| 9'0" | 18'0" | 27'0" | 36'0" | 45'0" |




Length of repeat (see table) over length of room equals 42 feet.

Length of room equals 41'3" plus 3" for waste.

*Material Needed*

2 pieces 6'0" x 42'
1 piece 6'0" x 41'6"
—or 83⅔ sq. yds.

To establish repeat, estimate first piece to the length of the repeat over the length of the room. All pieces, with the exception of the last, are estimated the same length. The last piece is exact length plus a 3-inch waste.

## 3. BORDER AREAS AND LINOSTRIPS

As a rule, borders and Linostrips are priced on a lineal foot basis. To estimate the lineal footage of border in any room, take the perimeter of the area plus a 3-inch waste for each side of the room. For each outside corner, add twice the given border width. The width of the border depends entirely on the size of the room, and it is the usual practice to add 3 inches waste onto the width of any border. This gives extra material for variation, cutting, etc.

To determine the total length of Linostrip needed for a job, subtract eight times the given border width from the perimeter of the room. Linostrips come in standard ½ inch and 1 inch widths, and costs can be quickly figured on a basis of lineal feet needed.

The diagram shown below illustrates a typical linoleum border and Linostrip estimate.

*Linostrips*

13'9"
4'0"
10'0"
8'9"
23'9"
12'9"
73' equals perimeter
less 48" (8 x 6")
equals
69'0" plus 12" waste

*Answer*

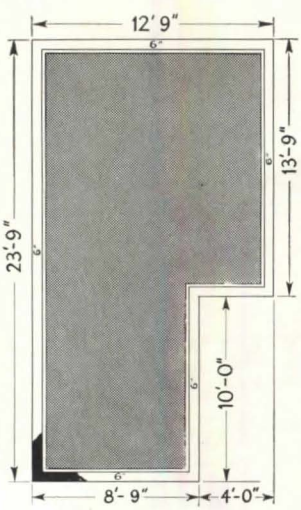
70 lineal feet Linostrip

*6" Border*

73'0" equals perimeter
plus 18" (6 x 3")—3" for each side of room
plus 12" (6" plus 6")—1 outside corner
equals 75'6"—plus 6" waste

*Answer*

76 lineal feet 9" border (6" wide border plus 3" waste)



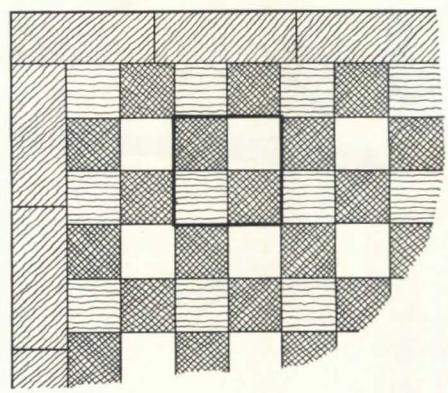

## 4. RESILIENT TILE

Resilient tile flooring is priced by the square foot. Some of these materials, such as Armstrong's Linotile flooring, have one price regardless of color. This makes estimating this type of tile flooring relatively easy. It is only necessary to add a waste percentage to the total number of square feet of floor area.

In figuring waste, a greater waste percentage than normal is allowed for small rooms. Such rooms contain about the same number of doors, closets, and offsets as larger rooms of the same architectural design. However, if the room contains more doorways, alcoves, or offsets than average, a greater waste percentage should be allowed to compensate for the additional irregularities. The following table will serve as a guide in estimating the amount of waste for rooms of various sizes:

| | |
|---|---|
| Up to 50 sq. ft. | 14% |
| 50 to 100 sq. ft. | 10% |
| 100 to 200 sq. ft. | 7% to 9% |
| 200 to 300 sq. ft. | 6% to 7% |
| 300 to 1,000 sq. ft. | 4% to 6% |
| 1,000 to 5,000 sq. ft. | 4% |
| 5,000 to 10,000 sq. ft. | 3% to 4% |
| 10,000 and up | 1½% to 3% |

Prices of some resilient tile floorings vary depending upon color as well as quantity. These present a more difficult estimating problem. Asphalt tile, for instance, is priced in A, B, C, and D color groups, and very often the design to be figured will consist of colors in two or more price groups. Estimating the quantities needed in each color group is illustrated and explained below.



The repeat unit of this three-color field design shows that 50% of the asphalt tile is in a B color, 25% in a C color, and 25% in a D color. The border is in A color. Thus 50% of the entire field area will require B color, 25% in C color, and 25% in D color. The amount of border required depends upon its width and its length (the perimeter of the room). Border is generally supplied in 18 x 24 inch size.

## 5. FLASH TYPE AND TOP-SET COVE BASE

Linoleum to be used for flash type cove base is estimated as though it were a border, except the height of the base is added to the width of the border. Only two heights are recommended—4½ inches and 6 inches. For example, if the border is 8 inches wide and the height of the base is 4½ inches, the total width of the material estimated including waste, would be 15½ inches. A three-inch waste is added just as with a border.

Asphalt top-set cove base is manufactured and sold in three-foot lengths. To find the number of lengths needed, divide the perimeter footage by three and add one three-foot length to allow for waste.

★ ★ ★

If you desire information on this or any other flooring problem, call any Armstrong district office or write direct to Armstrong Cork Company, 8904 State Street, Lancaster, Pennsylvania.

# For Radiant Heating, long lengths of Copper Tube* are easily handled

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Use of these long coils—combined with copper tube's ease of bending—cuts down to a minimum the number of joints necessary. And where joints *are* needed, they are quickly made with solder-type fittings.

The demand for Chase Copper Tube—result of its many advantages—is so great that we cannot meet it at all times. Information on radiant heating, however, is available for your use now to aid in your future planning.

For copies of our radiant heating literature, write on company letterhead, to Dept. PA47.

### *7 Reasons*
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2. *LIGHT IN WEIGHT*
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4. *SMALL DIAMETERS*
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# *A Tribute to* AQUELLA from a prominent California Architect

Elmer Grey Architect

1372 SOUTH EL MOLINO AVENUE
PASADENA 5, CALIF

November 15, '46

Prima Products, Inc.
230 Fifth Avenue,
New York City.

Gentlemen:

I have been a practicing architect in Pasadena for something like forty years and have thought that you might care to have from me an endorsement of Aquella. I was the architect of the Pasadena Community Playhouse, the Huntington Art Gallery at San Marino, California, and some of the buildings of the California Institute of Technology.

My own home in Pasadena was built some 35 years ago. When the forms for the concrete of its basement walls were removed a number of fissures were disclosed which, during heavy rain storms resulted in the basement being flooded. This has happened virtually every year now since the house was built.

I knew that if I could get at the outside of the basement walls it would be a simple matter to apply waterproofing and stop the leaks. But that would be difficult and expensive. This year I thought I would experiment with Aquella on the inside of the walls. We have just had the worst rainstorm of the season. The rain came down in torrents for several days. But our application of Aquella to the inside of the walls stopped the leaks. Our basement is as dry as a bone. I am therefore glad to recommend Aquella as an unusually effective waterproofing compound.

Yours truly,

Elmer Grey

The principle on which Aquella works and how it is being used by architects, engineers and contractors to control water seepage on all porous masonry surfaces is told in our new brochure "Aquella and Concrete Masonry Construction." May we send you a copy?

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# REVIEWS

## FROM THE TECHNICAL PRESS

JOHN RANNELLS

### SCHOOL VENTILATION

**A 1947 View of Ventilation Requirements in Schools.** *H. H. Linn, Professor of Education, Teachers College, Columbia University.* The American School Board Journal, *540 N. Milwaukee St., Milwaukee 1, Wis. Jan. 1947.*

The author makes a plea for school boards and architects to consider very carefully before spending money for heavy mechanical ventilating equipment for classrooms. In fact, direct heating with window air supply and gravity exhaust is now allowed by the N. Y. State Commissioner of Education's *Regulations on Heating.* This is unquestionably the cheapest in first cost but it cannot fulfill both heating and ventilating requirements under adverse weather conditions. Other allowable systems are: 1, direct heating with window air supply and duct exhaust with central fans; 2, direct heating with forced unit ventilator air supply and corridor gravity exhaust; 3, forced warm air with central or zone fans; 4, panel heating with window air supply and duct exhaust by gravity or central fans.

**School Ventilation Problems As Seen by a Manufacturer.** *Albert J. Nesbitt. Address delivered at the Convention of the New York State Association of Architects, Buffalo, N. Y. J. J. Nesbitt, Inc., Holmsburg, Philadelphia, Pa. Reprint, 9 pp., 6" x 9". Oct. 17, 1946.*

The author (one of the leading manufacturers of unit ventilators) contends that the performance standards of the recent New York State Education Department's regulations on heating and ventilating cannot be met by direct heating with window air supply and gravity exhaust. He is supported in his view by a number of leading manufacturers of heating, ventilating, and air conditioning equipment and a preponderance of the engineers in this field.

**Unit Ventilation—Its History and Progress.** *G. E. Otis.* The American School Board Journal. *Jan. 1947.*

Unit ventilators came into general use in classrooms about 1930 as a result of a shift in basic ventilating theory. The previous basis was 30 cu ft of air per minute per pupil; the new basis introduces only sufficient outdoor air to hold the room temperature at the proper level and prevent excessive humidity and odor (7½ to 10 cfm in cold weather, 20 cfm in mild weather). Unit ventilators can fulfill the requirements of the modern "thermal" theory with complete flexibility as each room is controled as a unit.

### PAMPHLETS, MANUALS

**Automatic Control of Radiant Panel Heating—A Manual of Theory and Application.** *Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn., 1947. 39 pp., 8½" x 11", charts, diagrams. $1.00*

In developing a theory of control of panel heating, a clear understandable background is developed by comparing panel and convection heating in some detail. The function of a heating system is described in terms of the *"comfort equation"* which requires that air temperature at breathing level and average surface temperature of enclosure should together average 70°. Thus convection heating can handle its load by increasing air temperature to offset "cold wall," while panel heating handles its load mainly by increasing the surface temperature of the enclosure and comfort is attained under load (low outside temperature) by *lowering* the air temperature. This lowered air temperature under load is the crux of the control problem in panel heating.

A rational method of design is developed as a basis for the simplified graphical control procedure which forms the latter portion of the book. It is shown that relative thermal inertia of structure vs. panel will determine what combination of outside and inside controls are necessary. It is stated, for example, that satisfactory control of a concrete panel in a frame house may be practically impossible, especially if there is inadequate insulation below the slab. In view of the widespread use of such designs this statement should provoke some warm rebuttals.

The design portions of the book are largely credited to Prof. F. W. Hutchinson of Purdue University.

**Sarcotherm Manual** *(controls and hookups for radiant and hot water heating). Sarcotherm Controls, Inc., 280 Madison Ave., New York 16, N. Y. Paper bound, offset, 35 pp., 8½x11, illus. 1946. Free*

Thorough explanation of the principles underlying design of control systems for hot water and radiant heating, with functions of controls for each purpose, and descriptions of the manufacturer's related products.

### FROM OTHER PUBLICATIONS

**Heat Conservation in Small Houses.** *A. F. Dufton.* Journal, Royal Institute of British Architects, *66 Portland Place, London W. 1, England. Jan. 13, 1947.*

Studies of fuel consumption were carried out on six houses, identical except for insulation, built at the Building Research Station. The same temperatures were maintained in all houses throughout a heating season. All were heated by ceiling panels in living rooms plus a radiator for incoming air and (in the case of two houses) "electric fires for topping up" in the living rooms (equivalent to built-in spot heaters). The "topping up" showed no economy in operation and it was felt that full panel warming was preferable.

The results of the run proved that an expenditure of £60 initial cost for insulation was justified to decrease thermal transmittance from (for example): .3 Btu per sq ft per hr per deg F in the walls of a house without insulation to .2 for the insulated house. The recommendations of the committee on Heating and Ventilating (Postwar Building Studies No. 12) are as follows:

| | |
|---|---|
| **External Walls:** | |
| A. For any part of the house | 0.20 Btu/sq ft/hr/deg F |
| B. Walls of warmed living room | 0.15 " " " " " |
| **Ground Floor** | 0.15 " " " " " |
| **Roof and Top Floor Ceiling** | 0.20 " " " " " |

Lower values are preferred where they can be obtained economically.

**Heat for the Heat Pump. Heat Sources for the Heat Pump.** *Emory N. Kemler.* Heating, Piping and Air Conditioning, *6 N. Michigan Ave., Chicago 2, Ill. Dec. 1946, Jan. 1947.*

The use of air, underground water, and the earth itself are discussed in these articles. The second article has a map of ground water temperatures throughout the United States, some data on seasonal variation of soil temperatures and a table on thermal conductivities of soils. A bibliography lists the rather meager data available. A program is outlined for studies leading to rational design using soil or water as heat sources for heat pump installations.

## BOOKS

### INSIDE YOUR HOME

*Dan Cooper. Farrar, Straus and Company, Inc., 580 Fifth Ave., New York 19, N. Y., 1946. 127 pp., illus. $3.95*

While not written for architects, this book offers them interesting information and encouragement. In it decorator Dan Cooper attempts to demonstrate to average readers of moderate means some of the same truths that architects and their associations have been stressing since the start of the modern design movement: employment of a qualified designer (not a "charm-gatherer") is a wise investment; true beauty can

(Continued on page 96)

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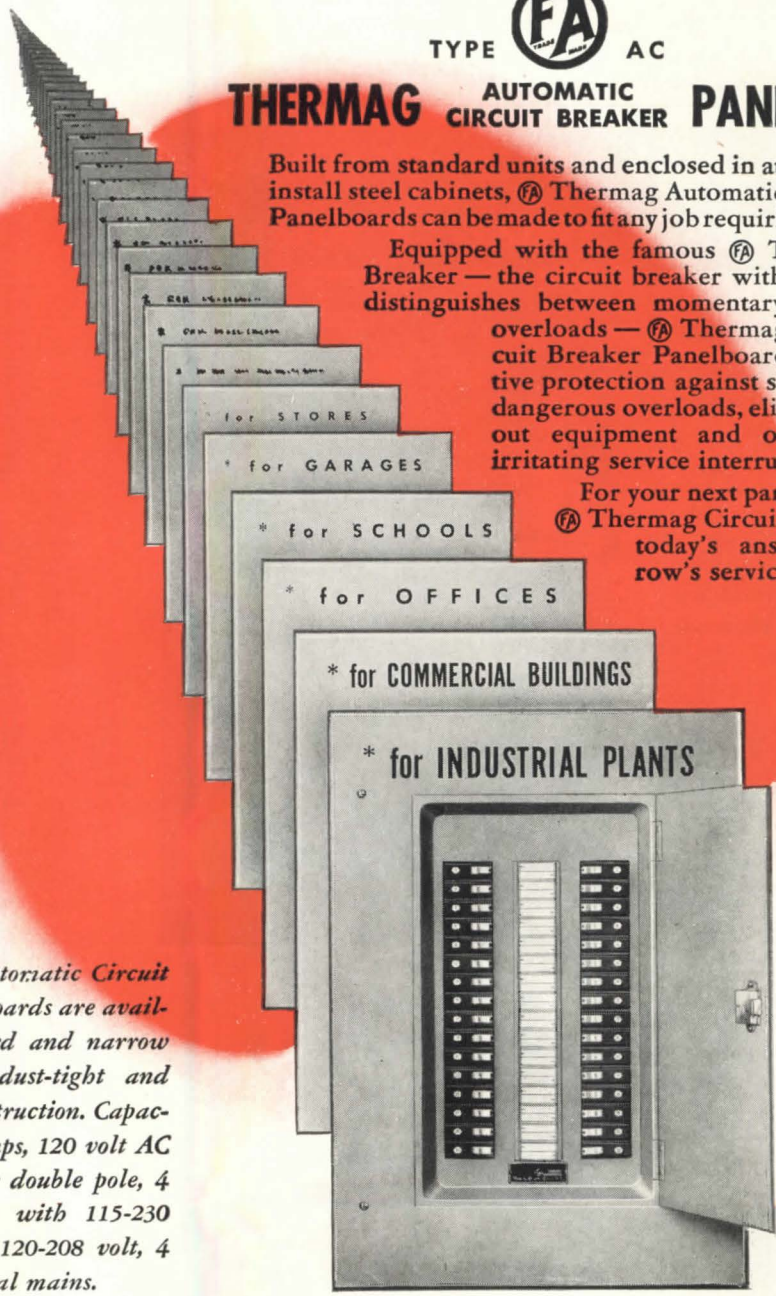


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# REVIEWS

(Continued from page 94)

be obtained within the limits of the average budget in everyday home surroundings. The main requirement is that the home planner should think for himself, ignoring tradition, trend, fads, and fashions.

The author's theme is that this latter course of action will achieve a living environment cheerful, clean, fresh, easily maintained, and especially suited to the members of the particular family that will live in it. The home will not then be merely a "rehash of former eras." Meaningless and unsuitable objects such as "the Regency console which looks so wonderful in your neighbor's small apartment" and the department store suites of furniture will not be given valuable house room. This course will also lead to a proper evaluation of the simplicity, utility, practicality, and beauty of modern design. Consideration is given in this book to such factors as color, natural and artificial lighting, special features for children in the home. The planning for beauty of the cottage home as an entity and of the entire community of which it is a part are treated in some detail. Also discussed are the planning and decoration of hotels, the faults of design in the products marketed by the home-equipment manufacturers, and the contrastingly honest, attractive products of the small craftsmen.

In sum, the work is a readable statement of sound theories which are not new. No pretense is made of offering complete solutions for all decoration problems. The text could have been profitably tightened and shortened and made more specific. More photographic illustrations better integrated with the copy would have been helpful to the reader.

LAWRENCE E. MAWN

## RADIANT HEATING

*T. Napier Adlam. The Industrial Press, 148 Lafayette St., New York 13, N. Y., 1947. 472 pp., illus., 6¼" x 9¼", working data, charts, tables, glossary, index. $6.00*

Radiant heating has probably aroused more interest recently than any other engineering contribution to architecture; this is true of both the general public and the architectural profession. The reason is threefold: first, the possibility of increased comfort; second, the freedom of architectural design which it permits; third, the "mystery" which envelopes its design and installation. The system, of course, is not new, although the attention it has received in the last few years is unprecedented. There are violent pro's and equally vociferous anti's; but until experimentation and time had proved its soundness and economy, we could not expect general acceptance of the low-temperature radiant panel; and since the radiant heating concept seems to challenge some accepted heating truisms, we need to return to fundamentals of the science before we can really evaluate this most recent method.

Therefore, part of the text of this volume is devoted to the interrelationship of thermodynamics and human comfort. As a textbook, well divided by subheadings, it thus becomes unique; in it a student, for instance, studies the engineering of building heating only after thorough grounding in such principles. Then various types of installations—ceiling, wall, floor—are discussed and analyzed to aid in selecting panel location and using structure and surfacing materials. The numerous illustrations include graphs, tables, installation photographs, and typical panel designs.

The fundamentals are fully explained. Body heat loss by radiation is shown to be high in comparison to loss by convection, respiration, and conduction; the importance of these factors as they relate to bodily comfort is demonstrated. Analysis on this basis, derived from experimentation, makes it difficult to set up heating requirement formulas.

(Continued on page 98)

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# REVIEWS

(Continued from page 96)

Design calculations for radiant heating become more lengthy (*not* more complex); they include more factors than do calculations for other types of heating—texture and finish of interior surfaces as they affect body Btu loss under varying conditions of outside and inside temperature; relative humidity; mean radiant temperature. And because radiant heating formulas take such factors into account, the heating system developed by their use can provide greater comfort in specific cases than other formulas and methods. It is true that many factors enter into heating requirements which cannot at present be analyzed or precisely calculated; but in radiant heating formulas we have taken a long step forward.

The author's association with the heating specialty field (in developing radiant heating controls) is indicated in detailed analysis of air venting, flow adjustment, and controls. Equally practical is the presentation of methods of radiant cooling and snow melting, accompanied by design graphs and installation details.

Much of the information in the book has hitherto been widely disseminated. Here, in one volume, are heat emission graphs; tables of heat transmission coefficients, conductivities, and temperatures; pipe selection, sizing, and spacing data; coil dimensioning charts covering most of the conceivable installation conditions. Their convenient reference form will be welcomed.

PHILIP F. HALLOCK

## THE HOME FREEZER HANDBOOK

*Gerald J. Stout and Philip H. Hallock. D. Van Nostrand Co., Inc., 250 Fourth Ave., New York, N. Y., 1947. 337 pp., illus., 5½" x 8½", diagrams, index. $3.95*

This book is concerned chiefly with large freezers for suburban or farm houses. The authors consider that freezer compartments now available in domestic refrigerators are sufficient for city use where packaged frozen foods are readily obtainable; for country use the minimum size should be 40 or 50 cu ft capacity.

Complete descriptions are given for constructing home-built freezers costing much less than the commercially built units on the market. Operating costs are also much less. It is recognized, however, that long storage in a freezer does add considerably to costs of food and much of the book is concerned with economical planning of the family food supply.

Most interesting to architects is the authors' suggestion to include a cold storage room in house plans and build the freezer in this cold storage room, combining the advantages of the old fashioned "root cellar" and the modern freezer.

JOHN RANNELS

## AIRPORTS: DESIGN, CONSTRUCTION, AND MANAGEMENT

*Horace K. Glidden, Hervey F. Law, and John E. Cowles. McGraw-Hill Book Co., 330 W. 42 St., New York 18, N. Y., 1946. 662 pp., illus., 142 figures, 55 tables, 6" x 9", cloth, introduction, appendices, index. $7.00*

This is a book by three Civil Aeronautics Administration employees expounding Civil Aeronautic Administration methods of airport design, construction, and management, as well as the part government plays in the development of airports. It is, to a degree, an index to past government thinking and standards in the field of airport development. The intention of the authors was to acquaint the reader with the important factors that enter into problems of airport design, construction, and management. In addition, they attempted to provide procedures and guides for solving these problems.

In providing procedures and guides, the

(Continued on page 100)

# REVIEWS

(Continued from page 98)

authors have collected a great deal of technical data and often go into minute design detail. Since the chapters which cover various aspects of airport development are not equal in importance or treated alike in respect to detail, the book lacks balance. Of the 662 pages in this book, 292 pages are in text, 284 pages are appendices and 114 pages are illustrations, tables, or graphs. There are 31 appendices, of which 24 are reprints of the Department of Commerce Civil Aeronautics Administration specifications.

The text is devoid of imagination and creative thinking and in some instances the material is misleading and confusingly presented. This is especially true of the chapter on "Airport Buildings," wherein the lists of facilities for airline operators at major terminal buildings infers situations and arrangements which are directly opposed to airline policy, practices, and standards. The material on airline maintenance hangar facilities is confusingly arranged and shows a poor grasp of the functional organization of such facilities. Next to the chapter on "Airport Buildings," the chapter on "Management and Operation" is the most disappointing in the book; although "Management" is emphasized in the title of the book, only 22 pages out of the 662 are devoted to this topic.

F. R. MEISCH

## NAMES ON THE LAND

*A Historical Account of Place Naming in the United States. George R. Stewart. Random House, Inc., 20 E. 57 St., New York, N. Y., 1946. 418 pp. $3.00*

Although George R. Stewart omitted the familiar and dubious tale of how Staten Island, New York, was named (said one Dutchman to another: Iss dat en island?), he produced an amusing and fascinating book out of America's picturesque place names. Some of his stories are fantastic, some are frankly questionable, but all seem more valid than the Staten Island yarn.

One of the best anecdotes in the book concerns the naming of Oregon. In 1715 a careless engraver, copying a French map of the unexplored Midwest which spelled the Wisconsin River, Ouisconsink, wrote instead Ouariconsint and hyphenated the word before *sint*. There thus appeared an Ouaricon River, which Major Robert Rogers in 1765 offered to discover for Britain's king. In his petition the spelling was variously Ouragon, Ourgan, and Ourigan. (Grammar-school educations were at a premium apparently.) Another explorer got to the river, which turned out to be on the

(Continued on page 102)

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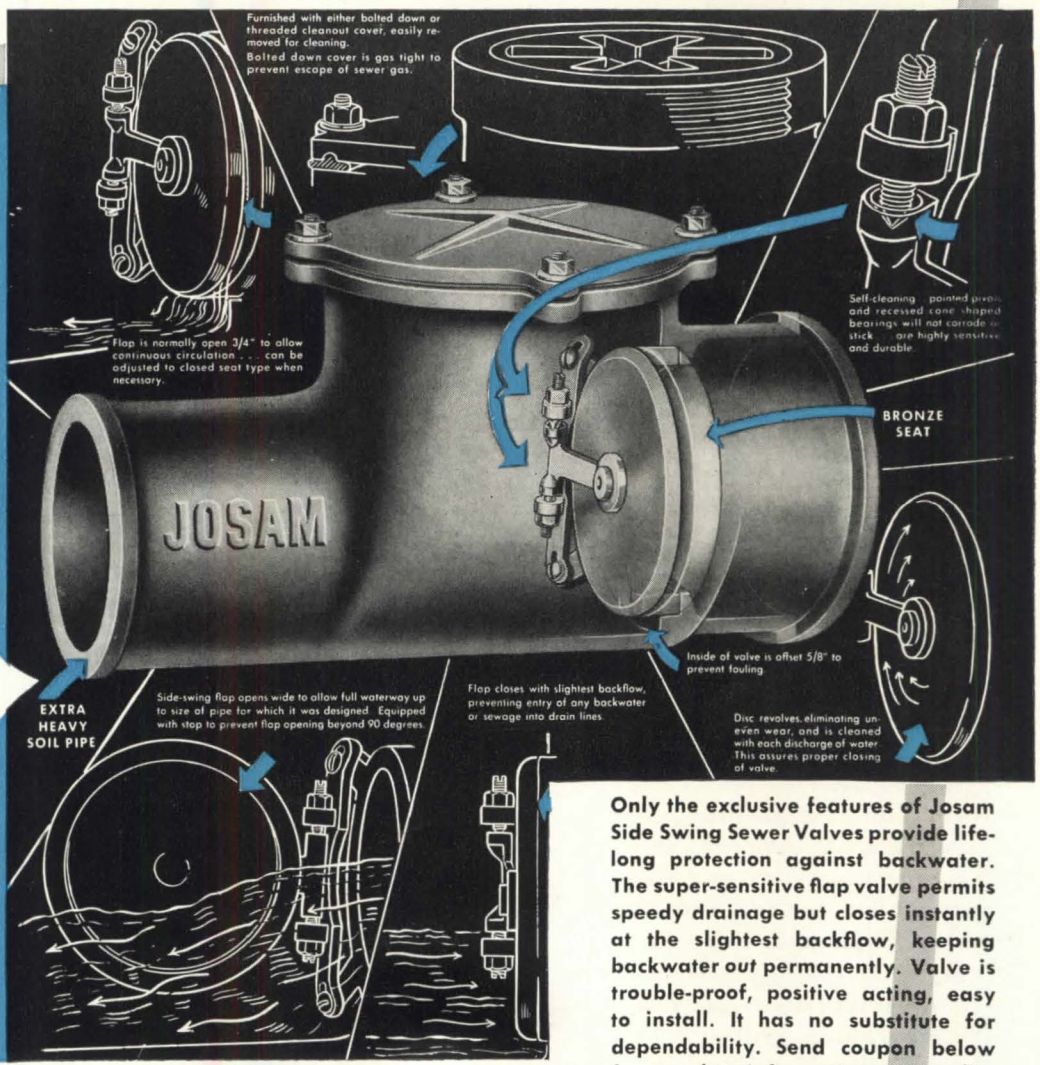


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# REVIEWS

(Continued from page 100)

Pacific coast, when Rogers was refused the funds, and this discoverer's report established the final spelling—Oregon. That is not the end of the tale. Stewart admits there have been claims of derivation from oregano (Spanish for marjoram), orejon (big ear), and a half dozen other words, some Indian slang. There is the final claim which credits a wandering gentleman named O'Regan.

Etymologists will find a lot of fascinating anecdotes in this book; many names were created by folk derivation from Indian names: Pigsty from Piscot River through Piggsgutt. Then there was Oxyboxy from Oxopaugsaug and Mosquito Hawk from Moskitu-auke, which meant grasslands. The ghoulish Spanish name, "River of the Lost Souls in Purgatory," (how that was named is one of Stewart's milder stories) now is known by three names: Las Animas (the souls), Purgatoire (French), and Picketwire (cowboy French).

Most American place names came easily —from kings, patrons, heroes, local characteristics, (Saddle Mountain, Nipple Butte, or Chicago, from the Indian name for its onion fields) memories of the immigrants' homelands and mythology. The weakest names—in the sense of sentimental appeal — have been among the most prominent. There is New York with all the other "new" cities before and after it; the jawbreaker, District of Columbia, and poorest of all, The United States of America. There was little imaginative thought in the creation of these names and less consideration of what would be the appropriate appellation for their residents.

WILLIAM SMULL

## HOUSING REPORT CARD

*An Appraisal Method for Measuring the Quality of Housing: A Yardstick for Health Officers, Housing Officials and Planners. Part I, Nature and Uses of the Method. Committee on the Hygiene of Housing, American Public Health Association, 1790 Broadway, New York 19, N. Y., 1945. 71 pp., illus.*

An early public housing anecdote describes the indignation of a farm county legislator on viewing a low-cost urban project. "Why, back home," he sputtered at the minimum apartments, "we keep our toilets outside the house and we don't fancy gadgets like bathtubs. These poor folks are living in luxury. Darn better than I do, too." The rural politico was perhaps right; but now the American Public Health Association has an appraisal method which can evaluate just how much and in what aspects one dwelling is better than another. The general confusion encountered in determining housing needs

(Continued on page 104)

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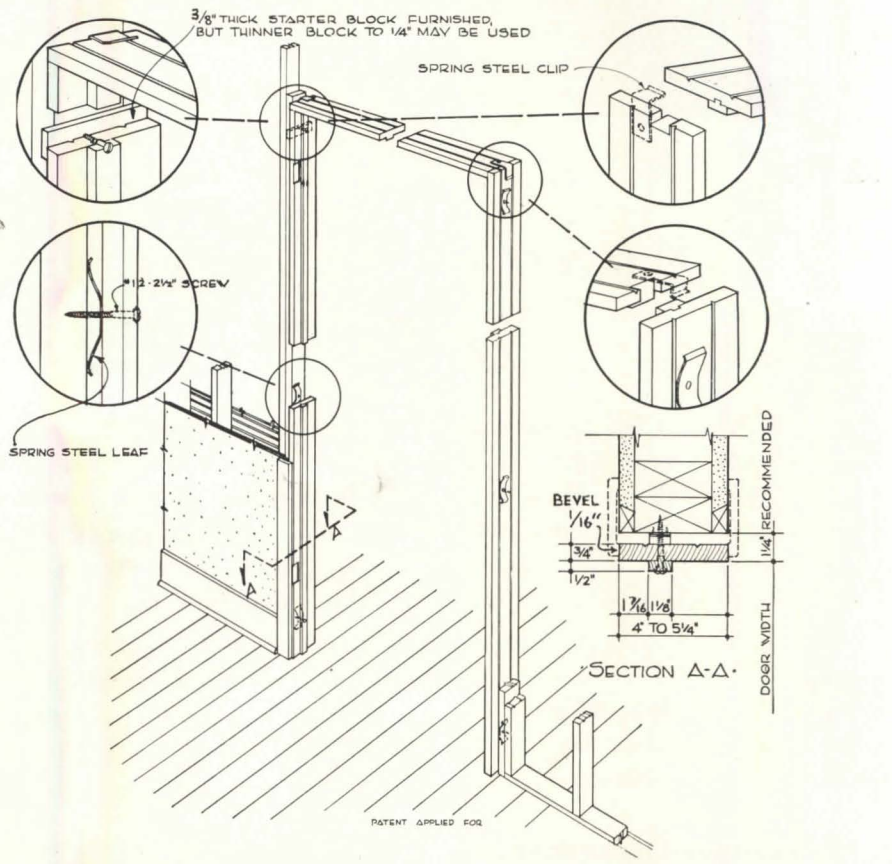


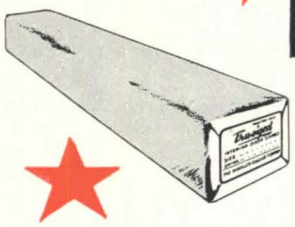

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# REVIEWS

(Continued from page 102)

and in reporting the quality of dwelling units should clear away, as the Association's yardstick is put into practice.

The need for valid standards in housing has become increasingly acute as we approach a full-fledged program of urban and rural rehabilitation. Many city dwellings might be rated, subjectively, either poor housing because of the tenants' sloppiness or good housing because a certain neatness obscures basic health menaces and a poor neighborhood. In a like manner, much rural housing is rated too highly because the viewer's sentimental attachment to the "simple" life affects his judgment. These evaluations would be of little value in program planning for housing; a completely objective and accurate system is necessary.

In a little booklet, the Subcommittee on the Appraisal of Residential Areas, of the Public Health Association's Committee on the Hygiene of Housing, describes its inspection method and tabulation system. A series of checklists is offered, recognizing not only intrinsic characteristics of the dwelling unit but also the great importance which must be assigned to neighborhood factors.

Modernists will be particularly encouraged by the approach of the public health experts to housing design. The criteria followed in setting numerical values on the inspectors' findings are probably based upon the *Basic Principles of Healthful Housing*, which the Committee issued in 1939. The housing design this earlier publication describes is clearly good contemporary architecture. Much of the information in this pamphlet can serve as excellent design data for all residential purposes. The health experts' approach to the esthetic and psychological needs of the individual are in terms familiar to abstract artists: texture, mass, spatial relationships, color.

The Committee can be permitted a little crowing over the results obtained in the test survey in New Haven, Connecticut. For their yardstick turned out to be sensitive enough to classify a low-cost housing project in the midst of a slum area as good housing, with a few demerits for the stingy room sizes. Nothing escapes under this objective system; a standard claim of housers that Negroes pay more for less housing was found to be generally true, as another incidental result of the New Haven test.

Refinement and locality adjustment will be necessary before the checklists and indices of the Public Health group are accepted widely; but progressive housing groups should champion such an objective too. There are needed, now, companion yardsticks for commercial and industrial buildings and neighborhoods.

WILLIAM SMULL

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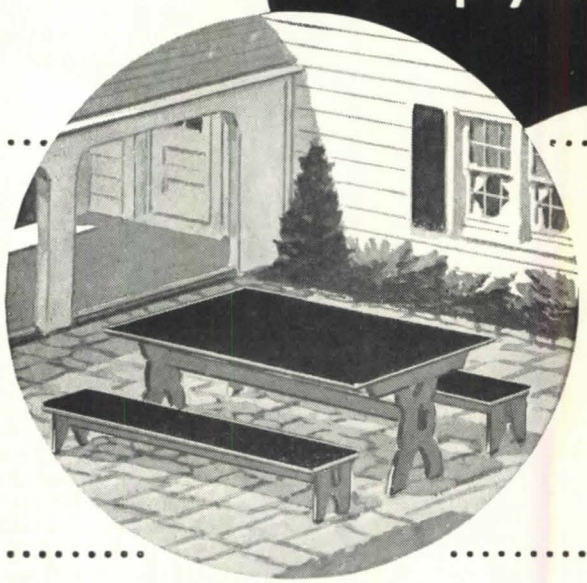

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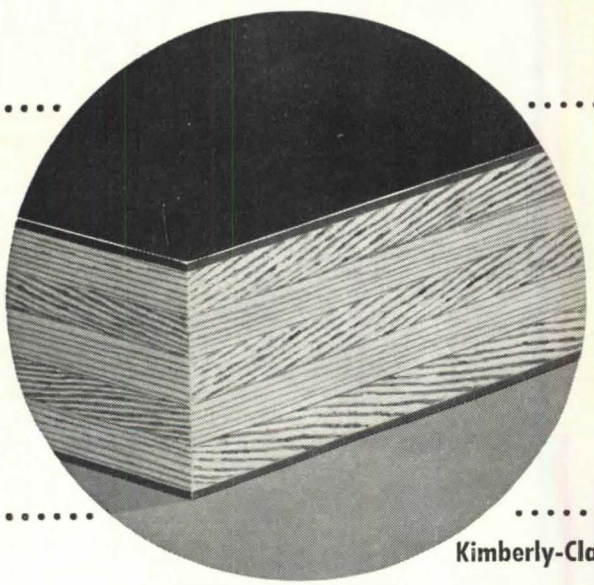

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(Continued on page 108)


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(Continued from page 106)

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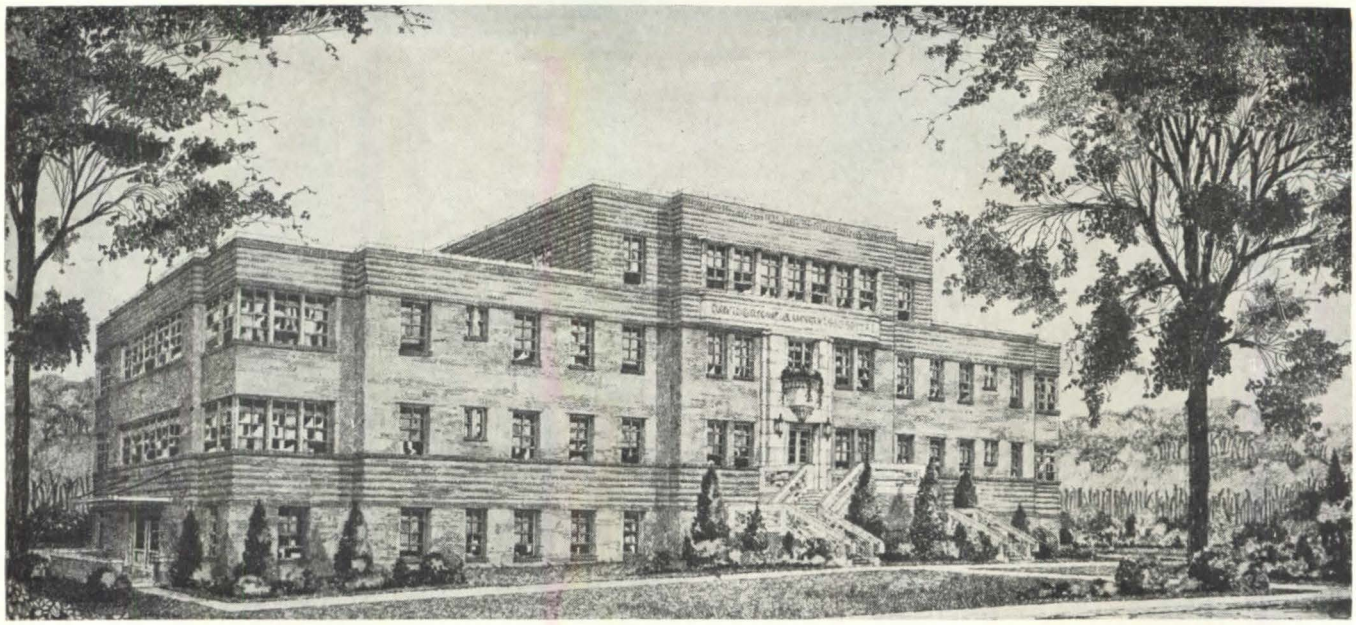
DRAFTING WORK WANTED—structural plans for architects and engineers. Shop plans for steel fabricators; bending details and bar schedules for concrete work; mechanical designs, details, and developments. By competent, registered engineers. Georgia Detailers Association, P. O. Box 191, East Point, Ga.

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 1, PROGRESSIVE ARCHITECTURE.

ARCHITECT—35, in large midwest metropolitan area, desires association or partnership in small thriving community. Locality not specific — interested only in aggressive working and comfortable living conditions. Background consists of design and supervision in large and small offices on widely diversified projects. Veteran. Box 2, PROGRESSIVE ARCHITECTURE.

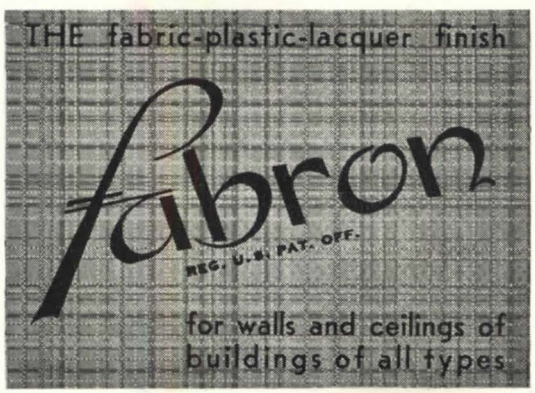
(Continued on page 110)



THE NEW LEXINGTON MEMORIAL HOSPITAL
now under construction at Lexington, N. C.
From the sketch by Charles C. Hartmann, Architect.

# PLAN TODAY - TO SAVE TOMORROW

In specifying FABRON for the finish of walls and ceilings of the new Lexington Memorial Hospital, the architect and the building committee have recognized the practical and economic advantages of installing this fabric-plastic-lacquer covering **at the time the building is constructed.**




For FABRON in one simple operation completes the structure and permanently decorates the wall. It seals and strengthens plaster or other sub-surface materials, prevents plaster cracks, conceals irregularities, withstands ordinary impacts, acting as a general protection to walls and ceilings. Due to its permanency, FABRON eliminates future costly wall repairs, replacements and periodic redecorations by **forestalling the causes** of such expensive occurences.

Furthermore, FABRON can be washed as often as necessary, or disinfected if desired, to restore its original freshness for its colors are fast and light-resistant.

The patterns used in the Lexington Memorial Hospital were selected from a number which are especially designed for hospitals to introduce decorative effects of distinct therapeutic value. Other designs and colors specifically made for hotels, schools, theatres, restaurants, etc. are available.

To secure these proven advantages for any new building project you are now planning, make sure that FABRON is **included in your original specifications.**

**FREDERIC BLANK & COMPANY, INC.**
***Established 1913***
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In reference to type of building checked please send samples and more information about Fabron.

Hospitals ☐ Hotels ☐ Schools ☐ Theatres ☐ Restaurant ☐ Offices ☐ Apartment ☐ Residences

Name.....

Address.....

City.....Zone.....State.....

# JOBS AND MEN

(Continued from page 108)

ARCHITECT — wishes association with busy architect. Experienced with all types of buildings including hospitals, industrial, commercial and public buildings, theaters, school and college buildings, housing, apartments, and hotels. Good designer and delineator. Registered in four states. Box 3, PROGRESSIVE ARCHITECTURE.

REGISTERED ARCHITECT—very wide experience, excellent designer, seeks association with established architect. Drawing account and share of profits desired. Box 4, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DRAFTSMAN — recent graduate, 20, New York metropolitan area, general (housing, commercial, etc.), salary open. Wants position with chance to get good general experience, large or small firm. Box 5, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DESIGNER — project leader, 20 years' experience, large scale housing, hospitals, schools, and industrial projects. Desires association with progressive, growing, western or Pacific coast office. At present in charge reinforced concrete housing project for important architectural office, salary $6500. University graduate, member A.I.A., married, no children. Box 6, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DRAFTING WORK WANTED—part time, free-lance. Thoroughly experienced stores, interiors, merchandising establishments, general alterations, housing and building codes. Clean, accurate, dependable. Carry job from rough sketches to final details. Familiar with mechanical, and structural requirements. Box 7, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DRAFTSMAN—Navy veteran, 36, registered in several states, desires to locate in either Florida, Texas, or West Coast. 10 years' experience in small and large offices, varied projects, all phases of work, sketches, drafting, detailing, specifications, and supervision. Position should offer opportunity, possible business or partnership arrangement. Box 8, PROGRESSIVE ARCHITECTURE.

STRUCTURAL ENGINEER — professional license, desires connection with architects for structural design and drafting; fee, hourly or tonnage basis; commercial and industrial buildings, foundations, alterations; N. Y. metropolitan area. Box 13, PROGRESSIVE ARCHITECTURE.

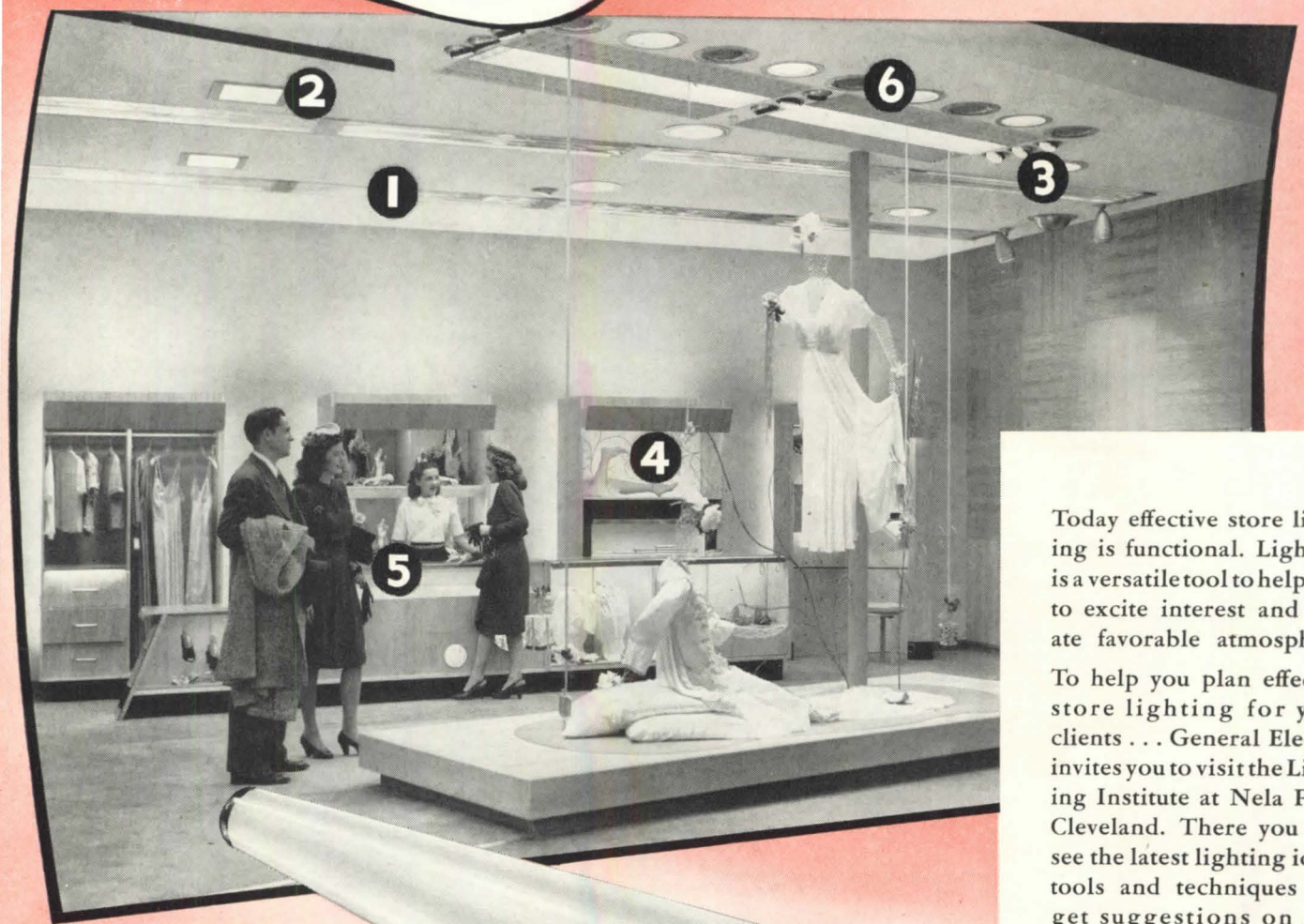
PRACTICING ARCHITECT—age 36, seeks association with progressive organization, architectural, engineering, or business. Recognized "Idea" man who can analyze client's requirements, establish intelligent program, design and develop imaginative yet realistic solution that

(Continued on page 112)

# 6 Ways G-E LAMPS Help Sell Merchandise

Here are six of many ways G-E Lamps are used in the women's wear store to aid in selling merchandise:

1. G-E Fluorescent Lamps give cool, even overall lighting to the store.
2. Filament Lamps in recessed fixtures may add the punch, snap and relief of direct lighting.
3. G-E Reflector spot or flood lamps focus attention on special displays—add high spots of interest.
4. Fluorescent lamps built into wall cases accentuate the merchandise.
5. Slimline fluorescent lamps fit modern display cases.
6. Filament lamps provide high brightness to dramatize featured items in window displays.




Today effective store lighting is functional. Lighting is a versatile tool to help sell, to excite interest and create favorable atmosphere.

To help you plan effective store lighting for your clients . . . General Electric invites you to visit the Lighting Institute at Nela Park, Cleveland. There you may see the latest lighting ideas, tools and techniques and get suggestions on new ways to use G-E Lamps.

*When specifying lamps be sure you say "G-E Lamps", for they are constantly improved by research to make them . . .*

## Stay Brighter Longer!


# G-E LAMPS

GENERAL ELECTRIC

# JOBS AND MEN

(Continued from page 110)

"clicks." Wide experience on various building types. Graduate University of Pennsylvania; registered New York State. Box 14, PROGRESSIVE ARCHITECTURE.

## NOTICES

RINAUDOT and MEAD, Architects, have opened offices in Bethesda, Md.

OSCAR J. POOL has reopened his office for the practice of architecture at 618 E. 48th St., Indianapolis, Ind.

An office of design and interior decoration has been opened by KENNETH BOTTORF at the Oversen Bldg., 871 E. Washington St., Pasadena, Calif.

CHRISTOPHER P. KANTIANIS has opened an architectural office in the Springfield National Bank Bldg., Springfield, Mass.

T. H. ROBSJOHN-GIBBINGS is now at 145 E. 72nd St., New York, N. Y.

MACKIE AND KAMRATH, Architects, have moved to a newly completed office building at 2713 Ferndale Pl., Houston 6, Tex.

ARTHUR ROSENSTEIN announces the removal of his office from downtown Boston to 184 Boylston St., Boston, Mass.



WILLIAM POTTER, Architect, has moved to an office at 9 Rockefeller Plaza, New York, N. Y.

BENJAMIN EARLE IRBY has moved to the Kyle Bldg. at 2288 Victoria St., Beaumont, Tex.

ALFRED WATTS GRANT, Architect, has moved his offices to a new location at Midland Savings Bldg., Denver, Colo.

ETHELBERT E. FURLONG has reopened his office for the practice of land planning and site engineering at 93 Baldwin St., Glen Ridge, N. J.

SAMUEL M. KURTZ has resigned his position with YORK AND SAWYER and has opened an architectural office at 101 Park Ave., New York, N. Y.

WILLIAM T. HERZOG and JOHN L. HENDERSON have established a new design firm at 715 Ontario St., Oak Park, Ill.

KENNETH E. WISCHMEYER and CHARLES W. LORENZ have formed an architectural partnership with offices at 911 Locust St., St. Louis, Mo.

ROBERT I. GOLDBERG has opened an industrial design office at 11 Broadway, New York, N. Y.

The office of JAMES R. EDMUNDS, JR., architect, is now located at 130 W. Hamilton St., Baltimore, Md.

NORRIS M. GADDIS, architect, has opened an office at 544 Colusa Ave., El Cerrito, Calif.

PAUL HYDE HARBACH has moved his architectural office from 507 Franklin St. to 70 Niagara St., Buffalo, N. Y.

KARL BUCKINGHAM HOKE has reopened his architectural office at 1514 Madison Ave., Toledo, Ohio.

EUGENE WEISBERG has established an office for the practice of architecture at 219 Central St., Lowell, Mass.

RONALD ALLWORK has opened an office for the practice of architecture at 30 Rockefeller Plaza, New York, N. Y.

Architecture, city planning, and design will be practiced by RUNNELLS & CLARK who have opened offices at 919 Baltimore Ave., Kansas City, Mo.

SAUL EDELBAUM has moved his office of architecture to 624 Madison Ave., New York, N. Y.

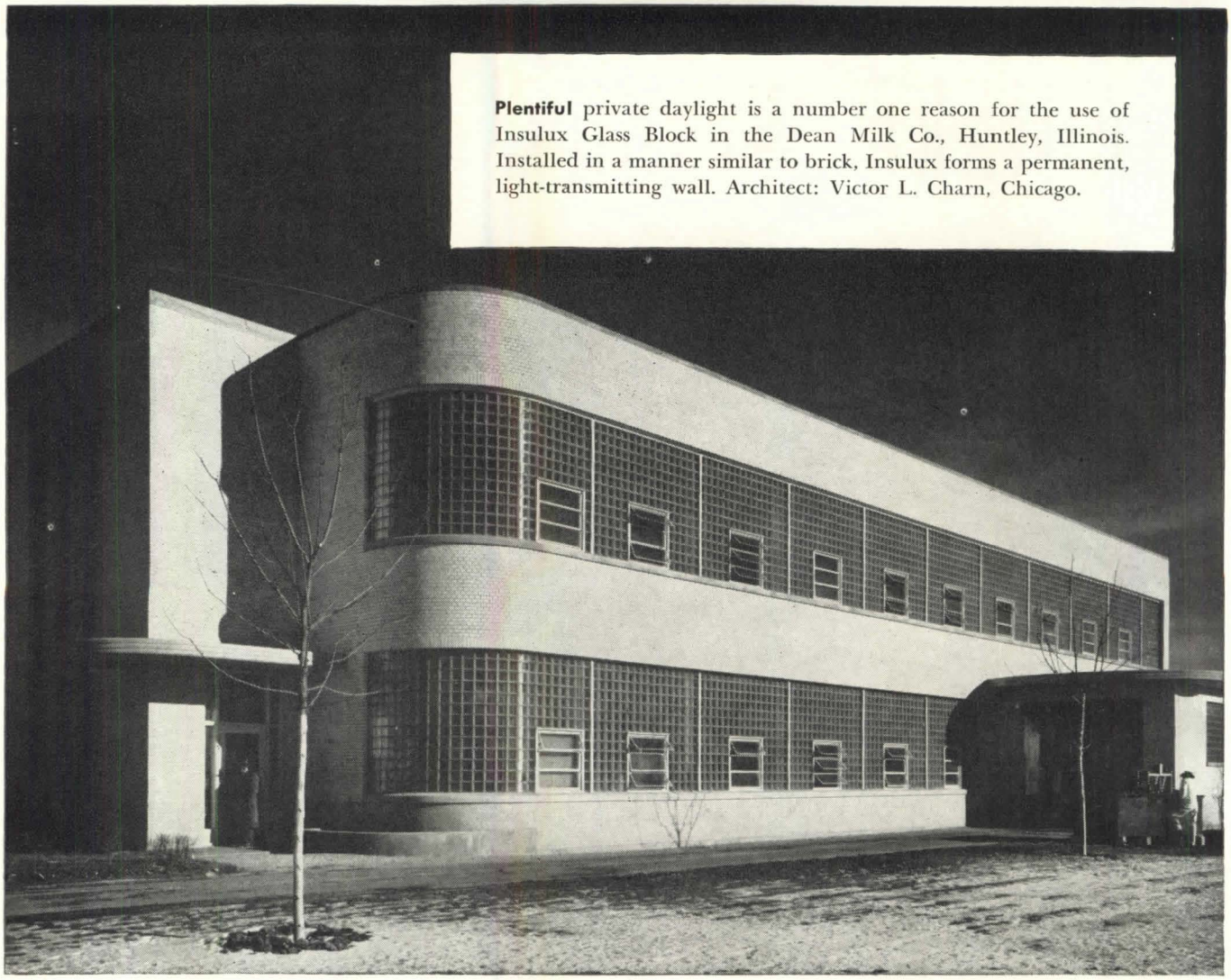
A. CARL STELLING has associated with JOHN ROBINSON TREGANZA for the practice of landscape architecture and site planning at 77 Park Ave., New York, N. Y.

HERVEY PARKE CLARK and JOHN F. BEUTTLER have formed a partnership in architecture with offices at 210 Post St., San Francisco, Calif.

LEONARD SCHULTZE AND ASSOCIATES are now practicing architecture at 119 E. 40 St., New York, N. Y.

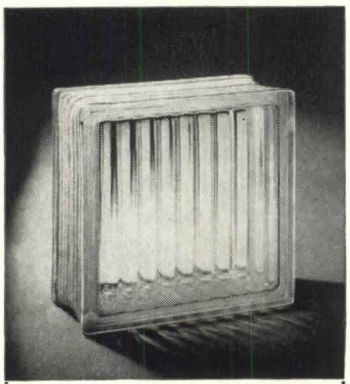
CARL SCHMUELLING has resumed his architectural practice with offices located at 6224 Kennedy Ave., Cincinnati, Ohio.

C. HERBERT MULLEN, R.A., has moved to 458 Board of Trade Bldg., Kansas City, Mo. He was formerly located in Joplin, Mo.



**Plentiful** private daylight is a number one reason for the use of Insulux Glass Block in the Dean Milk Co., Huntley, Illinois. Installed in a manner similar to brick, Insulux forms a permanent, light-transmitting wall. Architect: Victor L. Charn, Chicago.

# Permanent answer to daylighting problems



OWENS-ILLINOIS
INSULUX
GLASS BLOCK

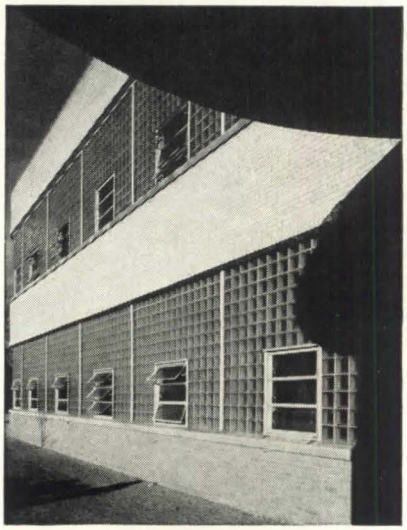
*Insulux Glass Block is a functional building material, manufactured in three sizes, many attractive and functional face patterns. Investigate!*

PLENTIFUL daylight pours into the new Dean Milk Co. building through panels of Insulux Glass Block—which also *permanently* solve other important problems.

Here, sanitation is a prime concern. Insulux Glass Block seals out dirt and dust and it's easy to keep the panels clean and sparkling. Even if humidity is excessive, impervious Insulux will not rot, rust or corrode and there's no need for painting.

High insulating value is an important plus feature. Heat gain and heat loss are sharply reduced as compared to single glazing. The result: lower cost air conditioning and heating operations.

These advantages are a few of the many that have made Insulux Glass Block so widely and well used in industrial, commercial and residential construction. Complete technical data, specifications and installation details are given in the "Glass" section of Sweet's Architectural Catalog, or write Dept. D-28, Owens-Illinois Glass Company, Insulux Products Division, Toledo 1, Ohio.



**Harmony** of Insulux Glass Block and other building materials is readily seen here. Small clear windows, set in the panels with standard frames, provide vision out and ventilation.

# Meet the Adlake Window Maintenance Man

**THAT'S RIGHT** — he hasn't a thing to do but loll in the sun — because NO MAINTENANCE IS REQUIRED with an Adlake Aluminum Window. You install it—*you forget it.*

**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.*

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BEING architects, you already *know*. That's why the majority of your specifications for new building call for sound conditioning.

The problem—architecturally speaking—is to specify the right *material* and the right *applicator*. Acousti-Celotex* offers you *both*.

It's the right material because it's the original and genuine drilled fibre tile, most widely used of *all* acoustical materials. Acousti-Celotex can be easily, quickly installed—and is simple to maintain through the years. Repeated painting does not affect its sound conditioning efficiency.

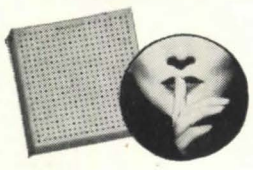
Your local Acousti-Celotex distributor is the right applicator because he is a trained technician, member of the world's only sound conditioning organization with the combined experience of over 100,000 acoustical installations.

Consult him with confidence. His advice is yours absolutely without obligation, and he *guarantees* results.

A note to us will bring the Acousti-Celotex sound conditioning expert to your desk—ready and able to assist you in any and all of your plans.

* * *

**FREE!** *"25 Answers to Questions on Sound Conditioning."* Interesting, fact-packed booklet. Write: *The Celotex Corporation, Dept. PA-447, Chicago 3, Illinois.*



*Sound Conditioning with*

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REG. U. S. PAT. OFF.

* *Perforated Fibre Tile* SINCE 1923

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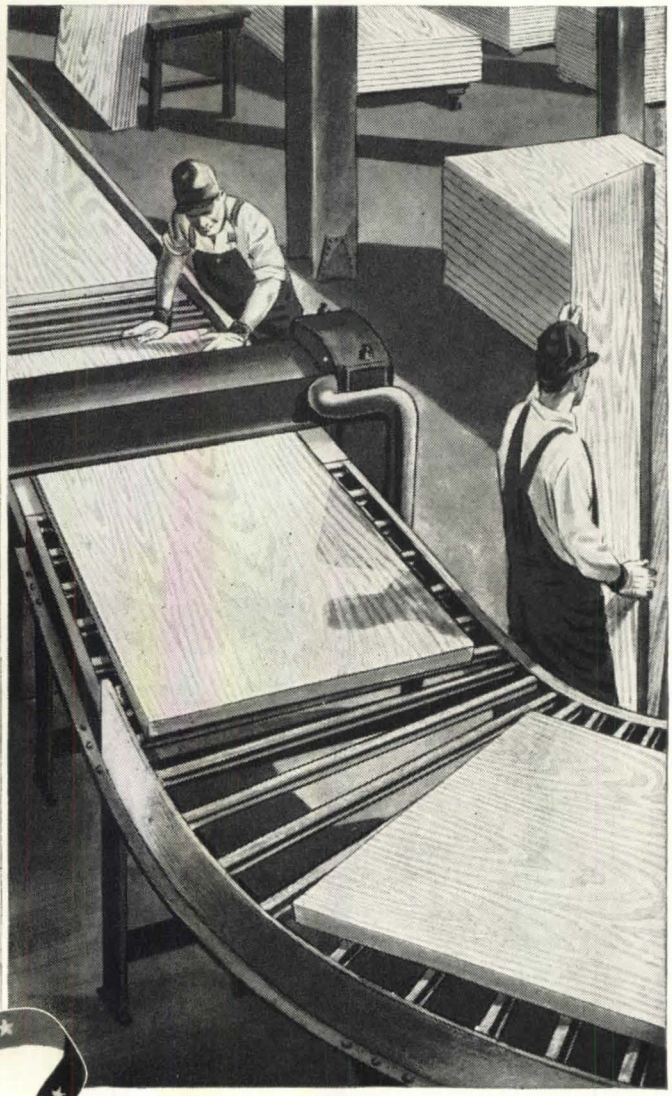
# Stock Sizes Mean *Door and Plywood Dividends* for Our Customers—

Percentage-wise, it's quite a dividend. By concentrating all our production on stock size doors and plywood, production can be increased a minimum of one-third.

For instance, the man-hours required to cut three lights, will produce a complete stock door. Odd sizes and other special details further limit production by added labor and material demands. The elimination today of all special doors — and concentration of our manpower and machines on stock sizes is a policy dictated by our customers' needs. It means more Roddiscraft Doors and Plywood for everybody — plus stocks in the warehouses for delivery where and when you want them.



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*Roddis Lumber & Veneer Co.*

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**Roddiscraft WAREHOUSES**

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DALLAS 10, TEXAS.....2800 Madill Street
DETROIT, MICH.....11855 E. Jefferson Ave.
KANSAS CITY 8, MO.....2729 Southwest Blvd.
LOUISVILLE 10, KENTUCKY...1201-5 S. 15th Street
LONG ISLAND CITY, N. Y..Review & Greenpoint Ave.
MARSHFIELD, WIS.....115 S. Palmetto Street
MILWAUKEE 8, WIS.....4601 W. State Street
NEW YORK CITY, N. Y.....920 E. 149th Street
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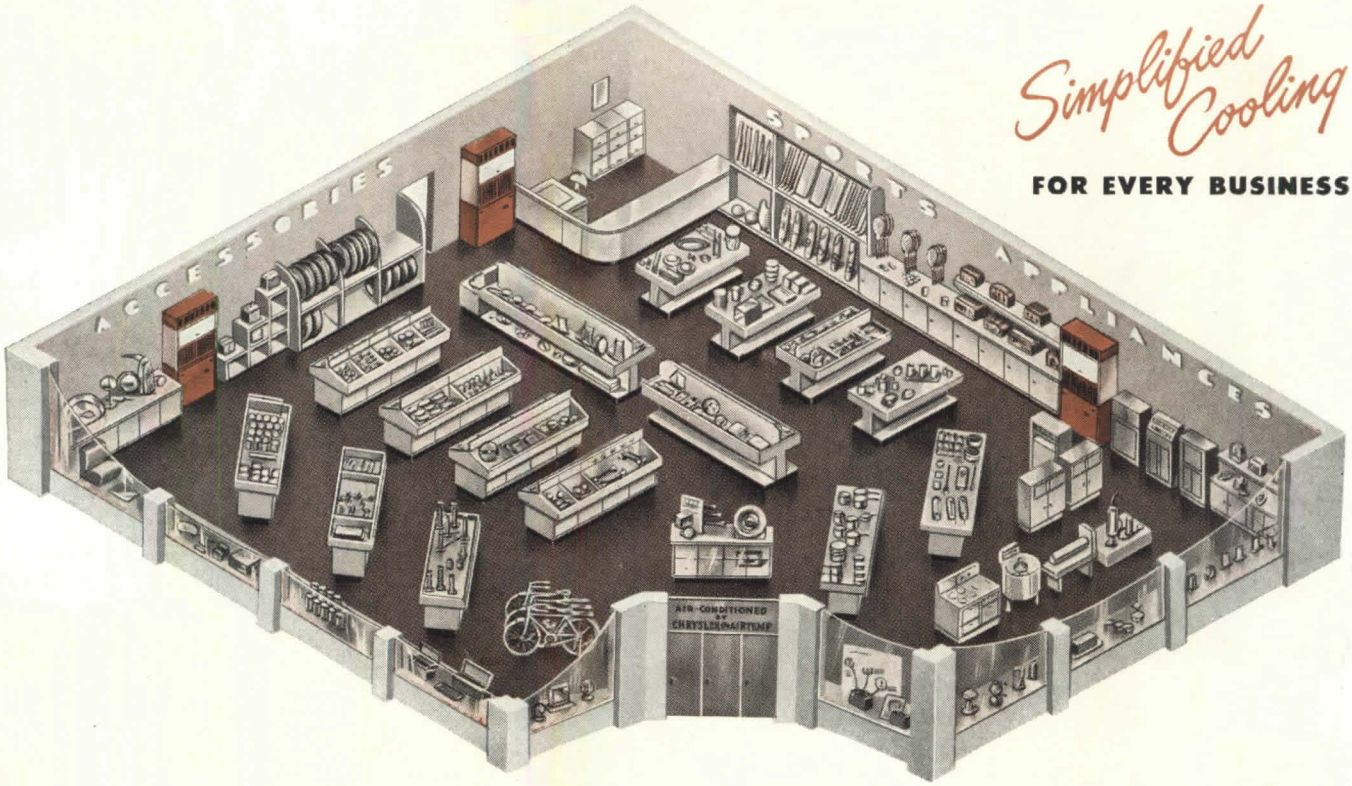
**DEALERS IN ALL PRINCIPAL CITIES**

*Simplified Cooling*

**FOR EVERY BUSINESS**




Chrysler Airtemp Packaged Air Conditioners are products of famous Chrysler Corporation engineering and mass production skill.

# Easy, Economical Way to Cool Large Display Areas

★ ★ ★

Alert architects are solving the problem of air conditioning large merchandise display areas, such as shown above, with Chrysler Airtemp Packaged Air Conditioners. These air conditioners fit the requirements of stores large and small. Because of compact design and ease of installation, they can be placed almost anywhere and occupy little floor space. The design is so flexible that Packaged Air Conditioners can be installed singly, or in multiple, and are easily moved when remodeling or changing store locations. Heating coils can be placed in the packages for year-round conditioning. Operating and upkeep costs are exceptionally low. For details, please write . .

**AIRTEMP DIVISION OF CHRYSLER CORPORATION, DAYTON 1, OHIO**

**In Canada—Therm-O-Rite Products, Ltd., Toronto**

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CHRYSLER AIRTEMP
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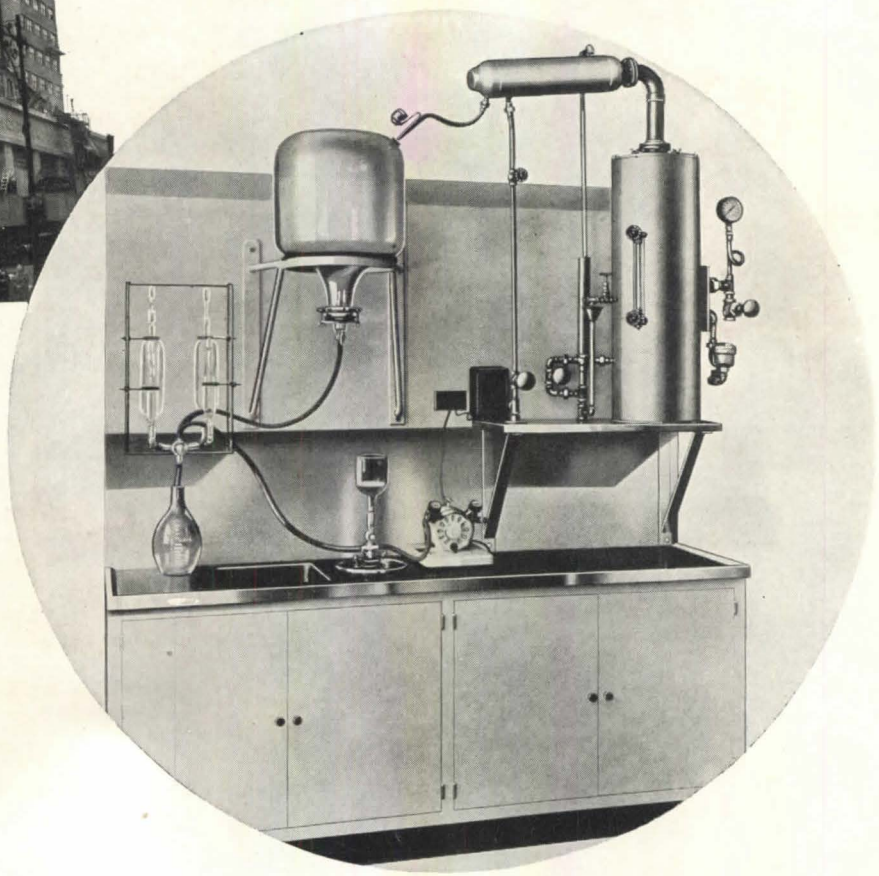
**PACKAGED AIR CONDITIONING**

**HEATING • AIR CONDITIONING • COMMERCIAL REFRIGERATION**

# FLUIDS PRODUCTION SUPPLY

## gets the *Green Light*



With the mounting demands for surgical solutions, whole blood and plasma, progressive hospital planning considers the economic importance of the FLUIDS PRODUCTION SUPPLY—a vital, centralized service embracing facilities for processing requirements independent of outside sources of supply.

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Nationwide hospital experiences substantiate the consistent degree of accuracy and safety attainable by any properly trained attendant . . . far less difficult than that of collecting blood and producing plasma. Hospitals, large or small, can benefit by this timely installation . . . only negligible space is required.

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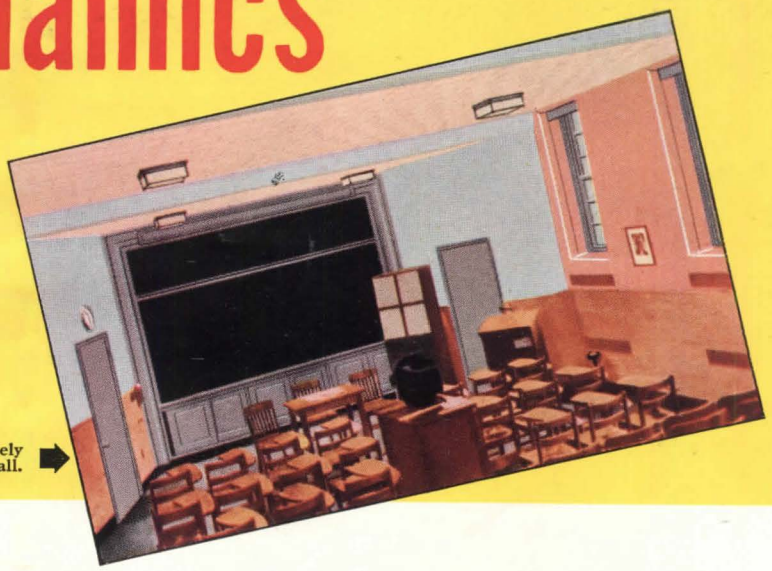
● Buff walls of this private office contrast with cool colors of ceiling, drapes and rugs. Drop ceiling lowers its height.

# Color Dynamics

**Pittsburgh's exclusive painting method assures color combinations that promote health, comfort and safety—stimulate energy—increase efficiency—at the same time that they please the eye!**



● Eye-rest focal walls of Blue-Green contrast effectively with warm side walls and wainscot of this lecture hall.

## Here's How You Can Put the *ENERGY IN COLOR* to Work . . . with Scientific Accuracy!

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EXPERIENCE has proved that people who work or live in surroundings painted according to Pittsburgh's science of COLOR DYNAMICS benefit in many ways.

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Properly applied, COLOR DYNAMICS can make your institution inspire trust and confidence by its appearance. It can lessen eye fatigue. It can increase efficiency, improve morale, promote cheerfulness and well-being. With COLOR DYNAMICS you can also make rooms seem more inviting and spacious, make them appear longer or wider, higher or lower.

You can now apply these principles of color energy with scientific accuracy. What you can do with COLOR DYNAMICS—and why—is told in our revised, profusely illustrated book, *"Color Dynamics for Office Buildings, Hotels and Restaurants."* Write for your FREE copy. Pittsburgh Plate Glass Co., Paint Div., PA-4, Pittsburgh 22, Pennsylvania.

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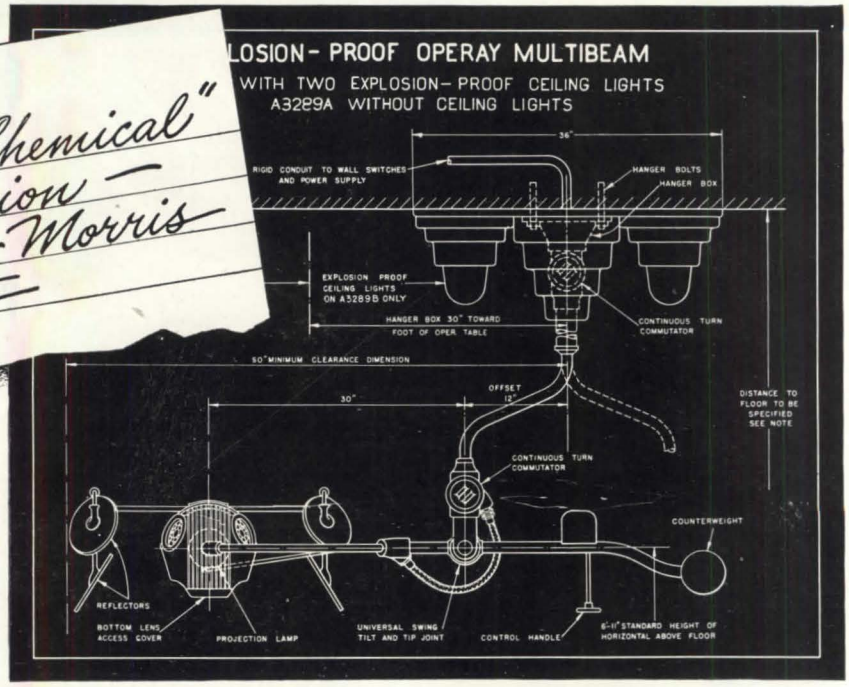
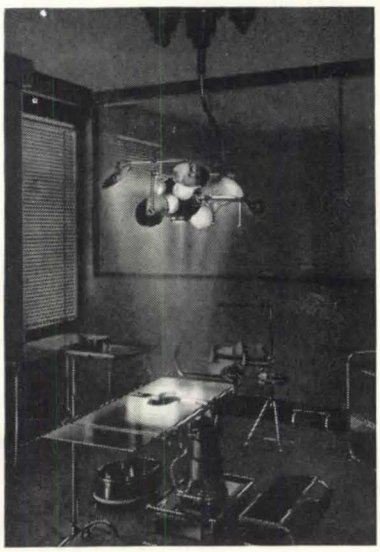
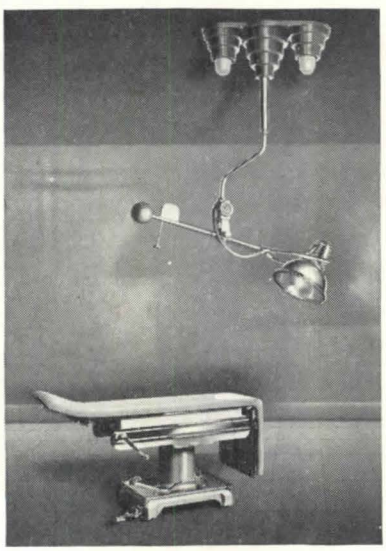


*Explosion-Proof Operay Multibeam Light*



*Explosion-Proof Operay Surg-O-Ray Light*

# *Ceiling* HOSPITAL ~~FLOOR~~ PLANS

***should include provision for***

## Explosion-Proof Surgical Lights

• For more than 40 years architects and hospitals have received valuable assistance and authentic guidance in planning for many major items of hospital equipment manufactured by Scanlan-Morris. They have found this service especially helpful in planning for surgical lighting.

Efficient surgical lighting plus adequate protection against fire and explosion hazards in the anesthetic area is the dual accomplishment of Scanlan-Morris Operay explosion-proof surgical lights. These fixtures are approved by Underwriters' Laboratories for use in Class 1 Group C Hazardous Locations—a classification that includes operating and delivery rooms employing explosive anesthetic gases.

Scanlan-Morris Operay lights are widely used in prominent hospitals. The lights are made in two general types, as illustrated: Operay Multibeams and Operay Surg-O-Ray. The ceiling fixtures are furnished either with or without auxiliary ceiling lights for general illumination.

The Scanlan-Morris Technical Sales Service Department will be glad to supply complete information, including installation drawings, and will also welcome opportunities to cooperate with architects in correct planning for surgical lighting based on building plans. Such service is freely offered, without obligation, not only on surgical lighting but also on sterilizing equipment, recessed cabinets and other major items of hospital equipment manufactured by Ohio Chemical. Mail the coupon for detailed information.

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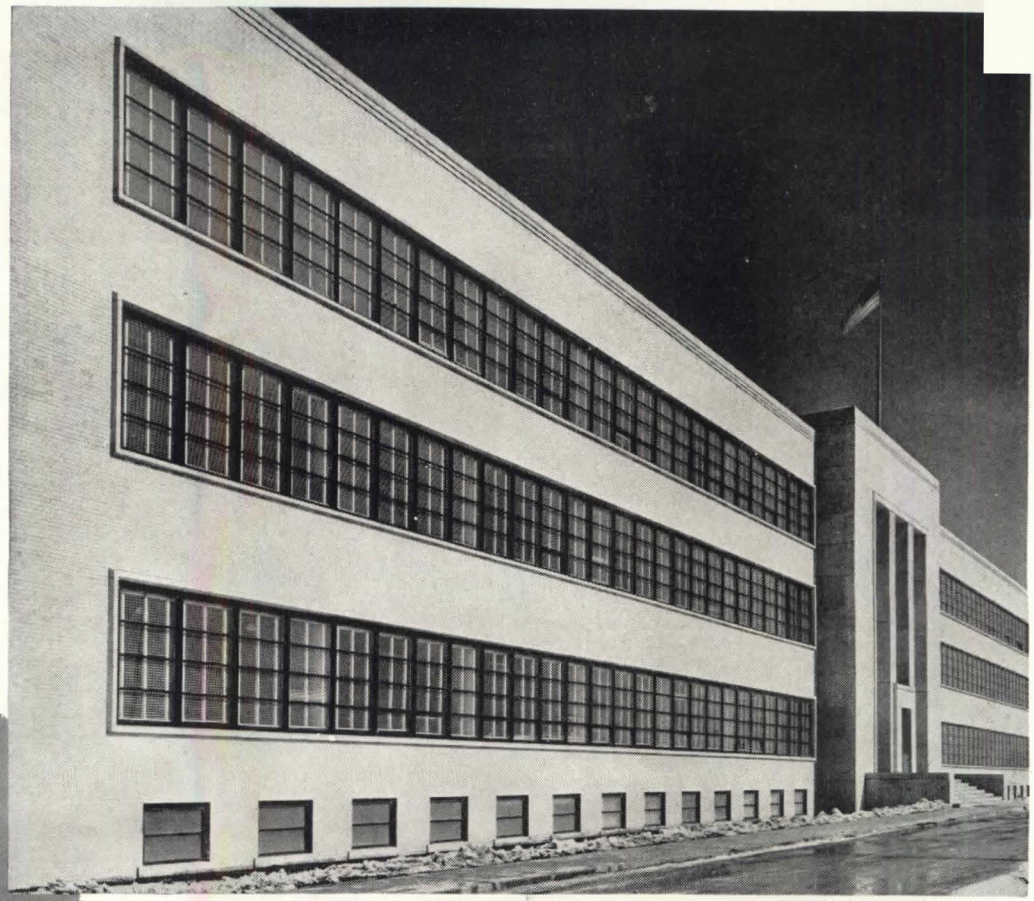

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4. Steel windows cost less than any other type—are durable and fire resistive.

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Here are Ceco points of superiority: (1) Tight weather seal, (2) Easy opening and closing . . . no sticking or warping, (3) Beauty of design to enhance the architectural effect, (4) Bonderizing as a standard for protection against rust.

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# Lowest Wall Upkeep!

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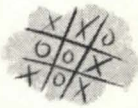
Yes, you get maximum beauty *plus* lowest maintenance cost with this miracle wall covering. Because Varlar's *practical* beauty resists many injurious elements which would destroy ordinary wall coverings...resists ever-present finger marks  and beauty-effacing pencil and ink marks  . Add to the countless enemies of beauty which Varlar defies . . . dirt abrasion . . . water . . . lipstick . . . perfume . . . piping hot kitchen grease  . . . steam . . . vermin  . . . and bacteria. None of these can mar the beauty of Varlar!

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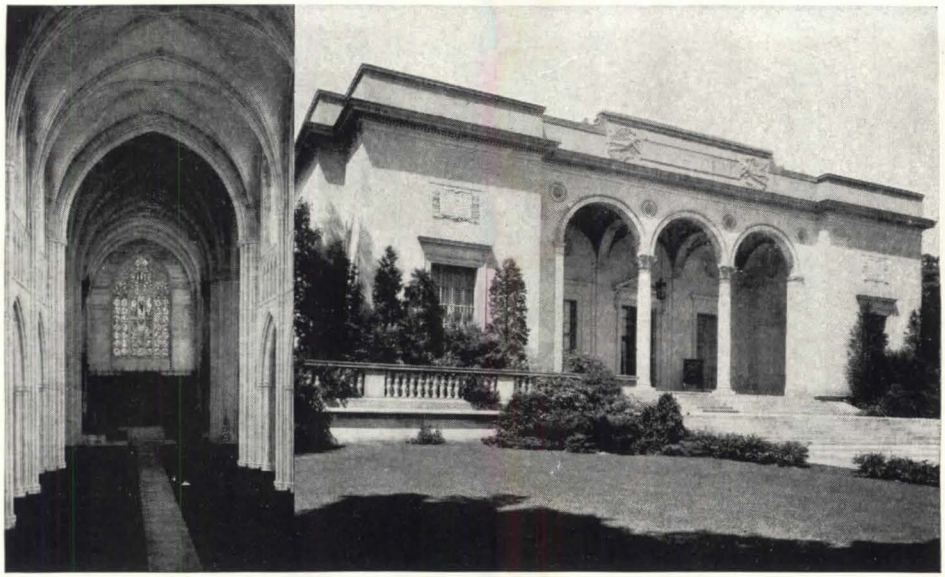

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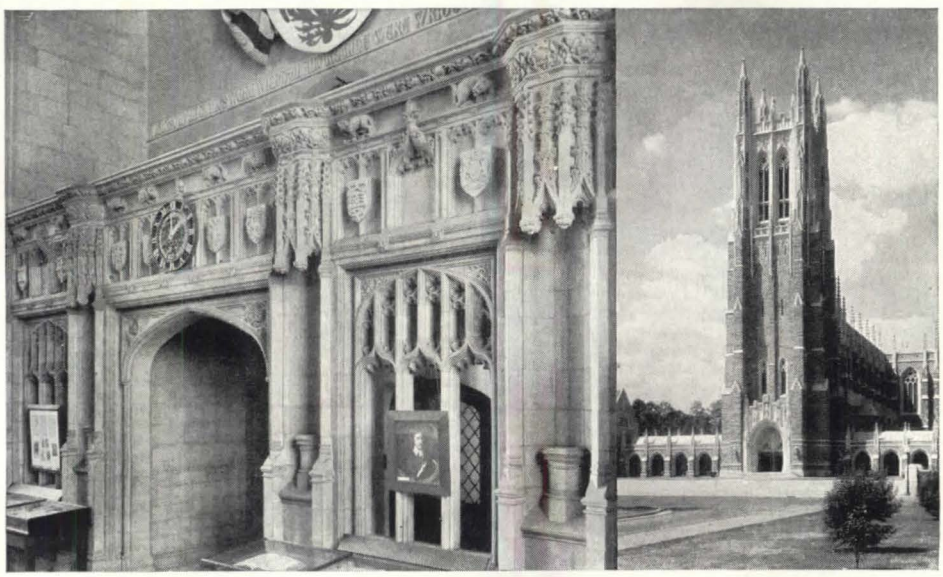

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**Swartwout's New Powered Roof Ventilator**
*The*
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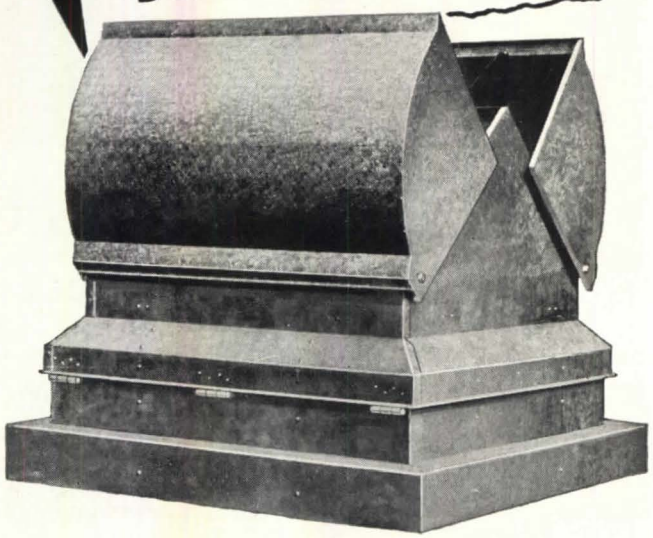

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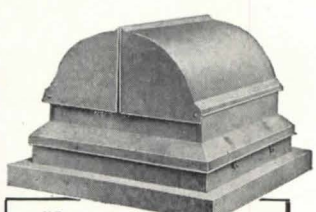
***Ject-O-Valve*** is the "straight-through" type. The powerful blast from its scientifically designed propeller holds top sections open, sweeps aside all weather, forces unwanted elements into the outer atmosphere. Top closes weather tight when motor stops.

Carefully engineered in five sizes... and powered by motors and propeller type fans of varying ratings to give you a selection of 14 different capacities. Write for Ject-O-Valve Bulletin 323.



*Use*
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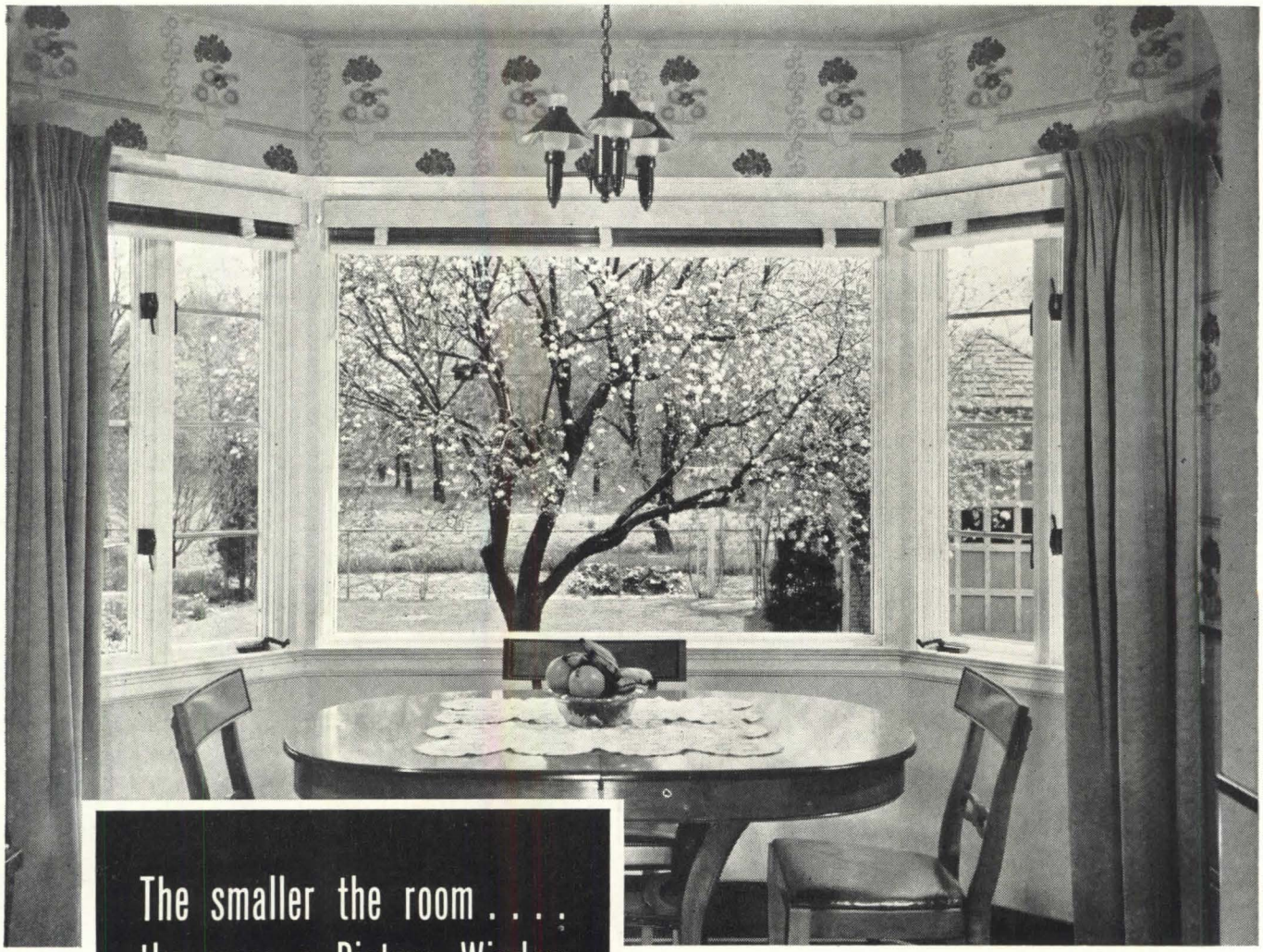
*Controlled* **Air Circulation**
EQUIPMENT FOR EFFECTIVE ECONOMICAL VENTILATION OF INDUSTRIAL BUILDINGS



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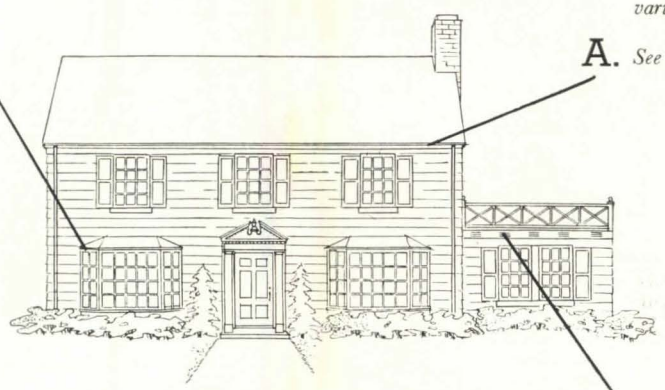
Q. *What is the effective technique for insulating the narrow spaces around windows and air ducts?*

A. *See Balsam-Wool Application Data Sheet Section C No. 1.*

Q. *What are the thermal resistance values of various building materials?*

A. *See Balsam-Wool Data Sheet Section A No. 4.*

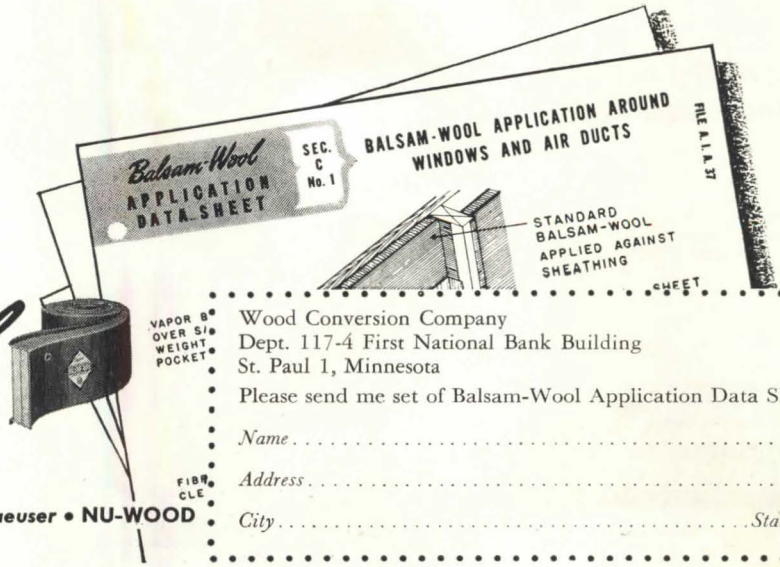


Q. *What methods can be used to ventilate flat-roofed construction effectively?*

A. *See Balsam-Wool Data Sheet Section B No. 5.*

# Quick Facts for Busy Architects . . . Balsam-Wool Data Sheets

Through its twenty-five years of experience, Wood Conversion Company has collected a wealth of valuable information on applying insulation. This information is embodied in a series of Balsam-Wool Application Data Sheets. These sheets are offered to you without cost or obligation. Mail the coupon for your set!

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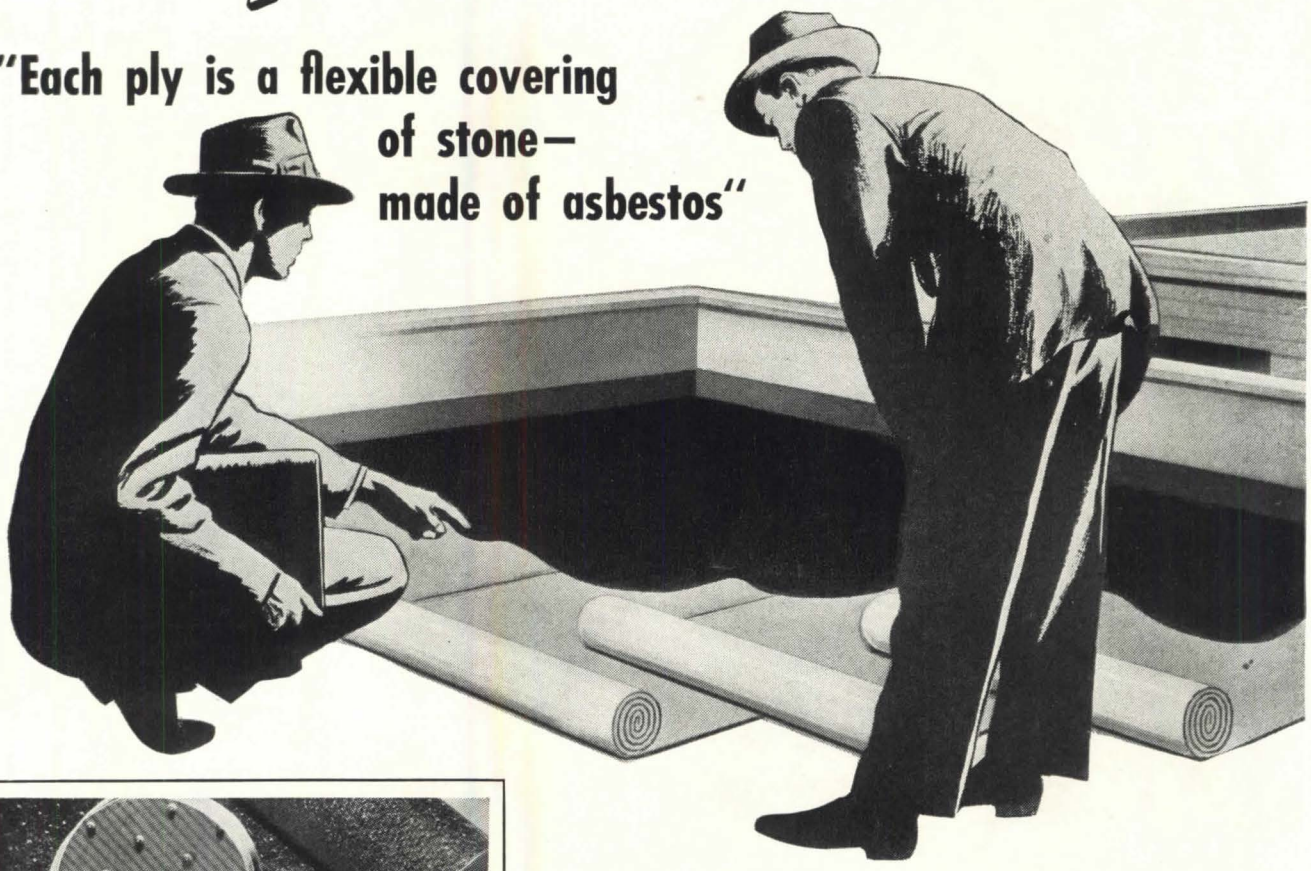
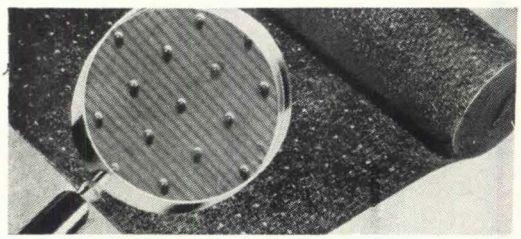
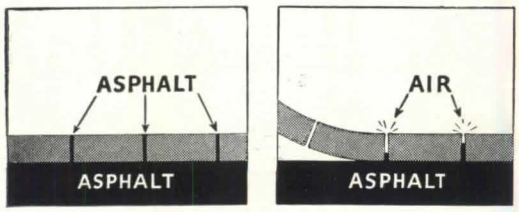




**Perforated to make application easier, eliminate blisters.**

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**Johns-Manville** FLEXSTONE BUILT-UP ROOFS


SOON we'll see plenty of smart new homes under way, like those at the left. Maybe you remember seeing some of these pictures in National Gypsum's big full-color campaign in the Saturday Evening Post. (All during 1946 and begun again this year with the February 22nd issue.)

In America, the land of beautiful homes, it's amazing how many families put most everything else ahead of owning a home of their own. So, this series of Post ads is designed to:

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**You'll build or remodel better with Gold Bond**

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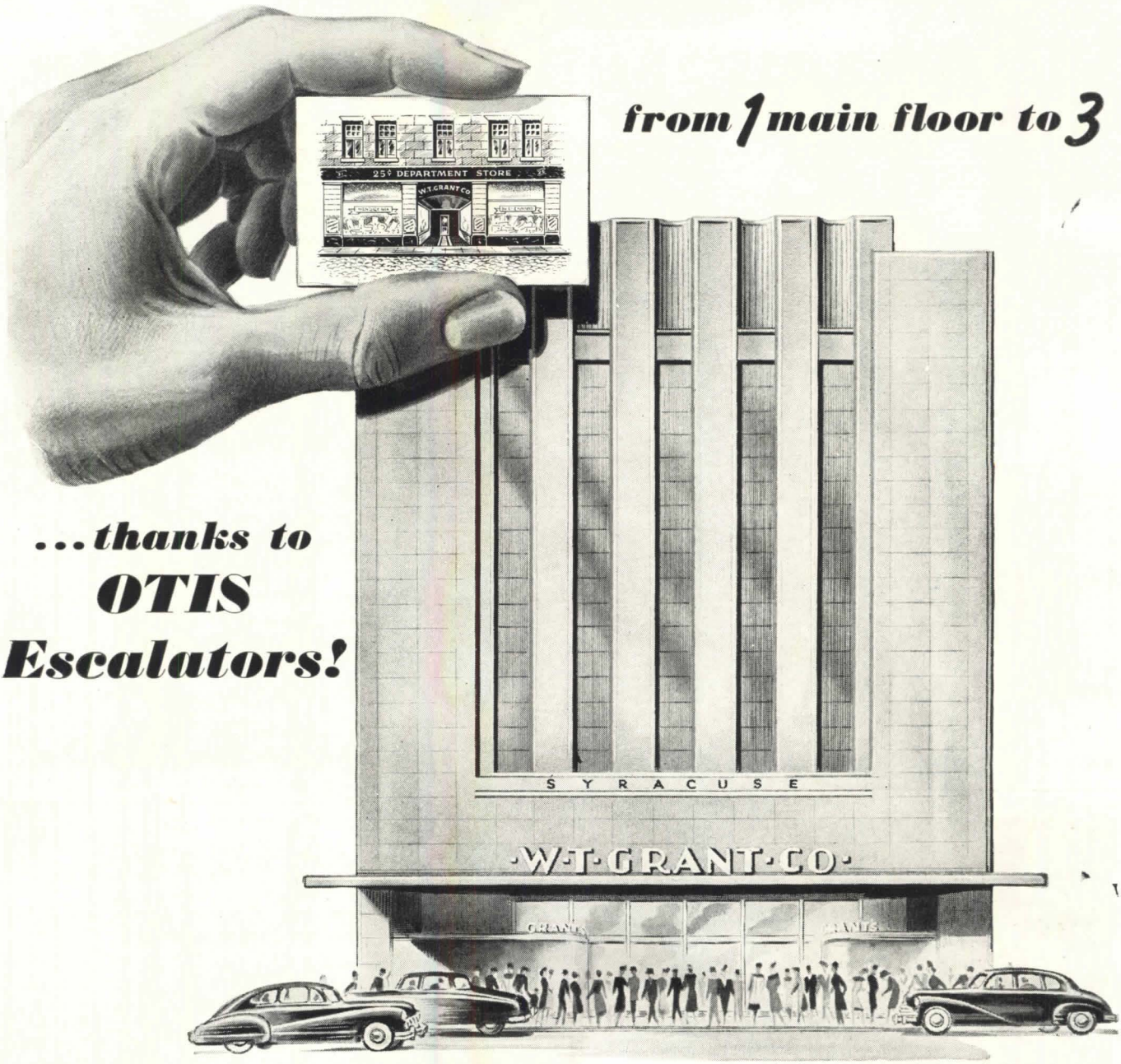
*Over 150 Gold Bond Products including gypsum lath, plaster, lime, wallboards, gypsum sheathing, rock wool insulation, metal lath products and partition systems, wall paint and acoustical materials.*

# from 1 main floor to 3




## ...thanks to OTIS Escalators!

*Designed by P. A. Cunnius, architect for the W. T. Grant Co.*

*41 years and 488 stores ago* the W. T. Grant Co. started business in a small store in Lynn, Mass. Street-level convenience, plus easy-to-see merchandise made the store a success.

And throughout four decades of steady growth the Grant Co. has prospered by concentrating on *main-floor selling.*

Today, four Otis Escalators are being installed to the second and third floors of their new store in Syracuse, N. Y. Why?

- because Grant's know that Escalators will give their great new store not one main floor but *three.*
- because Grant's know that Escalators will make it easy for main-floor shoppers to visit upper floors, see more merchandise.

If you need more main floors in *your* store, call your local Otis office today.

**Otis ELEVATOR COMPANY**
OFFICES IN ALL PRINCIPAL CITIES

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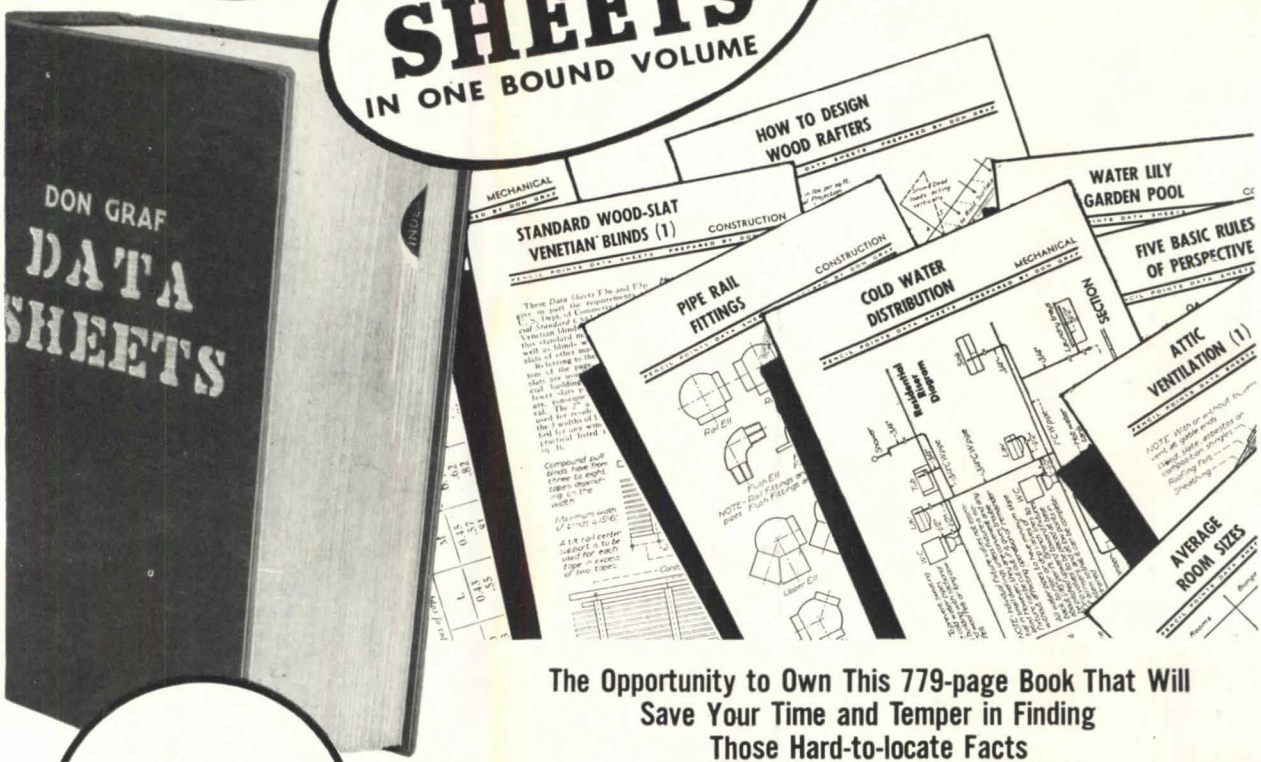


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The DATA SHEETS contain much original material available in no other architectural reference work. These pages are not just reprinted catalog drawings. The book is packed with the results of original research in quick, easy-to-use form.

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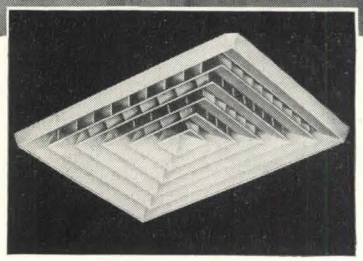

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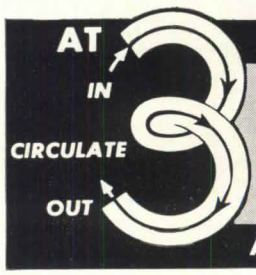
And in this building which U.S. Plywood uses as a center to demonstrate advanced building techniques and products, you'll find Agitair Type R Diffusers providing correct air distribution.

Why Agitair Type R? Because only Agitair Type R blends with the spirit of this new architecture. Because only Agitair Type R gives Diffusion Pattern Control. That means 100% control over air distribution—with no drafts, no blank corners, no hot spots, no cold spots.

Patented construction permits Agitair Type R to be assembled into numerous patterns which divide the air and discharge it noiselessly in one, two, three or four directions in proportion to the area served.

Result: *100% air distribution in any shape room —from any location.*

***Write Today for Complete Data***




**KEY POINTS IN AIR CONDITIONING—AGITAIR SERVES BEST**

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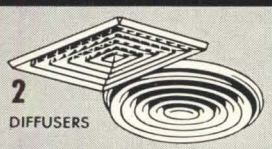

3 EXHAUSTERS

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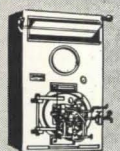

**AIR DEVICES. INC. · 17 EAST 42nd STREET · NEW YORK 17, N. Y.**

# OBSERVATIONS

**THERE IS ALWAYS A TEMPTATION TO LET A PERSONAL COLUMN OF THIS SORT DEGENERATE INTO A DIARY.** You know—Fascinating Conversations with Great Architects. Words of wisdom pantingly passed on to wide-eyed subscribers. It's tempting because people like Don Hershey write in from places like upstate New York and say they read the "Observations" because "the inside story is always interesting." I promise never to do it again, but here's Inside Last Week. I haven't had time yet to decide whether or not it was interesting. This will just be deadpan reporting; no editorializing, no drawing of conclusions.

•

**ON MONDAY I ATTENDED A LUNCHEON MEETING OF THE WAR MEMORIALS COMMITTEE OF NEW YORK CITY'S MUNICIPAL ART SOCIETY.** The old battle goes on between the advocates of "living memorials" and those who want monuments. A new note injected by Charley Platt, who suggests *anti-war* memorials, fell flat.

•

**DURING THE AFTERNOON I WAS CALLED OUT TO ATTEND A MEETING OF THE ADVISORY COMMITTEE FOR THE STORE MODERNIZATION SHOW** to be held in New York the week of July 7. A serious group of educators, merchandisers, and architects discussed the most effective means of bringing together the store owner and the store designer and the product manufacturer. There will be a series of clinics at the Show, which should be mutually beneficial. We all agreed that no one knows right now what makes a "good" store. Is merchandising success the only standard? If so, some pretty sad looking stores should be rated highly. If not, what are the criteria? Perhaps our Store Critique next month will provide some answers, and the clinics at the Show some others.

•

**ON TUESDAY I WAS INVITED TO SIT IN WITH A GROUP OF ARCHITECTS,** at the home of one of them, for the purpose of discussing the architect's relation to the manufacturer of building products. These people are really concerned about the fact the designer does not have available the tools he should have to work with. They believe this is largely because the manufacturer fails to recognize the architect as the person who could tell him best what is needed, and in what form. Conclusion: something should be done about it. Prediction: something *will* be done about it by this group (something which can't yet be announced).

•

**ON WEDNESDAY THE NEW YORK CHAPTER OF THE A.I.A. HAD A DINNER MEETING ON THE SUBJECT OF EXTERIOR DRY-WALL CONSTRUCTION.** Celotex, Truscon, and Reynolds Metals sent speakers. The Reynolds man got hopped on because his bag of samples consisted of that company's aluminum imitations of wood shingles, siding, corner posts, etc. The architects suggested that it might not be smart to imitate in aluminum all the limitations of wood surfacing (laps, butts, corners, gutters, ridges, hips, valleys) without the sympathetic advantages of wood. After the meeting I had to catch a midnight train to Pittsburgh.

•

**ON THURSDAY IN PITTSBURGH I CALLED ON SEVERAL ARCHITECTS AND HAD LUNCH WITH THE MEMBERS OF THE FIRM OF BUTTON, STERLING, WOLFE, AND McLEAN.** I had wanted to meet Lamont Button since he sent us last year a house plan with no straight walls—all curves—and explained it thus:

"We hired a draftsman from Benares
Who balked at our policy upstairs
His revolt was complete
When he jumped with both feet
And smashed our T-squares; who cares?"

We had sent it back with thanks, and the following comment:

"We got a wild blueprint from Button
With spaces like round legs of mutton
It intrigued us no end
But we just couldn't spend
Our valuable pages on nuttin'"

The office is now busy on two veterans' hospitals, the drawings of which, I am happy to report, are being made with T-squares.

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**THEN I VISITED A COUPLE OF YOUNG MEN—JAMES MITCHELL AND DAHLEN RITCHEY**—who have prepared visualizations of Pittsburgh in Progress, sponsored by Kaufmann's store. Forming a very exciting exhibit, their drawings are the result of a study of Pittsburgh's needs and are rooted in the reality of many projects already authorized. It was my pleasure, along with a number of other architects, to view the exhibit, make appropriate comments to the press, and enjoy a fine dinner at Kaufmann's expense. Until my train left for New York a number of us went on discussing architecture in a place that must have been called the Kit-Kat Klub. Tom Pratt, president of the Pittsburgh A.I.A. Chapter, tried to find Dr. Walter Gropius a nice girl to dance with, but I guess he looked too austere. Gropius, I mean; Pratt claims to be the youngest Chapter President, and looks it.

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**BACK IN THE OFFICE ON FRIDAY, WE HAD A VISITOR FROM A SMALL TOWN IN OREGON—SHELDON BRUMBAUGH.** His story is inspiring and should make many other architects either envious or ashamed. Brumbaugh, with no compromises in design standards, does everything in town, from public buildings to G.I. houses; even the town plan. His leadership in the community is the sort I was thinking of when I wrote, in February, that I didn't think architecture just "another segment in the building industry." His office includes a mural painter and an engineer. Everyone works, and everyone takes responsibilities. "I don't want any technicians in my office; I want architects," he said banging the table. The result he produces is architecture of a high order.

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**ON FRIDAY EVENING I MET AT THE ARCHITECTURAL LEAGUE WITH A GROUP DISCUSSING SOME PRETTY DEEP MATTERS LIKE THE PHILOSOPHY OF FORM AND THE PSYCHOLOGICAL EFFECT OF FORM.** Someone brought up the subject of the "cultural lag," which has always existed when art and invention have outstripped appreciation and understanding. The suggestion was made that that lag might be greater at the moment within the design groups than it is in the general public. Reaction to the Geller house in our February issue might be an indication of this. We had several letters that threatened to sue us for publishing a "cowbarn," from our professional readers, while *House & Garden*, which carried the house in two issues, got a favorable response from its lay readers.

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**ON SATURDAY EVENING PHILIP GOODWIN GAVE A PARTY FOR "FRIENDS OF THE ARCHITECTURAL DEPARTMENT OF THE MUSEUM OF MODERN ART."** Philip Johnson bawled me out for something the *Record* had published, and I steered him toward Ken Stowell. It was good to see Howard Myers of the *Forum* up and around. Le Corbusier was overcome by the penthouse view of mid-Manhattan and kept muttering, "Formidable, c'est formidable."

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**ON SUNDAY I TOOK A TRAIN TO WASHINGTON FOR A MONDAY CONFERENCE OF BUSINESS PAPER EDITORS,** and I came back on the sleeper Monday night. Tuesday after work I went home, and my wife said, "What are *you* doing here?"

Thomas H. Creighton