PROGRESSIVE ARCHITECTURE

newsletter

MAY 1951

- Many architects have by now gone through the process of filing NPAF-24 forms, and have discovered what types of commercial building are permitted in their areas. Actions and reactions differ in the various NPA field offices, but generally the reports are that a good deal of leniency is exercised, as had been predicted. In New York, for instance, the regional office has granted authorization for construction of such items as stores and restaurants, motor courts, banks, office alterations, service stations, etc. -- even a mess hall for a Boy Scout camp.

- Construction volume remains high (first quarter was the highest on record) and good guess now is that 1951 may beat 1950's record-breaking figures, even with restrictions that have been tried. Real test will come in July, when the Controlled Materials Plan will go into effect, controlling more effectively the flow of steel, copper, aluminum, and some other items.

- Although construction costs are now running well above the same period last year, cost indices for April show almost no rise over March -- and March did not go appreciably above February.

- Don't pin many hopes on Defense Housing Bill. It is suffering from Congressional cooling-off about emergency nature of international situation, and from the fact that it has many controversial aspects -- it is being attacked by opponents of public housing, although new version would authorize only $50 millions for federal subsidies and only after it had been proved in a community that new housing could not be provided otherwise. Once it is passed, definition of a "critical defense housing area" -- which is the only place the bill is applicable -- will become important.

- NPA has released an order which allows issuance of DO's (Defense Orders) for maintenance, repair, and operating supplies (to be known henceforth -- and these may become important initials -- as MRO). Producers' Council immediately issued a release pointing out that this may, during the year, become a major area of construction activity. Present factors, says P.C. President Lane, "not only will free part of the materials output for repair and maintenance purposes, but also will make it more necessary and profitable to keep the existing supply of such buildings in good repair."

- Leonard G. Haeger, A.I.A. member, has resigned as Assistant Director of HHFA, where he had been in charge of housing research, to become Building Materials Expediter for the National Ass'n of Home Builders.

- Employment offices report many women draftsmen being trained and hired, as during the last war. Shortages in the mechanical design fields and re-emergence of huge drafting staffs in marine and communications fields account for this.

- Current exhibition at Museum of Modern Art in N.Y. shows lamps which won recent competition sponsored by Museum and Heifitz Co. First two prizewinners and winner of special prize were students or graduates of Chicago's Institute of Design. Only architects who placed were Abe Geller and Marion Geller of New York.

(Continued on page 2)

newsletter

- Chicago Tribune's Better Rooms competition was taken over this year by Guy Fishman, architectural student and part-time instructor at U. of Illinois. Fishman won three first prizes and shared a special prize, with a total prize-money take of $3050. Other prizewinners were George Cooper Rudolph, New York architect and artist; Ronald Gourley, M.I.T. architectural teacher; and Basia Benda, Pratt Institute graduate.

- Marvin E. Goody, M.I.T. student, has won first prize in Brooklyn A.I.A. Chapter's annual design competition, with a civic center scheme for the Bushwick section of that borough.

- U. of Pennsylvania joins the many schools now giving degrees in city planning, with an undergraduate and a graduate course announced.

- Thomas W. Mackesey, professor at Cornell since 1938, has been named Dean of the College of Architecture at that University.

- School of Architecture and Allied Arts, U. of Oregon, announces the addition to its staff of Heinrich Waechter and Edmond McCollin as associate professors, and of Donald Sites, Lionel Chadwick, and Jan Smokens as instructors.

- John W. Root will be initiated as Master Architect of Alpha Rho Chi, architectural fraternity, during A.I.A. Convention in Chicago. Root follows Nathan Clifford Ricker, Cass Gilbert, and Eliel Saarinen in the position.

- Albert Mayer of Mayer & Whittlesey is in India, bearing with him, among other things, a scheme for a Gandhi memorial area, designed by his firm, with Dan Kiley, landscaper, and Isamu Noguchi, sculptor. Joseph Neufeld will soon leave for Israel with plans for a new medical center. Antonin Raymond is still in Tokyo. Jose Luis Sert and Paul Wiener are again heading for South America.

- However, not all out-of-country work is being done by U.S. architects, much as it must seem that way. New town hall for Le Havre, one of France's worst-bombed cities, is being designed by Auguste Perret, with a 300-foot tower and "a long colonnade on a stylobate."

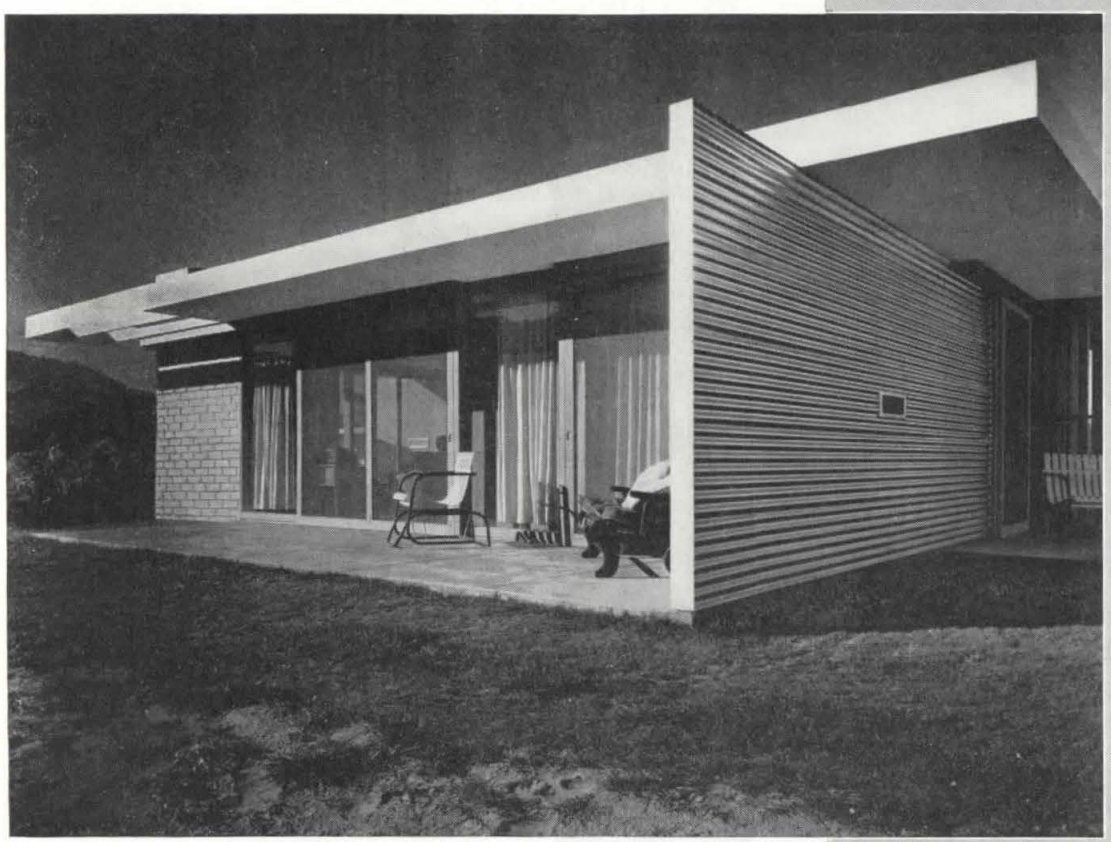
- American Architectural Foundation, Inc., is seeking funds for carrying out program of architectural research and education. Started in 1942 with a grant left by Albert Kahn, the Foundation now has as officers and trustees J. Frazer Smith, James R. Edmunds, Jr., Max Foley, Walter T. Rolfe, Edgar I. Williams.

- Turnover in architectural magazine staffs, which upset several papers in the field a few years ago, seems to be underway again. Eleanor Bitterman, longtime staff member of what was "Forum," is no longer with "Building." It is also rumored that Harold Hauf will leave as editor-in-chief of "Record" to accept a Navy construction post.

- New York's recent turmoil over the advisability of tearing down several Greek Revival buildings on Washington Square North in order to make way for an Emery Roth & Sons apartment building has been solved -- the buildings have been torn down, and that part of the new structure that fronts on the Square will be a "replica" of them.

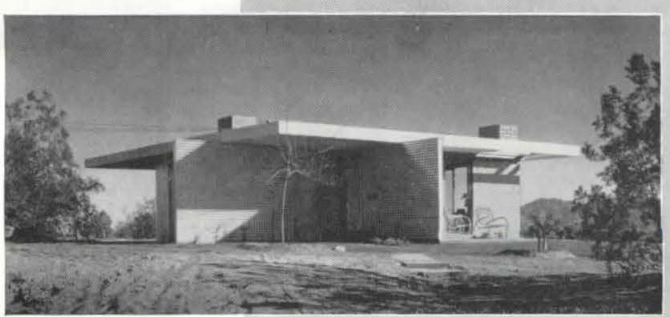
Published monthly by REINHOLD PUBLISHING CORPORATION, Emmett Street, Bristol, Conn., U.S.A. Executive and editorial offices, 330 West 42nd Street, New York 18, N. Y. Ralph W. Reinhold, Chairman of the Board; Philip H. Hubbard, President; H. Burton Lowe, Executive Vice President and Treasurer; Fred P. Peters, Vice President and Secretary; John G. Belcher, William P. Winsor, Gilbert E. Cochran, Merald F. Lue, Francis M. Turner, Vice Presidents. Executive and editorial offices: 330 W. 42nd St., New York 18, N. Y. Subscriptions payable in advance. Subscription prices to those who, by title, are *architects, engineers, specification writers, designers, or draftsmen,* and to government departments, trade associations, members of the armed forces, college libraries, students, publishers, advertisers, prospective advertisers and their employers—$4.00 for one year, $6.00 for two years, $8.00 for three years. To all others—$10.00 per year. Above prices are applicable in U.S., U.S. Possessions, Canada, and Philippine Republic. Latin America—$10.00 for one year, $16.00 for two years, $20.00 for three years. All other foreign subscriptions—$15.00 for one year, $25.00 for two years, $30.00 for three years. Single copy—$1.00. Printed by The Hildreth Press, Inc., Emmett Street, Bristol, Conn. Entered as second class matter January 22, 1947, at the Post Office at New York, N. Y., under the Act of March 3, 1879. Application for re-entry at the Post Office at Bristol, Conn., pending. Volume XXXII, No. 5, May 1951. In Art Index.

IN THIS desert home at Palm Springs, California, Kaiser Aluminum corrugated roofing is used in the living room ceiling to diffuse sound and carry the attractive exterior corrugation design inside the house. The corrugations deflect and hinder movement of sound waves.



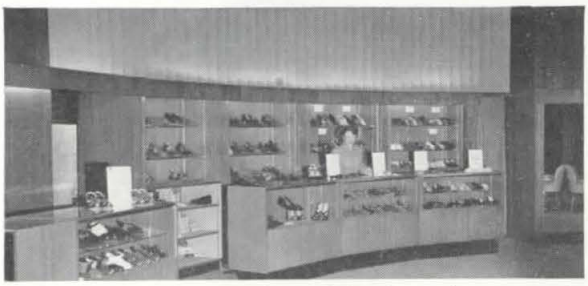
KAISER ALUMINUM corrugated roofing is used on wing walls to reflect heat from patios and to provide wind shelter. Horizontal corrugations blend with the roof design to give a lower, wider effect.

KAISER ALUMINUM ROOFING helps keep interiors cooler during hot days by reflecting up to 60 per cent of the sun's rays. At night, when desert temperatures fall, the aluminum helps retain interior warmth to give this beautiful home a more uniform temperature over each 24-hour period.



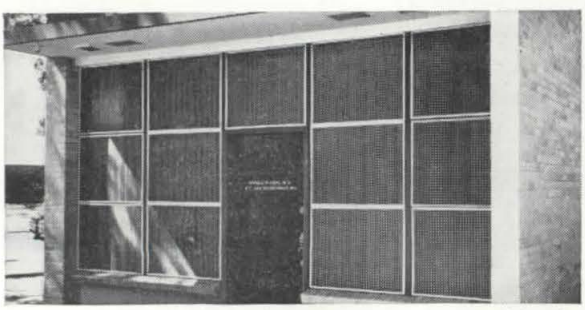
ARCHITECTS: Clark and Frey, Palm Springs.

KEEP ALUMINUM IN YOUR PLANS



KAISER ALUMINUM SIDING is used for fire-resistant curtain walls in R. H. Macy's San Francisco store. In several instances siding was locked together but most often was set vertically at an angle several inches apart to permit circulation of air. The lightweight panels permit overnight remodeling. Architects: Gruen & Krummeck, San Francisco.

DUCTWORK MADE OF Kaiser Aluminum cut installation and fuel costs in this Richland, Washington, housing project. Architects and engineers J. Fletcher Lankton-John N. Ziegele, Peoria, Ill., decided on Kaiser Aluminum because, uninsulated, it delivers as much heat as insulated galvanized material. Aluminum's lightness enabled crews to install units faster, with less worker fatigue.



KAISER ALUMINUM SHADE SCREENING was installed in the doors and windows of this medical office to lower interior temperatures on hot days, and enhance the beauty of the exterior. Tiny louvers block sun's heat rays, but admit comfortable, glareless light. Additional benefits: Privacy, an effective insect barrier, protection from fading.

KAISER ALUMINUM is now helping to meet the critical demands of national security, but a limited amount of some aluminum building materials is still available.

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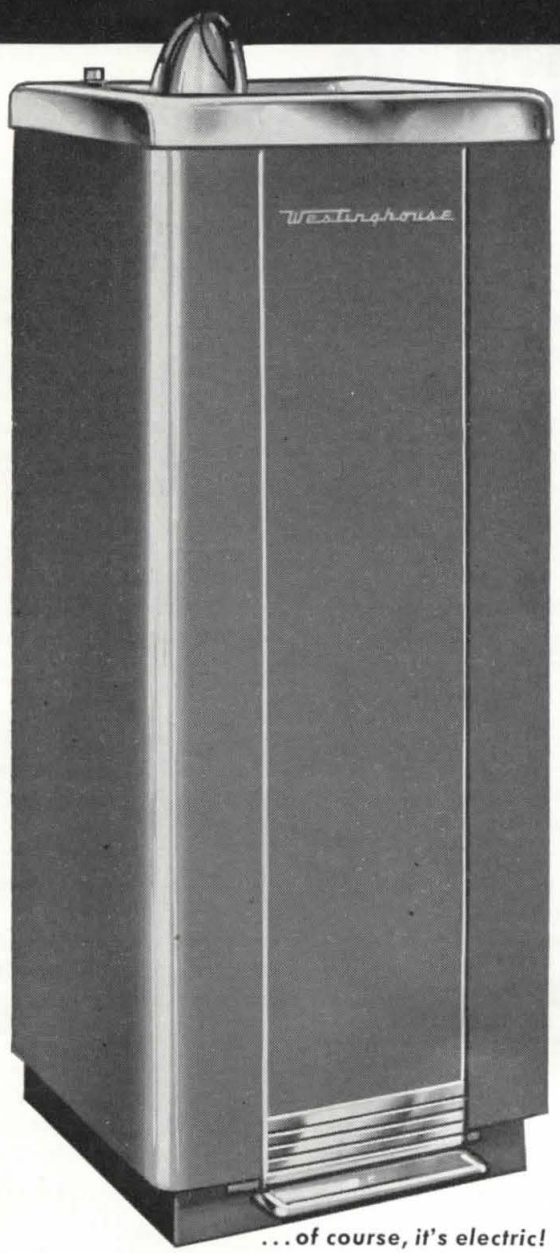

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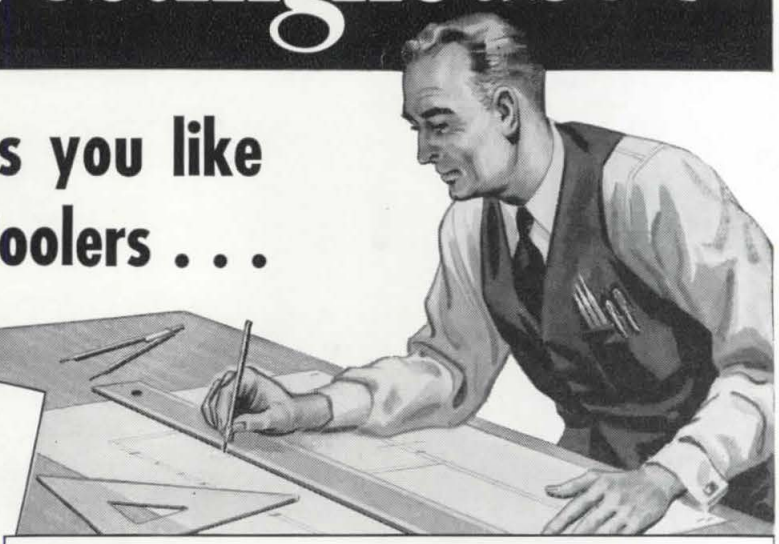

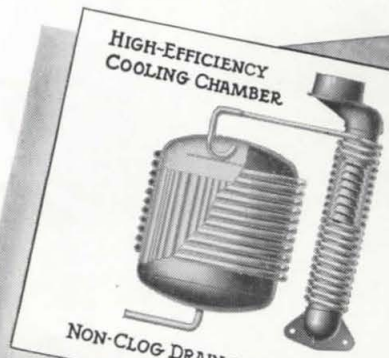

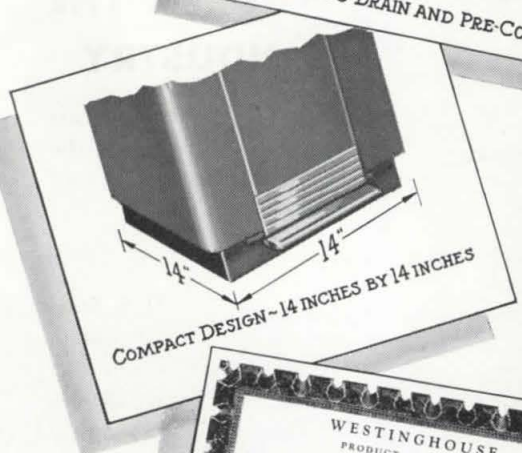

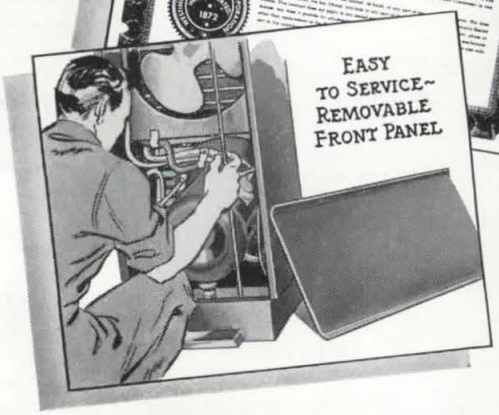

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Ward & Conrad, Architects

p/a

VIEWS

COURAGE TO FOLLOW

Dear Editor: As an old-timer in co-operative housing, your February issue is to me of particular significance.

The architectural examples of co-op housing are outstanding and the coverage by Vernon DeMars most competent. I am very much pleased that this piece was written by a professional man who himself gained experience in the field. Maybe more architects will find the courage to follow this example. I wish to underline DeMars' characterization of co-op housing as an actual market, versus the hypothetical market of the speculative builder.

It seems to me worthwhile, however, to point out that the manifestation of the Rochdale principles which we like to regard as an effective solution of the social problem of housing is in reality only the statement of the problem.

It is true that co-operative action in this country was frequently handicapped by a lack of laws legalizing co-operatives. But even in those states where we have such laws, co-operatives do not enjoy complete freedom to act also as bankers besides being organizers of large-scale developments and owners, not to speak of representing the tenants in most of the privately owned apartments and having charge of subsidized housing, as they do in Sweden.

Furthermore, it is true that our own co-operative efforts have often failed because we did not always adhere strictly to the Rochdale principles, and because local, state, and federal government did not favor co-operative enterprise as they do individual or monopolistic ones. We know that we should succeed if we overcome these difficulties. Yet, why is the going so tough? It seems to me that we overlook one major factor in the analysis: or does the truth make us feel too uncomfortable?

We like to quote the success of consumer co-operatives in Europe in general, and of housing co-operatives in Sweden, Holland, and Germany in particular. We certainly need this encouragement. But do we properly interpret the history and character of those European examples? The more I think back and try to understand the American background against my own experience with Sweden's HSB, with Berlin's co-op architects, Bruno and Max Taut, or still further back with the union-owned Munich "Bauhutte" contracting all co-op construction work, then I find that there is one major omission in our discussion of today.

As old as Europe's co-op housing may be, it came to the fore in connection with history-making social events. Large masses were carried away by the great ethos of social philosophy which preaches the understanding of the human needs of the individual as a part of the community. The benefit of concerted action within a self-governing group was discovered and fought for, in bitter struggle with the forces of privilege. Sweden's HSB never would have become what it is if there had not been revolting, striking, and evicted tenants, and if there had not been people who elected labor leaders and progressive university professors as their social democratic representatives.

Now, revolutions are not always the best medicine. They do occur if there is no other remedy. As history teaches, since the time of Saint Simon, we may have to pay dearly for not learning the lesson of democratic government. Co-operative organization offers the opportunity to practice democracy, have some social progress at the same time, and be ready to take care of social pressures in a more positive way. The question is, how can we solve the problem posed by rugged individualism and monopolized business, to satisfy the needs of the individual as an integral member of his community? How can we make the individual see that his advantage lies in group action, and that he can help to make social adjustments peacefully?

The Amalgamated Clothing Workers continued their European tradition. As union members they are equipped to be co-operators. They invite outsiders to join in their housing enterprises, because they know the danger of inbreeding. The veterans caught the co-op idea in their desperate need for housing because they are also equipped to act co-operatively as a firmly organized group. It is doubtful, however, whether it is possible to understand all our civilian co-operative action as a translation from military solidarity.

It seems clear to me that there are two major forces whch make for co-operative housing. One is the need, which has to build up enough social pressure; the other and higher one is a widespread social ethos which carries the soul toward satisfaction within the group and on the basis of social justice.

H. H. WAECHTER
Eugene, Ore.

hello again, mr. kaufman

dear editor: the question is—which is the point of diminishing resistance? all these months now i have been sitting in my attic, keeping alive on my pride and warm on the sheafs of renewal literature you sent me, wondering if you would break down first, or if summer would come and find me without a place to store incoming mail. and then, yesterday i receive an authentic document, autographed by someone surely in the hierarchy of circulation promotion, stating that you "are abandoning attempts to secure***renewal." ah, i shout, this is the moment of triumph and surrender i have been waiting for (i once knew a girl who was almost as difficult); and i went and spent my mother's beer money in celebration of the end of the siege.

but today i find it was all a trick, a ruse, a scheme to bring me out into the open and make me lose my self-control. for the morning mail (you could have waited several days, at least) delivers another of these special invitations, as if nothing had happened, as if i had not said "no" nine times and covered myself with glory among the men of resistance. but i am not easily fooled, aha, i told myself, one of the editors let a subscription expire in my name, and the treatment is on again. and i promptly headed for the corner saloon, ready to establish credit with prospective waste paper sales.

around the sixth or seventh beer, however, i began to think of your dwindling postage-stamp- and paper-supply, of the anxious months your circulation staff would be spending, worrying incessantly about me. no, i said, i cannot do it to them again, i just cannot. i do not have the heart. after all, what price glory?

i shall not give the details of the fierce battle waged between my conscience and my pride; let it suffice to say that the clinching argument went something like, "if nobody's going to be reasonable, it might as well be me."

enclosed, along with a list of creditors who might possibly enjoy being on a "subscription-expired"-list you will find my kid sister's piggy bank containing $4.00 in pennies, for another year's try. don't let me catch her saying she didn't think it was worth stealing for. . .

resignedly yours, axel kaufmar

(Continued on page 10)

p/a

VIEWS

(Continued from page 9)

GOOD TO READ AGAIN

Dear Editor: If anyone desires a most interesting pastime, let him spend a couple of hours each weekend going through old architectural magazines, that date from about 30 years ago. Of course you should have grown up with those old magazines, and have mulled through them many, many times: when you were a student and a young draftsman, and the building business was roaring, as it was in the 1920's.

Those magazines have been accumulating and piling up, but now they must be disposed of. My house is crowded for storage space. New magazines are flowing in through the mailbox in a steady stream. The old ones are largely out of date. How unappropriate that sounds! During the 1920's they glittered with splendid photography; new gleaming entrances such as the Chrysler Building, the New York and also the Chicago *Daily News* Buildings, the Lincoln Memorial in Washington; mellow country homes set among lovely hills and formal gardens; glamorous theaters like the Ziegfeld, many great movie houses shown in fine large photographs, and in sophisticated drawings by famous artists. Colored prints of beautiful homes rendered in water color, etchings by Troy Kinney, Samuel Chamberlain; pictures of France, Germany, Italy, Britain; the old historic buildings rich and distinguished looking; even the smooth, flat surfaces of most of the efforts of the 1930's and early '40's—out of date!

Nobody wants these old magazines. They must be thrown on the junk pile. But first they must be scanned. There is much in them that cannot be thrown away, for once gone they will be irretrievable. So, every weekend that can be spared, a two-hour search is made. We meet fresh, new scenes of buildings now more than 20 years old! But the valuable parts are the biographies, and the articles of opinion written by men then leaders in the field.

Here I find an article by Louis Sullivan on the Tokyo disaster of 1923. In 1924, I find a full-page portrait of him, and the page adjoining contains his obituary. I remember my brief meeting with him in 1921. Just Louis Sullivan and I alone in an office for an hour. But I did not know the identity of my guest! Just a white-haired man who had called to see the architect who was my boss, and who spent his time waiting for the boss to appear, listening to me tell him my opinion of architecture—and my opinion of Louis Sullivan, because a little trade magazine had come in that morning named *Common Clay* and it pictured two or three small banks Sullivan had done in Wisconsin. Talking—when I should have been listening. My boss told me later who he was.

Biographies of Henry Bacon, Bertram Goodhue, Pierce Anderson, H. Van Buren McGonigle, many others. Articles of opinion by Raymond Hood, Albert Kahn, Cass Gilbert, to name a few.

After reading recently Saarinen's books, *The City* and *Search For Form*, I can understand better the principles which Hood, Goodhue and others were trying to explain. Even in books 150 years old I find the same striving to explain those ideas which Saarinen went to great length to expound and to acquaint his readers with. And he succeeded, too, in my book. Many of the articles are clipped and filed and indexed now, while the large part of the old magazines are in the vats of paper container makers.

There is a certain continuity to going through old magazines. The lapse of time between issues is avoided. We can read on right now that which we had waited a long month for. We sense the pattern to which a magazine is made. Almost all of the discussions pos-

(Continued on page 12)

Denver's "SKY CHEF RESTAURANT" selects . . .

Carpet Craftsmanship . . . from the looms of Mohawk

for that "Walking on Air" feeling!

Entrance to dining room and lounge of Denver's Stapleton Sky Chef Restaurant — carpeted with handsome, durable Texturepoint by Mohawk.

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Luxurious and Spacious Sky Chef dining-room seats 182 persons.

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(Continued from page 10)

sible about architecture are contained in Mr. Creighton's book *Building for Modern Man,* but I would add to the back-page editorial of January 1951 P/A that in razzing the monotony and regularity of the appearance of certain features, a perusal of old magazines dating over a period of 30 years or so (with a few inherited numbers running about 50 years old) reveals that such periodicity is evolution. Great changes do not happen in the architectural field like an explosion. Apparently architects have been off the track for about 500 years and for the last 100 years have been trying to find the path back to the right road.

F. S. BARRETT
Chicago, Ill.

DUBBED "THIN DECEPTION"

Dear Editor: I am sorry to see you show sympathetic interest in the "Newsletter" distributed to schools by architects as mentioned on page 65 of your March issue. Whether it is wise or ethical is something for the individual architect to decide, but to presume to speak for the profession is quite another matter.

Some of the items quoted are not typical of all architects' office procedure. For instance, there are many who design and develop their drawings as a personal professional service and do not "assign them to draftsmen" nor do we all think of a set of drawings as costing so many man-hours of draftsmen's work.

It is most unfortunate to give the impression that the architect's fee must be explained away in apologetic terms. Rather than trying to gloss over this obvious advertising by pretending to be a big brother to the profession, I would suggest that the "Newsletter" avoid its thin deception and "speak for yourself, John" if that seems necessary for the architect-author's practice.

MAYNARD LYNDON
Los Angeles, Calif.

OTHERS LIKE IDEA

Some letters received by Flewelling & Moody since the article in March 1951 P/A *about their "Newsletter" follow:*

Gentlemen: The "Newsletter" in this month's issue of PROGRESSIVE ARCHITECTURE is tremendously interesting. This is a wonderful idea. I wonder if you could put us on the mailing list for a few issues. DANIEL PERRY, President
Long Island Society Chapter, A.I.A.

Gentlemen: I note with extreme interest the article in the PROGRESSIVE ARCHITECTURE for March, 1951, pertaining to the public relations that you have been carrying on by the issuance of your monthly "Newsletter." I believe that a lot can be done pertaining to public relations and this method that you have evolved intrigues me very much.

I am wondering if you would be kind enough to send me copies of the "Newsletter" that you have mailed out so that I could become better acquainted with this particular phase of public relations. I am on the Public Relations Committee of the Arizona Chapter of the American Institute of Architects, and we are trying to find new ways and methods of informing the public of the value of architectural service, and we would appreciate, as I stated above, receiving copies of your "Newsletter" for our perusal and use. MARTIN RAY YOUNG, JR.
Mesa, Arizona

Gentlemen: I read in PROGRESSIVE ARCHITECTURE about the publication of your "Newsletter." If possible I would like very much to have my name added to your mailing list.

V. HARRY RHODES
Commissioner of School Buildings
Board of Education
City of St. Louis

the light side of the office

Smithcraft mercury

Smithcraft director

Smithcraft troffer

and an outstanding line of fluorescent fixtures for the offices that run the nation's industries....

The offices that run the nation's industries are today being called upon to "produce" more than ever before . . . and, as always, increased production calls for better-than-adequate lighting. Smithcraft Lighting Division, proud of its position as leader in the progressive development of fluorescent fixture design, manufactures the lighting fixtures that assure better-than-adequate lighting results. Here are a few of the reasons why:

1 — Smithcraft fluorescent fixtures are designed to develop to the fullest possible extent the light provided by the lamp.

2 — Smithcraft fluorescent fixtures are carefully louvered or shielded to eliminate successfully the element of "glare". Employees can work long hours with full effectiveness in Smithcraft installations.

3 — And . . . there's more to good lighting than meets the eye! Smithcraft fluorescent fixtures incorporate quality electrical components . . . guaranteeing the purchaser a long-term lighting investment.

These are only three of the many features that have been developed into every Smithcraft fixture. Smithcraft representatives, located in major cities throughout the country, will be glad to furnish the full story. Drop us a line . . . we'll do the rest.

Smithcraft

LIGHTING DIVISION

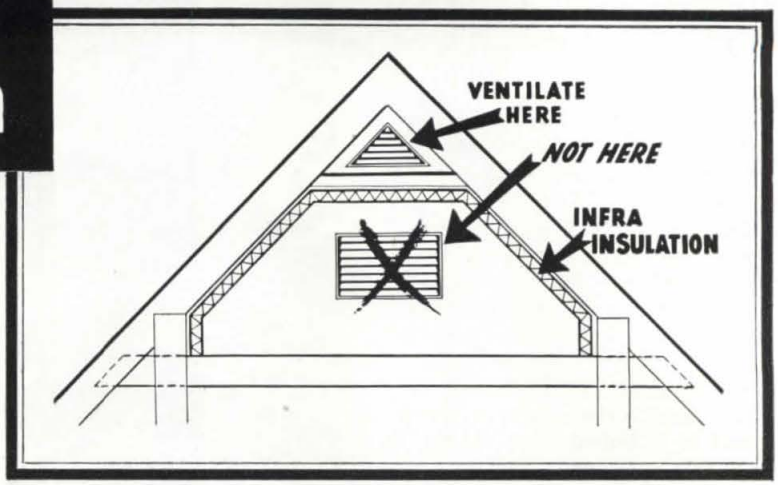
CHELSEA 50, MASSACHUSETTS

America's finest fluorescent fixtures . . . . . .

Write for the Smithcraft Catalog describing our full line of commercial and industrial fluorescent fixtures. We'll also be glad to add your name to our mailing list for our popular monthly house organ, "The Light Side of the News".

Don't Vent Below Insulation

Vents below insulation let heated air out, cold air in, waste fuel in winter. This defeats the purpose of insulation, which is to prevent the escape of heat.



Ventilation is generally necessary above all insulations, less in residences, more in buildings where crowds or other conditions create large amounts of water vapor. Where roof rafters are insulated, it is good practice to cap under the ridge, insulate across, and ventilate above.

With ordinary insulation, at least 1 sq. in. of free opening is needed for each 4 sq. ft. of ceiling and wall surface exposed to vapor flow. No point in the vented space should be more than 25 ft. from a vent opening. Adequate ventilation takes care of vapor which seeps through into a building space from within, and of evaporated water which leaks in through nail holes and other openings from without. In summer, attic vents help lessen the heat load imposed by the sun.

Multiple accordion aluminum is non-condensation forming, non-absorbent. Since it is impermeable to vapor, it will slowly force out, even without vents, ordinary amounts of fortuitous vapor which has leaked in through openings in the outside walls. (To do this, an insulation must have a permeability no greater than one-fifth that of the colder outer wall or roof.) Venting accelerates this process.

Multiple accordion aluminum turns back 97% of the infra-red rays striking it; emits from its opposite surface but 3%. There is negligible conduction, and convection is blocked. The commercial form of multiple accordion aluminum, with 6 integral reflective spaces and 6 reflective surfaces is Infra Insulation Type 6.

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Up-Heat C.080, R12.50 equals 4" DRY Rockwool
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VAPOR PERMEABILITY equals ZERO

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10 Murray Street, New York, N. Y. Dept. P-5
Please send "Simplified Physics of Vapor and Thermal Insulation."

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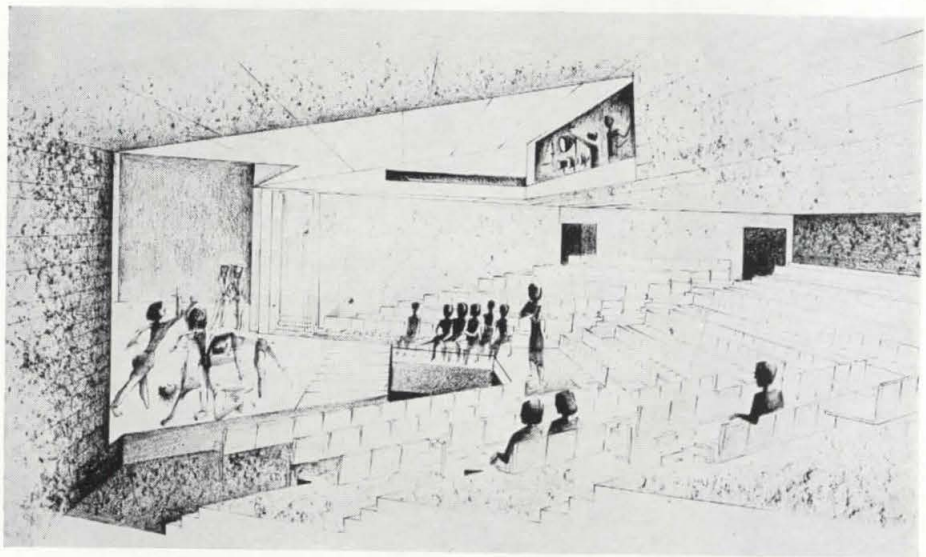
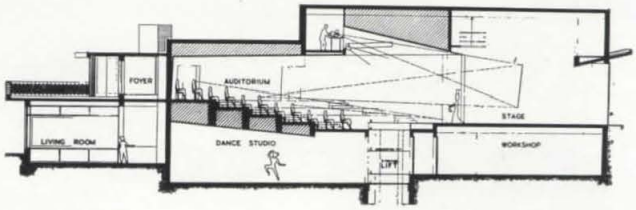
PROGRESS PREVIEW

Theater, Concert Hall, Music and Dance Center

Marcel Breuer is now preparing working drawings for an Auditorium for Sarah Lawrence College in Bronxville, north of New York City. This latest instance of the trend toward good contemporary design on the part of colleges and universities came about through the recommendation of Breuer to the college authorities by several of the faculty members who knew his work. Funds for the actual construction are now being raised and it is hoped that building will start this summer.

The building will be a theater, concert hall, and music and dance center of unusual scope and design. The auditorium, proper, seats almost 500 people with wide spacing between the rows allowing a greater number of seats in a row. Alternate rows of seats may be removed for banquets or special events, when tables may replace them in nightclub or cabaret fashion. A removable fore-stage



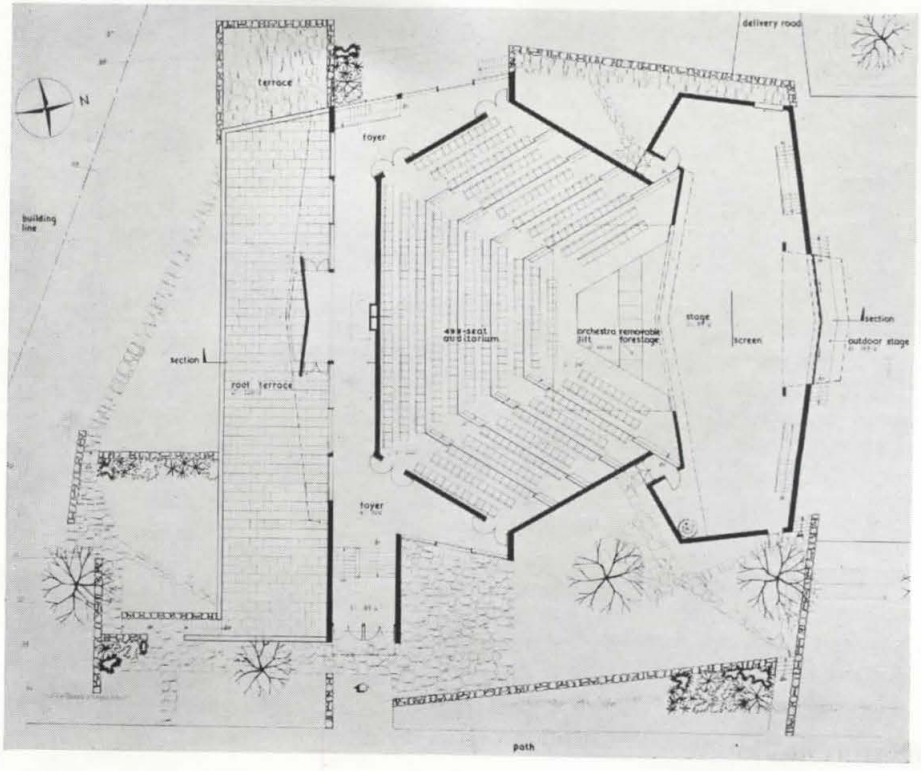


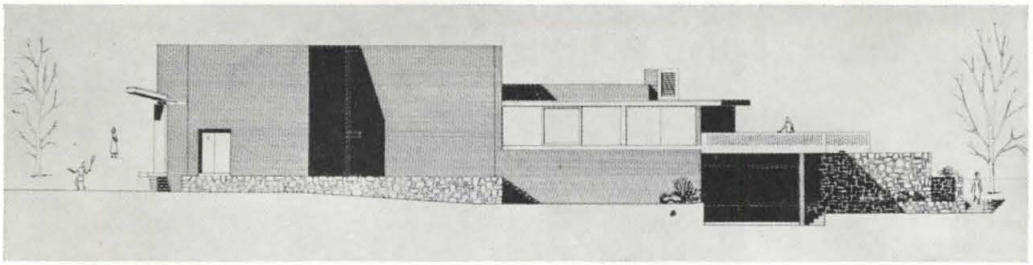
Above — imaginative drawing of the theater in use.
Right — section, showing close relationship of lighting gallery and stage.
Below — upper-level plan, indicating two-way use of stage.

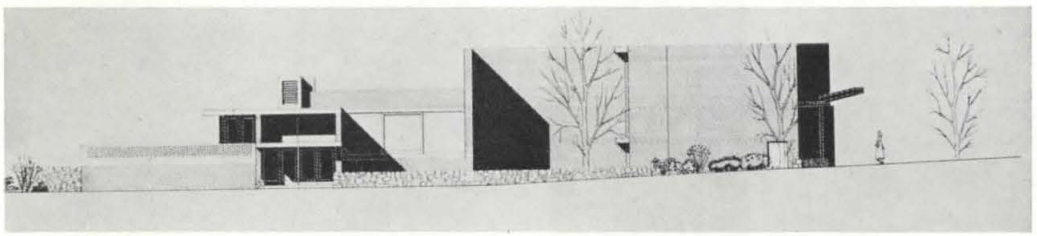
makes it possible for 50 more seats to be installed in the orchestra.

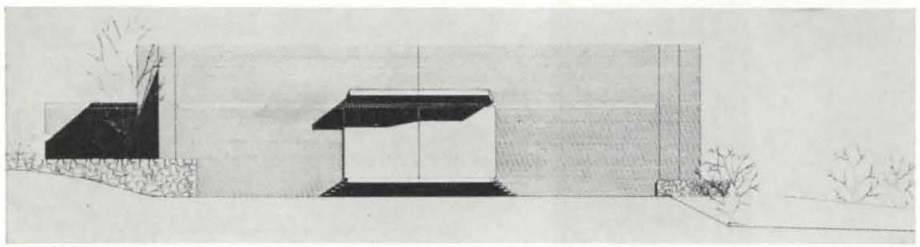
Lighting will be controlled from a gallery and catwalk above the audience, rather than the ordinary switchboard behind scenes, worked on cues. There is an orchestra lift which may be brought up to stage level for an extension of the forestage, depressed for a regular orchestra pit, or lowered to the basement for raising scenery constructed in the workshop below the stage. Two sets of fireproof doors between the workshop and lift give the required fire protection. In the summer, doors at the rear of the stage may be opened for an outdoor theater with the audience seated on the tennis courts behind the theater.

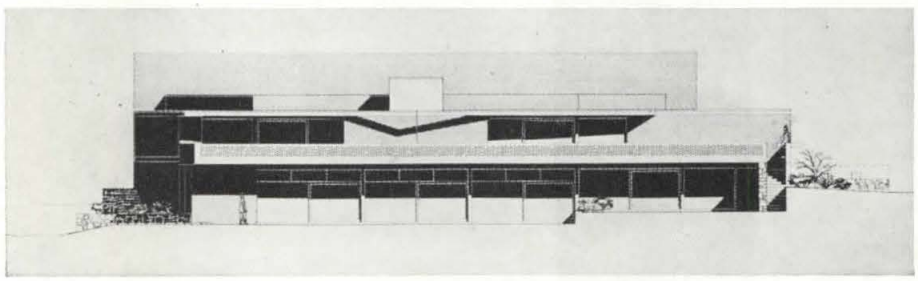
On the lower floor, besides the workshop, is a dance studio, costume shop, dressing rooms and showers, practice and listening rooms, a committee and chamber music room, and the mechanical equipment. At a slightly higher level there is a living room, with snack bar and kitchen, extending to an open terrace on the



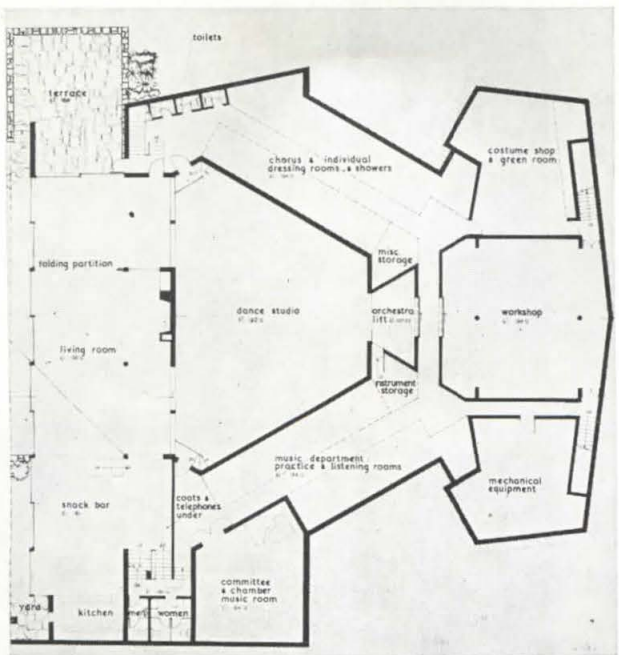








Reading down — West Elevation, with upper and lower terraces at righthand end; East Elevation, principal entrance to both levels; North Elevation, with stage opening for outdoor use; South Elevation, showing glazed side of living room protected by overhang of terrace off foyer above.



lower side of the sloping site, and opening visually to the dance studio, when these two spaces are used together. Above the living room is the foyer to the auditorium with a roof terrace (which also forms an eyebrow over the almost continuous glass of the southeast side of the living room) for use in good weather.

The varied facilities concentrate under one roof all the related arts of theater, music, and dance, and also provide a handsome setting for receptions, banquets, and various scholastic affairs.

Wurdeman & Becket, Architects; P. J. Walker Co., Builders

The new home of General Petroleum Corporation is faced with Ceramic Veneer

One of the largest office buildings in Southern California, the new Home Office of the General Petroleum Corporation, is faced with beauty and permanence . . . with Ceramic Veneer. This machine-perfected terra cotta accents the modern lines of the structure and will keep it looking as modern as tomorrow.

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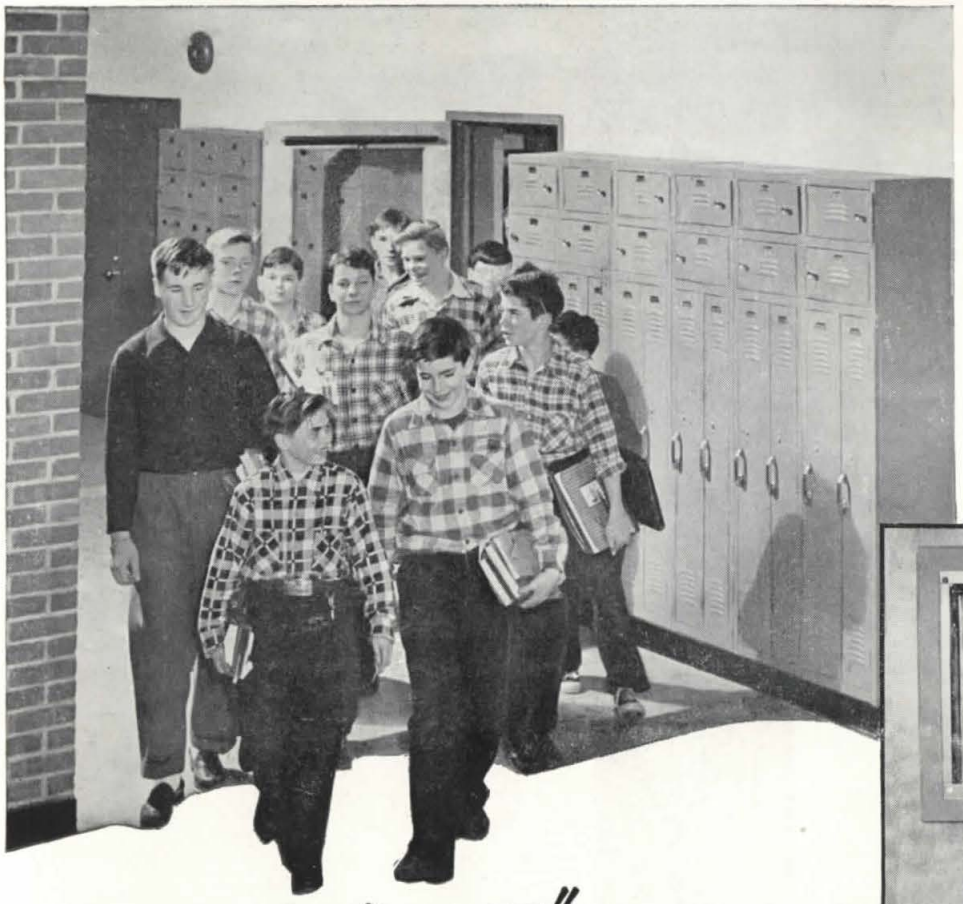
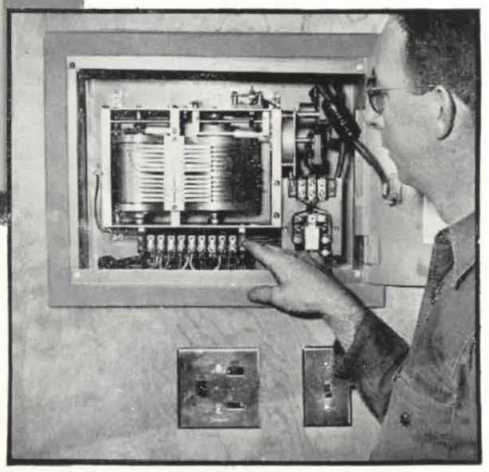


School "DAZE" Eliminated Here!



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Editors Visit Daylighting Laboratory

By Burton H. Holmes

Being overcast, dreary, and looking like rain, it didn't seem much of a day for our recent junket to Ann Arbor as guests of the American Structural Products Company and the University of Michigan. Ray Dodd of Steve Hannagan's office had advised us to be at the Capitol Airlines Terminal (New York) by 8:30 a.m. Waiting for others to arrive, chatted with Bob Fisher of *Architectural Record*, Fred Pawley from the Octagon, Carl Norcross, Dero Saunders, William Goolrick of *Building-Fortune-Life*, and also met Miss Ruby Redford of *Illuminating Engineering*, who was making the trip in her new capacity as editor of that journal.

Our DC-3 was air-borne by 9:05 and within another few minutes, we were in the sunshine at 6000 feet being tailwinded westward at 200 mph. Somewhere between Pittsburgh and Youngstown, the clouds opened up long enough for us to get a glimpse of the Ohio River. Landing at Willow Run, we were met by Hannagan-man Merrill Compton (someone said "Hello, Mr. Berghoff") who escorted us to the University of Michigan campus.

Almost immediately, daylighting became the principal subject of discussion. Whisked to a suite of rooms in the Michigan Union, our party indulged for a few minutes in a pleasant activity which often precedes a luncheon for the press. Met Stan McGiveran, president of American Structural Products Company, subsidiary of Owens-Illinois Glass Company, who welcomed us aboard; among his associates were Ben (Get-the-top-down) Dennis, "Mac" McWhortle, Ed Lockhart, Ken Cunningham, and others. After luncheon and a brief welcome to Ann Arbor by both McGiveran and President Townley of the University, we "went to class" in the model classroom of the Daylighting Laboratory atop the East Engineering Building. Although this laboratory has been in existence for over 10 years, its presence was only recently announced.

In 1940, the Owens-Illinois Glass Company, seeking outside assistance to develop its early types of light-directing glass block, began a program at the University of Michigan through the Engineering Research Institute for the purpose of establishing a daylighting laboratory and conducting a series of daylighting studies. Although the laboratory's principal purpose has been the study of light-diffusing and light-directing glass block in the field of fenestration, it has also contributed valuable data concerning window arrangement and materials, reflectivity values of various color schemes, and the transmission of daylight under various room and weather conditions.

The present rooftop laboratory consists of a testing section — painted flat black to diminish scattered light — which possesses an artificial sun and sky plus auxiliary equipment for calibration and measurement purposes. Also included in this penthouse is a model classroom with an adjustable ceiling and movable walls to study the properties of glass block fenestration under actual daylight conditions.

Under the direction of Dr. R. A. Boyd, research physicist, and his associates, a scientific approach to the solution of these studies has been followed. Early in the program, it was realized that it would be necessary to develop more accurate instruments

(Continued on page 20)

(Continued from page 19)

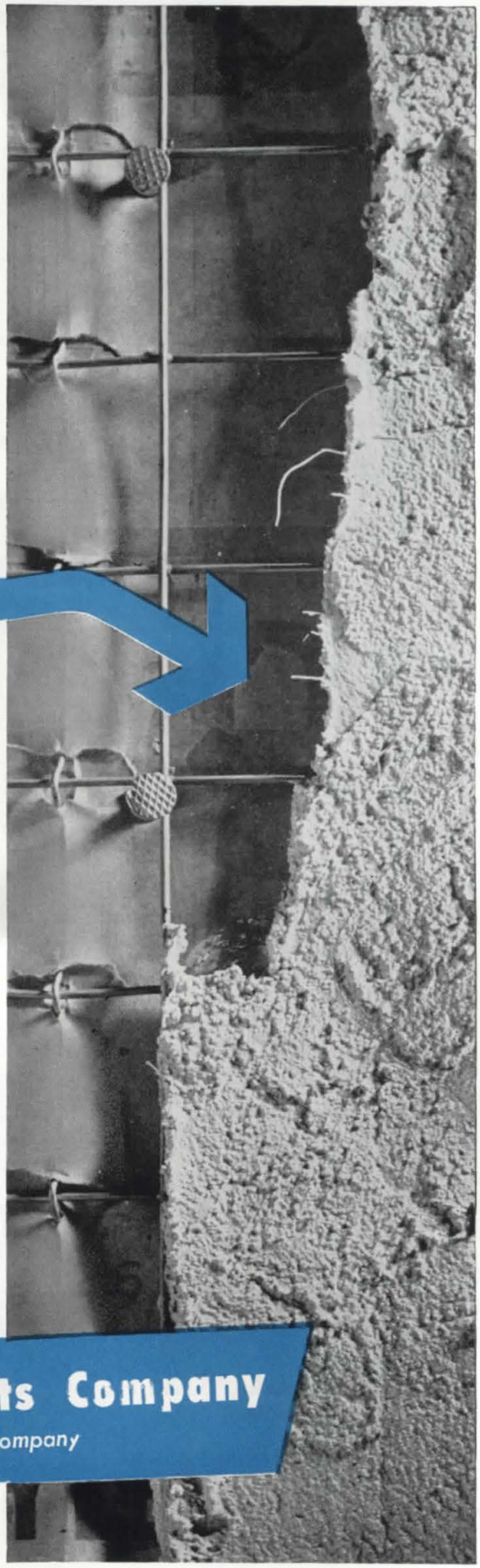
to measure the amount of light at a given location, the reflectance of natural light, and the brightness of natural light. Although this requirement further complicated their tasks, these men ingeniously developed improved instruments which eliminate human estimates, in operation. For example, using the photocell of their own design, the errors in measurement for the majority of illumination conditions encountered are not greater than two percent. An ordinary, uncorrected photocell, however, may be in error by as much as 100 percent in measuring illumination due to direct sunlight. In order to be able to take simultaneous readings of illumination conditions at various locations throughout the model classroom as well as other readings outside the penthouse, a special recorder was devised. With this equipment, 16 separate events can be recorded at one time with a four-second interval for the registering of each figure. Equally interesting was the development of controlled artificial light to simulate natural sources.

Dr. Boyd and his staff have taken full recognition of the two basic factors in the control of natural light: *quantity* and *quality*. They have modestly admitted that little may be done about the former by a mere scientist; however, with the latter they are justly proud of their achievements. That they have succeeded in their goal is effectively proven in their laboratory. A most impressive demonstration is performed in the blacked-out testing room. A prismatic glass block, Insulux 363, is mounted in an aperture of a completely enclosed room. Behind that wall, an artificial sun directs collimated light (5000 watts) in a downward direction toward the face of the block. The witness observes the effect of the light emerging from the other side of the block — eye examination charts placed 20 feet above floor level, and on three different walls, are read with ease. Subsequently, other types of plain and translucent glass are clamped in this wall opening. It is quite apparent that the Insulux block with prisms on its interior face and azimuth-correcting ribs on its exterior faces, not only transmits more daylight but also diffuses it more uniformly to all portions of the room. Despite this increase in transmitted light, the block offers less surface glare when viewed from normal eye level.

It would be a valuable experience for any architect to visit this laboratory and witness the results of this research developed by the combined efforts of an industrial organization and a university. To know first-hand that a product is backed by a competent and thorough research program, certainly gives one confidence in its use. In addition to the advantage of this product for classroom lighting, there can be no doubt that there are also many commercial, industrial, and other applications where it is desirable to take full advantage of natural daylight. Although only a few architects will be able to visit this laboratory, it is possible for all to learn more about it through an excellent 88-page bulletin, *The Development of Prismatic Glass Block and the Daylighting Laboratory*, which has been published by the Engineering Research Institute. It gives the reader a full and intimate knowledge of the work that has been conducted by Dr. Boyd during the last ten years.

Although there were still many questions to ask, our class had to be dismissed. Except for strong headwinds and a double refill at Buffalo, the return flight was uneventful for most of us.

See how tough welded-wire **Pittsburgh Steeltex** bites deep into a stucco slab



Look closely at the actual-construction photograph. Notice that the Steeltex mesh is heavy, and the galvanized wires are welded together for greater rigidity. This provides positive protection against later distortion by actually strengthening the entire wall. Notice also the tough, double-ply waterproof backing. This not only protects the structure, it assists proper curing of the stucco slab. Steeltex backing and mesh are applied in one operation, thus saving money. For further good reasons for specifying Steeltex, see Sweet's or write for catalog D.S. 131, Dept. PA, Pittsburgh Steel Products Co., Grant Building, Pittsburgh 30, Pa.

Pittsburgh Steel Products Company

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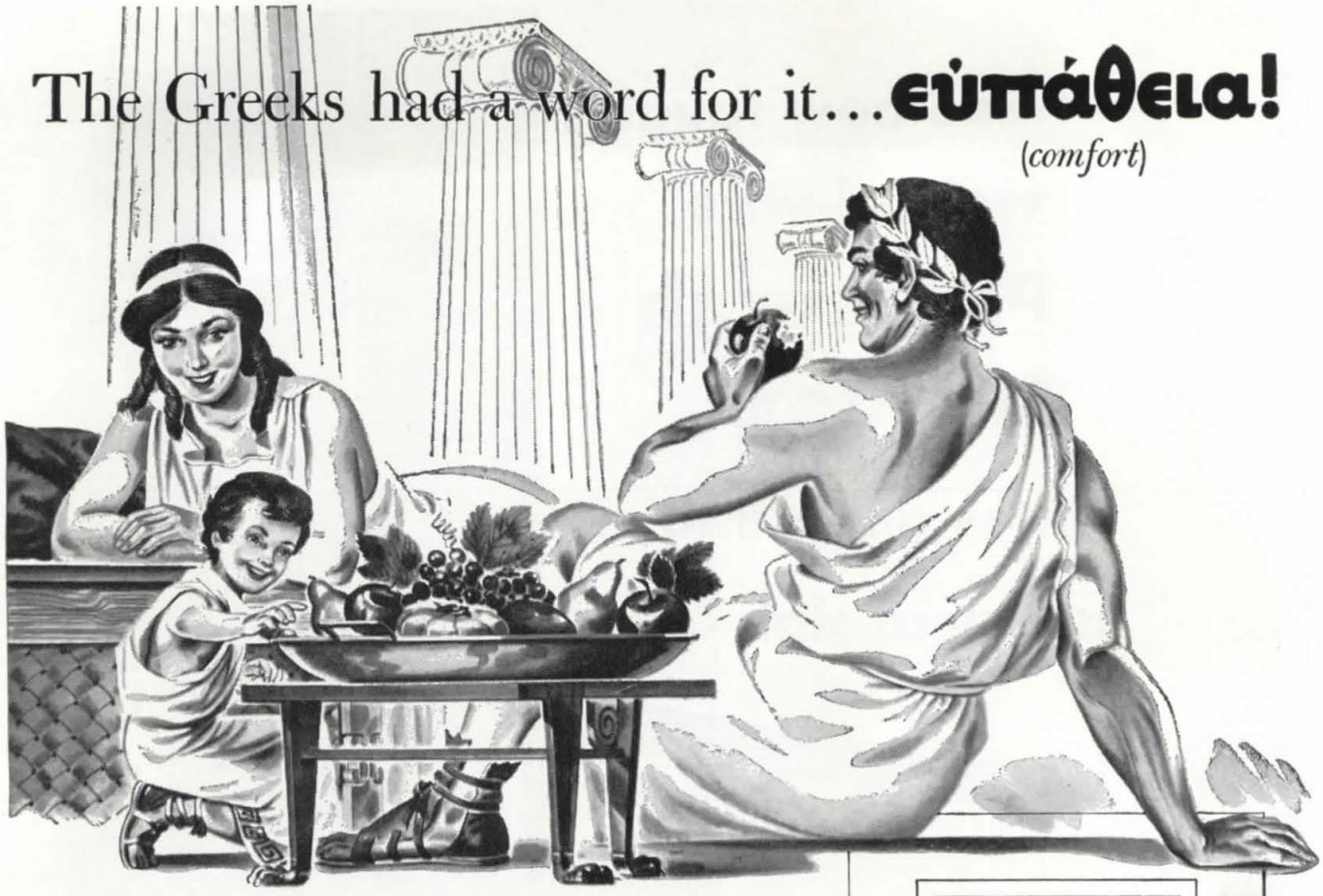
The Greeks had a word for it... εὐτταθελα!

(comfort)



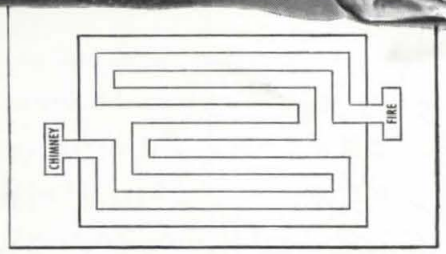
For the "comfort" of radiant heat today steel pipe is first choice—

Self preservation is the first law of nature and man's urge to seek comfort is part of it. Civilizations long extinct knew that, too. The ancient Greeks had a word for it which means the same but doesn't look nor sound as warm and friendly as our own word "comfort."

But in whatever language you say it, one of the ways of attaining comfort is by keeping warm, and the Ancients knew about radiant heating centuries ago. By passing smoke and hot gases from their fires through ditches and ducts, they warmed the floors and radiated heat throughout their homes.

Today radiant heating brings sun-like warmth to every room, in a completely scientific and effective way, by circulating hot water through embedded steel pipe coils. Proved through more than 60 years of service in conventional hot water heating systems, steel pipe has every quality required by modern radiant installations . . . low cost, strength, weldability, formability, and complete suitability.

Yes, if the Greeks had known about it they would have had words to say "steel pipe is first choice," too.



The ancients utilized channels beneath their floors to draw hot gases through from firebox to chimney, as shown above, thus warming floors.

Today steel pipe coils are embedded in floors or ceilings during initial construction to provide advantages of radiant heating.

COMMITTEE ON STEEL PIPE RESEARCH

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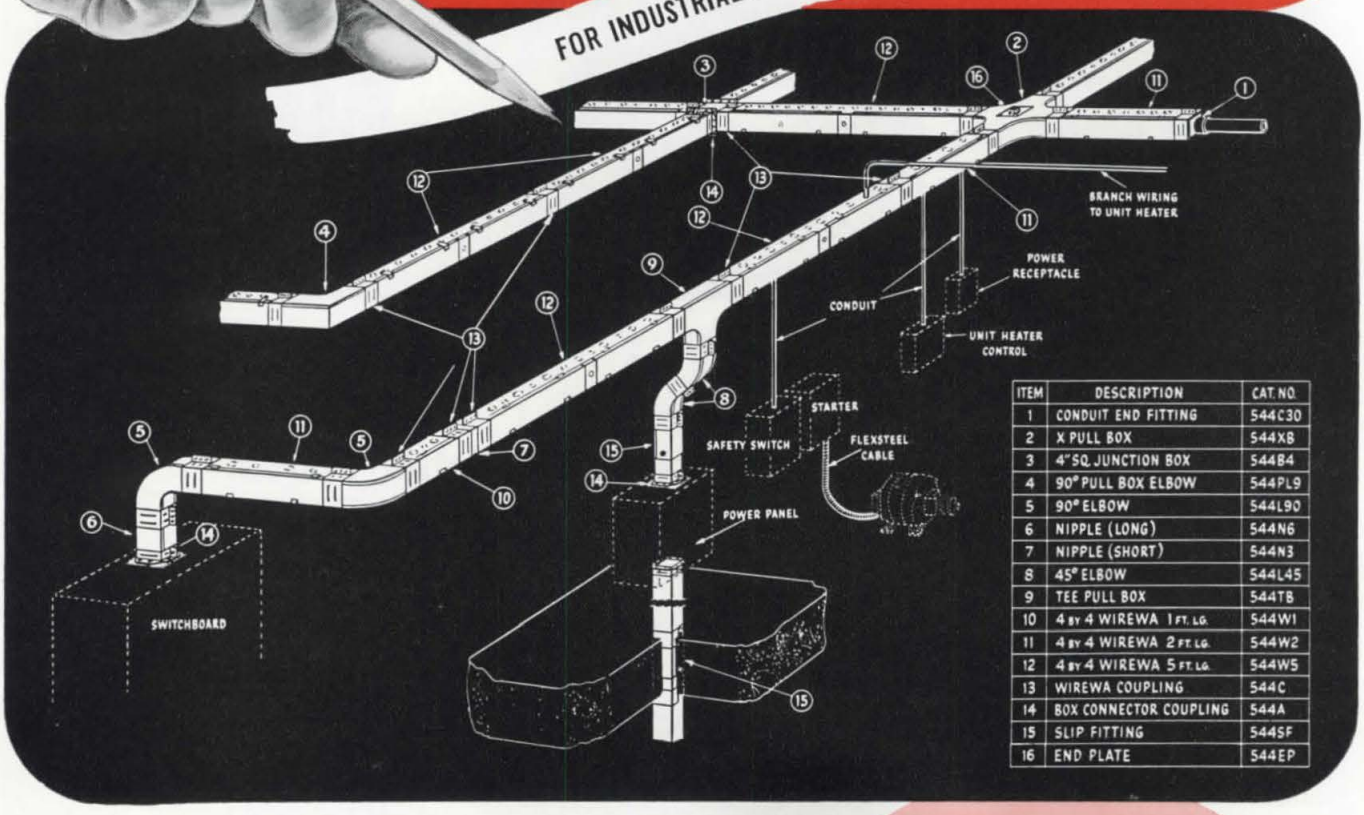

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12	4 BY 4 WIREWA 5 FT. LG.	544W5
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Sketch of a typical 4 x 4 WIREWĀ installation showing complete flexibility, simplicity and use of fittings.

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- **It may be mounted direct to wall or suspended from ceiling. Couplings may also serve as hangers.**
- **Low maintenance, simple to reroute and extend —100% salvable.**

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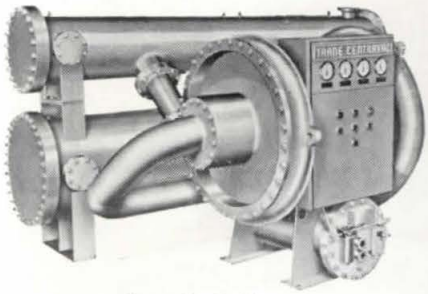
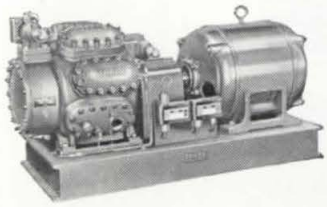
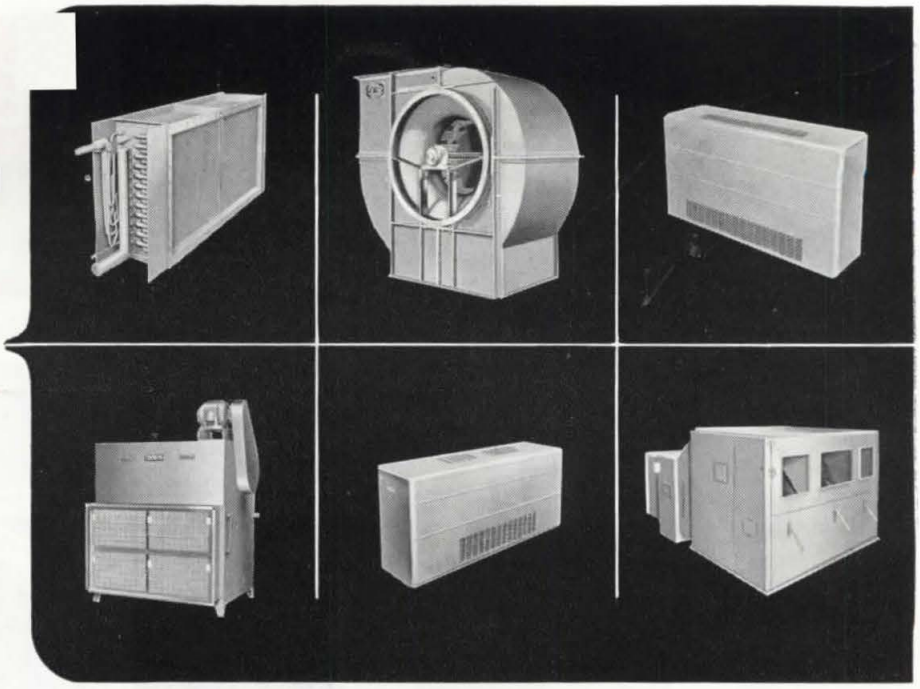


Trane CenTraVac



Trane Reciprocating Compressor



Trane Cooling Coil (above) Trane Climate Changer

Trane Centrifugal Fan (above) Trane Custom Air Unit

UniTrane Air Conditioner (above) Trane Multi-Zone Climate Changer

How matched Trane Products make better systems

Here's why more and more people are specifying, installing and using more and more Trane matched products each year.

Specifiers know that Trane manufactures everything from hot water valves to refrigeration units. Using Trane equipment, they can create a wide variety of complete systems for every type of building. They combine Trane Evaporative Condensers with Trane Reciprocating Compressors, Trane Fans with Trane Cooling or Heating Coils, Trane Unit Ventilators with Trane Steam Specialties.

And when they use Trane equipment together, they are not only getting the fine features that have established individual Trane products as leaders in their respective fields but a lot more as well.

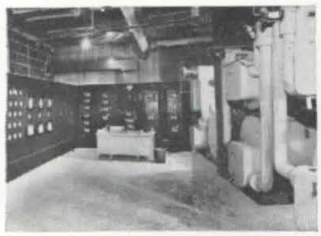
Save Time—If they need equipment counsel they see one salesman-engineer instead of several. They use one set of completely integrated catalogs conveniently bound into one handy binder.

Save Trouble—When they use Trane equipment to create a system, Trane assumes the responsibility for the correct performance of all its equipment when properly installed and controlled. There is no blaming the product of one manufacturer because the product of another doesn't operate satisfactorily.

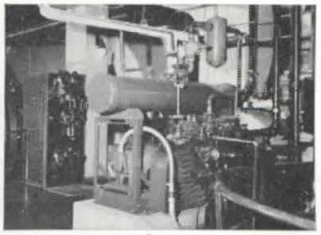
Better Performance, Too—Trane products are designed together, made together, tested together for service together. Each product is built to the same high level of quality. Into each product, Trane has incorporated important construction features that make that product a leader in its field. When these leading products are used together in a system, better performance is inevitable.

Add to all these specific advantages those that the installer enjoys. He orders equipment directly from one supplier. He can plan shipment of equipment more easily. He writes one check for the whole system. Bookkeeping is cut to the bone. So is installation because Trane products fit better together.

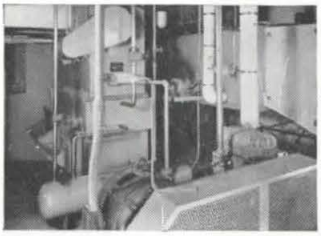
When Trane products are used together in complete systems the user gets a better installation. Join those who have already found the advantages of complete Trane systems—specify and install Trane products.



Equipment room of a large office building where Trane centrifugal refrigerating units supply chilled water in an extensive Trane air conditioning system.



This Trane Condensing Unit is perfectly matched with Trane Direct Expansion Coils to form the heart of a Trane system for the coffee shop of a large hotel.



Real Trane product teamwork is illustrated by this complete Trane Compressor, Trane Evaporative Condenser and Trane Climate Changer installation.

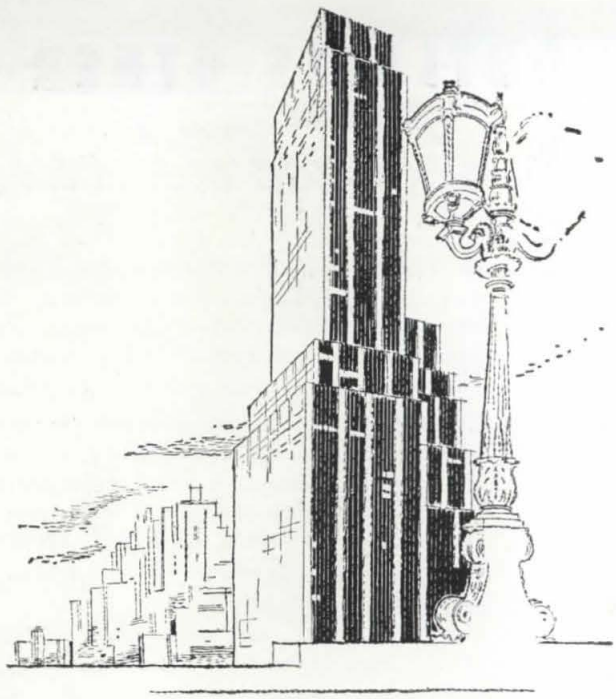
TRANE

MANUFACTURING ENGINEERS OF HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT

THE TRANE COMPANY, LA CROSSE, WIS.
Eastern Mfg. Division, Scranton, Pennsylvania
Trane Company of Canada, Ltd. . . . Toronto
OFFICES IN 80 U.S. and 10 CANADIAN CITIES

and below: Installation in American Airlines, Inc., Offices. Architect: Kahn ıbs—Acoustical Contractor: National Acoustics Co., N.Y.C.

Installation in Canada Dry Ginger Ale, Inc., Offices. Architect: Carson & —Acoustical Contractor: National Acoustics Co., N.Y.C.



DESIGN for Quiet, Firesafe BEAUTY

In 100 PARK AVENUE, Fiberglas* Acoustical Tile—the modern, low-cost, incombustible acoustical material—hushes noise in over 150,000 sq. ft. of office space. It's specified by architects for a number of tenants because it offers a unique combination of values:

- **Fire Safe**
- **High Acoustical Value**
- **Decorative Beauty**
- **Good Light Reflection**
- **Ease of Application**
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- **Cleanable and Paintable**
- **No Sustenance for Vermin**
- **Dimensional Stability**
- **High Insulation Value**
- **Low Cost**

For complete specification information on Fiberglas Acoustical Tile, see Sweet's Files—Architectural, or call your local Fiberglas acoustical contractor, listed in the yellow pages of the phone book.

Owens-Corning Fiberglas Corporation, Department 63-E, Toledo 1, Ohio. Branches in principal cities.

OWENS-CORNING FIBERGLAS ACOUSTICAL TILE

*Fiberglas is the trade-mark (Reg. U. S. Pat. Off.) of the Owens-Corning Fiberglas Corporation for a variety of products made of or with fibers of glass.

***WRITE FOR* FIBERGLAS DESIGN DATA**


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CENTRAL SYSTEM FILTERS


ACOUSTICAL TILE

OUTLASTS OTHER FERROUS SHEE METALS

... because it's rust-resistant throughout

● TONCAN IRON's rust-resistance is not just a surface quality, but extends all through its cross-section. Even sheared and punched edges stubbornly fight rust. That's one reason it so consistently outlasts other *ferrous sheet metals* in its price class.

TONCAN is an *alloy* iron. Its base is highly-refined, open-hearth iron, remarkably free from rust-inviting impurities. Copper is added—twice the amount generally contained in copper-bearing steels or irons. Molybdenum is alloyed in carefully controlled quantities to help this double dose of copper say "stop" to rust . . . and mean it.

Sheet metal contractors like to fabricate TONCAN IRON. They know from experience that it's soft, ductile and easy to work. As a result, jobs move through their shops without delay.

Considering forming, shipping and erection expenses for any sheet metal, TONCAN IRON's slightly higher material cost hardly reflects itself in the total. Actually, over the long-term period, its trouble-free service means important savings for your client.

See Sweet's File for more information, or write us:

REPUBLIC STEEL CORPORATION
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, N. Y.

for more than 40 years... HIGHEST RUST-RESISTANCE OF ALL FERROUS MATERIALS IN ITS PRICE CLASS

TONCAN COPPER MO-LYB-DEN-UM IRON

Republic

REPUBLIC STEEL

TONCAN® COPPER MOLYBDENUM IRON

—for ducts, gutters, conductor pipes, roofing, siding, tanks, ventilators, skylights, hoods and other sheet metal applications requiring rust-resistance — and for corrugated metal drainage products.

A. I. A. File #23D

Kentile can be installed over any smooth, firm interior surface

Wood—Boards for rough flooring should be nominal 1 x 4's or 1 x 6's that are square edged and nailed twice at each bearing, preferably running diagonally. T & G top flooring should not be over 3" wide. ¼" waterproof plywood laid over the rough flooring makes a suitable surface to receive Kentile.

Metal—Kentile can be installed over metal if the surface to be covered is firm, smooth, clean, free of scale, dust, oil, grease and other foreign matter.

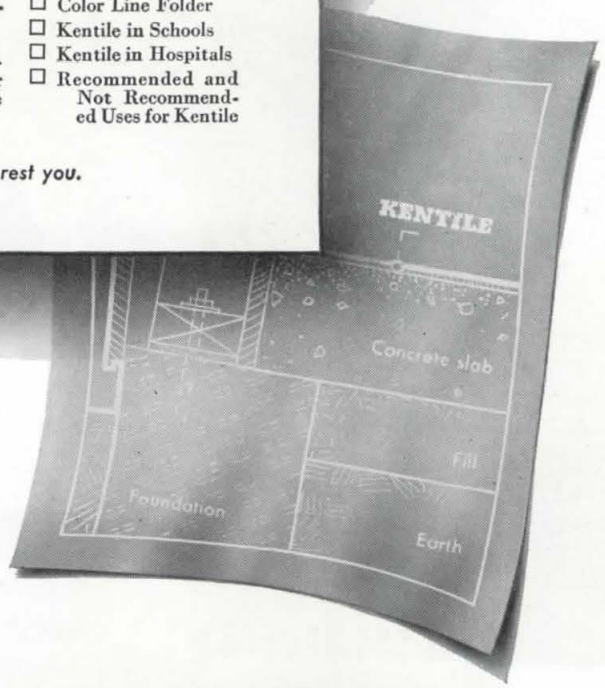
Concrete—Kentile can be installed over concrete that is smooth and free of foreign matter...even concrete on fill in direct contact with the earth...walls and floors above or below finish grade.

Kentile should not be installed out-of-doors or over wood in contact with the earth. Kentile should not be installed in commercial areas where it is exposed to petroleum or cooking greases and oils, alcohols and most acid solutions. In cases such as these, SPECIAL KENTILE is recommended. It can be installed wherever standard Kentile can be used.

The following literature is available on request and is designed to aid in the specifying of floors and walls for residential, commercial or industrial building or remodeling.

- ☐ Architects Specifications
- ☐ 16 Page Catalog—includes 4-color photos of Kentile installations
- ☐ Color Line Folder
- ☐ Kentile in Schools
- ☐ Kentile in Hospitals
- ☐ Recommended and Not Recommended Uses for Kentile

Please write the Kentile, Inc. office nearest you.



✓SPECIFY KENTILE BY NAME...because of its

...**appearance**—a complete range of marbleized colors in Kentile and SPECIAL Kentile. Also, feature strips, decorative inserts, edging and cove base.

...**installability**—Kentile can be applied over any smooth wood, metal or concrete surface...even below finish grade over concrete on fill in direct contact with the earth.

...**availability**—Over 3,000 Kentile dealers throughout the country assure prompt attention to your needs.

...**service**—Nine conveniently located Kentile, Inc. offices and a nation-wide system of trained representatives plus a comprehensive selection of technical literature, are available to help solve any flooring problem.

...**low cost**—Installed prices are lower than those of practically any flooring material; varying with size and condition of floor; colors and thicknesses chosen and freight rates. Accurate estimates are available from any Kentile dealer—listed under FLOORING in your classified phone directory.

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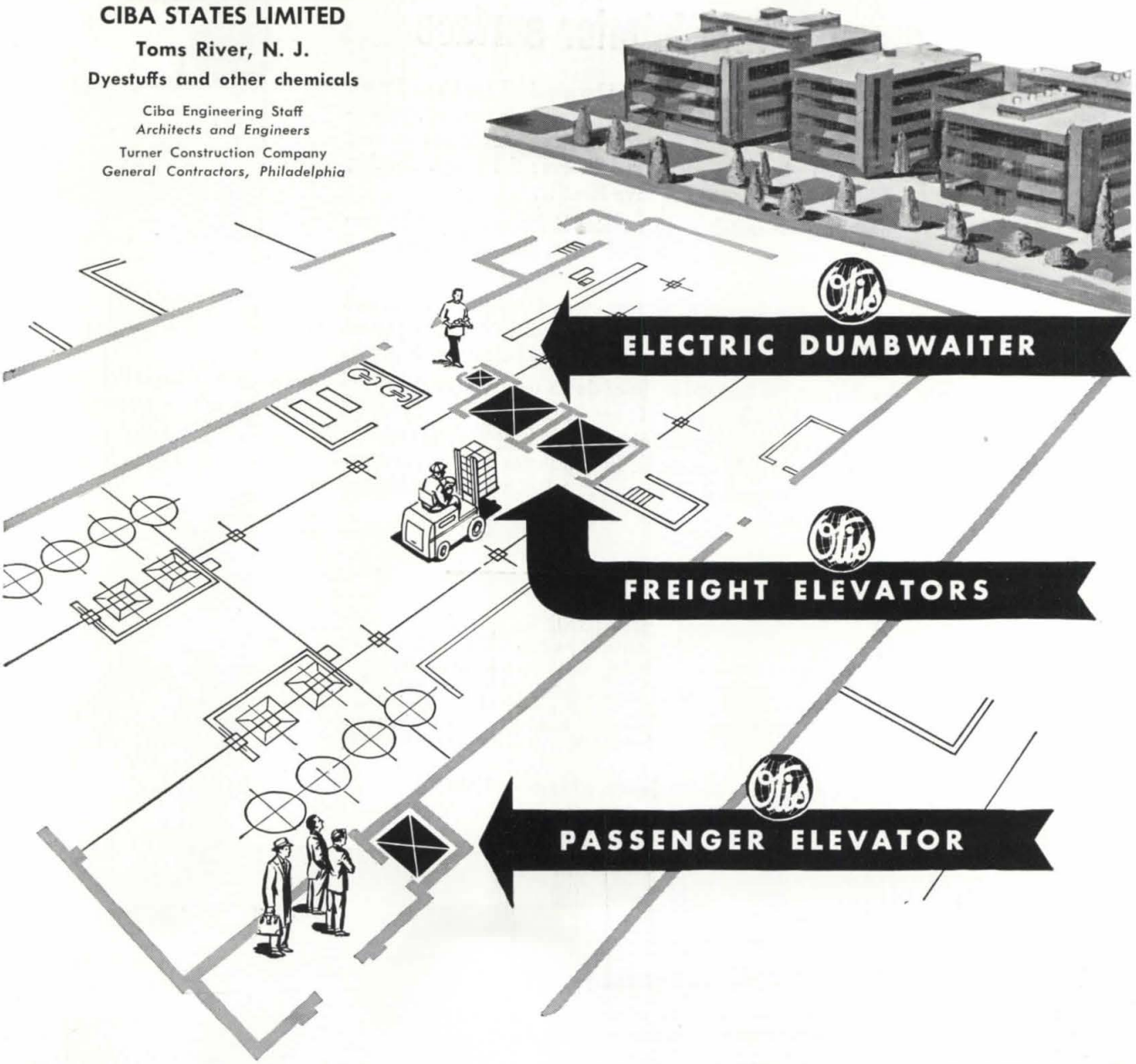
"Factory-Traffic" Elevatoring

CIBA STATES LIMITED
Toms River, N. J.
Dyestuffs and other chemicals

Ciba Engineering Staff
Architects and Engineers
Turner Construction Company
General Contractors, Philadelphia



This floor plan of the central building at CIBA's new Toms River Plant is typical of all three buildings. "Factory-traffic" ranges from industrial-truck freight handling to light-duty laboratory service.

OTIS elevatoring at Ciba includes 4 GENERAL-DUTY FREIGHT ELEVATORS (one with explosion-proof features), 1 FREIGHT ELEVATOR for industrial truck loading, 1 ELECTRIC DUMBWAITER and 1 PASSENGER ELEVATOR.

WHY DID CIBA BUY OTIS? Excellent 20-year service record of OTIS elevators in other Ciba plants . . . the ability of OTIS to assist on all problems of vertical transportation . . . the fact that all the equipment is OTIS designed, manufactured, installed . . . that OTIS assumes responsibility for the entire installation.

For further details of OTIS equipment, see SWEET'S Architectural File. Or, call your local OTIS office. Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.

Better elevatoring is the business of

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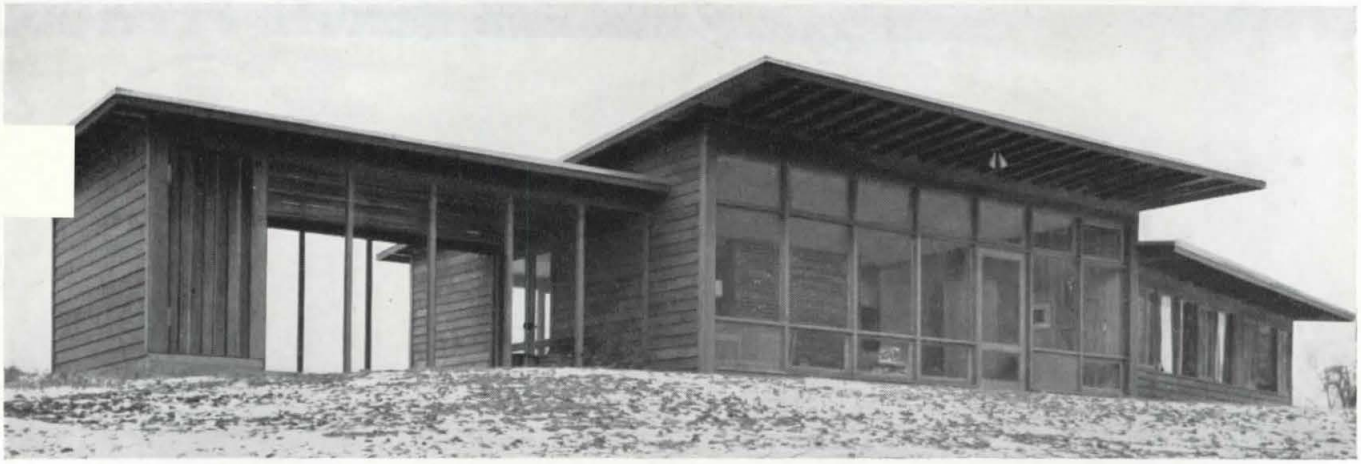


an artist with a practical eye

RESIDENCE of Artist Roland Rodegast, in suburban St. Louis, is protected against termites and decay by Monsanta Penta. Lumber used in the interior also is treated with Monsanto Penta to make it water-repellent while retaining paintability. ARCHITECT: Rex Becker, Froese, Maack & Becker, St. Louis, Mo. CONTRACTOR: Wm. S. Nicolson, Kirkwood, Mo.

When Artist Roland Rodegast built his suburban home near St. Louis, Missouri, he combined the beauty of *modern* architecture with the practicability of *modern* wood preservation.

Monsanto Penta (pentachlorophenol, technical), applied by pressure at the rate of six pounds of five per cent penta solution per cubic foot, preserves studding, ship lap and redwood siding. The residence is permanently protected against attacks by termites and other wood-boring insects . . . against decay caused by fungi. Both the beauty and structural strength are protected.

Pecky Cypress, used in the interior, is treated with Wood-tox, a formulation including Monsanto Penta, which makes wood water-repellent and dimensionally stable as well as protecting it against insects and decay. When treated with properly formulated Monsanto Penta, wood can be painted, varnished or beautified with modern finishes.

Monsanto Penta is a permanent wood preservative. It does not leach out of lumber but penetrates deeper as time goes on. It is a chemical treatment that always is uniform, giving *dependable* results.

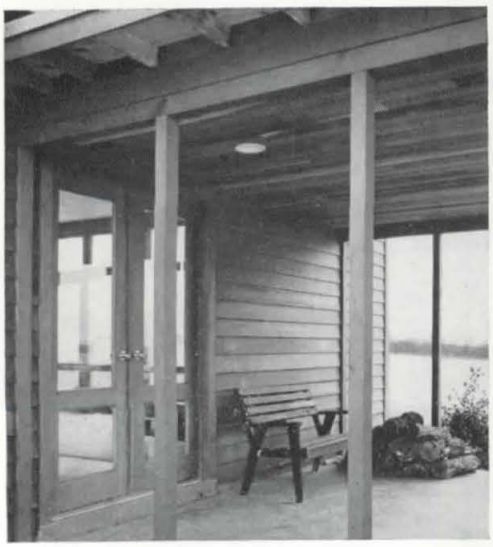
For suggestions on specifying penta-treated lumber and for information on sources of materials, contact the nearest Monsanto Sales Office or write MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri.

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

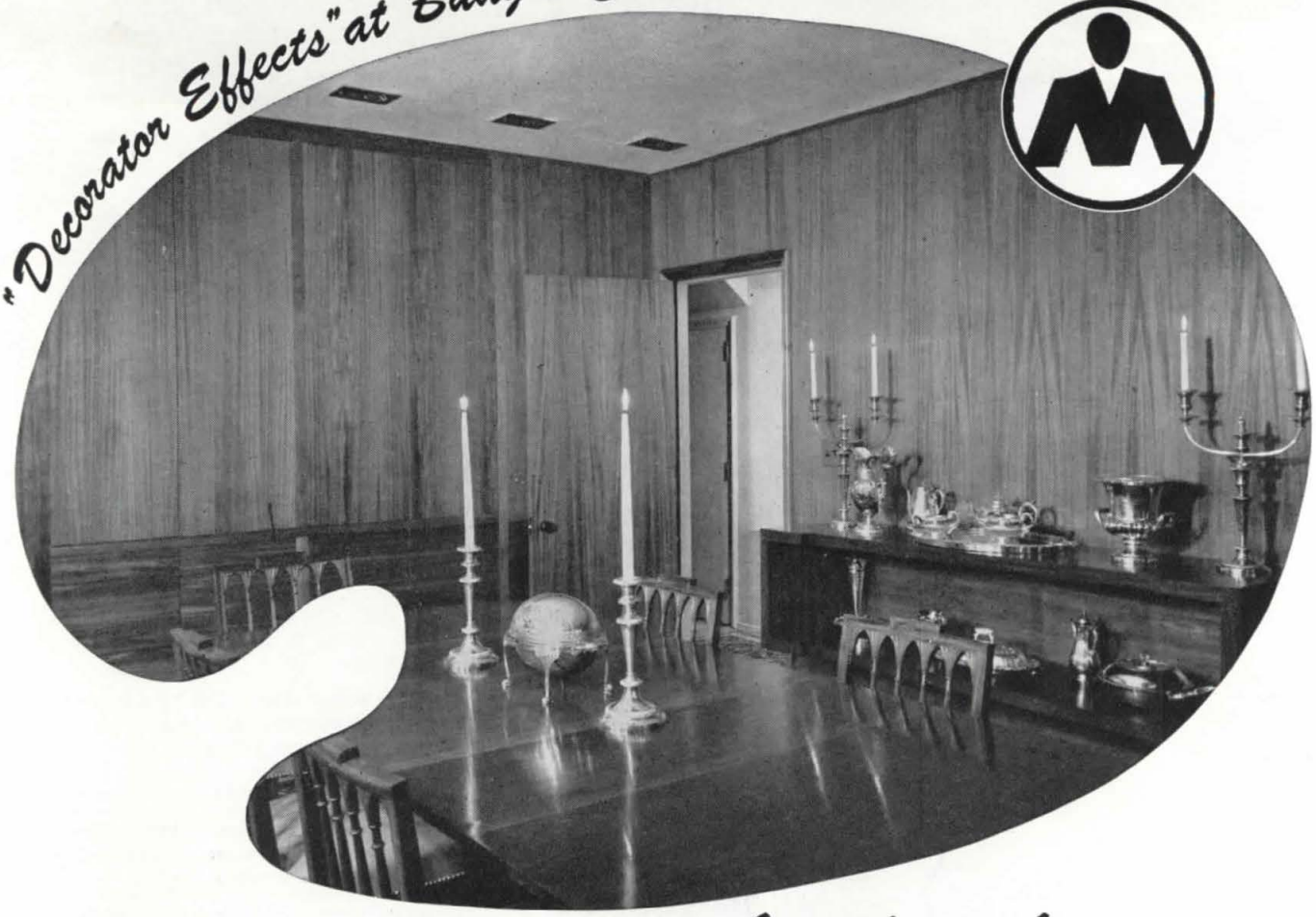
Wood-tox: Registered Trade-Mark of Wood Treating Chemicals Company, St. Louis, Mo.

MONSANTO
CHEMICALS — PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND



"Decorator Effects" at Budget Costs—with MENGEL PLYWOOD



Look what you can do with Mengelux FANCY FACE PLYWOOD!

Using Mengelux — *hardwood* plywood, with one face of lovely, genuine Mahogany, Walnut, Oak and Birch — you can get "decorator interiors" at a cost only slightly higher than plaster and wallpaper. The installation is completed in hours instead of days or weeks, and you give your client that "something extra" which makes all the difference between conventional and *extraordinary* jobs.

Mengelux is available in large, 48" x 96" panels, and in other standard stock sizes. It is available through leading distributors and building materials dealers, almost everywhere.

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Mengelbord
THE UTILITY HARDWOOD PLYWOOD

Write us direct for local names and addresses.

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Where fancy faces are not required, Mengelbord is the answer to the builder's prayer! It is 1/4" *hardwood* plywood, with one-piece face, free from joints and oval patches. No grain-raising. Works and cuts cleanly. Most panels are all-white or nearly all-white. Can be painted, stained or finished natural. And Mengelbord is available through same distributors who handle Mengelux; names and addresses on request.

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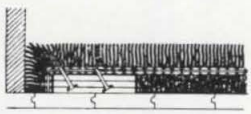
The Mengel Company . . . growers and processors of timber • manufacturers of fine furniture • plywood • flush doors • veneers corrugated containers • kitchen cabinets and wall closets

Now you see them... *Now you don't...*

DETAILS ARE your business
tack marks ARE DETAILS!

it's not magic... IT'S

Smoothedge
TACKLESS CARPET INSTALLATION
that makes the difference



HOW SMOOTHEDGE WORKS

SMOOTHEDGE gripper holds the carpet firmly and invisibly from beneath... dust-catching tack marks are eliminated—no bulges, puckers, ripples or ridges, because the carpet is thoroughly stretched from wall-to-wall for a perfect fit, much like a curtain on a curtain stretcher. It "stays put" until purposely removed, but when it must be taken up it's as easy as opening a zipper. No special provisions are required for installation on either wood or concrete floors. To specify, merely state, "Carpet to be installed with Smoothedge Carpet Gripper."

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Guaranteed by Good Housekeeping
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easy to specify • available nationally—

Handled by more than 4,000 carpet retailers and by 68 distributors. Recommended by the leading carpet mills for wall-to-wall installations.

SEND TODAY FOR FULL DETAILS, A. I. A. FILE AND NAMES OF INSTALLATION CONTRACTORS NEAREST YOU

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1536 N. Indiana St., Los Angeles 63, Calif.

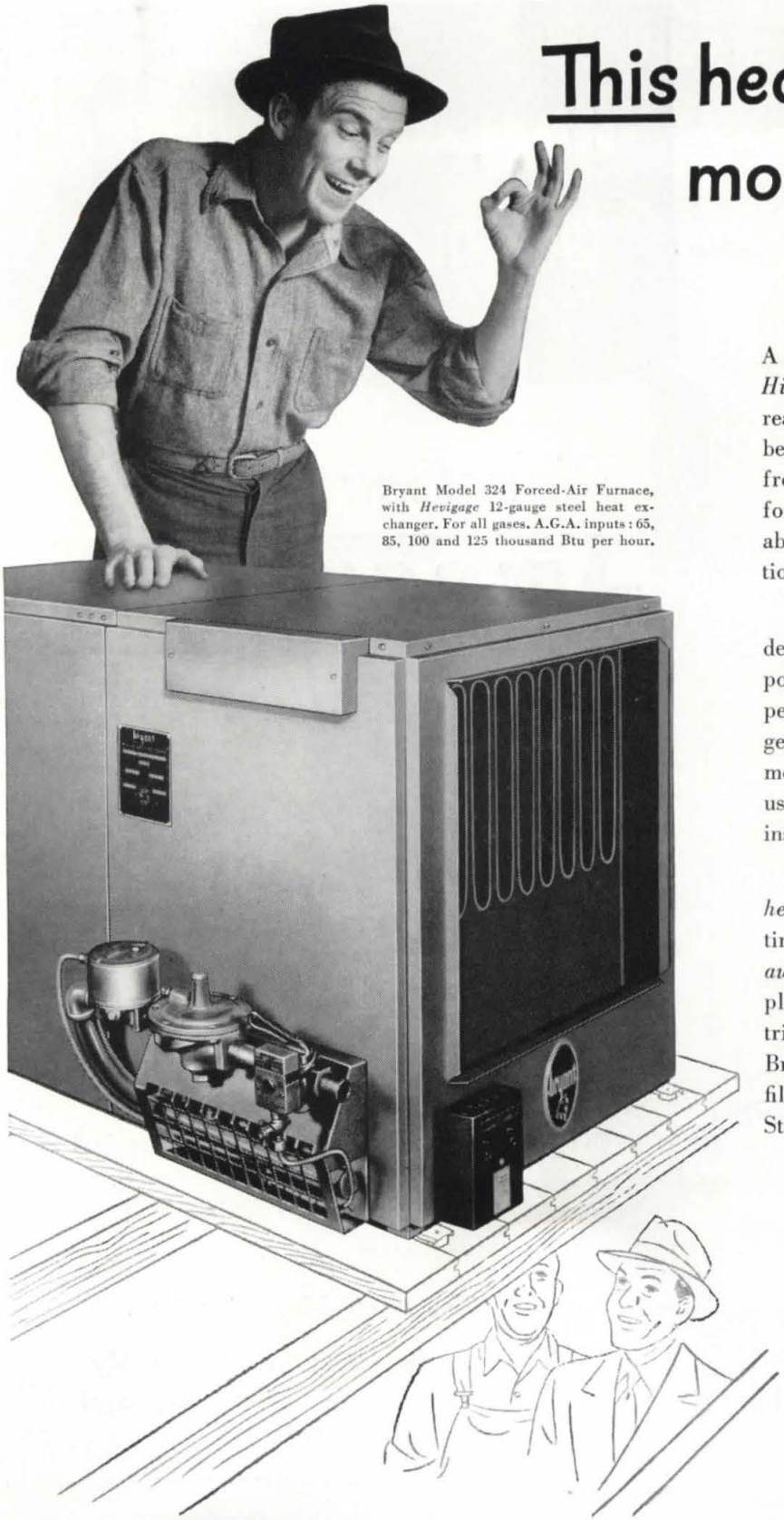
Please send me Smoothedge A.I.A. file ☐
Installation Manual ☐ Names of nearest contractors ☐

Name_____

Address_____

City_____ Zone____ State_____

This heating unit sells more *living* room



Bryant Model 324 Forced-Air Furnace, with *Hevigage* 12-gauge steel heat exchanger. For all gases. A.G.A. inputs: 65, 85, 100 and 125 thousand Btu per hour.

A truly great space saver like the Bryant *Hide-away* Gas Forced-Air Furnace adds real value and *appeal* to a house. It can be tucked away in the attic or suspended from ceiling or under the floor, releasing for storage, utility or *living* all the valuable space usually occupied by conventional heating equipment!

The *Hide-away* offers typical Bryant dependability and gas economy, with positive automatic control. Casing temperatures are *low*. Installation-wise, you get ease of handling, and structural steel mounting channels provided can also be used to suspend the unit when it is so installed.

Plan more *living* space and better *heating* for your homes at the same time. Plan to use the Bryant *Hide-away* Forced-Air Furnace! For complete details, contact the Bryant Distributor nearest you or write direct. Bryant Heater Division, Dept. 122, Affiliated Gas Equipment, Inc., 17825 St. Clair Avenue, Cleveland 10, Ohio.

Let the pup be furnace man
... and water boy, too!

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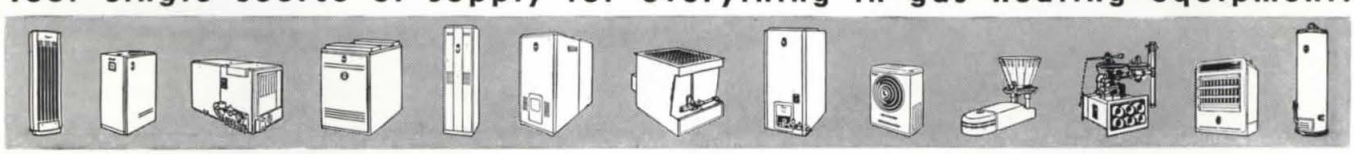
Your *single source* of supply for everything in gas heating equipment!



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LOW COST

EASY INSTALLATION

FOR NEW OR OLD CONSTRUCTION

SECURITEE SYSTEMS*, mechanical attachments for erecting acoustical tile, are designed to give full length proper tee support that assures maximum safety and structural permanence.

Securitee Systems* superiority on new installations and conversions has been proven by the test of years on both types of construction.

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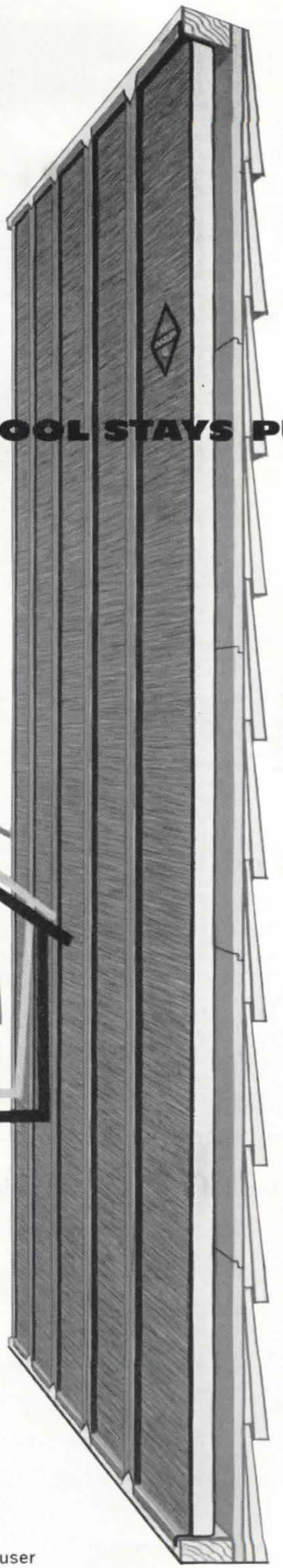
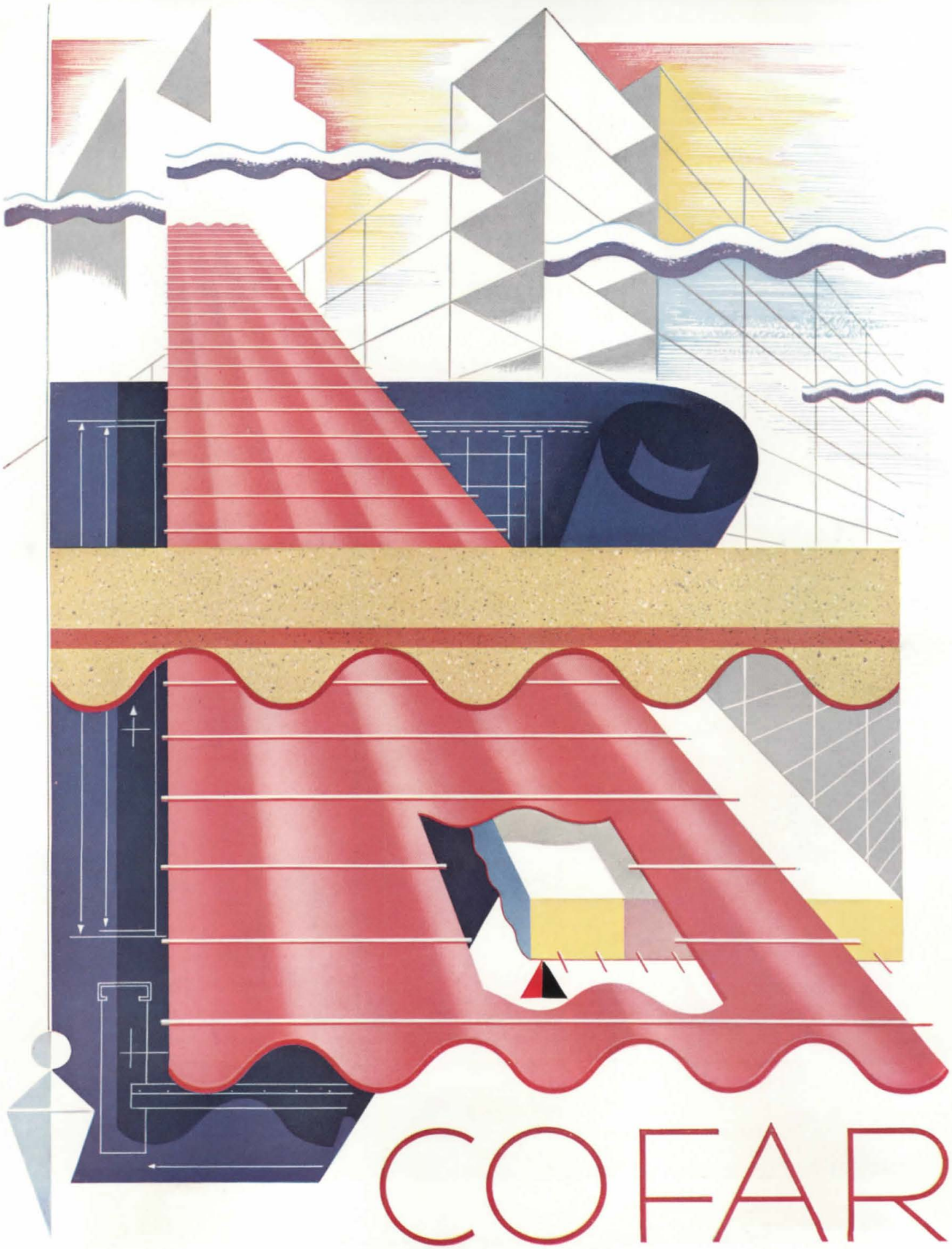


BUT BALSAM-WOOL STAYS PUT

Every house vibrates . . . and some insulations respond by settling or packing down. Balsam-Wool® doesn't. Its felted fibers are bonded together. This mat is cemented to the liners . . . double bonded. Securely fastened in place by sturdy spacer flanges, Balsam-Wool "stays put." Send for A. I. A. folder containing application data sheets. Wood Conversion Company, Dept. 117-51, First National Bank Building, St. Paul 1, Minnesota.

balsam-wool

Sealed Insulation — A Product of Weyerhaeuser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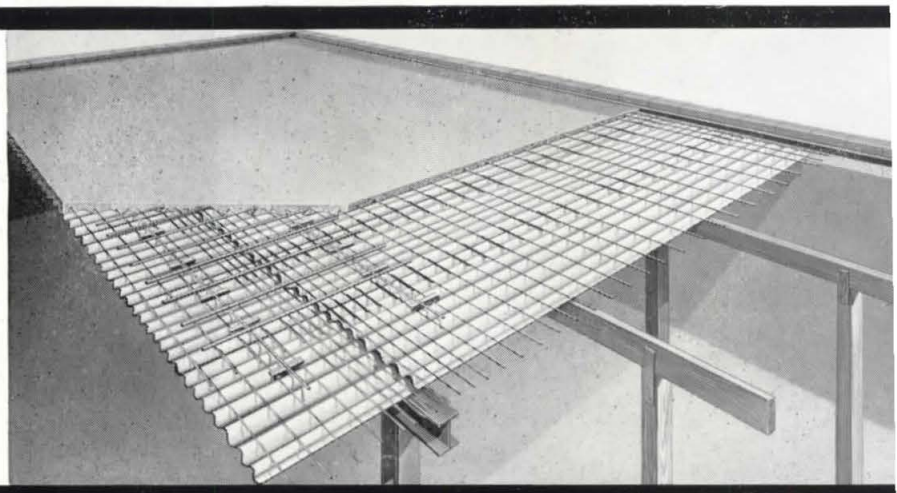
. . . A NEW PERSPECTIVE IN BUILDING!

COFAR

- Reinforced concrete construction.
- High-strength, deep-corrugated steel manufactured with welded closely spaced transverse wires (T-wires).
- Positive reinforcement permanently anchored to and combined with structural concrete.
- Concrete floors and roofs without forms.

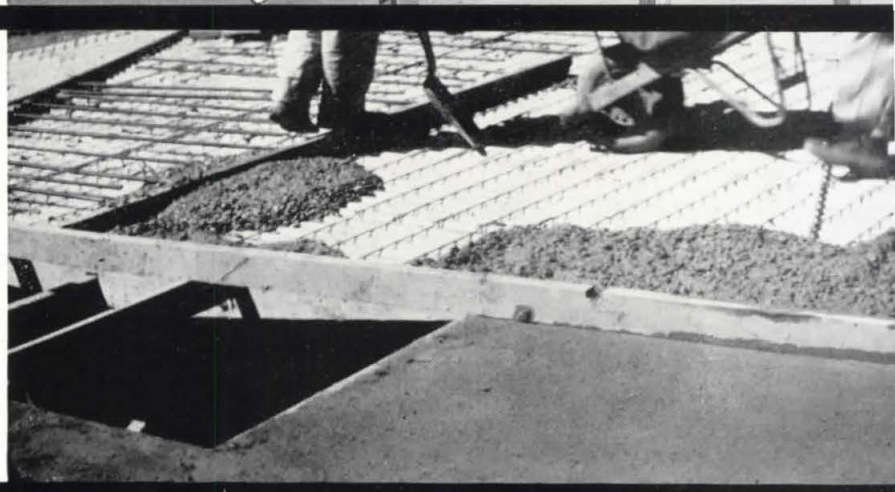
STRENGTH UNLIMITED

COFAR! Deep-corrugated steel, 100,000 psi and stronger (the main reinforcement), and T-wires (temperature reinforcement) in one manufactured product . . . all the positive steel needed in the structural concrete slab! Design follows normal concrete structural procedures. Full range and design freedom is given concrete slab construction, with continuity and weight saving. Hot-dip heavy galvanizing insures building-life permanence. Build strong . . . build COFAR.



TIME AND MONEY SAVED

COFAR makes concrete floor and roof construction a one-stage operation . . . no forms to build and tear down. Construction is clean and fast. Concreting in multi-story buildings moves indoors out of the weather. Large or small, your building is better, costs less with COFAR.



SPACE AND LIGHT RECAPTURED

Bright, clean, corrugated-pattern COFAR ceilings give the new look to many homes. Fire resistant for any exposure with lightweight modern ceiling protection. COFAR saves enough head room and deadweight to add stories to skyscrapers. Business, office or residential . . . COFAR is the answer.

- *ADVICE on application and design by qualified COFAR engineers.*
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- *KNOW-HOW from experience on many COFAR jobs.*

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(Sudsidiary of Granite City Steel Co.)

GRANITE CITY, ILLINOIS

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- LOCATION: LOS ANGELES, CALIFORNIA
- OWNERS: METROPOLITAN LIFE INSURANCE COMPANY
- ARCHITECTS: LEONARD SCHULTZE AND ASSOCIATES
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- WINDOWS:

WARE ALUMINUM CASEMENT WINDOWS

WARE LABORATORIES, INC.
General Sales Office
3700 N. W. 25TH ST., MIAMI, FLORIDA

For homes that are cool in summer . . .

cleaner and more healthful the year 'round

AMERICAN-Standard now presents

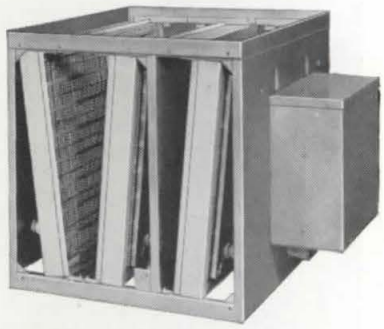
two sensational new products

THE

MAGNE-FILTER

AIR

CLEANER



Designed for easy installation in *any* winter or summer air conditioning system, the new Magne-filter Air Cleaner is a dry type electronic air filter that traps even the smallest dirt particles. Automatically cleaning the air by electrical attraction, the Magne-filter effectively removes pollen, air-borne bacteria, dust, and smoke. The Magne-filter is designed to be installed in the return duct of the air conditioning system, and can be installed on its side in limited space applications.

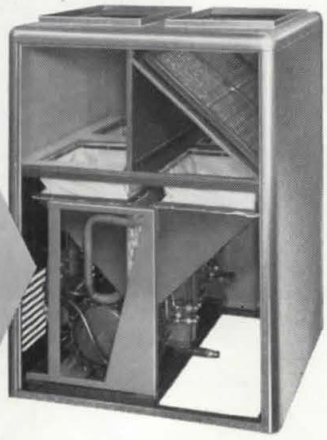
THE

MAYFAIR

SUMMER AIR

CONDITIONER

Here is the newest in summer air conditioning for small and medium homes. The new Mayfair Summer Air Conditioner connects to the duct work of existing forced warm air heating systems. Handily controlled by a switch, it mechanically cools and dehumidifies the air. And because it has a hermetically sealed, factory-tested cooling system, the Mayfair is as simple in operation as a modern refrigerator! When installed with an American-Standard warm air heating unit, the Mayfair provides year 'round residential air conditioning at its best.



For free literature on these two new products, contact the American-Standard sales office serving you or write to **American Radiator & Standard Sanitary Corporation,** P. O. Box 1226, Pittsburgh 30, Pa.

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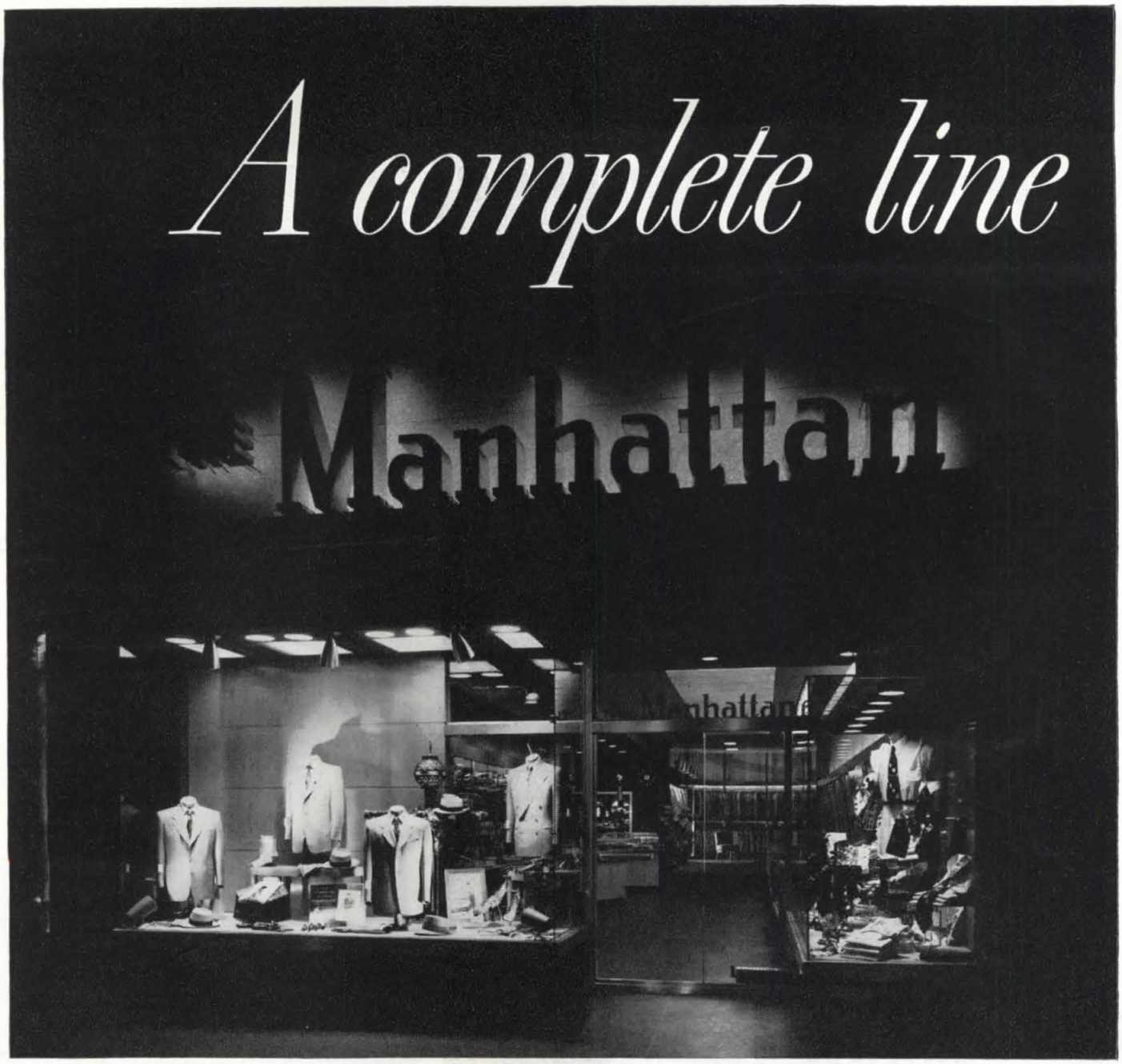
First in heating . . . first in plumbing

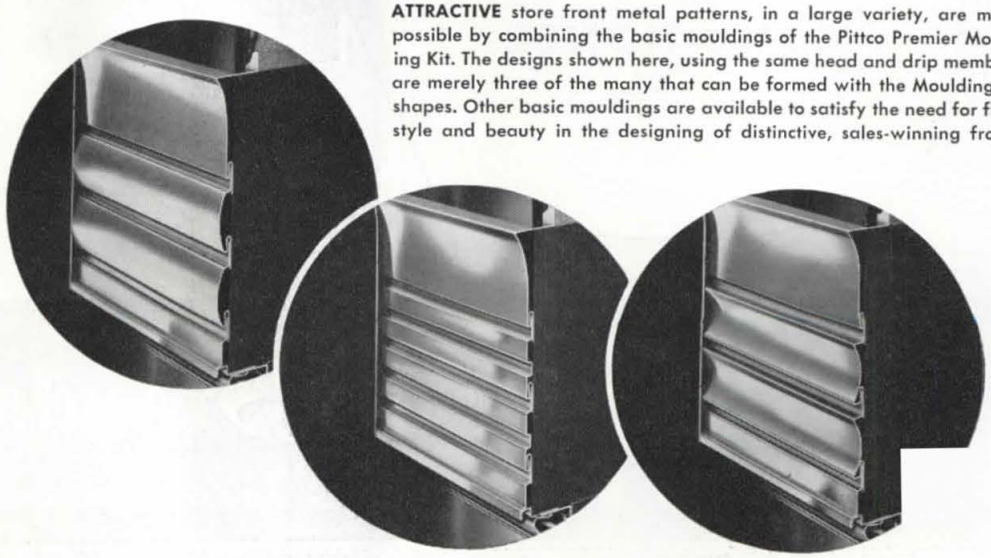
Serving home and industry: AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

A complete line



IN THIS men's wear store at Cumberland, Maryland, Pittsburgh Products, including Pittco De Luxe Store Front Metal, Gray Suede-Finish Carrara facia, Polished Plate Glass display windows, and Herculite Doors, were combined to create a sales-inviting open-vision structure. In the modernization, as well as new building, of a wide variety of business establishments all over the country, Pittsburgh Products have achieved the enviable reputation of being the leaders. Architect: Morris Lapidus, New York City.

ATTRACTIVE store front metal patterns, in a large variety, are made possible by combining the basic mouldings of the Pittco Premier Moulding Kit. The designs shown here, using the same head and drip members, are merely three of the many that can be formed with the Moulding Kit shapes. Other basic mouldings are available to satisfy the need for fresh style and beauty in the designing of distinctive, sales-winning fronts.



# of quality products for store fronts and interiors

THIS FASHIONABLE jewelry shop in Miami Beach, Florida, utilizes a large mirrored wall of Pittsburgh Structural Mirrors, together with niches and ingenious display cases of Pittsburgh Polished Plate Glass, to effect a smart, spacious-looking store interior of immediate appeal. In interiors as well as exteriors, Pittsburgh Products are the choice of leading architects and merchants from coast to coast. Architect: Victor H. Nellenbogen, Miami, Fla.

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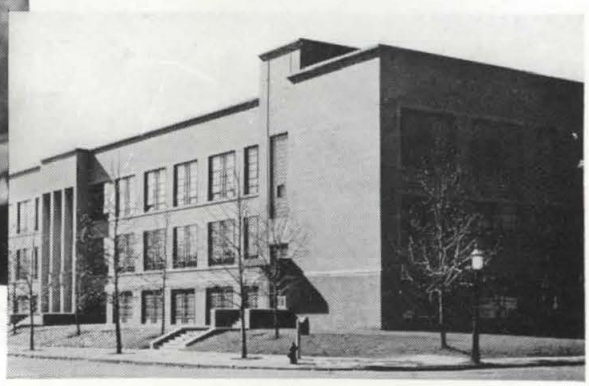

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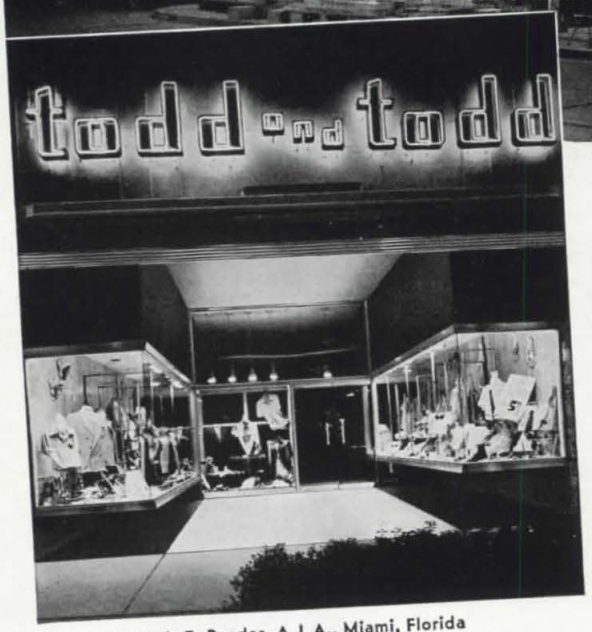

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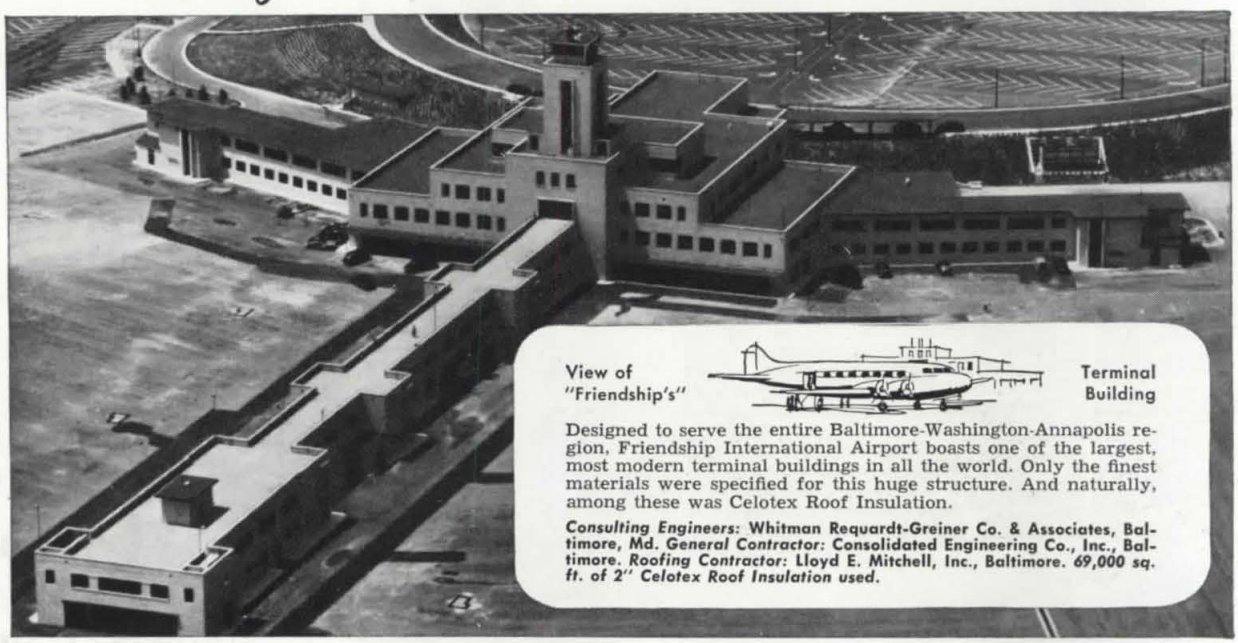

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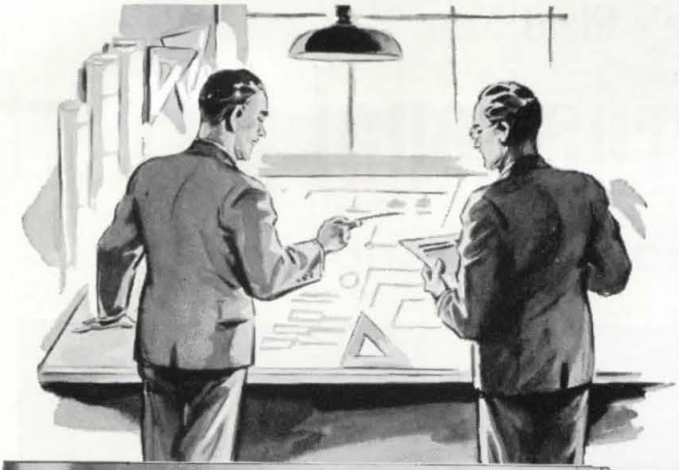

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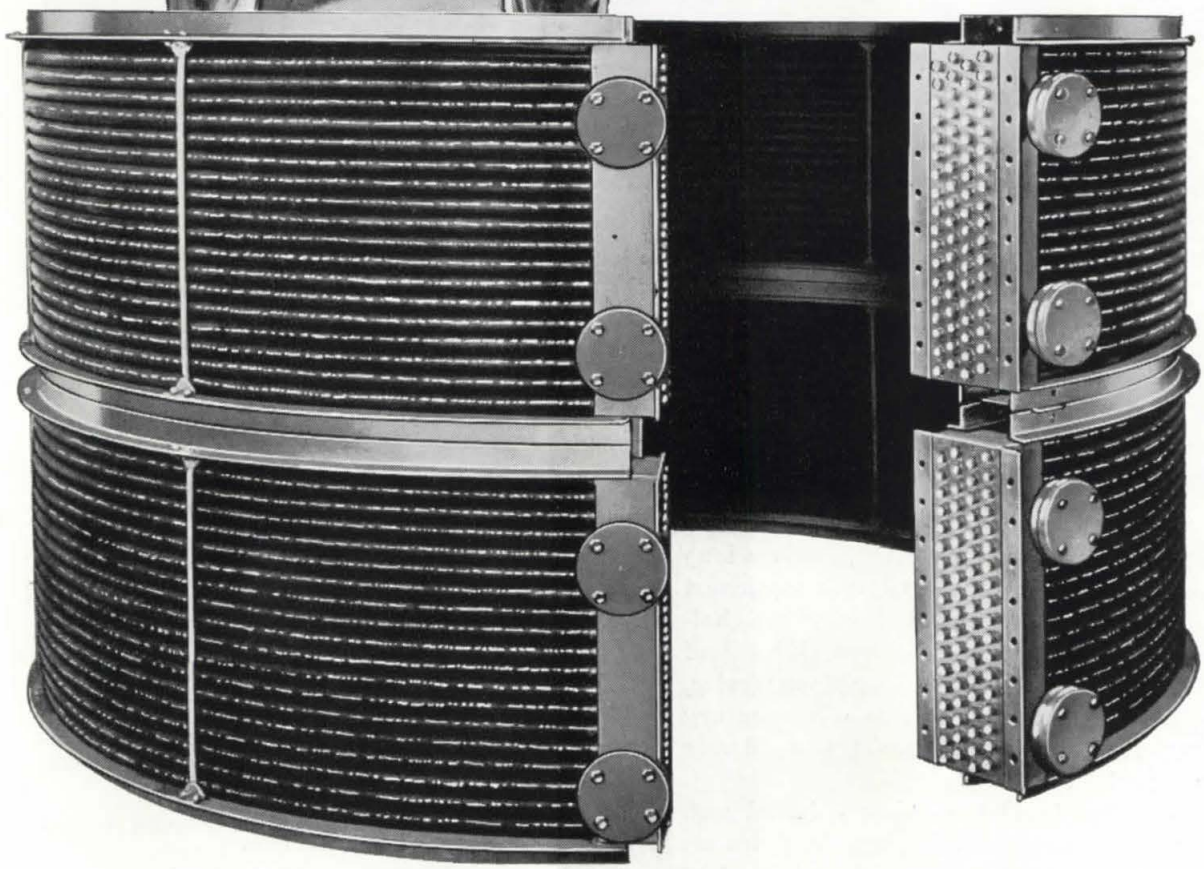

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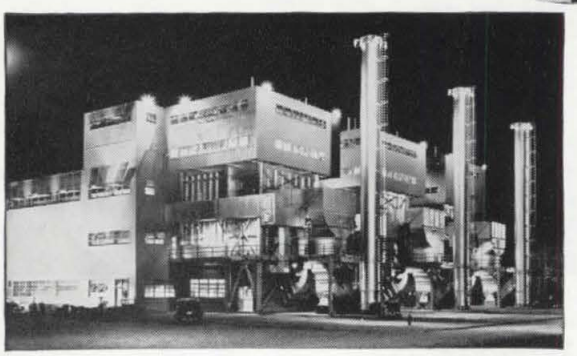

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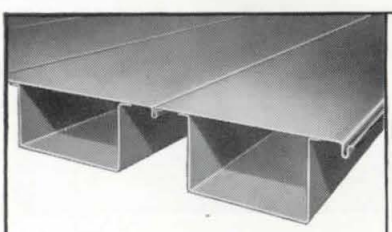

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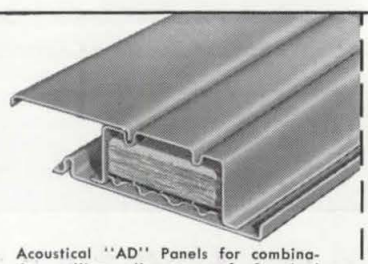

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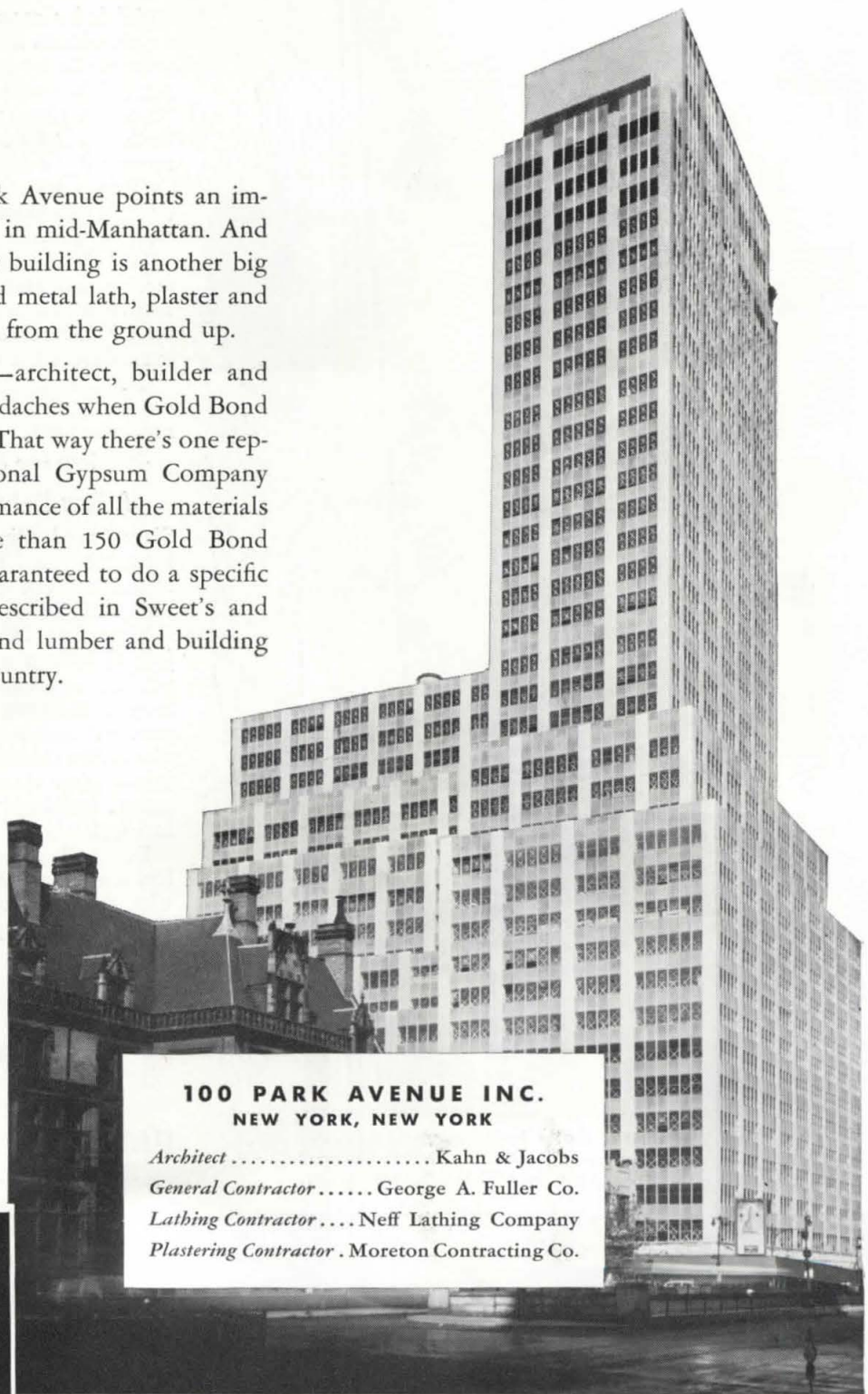

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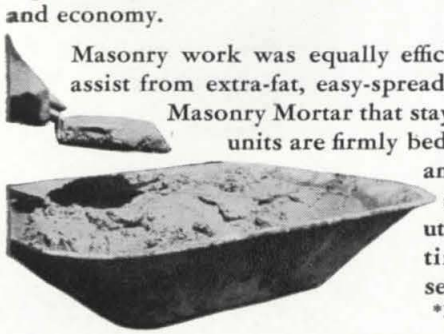

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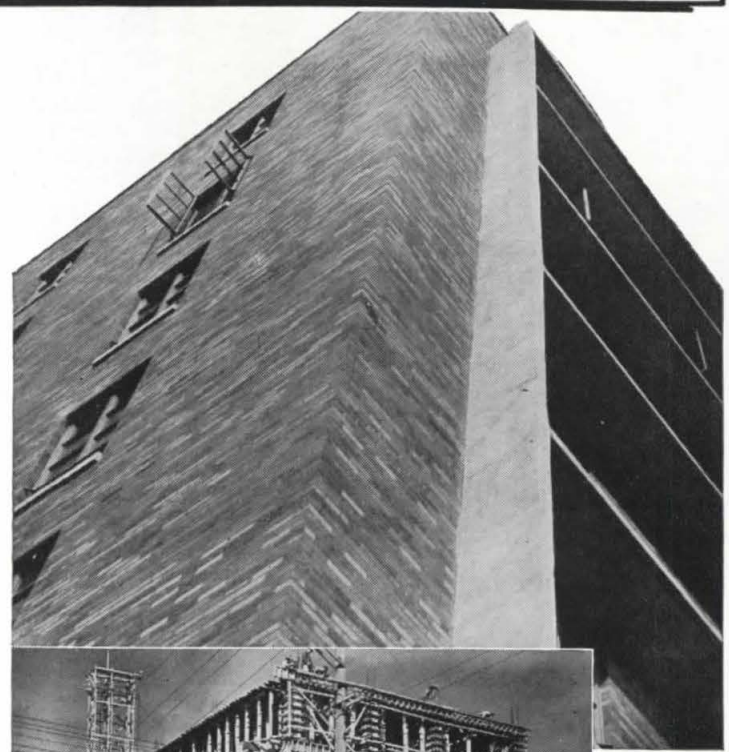

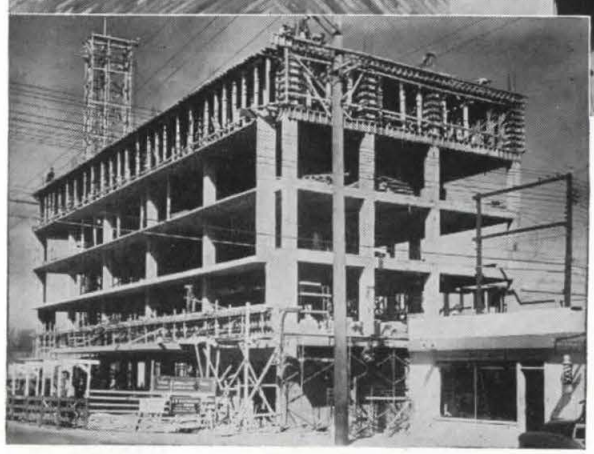

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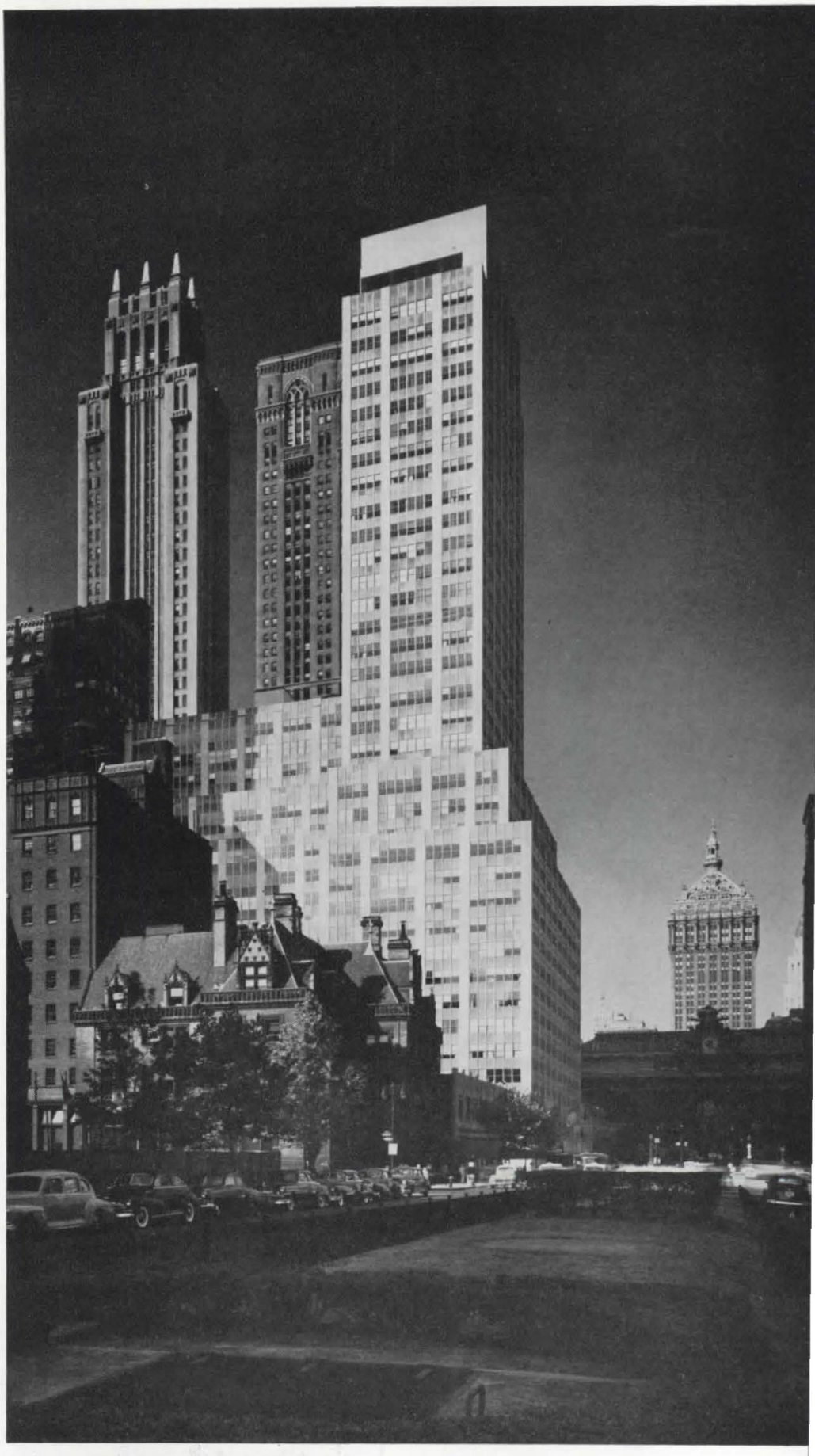

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JAROS, BAUM & BOLLES
mechanical engineers

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Architectural photos: Lionel Freedman

critique

The midtown urban skyscraper is a phenomenon of our time. The economic possibility of such a building and the structural and technical ability which made it feasible, posed the skyscraper as an important architectural problem between the two world wars. It is now a common remark that in the period of unrestricted commercial activity big-city centers were overbuilt ,little attention was paid to transportation problems resulting from the agglomeration of workers in concentrated densities, future development of the centers of cities was not considered, and light and air in the spaces between buildings was controlled only by minimum setback requirements in some city codes and ordinances. But it is not yet generally recognized that the same social and economic phenomenon has been re-occuring. In midtown Manhattan, for instance, skyscrapers are rising on every hand today and, until the current freezes on commercial building, scarcely a week passed without announcement of a project.

100 Park Avenue must be assessed as an instance of this mid-century resurgence of a building type that is usually either emotionally condemned or thoughtlessly promoted. It is, in this writer's opinion, the best of the new office buildings that has yet been erected in New York or in most other cities. The P/A editors chose it to study carefully for that reason; their judgment was bolstered when Lewis Mumford recently praised it in his "The Sky Line" column in *The New Yorker*, speaking of its "white, ethereal elegance" and "its superiority, as pure form, to most of the buildings whose design is a series of long, unbroken strips." It does, as Mumford says, produce in the observant citizen who walks past it a certain "esthetic satisfaction." Does that make it a good building?

Judgment on a building such as 100 Park Avenue cannot ignore any one of three primary criteria:

First, the social impact of the structure: in relation to community needs, personal gain, over-all planning, effect on individuals and the citizenry, effect on business and the economy.

Second, the technical competence displayed: in taking advantage of technologies available, in translating *these into* ways of providing space for human beings to use, in controling the environment in which they will exist while in the building.

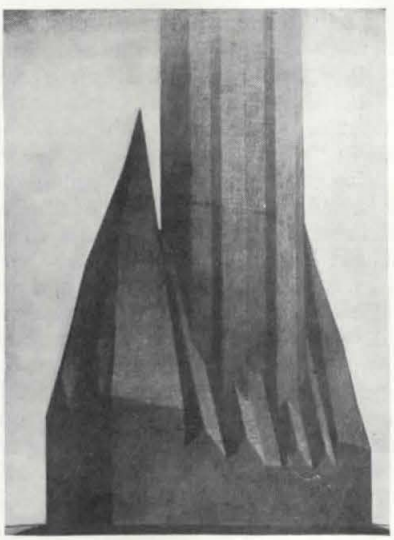
Third, the esthetic result in all of its implications: the pleasure or displeasure of the people who see the building, the harmony or lack of it in relation to the neighborhood, the unity or disunity of the building as a fusion or function, materials, and expression.

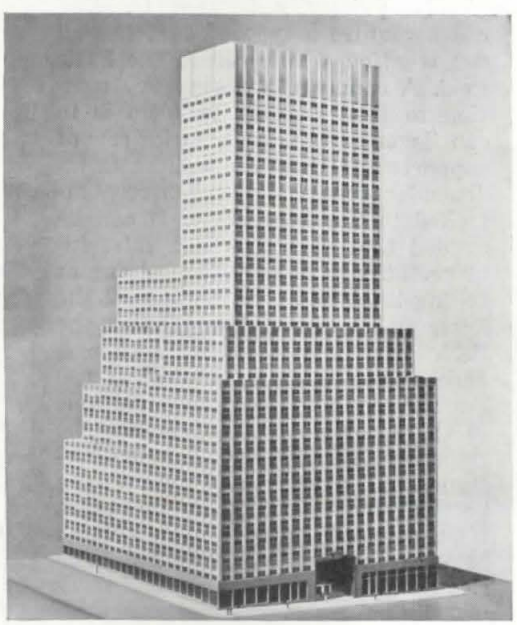
As a social phenomenon, it must be said that 100 Park Avenue is as bad as any of its brothers of today or its cousins of the '20s. It obeys the zoning ordinances regarding use of land and setbacks, but that is as far as it goes toward improving the use of midtown Manhattan. It rises in one of the most congested sections of the city, at a point where the subways and buses are already overtaxed and will become impossible to use with any degree of human decency when other new buildings to be served by the same facilities (including the United Nations Headquarters) are completed and fully occupied.

No one can deny that there is present need for additional office space in this part of the city; how long that need will persist or whether this building will drain many tenants from others, are questions that have surely not been carefully examined. It would have been desirable, theoretically, to consider the whole neighborhood south of Grand Central Station as one important enough for integrated planning, with buildings placed where they would enhance their neighbors economically as well as visually. It would be good to know what might happen ultimately to nearby property, some of which is still occupied by low buildings, some of which is for the time being vacant. Surely from the point of view of the

The old Murray Hill Hotel — site of 100 Park Avenue — where there were months of legal battles before the last guests finally moved.
Photo: Underwood & Underwood

Below — two drawings by Hugh Ferris, made originally to show (1) the potential volume within New York's setback regulations and (2) a feasible space enclosure that would come within the allowable angles. Below these are two of the progress studies made by Kahn & Jacobs in developing the actual design of 100 Park Avenue.





working community it would be pleasant to maintain some open space at this point, almost opposite the station, directly against the ramped approach from lower Park Avenue.

It is not fair, of course, to blame the architects for following the program laid down for them — maximum rentable space, with the conveniences that are required to produce maximum income. It is not fair either to blame the corporation which was the client — it is not a planning commission, but quite simply and frankly a business enterprise. Buildings such as 100 Park Avenue rise today because of the weakness of city planning commissions, monuments to the ineffectiveness (to date) of those who have long seen the need for overall planning in its more obvious aspects, yet who now spend their time on urban *re*planning in its more hopeless aspects. Well, there will be plenty of work ahead for them in that field; the causal basis for it is being laid right now.

Technically, 100 Park Avenue comes off well in some respects, no better than its neighbors in others. The architects are frank in saying that little in the way of advance in construction methods or basic structural materials appears in the building. It is an extremely competent contemporary instance of the use of the steel frame and the masonry curtain wall, systems which were first developed in the early decades of the century. Spandrels are metal-surfaced and backed by as thin a masonry wall as codes now permit. Good materials are used well; it is a successful culmination of past experiences rather than any step forward into the speculative future of construction possibilities.

In planning space, to make best use of the floor areas available, the architects of this building are past masters, and 100 Park Avenue represents the result of their study and experiment to date. The 21-foot typical bay, with piers wide enough to contain structural members and mechanical lines, and with four window divisions between the piers, undoubtedly gives the greatest flexibility in interior planning. Variations in this bay width, permitting five or six windows in a panel, give greater depth where it is wanted (as in the office space fronting on Park Avenue) and provide pleasant changes in the rhythm of the exterior design.

The depth of the office space — distance from windows to service core — can be justified by the fact that modern lighting and air conditioning makes almost any depth reasonable. Most office layouts today utilize low partitions and large and divided spaces, and work better in a deep rather than a shallow plan, in any event.

100 Park Avenue is undoubtedly a pleasant place in which to work. The interior environment is well controlled; office space is completely air conditioned, with individual thermostatic control; interior lighting is carefully conceived (with details left up to the individual tenants, of course). The architects have shown their usual skill in the study of elevator requirements, in service accommodations, and in all such technical planning matters. One great contribution to the functional efficiency of the building — and to its neighborhood relationships as well — is the provision of truck docking facilities within the building envelope.

Opinions may vary as to the esthetic excellence of this building. There is a pleasant harmony in the color and the texture of the exterior materials used, and the aging of materials, such as the oxidation of the aluminum in the spandrels, has been carefully taken into account. From most points of view the setbacks mass pleasantly. The lower floors and the entrance are in a successful scale relationship to the total building.

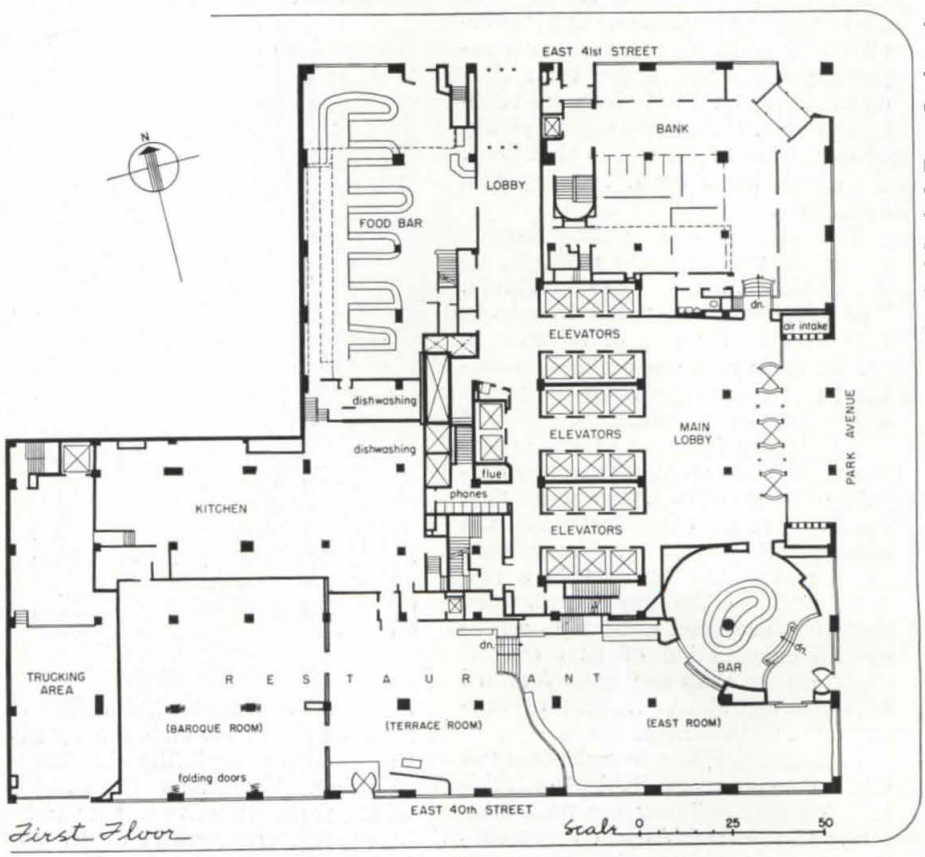
To this writer, the old argument as to whether a frame structure should express horizontality or verticality is meaningless — the frame is a three-dimensional grid and if it cannot be indicated thus, then no other solution has special validity as an "expression" of the structure. There are few if any skyscrapers which have solved this design problem completely, primarily because building codes require a type of curtain-wall construction which denies the basic grid. A common contemporary solution to the "façade" problem is to cantilever beyond the exterior row of supports and treat the wall as an independent full curtain, merely attached to the floor slabs. It can be argued that this also is a false interpretation, and requires fudging at ceiling lines and compromises at the lower parts of windows (as in the U.N. Secretariat Building). Kahn & Jacobs have made no attempt at 100 Park Avenue to find new solutions to this problem of "expressing the structure." They have simply designed and detailed and built in the best way now permitted. The result, if one attempts to judge a few isolated bays of the building esthetically, is clean and simple and logical, if emotionally uninspiring.

However, one should not judge a few isolated bays of a building like 100 Park Avenue, except as a module from which the entire esthetic expression results. The word module is correct in this application, I believe, because the entire design is based on a given number of floors, each a given number of bays wide and deep, which repeat a typical bay detail. The fact that the bays in 100 Park Avenue vary — most of them four windows wide, but some three, five and even six windows between piers — is not only an expression of the interior planning but is an excellent example of the value of variety within a self-imposed modular unity.

The judgment of the success of the building mass again raises the question of who should be credited or who should be blamed. When the New York City zoning ordinance went into effect, limiting heights and setting up requirements as to setbacks, it was remarked by imaginative architects of the time that great possibilities were opened up within the factual envelope that resulted. Hugh Ferris at that time made drawings, two of which are again reproduced here, showing what might result. Every architect of a skyscraper since has struggled with the problem of finding maximum usable space for his client without resorting to repetitive setbacks, which are expensive and esthetically unpleasing. Until the recently designed Lever House, the Empire State Building was one of the few instances where good usable space was sacrificed to make one sharp setback which might then produce a tower of great height.

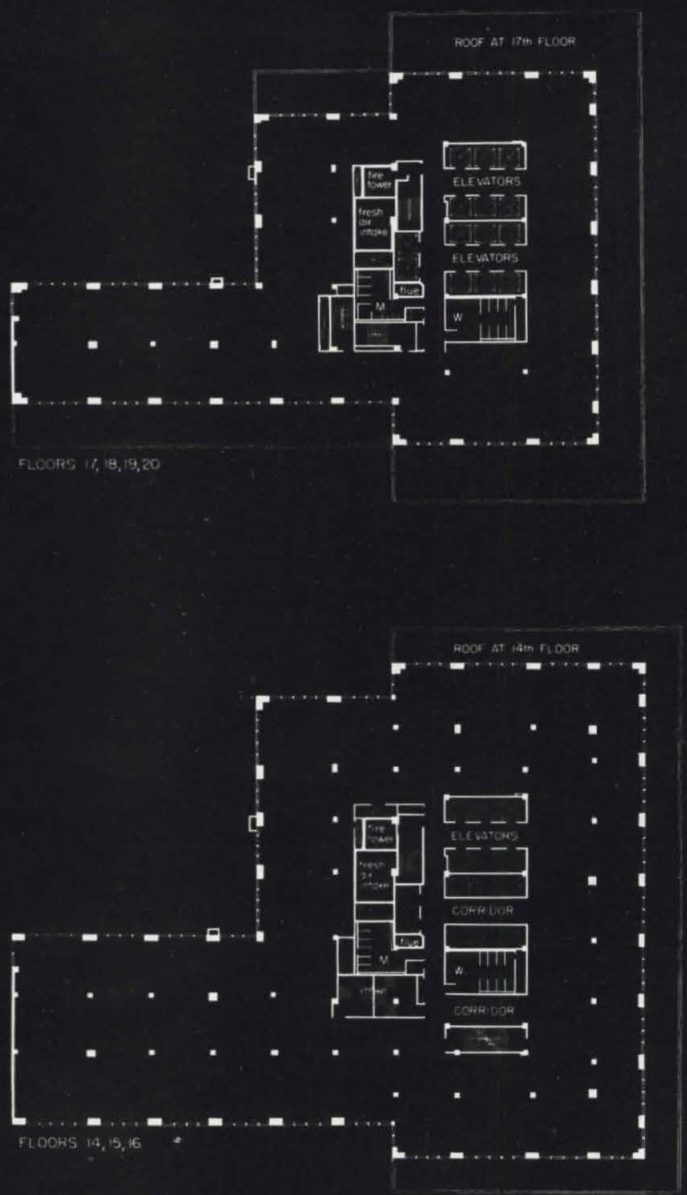
It is easy to say that a building owner should be persuaded to allow his architect to forfeit lower-floor space, and gain it in more stories at the top, but the economic reasoning is not that simple. There is a limit to the number of stories that an elevator bank can serve efficiently. The addition of more tower stories increases the dead load, the size of lower-floor structural members, and the foundation problems. So this is not a matter that an architect dealing with a business corporation as client can solve on purely esthetic grounds. He has almost insuperable obstacles to the study of masses as pleasing composition, within the zoning requirements. Not that there is *no* choice — some of the variations that were studied in the case of 100 Park Avenue are indicated on Page 55.

One might conclude, then, that this building is a frank statement, by capable people, of a commercial structure straining at the setback limitations. Within the acknowledged design limitations and restrictions, the architects have achieved as pleasant a result, by choice of materials and textures, by scale and harmony and rhythm, as one could hope for. What faults the building may have are the result of factors which could not be solved by the design ability of Messrs. Kahn and Jacobs and their staff. THC



Chemical Bank & Trust Co. branch, Walker & Poor, Architects

Brass Rail Restaurant Louis Allen Abramson, Architect



Typical Floor Plans Scale 0 25 50

This office building, just one block south of Grand Central Terminal, occupies the entire Park Avenue frontage between 40th and 41st Street and extends back along both streets—150 feet on 41st Street; 280 feet, on 40th.

Soon after the owners acquired the Murray Hill Hotel site, several years ago, the architects started exploring practicable solutions. As the scheme was developed, weekly meetings were attended by representatives of the architects, engineers, owners, rental agents, and management engineers.

solution

The final solution, in brief, is a 36-story structure, with setbacks at the 9th, 11th, 14th, 15th, 17th, and 21st floors. The tower itself soars 16 unbroken stories. For details of the offset structural framing that supports the tower, see Page 59.

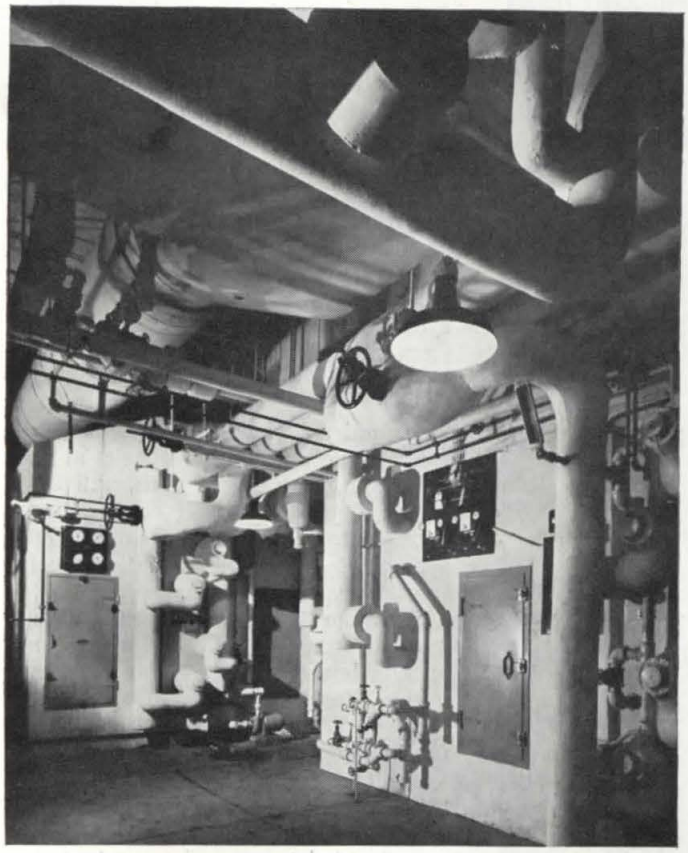
Between the Park Avenue front and the first row of interior columns on the lower floors of the building, notice the exceptionally deep 29-foot bay, catering to tenants desiring unusually open, uninterrupted office space (for an example see Page 64). "With a building on such a prominent site," explains Fred N. Severud, "it was decided to expend some tonnage of structural steel to obtain these wide, clear, and free areas which would lend themselves excellently to flexible layouts." That this decision was sound, he adds, "is proven by occupancy of these areas, as a large part of this open space is leased to large corporations who have taken full advantage of the open layout."

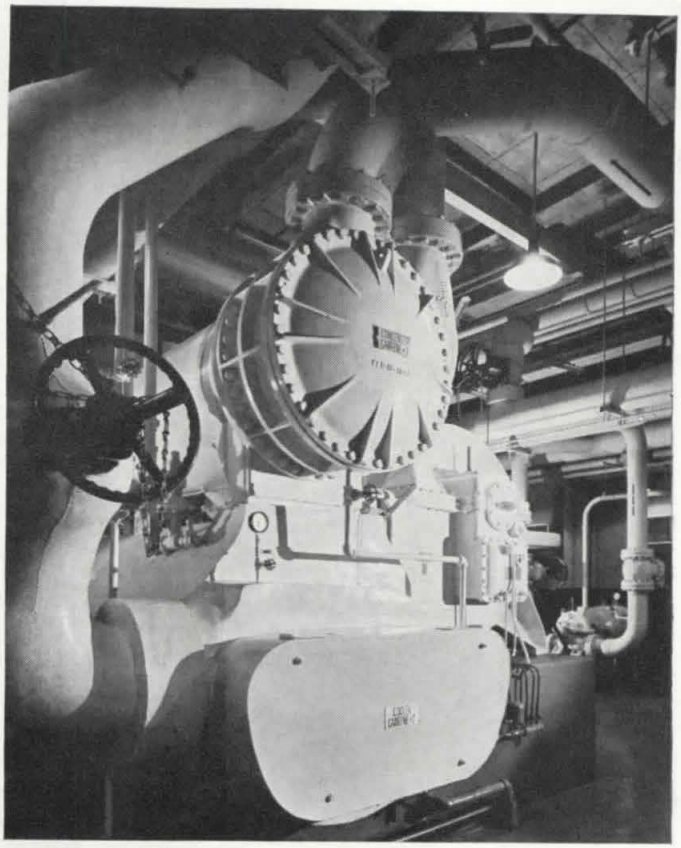
rental

An interesting estimate of the success of the building from the point of view of rentability comes from L'H. S. Shaeff, vice president of Cushman & Wakefield, Inc., the real-estate firm that handles renting at 100 Park: "Leases are not signed until at least preliminary layouts have been made, and there the efficiency of the floor plans can be judged. 100 Park Avenue was fortunate in having a window arrangement which is a great deal more flexible than that found in older buildings and yet does not raise that objection, which some people have, to the feeling of being in a glass bowl." He also credits the excellent air-conditioning installation as being an important factor in attracting the finest class of tenants.

Jacobs

Kahn





Various elements of the air-conditioning equipment are pictured above.

Left — after outdoor air has been filtered, it passes through preheat coils and dehumidifiers shown in this view.

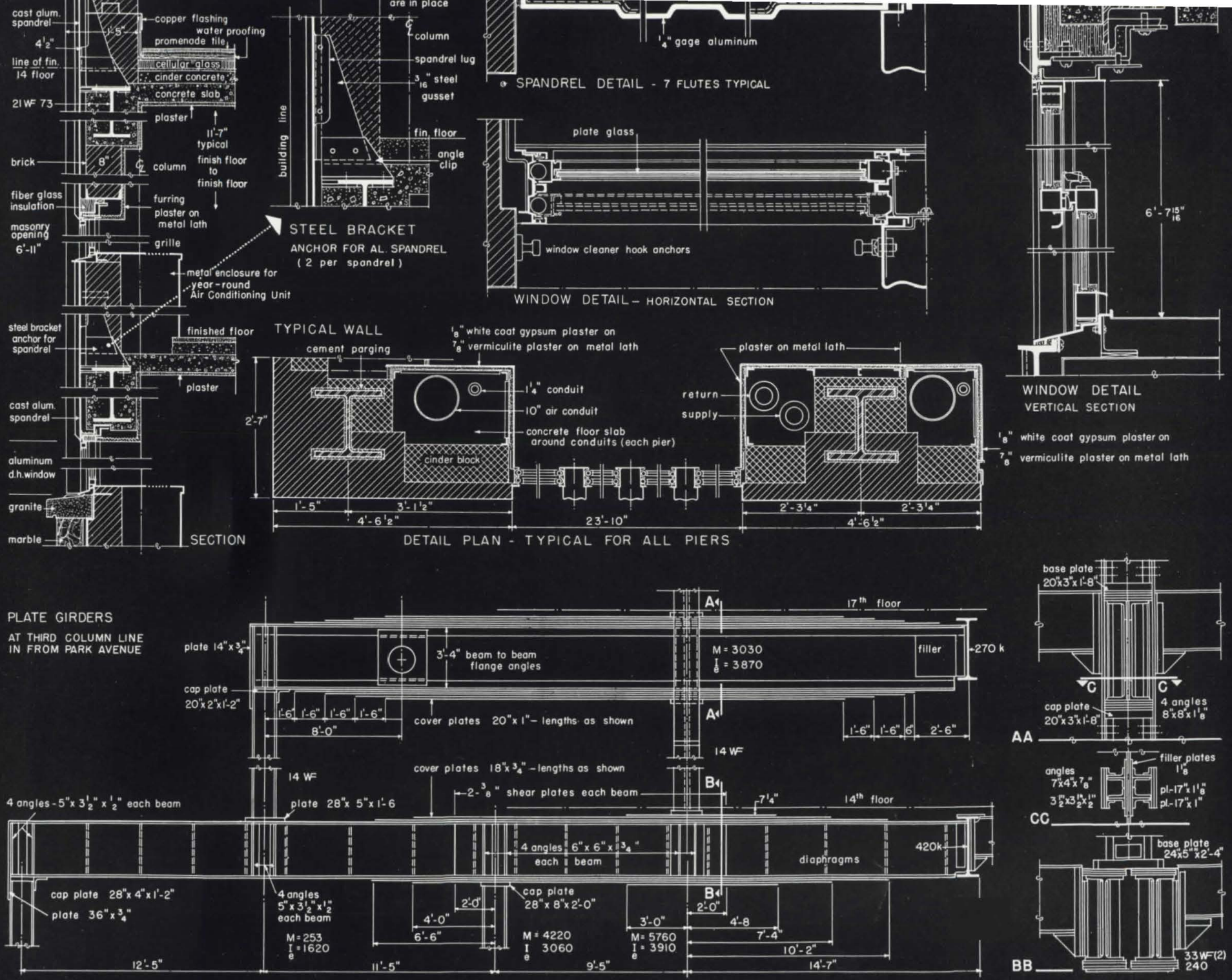
Right — condenser (top) and cooler (bottom) of one of the two refrigerating machines. Cooling-tower water-pump may be seen in background of lower right corner.

Acrosspage — principal architectural details and structural drawings of a representative pair of built-up sections.

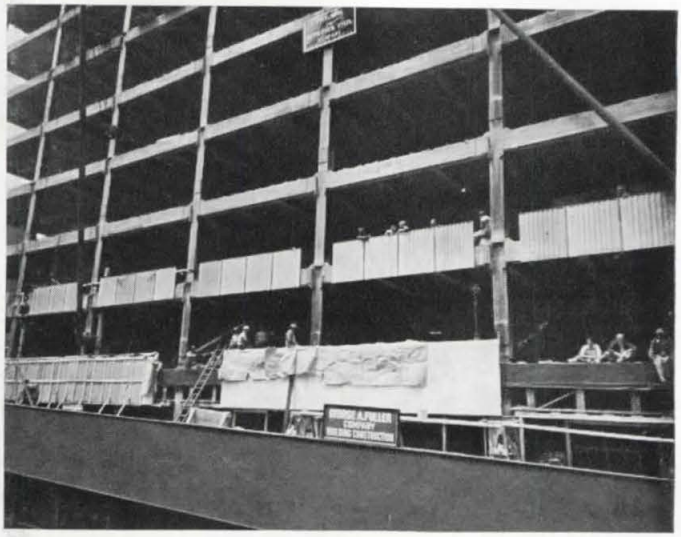
CONSTRUCTION (this outline does not include materials and equipment subsequently installed by individual tenants): Foundation: structural steel billets on bed rock, reinforced concrete walls. **Frame:** structural steel — BETHLEHEM STEEL COMPANY. **Walls:** brick — aluminum spandrels and mullions — GENERAL BRONZE CORPORATION and ALCOA; Georgia marble; granite; cinder block. **Interior wall surfacing:** travertine; gypsum and vermiculite plaster — NATIONAL GYPSUM COMPANY and MUNN AND STEEL COMPANY; metal lath; tile in toilet rooms. **Floors:** reinforced concrete; cement — LONE STAR CEMENT CORPORATION; reinforcement — BETHLEHEM STEEL COMPANY; cement and terrazzo finish — LONE STAR CEMENT CORPORATION and DE PAOLI COMPANY INCORPORATED; filler for expansion joints — CELOTEX CORPORATION. **Roof:** main roof deck and all setbacks are reinforced-concrete protected by: cellular-glass insulation — PITTSBURGH CORNING CORPORATION; water-proofing — CERTAIN-TEED PRODUCTS CORPORATION; setting-bed and promenade tile — LUDOWICI-CELADON COMPANY. Surfacing of tower roof: tar and slag — BARRETT DIVISION, THE ALLIED CHEMICAL & DYE CORPORATION. Typical ceiling surfaced with gypsum plaster. **Insulation:** fiber glass at windows — OWENS-CORNING FIBERGLAS CORPORATION; cellular glass in roof decks and under sidewalk slabs; cork on ceiling in trucking area — ARMSTRONG CORK COMPANY. **Roof drains:** JOSAM MANUFACTURING COMPANY. **Interior partitions:** cinder block; gypsum block; glass partitions in toilet rooms — PITTSBURGH PLATE GLASS COMPANY. **Fenestration:** double-hung aluminum sash — GENERAL BRONZE CORPORATION and ALCOA; steel sash — S. H. POMEROY COMPANY; plate glass — PITTSBURGH PLATE GLASS COMPANY; Venetian blinds — HUNTER DOUGLAS; stainless steel store fronts, using metals of EASTERN STAINLESS STEEL CORPORATION and REPUBLIC STEEL CORPORATION. **Doors:** interior — AETNA STEEL PRODUCTS CORPORATION; overhead, steel — J. G. WILSON CORPORATION; elevator, steel — DAHLSTROM METALLIC DOOR COMPANY; entrance, bronze — ELLISON BRONZE COMPANY; revolving, bronze — INTERNATIONAL STEEL COMPANY. **Hardware:** general — RUSSELL & ERWIN MANUFACTURING COMPANY; Venetian blind hardware — LEVOLOR-LORENTZEN, INCORPORATED. **Interior paint:** L. SONNEBORN & SONS.

EQUIPMENT

Air conditioning: a complete air conditioning, peripheral system, provided by water-cooled central station and window units, centrifugal compressor, air conduit — CARRIER CORPORATION; refrigerant — E. I. DUPONT DE NEMOURS & COMPANY, INCORPORATED; wall and ceiling type diffusers — TUTTLE & BAILEY, INCORPORATED; centrifugal blowers — BUFFALO FORGE COMPANY; throw-away filters — RESEARCH PRODUCTS CORPORATION; cooling coils — AEROFIN CORPORATION. **Heating:** city steam for cast-iron fin convectors and radiators — AMERICAN-STANDARD; steel piping — BETHLEHEM STEEL COMPANY and JONES & LAUGHLIN STEEL CORPORATION; fin and propeller unit heaters — MODINE MANUFACTURING COMPANY; pneumatic controls — JOHNSON SERVICE COMPANY. **Snow melting:** steel pipe embedded in sidewalk slab — BETHLEHEM STEEL COMPANY. **Vertical transportation:** electronically controlled elevators — OTIS ELEVATOR COMPANY; stainless steel, aluminum, and walnut surfaced cabs — TYLER COMPANY. **Lighting:** office fixtures — LIGHTOLIER, INCORPORATED; in lobby area, special metal ceiling with trough lighting and lighting strips — GENERAL BRONZE COMPANY and LIGHTOLIER, INCORPORATED. **Electrical:** service-entrance switch — METROPOLITAN ELECTRIC MANUFACTURING COMPANY; fiber duct system — GENERAL ELECTRIC COMPANY; panel boards and multibreaker — METROPOLITAN ELECTRIC MANUFACTURING COMPANY; wire — PHELPS DODGE COPPER PRODUCTS CORPORATION; conduit — GENERAL ELECTRIC COMPANY; wiring devices — BRYANT ELECTRIC COMPANY and GENERAL ELECTRIC COMPANY. **Plumbing:** water closets and lavatories — AMERICAN-STANDARD; toilet seats — C. F. CHURCH MANUFACTURING COMPANY; water heater — PATTERSON KELLEY COMPANY; flush valves — SLOAN VALVE COMPANY; toilet room shelves — NIK-O-LOK COMPANY; brass and galvanized steel pipe — BRIDGEPORT BRASS COMPANY and BETHLEHEM STEEL COMPANY; shower controls — AMERICAN-STANDARD.


cast alum. spandrel
1'-5"
4½"
line of fin. 14 floor
21 WF 73
brick
8"
fiber glass insulation
masonry opening 6'-11"
copper flashing
water proofing
promenade tile
cellular glass
cinder concrete
concrete slab
plaster
11'-7" typical finish floor to finish floor
column
furring
plaster on metal lath
grille
metal enclosure for year-round Air Conditioning Unit
steel bracket anchor for spandrel
finished floor
plaster
cast alum. spandrel
aluminum d.h.window
granite
marble
SECTION
building line
are in place
column
spandrel lug
3/16" steel gusset
fin. floor
angle clip
STEEL BRACKET
ANCHOR FOR AL. SPANDREL
(2 per spandrel)
1/4" gage aluminum
SPANDREL DETAIL - 7 FLUTES TYPICAL
plate glass
window cleaner hook anchors
WINDOW DETAIL – HORIZONTAL SECTION
6'-7 15/16"
WINDOW DETAIL
VERTICAL SECTION
1/8" white coat gypsum plaster on
7/8" vermiculite plaster on metal lath
TYPICAL WALL
cement parging
1/8" white coat gypsum plaster on
7/8" vermiculite plaster on metal lath
1¼" conduit
10" air conduit
concrete floor slab around conduits (each pier)
cinder block
2'-7"
1'-5"
3'-1½"
4'-6½"
23'-10"
plaster on metal lath
return
supply
2'-3¼"
2'-3¼"
4'-6½"
1/8" white coat gypsum plaster on
7/8" vermiculite plaster on metal lath
DETAIL PLAN - TYPICAL FOR ALL PIERS
PLATE GIRDERS
AT THIRD COLUMN LINE IN FROM PARK AVENUE
plate 14"x¾"
cap plate 20"x2"x1'-2"
3'-4" beam to beam flange angles
M = 3030
I/e = 3870
filler
270 k
17th floor
1'-6" 1'-6" 1'-6" 1'-6"
8'-0"
cover plates 20"x1" – lengths as shown
1'-6" 1'-6" 6" 2'-6"
14 WF
cover plates 18"x¾" – lengths as shown
2-⅜" shear plates each beam
7¼"
14th floor
4 angles - 5"x3½"x½" each beam
plate 28"x5"x1'-6
4 angles 6"x6"x¾" each beam
diaphragms
420k
cap plate 28"x4"x1'-2"
plate 36"x¾"
4 angles 5"x3½"x½" each beam
cap plate 28"x8"x2'-0"
2'-0"
4'-0"
6'-6"
M = 253
I/e = 1620
M = 4220
I/e = 3060
3'-0"
2'-0"
4'-8
7'-4"
10'-2"
M = 5760
I/e = 3910
12'-5"
11'-5"
9'-5"
14'-7"
base plate 20"x3"x1'-8"
cap plate 20"x3"x1'-8"
4 angles 8"x8"x1⅛"
AA
filler plates 1⅛"
angles 7"x4"x⅞"
3½"x3½"x½"
pl-17"x1⅛"
pl-17"x1"
CC
base plate 24"x5"x2'-4"
BB
33WF(2) 240

Left — in this progress shot, concrete has been poured only at lower levels; note framing at 9th floor setback.
Right — cast-aluminum spandrels were erected before the eight-inch brick walls were laid-up behind them.
Photos: courtesy of George A. Fuller Co.



Left — built-up sections supporting setbacks at 14th and 17th floors can be seen at top-center of photo.
Center and right — various stages of construction are clearly evident; note extra story heights required (for mechanical crossovers) at 21st and 29th floors.

engineering analysis

Although the 29′-deep bays along Park Avenue required a larger tonnage of structural steel than the more usual 20′ bays, the total cost of the steel was not greatly increased. A large part of such a cost depends upon the number of pieces to be erected and the number of field connections to be made; the smaller the number, the smaller the unit cost per ton of steel. Nor did this large span excessively increase the size of the columns; the largest single column section, weighing about 24 tons, was erected with the same speed as any other.

To achieve an economically acceptable solution for the framing of the setbacks, some of the columns were offset and supported on built-up girders (see structural drawing on preceding page). The additional floor-to-floor heights between the 13th and 14th floors and the 16th and 17th floors, caused by the depth required for these girders, were utilized for piping and air-conditioning crossovers. By taking maximum advantage of both the continuous construction in the girders and the area created by their depth, the heavy loads were supported without sacrifice in story height.

As the moment of the structural frame in a tall building acts against the masonry envelope, leaks often occur under windows where the masonry is most vulnerable. The cast-aluminum spandrels provide weather protection for those members. To satisfy design requirements, the spandrels were partially oxidized before erection; the continuous vertical mullions, however, were treated with a protective coating and will retain their luster.

100 Park Avenue is fully air conditioned. A high-velocity peripheral system heats and cools the offices through under-window units; an interior system conditions the air within the inside perimeter of the first bay.

The illumination level in the average office is 30 to 40 footcandles.

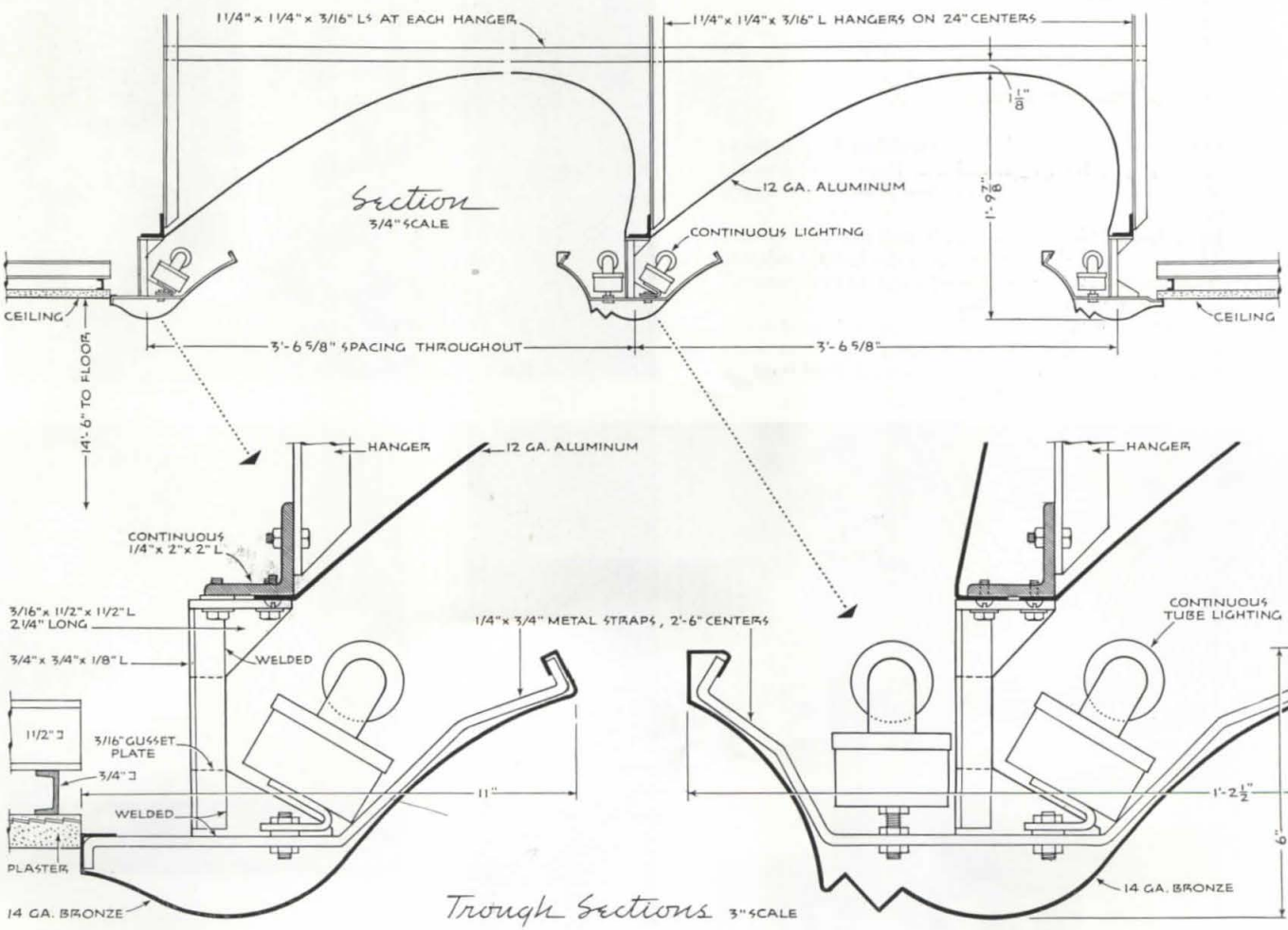
Right — view of corner at Park Avenue and East 40th; setbacks at 9th, 11th, 14th, 15th, 17th, and 21st floors as well as the 29′-deep bay extending west from Park Avenue, are clearly visible.

Below — fresh-air intakes are in soffit and side walls of main entrance; balanced and revelolving doors are bronze; columns, 21′ on center, are faced with marble; large address numerals on marble fascia are stainless steel.

Below, right — 9000 feet of steel pipe are embedded in the 10,000 square feet of sidewalks surrounding three sides of the building. *Photo: courtesy of American Iron & Steel Institute.*

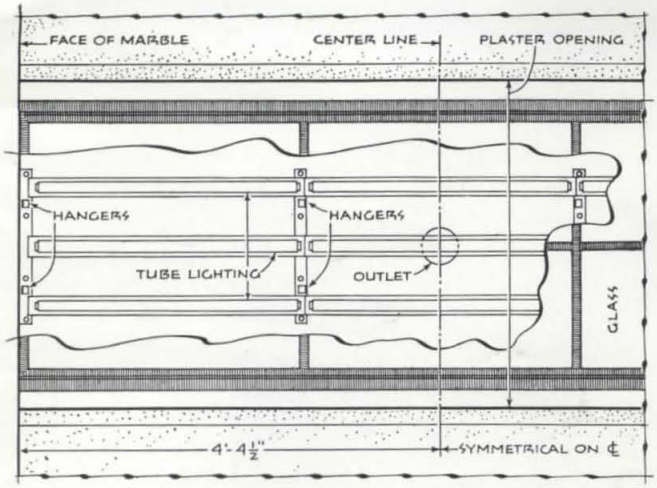
selected details

LIONEL FREEDMAN © PICTOR



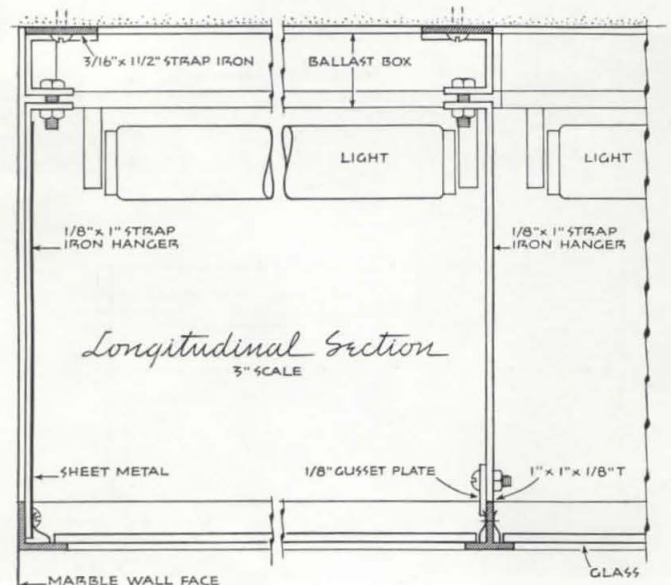
100 PARK AVENUE, New York, N. Y.

KAHN & JACOBS, ARCHITECTS

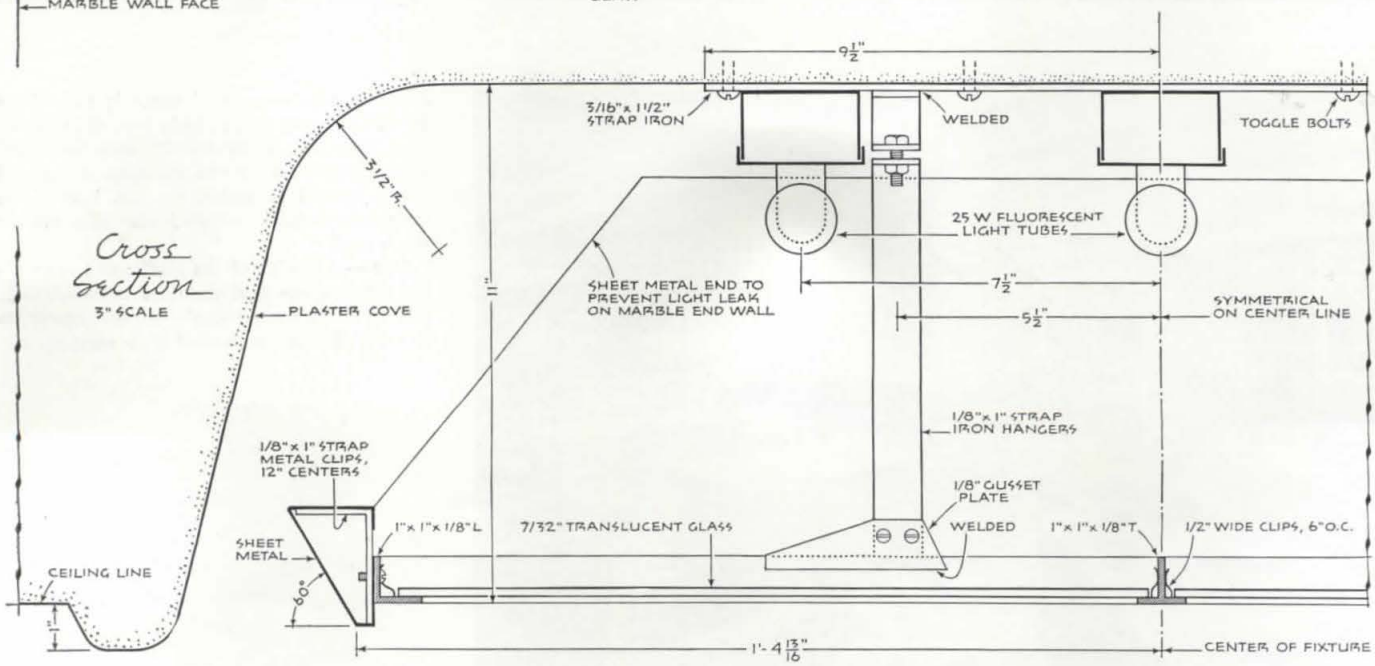


Reflected Plan 1/2" SCALE

LIONEL FREEDMAN © PICTOR



Longitudinal Section
3" SCALE



Cross Section
3" SCALE

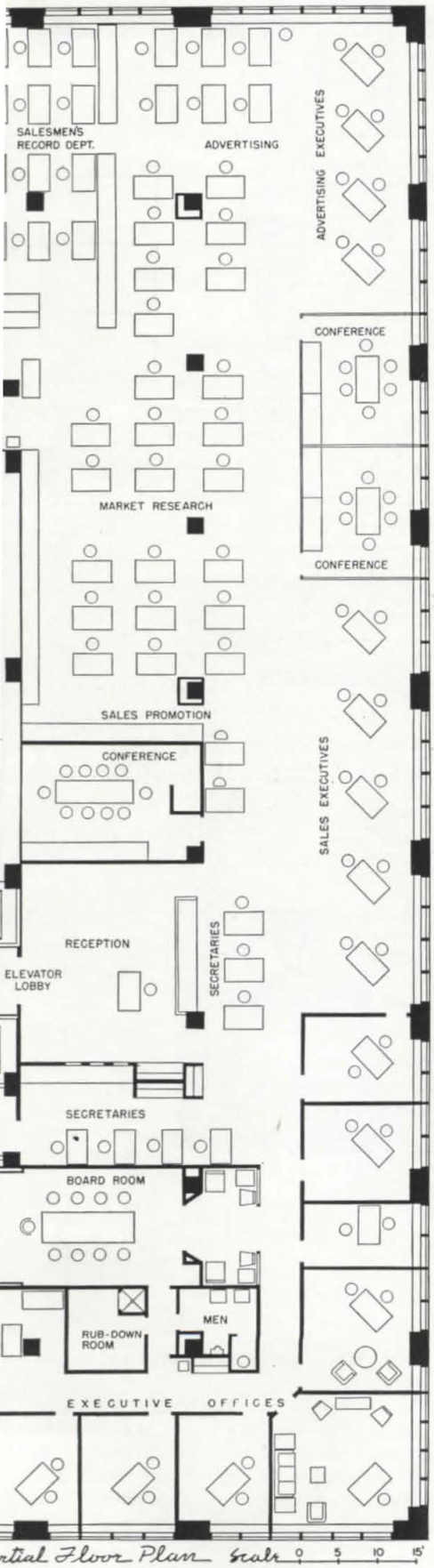
100 PARK AVENUE, New York, N. Y.

KAHN & JACOBS, ARCHITECTS

Above — sales executives' space in the offices for Philip Morris & Co., Ltd., Inc., showing the open area allowed by the 29'-deep structural bay at the front of the building. Acoustical tile is applied to arches between beams; the floor under desks is carpeted; elsewhere asphalt tile is used.

Left — a portion of the traffic and accounting office space that occupies a considerable portion of the south end of the floor; aluminum Venetian blinds; suspended strip lighting.

100 PARK AVENUE: NEW YORK, N. Y.



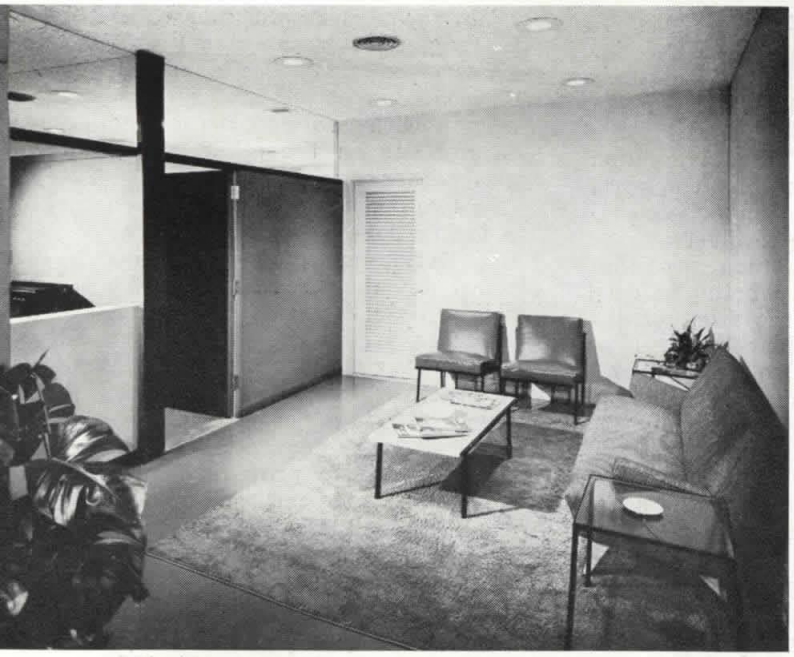
individual office planning

The partial plan of the offices for Philip Morris & Co., Ltd., Inc.—that occupy not only the entire fourth floor of the building, but also space on the floor below for a recreation room and canteen for employes, first-aid rooms, and an art department—is used here to illustrate the versatility in plan arrangement that is made possible by both the deep structural bay at the front of the building and the four-foot window module. In this firm's offices, as shown in both the plan and the large photograph across page, the entire 29′ depth of the forward bay is utilized at the center of the floor, without partitioning. In actuality, the sense of spaciousness is considerably more impressive than a photograph can convey. In the separate offices on the perimeter, notice that the four-foot window subdivision makes it possible to have a workable private office as small as eight feet in width; or in larger offices, arrangements with windows extending from wall to wall. Other subdivisions, all of which appear in the plan fragment, are the office subtended by a column with two windows alongside; a column with a window at either side of it; a column with two windows on one side and one on the other, and a typical corner office.

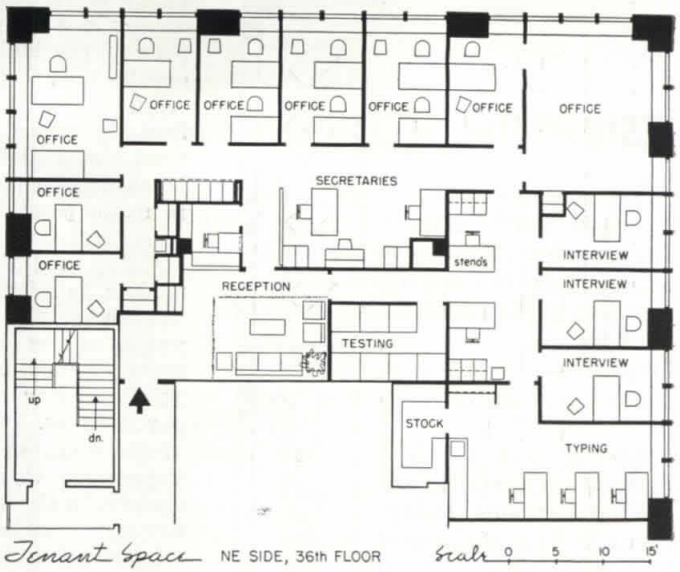
The two general office pictures on the facing page were taken on the Philip Morris main floor, which was planned by the architects of the building, Kahn & Jacobs. The photographs of private offices on this page come from various places in 100 Park Avenue, to illustrate the point.

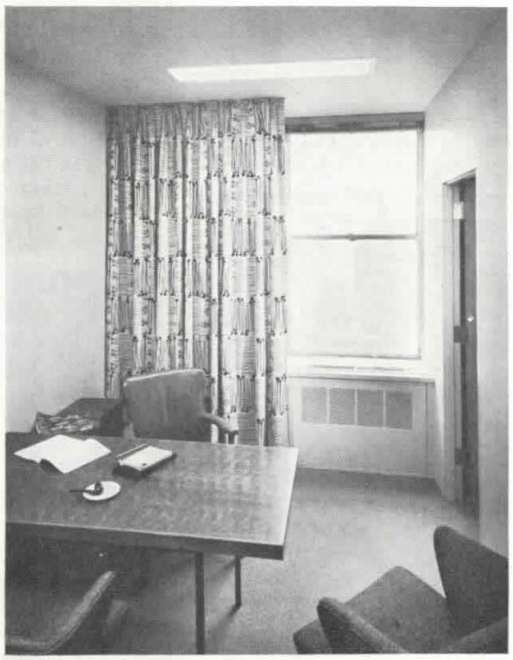
The real-estate people emphasize that these large floor areas on the lower floors have proved advantageous for sizeable corporations that wished to have their offices more efficiently co-ordinated, while the tower offices have proved ideal for smaller firms. Bearing this out, Kahn tells us that "the entire building is rented to tenants occupying full floors, with only a few exceptions where part-floors are used by tenants using whole floors above or below, and a few odd offices otherwise."

Various types of smaller offices are illustrated both in the partial plan for the Philip Morris offices and in the photographs below, which were taken in various offices in 100 Park Avenue — a corner office, a north-facing office with three-window subdivisions extending from wall to wall, and an eight-foot wide private office.



100 PARK AVENUE: NEW YORK, N. Y.





tower office space

This suite of offices was designed by the New York office of Skidmore, Owings & Merrill, for George Fry & Associates, Inc., consulting management engineers. They well illustrate the airiness and light that a relatively small organization can achieve in the tower portion of the building. Though the reception room and secretarial spaces are interior rooms, glass transoms at the top of partitioning lead the eye beyond. Interior office areas have acoustical tile ceilings; perimeter offices have plaster ceilings. All partitioning is of 3" solid gypsum blocks plastered, or surfaced with plywood.

In the reception room (photo, top left) flooring is rubber tile; the counter top is formica; the door saddle is aluminum.

The floor of the corner office is wholly carpeted and choice of fabrics lends an almost residential air to the room.

The small private office that immediately adjoins the corner office (small photo above) is a particularly ingenious handling of the comparatively awkward condition wherein a column and a single window constitute the entire end wall. As maintains throughout the building, these offices are wholly air conditioned with individual room control.

RESIDENTIAL DESIGN—1951

The designer of houses is up against a tough situation right now. Financing restrictions in Regulation X are scaring off many potential clients; difficulties in getting materials are discouraging many others. The emphasis at the present time is on "defense" housing. M.I.T. has just run a conference on "mobile" housing. Government agencies are publishing brochures on "temporary" and "emergency" housing. Standards of the FHA are being reduced and the rational planning studies of bodies like the American Public Health Association are being completely ignored.

What happens, today, to the designer of pleasant places to live, planned as parts of healthy communities? What happens to studies of planning for better family life, as distinguished from planning for quick dispersal when the bomb falls? What happens to the study of construction methods for better use of our available technology, rather than "research" in the use of available, noncritical materials?

We have reached a rather high point in the development of residential design in the United States, and the trends now indicate exciting potential advance from here on. Individual leaders like Belluschi and Stubbins, Neutra and Koch have shown a way that is even now being reflected in improved design on the part of speculative developers—the great producers of houses in our time. A few years ago it would not have been possible to show a group of houses like the one that follow from various parts of the country, from so many design hands. Do we stop now and concentrate on production of places to hide in, or of houses to move around the country like trailers?

•

P/A doesn't believe so. In the first place, reports from various parts of the country indicate that individual clients for custom-designed houses still exist, despite the handicaps that have been thrown in their way, and that they will continue to turn to capable architects until they are literally forbidden to do so. A good house is still a good investment, even if the equity required is of unreasonable proportions. But more important than that, P/A believes that the terms of the present emergency could be turned to advantage, rather than frantic disadvantage, if we could avoid the hysteria and the crude opportunism that the situation seems to foment. Is this unrealistic living in the clouds? Is this, God forbid, unpatriotic? We don't think so.

P/A believes that the present housing situation can be advantageous to good residential design because of these characteristics of the emergency: (1) the apparent need for decentralization; (2) the need to conserve materials and build more houses with less productive investment; (3) the need to study planning standards and thus improve the physical and emotional health of the citizenry.

All of these factors will be turned to a *dis*advantage if we are not careful, and that seems to be the present tendency. For instance, decentralization of industry is resulting so far in land speculation, shanty-towns, ribbon honky-tonk developments. The need to save materials is resulting in jerry-building in the name of national economy. The need to revise planning standards is resulting in the squeezing of already hopelessly small houses to indecent proportions in the name of patriotic endeavour.

•

What can the architectural profession do at this point? It can advocate, vigorously:

1. Application, at this time, of the principle of planned new towns. Everyone who has studied the subject knows what is needed: control of large areas of land; control of design and construction under the supervision of capable architects and contractors.

2. Application, at this time, of knowledge which is already available with regard to construction methods and use of materials. Research should continually go on, of course, but that is no reason to avoid using the fruits of studies that have already been made. For instance, we know that, as in the Knowlton house on the following pages, structural members can be designed so as to eliminate trim around windows and doors. We know that, as in the Vahlberg house, a skeleton frame is economical and can make future changes possible at minimum cost. We know well enough by now the advantages of modular co-ordination, and we know the additional advantages of a four-foot structural module, to make panels of various materials economically feasible, as in the Buchner house. We know the insulative value and labor economy in materials like cemesto board panels. We know that materials such as "flexicore" can be used for heating as well as structure, and that good masonry materials can form their own surface finishes, as in the Ruhtenberg house.

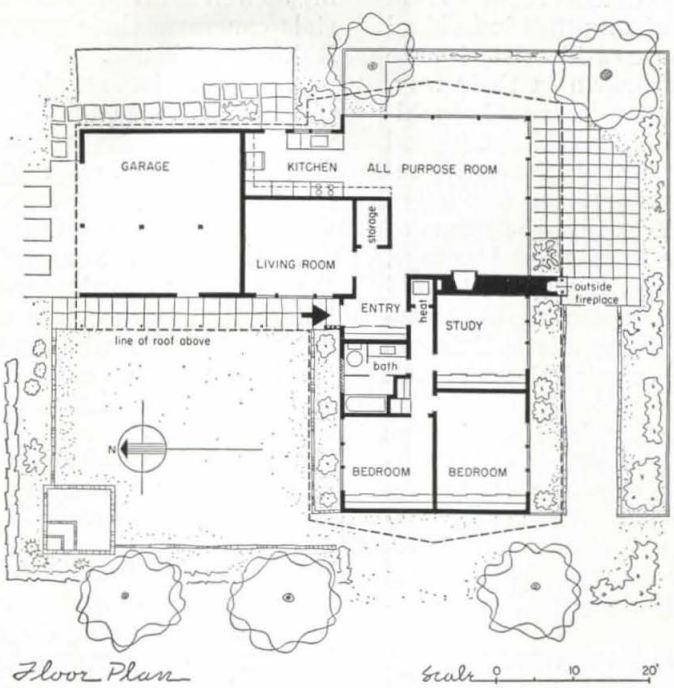
3. Application, at this time, of what we know about *planning* a house for better living. Much has been written, and a great deal put into practice, about flexible planning, open planning, multi-use spaces; the illusions of greater space created by ceilings and floors and walls which do not stop at arbitrary partitions, and by the extensions of interior space into the outdoors; the pleasurable emotional effect of intelligently chosen colors and textures. These things don't cost money which might be used to make more airplanes; they merely take thought and design skill, which will otherwise be wasted.

•

Can't we have *good* houses in America, even though they must be dispersed and must be cheap and must be small? We think this is possible; we think the design advances made in houses like the ones presented in the following pages can be applied even in a time of bomb-fright. It is easy to call all this extraneous to the needs of the moment (a moment that is likely to last for many years). Nothing is likely to be done unless a strong, concerted, articulate argument is made by a united profession.

1. House: Orlando, Florida

ALEXANDER KNOWLTON, ARCHITECT
L. H. GALIHER & ASSOCIATES, LANDSCAPE ARCHITECTS



program A house for a merchant builder that would be adaptable to varying family needs. Built under the general supervision of the magazine *Living For Young Homemakers* (which published it fully in its July, 1950 issue), the house has a total area of 1600 square feet.

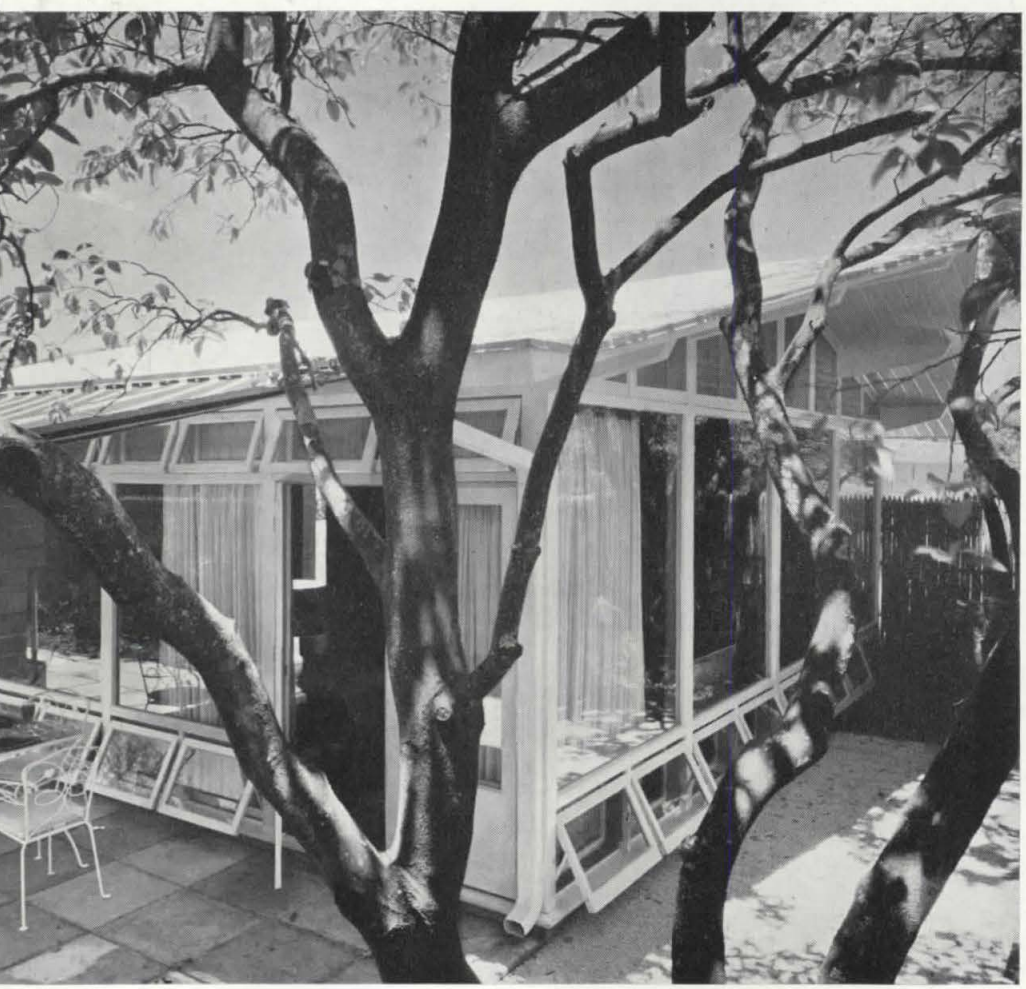
site Typical, flat 75′ x 100′ lot, on south side of street.

solution Southerly prevailing breezes, plus the vigor of western sun, determined orientation of main rooms to the east and south; "L" plan, with garage at street end, all-purpose (living-dining-play) room and three bedrooms organized around central entry in rear wing, opening to private garden. A smaller living room provides either a grownups' retiring room, a fourth bedroom, or possible hobby room or workshop.

Structurally, the house is equally resourceful—the mill-construction 2″ x 6″ t&g roof sheathing serving not only as a base for the roofing, but providing considerable insulation and the finished ceilings of rooms; integrated within the concrete-block chimney are a fresh-air intake for the heater and flues for heater, fireplace, and terrace barbecue.

materials and methods CONSTRUCTION: *Foundation:* concrete. *Structure:* concrete block and post-and-beam. *Exterior walls:* sheathing, gypsum siding; interior wall surfaces—rigid wallboard, wallpaper, and paint. *Floors:* concrete slab; waxed asphalt tile. *Insulation:* wool type. *Ceilings:* painted, t&g V-joint mill floor, longleaf yellow pine. *Roof:* 4-ply built-up; white marble chips. *Fenestration:* red cypress sash; ½″ plate glass and double-strength glass. *Partitions:* stud, with plywood, wallboard or tile surfaces. *Doors:* flush panel.

EQUIPMENT: *Heating:* perimeter-type, forced warm air system; oil-fired furnace; controls. *Piping:* copper.



The architect, *Alexander Knowlton,* Architectural Editor of *Living For Young Homemakers.*

Implicit in the design problem were economical construction, making materials, structural elements, and even rooms serve two or more functions. The post-and-beam-construction, employed in conjunction with fixed-glass areas (with operable ventilating panels above and below) made use of window frames unnecessary.

Photos: Tom Leonard

Top—east end of all-purpose room with glimpse of kitchen-laundry at left.

Above, left—corner of small family sitting room, with shelving on adjustable wall brackets.

Above, right—looking from kitchen across the all-purpose room out to the fenced terrace-garden beyond.

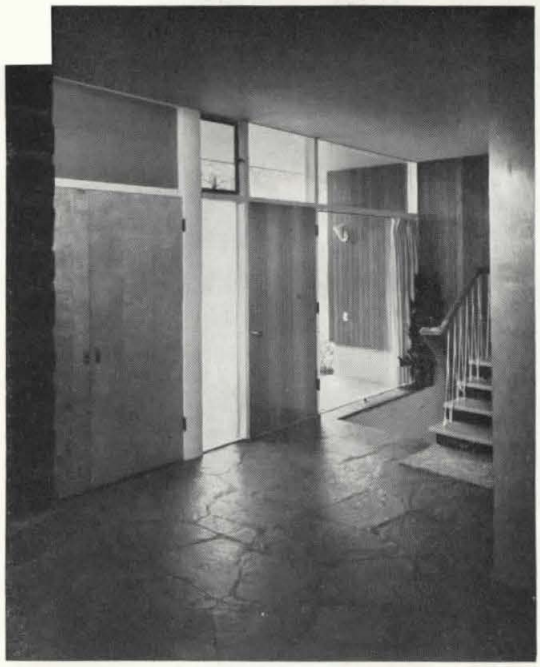
1. HOUSE: ORLANDO, FLORIDA

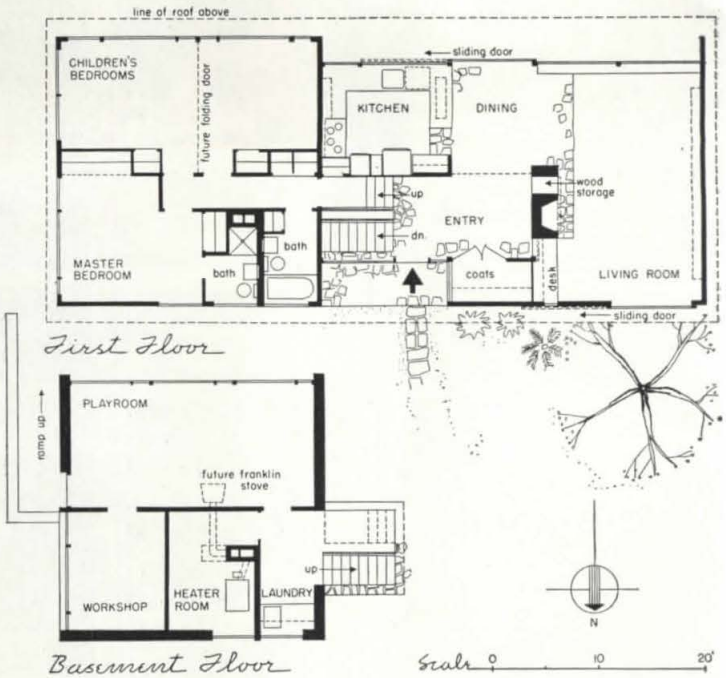
2. House: Lexington, Massachusetts

THE ARCHITECTS COLLABORATIVE, ARCHITECTS

Built on a wooded site, on the south side of the approach road, this unpretentious house employs changes in level to provide a partial basement, which, toward the rear (below) becomes a downstairs playroom with ample above-grade daylighting.

Photos: Richard Garrison





program Specific requests of the clients—that the living room *not* be a thoroughfare; that the house be organized mainly on one floor, but include a partial basement high enough to provide good windows for a secondary living and activity area; that the kitchen open into the living room, but be so finished in natural wood (rather than operating room white) that it would be harmonious and agreeable to the eye; that there be generous storage space; and that there be an open, children's room that could be divided later on.

site Roughly rectangular, beautifully wooded level lot.

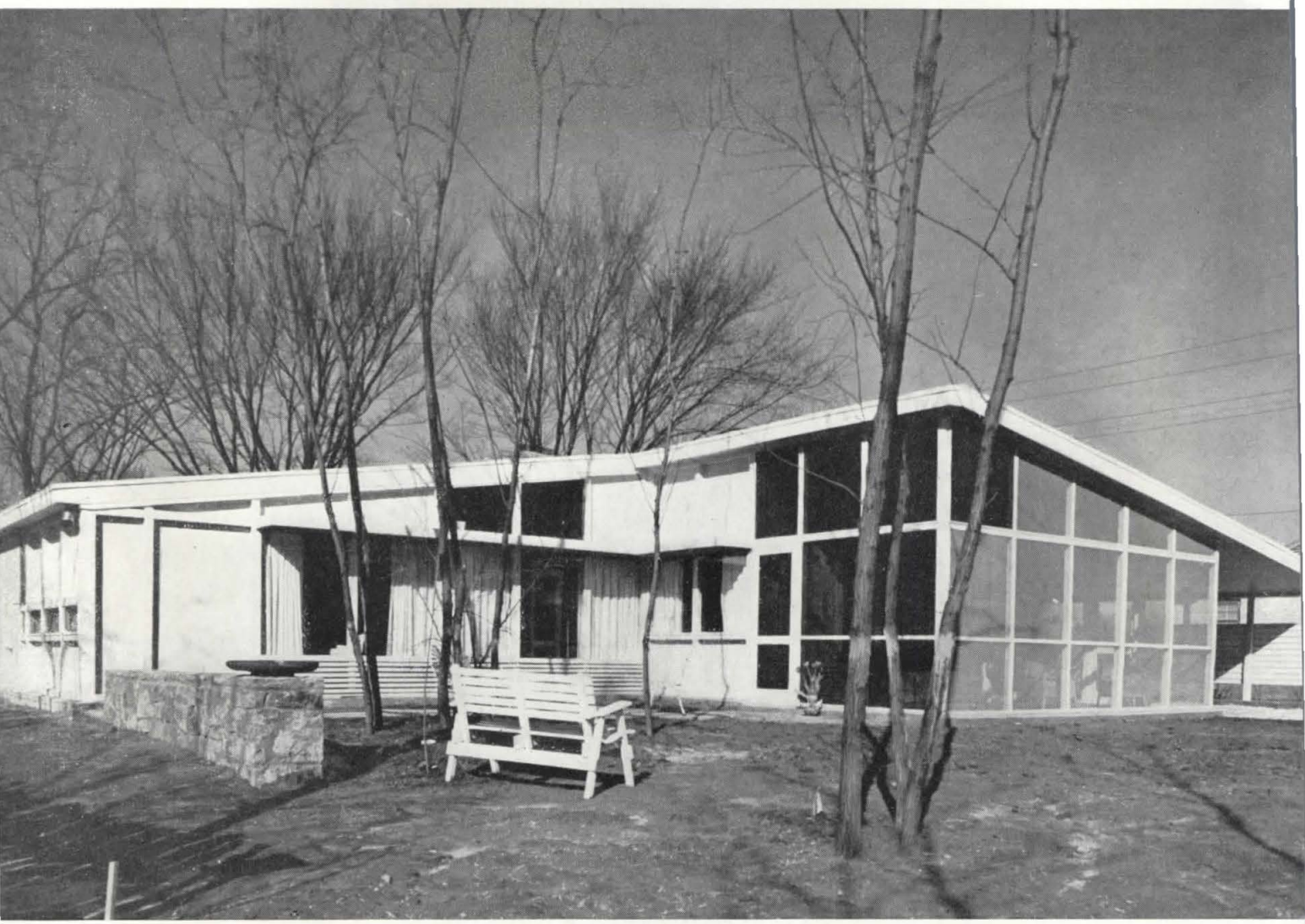
solution Main floor arranged on two levels, with bedroom wing four risers up from family living rooms. With a continuous roof line, the latter rooms thus have greater height (9′—1″) than the bedrooms (7′—3″). This scheme also provided headroom for the partial basement, a height that was limited by existence of ledge beneath. Flagstones in the entrance hall and out through the dining area simplify housekeeping, since rugs are eliminated in these areas. Eight-foot square, sliding glass panels, at the north end of living room and wall of dining room provide thorough cross-ventilation, as well as opening the garden and terrace areas to the house. High windows in the bedrooms occur near the ceiling to avoid blankets of warm air at this level.

materials and methods CONSTRUCTION: *Foundation:* 10″ poured concrete. *Frame:* standard wood. *Walls:* interior—tongued and V-jointed redwood; interior—redwood siding, gum plywood, plaster, pandanus cloth. *Floors:* wood construction over basement; concrete slab on grade; basement floor—slab on gravel fill; waterproof membrane and 3″ slab with heating pipes. *Floor surfaces:* concrete with integral lamp-black coloring; flagstone, waxed; oak, varnished and waxed; asphalt tile (kitchen), and rubber tile (baths). *Roof:* frame; built-up tar and gravel. *Insulation:* wool batts in roof construction; aluminum foil over ceiling radiant-heating pipes; exterior walls—wool batts. *Ceilings:* metal lath, plaster, painted. *Fenestration:* steel residence casements; intermediate projected; ¼″-plate glass in large areas; 2 sliding doors, with double, insulating glazing.
EQUIPMENT: *Heating:* radiant-heating coils, floor and ceiling; oil-fired furnace; two-zone thermostatic control and outside thermostat; electric heater in bathroom. *Lighting:* incandescent; fluorescent: lights with wood baffles, and others.
Members of The Architects Collaborative are: Jean B. Fletcher; Norman C. Fletcher; Walter Gropius; John C. Harkness; Sarah Harkness; Robert S. McMillan; Louis A. McMillen, and Benjamin Thompson.

HOUSE: LEXINGTON, MASSACHUSETTS

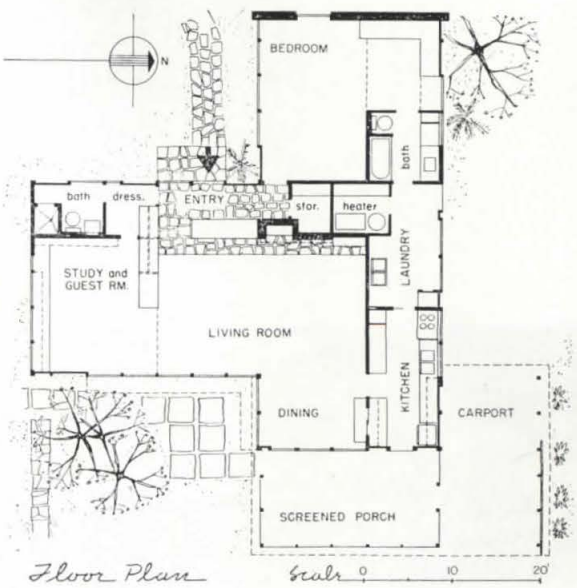
Acrosspage: top—the entrance hall, with its flagstone floor and huge two-door closet; stairs lead up to bedrooms, down to the playroom. Bottom—southern sitting terrace, with eight-foot sliding glass panel opened outside the dining area.

This page: above—living room looking toward front of house. Right—view from kitchen through dining space to living room (See page 103 for Selected Detail of kitchen cabinets). Below—the long, west wall of the living room is windowless.



3. House: Tulsa, Oklahoma

RAMEY, HIMES & BUCHNER, ARCHITECTS



program A comfortable small house for a couple whose children had grown and moved away. Special requirements: ease of maintenance without a full-time servant; space enough for group (up to 50) entertaining; space for occasional over-night guest; generous storage.

site Wooded, gentle slope to the east; large trees to the west.

solution Organization within a T-shape plan, with ample, L-shape living-dining area, adjacent to study-guest room. When entertaining, direct access from kitchen facilitates serving. Screened living-dining porch, on favored east exposure, adjoins southern patio. Owners' bedroom suite leads directly back to service portions of the house.

Designed on a two-foot module, most exterior walls are of asbestos-cement-surfaced insulation board, chosen for structural economy as well as insulative value. Ventilation is provided in this year-round air-conditioned house by means of horizontal louvers (screened and weather-stripped) beneath fixed glazing. Eastern exposure of main living areas and trees to the west that shade the roof in summer help reduce the air-conditioning load.

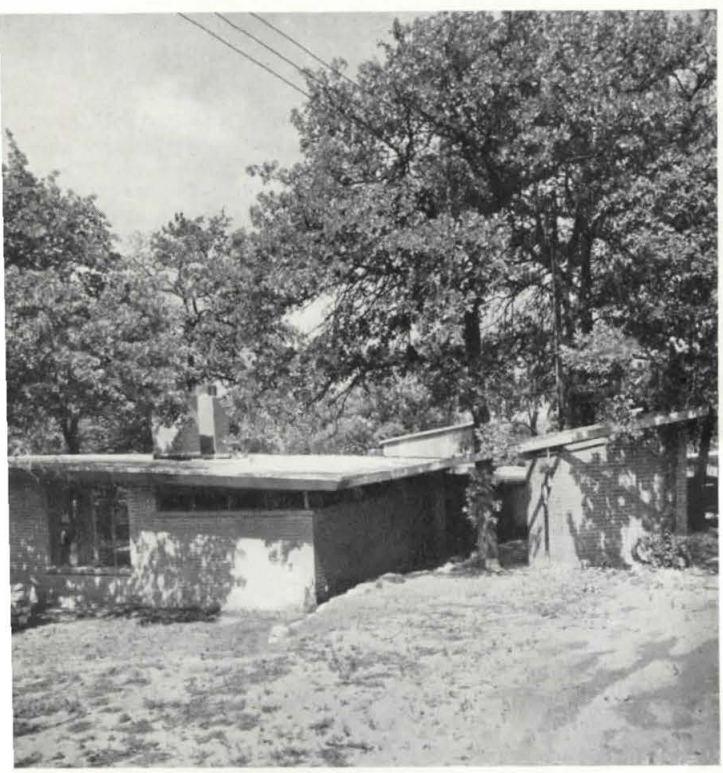
materials and methods CONSTRUCTION: *Foundation:* reinforced concrete. Frame: 4″ x 4″ wood posts. *Walls:* asbestos-cement-surfaced insulation board; stone. *Floors:* concrete slab, surfaced with carpet, rubber tile, asphalt tile. *Roof:* frame, tar and gravel. *Insulation:* wool type batts. *Ceilings:* laminated plaster board. *Fenestration:* commercial projected sash; DSB and crystal sheet glass.

EQUIPMENT: *Heating and air conditioning:* gas-fired warm-air furnace; unit bathroom heaters; five-ton air conditioner; same fan used for warm air in winter. *Water supply:* copper tubing. *Lighting:* recessed incandescent; fluorescent strip in light cove. *Kitchen:* ventilating fan; dishwasher; home laundry and freezer.

the architects *Uel C. Ramey:* Kansas State; *Harold W. Himes:* U. of Mich.; *Robert E. Buchner:* U. of Mich. Firm founded in 1948. Buchner has retired from the firm and opened offices in Tulsa, Okla., known as Robert E. Buchner, Architects. Associated with him in the new office is A. Blaine Imel, B. A., U. of Okla.

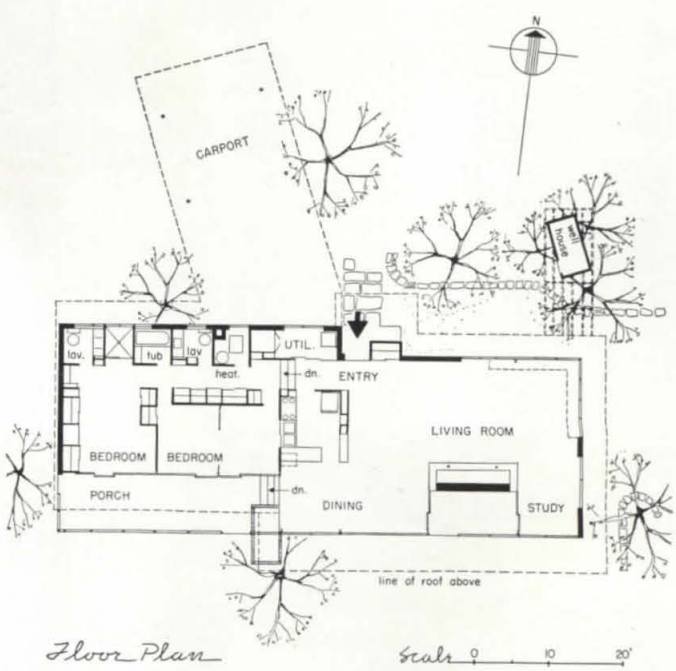
Exterior of the house is painted light, straw yellow, with steel sash and gravel stop, nasturtium. The architect comments: "These colors, against the blue Oklahoma sky, of which we have quite a bit, contribute to warm appearance even in winter." Photo at left is of the study-guest room.

Photos: Bob McCormack



4. House: Oklahoma City, Oklahoma

VAHLBERG-PALMER-VAHLBERG, ARCHITECTS



program Home for Robert W. Vahlberg, one of the partners, planned on the principles of expansion and flexibility. A special desire was to have one big general-purpose room rather than a series of walled cubicles.

site Approximately one acre, well wooded, with a deep ravine alongside.

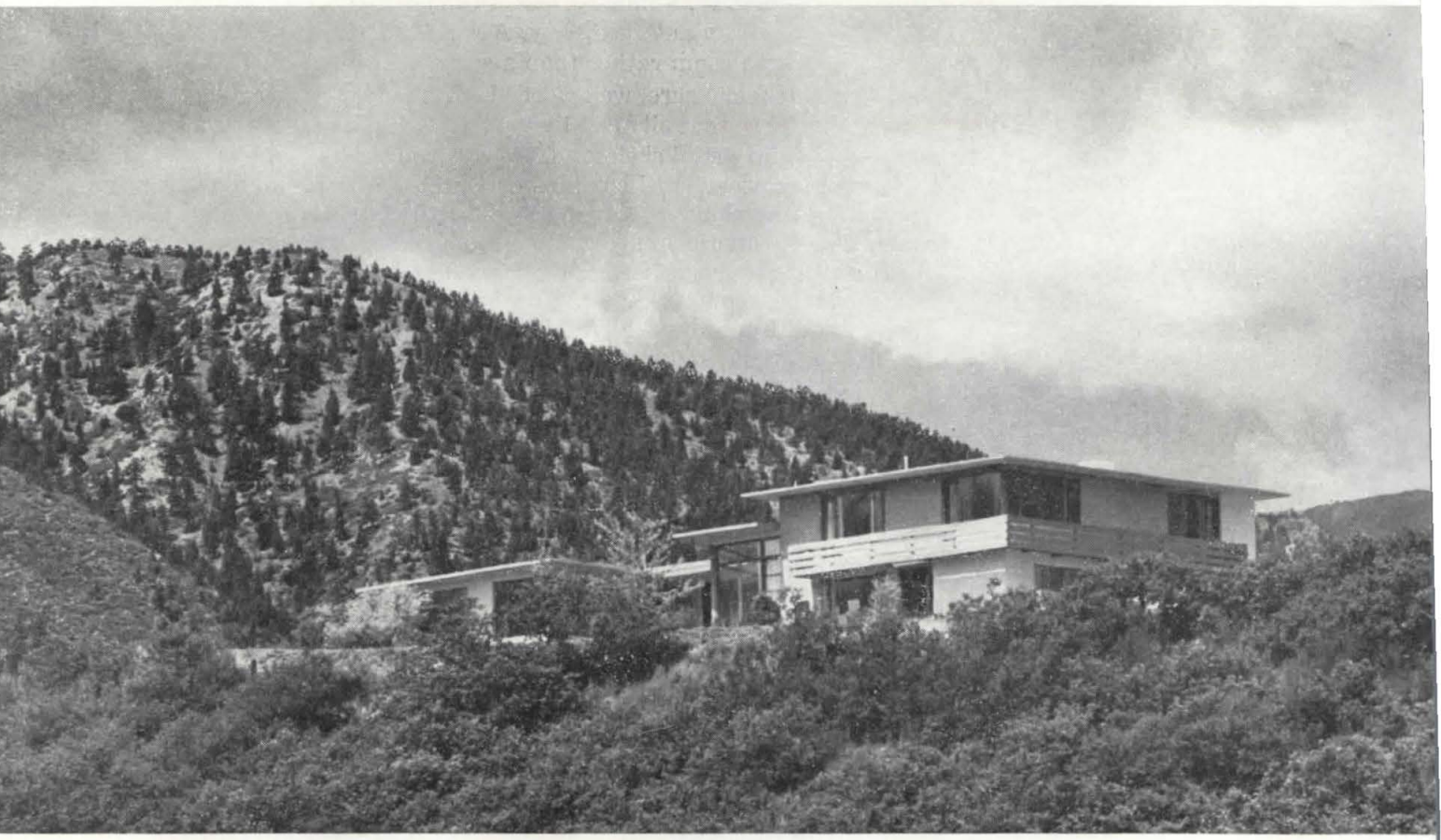
solution House aligned so that all main living areas face the favored south-southeast exposure, Partial skeleton framing (concealed, steel beams around perimeter; exposed steel columns on south wall) would allow reorganization of interior partitioning and will facilitate future possible expansion—a studio and drafting room, office and owners' bedroom suite, toward the east; service wing, north of the present carport, additional bedrooms to west. The huge (24′ x 40′) general-purpose room, divided only by the freestanding fireplace mass, includes lounging, eating, study, and play facilities, as well as the compact kitchen.

materials and methods CONSTRUCTION: *Foundation:* reinforced concrete. *Frame:* steel, perimeter frame; beams and H columns (south wall) ; 10″ reinforced, brick-cavity wall on north. *Floor:* concrete slab, cement finish, integral, brown, color and hardener, carpeting. *Wall surfaces:* exterior—glass; common brick; interior—same materials plus (on partitions) fir plywood, 1/16″ open joint. *Ceilings:* ribbed plywood. *Roof:* 2″ x 12″ wood joists between steel members; asphalt and gravel over wood deck. *Insulation:* acoustical —furnishings and carpet; thermal—accordion-type aluminum foil. *Fenestration:* high windows—project-in type; residential type; lightweight; one casement; 1/4″ standard, polished, clear glass; plate-glass set in steel channels and angles; D.S.B. *Doors:* mahogany grid-core; glass sliding, with 1/4″ tempered plate-glass; slab white pine.
EQUIPMENT: *Heating:* radiant, floor-panel; gas-fired boiler, wrought-iron piping; inside-outside thermostat control. *Lighting fixtures:* goose-neck and spots over bookshelves; recessed incandescent and fluorescent.

the architects *R. W. Vahlberg:* U. of Okla. (B. Arch.; B. S., Arch. Eng.) ; graduate work at M.I.T. (M. Arch.). *C. J. Vahlberg:* U. of Okla. (B. S. Arch. Eng.). *Gail R. Palmer:* U. of Okla. (B. Arch.; B. S. Arch. Eng.). After various spells of Army service, the firm was formed in 1949.

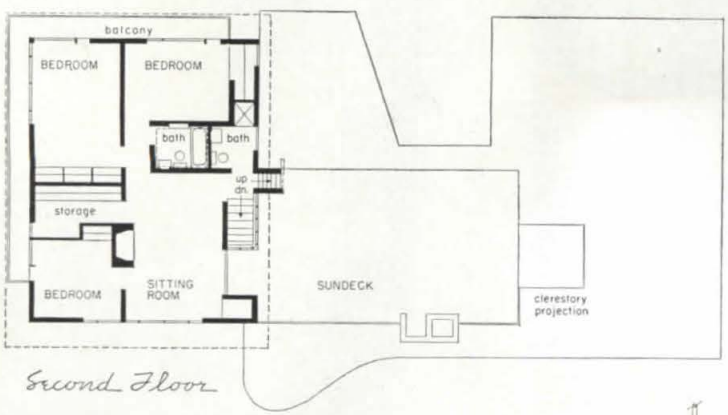
Above—general purpose room from dining area. Right, above—study-drafting corner; right, below—dining area, kitchen-entertainment bar, and (beyond) screened porch.

Photos: Fred Gund

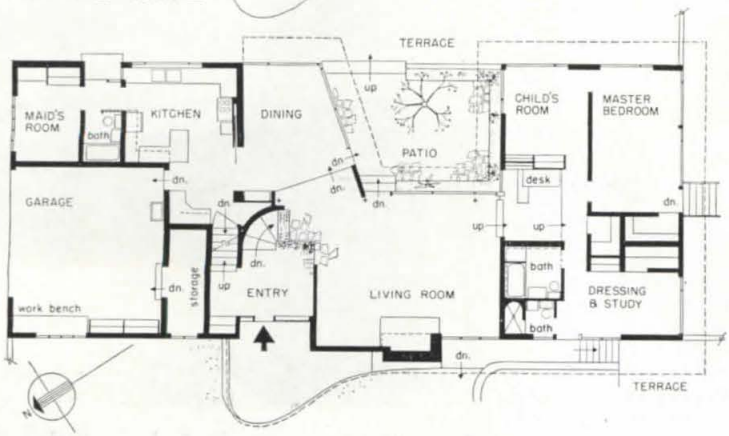


5. House: Colorado Springs, Colorado

JAN RUHTENBERG, DESIGNER



Second Floor



First Floor

Scale 0 10 20

program Home for the designer's own family—his wife and five children, two of whom have passed their 20th birthdays. The dual problem was (1) to house the entire family adequately, yet (2) so arrange things that when the older children were away at school, the remainder of the family could live comfortably in just a portion of the house.

site Mesa at foot of the Rockies, with an abrupt drop-off toward the southeast view, across almost endless grazing plains.

solution House, placed 100-feet back from the southeast drop, organized (on first floor) in a long rectangle containing owners' bedroom and room for youngest child, in addition to main living areas, kitchen, maid's room, and garage. Second story, above kitchen-garage area, provides separate living suite for older children. House as fireproof as possible.

materials and methods CONSTRUCTION: *Foundation:* reinforced concrete. *Frame:* steel. *Walls:* pumice block stuccoed on the exterior; either exposed or surfaced with plaster or hardwood plywoods indoors. *Floors:* concrete slab (first floor); precast, prestressed concrete panels (second); surfaces—flagstones, asphalt tile, or simply waxed. *Roof:* reinforced lightweight concrete; built-up gravel roofing or (on sundeck) aluminum built-up roofing. *Insulation:* acoustical—wall and ceiling plaster with perlite aggregate. *Fenestration:* steel sash; plate glass. *Partitions:* pumice block.
EQUIPMENT: *Heating:* warm-air system; gas-fired furnace; ducts running under first-floor slab and through hollow tubes of second-floor decking provide radiant air heat. *Piping:* copper.

the designer *Jan Ruhtenberg:* Training in Leipzig and, under Mies van der Rohe, in Berlin; practice in Sweden before coming to U. S.; instructor, Columbia U.; New, member, Advisory Board, School of Architecture and Planning, Denver U.

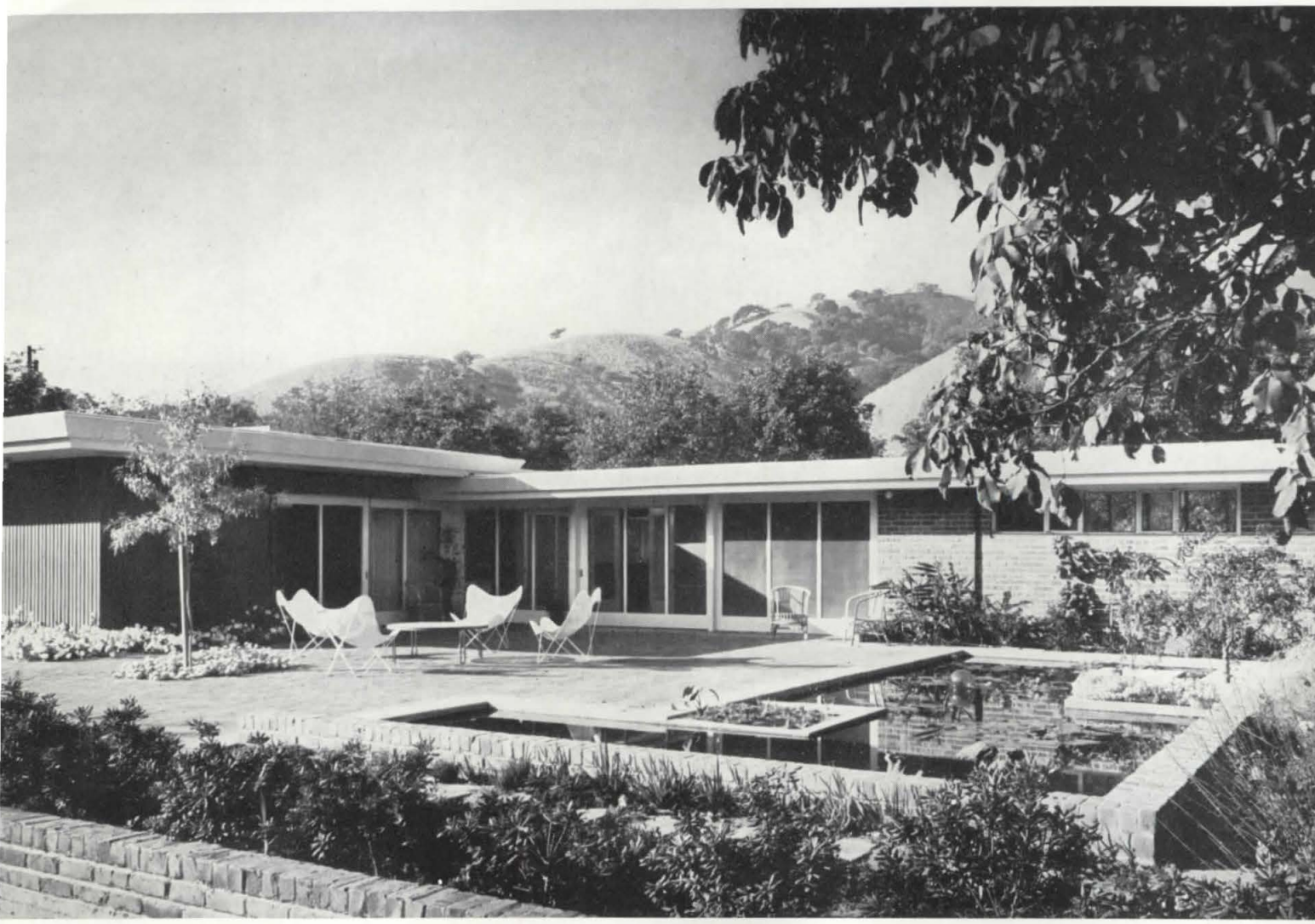
Acrosspage, top—the house crowns a mesa just at the foothills of the Rockies; below—steps up to foyer.
Above—the flagstone-floored living room.
Right—exterior and interior views of the sunny dining patio. *Photos: Guy Burgess*

HOUSE: COLORADO SPRINGS, COLORADO

Above—the children's sitting room, upstairs, with view out past ranch buildings to the Rockies in the distance.

Left—detail of bedroom dressing table, mounted on wall of pumice block.

Below—East corner bedroom, upstairs, with practically all of Colorado in the background.



6. House: Lafayette, California

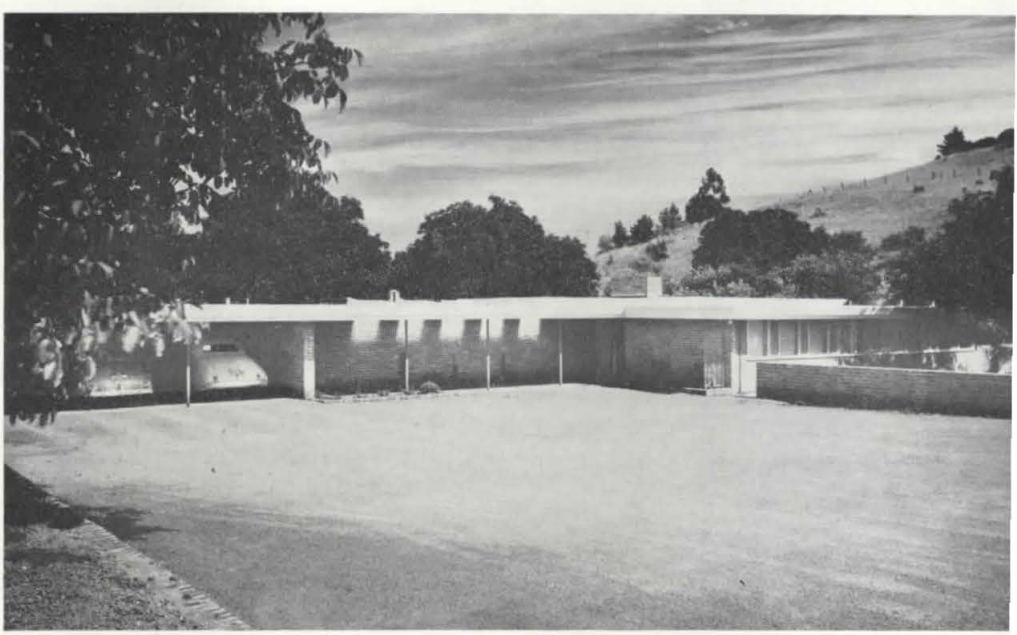
CONFER & OSTWALD, ARCHITECTS
ECKBO, ROYSTON & WILLIAMS, LANDSCAPE ARCHITECTS

Planned for gracious entertaining, sometimes of large groups, this spread-out house is located in a valley surrounded by rolling hills. Exterior cavity walls are of brick the owner had collected over several years.

Above—view from the garden (south) side: living area (left); dining porch, (center); studio wing, for loomwork (right).

Right—seen from the approach (west) side, the garage is at left; front door, just below chimney, and bedroom wing at right.

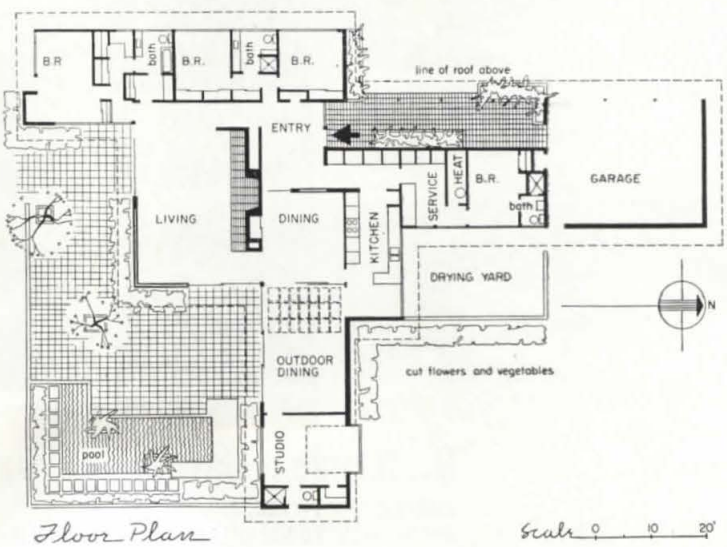
Photos: Kurt E. Ostwald



Above, left—looking across the landscaped loggia adjoining the motor court, toward the front door.

Above, right—looking back from the front door, through to the garage.

Below—exterior and interior of the weaving studio, with its generous north skylight.



HOUSE: LAFAYETTE, CALIFORNIA

program House for two adults and a grown son. In plan it was requested that the owners' bedroom be separate from the son's room and guest quarters. Because the family entertains frequently, it wanted as much openness as feasible, with halls, etc., kept to a minimum. A north-lighted studio, where the lady of the house could weave, was a special requirement.

site Bottom of a valley, with hills on all sides; a creek bed just below the garden terrace. Moderate climate, with occasional winter frosts and hot summer days.

solution From the west, or approach side, a covered shelter leads from the carport to the front door. Along the garden front are the main living rooms; the three main bedrooms are organized within the western wing that extends southward to form one side of the living yard. Beyond the living rooms, to the east, and separated from them by a screened dining porch, is the studio, which doubles as a guest room. The structural concrete slab is supported on concrete piles, about six feet o.c., which penetrate the adobe soil to reach solid bearing.

materials and methods

CONSTRUCTION: *Foundation:* concrete piles and slab. *Structure:* reinforced brick cavity walls; also stud walls, surfaced outside with birch. *Floors:* exposed concrete; sealer, integral color, wax. *Roof:* wood joists; built-up roofing; white marble chips. *Insulation:* 4" wool-type in roof construction. *Ceilings:* plaster, painted. *Fenestration:* aluminum sash; D.S. and plate glass. *Doors:* birch hollow-core.

EQUIPMENT; *Heating:* radiant heat, through copper coils in floors; gas-fired boiler. *Lighting:* indirect fluorescent flush ceiling units.

the architects

Frederick L. R. Confer (left) : U.C. (B.A.; architectural degree). Work in various offices; own practice established, 1932. Since the war, he has acted as Chairman of the Board of Architects for the Oakland Civic Center Development.

John Hans Ostwald (right) : Federal Polytechnical U., Switzerland (architectural diploma and degree of Dr. of Technical Sciences in Architecture). Work with Moser, in Zurich; Merkelback & Karsten, in Amsterdam and, in this country, with Richard Neutra. Associated with Confer since 1947.

Above—fireplace wall of living room, with patterned glass beside front door (rear, left).

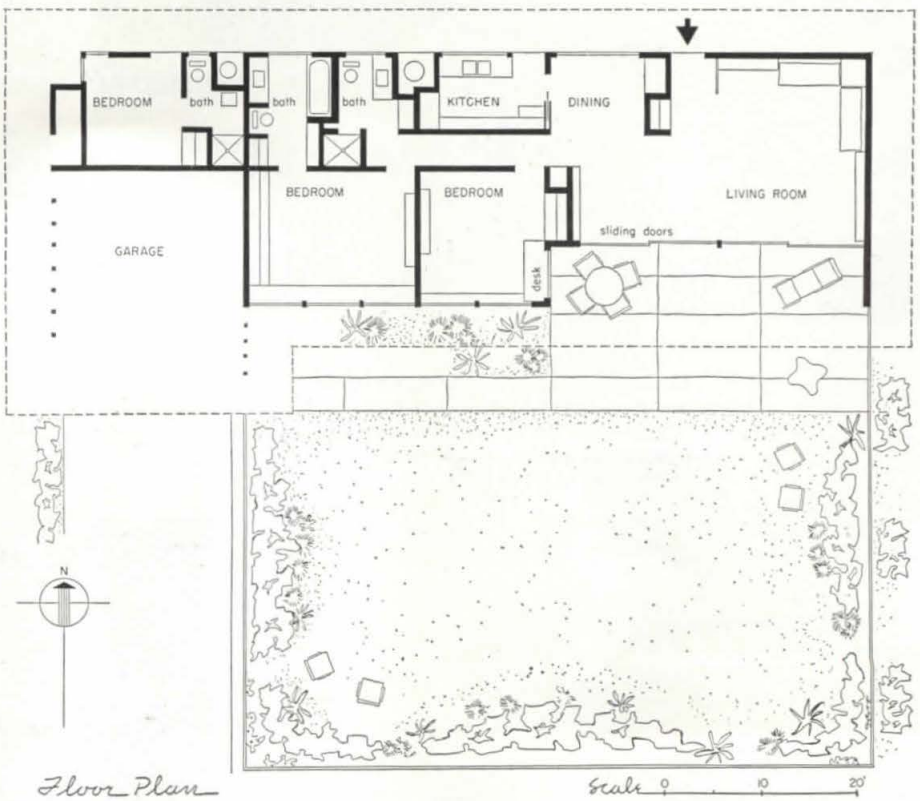
Right—the dining porch, facing the south terrace and garden, which connects the main house with the studio wing.

7. House: Brentwood Park, California

CRAIG ELLWOOD, DESIGNER
MACKINTOSH & MACKINTOSH, CONSULTING ENGINEERS
ERNEST WERTHEIM, LANDSCAPE DESIGN

View of south lawn (above) shows complete privacy provided by the enclosing six-foot fence; roof overhang provides summer shade, even on the terrace.

Acrosspage—general view from northeast; redwood end wall of the house echoes the fencing. *Photos: Julius Shulman*



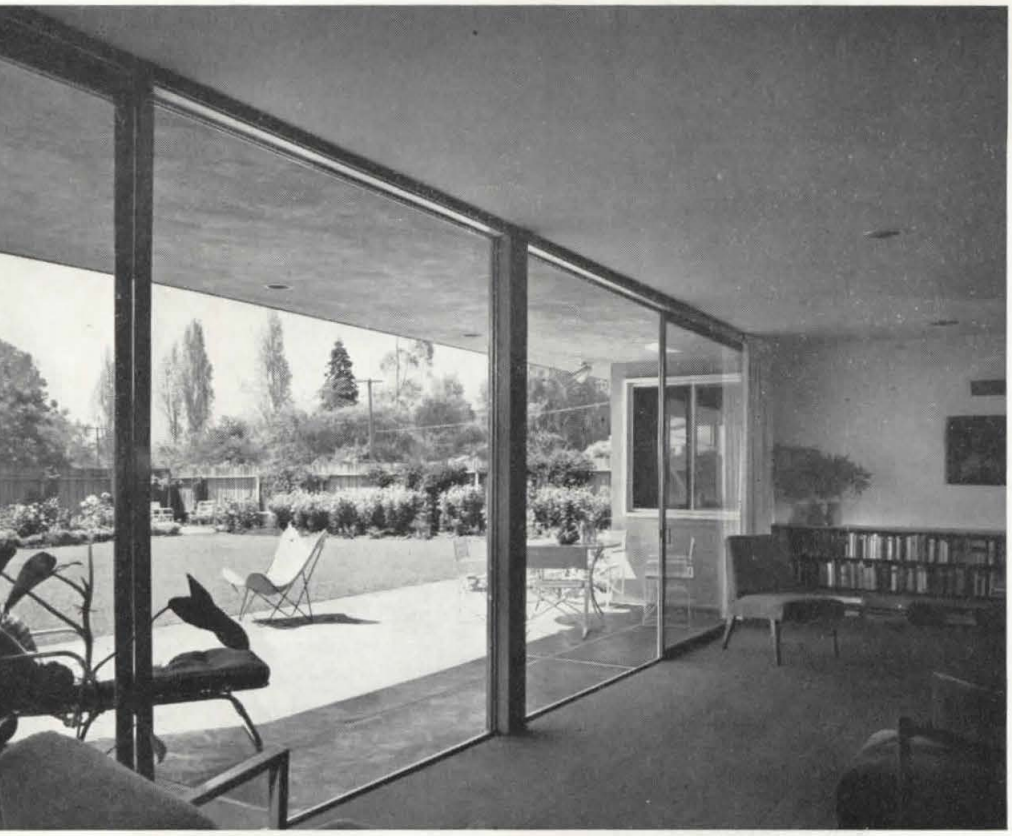
program Small house in which desire for living privacy, both indoors and out, was a prime factor. Special request: maid's quarters (initially to be used as guest room) to be independent of remainder of house.

site Irregular, level, northwest corner lot.

solution Plan orientation places living room and bedrooms along the south exposure; eight-foot-deep overhang excludes summer sun, while admitting ample sunlight in the winter months. A six-foot-high redwood fence encloses the southern lawn and garden, insuring complete privacy for both indoor and outdoor living. All furniture, except for tables and chairs, is built in. "I'm not of the purist 'form follows function' school," the designer comments. "Architecture has to be more than a technical, utilitarian achievement. Also, I don't subscribe to 'form for form's sake', but rather a modulated *simultaneous* expression of plan to function—structure to plan—form to structure—are to form. . . "

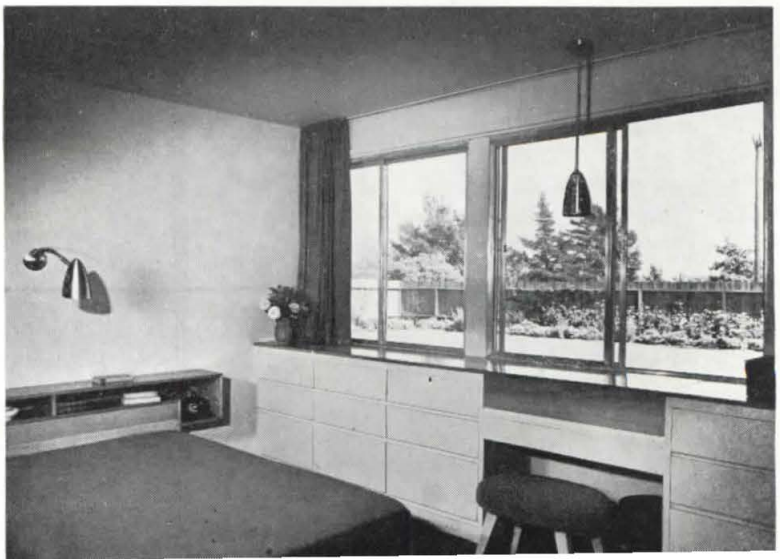
materials and methods CONSTRUCTION: *Foundation:* concrete. *Frame:* combination of standard frame with wood and steel columns. *Exterior walls:* redwood and plaster; interior—plywood; plaster. *Floors:* concrete, simply troweled or (in kitchen and bath) surfaced with asphalt tile. *Roof:* wood frame; composition with white treatment. *Insulation:* asphalt impregnated wood fiber. *Fenestration:* aluminum transom and sliding sash. *Door:* slab type. EQUIPMENT: *Heating:* forced warm air; gas-fired furnace; controls; electric unit heaters in bathrooms. *Light fixtures:* aluminum reflectors.

the designer *Craig Ellwood:* Entered construction field, with no previous architectural or structural experience or training, on release from AAF in 1946; interest in architecture stemmed from a job with general contractor who built only contemporary structures—plus exposure to work of Saarinens, Soriano, Wright, Eames, Neutra, A. Q. Jones, Harwell Harris, and others. "Graduated" to design field in 1948, revising an interior plan and façade for an existing commercial building ("the result was horrible"). Continuing research and study of published design work and/or writing of contemporary artists and architects; courses in extension division, U.C.L.A.; prerequisites for architectural license examination to be completed late in 1952.



Left—two views of the living room: looking out through the window-wall to the enclosed lawn and garden; and the interior corner of the room, showing main entrance door.

Detail of the owners' bedroom. Here, as elsewhere in the house, all furniture except for tables and chairs is built in. Sliding aluminum sash provides flexible ventilation control.



HOUSE: BRENTWOOD PARK, CALIFORNIA

Wood Preservatives and Preservative Treatment

By GEORGE M. HUNT*

What is the best wood preservative? No doubt this question has been asked thousands of times. The simple fact is that there is no answer, because there is no "best" wood preservative. Some preservatives excel for one purpose and others for other purposes. Nor is there any "best" method of applying wood preservatives. Pressure treatment is best under some conditions, and brushing, dipping, soaking, the hot-and-cold bath, or some other treatment may be preferable and more economical under other conditions. In fact, there are circumstances under which one may be justified in using no treatment at all.

Where do these facts leave the architect or home owner who needs to make a choice with regard to the use of treated wood? Should he accept the recommendations of the first salesman who calls or the first advertisement on the subject that comes to his attention? If he followed that procedure, he would be right sometimes but wrong probably more often. His only alternative is to seek the advice of a qualified, unbiased consultant or learn for himself how to make an intelligent choice. There are so many factors to be considered that it is not easy to lay down simple rules for making a choice.

In outdoor structures, such as bridges, railway tracks, pole lines, and the like, oils like coal-tar creosote or creosote mixtures, or heavy oil solutions of toxic chemicals applied by pressure methods are generally preferred. Railway men, highway engineers, public utility engineers, and others concerned with such structures are either sufficiently well informed to make their own decisions for their structures or they know where dependable advice can be obtained. There is one "best" in this connection that may be mentioned, however. For the protection of piles and timbers that will be in salt water, only coal-tar creosote or creosote-coal-tar mixtures should be used. They should be applied by a full-cell pressure process and the wood should be made to absorb all the preservative it will hold. No other preservative is dependable for this job and it is a tough one for creosote.

For homes and small buildings in general, creosote and similar preservatives may be, and frequently have been, used with good results. Their color, odor, and oily nature, however, make them unattractive for this purpose. Workmen do not like to build with creosoted lumber. The creosote gets on their clothes, it has a strong odor and, occasionally, untreated flooring has been discolored when laid over creosoted subflooring or nailing strips. For these reasons, wood treated with creosote will never enjoy as much popularity for buildings as the so-called "clean" preservatives.

Clean preservatives are of two types, depending on whether the toxic chemical is dissolved in water or in a volatile, organic solvent. Chromated zinc chloride, Chemonite, Celcure, Greensalt or Erdalith, Tanalith (Wolman salt), and a number of others are of the water-borne type. They are usually but not necessarily applied by pressure methods. They have the disadvantage of making the treated wood very wet and swollen. Wood treated with water-borne preservatives must, therefore, be redried before it is used in buildings, in order to avoid the shrinkage and loosening of joints that result when wood is installed wet and allowed to dry in place.

Clean preservatives of the organic-solvent type usually consist essentially of a solution of pentachlorophenol or copper naphthenate in a petroleum solvent, such as kerosene, Stoddard solvent, or light domestic fuel oil. Other toxic chemicals are sometimes used or added to the pentachlorophenol, as well as other oils or waxes to provide water repellency, prevent surface crystallization or increase solubility. An outstanding characteristic of these preservatives is that they do not swell the wood. The freshly treated wood must be dried sufficiently, however, to permit the solvent to evaporate and to get a clean, dry surface, especially if the wood is to be painted. Immediately after the treatment, the wood is highly inflammable because of the oily solvent on the surface but this condition gradually changes as the solvent evaporates.

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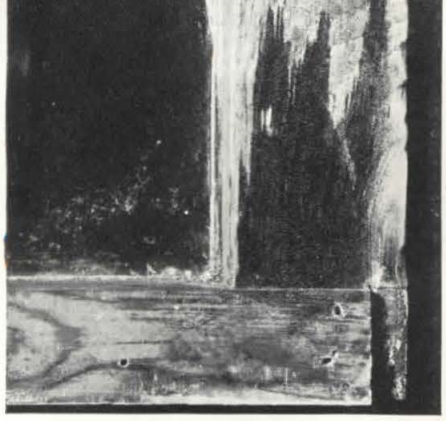


Left—fungus and incipient decay on this window sash could probably have been avoided by using the standard National Woodwork Manufacturers' Association three-minute dip treatment. *Photos: except as noted, courtesy of Bureau of Plant Industry, Soils, and Agricultural Engineering.*

Frequently, waxes or other suitable materials are added to the clean, organic-solvent preservatives to increase their effectiveness in retarding moisture changes, thus providing nonswelling, water-repellent preservatives. There are numerous proprietary preservatives of this type, most of which contain five percent of pentachlorophenol in the ready-to-use mixture. They do not actually moistureproof the wood but, when properly applied, they slow down the rate at which moisture changes can take place and measurably retard shrinking and swelling of the wood under fluctuating moisture conditions. There is some indication that the presence of the water repellent also adds to the effectiveness against fungi.

All the preservatives named above, and numerous others, are good preservatives and will provide protection from fungi or insects, if they are present in the wood in sufficient quantity and depth. They vary in cost, of course, and in the amount required for a given degree of protection. Of outstanding importance is the fact that no preservative can be depended upon for good results when improperly used. Fungi and insects are methodical and thorough in their search for unprotected wood because their lives depend on finding it. When conditions for their growth are otherwise favorable, they will ultimately discover the weak spots in any treatment resulting from shallow penetration or checks extending through the treated zone. In preservative advertising and in general discussion of the subject, too much attention is given to comparing preservatives and too little to the importance of good treatment.

When using any preservative, the highest degree of protection is obtained when the largest possible amount of preservative is injected into the wood to the greatest possible depth. Such treatment should be specified when creosoting wood piles for use in salt water, but it is not necessary or economical in preservative treatments for buildings. For the preservatives in commercial use by pressure methods, standard specifications state the minimum amount of preservative required per cubic foot of wood treated. Experience has shown that when the wood is well penetrated and contains not less than the specified amount of preservative, good protection may be expected. Larger quantities and deeper penetrations give greater assurance of long life but may be unnecessarily costly for most purposes.

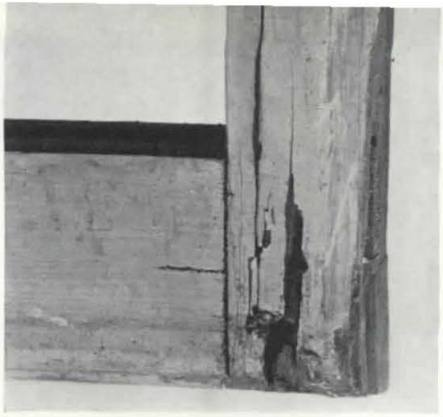
Pressure treatments generally afford the best means of securing the desired penetration and absorption of preservative because the treating-plant operator can vary the treating temperatures and pressures and apply steam, air pressure, or vacuum as needed for the preservative used and the material being treated. It is sometimes possible by certain nonpressure methods to secure as deep penetration as by pressure methods and, when this is done, the protection obtained will be as great as by pressure treatment. Such deep penetrations by nonpressure methods, however, usually require higher preservative absorptions than specified. This makes for longer life but, also for higher cost of treatment.

Where large quantities of lumber are involved in a single order, pressure treatment is the preferred practice. It is also desirable for small quantities when they can be obtained at reasonable cost. In some cities retail lumber yards or jobbers are able to supply pressure-treated lumber in relatively small amounts. When it is not thus readily available, the prospective user seldom can afford to have a special order treated for him since, with few exceptions, pressure-treating plants are not equipped to handle small orders at reasonable cost. He may, however, choose one of the numerous nonpressure treatments, the choice being influenced by the kind and quantity of material to be treated, the availability of suitable treating facilities or treated lumber, and the degree of protection desired.

The simplest and cheapest treatment is to brush or spray the preservative on the wood. Unfortunately, it is also the least effective method, for the simple reason that the amount of preservative absorbed by the wood is low and the penetration is usually slight, frequently not more than one thirty-second of an inch. The quantity absorbed can be increased somewhat by repeated applications but not much improvement in penetration will result. Such superficial treatments, particularly if the treated wood is painted subsequently, will have a retarding effect on fungi and insects but they cannot safely be depended upon for long life. The treated surface is easily broken or worn through and, if checks develop, they will penetrate through the treated area and provide access to the untreated wood beneath. Paint, of itself, provides little or no protection from decay, but where applied over a treated surface, helps to reduce wear and checking and tends to prolong the effectiveness of the preservative on the surface. Surface treatments should be used only as a last resort, when no better method of retarding decay is practicable.

Immersing the wood in a tank of preservative is almost as simple as brush application but costs more because more preservative is absorbed, more equipment is required, and a substantial amount of preservative is needed to fill the tank. Because of this higher absorption and generally deeper penetration, greater protection can be expected than from brush treatment. When the wood is immersed for only a few minutes or less, the treatment is referred to as dipping. When the immersion period is in an oil solution for several hours or days, it is often called "cold soaking."

In these treatments it is customary to use clean, nonswelling preservatives, such as solutions of pentachlorophenol in Stoddard solvent or kerosene. Copper naphthenate solutions may be used instead of pentachlorophenol when the green color of the copper naphthenate is not objectionable. For the most part, dipping treatments are for "home" or "on the job" use. One important commercial application that has developed, however, is the three-minute dip treatment for window sash, frames, and other millwork sponsored by the National Woodwork Manufacturers' Association. The finished sash or frames



Right—preservative treatment would have prolonged the life of this window sash; it rotted because of moisture accumulation.

are immersed by the manufacturer or dealer for three minutes in a standard preservative solution containing not less than five percent of pentachlorophenol or its equivalent. The cost of the treatment is slight and it is good practice to require it for homes and similar structures. While the penetration into the sides of the sash members is usually rather limited, good absorption and penetration are common in the end surfaces and joints in sash made of ponderosa pine or other easily treated wood. These are also usually the points first attacked by stain or decay fungi. In structures where conditions are usually favorable to decay, the three-minute dip treatment will give limited protection but more thorough impregnation is needed for maximum effectiveness.

Cold-soaking is more often used for fence posts and outdoor structures than for house lumber, but it can be used for that purpose. With dry, easily treated material like the sapwood of pine lumber, fair absorptions and penetrations can be obtained by soaking it two or three days in pentachlorophenol or copper naphthenate solution. The effectiveness should be correspondingly better than for dip treatments. Such long treatments would not do for window sash and frames because many of them would absorb too much preservative and would require months of drying after treatment to remove all danger that the preservative would discolor paint, plaster, or woodwork in contact with the treated wood. For lumber not exposed to view in the completed structure, and not in contact with plaster, no such result need be feared. Furthermore, the lumber commonly used for the concealed parts of houses is usually less absorptive than the pine used in window sash, and much less likely to absorb excessive amounts of preservative.

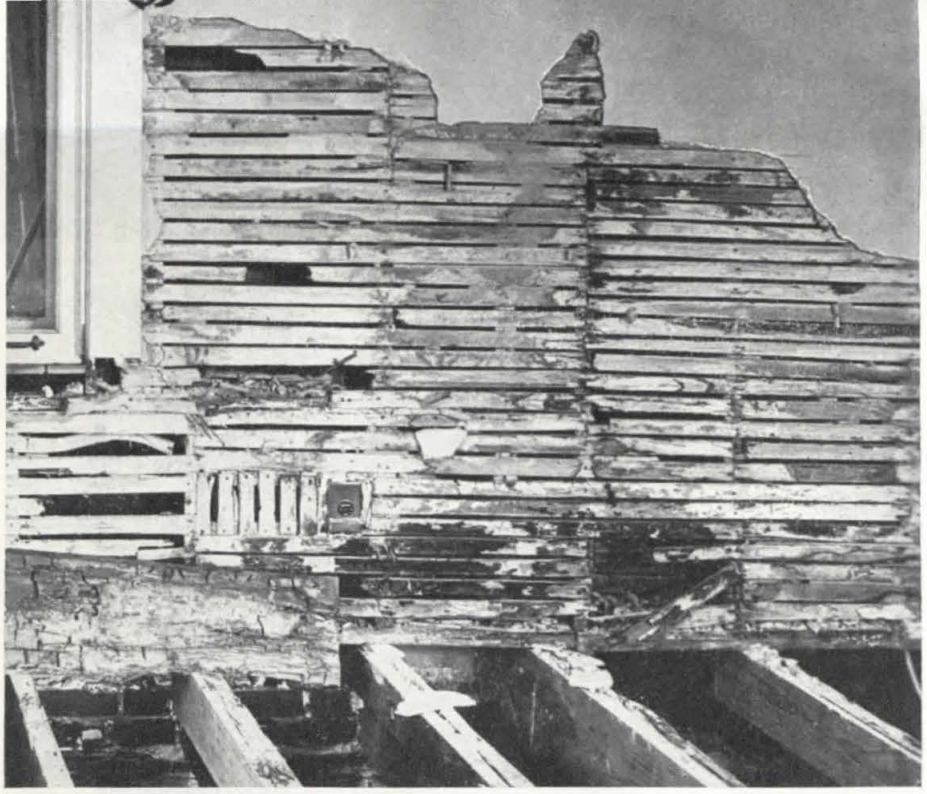
Water-borne preservatives may also be applied by soaking the wood in them for several days or weeks at ordinary temperatures or with some heat. Such treatment is usually referred to as steeping. It gives limited absorption and penetration and is not often used for house lumber. Because of the water absorbed during treatment, the treated wood should be thoroughly dried before use. An advantage of steeping wood in water solutions is that it may be applied to lumber in any stage of seasoning, from thoroughly green to thoroughly dry, while cold-soaking with oil solutions requires dry lumber. The steeping method finds very little use in this country for either commercial or "home" treatments and seldom can be used to good advantage for treating house lumber.

Hot-and-cold bath treatment consists in heating the wood in an open tank of preservative and then immersing the hot wood in cold preservative, or allowing the hot wood and preservative to cool together. The method finds commercial use for poles and posts but is not commonly used for house lumber. It is used mainly with creosote and similar oils that can stand heating without much loss by evaporation, and these preservatives are not popular for house lumber. Water solutions can be used, however, if sufficient care is taken to maintain the right solution concentration and treating temperatures. Light oil solutions are too volatile and inflammable to heat safely in open tanks but may be used by subjecting the wood to a vacuum in a closed tank and then admitting unheated light oil solution without admitting air. A few small commercial installations at millwork plants treat millwork products by this method. With water solutions, a similar effect may be produced by heating the wood with steam in a covered or closed tank and then covering it quickly with cold preservative.

Many other methods of treatment could be described, but the foregoing are the principal ones likely to be proposed by those selling treated wood or preservatives. A long list of preservatives could also be described and compared, but differences in the effectiveness of preservatives of recognized standing are generally much less important than the thoroughness with which they are applied, and such characteristics as color, odor, cleanness, and swelling properties. One should beware of accepting a preservative of unknown composition or one for which extravagant claims are made, but any preservative in good standing will give good protection when properly used.

One of the most practical means of avoiding decay and insect damage in houses and similar buildings is to design and construct them in such a way as to avoid the conditions that favor such deterioration. Keeping the wood in the structure dry at all times is the principal precaution to observe. Any condition of design, construction, or use that favors the accumulation of moisture in the wood favors decay. Condensation of water on windows, walls, or attics should be avoided. Placing wood in contact with the soil or damp concrete favors decay and, in regions where termites are active, favors their attack. Lack of ventilation in crawl spaces under basement-

Right—expect this to happen whenever untreated wood is placed in contact with the ground, a concrete porch or sidewalk, or any other good source of moisture. *Photo: courtesy of Forest Products Laboratory.*



Right—dampness from an unventilated crawl space resulted in rapid decay of the wood in this house in Florida. It is wiser to avoid such conditions than to depend on preservative treatment to protect the structure from their consequences.

WOOD PRESERVATIVES

less houses encourages decay fungi and termites. It is much better to avoid such conditions than to depend on preservative treatment to protect the structure from their consequences. There are numerous publications that discuss these conditions and tell how to avoid them but far too frequently their recommendations are ignored. Can it be because too many architects and builders concern themselves only with the appearance of the new structure and pay little or no attention to the factors of durability and low maintenance costs? Some architects, at least, have thoroughly informed themselves on the details of preventing fungus and insect damage and do a consistently good job in protecting their clients.

The heartwood of naturally durable species such as cedar, cypress, and redwood is, of course, resistant to decay and suitable for use in places of moderate decay hazard. The availability of all-heart material is becoming less each year, however, except in a few favored places. Sapwood or mixed heart and sapwood is not resistant to decay.

When it is known that conditions will favor deterioration despite the best that can be done in the way of design and construction and when wood of satisfactory, natural durability is not available, treated wood should be used. A preservative in good standing should be employed and applied to the wood by the most thorough method that it is practicable to use under the prevailing conditions. Furthermore, the treated wood should not be cut into or trimmed any more than is absolutely necessary, because cutting exposes untreated wood beneath the treated surface and provides open gateways for the entrance of fungi and insects. Best practice requires that the wood be cut to finished dimensions before treatment. When that is impracticable, all cut surfaces should be coated liberally with preservative.

Most preservatives in the amounts used for decay prevention do not significantly increase the fire resistance of wood. This would not be expected of preservative oils but even with water-borne chemicals, the amounts that remain in the wood after drying are generally too small to have much effect. For preventing decay, the net retentions of dry chemical in the treated wood are usually only fractions of pounds per cubic foot of wood but, for substantial fire retardance, several pounds per cubic foot are needed. Furthermore, only a few chemicals that have preservative value also are effective fire retardants. Among these are borax, boric acid, and zinc chloride. To these it is customary to add a large proportion of ammonium phosphate or ammonium sulfate in preparing fire-retarding solutions. For best results these are injected into the wood by pressure methods in amounts that will leave three to five pounds of the dry mixture per cubic foot of wood. The high cost of such treatment puts it out of reach for the frames and woodwork of homes of low or moderate cost. Fire-retarding treatment is used industrially to the extent of several million board feet per year, however, and a number of commercial treating plants are prepared to furnish fire-retardant treated lumber, interior trim, flooring, doors, or other products.

Fire-retarding paints are available that can be applied by brush or spray and will give a considerable degree of protection against ignition or spread of flames from small fires. Some of these are proprietary products of high effectiveness and formulas for others are available.

The use of wood treated with fire-retardant chemicals or paints has only a limited effect on the fire safety of a house because treating the wood does not protect the contents of the room or building. Fire can spread rapidly through the inflammable contents of a room even in a house made of concrete. The wood itself, however, is greatly benefited by fire-retardant treatment in that it serves to retard rather than feed the flames that may come in contact with it.

In this brief summary, it is not practical to discuss the many details relating to the selection of preservatives, fire retardants, and treating methods. The U. S. Forest Products Laboratory at Madison, Wisconsin, has numerous publications on these subjects that may be obtained without cost. Information is also available from other branches of the Department of Agriculture and from a number of state forest schools and laboratories, as well as from industrial concerns and associations. In making inquiry of any of these sources, the inquirer should be specific in stating the questions he needs answered.

Odor Control in Air-Conditioning Systems

By KEVIN B. MAGEE*

From the inception of air conditioning, one problem has been the insurance of obtaining pure air for the conditioned space in the presence of innumerable foreign substances prevalent in the air around it. Air *quantity* remains static over most of the earth's surface; all *quality* varies extremely. "Fresh" air is seldom fresh in the true sense of the word, particularly in cities and industrial areas. Practically all air contains more or less adulterants in solid or gaseous form, sometimes even to an extent hazardous to health.[1] The "poison fogs" suddenly and unexpectedly permeating industrial regions and the resultant hospitalization of its victims are an all too recent reminder.

An even more perplexing problem has been the *maintenance* of proper air quality within conditioned occupied enclosures in the face of gaseous and particulate impurities continuously generated and expelled by the occupants and their habits and services—dust and bacteria, body emanations, tobacco smoke, cosmetics, food and cooking, liquors, painted surfaces, furnishings, putrefaction, detergents, and numerous other contributions.[2] Most of those that are gaseous are manifested as odors.

Despite continuing technological progress in air conditioning in general, its advancement has been primarily in the direction of thermodynamics and psychrometrics—in the control of temperature and humidity. In other words, the emphasis has been and still is on thermal comfort. Man's equally vital fourth sense—that of smell—has been seriously neglected. This paradox is revealed in the lates definition of "air conditioning" from the official "Guide" of the American Society of Heating and Ventilating Engineers, reading "The simultaneous control of all, *or at least the first three of* these factors . . . of the atmosphere . . . temperature, humidity, motion, distribution, dust, bacteria, odors, and toxic gases . . ." Yet the remaining factors are every bit as important to human comfort and health as are the first three. No one today would seriously consider an air-conditioning installation without means for filtering out dust from the air to be breathed; yet harmful or, at best, annoying vapors are permitted to pass without restriction through these same filters, resulting in discomfort and in some instances actual distress.

With the gradual recognition of the importance of controlling odors and gaseous impurities in occupied spaces, there has appeared a profusion of air "purifiers"—perfuming agents, odor eliminators, ozonaters, ionizers, aerosols. These range from bottles of liquids, with or without wicks, sold in grocery stores, to equipment designed to vaporize them into the air circulated by air-conditioning systems. Most of these substances, however introduced, are either masking agents, i.e., they permeate the space with a stronger and presumably more agreeable odor, or contain counterirritants to accelerate fatigue of the olfactory nerves or even deaden or anesthetize the olfactory sense so that it is incapable of detecting either the masking or offending odors.

Although much study and experimentation has been devoted to the physiological effects of ozone (O_3) to determine its over-all value as an air purifier, the results have been inconclusive or negative.[3] Nevertheless, because ozone *in sufficient strength* will neutralize certain gases and vapors by oxidation it was for many years regarded as an odor eliminator, resulting in the development and application of electrical ozone generators and so-called ionizers to air-conditioning systems. However, the value of ozone for odor control in occupied spaces has been subject to serious criticism because of its inherent toxicity and the fact that, unless applied in toxic concentration, its oxidizing effectiveness is limited or nil. In dilute concentraton its effect, because of its own characteristic pungency, is simply one of masking plus to some extent narcosis of the olfactory nerve.**

Toxicologically, ozone in quite low concentrations (0.1 to 1 PPM) is a powerful irritant to the mucous membranes of the respiratory organs; constant exposure to relatively high concentrations (5 to 10 PPM) can result in pneumonia, lung congestion, and edema. The irritation threshold is generally around 0.05 PPM which, though not considered detrimental to health is, in the experience of the writer, ineffective in masking certain body odors, particularly under conditions of occupancy by persons of lower than average socio-economic status. At concentrations above 0.08 PPM, some office workers became ill and in one instance 22 per cent of the employees of a bank were sent home with headaches and similar indispositions after the installation of ozone equipment in the bank's air-conditioning system. It was found that concentrations above 0.05 PPM resulted in personnel absenteeism in direct proportion to the increase in ozone. Authoritative tests have established that body odors lack the ability to affect the ozone smell, resulting in a condition where the very effect striven for is nullified. In other words, the greater the concentration of body odor, the more ozone is required to mask the body odors and therefore the more noticeable the ozone odor becomes. Ozone is still used to some extent in refrigerated storage spaces not subject to sustained human occupancy, particularly in connection with the storage of whole eggs.[4] It cannot, however, be applied to the preservation of foods sensitive to rancidity, such as lard, butter, and other fats; even low concentrations of ozone hasten rancidity in these staples.

Basically, there are three methods in use today for the control of obnoxious odors and air-borne impurities in air conditioning. The first, and most elementary, is that of ventilation; namely, the continuous introduction into the occupied space of theoretically uncontaminated outdoor air. Even assuming such outdoor air is pure, it nevertheless imposes a direct charge on the conditioning capacity and is therefore costly. The second method involves masking accumulated, objectionable odors in the manner already reviewed and, whatever its merits, if any, consists of adding to rather than subtracting from the air-entrained impurities. The third method consists of extracting the odors from the contaminated air, filtering them out in much the same manner that air filters extract air-entrained dust. This method depends on the adsorption of the vaporous and gaseous impurities and the most powerful sorbent for this purpose, as well as the most practical in relative density and hardness, is activated carbon.

In its processed form, activated carbon contains a vast network of

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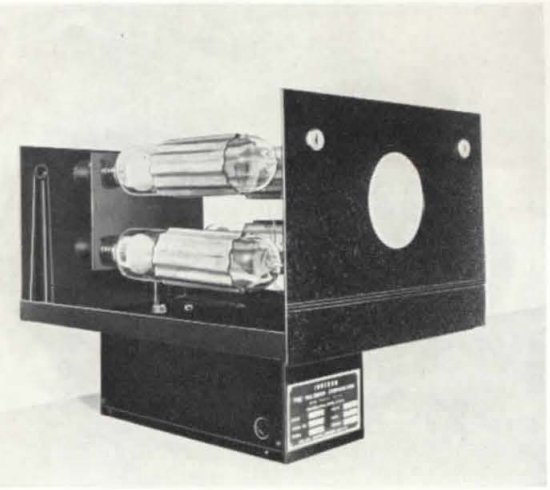
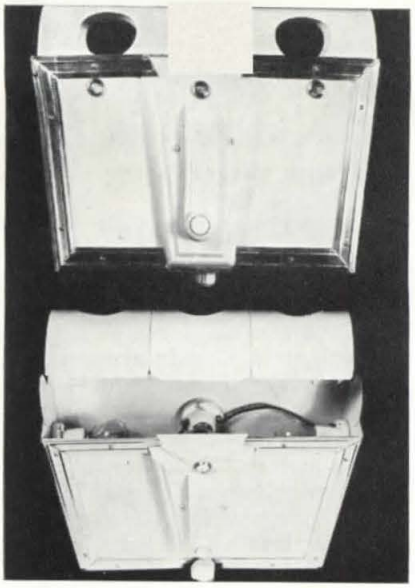
** *Most practically produced ozone is still from devices which provide ozone of high possible nitric oxide contamination. It is possible, however, to produce ozone by the ionizing wavelengths of ultraviolet energy which, for all practical purposes, is free of oxides of nitrogen contamination and hence more suitable for odor control use within the limitations of all masking agents. Editor.*





Left — this ionizer was designed for installation in ventilating- or air-conditioning systems handling up to 12,000 cfm. Its size, 14" wide x 20" deep x 9" high permits the ionizer tubes to be located wholly within the ventilating duct — transformer and control apparatus are outside.

Right — two slightly different models of ozone producers. Operating on household current, three four-watt General Electric ozone lamps make the presence of odors less perceptible; they are suitable for volumes of up to 3000 cubic feet. Units should be mounted not lower than six and one-half feet from the floor in a way that shields the direct rays from the eyes.

Photos: courtesy of the Melsbach Corp. (left); and Atlas Consolidated Corp. (right).

extremely minute channels and submicroscopic pores within the structure of the material. The aggregate area of the active adsorbing surface in one pound of granular activated carbon has been estimated to be equivalent to about 140 acres. The ability of a given weight or quantity of carbon to adsorb the various gases present in the everyday atmosphere of an average city, both indoors and outdoors, is dependent upon the rate of flow of the air across the surfaces of the carbon, and the amount of carbon surface exposed to the air. The useful life of the carbon between reactivations is governed by the concentration of vaporous and gaseous impurities in the air to be treated, so that air containing relatively large quantities of impurities will obviously necessitate more frequent reactivation of the adsorptive medium than will less contaminated air.

From a purely physiological standpoint, an air-conditioned space requires surprisingly little outside, i.e., new air. Experiments conducted at the U. S. Naval Medical Research Institute,[5] for example, established that 1 cfm of chemically pure air per person will provide ample oxygen for an active worker and that 3.5 cfm per person will prevent the carbon dioxide from rising above the accepted limit of 1 percent. Ventilation requirements, i.e., adequate pure air to dilute internally generated and accumulating odors, on the other hand, may require anywhere from 10 to 50 or more cfm per occupant depending on conditions. In this connection, the reader is cautioned to regard the usually published recommendations or standards of ventilation requirements with reservations. Such data are invariably influenced by economic considerations and, therefore, represent minimum permissible rather than optimum values. In the conventional air-conditioning installation, the purchaser is paying for an excess of conditioning to an extent represented by the difference between heating and/or cooling the acceptable minimum of 3.5 cfm of outside air and the amount of outside air that must actually be supplied to maintain an odor-free indoor condition, usually about 15 percent of the total conditioning load plus, of course, a commensurate increase in operating costs.

In an air-conditioning installation it is usually advisable to introduce and condition sufficient outside air to maintain a positive pressure within the conditioned space to counteract infiltration of unconditioned air through door and window cracks. Therefore, the amount of air required for this purpose, generally at least the equivalent of 5 cfm per occupant, almost invariably exceeds that needed for purely physiological requirements. It will thus be apparent that the outside air can be reduced to a maximum of 5 cfm per person provided a sufficient volume of the recirculated, already conditioned air is adequately purified. It should be noted particularly that it is necessary to decontaminate only that percentage of the total air recirculated which, when added to the outside air supplied for pressurization, will provide the volume required for ventilation effect.[6] The actual quantity to be decontaminated will vary depending on the type and concentration of contaminants to be extracted. Likewise, the size of the adsorption equipment will be governed by service life or frequency of reactivation considered practical.

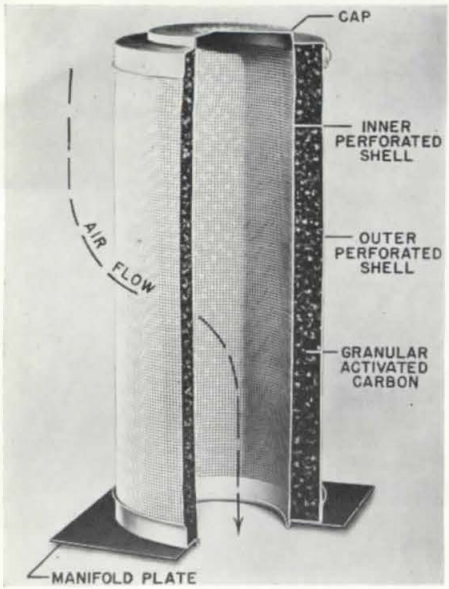
As an example to illustrate the saving in initial and operating costs through the application of air purification and recovery, consider a typical department store system requiring a total circulation of 100,000 cfm of which say 25,000 cfm should be ventilation effect and therefore conventionally outside air, the balance being recirculated. Assuming that the building can be adequately pressurized with 10,000 cfm, then the outside air can be reduced to this amount and 90,000 cfm recirculated, provided 15,000 of the 90,000 cfm is purified. As, in the mean temperature zone, every 1000 cfm of outside air supplied requires approximately 2.5 tons of installed refrigeration for cooling and 80,000 Btu per hour capacity of boiler and radiation equipment for heating, the saving in the hypothetical case cited would be 15 x 2.5 or 37½ tons of installed refrigeration and 15 x 80,000 or 1,200,000 Btu per hour of boiler and radiation capacity, conservatively equivalent at current costs to $8000 and $3000 respectively. Against these the installed cost of activated carbon air recovery equipment for a capacity of 15,000 cfm would not exceed $3000, resulting in a net capital saving of $8000.

Similarly, based on 1200 hours seasonal cooling at an average of one-half design load and one KW hour input per actual ton of refrigeration produced and a two cent per KW hour power rate, the reduction in cooling energy cost is 1200 x 37.5 x .5 x .02 or $250 per cooling season while, based on 2400 hours seasonal heating at an average of one-half design load of 0-70 degrees with 140,000 Btu oil at eight cents per gallon and 70 percent heating efficiency, the reduction in fuel cost is

$$\frac{2400 \times 15{,}000 \times 1.08 \times 35 \times .08}{140{,}000 \times .7}$$

or roughly $1100 per heating season. Against this, again, the cost of reactivating the activated carbon recovery equipment will approximate $450 per year, resulting in an average net annual operating saving of $850.

The advantages of air purification by adsorption are that it neither adds anything to the air nor alters its chemical or ionic composition. Neither does it change either the air temperature or relative humidity be-



These photos illustrate the canister type of activated-carbon air-purification equipment. Left — typical canister is closed at top and the inner cylinder is open at the bottom; this opening registers with a corresponding hole in the supporting manifold plate.

Right — a sectional view shows the direction of air flow through a typical arrangement of canisters. In this instance, each of three manifold plates supports 98 canisters; each canister decontaminates from 25 to 35 cfm of air. *All photos this page: courtesy of W. B. Connor Engineering Corp.*

cause activated carbon has no retentivity for pure water vapor. Upon saturation, usually after a year or more of service in the average air-conditioning system, the carbon can be reactivated to its original potency and, although this must be done under meticulous controlled conditions by the manufacturers, they usually facilitate this simply by exchange of the carbon containers thereby eliminating any interruption in service.

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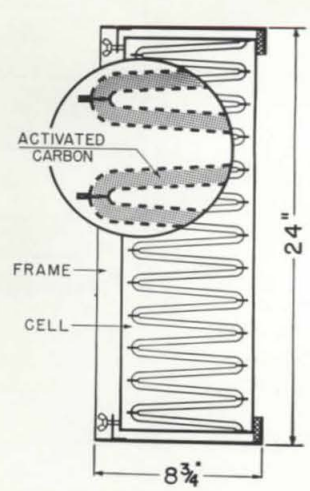
"The Toxicity of Ozone," by Dr. Clark E. Thorpe. *Industrial Medicine and Surgery,* Vol. 2, February 1950.

Below, far left — part of the 3400 canisters which bar fumes from the neighborhood surrounding the Washington D. C. Refuse Transfer Station.

Below, left and right — photograph and drawing of cell-type activated carbon air purification equipment. Each cell purifies 1000 cfm of air at a resistance of about ¼" water gage.



Research Report: Surface Waterproofing with Silicone Resins

By F. O. ANDEREGG*

It is unfortunate, but true, that many buildings with masonry walls are found to leak when subjected to rainstorms. In some cases, especially in winter, an unsightly efflorescence may demonstrate that moisture is penetrating the masonry. To remedy these conditions, the application of surface waterproofing would seem to be the logical procedure. However, a careful study should be made of each job to find out where the moisture enters, whether directly into the wall from exterior leaks above grade, or from condensation of water vapor entering the inner surface of the wall. Moreover, the advantages and limitations of the various surface waterproofers should be known. Since they are subject to a variety of exposure hazards, their reactions to a given severity of attack must be understood before an adequate waterproofing job can be undertaken. As with most problems, when a thorough study is made, a variety of factors are encountered which are not always evident on first examination.

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background

The problem of surface waterproofers has been studied for more than a quarter of a century. It began at Purdue University in 1924 with the study of Efflorescence and Staining of Indiana Limestone,"[1] and was continued at Mellon Institute on the subject of "Water-tight Brick Masonry."[2] Recently, the study has been brought up to date by a variety of research and consulting jobs which culminated with two papers on surface waterproofers from the John B. Pierce Foundation.[3, 4]

The wax and aluminum stearate colorless waterproofers available at the time were studied. They have been kept under continuous observation over the intervening years, and their limitations have been reasonably well defined. This field experience has allowed a compilation of these limitations which include:

Factor 1: *Some change in appearance of the masonry* due to thick coatings over sharp corners which diffract the light.

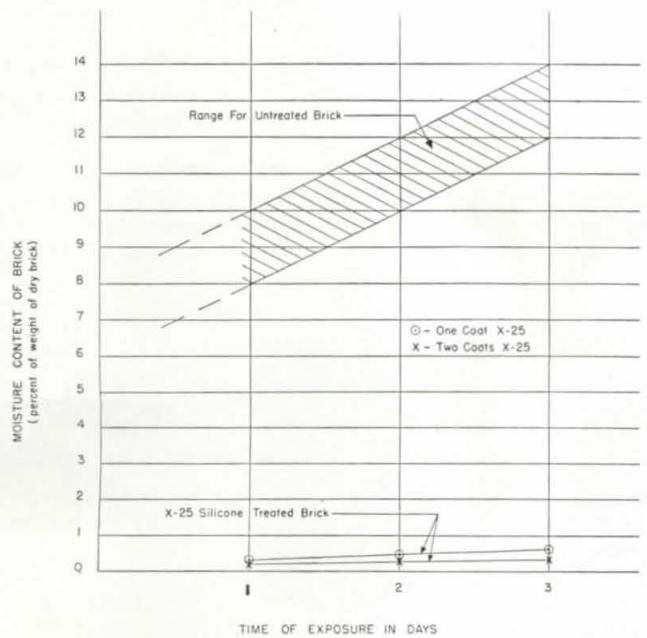
Factor 2: *Incomplete exclusion of moisture.* Since the bulk of the surface waterproofer is solvent, the larger pores still are not closed after solvent evaporation even though they are reduced in size and possess some water repellency.

Factor 3: If the masonry texture is sufficiently fine, that is, if the pores are small enough so that a continuous film could be produced by the waterproofer, *the "breathing" of the wall is interfered with.* This causes the accumulation of blisters behind the coating, due to osmotic pressure and vapor pressure lowering, which tend to detach the film bodily.

Factor 4: *The life of the surface waterproofer is short.* This appears to be caused by: a) differential volume changes aided by preferential wetting are effective in detaching these surface coatings, and b) oxidation which may cause embrittlement and more ready detachment of the film.

Factor 5: Finally, where soluble salts are present in masonry, pene-

Figure 1—moisture absorption of bare and X-25 silicone treated brick.



trating moisture dissolves them. This moisture can come to the surface, evaporate, and deposit salts directly behind the surface coating. The salt crystals grow with changes in temperature and moisture conditions in oriented directions and exert tremendous forces. *The surface coating may thus be pushed off bodily.* This phenomenom, although not generally appreciated, causes millions of dollars' worth of damage to our masonry structures every year. The salts may be in the stone, brick or concrete masonry units, in Portland cement or sand used for mortar, or may be formed from the sulphuric acid found especially in winter rains which enter the wall.

Based on this experience and analysis, a set of test methods has been developed[3] and applied to a variety of surface waterproofers. The results of these tests seem to compare well with actual service conditions, so that they predict the performance of any surface waterproofers tested. They determine the water penetration through the waterproofing film under controlled conditions; the transpiration or "breathing" rate; resistance to forced efflorescence from within; and finally, the resistance to weathering, both in the presence and absence of the soluble salt, sodium sulphate.

silicone resin waterproofing, general

The most interesting and promising materials recently studied for surface proofers are a series of silicone resins. They are applied by flooding the surface with a dilute solution which seems to provide the masonry pores with the diffraction of light (Factor 1). Within reasonable limits of pore size, the treatment is quite effective in excluding liquid water (Factor 2). Pores finer than about 1/32" which are treated seem to be able to exclude water under a head of 1/4". This is approximately the pressure exerted by a 20-mile-per-hour wind. For large cracks and fissures, tuck pointing or grouting appears a necessary prerequisite. The pores have not become appreciably clogged by the treatment, so that the rate of transpiration or "breathing" is essentially that of an untreated wall (Factor 3). Silicones may be affected by Factor 4, although where silicate masonry materials are involved, hydrolysis of the silicone halides may result in direct attachment to the masonry surface by primary or secondary valence forces. Certainly the excellent resistance of silicones to oxidation under varying conditions of humidity is well known, making this a factor of importance. Under very severe exposure on the roof, some loss in ability of the silicone waterproofing to exclude water was noted after two years. This reduction may be expected to vary with the severity of exposure. Where not too severe, an effective life of 8 to 10 years may be reasonably predicted. When soluble salts are present in quantity, trouble is to be anticipated (Factor 5). The application of silicone waterproofing to very old walls, showing signs of efflorescence disintegration, should be made with caution. However, on bricks tested in the laboratory by forced efflorescence, definite progress was made toward remedying this problem.

specific test data

Using test methods which had been developed previously, a series of tests have been run with certain silicone resin solutions supplied by Linde Air products, Division of Union Carbide and Carbon Corporation. Ten masonry units were run in each experiment. Units which were not bricks were cut to approximate brick size. One flat side and the four edges were coated by flooding with the resin solution. After allowing a short time for solvent evaporation, the treated flat surface was placed in contact with water maintained at a level of exactly 1/4 inch, which approximates the pressure exerted by a rainstorm with a wind of 20 miles per hour. The units were weighed after 24, 48, and 72 hours and their moisture pickup compared with that of ten similar units.

The silicone treated bricks were then loaded with moisture through their untreated sides until they contained approximately as much moisture as an untreated brick after three days' exposure. They were then placed, untreated side down, on a rubber sheet which tended to seal off the untreated side and to allow evaporation of moisture through the silicone film. Weighings were made at intervals to note the rate of transpir-

Table I: Waterproofing of Masonry Units with "Linde" Silicones

Silicone No.	*Masonry Unit*	*Coats of Waterproofing*	*Per cent Water Absorption in*			*"Breathing"*	*Resistance to Forced Efflorescence*
			24 hr.	48 hr.	72 hr.		
X-25	Shale Bricks	None	8-10	10-12	12-14	Very good	Poor
		One	0.3	0.5	0.7	Very good	Excellent
		Two	0.27	0.30	0.32	Very good	Excellent
X-25	Waylite Concrete	None	3.4	3.8	4.4	Good	Fair
		Two	0.69	0.85	1.2	Good	Good
X-25	Sand-Lime Bricks	None	13.2	13.7	14.3	Very good	Excellent
		One	7.1	—	—	Good	Excellent
		Two	6.0	—	—	Good	Excellent
X-25	Ohio Sandstone	None	6.3	6.3	6.8	Good	Poor
		One	1.1	1.4	1.5	Good	Poor
		Two	0.6	0.8	0.9	Good	Fair
X-25	Indiana Limestone	None	4.2	4.2	4.2	Good	Poor
		One	3.7	3.8	3.9	Good	Poor
		Two	3.7	3.9	3.9	Good	Fair

ation or "breathing."

The next test consisted in placing the untreated sides of five of each set of units in contact with a ten percent solution of sodium sulphate for one week to see whether migration of the solution to the surface would result in the deposit of any efflorescent salts. The results of these tests are given in Table I and are shown graphically in Figures 1 and 2.

conclusions

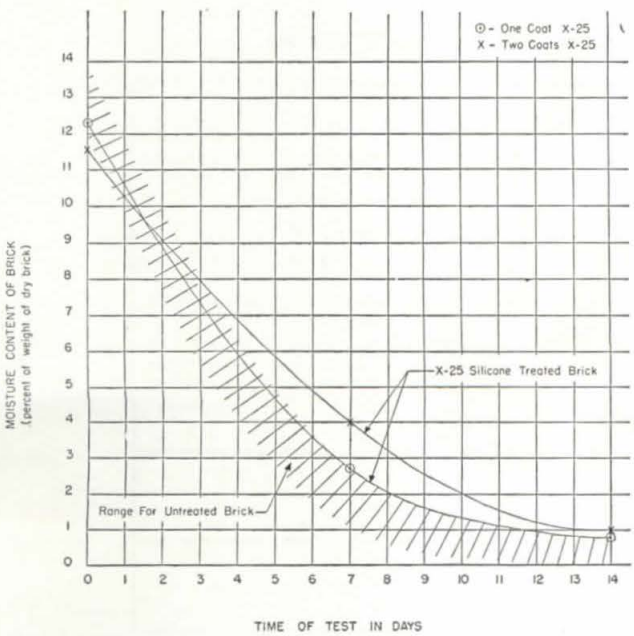
The results of these tests are most interesting. They indicate that the silicone waterproofer has overcome most of the limitations of earlier materials. The effect of the coating on color tone and appearance was negligible. For most of the masonry units tested, water absorption was reduced to a minimum, although the silicones seem to be more effective on siliceous than on calcareous units. While two coats had a somewhat more effective waterproofing effect on bricks in this test than had single flooded-on coatings, the extra benefit would hardly seem to justify the extra cost. Figure 2 indicates that the coating permits effective transpiration of any moisture which enters the bricks from inside surfaces. While results of the forced efflorescence test were mixed, the excellent results on shale bricks, which are normally quite prone to forced efflorescence, seem to show that eventually the silicones can be made to perform well here.

By these tests, the silicones have been found as new and improved surface waterproofers. Their continued and expanding use on actual field problems is indicated, and will ultimately prove the range of their applicability to the problems of masonry waterproofing and preservation. Meanwhile, they continue to be promising new materials for study and testing on the many waterproofing problems which continually confront the architect, builder, client, and the building maintenance man.

references:

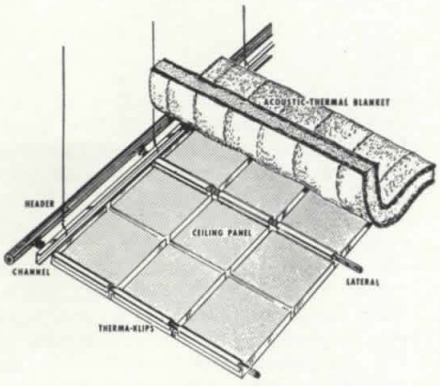
1. "Efflorescence and Staining on Indiana Limestone," Purdue University Experiment Station, Bulletin 33 (1928). Anderegg, Peffer, Judy and Haber.
2. "Water-tight Brick Masonry." F. O. Anderegg. *Architectural Record,* August 1931.
3. "Testing Surface Waterproofers." F. O. Anderegg. A. S. T. M. Bulletin, January 1949.
4. "Results on Testing Surface Waterproofers." F. O. Anderegg. A. S. T. M. Bulletin, January 1951.

Figure 2—moisture transpiration of bare and X-25 silicone treated brick.



I/a products

radiant ceiling serves new or old structures



Development of a new radiant ceiling capable of combining heating, cooling, and sound control has been announced by the Burgess-Manning Company, Libertyville, Illinois. These producers state that this ceiling is not difficult to erect and that it can be installed in both new and remodeled structures.

Assembly Method (see illustration). (1) 1½" channels are hung approximately 4' on center; (2) 1¼" header pipes with ½" laterals, connected at one- or two-foot intervals, are clipped to these channels; (3) a glass-wool blanket with aluminum-foil septum covers the pipe coils from wall to wall and serves as an acoustical absorber and thermal insulator; (4) perforated aluminum pans are snapped into clips supported by the laterals.

Operation. During cold weather, circulating hot water heats the aluminum pans, which in turn radiate warmth to cooler objects within the room below. As pipes are not embedded in concrete or plaster, higher water temperatures and faster warm-up characteristics are possible. During the hot months, cold water can be circulated to chill the panels so that warmer objects within the room below will lose their heat to the ceiling.

Although installation is made by local contractors, all special materials and engineering information are furnished by the manufacturer. This ceiling is easily assembled; laterals are slipped into special header connectors and the joint is made with two turns of the connector nut. All pans can be easily snapped into place or removed for inspection of the coils; they can also be washed or painted without affecting their acoustic or thermal properties.

While these units are now in the early stages of limited production, several installations have been completed in the Chicago and Philadelphia areas at a price range of $2 to $3.50 per sq. ft. installed.

air and temperature control

Uni-Flo Square Ceiling Outlets: new air-conditioning outlets designed and sized to match acoustical tile and to blend with ceiling pattern. Air supply can be adjusted from vertical to horizontal and can be set to discharge air in one, two, or three directions, or to provide full 360° distribution. Available in variety of finishes. Barber-Colman Co., Rockford, Ill.

Town and Country Furnace: pressure oil-fired gravity furnace delivers 82,000 Btu; fully automatic; low height allows ample room for plenum and ducts even in low-headroom basements; self-leveling legs; heat exchanger and radiator easily accessible for cleaning. Conco Engineering Works, Mendota, Ill.

"PRV" Power Roof Ventilator: unit consists of direct-connected centrifugal fan and self-cooled motor in weather-tight housing; ventilation is controlled, independent of wind or weather conditions; leak-proof roof hinged on two sides for inspection and assembly. Suitable for schools, hospitals, commercial, and industrial buildings. In 11 sizes, each size available in two to four different speeds. Ilg Electric Ventilating Co., 2850 N. Crawford Ave., Chicago, Ill.

IMPSCO Industrial Humidifier: simplified, self-contained system requiring only water-feed line —no ducts, pumps, compressed air, or return-water line. Working on principle of atomization through centrifugal force, finest vapor is produced at lowest cost for equipment, installation, operation, and maintenance. Vaporization capacity of one gal. per hr. Industrial Materials Purchasers, 401 Broadway, New York 13, N.Y.

Sarcostat Type W Heating Control: steam-modulating valve, actuated by weather and pressure, for controlling volume of steam to heating systems in relation to outside temperature. Control panel provides night shutdown and morning pickup at any predetermined time. Sarcotherm Controls, Inc., 350 Fifth Ave., New York 1, N. Y.

construction

High-Conductivity Concrete: newly developed concrete comprising special aggregates that increase heat conductivity and wearing qualities of commercial grade concrete. Saving in pipe for radiant heating of from 25 to 30% per installation, compared with quantity of pipe required with standard concrete. Available in dry blend to be added to wet concrete at time it is mixed. Products Planning Co., Bakewell Bldg., Pittsburgh, Pa.

doors and windows

Dorflo Ready-Unit: compact, ready-to-install wall-section and door-hanger simplifies installation of recessed doors. All essential hardware, including hardware for hanging door and hardwood sole plates, is supplied, for fast insertion into rough wall opening. Unit is adaptable to 1⅜" or 1¾" doors. Dorflo Mfg. Co., Hibbing, Minn.

electrical equipment, lighting

Par-Beam-Lite: recessed adjustable incandescent fixture especially designed for high-ceiling lighting application. Heavy-gage aluminum housing; sectional color lens can be used with or without removable louver. Fixture accommodates either Par 56 lamp (33w narrow beam spot with initial 100,000 beam candle power) or Par 46 lamp (200w narrow beam spot with initial 50,000 beam candle power). Swivelier Co., Inc., 30 Irving Pl., New York, N.Y.

finishers and protectors

Wallhide Rubberized Satin Finish: interior paint combining durability and washability of enamel with appearance of flat wall paint. Requires no special primer; easily applied by brush, spray, or roller, on any wall or ceiling surface, including new or old plaster, paint, wallpaper, wallboard, brick, concrete, cinder block, wood, or primed metal. Grease, crayon, lipstick, inkspots easily removed from nonporous paint surface. Finish dries within hour after application. Twelve standard colors. Pittsburgh Plate Glass Co., 632 Duquesne Way, Pittsburgh, Pa.

insulation (thermal, acoustic)

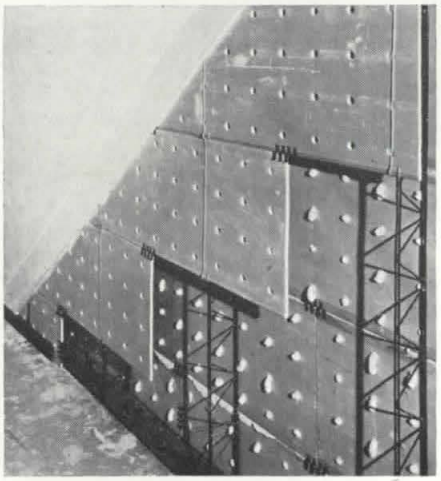
Hylag: multi-use refractory insulation for temperatures ranging from 150F to 2200F. Manufactured in powdered state, product is mixed with equal parts of water and must be applied within 50 minutes after mixing. One coating will also fireproof walls, roofs, and furnace rooms. Lightweight, does not shrink, dissolve, or powder off on contact with steam or water; requires no fabric covering since it dries to hard, smooth white finish which will readily take paint. Easily troweled or sprayed on brick, metal lath, or concrete block. Low K factor. Continental Coatings Corp., 304 E. 44 St., New York 19, N.Y.

surfacing materials

Monowall: predecorated hardboard wall and ceiling panels now given new plastic finish with gloss and finish of plate glass. High resistance to soaps, strong cleaning powders, scrubbing; also to such household stains as ammonia, grease, ink, etc. Laboratory tests showed no change of color after product was subjected to equivalent of 12 years in full sunlight. Available in 27 different color and design combinations. Armstrong Cork Co., Lancaster, Pa.

Linwood Siding: patented, prefab, broad, wood siding, similar in appearance to shakes. Combed texture with invisible tongue and groove joints. Siding sections overlap and interlock. Panels come in sizes 32" x 10" and 32" x 14", both ½" thick, already dipped in wood preservative for protection against decay, mold, mildew, termites. Distributed by Aetna Plywood & Veneer Co., Dept. R., 1750 N. Elston, Chicago 22, Ill. Manufacturer: Linscott Mfg. Co., Inc., Centralia, Wash.

Rocklath and Plaster Partition Assembly: non-load-bearing partition, consisting of Trussteel studs, rocklath plaster base attached with Brace-Tite clips, and plaster, substantially reduces expense, effort, and time needed to erect fireproof partitions where 1-hour fire ratings and 45 decibel ratings are required. Especially suited to construction calling for hollow partitions to conceal conduits, piping, or air ducts. Finishes to over-all wall thickness of approximately 4½", 5¼", 6", or 8", depending on stud size used. U. S. Gypsum Co., 300 W. Adams, Chicago 6, Ill.



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MANUFACTURERS' LITERATURE

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

AIR AND TEMPERATURE CONTROL

1-94. Planning Your Home for Health and Comfort (904), 42-p. illus. booklet offering latest line of heating and plumbing equipment for home use. Descriptions of units—boilers, baseboard panels, radiators, convectors, kitchen sinks, lavatories, toilets, etc.; typical installations, color plates. American Radiator & Standard Sanitary Corp., P. O. Box 1226, Pittsburgh 30, Pa.

★ **1-95. Ceiling Architecture,** AIA 30-J (Vol. 1, 1951), 26-p, brochure demonstrating coordination of air diffusion, acoustics, lighting, and color to produce functional and architecturally pleasing ceilings. Individual reports by specialists, including Stanley McCandless, Professor of Lighting at Yale University; Vesper Schlenker, Development Engineer at RCA Victor Corp., and others. Illustrations by George C. Rudolph, Architect and Designer, show many successful applications of diffusers in offices, classrooms, churches, theaters, and other buildings. Anemostat Corp. of America, 10 E. 39 St., New York 16, N.Y.

1-96. Industrial Cooling Towers, 4-p. bulletin describing cooling towers utilizing chemical stoneware saddle type of "fill," which provides greatly increased surface area in relation to total volume; use of saddles permits reduction of tower heights and pumping h.p., up to 50%. Technical data, specimen cooling tower problem. Aqua-Therm, Inc., 739 Albany St., Dayton 1, Ohio.

1-97. Counterflo Heaters (526), 8-p. bulletin. Direct fired space heaters, gas or oil fired, with output range of from 400,000 to 2,000,000 Btu per hr. Advantages. Dravo Corp., Heating Dept., Fifth & Liberty Aves., Pittsburgh 22, Pa.

1-98 How to Control Radiant Heating, 20-p. booklet on types of radiant heating and proper controls. Recommendations of pipe and tubing manufacturers, diagrams. Johnson Service Co., 507 E. Michigan St., Milwaukee 2, Wis.

Brochure describing all-year air conditioner, utilizing steam for winter heating and absorption refrigeration system in summer; unit cleans, humidifies, and dehumidifies air. Advantages, operation principles, specifications, dimensions, views. Other brochure gives equipment data on air conditioner. Servel, Inc., Evansville 20, Ind.:

1-99. All-Year Air Conditioner (L AC-79-02

1-100. Equipment Data

CONSTRUCTION

3-78. Insulux Glass Book, AIA 10-F (1B-2), 28-p. illus. booklet describing variety of glass block for functional, decorative, or general-purpose use. Basic properties, methods of erection, typical applications, dimensions, construction details, steel window details, basic specifications, technical data. American Structural Products Co., Ohio Bank Bldg., Toledo 1, Ohio.

3-79. Preformed Waterproofing Units (1951), 4-p. folder illustrating waterproofing units which stop leaks in masonry walls above grade by providing impenetrable membrane barrier within wall area and around all openings, including sheathing of structural steel, pipes, and conduits. General data, suggested specifications, typical details and sections. Brisk Waterproofing Co., Inc., 103 Park Ave., New York 17, N.Y.

Booklet on fireproof and rotproof movable, asbestos wall partitions that can be erected, dismantled, and re-erected with complete salvage of materials and without undue mechanical labor. Types, construction details, specifications, typical applications. Other booklet illustrates new movable walls made of asbestos panels impregnated with color which will not chip or wear off. Uses, construction details, advantages. Johns-Manville, 22 E. 40 St., New York 16, N.Y.:

3-80. Transite Walls (TR-47A)

3-81. Transitone (TR 91-A)

DOORS AND WINDOWS

4-93. Bilco Doors, 12-p. catalog. Line of roof hatchways, ceiling access doors, sidewalk elevator and ash hoist doors, and cellar doors. Construction, sections, details, diagrams showing minimum and maximum stair runs for cellar doors. Bilco Co., 164 Hallock Ave., New Haven 6, Conn.

4-94. Weather-Lok, 4-p. folder describing window unit adaptable to all types of construction; frame made of grade "A" ponderosa pine treated with preservative for durability and protection against insects and weather; fully weatherstripped and balanced. Advantages, construction details. Western Pine Mfg. Co., Ltd., Spokane, Wash.

4-95. Flexible Doors, 16-M (128), 4-p. brochure containing installation details of accordion-type doors constructed of basswood splints interlaced with seine twine. Uses, specifications. Hough Shade Corp., Janesville, Wis.

4-96 Kennatrack, AIA 27-A, 12-p. booklet on hardware designed for interior sliding doors (wardrobes, cabinets, by-passing doors, etc.). Types, details, accessories. Jay G. McKenna, Inc., E. Jackson Blvd., Elkhart, Ind.

4-97. Wilson Doors, 24-p. catalog offering wide range of rolling steel doors for industrial installations. Types, construction features, space requirements, specifications. J. G. Wilson Corp., 370 Lexington Ave., New York 17, N. Y.

4-98. Metal Weatherstrip-Sash Balance, 4-p. folder describing combination metal weatherstrip-sash balance that eliminates weights, cords, and pulleys, and provides noiseless, finger-tip window operation. Advantages, details, sections. Zegers, Inc., 8090 S. Chicago Ave., Chicago 17, Ill.

ELECTRICAL EQUIPMENT, LIGHTING

5-63. Curtistrip, AIA 31-F-2 (Serial No. 2415), 8-p. bulletin describing series of completely wired fluorescent units, either single or twin-lamped, and component parts. General information, types, accessories for assembling units. Curtis Lighting, Inc., 6135 W. 65 St., Chicago, Ill.

5-64. The "Monroe," A1A 31-F2 (A5-2), 12-p. bulletin. Line of two- and four-lamp luminaries, in four- and eight-foot sections, for standard fluorescent or slimline lamps. Photometric data, specifications, maintenance. Pittsburgh Reflector Co., Oliver Bldg., Pittsburgh 22, Pa.

5-65. Westinghouse Lighting Sets the Stage (B-5254), 16-p. booklet picturing different types of lighting, including indirect incandescent, direct and semi-direct fluorescent, and general diffuse lighting fixtures, for schools, offices, commercial buildings. Shielding mediums, lamp sizes, suspension methods, suggested use. Westinghouse Electric Corp., Box 2099, Pittsburgh 30, Pa.

FINISHERS AND PROTECTORS

6-28. Hil-crete, 4-p. folder on new rubberized one-coat seal and finish for cement, concrete, wood, metal, and linoleum; gives nonslip, long-wearing surface unaffected by alkalies, moisture, grease. Uses, color chart. Hillyard Co., St. Joseph, Mo.

★ **6-29. Painting Swimming Pools** (700), 30-p. handbook. Description of waterproof, lacquer-type coating designed to cover concrete surface of swimming pools with hard-wearing, nonfading, tile-like finish claimed not to blister, peel, or flake off. Directions on preparation of surface for painting, suggested specifications, chart for estimating paint required, general information. Inertol Co., Inc., 480 Frelinghuysen Ave., Newark 5, N.J.

6-30. Penta, 26-p. brochure discussing properties and advantages of pentachlorophenol as wood preservative. Historical data, methods of application, where to use, precautions. Monsanto Chemical Co., 1700 S. 2 St., St. Louis 4, Mo.

6-31. Siliphane, AIA 7-B-2, 8-p. test report on silicone formulation for masonry water repellent which contains silicone resin used in *Siliphane.* Tests include: accelerated weathering; blushing; visual water repellency; resistance to efflorescence; and application data at varying temperatures. Prima Products, Inc., 10 E. 40 St., New York 16, N. Y.

6-32 Your Lumber's Future (115), 4-p. circular discussing various processes of treating wood with preservative to render it proof against fire, decay, and termites. Selection of proper treatment, suggested specifications, Underwriters' Laboratories rating, company's facilities and services. Protexol Corp., 74 Market St., Kenilworth 2, N. J.

INSULATION (THERMAL, ACOUSTIC)

9-45. Thermalite 85% Magnesia, 4-p. folder describing lightweight, magnesia pipe insulation, now manufactured in sectional form according to new simplified thickness standards so that every size pipe covering will fit precisely over or into another basic pipe size. Chart denoting basic and assembled sizes and thicknesses of pipe. Ehret Magnesia Mfg. Co., Valley Forge, Pa.

9-46. Insulating Gypsum Lath (A1644), 4-p. folder. Advantages of gypsum lath, surfaced with aluminum lath, for residential insulation. Comparative vapor permeability and insulating values. Also, brief description of fireproof gypsum sheathing. National Gypsum Co., 325 Delaware Ave., Buffalo 2, N. Y.

9-47. Sound-Absorbing Blankets, AIA 39-B (48-1024), 4-p. circular illustrating properties of lightweight, fibrous glass wool blankets for noise reduction and acoustical correction; to be used behind perforated metal or board, expanded metal or screen, cloth or decorative fabric. Typical wall and ceiling applications, noise reduction coefficients. Union Asbestos & Rubber Co., 1827-B S. 54 Ave., Cicero 50, Ill.

INTERIOR FURNISHINGS

9-48. Century Desk, 4-p brochure. Descriptions and photos of functional chair-desk units for primary school grades; utilizes horizontal adjustment device to seat comfortably stout or thin students; constructed of hard rock maple and tubular steel framework. Northern Seating Co., 666 Lake Shore Dr., Chicago 11, Ill.

SANITATION, WATER SUPPLY, DRAINAGE

19-127. Bradley Group Washing Equipment (D766), 4-p. folder showing various types of group washfountains, either foot or hand controlled, in precast stone, precast marble, enameled iron, stainless steel, or precast and metal combination. Advantages, standard equipment, brief descriptions of multi-stall showers and drinking fountains. Bradley Washfountain Co., 2203 W. Michigan St., Milwaukee 1, Wis.

SPECIALIZED EQUIPMENT

19-128. Bancork Bulletin Boards, 4-p. folder on bulletin boards made of soft, spongy, resilient cork which retains its tackholding qualities despite repeated use; suitable for use in schools, offices, hospitals, etc. Available colors. Bangor Cork Co., Pen Argyl, Pa.

19-129. Laboratory, Pharmacy and Dental Laboratory Equipment (AL-82), 20-p. bulletin especially prepared to aid architects in preparation of medical equipment specifications. Table of contents include: scope of work; materials; construction; finishes and tests; supplementary equipment; and equipment schedule. Alphabetical index. Hamilton Mfg. Co., Laboratory Equipment Div., Two Rivers, Wis.

19-130. Portable Folding Stands (B56), 4-p. folder. Wood folding stands, built in standard sections to fit all requirements; steel legs under each unit fold down flat, enabling stacking of units in minimum of space. Available types. Mitchell Mfg. Co., Milwaukee 15, Wis.

SURFACING MATERIALS

19-131. Rubber Tile (F 491-849), 8-p. brochure describing practical flooring advantages of resilient rubber tile for residences, business establishments, hospitals, and public buildings of all types. Sizes, gages, color and design chart, maintenance accessories, specification data. Armstrong Cork Co., Lancaster, Pa.

19-132. Tile-Tex Products, 12-p. booklet offering number of floor surfacing materials, such as asphalt tile, fire-resistant Tuff-Tex for industrial flooring, and other fireproof asbestos tile flooring for home and commercial installation. Asphalt tile specifications. Flintkote Co., Tile-Tex Div., 12 St., Chicago Heights, Ill.

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PLEASE PRINT 5/51

Auto-Lok
PATENTED

the Awning Window That Has Brought New Meaning to the Phrase **"Weather Control"**

Everybody talks about the weather -- but **AUTO-LOK** has done something about it! In all the history of window making, no window has forged so quickly into nation-wide popularity -- due largely to the practical manner in which it assures true "weather control."

HOT OR COLD? Auto-Lok Awning Windows (in either aluminum or wood) have vents that open to almost 90 degrees, scooping in welcome breezes. Too, they can be closed up -- literally air-tight -- and consequently effect real fuel and air-conditioning economies.

RAINS OR SNOW? Easy to keep the driving downpours and snow flurries outside -- without sacrificing the ventilation that is so imperative. Auto-Lok's weather-stripping and the automatic locking action make it indeed the ***TIGHTEST CLOSING WINDOW EVER MADE!***

ALL CLIMATIC EXTREMES. Yes, Auto-Lok functions equally well in hurricanes or dust-storms, cold winds or on heat-filled, humid days. It affords protection against the elements, provides perfect visibility -- and fits readily into practically any architectural scheme.

Consult your copy of SWEET'S, and
write for name of nearby AUTO-LOK distributor
and complimentary copy of
"WHAT IS IMPORTANT IN A WINDOW?"
Address Dept. PA-5

LUDMAN CORPORATION
P. O. Box 4541 Miami, Florida

Auto-Lok
PATENTED
weatherstripped
AWNING WINDOWS
ALUMINUM or WOOD

The Window with the
"FLOATING SEAL"

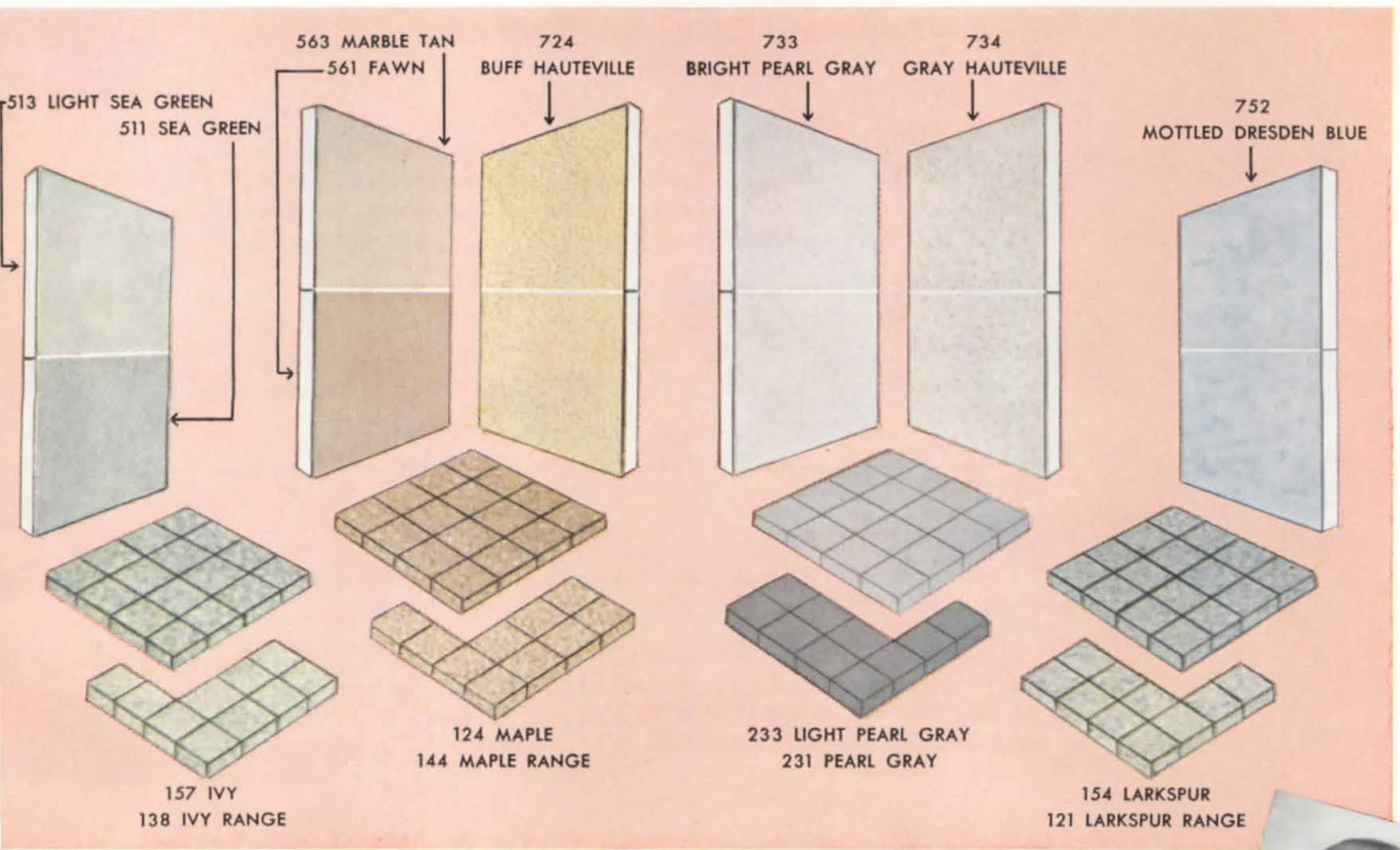
Merely providing weatherstripping isn't the sole answer to elimination of air infiltration. But with ***AUTO-LOK,*** vinyl plastic weatherstripping combines with the ingenious locking action of patented, precision hardware to create a ***"floating seal"*** -- and assures a closure ***ten times as tight*** as the generally accepted standard for casement or projected windows.

Specify AUTO-LOK in either Aluminum or Wood
and You Specify the
TIGHTEST CLOSING WINDOWS EVER MADE

these new *Suntile* colors

let you fit the color to the function

of industrial, institutional and commercial interiors...



Should you rely on your own personal opinion in selecting colors for interiors—or on scientific methods?

Authorities say you should rely on scientific methods when you select color for *industrial*, *institutional* and *commercial* interiors.

For that reason, a new line of functionally correct Suntile colors has been scientifically developed as an aid to the design and purpose of building interiors.

With these new Suntile colors you can help industry increase production, reduce accidents, aid lighting and build employee morale and efficiency.

In schools and hospitals you can protect eyesight by color aid to lighting, increase student and patient morale and create an atmosphere favorable to study and convalescence. In commercial units you can attract customers, aid merchandising and sales, and stimulate employee enthusiasm.

These new functional colors give you added reasons for selecting Color-Balanced Suntile for walls and floors—beyond the advantages that real clay Suntile gives you in creating interiors that withstand heavy use, are easy to clean and maintain, and remain attractive for the life of the building.

NEW COLOR BOOKLET

Write Dept. PA-5 for our new color story, "Suntile Functional Color Recommendations," or see your local Authorized Suntile Dealer for detailed information.

Faber Birren, nationally known color authority, has applied extensive research to the design and organization of the new Suntile color line. He says, "Where the special technical needs of industry, schools, hospitals and commercial buildings are concerned, color styling and selection must avoid anything speculative. Personal opinion must give way to scientific method."

THE CAMBRIDGE TILE MANUFACTURING CO.

CINCINNATI 15, OHIO

WEST COAST OFFICES: The Cambridge Tile Mfg. Co., 470 Alabama St., San Francisco 10, Cal. • The Cambridge Tile Mfg. Co., 941 N. Citrus Ave., Los Angeles 38, Cal.

How many autocrats on Park Avenue?

There's no telling the total. But in just one building — at 100 Park Avenue — there are about three thousand two hundred and ninety three. Every day in the year, that many happy autocrats have absolute power over their weather.

The reason? This new 36-story building is air conditioned by the Carrier Conduit Weathermaster* system. It supplies conditioned air to 3293 Weathermaster room units — and gives each tenant the privilege of heating or cooling that air to his pleasure.

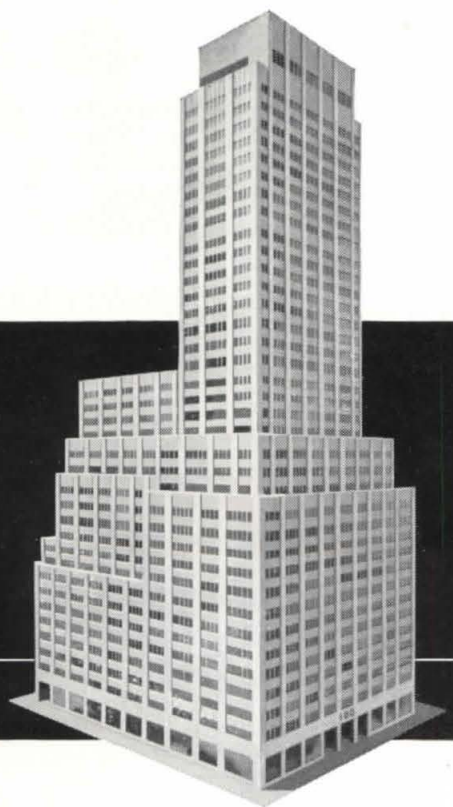
But happy tenants aren't the only advantage of the Weathermaster System. The room units contain no fans, motors or other noise-producing moving parts. There's nothing in them to go wrong. All the mechanical elements of the air conditioning system are centralized; so is the maintenance.

But we're getting ahead of our story, because the advantages of the Carrier Conduit Weathermaster System begin when construction begins.

It saves space. It eliminates return ducts, replaces supply ducts with small-diameter conduits. It takes 75 to 85% less space than ordinary systems, uses a fifth as many pounds of sheet metal.

It's easy to install. The conduits are prefabricated, slip together easily. In existing buildings, it takes only 15% of the usual cutting and patching to install the Carrier system. Like to know more? Write to Carrier Corporation, Syracuse 1, New York.

Reg. U. S. Pat. Off.

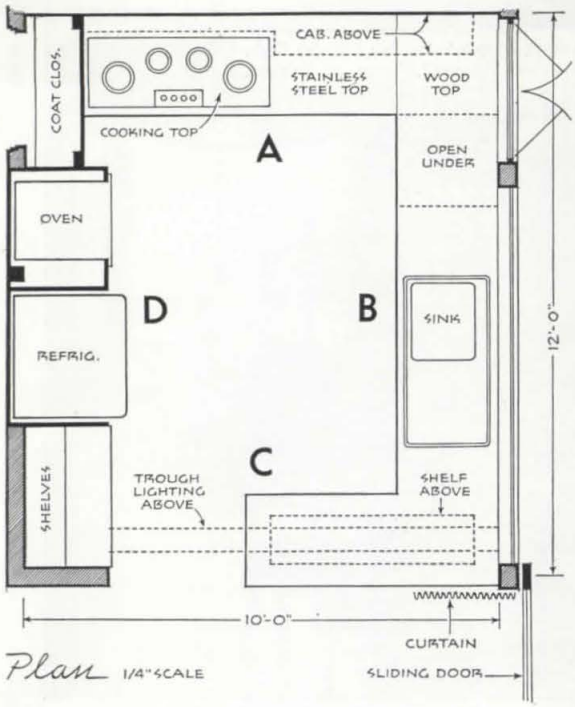


Two 1000-ton Carrier Centrifugal Refrigerating Machines provide chilled water for 3293 Weathermaster units at 100 Park Avenue.

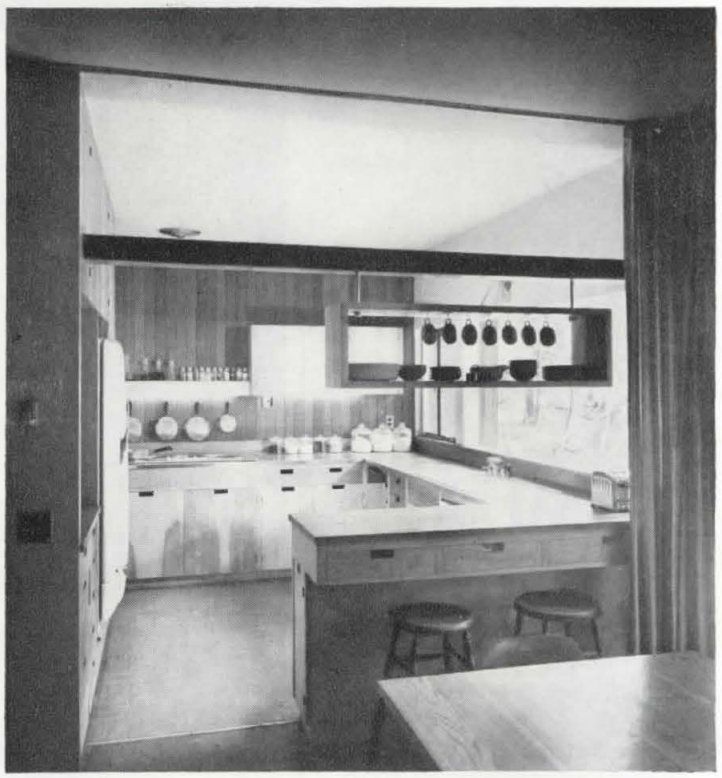
Kahn and Jacobs, architects; Jaros, Baum and Bolles, consulting engineers; George A. Fuller Company, general contractor; Kerby Saunders, Incorporated, mechanical contractor.

Carrier

AIR CONDITIONING
REFRIGERATION
INDUSTRIAL HEATING

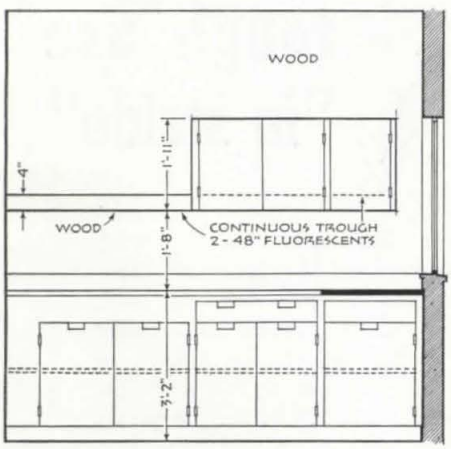


Plan 1/4"SCALE



RICHARD GARRISON

Elevations 1/4"SCALE



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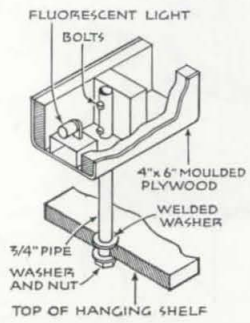
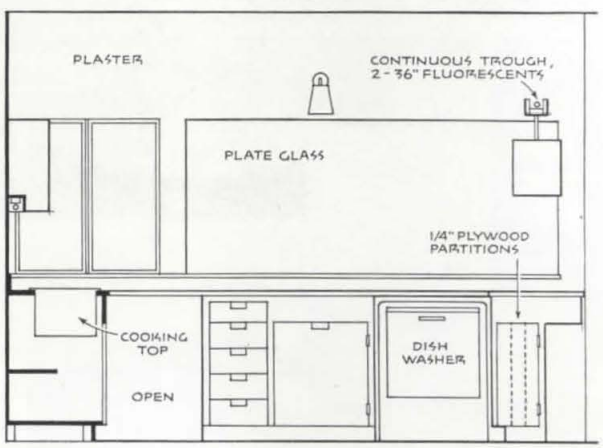


Trough Light



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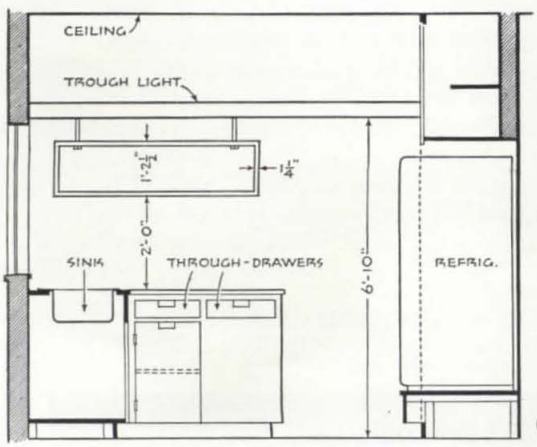

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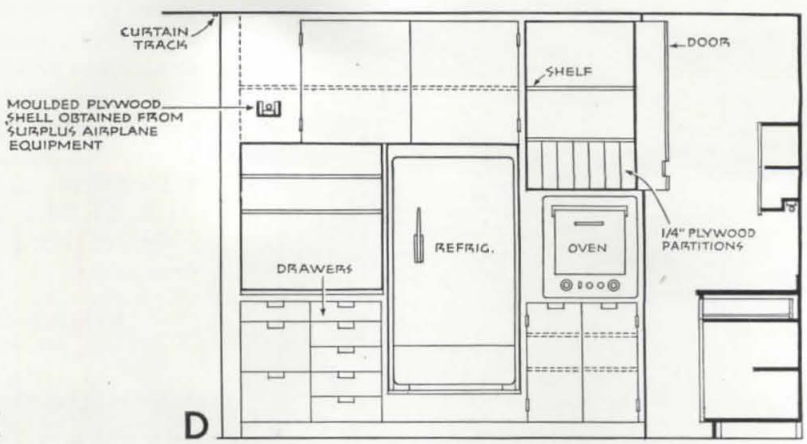


D

STEWART RESIDENCE, Cambridge, Mass.

ARCHITECTS COLLABORATIVE, ARCHITECTS

- FACTORY
- SCHOOL
- HOUSING
- MILITARY
- RECREATIONAL

Floor of Northern Hard Maple in Yakima Country Club, Yakima, Wash. Architect: Thomas F. Hargis, Jr., Yakima.

in ANY service— NORTHERN HARD MAPLE

the finest floor that grows

—takes tough use "in stride"

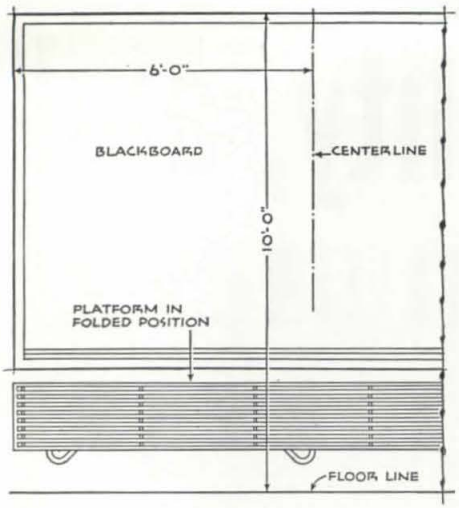
Southlawn Housing Project, Milwaukee. Architects: Ralph E. Schaefer, Frederick J. Schweitzer, George G. Schneider, Walter M. Trapp, Fritz von Grossmann. Contractor: Kroening Eng. Co., Milwaukee.

Floor of patterned Northern Hard Maple in Koppy Tool & Die plant, Ferndale, Mich. Campbell Const. Co., Gen'l Contractors.

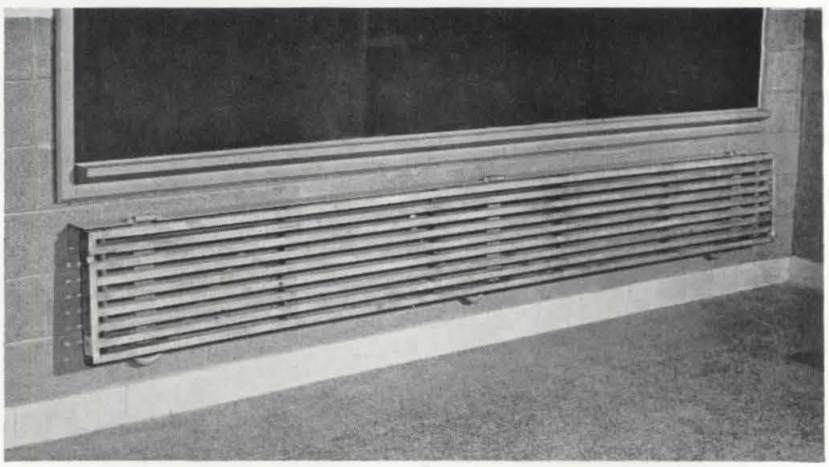
● Even those most familiar with Northern Hard Maple are constantly impressed with the way this handsomest of floors stands up under the severest of service. Often, in building, one has to forego something of beauty to be sure of sturdy endurance...or something of style to attain economy. But not with maple! The tough stamina that takes the beating of bowling alley and butcher's block is hidden in grain patterns of delicate loveliness, texture of satin smoothness, *resiliency* that resists even violent, pointed impact and pressure. And MFMA grading standards provide true economy with no penalty. Second and Third Grades (or Second-and-Better, Third-and-Better), in strips, blocks and patterned designs, produce floors of genuine beauty and unimpaired endurance. SEE SWEET'S, Arch. 13i/MA, for detailed specification data on MFMA Northern Hard Maple—"the finest floor that grows" —or write:

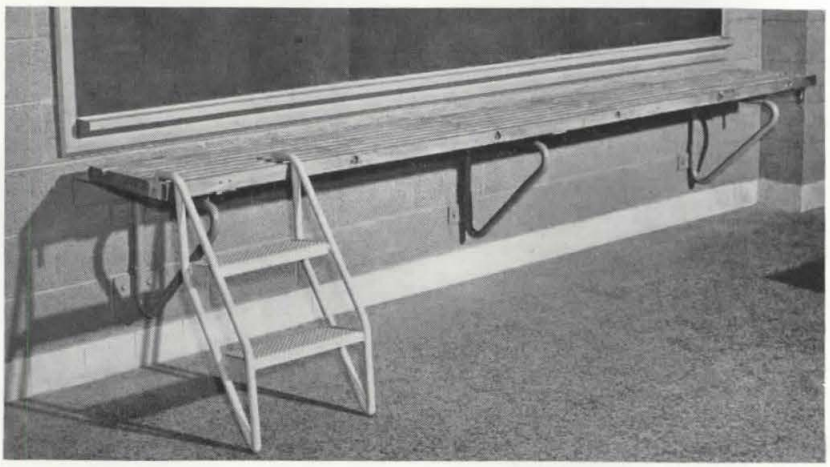
MAPLE FLOORING MANUFACTURERS ASSOCIATION
Suite 583, Pure Oil Building, 35 East Wacker Drive
CHICAGO 1, ILL.

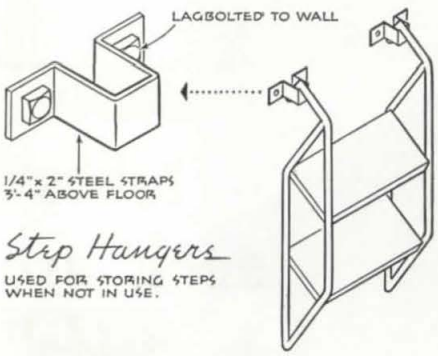
FLOOR WITH NORTHERN HARD MAPLE
BEECH AND BIRCH



Elevation 1/4" SCALE

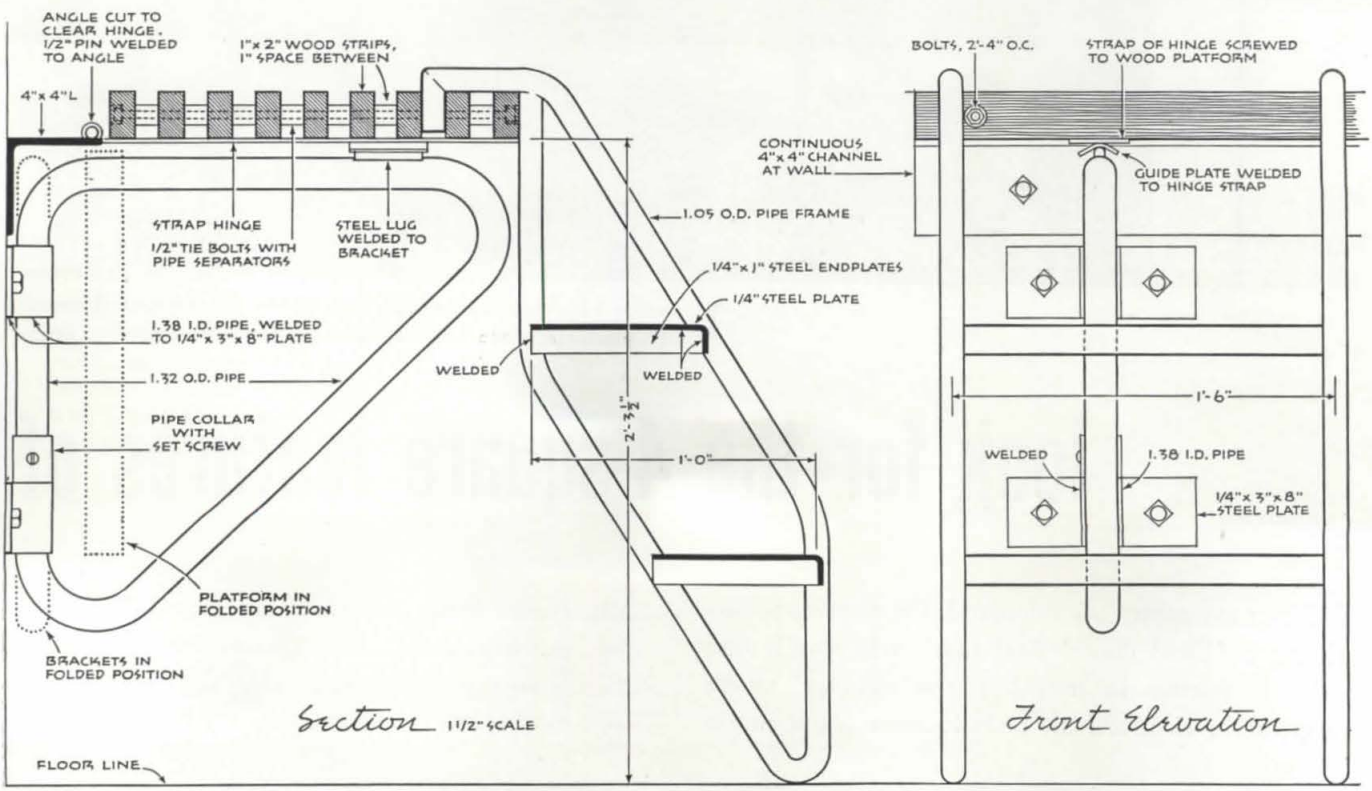






Step Hangers

USED FOR STORING STEPS WHEN NOT IN USE.



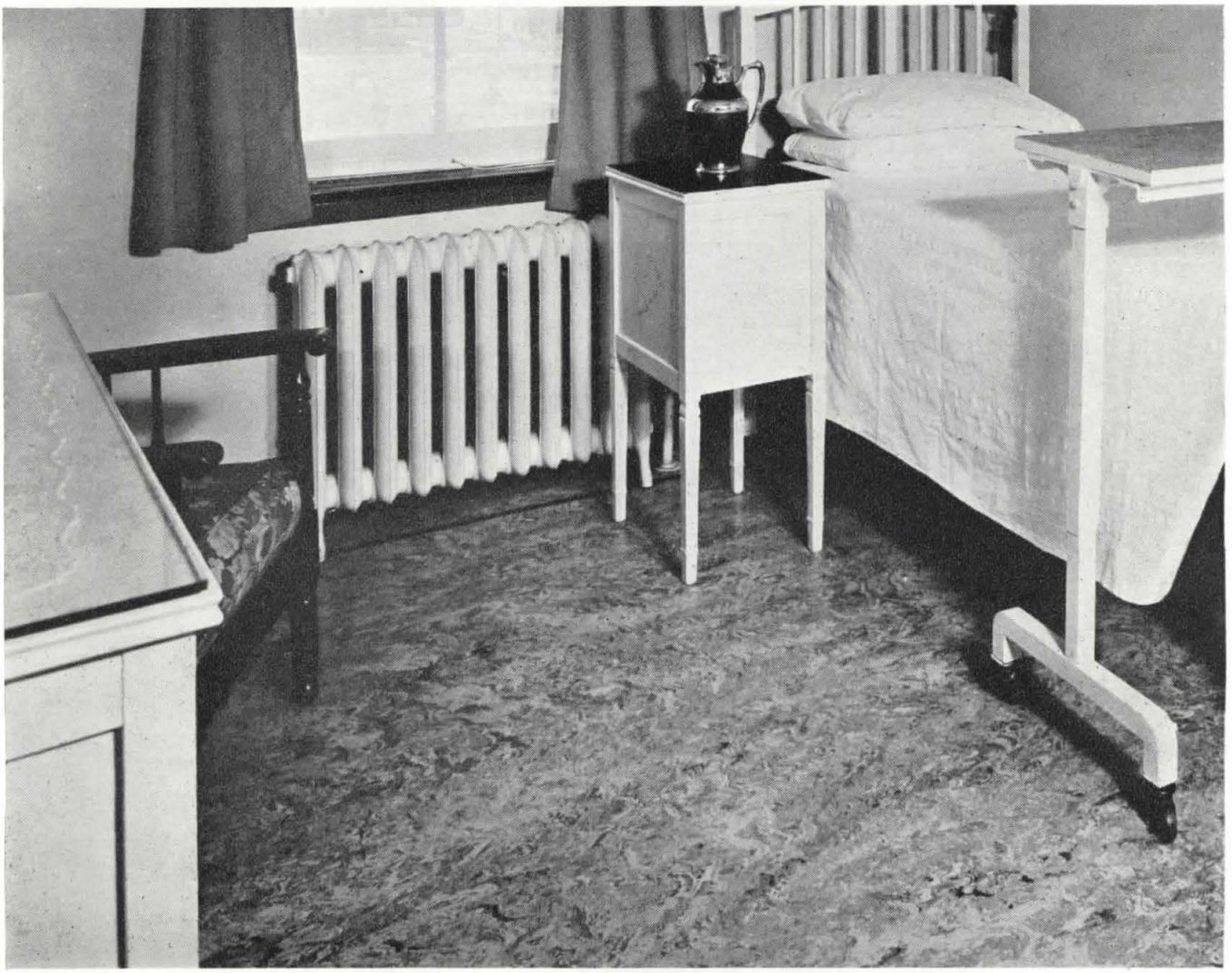
Section 1 1/2" SCALE

Front Elevation

NORTH CAROLINA STATE COLLEGE, Raleigh, N. C.

NORTHUP & O'BRIEN, ARCHITECTS

Where quiet, quality, and



1. Nairn Linoleum makes this floor in the Hackensack General Hospital, Hackensack, New Jersey, quiet and foot-easy . . . satin-

look for the 4-square features of

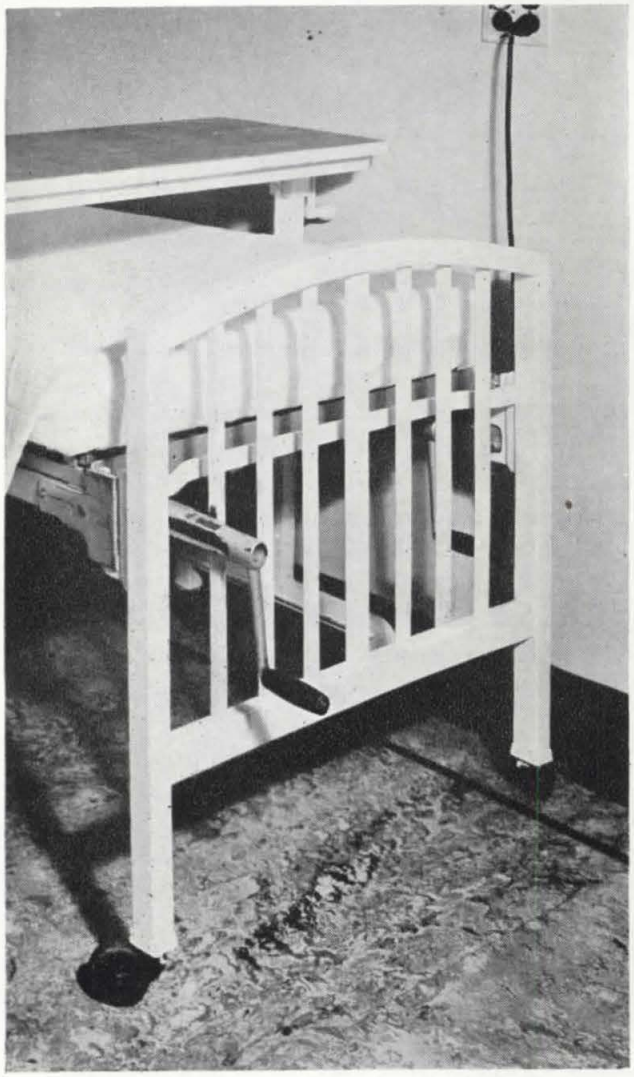
Modern medical practice demands the most up-to-the-minute, resilient floors! And that's why you'll find Nairn Linoleum in hospitals and doctors' offices everywhere. Economical, both to install and maintain, Nairn floors remain *more* quiet, foot-easy, and beautiful indefinitely. Because of their easy maintenance and smooth, crevice-free surface, they are a most sanitary and satisfactory floor covering.

For your specifications: Nairn Linoleum— Nairn Wall Linoleum—Nairn Asphalt Tile. Congoleum-Nairn Inc., Kearny, New Jersey

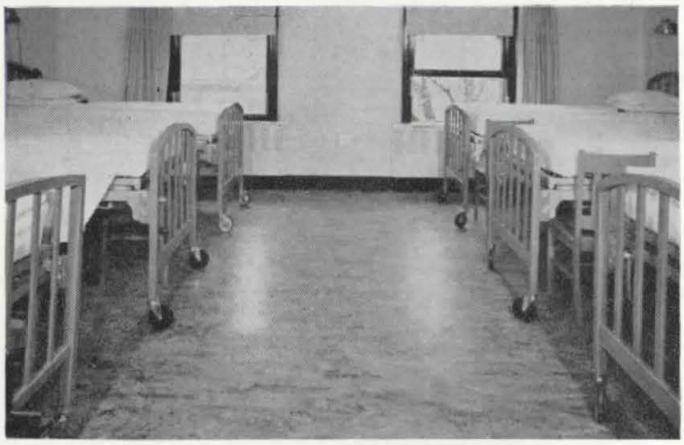
NAIRN LINOLEUM

Trade-mark ®

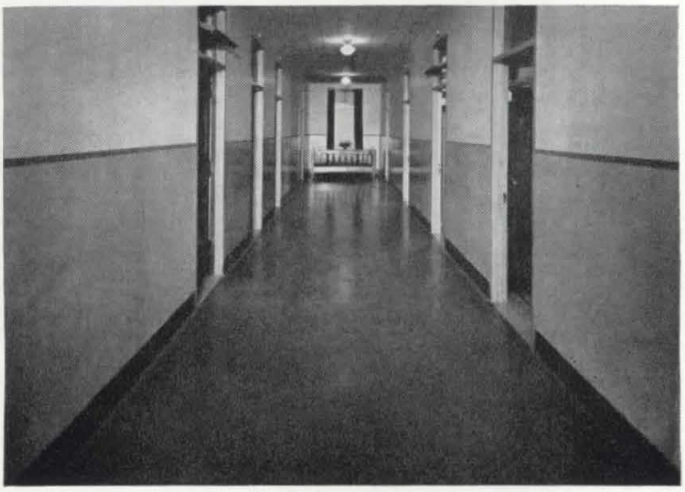
economy count...



smooth surface eliminates dirt- and germ-catching crevices.



2. The cleanliness of crevice-free Nairn Linoleum makes for easy maintenance in this room and increases sanitation at the Mercer General Hospital, Trenton, N. J.



3. A corridor in the Hackensack General Hospital showing an installation of battleship linoleum in use over 30 years! Proved long life where traffic is heavy, always clean and sanitary.

Nairn Linoleum!

NAIRN
SATISFACTION GUARANTEED OR YOUR MONEY BACK

For FLOORS and WALLS

1. Long Life

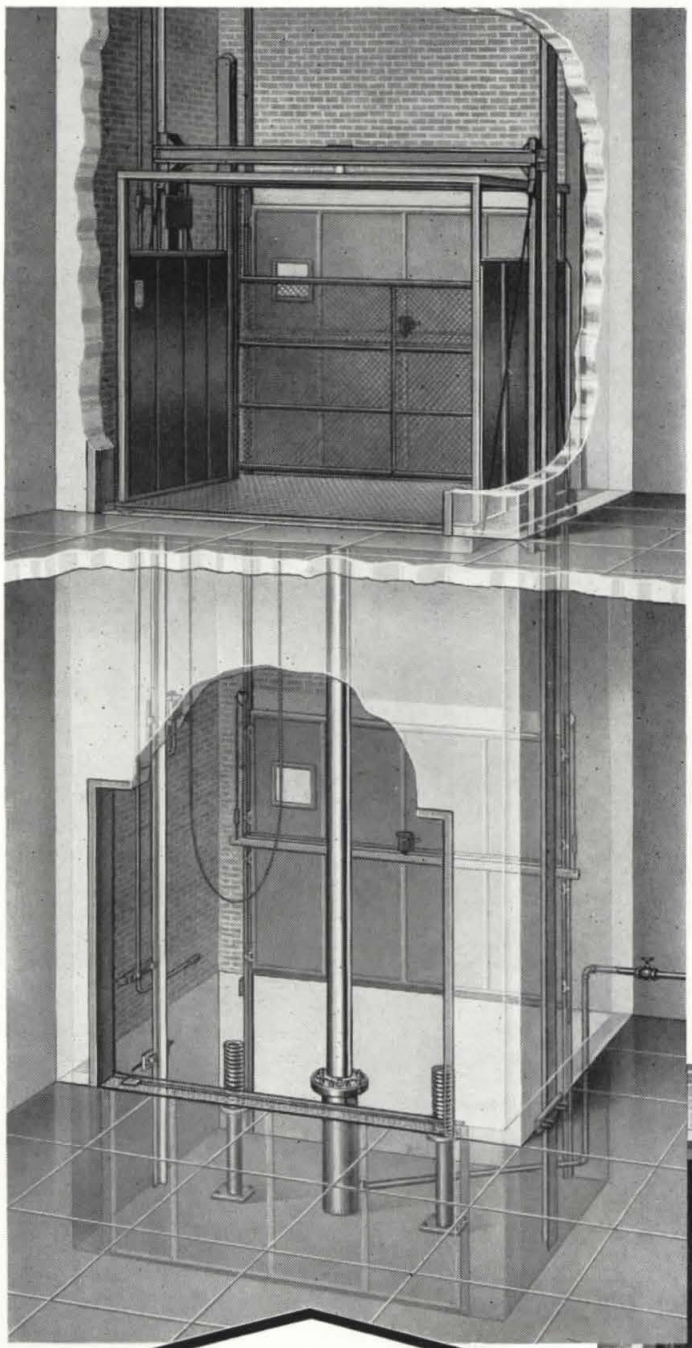
2. Enduring Beauty

3. Easy Maintenance

4. True Resilience

4. The Nairn Linoleum floor in the waiting room of Dr. J. D. Ross, Arlington, New Jersey, assures quiet walking, easy maintenance and enduring beauty.

Oildraulic® Freight Elevators



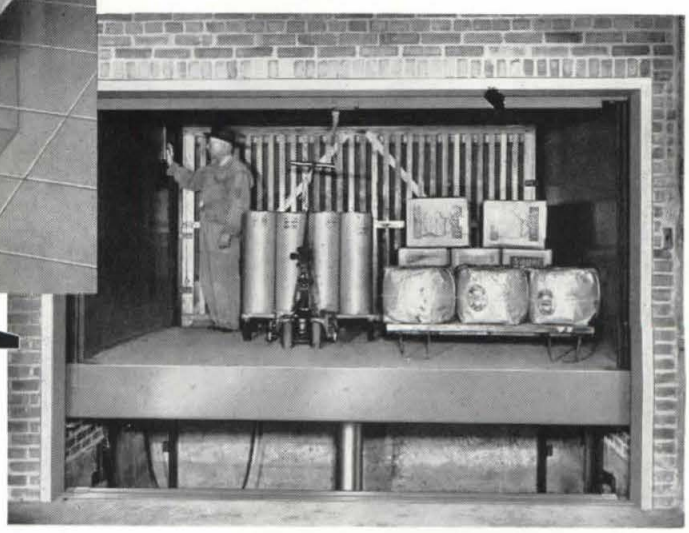
Elevator is pushed up by powerful Oildraulic Jack . . . lighter shaftway structure required.

1. LOWER CONSTRUCTION COSTS

Oildraulic Elevators simplify building design—no penthouse needed

You can usually cut construction costs materially by specifying Oildraulic Elevators. This modern elevator is pushed up from below, not pulled from above, and the powerful hydraulic jack supports all the load of the elevator and its contents. This eliminates the costly, unsightly penthouse and also permits a substantial lightening of the shaftway structure. There's no need for heavy, load-bearing sidewall supporting columns and footings ordinarily required to carry the elevator car, overhead machinery, and the load. A special machine room can usually be dispensed with, too, because Rotary's compact power unit can be located at any convenient spot, on any landing, on any side of the hatchway—anywhere within 50 feet of the elevator.

These structural simplifications also make the Oildraulic Elevator ideal for installation in existing buildings where elevator service is being initiated or expanded.



Have 3 Big Advantages

2. HEAVY-DUTY SERVICE

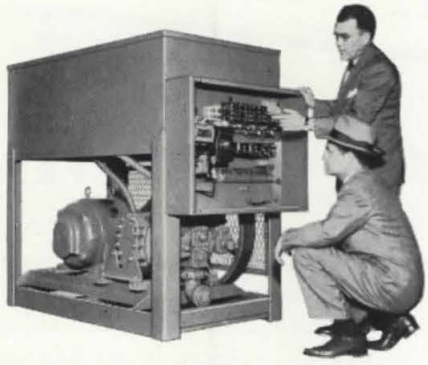
Some of the largest freight elevators in service are Rotary Oildraulics

Their basic operating principle (fluid under pressure) is ideal for freight service. Whether the load is little or great it is moved with the same efficiency. Power is applied directly to the load; there is no lost motion. The car will not move downward as heavy loads are rolled in, because the elevator is supported on a solid column of oil.

Oildraulic Elevator cars have extra-rugged construction that is essential for rough, tough freight service. Members are deep-formed, electrically welded. Bolsters, stiles and other parts are reinforced to withstand all stresses and strains.

Power truck loading is provided for on all Oildraulic Freight Elevators with a capacity of 5,000 lbs. or more, even though such service may not be planned at time of purchase.

3. SMOOTH OPERATION



New Rota-Flow power system gives smoother, quieter, lower cost service

Rota - Flow, the revolutionary new hydraulic power transmission system, moves Rotary Oildraulic Elevators on a continuous, pulsation-free column of oil. Rota-Flow operates with greater efficiency than any other hydraulic power unit.

Combined with the Rota-Flow power unit to give perfect operation is the Oildraulic Controller, a remarkable device that combines the functions of seven separate control valves . . . simplifies adjustments and maintenance.

Smooth starts and stops are a feature of Oildraulic Freight Elevators. Oildraulic automatic floor leveling accurately positions the car to each landing . . . very important in power vehicle loading because severe jolts and shocks result if the elevator car is above or below the landing.

WRITE FOR A. I. A. FILE

See Section $\frac{33a}{Ro}$ in Sweet's Architectural File and write us for catalog and complete information on Rotary Oildraulic Elevators. Our Engineering Department will be glad to work with you on preliminary layouts and specifications.

Over 55,000 Oildraulic elevators and lifts have been engineered and built by Rotary, oldest and largest maker of oil hydraulic elevators. Our coast-to-coast organization offers the most complete engineering service in this field.

ROTARY LIFT CO., 1015 Kentucky, Memphis 2, Tenn.

Rotary® **OILDRAULIC® ELEVATORS**

FOR FREIGHT OR PASSENGER SERVICE — CAPACITIES UP TO 80,000 LBS.

Which Tile Should You Specify?

HASTINGS AIRCRAFT ALUMINUM *alumitile*

COMPARE WITH ALL OTHERS . . .

CHECK THESE SALES FEATURES!

Features listed below have an important bearing on the amazing success dealers, contractors and architects are experiencing with *HASTINGS alumitile*, the exciting, modern, new wall facing. You, too, can enjoy increased profits from handling and recommending this well known line.

Alumitile is formed *after* it is painted—an unusual feature. Won't chip, crack, peel or corrode. Enamel finish permanently bonded to aircraft aluminum.

Over 25 different shapes and sizes of tile. *Count them* and *compare* with the number offered in other makes. Inside and outside corners, bases, caps, stripes, triangles; matching switch plates.

Fourteen vital colors, available in tile of various patterns, for attractive lettering and unusual designs. Does the tile you are handling have this "self-decorating" feature? Can you do lettering with it, as you can with *alumitile?*

Fireproof, rustproof, waterproof. Resistant to common acids. No unsightly mortar lines to collect dirt and grease. Easy to clean . . . sanitary . . . beautiful. Guaranteed long life.

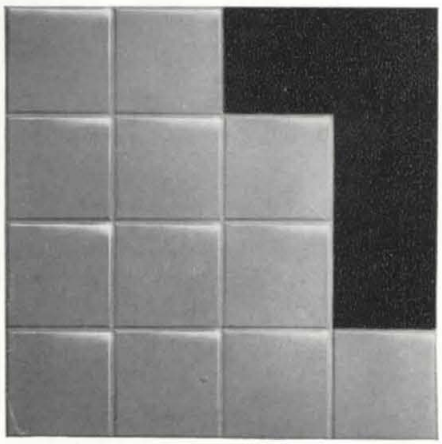
Adapted to both new construction and remodeling jobs. Serves countless uses for homes, institutions, commercial buildings. It will pay you to compare *alumitile* with other tile for flexibility.

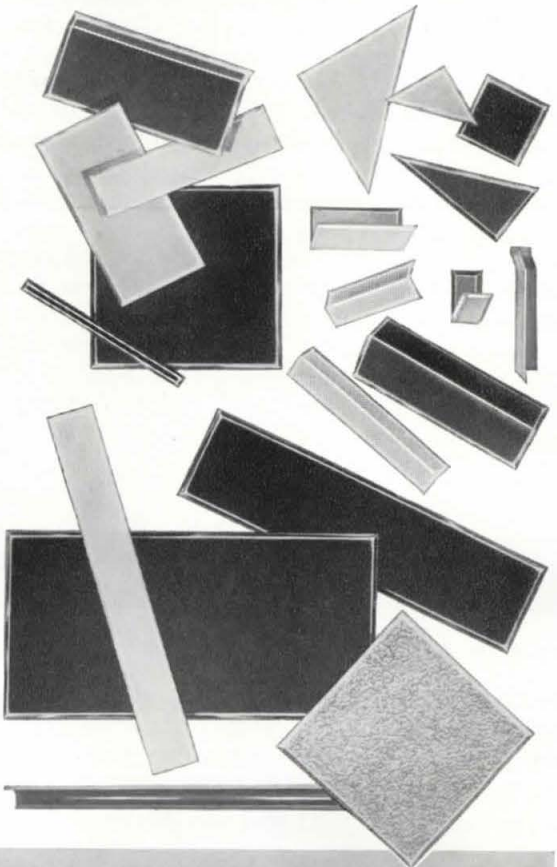
Light in weight . . . 120 sq. ft. weigh only 37 lbs. Easy to handle, lower shipping costs. Strength without bulk . . . requires less storage space. Easy to apply . . . saves labor hours.

VERSATILE TILE CUTTER

A handy tool that applicators who have used it would not be without. Trims and makes a perfect factory bevel. Four dies in one . . . cuts as small as 5/8" and up to 10". Does a professional job. Supplied by Metal Tile Products as one of the "extras" for which *alumitile* is famous.

The St. Joseph Hospital of Bangor, Maine, writes of HASTINGS *alumitile*, "We are happy to announce what satisfaction and pleasant atmosphere it brought, and how daily maintenance problems have been cleared right along." The Atlanta Biltmore Hotel says, "After extensive and rigid tests, we decided to install *alumitile* throughout the hotel."





METAL TILE PRODUCTS, INC.
Department 510, Hastings, Michigan

Be sure it's *genuine* HASTINGS alumitile

I should like to know more about your products.

I am a ☐ Distributor, ☐ Dealer, ☐ Architect, ☐ Contractor.

Name_____

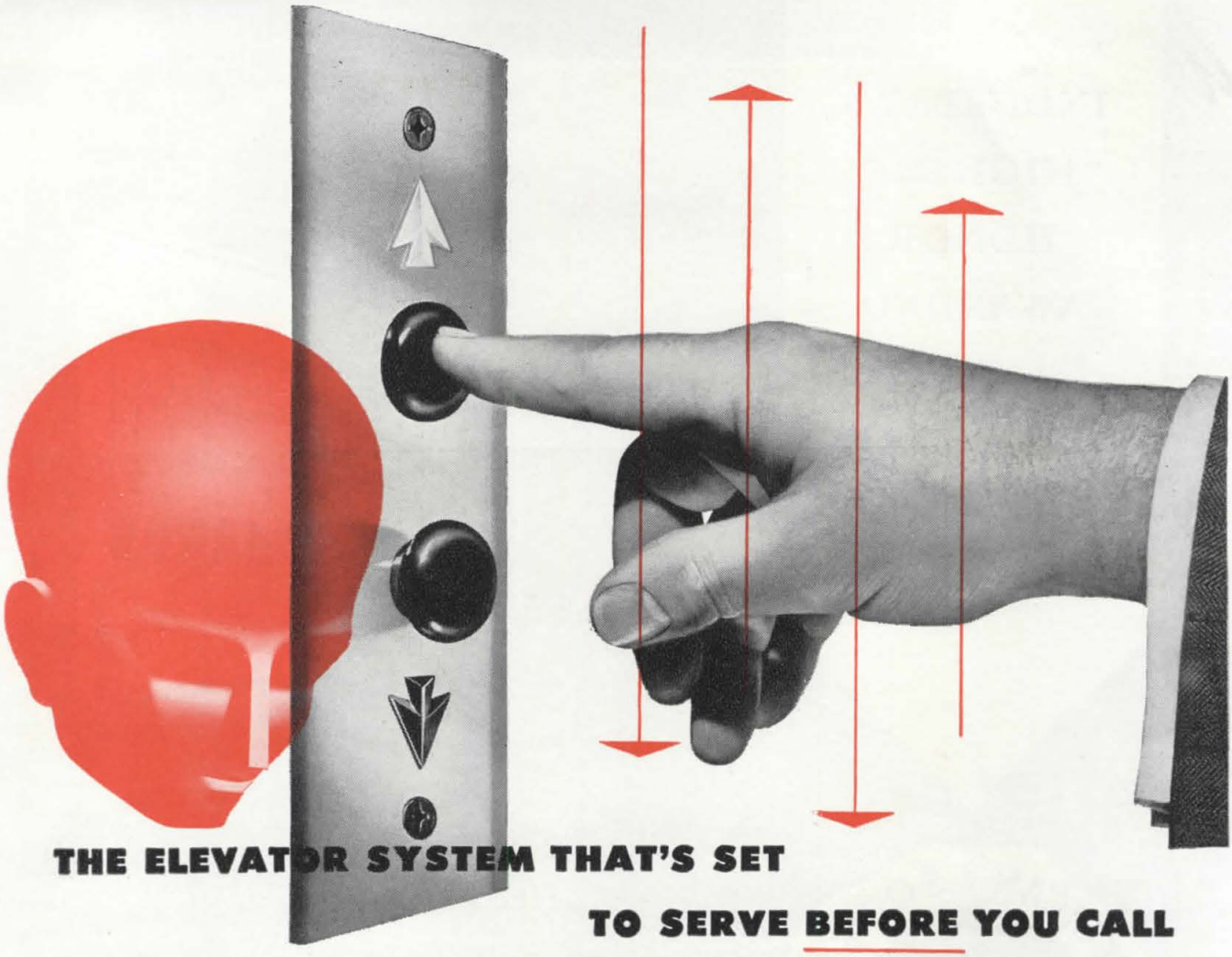
Address_____

City_____ State_____

Write Today!

METAL TILE PRODUCTS, INC. Hastings, Michigan

Makers of HASTINGS alumitile, alumi-AWNINGS doorhoods, mouldings and flashings



THE ELEVATOR SYSTEM THAT'S SET TO SERVE BEFORE YOU CALL

Maybe this happens to you! Press an elevator button. Wait for a car . . . and wait and wait and wait. It happens to millions every day . . . except in buildings served by Westinghouse Selectomatic Elevators.

For even before you think about taking an elevator, Selectomatic is ready to serve you. To make sure your call is answered in seconds flat, Selectomatic's ingenious "electrical brain" is always on the alert . . . always anticipates the traffic demand . . . automatically matches cars to calls to floors.

And that isn't all. Every new Selectomatic Elevator now has the exclusive Synchro-Glide Landing. This means your car takes off and lands so smoothly, it's really hard to tell a start from a stop. What's more, floor-to-floor travel time is cut 1½ seconds per stop!

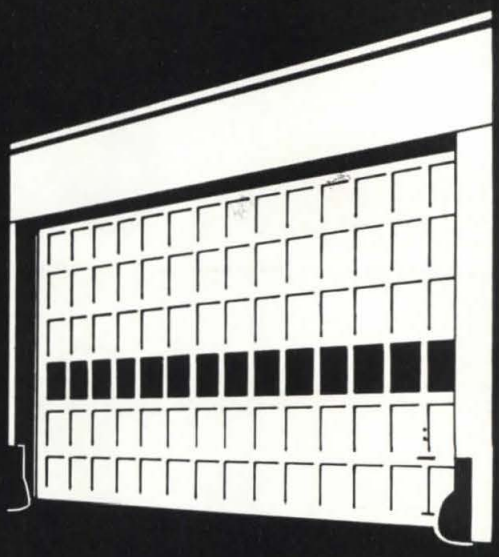
So, if your job is purchasing elevators, *test ride Selectomatic before you decide.* For information on local Selectomatic installations you can "test ride," write the Westinghouse Electric Corp., Elevator Division, Dept. E-1, Jersey City, N. J.

For years, Westinghouse engineering developments have stimulated the vertical transportation industry to strive for ever-higher standards of quality and efficiency. In every phase of vertical transportation—equipment, maintenance, and service—Westinghouse has been the vanguard for progress. So, whatever your traffic problems may be—there's a Westinghouse Integrated Vertical Transportation System to solve them completely. Look ahead with the leader . . .

YOU CAN BE SURE . . . IF IT'S **Westinghouse**

J-98597

INDUSTRY'S HIGHEST HONOR AWARDED TO CRAWFORD DOOR COMPANY



AMERICAN ★ SOCIETY ★ INDUSTRIAL ★ ENGINEERS
MERIT AWARD

"For Leadership in Research, Engineering, Design and Manufacture in the Garage Door Field" our company and our products have won the Merit Award of the American Society of Industrial Engineers.

This is the first time that the Society has granted its award to any door.

More than anything *we* could say, the judgment of this independent, impartial and competent body testifies to the excellence of Crawford Marvel-Lift Doors.

CRAWFORD DOOR COMPANY

70-401 St. Jean · Detroit 14, Michigan

Crawford Marvel-Lift Doors and Operators
Industrial · Commercial · Residential

FABRICATING PLANTS in Portland, Tacoma, Los Angeles, San Francisco, Dallas, Kansas City, Chattanooga, Milwaukee, Hudson, Cadillac and Ottawa, Canada.

DISTRIBUTING WAREHOUSES in 79 major cities.

SALES AND SERVICE companies everywhere.

MAN AS THE GOAL

Richard Neutra. *W. Boesiger. Editions Girsberger, Zurich, 1951. 238 pp., illus. Text in French, German and English.*

This is the reference work on Neutra for any architect's library. It is far more useful to the office than the 1946 issue of *L'Architecture d'Aujourd'hui*, of which the photographs are warmer, or the 1948 *Architecture of Social Concern* which treats extensively the special field of Neutra's designs for Puerto Rico and only touches in the sketchiest manner the balance of his work. The 238 pages, of oblong format matching several other Girsberger publications on architecture, are devoted largely to illustration, often with exceptionally complete coverage, and an adequate number of plans; but, in view of the importance of Neutra's structural studies, a startling indifference to detail drawings. The photographs, perhaps due to the method of reproduction, tend to grayness and have a diffused, rather than a concentrated field of interest. The exceedingly sensible device of a trilingual text for most (not all) of the written matter, is the work of different hands and often expresses varied points of view, as well as giving diverse information. The English text is marred by an extraordinary number of errors in spelling, grammar, dates, and vocabulary. I counted 13 on one page; which can only be put down to careless editing, unworthy of Swiss standards. Occasionally, the unfamiliar manipulation of our language has a positive value (as in Gertrude Stein) such as "out-sitting space," "panoramatic," "Holyday," and "a wandering exhibition."

The choice of Giedion for author of the Introduction was a wise one. No more sympathetic critic could have been chosen, in view of his stalwart and continued defense of the *echt* "International Style" to which Neutra also has remained, on the whole, a devotee, apart from his infrequent excursions into a more Californian vocabulary. Neutra has explicitly learned much from his associations with Otto Wagner, Adolph Loos, Eric Mendelsohn, and less from his friend, Frank Lloyd Wright, who (Giedion says) represents the country-dweller's attitude toward architecture as contrasted with Neutra's urban point of view. Giedion praises Neutra as "having preserved in practice the artistic integrity which emanated from the schemes of the early Twenties," and singles out, with some exaggeration, the Tremaine house, in Santa Barbara, as the only work in which Neutra has accomplished "the transcendance of mere function into psychic expression." He also praises Neutra for his attitute toward landscape, "the power to leave nature undisturbed and simultaneously to draw her into a specific emotional situation." This may also be put in the opposite way; the relation between the building and the site is such that it often seems

(Continued on page 114)

BOOKS RECEIVED

Landscape Architecture. Edited by Lester Collins and Thomas Gillespie. Dept. of Landscape Architecture, Graduate School of Design, Harvard University, Cambridge, Mass. 76 pp., illus. $2

Plant Layout. Planning and Practice. Randolph W. Mallick and Armand T. Gaudreau. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N.Y., 1951. 391 pp., illus. $7.50

(Continued from page 113)

as though the goal were contrast, rather than harmony. This is the case, sometimes, even where it is clear that intense and thoughtful study has been given to the relationship.

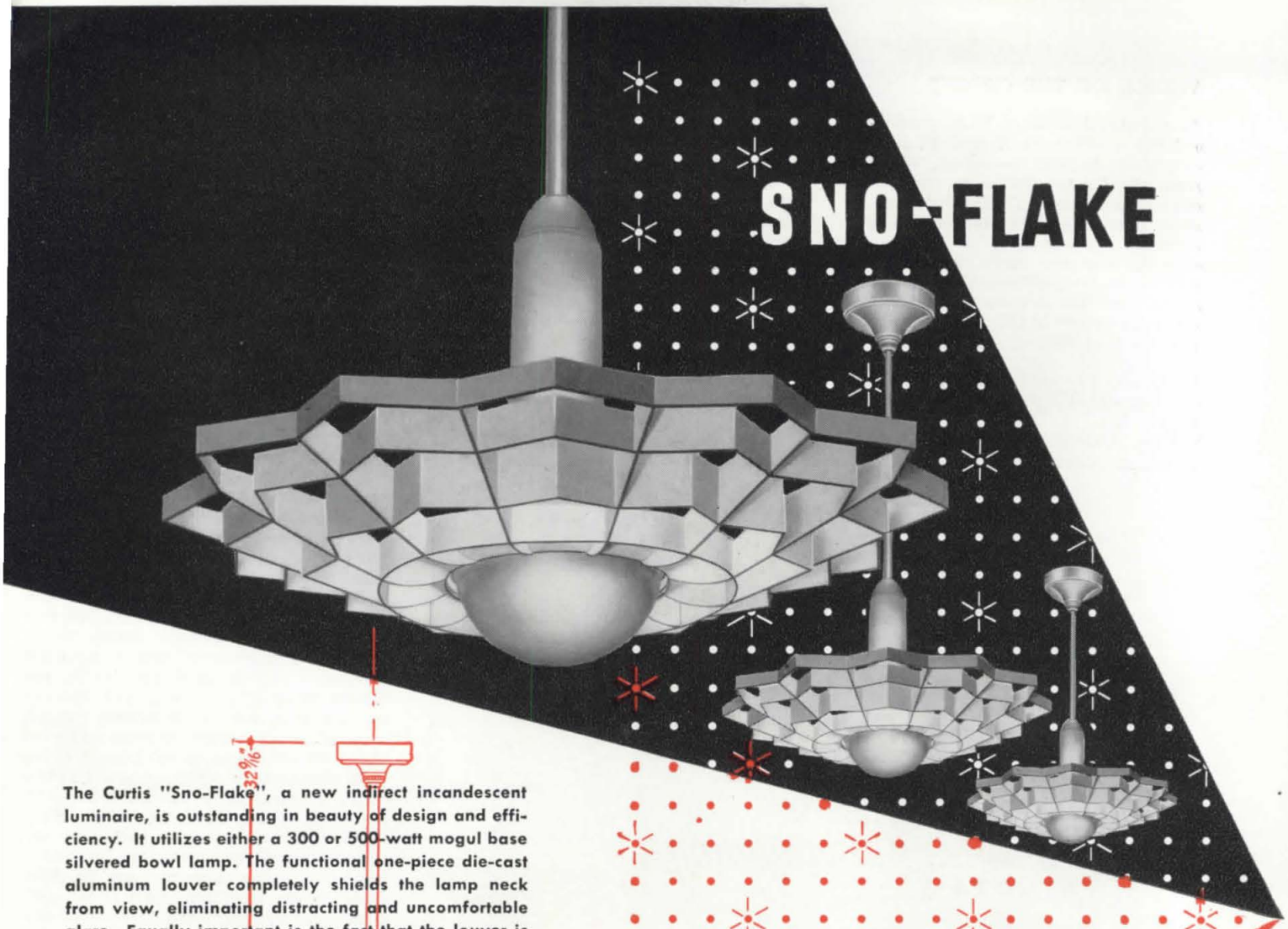
The chronological arrangement of the material points up Neutra's contributions in fields such as schools, and low-cost construction methods. He has been continuously preoccupied with structural experimentation. Every step toward simplifying office procedure, working drawings, and building techniques is badly needed. Neutra's inventions are of the first importance, such as his device of a flexible footing; hence the omission of more examples of this research is particularly serious.

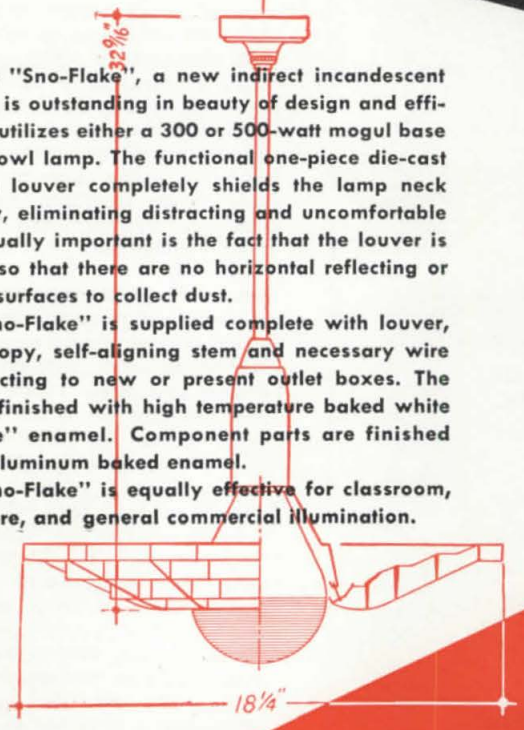
Neutra's approach toward architectural problems is based upon cost, materials, assemblies, and the desire, as well as the ability, to design for all income groups, buildings adapted to the program of simplified modern living—as in Channel Heights or the Nesbitt house. A number of pages have been given over to such projects as Rush City Reformed, in which I feel the anatomical traffic solutions are ameliorative rather than dynamic; and to some of his early sketches which reflect Expressionist, Cubist, and Oriental influences, suggesting the breadth of his sources.

Some of Neutra's more recent work shows a loosening of that mathematical intensity, which in his earlier work resulted in static geometrical forms, cubes, and blocks of almost terrifying absoluteness—as in the John Nicholas Brown house on Fisher's Island, of 1936, where strict economy was not the limiting factor as much as an esthetic akin to "Der Stijl." Neutra may be compared to Sir Christopher Wren in his scientific, intellectual mind; which has as an almost inevitable corollary, the subordination of the more frankly emotional and expressive. Neutra is a master of classical proportions. His simplest blocks have a serenity and agreeable horizontality which are not carried to mannerist excess, but are less satisfactory as a form language when applied to very large structures. Mechanistic determinism, so noticeable in some of his work, is tempered in such statements as "too much of mechanization wastes and withers humanity," architecture "responds from the ground up to the flowing forms of life," "the rational and calculated is only one side of architecture, the other is intuition." He has wisely come to believe that function should not have the house or the machine as the goal, but aim at helping man function as a human being.

C. L. V. MEEKS

SNO-FLAKE





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VENICE OF THE ORIENT

In the April issue of **P/A**, *portions of a letter written by Robert E. Alexander, Los Angeles architect, en route from the United States to India, were quoted in Thomas Creighton's* P.S. *column. Alexander has continued sending informal reports to his friends in this country, and the many expressions of interest in the paragraphs already published lead the editors to believe that our readers would like to see more. The portion that follows was datelined. . .*

Bangkok, Thailand: Set out early to see Dr. Jal F. Bulsara, Far Eastern Representative, Division of Social Activities, United Nations. On the way passed many fascinating scenes along the canals which line the roads. Boatloads of pet birds of all colors for sale. A fuzzy, grey, baby water-buffalo waddling behind its tawny, sleek mother. Tiny ponies hauling carts. Bangkok has been built on a vast swamp which floods every monsoon. Consequently, houses are built on "plinths" or mounds 3' high. Dirt for plinths is excavated in a methodical way along property lines, forming a network of drainage ditches which often are navigable.

The Bulsaras were very cordial and informed me Jacob Crane and his U.N. Mission on Rural Housing in tropical S.E. Asia just left. Helpful conversation on India and Bangkok. Also informed me John Barnabas, our recent visitor to L.A., now working for U.N. in Burma.

Called on Prince Prem Puruchatra, who was resting, but enjoyed a delightful visit with Mrs. Puruchatra. She invited me to attend Indian Republic Day Reception at the Indian Embassy, followed by party at the Australian Embassy. The Australians have a similar celebration same day. Kindly offered to retrieve my reservation at the Oriental Hotel, on river, which I had missed due to delays.

●

Checking on said reservation, thought I should follow suggestion of Shigeo Hirata and look up his friend, Prince Tongyai, to merely say "best regards from Shigeo." Trouble with Siamese accent at the hotel desk, but clerk said he knew just who I meant and would get him on phone. Soon talking to a most pleasant character who couldn't remember Shigeo's name as pronounced over phone, but graciously asked me to call at 3:00 p.m.

While waiting, sauntered in and out of alleys, slums up to my neck. Stopped in at a Chinese School during lunch hour and had game of ping pong with succession of boys and without an exchange of intelligible language. Everyone along street being served "quick lunches" being carried around and prepared on sidewalk. Boatloads of terra cotta and pottery being unloaded at the canal. Stopped in to call on a building materials dealer, S. K. Lee of the Thai Bhairoj Co., Ltd., who had just received his first and probably last shipment of Luminal 1 paint from the U.S. Glass from Belgium. Cast iron and steel from Japan. Wood local. Saw my first Oriental w.c.

Lunch at the Oriental Hotel on open terrace overlooking river. Traffic fascinating and heavy. A tiny towing launch pulls as many as seven junks up river in tandem. Saw boy balancing a bamboo pole walk ropes from junk to junk working his way from launch to his home. All boats look as though they will sink or be inundated any minute.

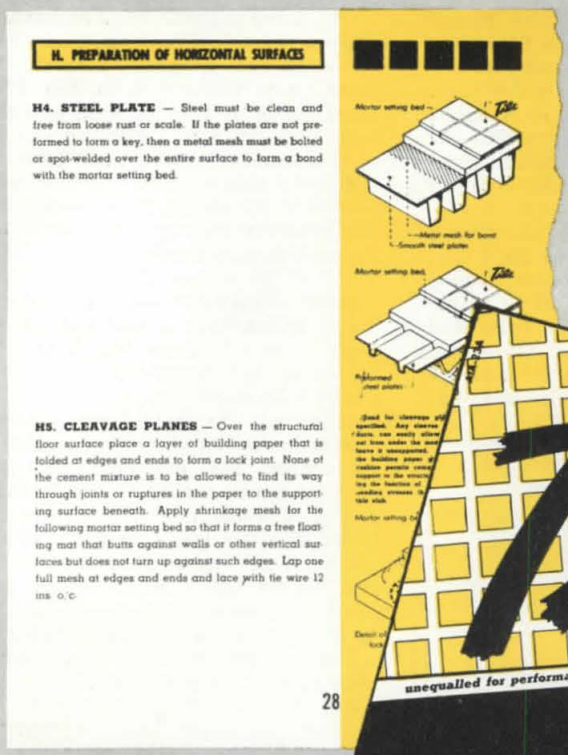
●

Set out in taxi for Prince Tongyai's, equipped with street number. Bangkok must have been a beautiful city at one time. Broad avenues plus canals, with large houses set well back from the street. In the last 20 years, however, shacks, hovels, commercial and backyard industrial "enterprises" have cluttered up the areas formerly open. As a result, had a terrible time finding the place, down a long and unkempt alley.

When finally found, the toot of a horn brought the gateman running. Inside, to my surprise, were liveried servants. A little girl came to the door with a big China tray on which I slapped an office card, then accepted her invitation to be seated. Soon, there descended the stairs a gentleman who could not possibly have been my contemporary at Cornell, as Tongyai was supposed to have been. He was small, but stocky, elderly, and dressed in a purple sarong and a white, high-necked jacket fitted with gold and colored enamel buttons.

(Continued on page 118)

SAMPLE PAGES OF NEW 48 PAGE TILE HANDBOOK



H. PREPARATION OF HORIZONTAL SURFACES

H4. STEEL PLATE — Steel must be clean and free from loose rust or scale. If the plates are not preformed to form a key, then a metal mesh must be bolted or spot-welded over the entire surface to form a bond with the mortar setting bed.

H5. CLEAVAGE PLANES — Over the structural floor surface place a layer of building paper that is folded at edges and ends to form a lock joint. None of the cement mixture is to be allowed to find its way through joints or ruptures in the paper to the supporting surface beneath. Apply shrinkage mesh for the following mortar setting bed so that it forms a free floating mat that butts against walls or other vertical surfaces but does not turn up against such edges. Lap one full mesh at edges and ends and lace with tie wire 12 ins. o/c.

28

F. PREPARATION OF VERTICAL SURFACES

F5. METAL LATH OVER WOOD STUDS OR FURRING — For members spaced not over 16 ins. o/c use flat rib metal lath weighing 3.4 lbs. per sq. yd., or wire lath made of 18 gage wires having 2½ meshes per inch; or sheet lath weighing 4.5 lbs. per sq. yd. For members spaced not over 12 ins. o/c use any of the foregoing types; or flat expanded lath (diamond mesh) weighing 3.4 lbs. per sq. yd., or wire lath made of 2 gage wires having 2½ meshes per inch. Apply metal lath with long dimension of the sheets at right angles to the wood members so that no bulges will occur when the scratch coat mortar is applied. Ends of sheets must occur at bearings but not to line with jambs or heads of openings. Butt flat rib metal lath at internal corners and apply cornerite. Bend flat expanded lath into corners with end of sheet started at least one stud or vertical furring strip away. Secure lath on the line of bear- with nails or staples 6 ins. o/c driven into the wood of 1 in. before bending over. Lap ends Tie lath once between each

ETAL STUDS — For . o/c use flat rib metal d.; or wire lath made of shes per inch; or sheet yd. For members spaced any of the foregoing types; ond mesh) weighing 3.4 lbs. ade of 20 gage wires having ply metal lath with the long t right angles to the steel mem- that no bulges will occur when is applied. Ends of sheets must

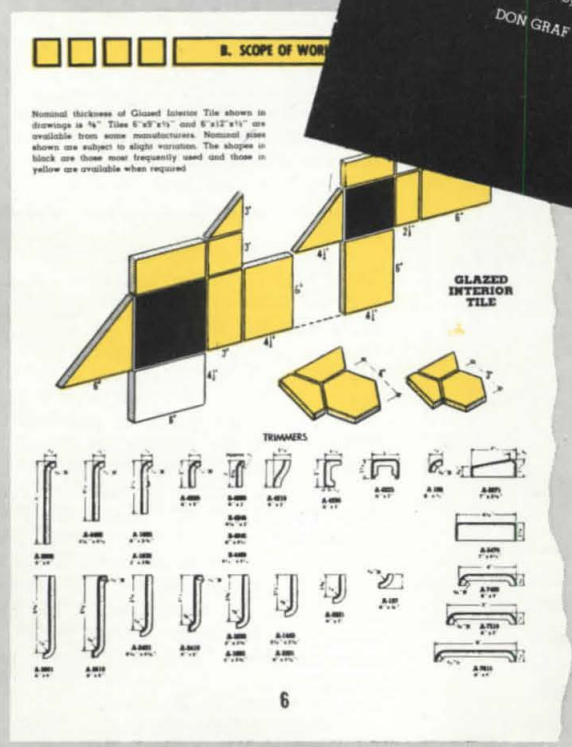
Flat Expanded Metal Lath

Flat Rib Expanded Metal Lath

Flat Sheet Lath

Self-furring Lath

23



B. SCOPE OF WORK

Nominal thickness of Glazed Interior Tile shown in drawings is ¼". Tiles 6"x6"x½" and 6"x12"x½" are available from some manufacturers. Nominal sizes shown are subject to slight variation. The shapes in black are those most frequently used and those in yellow are available when required.

GLAZED INTERIOR TILE

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6

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(Continued from page 116)

I explained that there had been a mistake, but promptly got into a confab on the relation of Cambodian to Siamese culture and architecture. He was most kind, affable, and distinguished. Seemed humble but cultured and "courtly" in the finer sense.

He offered to take me through "The Palace" the next morning. I asked "What Palace?" He said "The Main One." I suggested that I might get a guide rather than bother him, but he insisted it was no trouble at all. "I'm going down in the morning anyway," he said, "My office is down there." He introduced me to his charming wife and we left the house simultaneously.

Picked up Princess Prem and proceeded to the Indian Embassy reception where I indulged for the first time in a vast variety of Indian sweets under a great canopy erected on the lawn. I was introduced to dozens of V.I.P.'s, mostly diplomatic representatives or important members of the Indian community which is very extensive in Bangkok.

Suddenly came upon my old friend in the purple and white, whom I had just left, and to whom I now needed no introduction, much to Mrs. Puruchatra's amazement. After a brief and pleasant chat, she took me aside and asked how I knew him. I explained the circumstances, upon which she explained that I had barged in on the President of the Privy Council, currently King Regent of Thailand. (He prefers Siam to Thailand, since the latter combines a good Siamese word meaning "freedom" with the English word "land"). She pointed out that I couldn't have a more able guide, since he is a learned scholar and knows more about the palace than any living man. Subsequently found that he commands the greatest respect of everyone who knows him. His name is Prince Dhaneivat, but he is usually called "Prince Dhane" (pronounced almost like Tiny) which sounds like my first pronunciation of Tongyai. The Prems knew the latter quite well and promised an introduction.

Many of the guests were going to one or more weddings since this was the season. Met one charming elderly gent who was performing a traditional rite at one ceremony. Since he had a reputation for life-long faithfulness to his wife, he was to sleep in the bridal bed before the newlyweds, to induce them to follow his example. He must be in great demand; and I should think a little blind, considering the appearance of the Siamese girls.

•

Among other interesting people, met Igor G. Usatchev, the Chargé d'Affaires of the Russian Embassy—my first opportunity to talk with someone from the U.S.S.R. He spoke pleasantly enough, but in spite of my conscious attempt to be complimentary, I felt rebuffed repeatedly. He spoke such excellent English that I wondered when he had studied in England or America. He explained that the Moscow school system was the best in the world and that he learned all his English in Moscow.

In describing my observations of urban living conditions, I mentioned that I could find examples of slums in the U.S. similar to those in Hong Kong and Bangkok, but that they were not at all extensive by comparison. I supposed that every city in the world had its slums. He was quick to point out that "There are no slums in Moscow." I did not take exception to this, but pointed out that he sounded exactly like the President of the Los Angeles Chamber of Commerce, who periodically makes the same remark about my city, simply because he has never seen the slums. He was firm in his conviction that he knew every inch of his city, had been born in Moscow, walked every street of Moscow, and "There are no slums in Moscow."

I must admit that this could very well be, but I expressed a genuine interest in seeing for myself. After all, that's our objective at home, and it could be attained very quickly if we applied our resources to the problem. He explained that it was very easy to see; all I had to do was apply for a visa. Decided to take a rain-check, but expressed regret that there is not more direct exchange of information and culture between our countries. He men-

(Continued on page 122)

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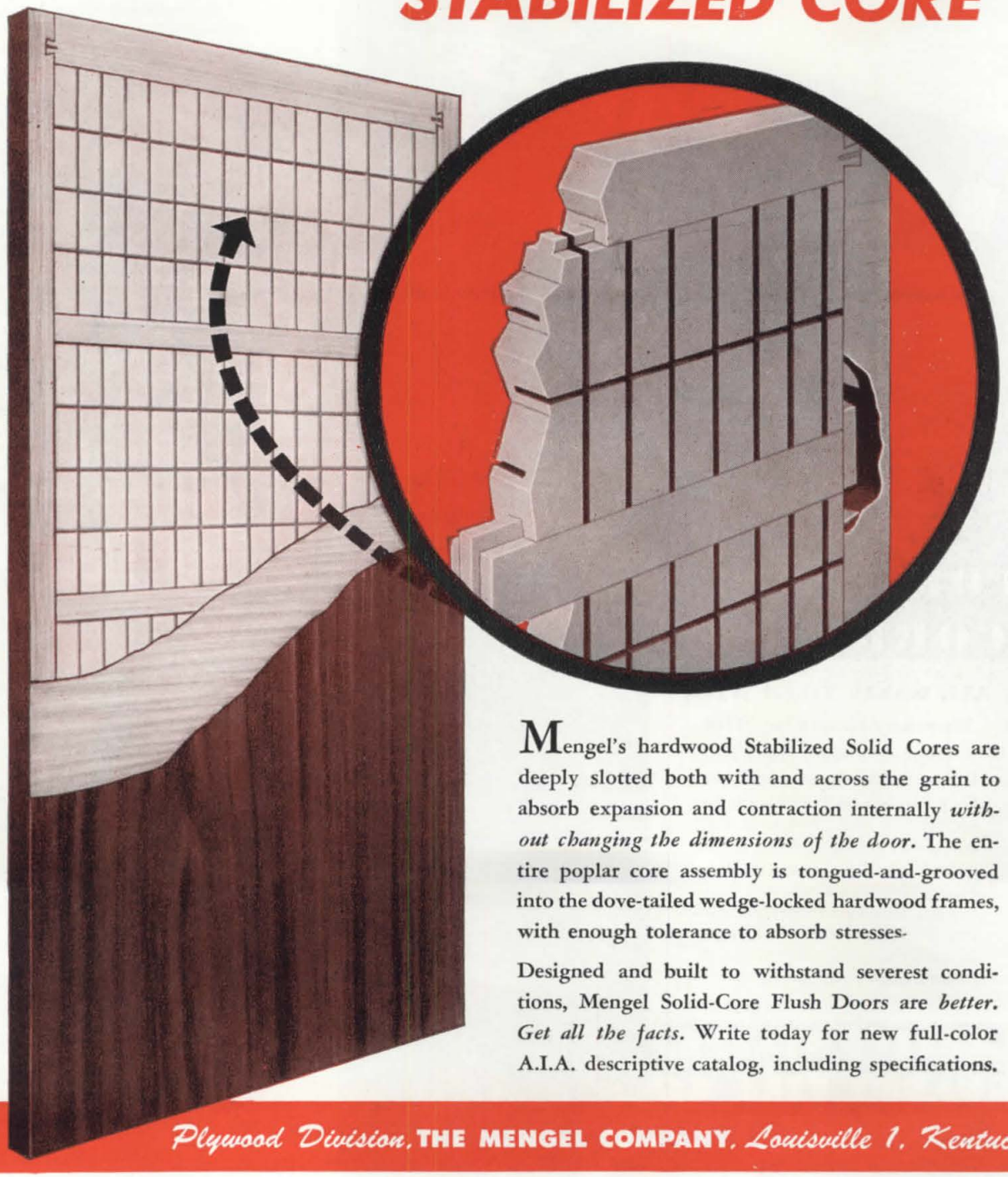

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(Continued from page 118)

tioned the many American books they had translated into Russian, naming a *half dozen* authors in rapid succession. I noted that each author was a critic of our contemporary society in the U.S.A. and asked if there was similar Russian literature which we could read in English. I was informed that *Pravda* is printed in English, and that it criticizes Russian society constantly. I felt ignorant on the subject, and somewhat frustrated in trying to learn.

•

Next morning off to the Palace with Prince Dhane, who is also president of Siam Rotary and was taking a visiting Rotary official also. No special treatment until we arrived at inner gate where the bowing and scraping began. During the tour when he had occasion to speak pleasantly to one of the many servants, the poor person addressed would fall flat on his face on the floor with his rear elevated in what I found later was the traditional court position.

Even the portions and buildings done in old Siamese style were only 170 years old, but the technique is extremely fragile. All forms are covered with an asphaltic mastic, to which a vast mosaic of tiny glass fragments is stuck. The buildings are under continuous repair and restoration, so we could see a family of glass cutters working on the mosaic. The humid weather plays havoc with all sorts of paints, etc., so that even intricately decorated doors had to be redecorated constantly. Same for murals. Our escort took us on the routine tour and also into rooms which we later learned were closed to the public.

The interiors of assembly halls were the most impressive. Also the "Emerald Buddha" in the temple. The head is one great piece of beautiful green jade beautifully carved. Temple itself loused up with an accretion of gifts, much to Dhane's disgust. Throneroom very swell complete with nine-tiered canopy used only at coronations.

Beautiful and delicate Siamese architecture in contrast to elephant mounting platform and central building in grotesque neo-classic design. Carefully cultured trees decorative and charming. Effect of profuse decoration dazzling but not cloying as I had expected. Over-all patterns melt into rich but simple background, sculpture or other accents still stand out.

•

At night, Bulsaras graciously took me to dance conducted by Siamese Association of University Women as benefit for scholarships for women to study in U.S.A. Tried dancing what sounded just like Sambas but found step difficult. Discovered ours came from Brazil; theirs from Philippines. Ours slides to side; theirs front and back.

People kept saying "I wish they'd start the Ramwong" which meant nothing to me until they finally did at 2:30 a.m. Contemporary Siamese music to the Samba beat and a contemporary country folk-dance introduced into Bangkok during the war. Ramwong means "Circle Dance." Each coupe disengages, dancing around each other using the hand motions of the famous religious temple dances. All Siamese double jointed and all girls have practiced bending their fingers back to their elbows since they were three. The entire group of circling couples moves around the floor in a galaxy of little suns and moons. The music is blood-chilling and the singing haunting. What a thrill! Tried it, but to little effect. Fingers too stiff and short. Siamese fingers twice as long and half as thick.

•

Next day called on An Nimmanahaeminda, B. Arch., M. Arch., M.C.P., Harvard, who teaches at university. His regards to Catherine and Bill Wurster. He had set up fine exhibit of students' work for me. Introduced fellow professor, B. Nikrodhananda, Cornell Arch. Doing very interesting work in design of hospitals, houses, communities, etc. Much more alive than other schools I have seen in the East!

Finally got under way to airport. Dinner on plane not as bad as Hong Kong—Bangkok, but terrible. Arrived at Calcutta to find the air as cool as a Los Angeles midnight. Dear old Inja —at last!

Love to all—Bob Alexander

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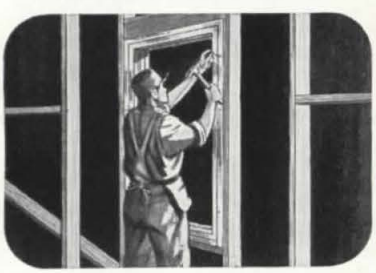

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By CARL FEISS*

"Be it ever so humble, there's no place like home." John Howard Payne

"Well, if yer knows of a better 'ole, Alf, go to it." Bruce Bairnsfather

Is house design architecture? Is home building architecture? Are architects who design houses, home builders? Are home builders who design houses, architects? If you train young architects who will build houses, to design houses; why shouldn't you train young home builders who will build houses, to design houses? I get fuzzier and fuzzier about the nuances of this thing. Why is an architect who designs and builds small houses, not a home builder? Why can a home builder buy a set of architectural drawings from an architect? Does a home builder lose caste when he builds duplexes, row houses, apartments? Does he use architects? Does he like architects? Vice versa?

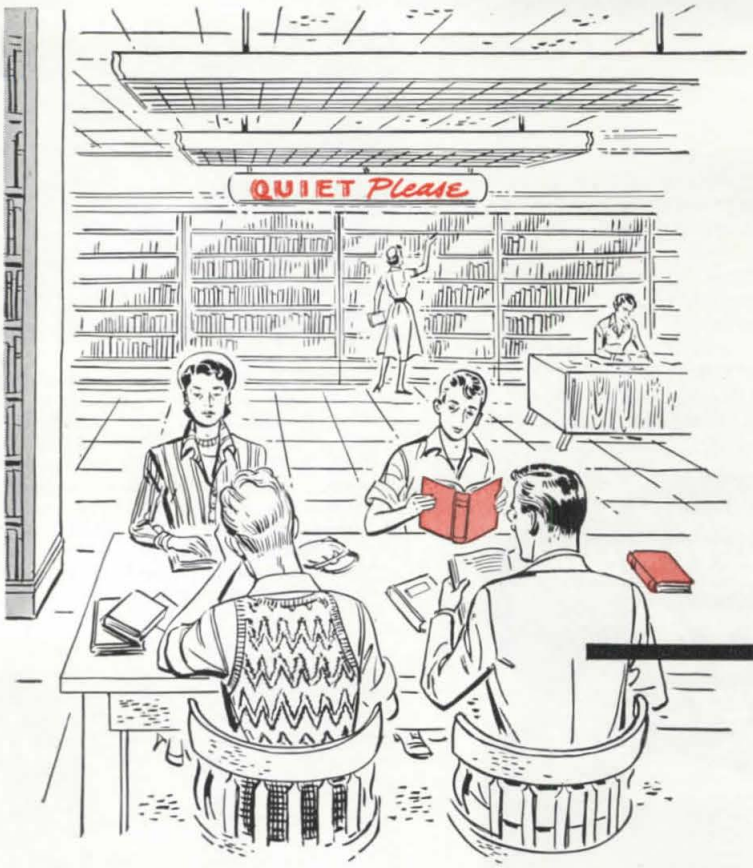
•

Twelve years ago, Arthur Hood, now editor of *The American Lumberman* and *Building Products Merchandizer Magazine*, then vice president of Johns-Manville Corporation, in charge of education, held a series of meetings with university personnel to explore methods of training young Lumber Dealers and Home Builders (capitalizing mine) to perform a better service and improve the business and industrial methods of the backward home and light-construction industry. Art's idea was a sound one. The business of building had been disorganized and anything but progressive. Hood traveled around the country sounding out various faculties to find out where interest might be aroused and to what extent the industry itself would be behind the college training of its members. To the best of my knowledge, only three architectural schools showed any interest, although several colleges of business administration did — as at Wisconsin, Denver and New York University. Also, a number of junior colleges and schools of forestry developed curricula. All in all, and my figure may be off, I believe that Hood's idea generated about eight full-fledged four-year courses. Probably, no one has checked all these recently.

The building business did not respond to any marked degree, although many of its members, when contacted,

(Continued on page 126)

* *Former Director of the School of Architecture and Planning in The College of Arts and Sciences at the University of Denver, served for four years simultaneously as Director of the Department of Building Industry and Real Estate (which he also founded) in the College of Business Administration in the same institution.*



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Makers of Certified Ballasts for Fluorescent Lighting

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out of school

(Continued from page 124)

were enthusiastic about the idea. Of course the building business itself has great difficulty in co-ordinating itself. The major groupings in the business have such a wide scatter-pattern of central interest with many overlaps. Just concentrate for a brief moment on the distinctions (if any) between the operations of the real-estate dealers, lumber dealers, home builders, contractors. All four of these have strong national organizations with many state and local chapters. (Any architect invited to a meeting of the local Hoo-Hoo Club can consider himself highly privileged. I wonder how many of you know what this strange-named bird is.) While these organizations maintain strong secretariats and both membership and political programs, the differences in function and business activity of their members is hard for the layman to distinguish. It is the rare builder who does not handle real-estate. Throughout the country, more and more real-estate dealers build or act as their own contractors. Many lumber dealers handle both the real-estate and contracting parts of a job while selling lumber and equipment. Today, lumber is seldom more than 30% of the inventory of a "lumber company." It is the rare contractor who doesn't serve from time to time in any of these other capacities. Now, add to the confusion the special interests of the equipment and materials fabricators and their highly specialized national organizations. Then there is organized labor — both A.F. of L. and C.I.O. — and their local building trades councils; and, at the other end, the mort-

(Continued on page 128)

Full concrete foundations for bearing walls of each house and exact quantities of lumber stacked at each site (above) attest the efficiency of production of Lakewood Park, $250-millions project in Los Angeles designed by Skidmore, Owings & Merrill, architects, New York and Chicago, and Albert C. Martin & Associates, architects, Los Angeles, for Prudential Insurance Company. On 3500 acres, 17,500 houses are to be built, served by shopping centers strategically placed.
Photos: W. A. Garnett

a sod roo_ —modern version

...with an assist by Ruberoid

OWNER: Lowell E. Walter, Quasqueton, Iowa
ARCHITECT: Frank Lloyd Wright
BUILDER: Kucharo & Assoc., Des Moines, Iowa
ROOFING CONTRACTOR: Powell Roofing Co., Cedar Rapids, Iowa

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When seen from the hill above, this roof appears as a pleasant grass terrace—happily wedded to the surrounding slope. Besides the design and landscaping appeal, this type of roof provides factors comparable to the effects achieved by water-cooled Ruberoid Built-Up Roofs (See diagram).

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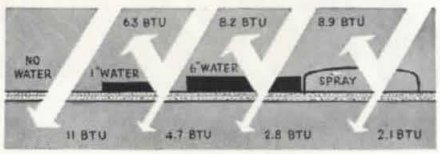
The relative cooling effect of a roof pool, graphically demonstrated in this diagram, will also give some indication of the effects of a moist garden roof. The pool depends primarily upon reflection or water evaporation for effectiveness. Based on controlled scientific tests, the chart shows that water in any form is an excellent barrier to solar radiation.



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out of school

(Continued from page 126)

gage bankers, the insurance companies, the municipal officials charged with building code and zoning responsibilities, and the FHA. In passing, I should mention that architects sometimes have an interest as well. No wonder Art Hood had trouble getting a strong or continued interest from the Building Industry. It is just too hard to find where it heads up.

•

The late Sir Raymond Unwin, at one time Chief Housing Architect for the British Ministry of Health, president of the R.I.B.A., and famous town planner, was interested in this problem. Back in 1937, when he was lecturing at the Planning and Housing Division of the School of Architecture at Columbia University, I treasured a remark. Sir Raymond was in his early 70's at the time. "If I had to do it over, I would start teaching the jerrybuilders some standards. You will never achieve high standards of architecture in your country or mine until you get the jerrybuilder to want to build better houses and until he himself wants to stop ribbon-development."

Sir Raymond often discussed how you would train the home builder in England, and one evening at his home in Wyldes at the edge of Hampstead Heath, we discussed the matter late into the night with three successful London speculative builders responsible for much of the bad stuff in the Hampstead area. This was in July 1937. I remember the large story-and-a-half living room in the 300-year-old house and the welcome fire in the big fireplace. Lady Unwin was sitting by the fire knitting something blue and making pungent remarks on finance and building law, all the time looking like some child's faery godmother with the firelight in her snow white hair. Under the gentle whip-lash of Sir Raymond's facts and figures and the brittle little remarks of his Lady, the three saucy burghers wilted and blushed. The logic behind Sir Raymond's booklet *Nothing Gained by Overcrowding* and the circumstantial evidence of crimes against social laws and civic order was damning indeed.

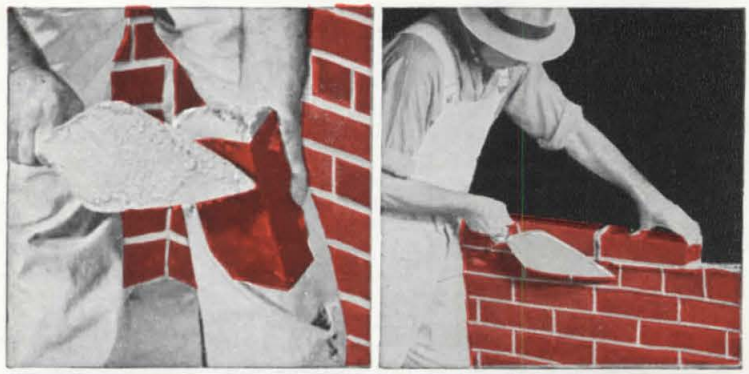
The upshot was, that Sir Raymond would organize a series of lectures before various building societies and trade-union groups, on training for better speculative building and raising the standards of commercial house design and construction. While some lectures were given, Sir Raymond was unable to follow through with the idea; but he and Art Hood were talking of the same thing at about the same time.

•

The young man or woman interested in home design and construction faces

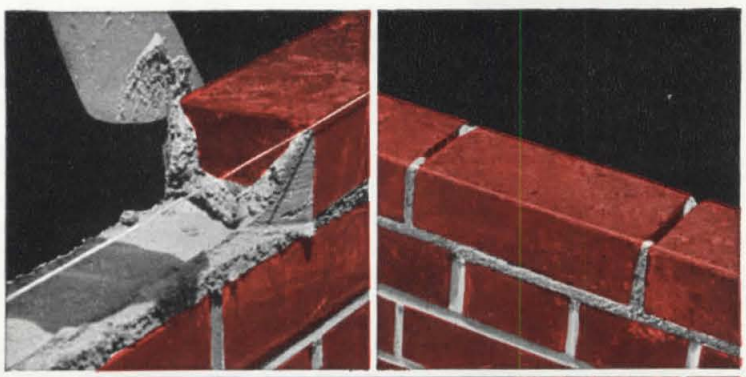
(Continued on page 130)

GOOD BRICKWORK = GOOD DESIGN + GOOD WORKMANSHIP + GOOD MATERIALS



GOOD WORKMANSHIP

Plenty of mortar should be thrown on the end of the brick to be placed. The brick should then be pushed into place, so that mortar oozes out of the head joint.



POOR WORKMANSHIP

When dabs of mortar are spotted on the corners of the brick, the mortar does not completely fill the head joint, and voids are still left.

FULL HEAD JOINTS, WITH BRIXMENT, HELP PREVENT LEAKY WALLS

WE SUGGEST THAT—

All head joints in both face brick and back-up work should be completely filled with mortar. If head joints are not completely filled, water may penetrate to the inside of the wall through openings in the joints. *Dabs of mortar spotted on the corners of the brick are not nearly enough to fill the joints.*

Take a look at the two examples shown at the left, and you'll instantly see why full head joints are an essential part of *good workmanship* in bricklaying.

No mortar material alone, not even Brixment, can make watertight masonry walls, so long as open crevices and pockets are left in the mortar joints.

Brixment mortar makes it far easier for the bricklayer to do good work. It is smooth and plastic — so soft and workable that the bricklayer can use enough mortar to fill the joint, and still "place" the brick easily and accurately to the line.

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out of school

(Continued from page 128)

a curious dilemma. The architectural schools do not specialize in the subject. In order to learn house design, materials, equipment, furnishing, and landscaping, the student must take a general architectural course covering all building types from skyscrapers to houses. He seldom, if ever, gets a course in financing, housing codes, labor relations, or federal housing law. Usually, in four or five years of design, he is able to get a couple of licks in at house planning. Occasionally he gets into a national home design competition and may even make a killing. But fairly early, particularly if he is lucky enough to get an office job during schooling, he learns that for the average architectural office, designing small, speculative houses does not pay. The architect's fee system hardly covers the overhead and never covers the headaches.

This is the point where the student and the teacher and the university stop. Now let me use a specific illustration to make my point.

Alfred Levitt, a small-house designer for large-scale speculative housing projects, makes a success as part of a merchant builder enterprise. At the same time he leads in progressive architectural design for large scale, mass-produced homes. He is not an architectural school graduate, although an architectural designer, and is co-owner in a building business firm. Twelve years Mr. Levitt's junior is Bruce Walker, architectural student at Harvard and winner of the N.A.H.B. —*Forum* House Design Competition (the word *Forum* by some is considered obsolete). There is no major design or other distinction between the Walker house designed to 1000 sq. ft. and $11,000 limits and Levitt's "Landia" house designed also for mass production at 1200 sq. ft. and $11,800 net.

Question (and being absolutely objective): Can the architect showing equal competency with the designer-builder, perform as an architect in satisfactory competition with the merchant-designer-builder, performing as a merchant builder? You answer that one!

The first question the head of an architectural school or an architectural alumnus asks is: "Is it the function of a professional school to train for the business of building? Isn't the training for the light-construction industry or for home building a vocational type course?" It is a valid question, under our present highly restricted educational system. I mention above some part of the weird complex we find facing our light-construction industry. The solution to irrational situations should be rational planning for sound solutions. Apparently the industry has not succeeded and is not trying too hard. I can see no reason why the job isn't one for the academic brain cen-

(Continued on page 132)

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By TED KAUTZKY

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—All told in a friendly, conversational way by Ted Kautzky! The *Journal of the American Institute of Architects* said about the author: ". . . in the last decade the list of prizes awarded his water colors has grown to arm's length. His genius is of that rare variety which includes the ability to teach . . . through the printed page." WAYS WITH WATERCOLOR is used as a textbook in the *Pratt Institute, University of California* and many other well-known schools. It combines in one large, beautifully-illustrated volume —at last!—the secrets of Kautzky's creative teaching and of his prize-winning technique.

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TED KAUTZKY'S paintings have won 13 awards in Europe and the United States. He has conducted his own school, taught at Pratt Institute in New York City, lectured at several universities. Beside WAYS WITH WATERCOLOR, he is the author of two best-selling art books, PENCIL BROADSIDES and PENCIL PICTURES.

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out of school

(Continued from page 132)

Housing by Miles Colean, (Twentieth Century Fund). Departments of public administration, government, and political science have many courses on municipal administrative management including analysis of the functions of the offices of the building department, the zoning board, and the planning commission. State and federal housing legislation is also studied. Building codes and other ordinances are discussed from the administrative angle both here and in schools of law. The latter now have available the new and invaluable legal casebook *Property, Wealth, Land: Allocation, Planning, and Development* by Professors McDougal & Haber of Yale University (Michie Casebook Corp.), which devotes extensive attention to local and federal housing law, city planning, zoning, regional planning, codes, etc.

The field of housing research has also invaded the campus. It does not always center in the architectural school although there are sometimes close associations. The Housing Research Center at Cornell is jointly administered by Dr. Glenn H. Byer, Professor of Housing and Design, with Dean Mackesey of the architectural school as Associate Director. The Cornell Housing Research Center maintains a close liaison with the parallel Cornell Social Science Research Center. However, in other institutions, as at Illinois, with its "Small Homes Council," the relationship is somewhat more obscure. Many schools and colleges of engineering are carrying on research into house materials testing and construction testing without the benefit of intercommunication with the architectural faculty.

Here my case rests. Home building both in the wide and wicked world and in the cloisters is obviously disorganized. On the campus, a wide open field for liaison and intercommunication on common problems is being neglected, except in rare instances. The China Walls around departments and around the minds of department heads seem all but insurmountable. And yet if we are to improve the living conditions of the American people, make advances in housing and community design, and solve our multitude of housing problems we must educate to meet the multi-purposes and multi-interests within the problem. Again, the architectural school, in its self-satisfaction and provincialism, has, by ignoring its responsibilities as a potential campus leader, forfeited its birthright.

Sir Raymond Unwin was right and we are wrong. All we have to do is to look at what is happening in the new developments around all our cities without benefit of architectural understanding. And, gentlemen, it is architecture that is a building whether you like it or not.

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a new photographic intermediate material that speeds up print-making . . . drafting

30% *more translucent* than "regular" Autopositive —for faster quantity-print production

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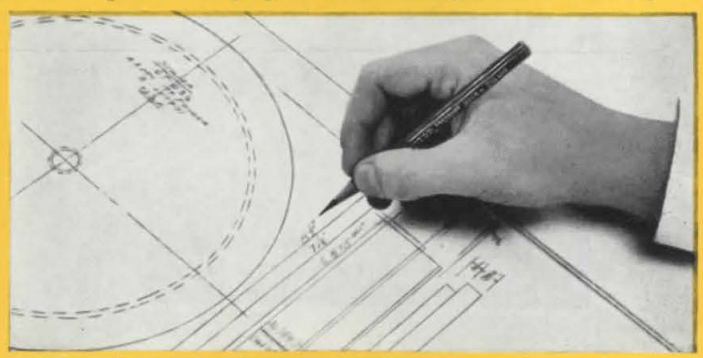

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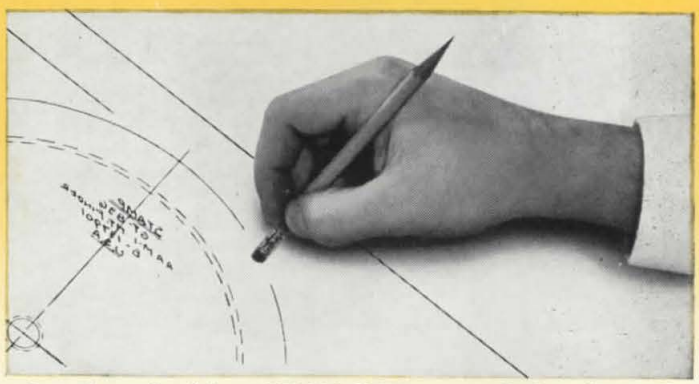

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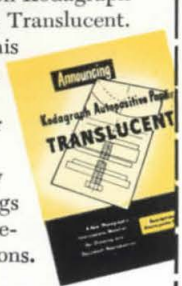

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By BERNARD TOMSON

With many categories of private work slowing up due to defense restrictions the subject of Tomson's column this month—fees for public works—becomes of unusual importance. EDITOR

There is something more than a suspicion that an increasing tendency exists on the part of some agencies, by one device or another, to reduce architects' net fees on governmental projects.

One expedient is to use an arbitrary pricing period (January 1950, for example) at which costs are to be estimated. Under contracts which base the architect's fee on a fixed percentage of the estimated cost, arbitrary choice of such a low-cost period will cut the architect's fee considerably. It is reasonable to assume that when general construction costs rise, the architect's own expenses rise correspondingly. At a time when such costs are at their highest levels, arbitrary selection of any earlier period for determining the estimated cost of a project will result in a marked disparity in the ratio between the architect's outlay and his financial return. While the architect's compensation lags behind the price trend, his expenses rise with every increase in cost of labor and materials.

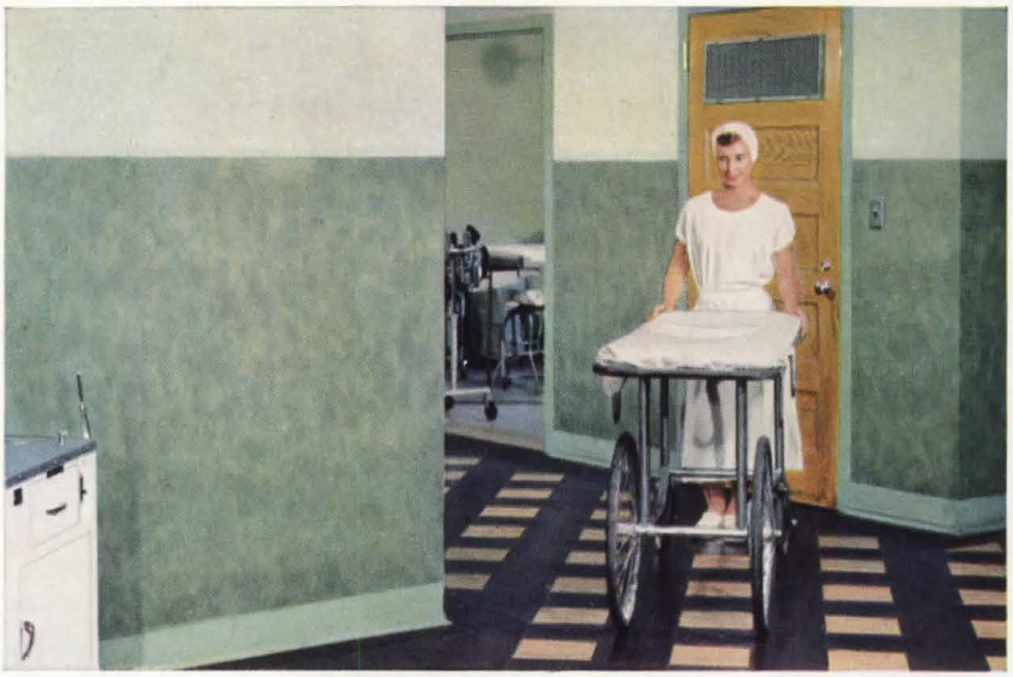
•

The situation prevailing in one of the largest states illustrates this inequity, from the architect's point of view. Roughly described, one form of contract used in that state for substantial building projects stipulates as the architect's fee a certain percentage of the estimated cost of construction. The contract provides that the architect's estimates shall be based upon the prevailing rate of pay and material costs in effect June 1, 1950 in the area of the proposed construction. Thus, an architect employed in 1951 will have to contend with 1951 prices in paying the expenses he incurs in carrying out the project—but his compensation will depend upon costs prevailing in June 1950. No economic data are required to establish the fact that prices have risen sharply since June 1950; and that anyone who must face a 1951 overhead while his earning capacity remains at the June 1950 level will find himself at an unhappy disadvantage.

The above-described form of contract is similar to one employed by the state for projects undertaken at the end of the war. In the earlier contract, however, the estimated cost of construction was based upon 1940 prices, increased by 50%. Again, this arbitrarily selected period bore no substantial relation to construction costs prevailing in the years 1947-1950. Yet, owing to the disparity in costs, architects employed under this form of contract were compelled to accept less than the usual and customary return for their services obtained under private contracts.

The schedule of fees set forth in the

(Continued on page 140)



Above: St. Vincent's Hospital, Bridgeport, Conn. Green Kalistron wainscoting. Architect—Fletcher Thompson, Inc.

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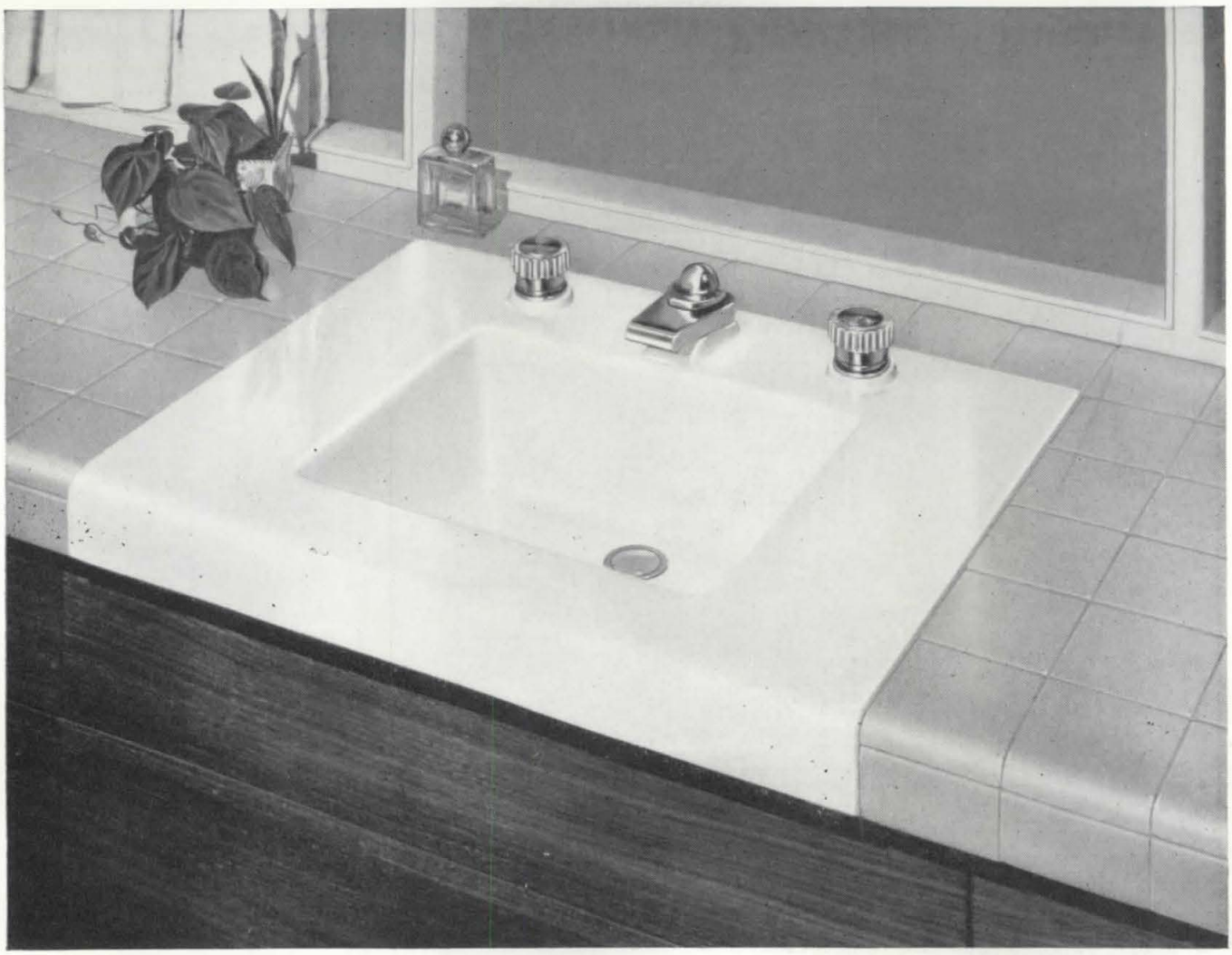

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(Continued from page 136)

earlier contract was as follows (no supervision required of the architect):

Estimated Construction Cost			*Fee*
Under	—	$ 70,000	6.0%
$ 70,001	—	90,000	5.9%
90,001	—	110,000	5.8%
110,001	—	130,000	5.7%
130,001	—	150,000	5.6%
150,001	—	170,000	5.5%
170,001	—	190,000	5.4%
190,001	—	210,000	5.3%
210,001	—	230,000	5.2%
230,001	—	250,000	5.1%
250,001	—	300,000	5.0%
300,001	—	350,000	4.9%
350,001	—	400,000	4.8%
400,001	—	450,000	4.7%
450,001	—	500,000	4.6%
500,001	—	550,000	4.5%
550,001	—	600,000	4.4%
600,001	—	650,000	4.3%
650,001	—	700,000	4.2%
700,001	—	750,000	4.1%
Over	—	750,000	4.0%

The schedule of fees set forth in the 1951 contract is the same as the above, until the $750,000 estimated cost level is reached. For projects whose estimated cost is in excess of this sum, the new contract provides a further gradual reduction of fees. The schedule continues as follows:

Estimated Construction Cost			*Fee*
$ 750,001	—	1,000,000	4.0%
1,000,001	—	1,500,000	3.9%
1,500,001	—	2,000,000	3.8%
2,000,001	—	2,500,000	3.7%
2,500,001	—	3,000,000	3.6%
3,000,001	—	3,500,000	3.5%
3,500,001	—	4,000,000	3.4%
4,000,001	—	4,500,000	3.3%
4,500,001	—	5,000,000	3.2%
5,000,001	—	5,500,000	3.1%
Over	—	5,500,000	3.0%

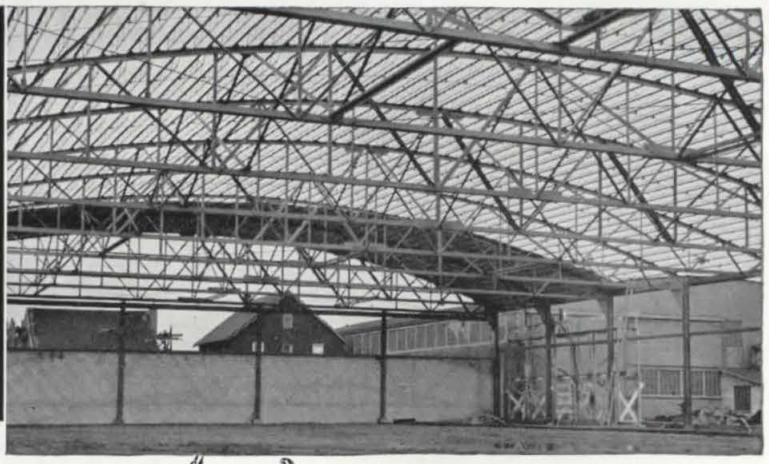
Thus, for projects where the estimated cost is anywhere between $1,000,000 and $5,500,000 the architect's percentage fee is further reduced in inverse proportion to the cost of the project. The difference in payment to the architect under the two sets of schedules above set forth for a project may be considerable. On a project estimated to cost $6,000,000 under the earlier contract, computing his fee at 4.0% of the estimated cost, the architect will be paid $240,000; under the contract in current use, computing his fee at 3.0% of the estimated cost, he will receive $180,000—a difference of $60,000. Actually the difference may be greater because of the "estimated cost" formula.

•

Even the somewhat higher percentages referred to in the earlier contract will

(Continued on page 142)

A METHOD OF BUILDING WITH STANDARD UNITS THAT SIMPLIFIES DESIGN AND SPEEDS CONSTRUCTION



The Complete Roof Structure

Engineered By Macomber For Industrial Plant Construction

Of particular interest to the designer and contractor is the fact that Macomber standards include all types of roof framing.

Numerically, these standards include in addition to the Bowstring Truss—Flat Trusses as illustrated above left, A-Frames, High-Low Monitor type roofs and Longspan Designs.

For the owner who desires any one or combination of these designs to house his plant facilities, Macomber can give the designer and builder the production advantages of shop standards for spans—30 to 130 feet. Save time and money by specifying MACOMBER.

STANDARDIZED STEEL BUILDING PRODUCTS

MACOMBER • INCORPORATED

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V BAR JOISTS • LONGSPANS • BOWSTRING TRUSSES • STEEL DECK

it's the law

(Continued from page 140)

suffer by comparison with the percentages recommended by individual A.I.A. Chapters. It should be noted that the A.I.A. schedules are based upon complete architectural services, while the contracts above considered exclude supervision of the actual work of construction.

The schedules devised by the individual A.I.A. groups provide different rates of compensation for different types of structures, the rates varying with the complexity of the type and the degree of care and skill required in their design.

One A.I.A. Chapter, for comparable structures, has the following schedule:

Building Cost	*Rate (with supervision)*
$ 25,000	7.00%
50,000	6.75%
100,000	6.50%
200,000	6.00%
500,000	6.00%
1,000,000	6.00%
2,000,000	6.00%
5,000,000	6.00%

Another Chapter, for similar structures, has the following schedule (includes supervision):

Cost of work up to:	
$ 300,000	8.00%
500,000	7.75%
1,000,000	7.50%
2,000,000	7.25%
3,000,000	7.00%
4,000,000	6.75%
5,000,000	6.50%

The schedule of minimum rates adopted by a third Chapter provides a fee of 7.0% for similar buildings. After making the necessary adjustment for supervision, the architect still finds that his fee is far below these "minimums" because the "estimated costs" are not current costs and the percentage itself is substantially lower.

•

Another type of contract which bears critical analysis from the architect's viewpoint is that presently in use by one of our largest cities. The architect's undertaking under this contract also does not include supervision of construction. The contract provides for payment of a lump sum fee to the architect for his entire services. The fee paid is arrived at after negotiation. As a basis for negotiation, however, the "estimated cost" of the project is used. This means the cost of construction estimated by the agency at the time of the execution of the contract with the architect. The fee is then adjusted upon a sliding scale depending upon the size of the project.

It should be noted, however, that the agency is under no obligation to estimate the cost of the project on the basis

(Continued on page 144)

New MORGAN WOODWORK Designs for Contemporary Homes...

Morgan Entrance: M-14 – Door: M-117 – Window: M-3612 – Morgan Blinds

When you build your own home — this is Your Woodwork!

Architects, Builders, Dealers instantly recognize the features that give Morgan the edge when woodwork is selected. This is the kind of woodwork they like to work with. Morgan designs, Morgan construction, Morgan craftsmanship all meet the specifications of men who have a hand in the better dwellings. Morgan woodworkers never let quality yield to high production. That's why Morgan always "measures up!"

Be sure your Woodwork file is up to date — Write for Morgan Catalogs

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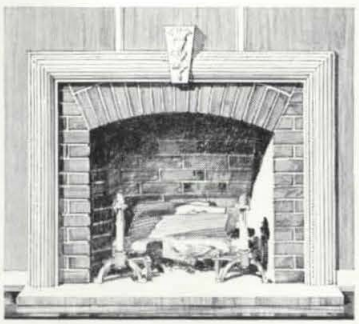
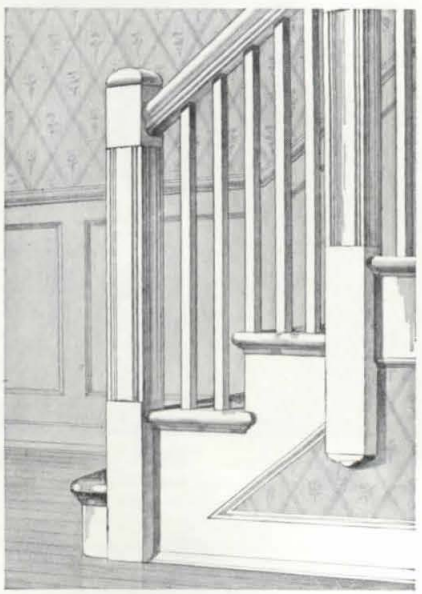


Morgan Mantel: M-1462



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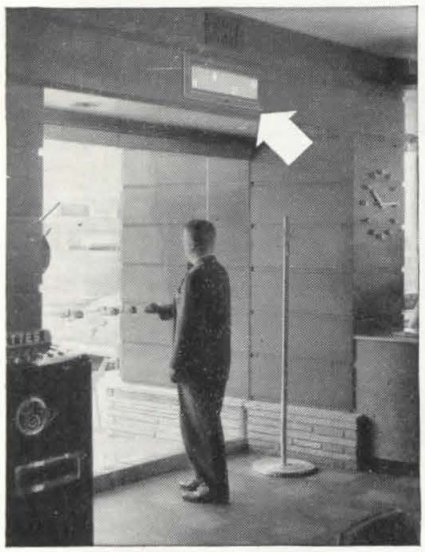
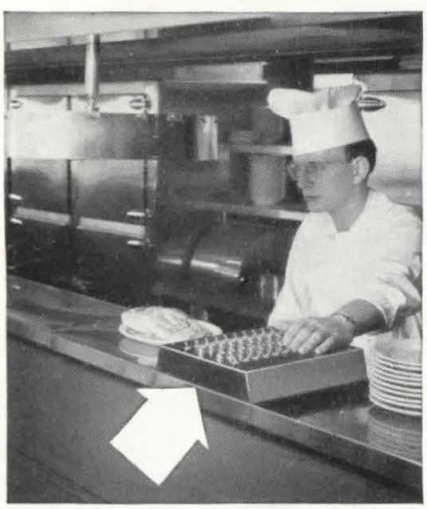


Entrance to Bob's Drive-in Restaurant in Eagle Rock, California, Type M-20 (20 number) with Chime. Cannon Annunciator over door is plainly visible to waitresses to indicate waiting orders.



Arrow points to Type RC-20J Single Pole Toggle Switch Control Unit, with Jewel Bull's-Eye Lights and Chime Ringing Buttons operated by chef as order is ready. Waitress turns off switch as she picks up order, clearing lighted numbers from annunciator.

it's the law

(Continued from page 142)

of prevailing market prices. The contract, while providing that the "preliminary estimated cost" and the "final estimated cost" are to be estimated by the architect on the basis of the prevailing market price of construction work and materials, entirely omits any criterion for arriving at the "estimated cost," which is set in advance. The architect is thus deprived of any objective measurement by which his compensation is to be determined. There will be a natural tendency on the part of the contracting officer to *under*estimate the cost. Should the proposed structure be of a type which the municipality has not erected for a number of years, the difficulty of estimating correctly the cost of any such project will be magnified. Adding to this the factor of sharply rising costs, with which all persons in any way connected with the building industry must contend, the final cost of the contemplated structure will in all probability (if recent experience is any criterion) far exceed the modest estimate of the municipality.

As was pointed out above, it is valid to assume that the architect's expenses for labor and materials will also be directly affected by the prevailing price trend. Yet, the contract specifically prohibits any adjustment of the architect's fee should the "estimated cost" be revised upward. The net result is that all contractors and suppliers are paid at current price levels. The architect is paid at an arbitrary, anachronistic price level.

The three forms of contracts which we have just discussed illustrate some of the techniques by which municipal and state agencies can effectively reduce an architect's fee below the amount to which he is entitled, according to the customary fees charged by the architectural profession for projects of similar scope. This situation affects not only those directly concerned in government projects but the entire profession, since such contracts also serve as yardsticks for private structures.

●

We would welcome correspondence on the subject matter of this column with particular reference to the following points:

1. If a fixed fee is provided, how is it determined?

2. If a percentage fee is provided, what is the scale employed?

3. If a percentage fee is provided, how is the estimate of costs determined —particularly, whether an arbitrary date is used, i.e., "1½ times 1940 costs," "June 1, 1950 costs," etc?

4. What other gimmicks are used to reduce the actual fee below the apparent fee?

The material received will be evaluated and digested. Constructive, remedial results may follow.

New Heavy-Duty Industrial Floor

by the world's largest maker of hardwood floors

TOUGH, DURABLE HARDWOODS
(Hickory and Pecan)

EXTRA THICK (33/32 INCH)
(Tongued and grooved)

TOXIK* PRESERVED
(For durability and to stop termites and rot)

INSTALLED IN MASTIC OVER CONCRETE

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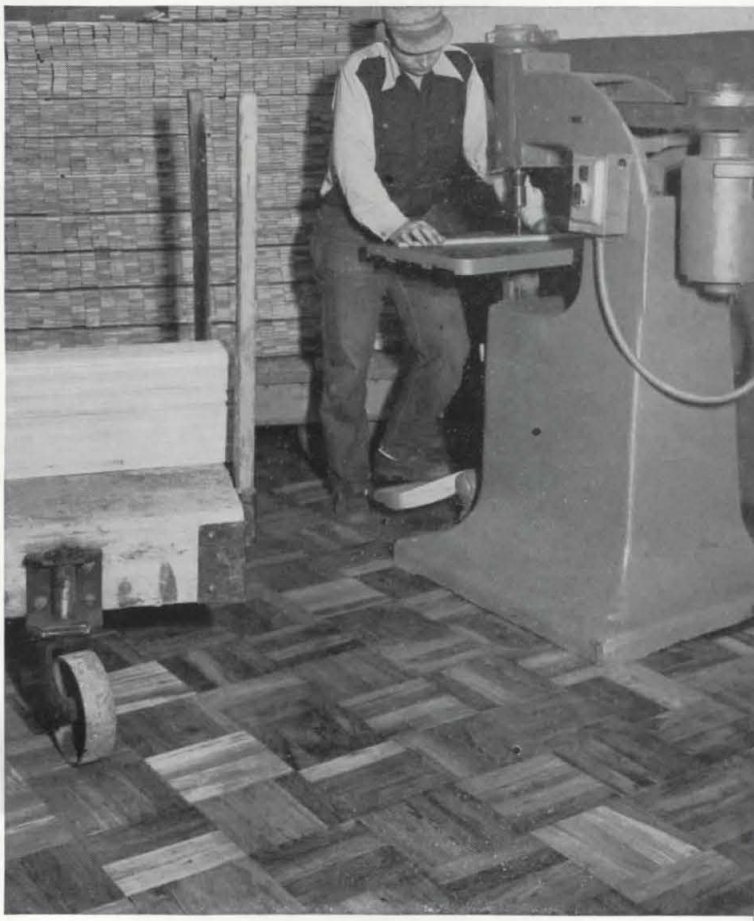


DURA-WOOD BLOCK FLOORS have big advantages for owners and workers

Durable-Economical

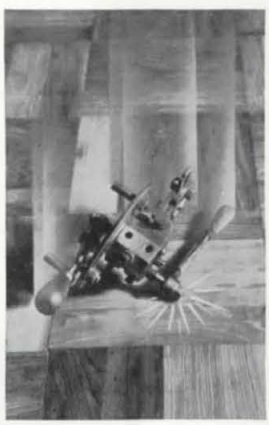
Dura-Wood Blocks are made of tough, long-wearing Hickory and Pecan . . . close grained, heavy hardwoods that resist wear and abrasion. A floor of this type will last indefinitely. It is less subject to damage than most floors, and can easily be repaired.

Simple installation

Prefabricated blocks are laid in mastic over concrete slab. No finishing is needed, as the Toxik treatment is preservative and protective. For added beauty, floor can be given a light sanding and penetrating seal finish after installation.

Less tool damage

Plant engineers report far less damage to tools and machined parts when accidentally dropped on wood floors than on concrete or other hard surfaced floors. This is often a sizeable expense item. There's less wear and tear on power trucks and other rolling equipment, too.



Less fatiguing

Workers find these hardwood floors far more comfortable underfoot—much less fatiguing than unyielding, hard-surface floors. They are warmer in winter . . . more healthful and fewer colds.

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Dura-Wood Floors don't powder or dust, thus eliminating a source of discomfort and irritation to workers. No abrasive dust to get into machines or machined parts. Simpler, less expensive floor maintenance.

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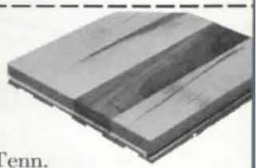
Bruce also makes 25/32" Dura-Wood Blocks and 25/32" and 33/32" Dura-Wood Strip Flooring

BRUCE **MAIL FOR SAMPLE BLOCK**



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p/a NOTICES

NEW PRACTICES, PARTNERSHIPS

BERT TUCKER & ROBERT SHIELDS, Architects, 914 Lakeview Blvd., Seattle 2, Wash., announce the formation of a new partnership as successors to TUCKER, SHIELDS & TERRY.

ROBERT N. CHAMBERLIN, Architect, 10 W. Cary St., Richmond, Va.

Announcement is made of the admission of A. WILSON KNECHT to the firm of SEELYE, STEVENSON & VALUE, Consulting Engineers.

PAUL L. BOYD, Architect, formerly with the Philadelphia Board of Public Education, is now associated with WILLIAM F. LOTZ, INC., Construction Engineers, Adams Ave. and Orthodox St., Philadelphia 24, Pa.

DANIEL D. MERRILL and CHARLES A. BRADBURY under the name of MERRILL & BRADBURY, Architects, 225 W. 57 St., New York 19, N. Y.

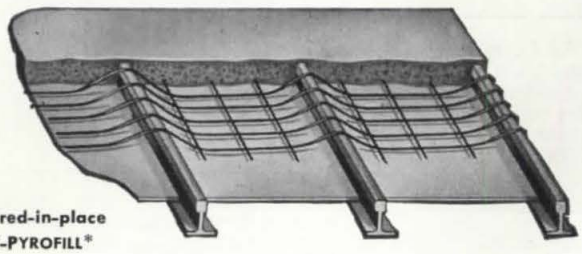
WILLIAM E. GRAHAM announced the dissolution of the firm GRAHAM & IRWIN, Architects, 2014 17th Ave., Vero Beach, Fla.

Right you'll be when you pick from 3

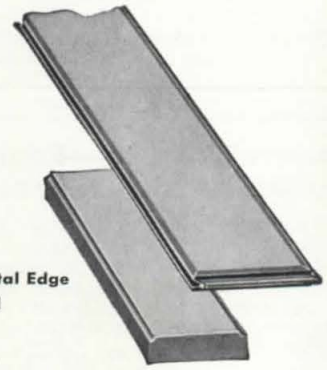
And right you'll be on your roof deck when you choose from the "U.S.G. Three" shown below. Select from: 1. Poured-in-place gypsum; 2. Precast gypsum; 3. Steel decks. Three completely different types — incombustible, lightweight, strong, quickly installed, easy to maintain.

As extra assurance of getting the right type for your job, your U.S.G. Representative will gladly help you determine what's best. Whether you're planning a pitched, flat or curved roof, he'll help you find the RIGHT answer in the complete U.S.G. line of dependable roof decks.

Get in touch with your U.S.G. Representative. See Sweets' Catalogs for complete specifications. *Right you'll be when you specify U.S.G.*



1 **USG Poured-in-place SHEETROCK*-PYROFILL* Roof Deck**



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SPECIFICATION WRITER—practical man with broad, general experience in building construction work (not mechanical). State qualifications and salary expected. Specification Department, Albert Kahn Associated Architects and Engineers, Inc., 345 New Center Building, Detroit 2, Mich.

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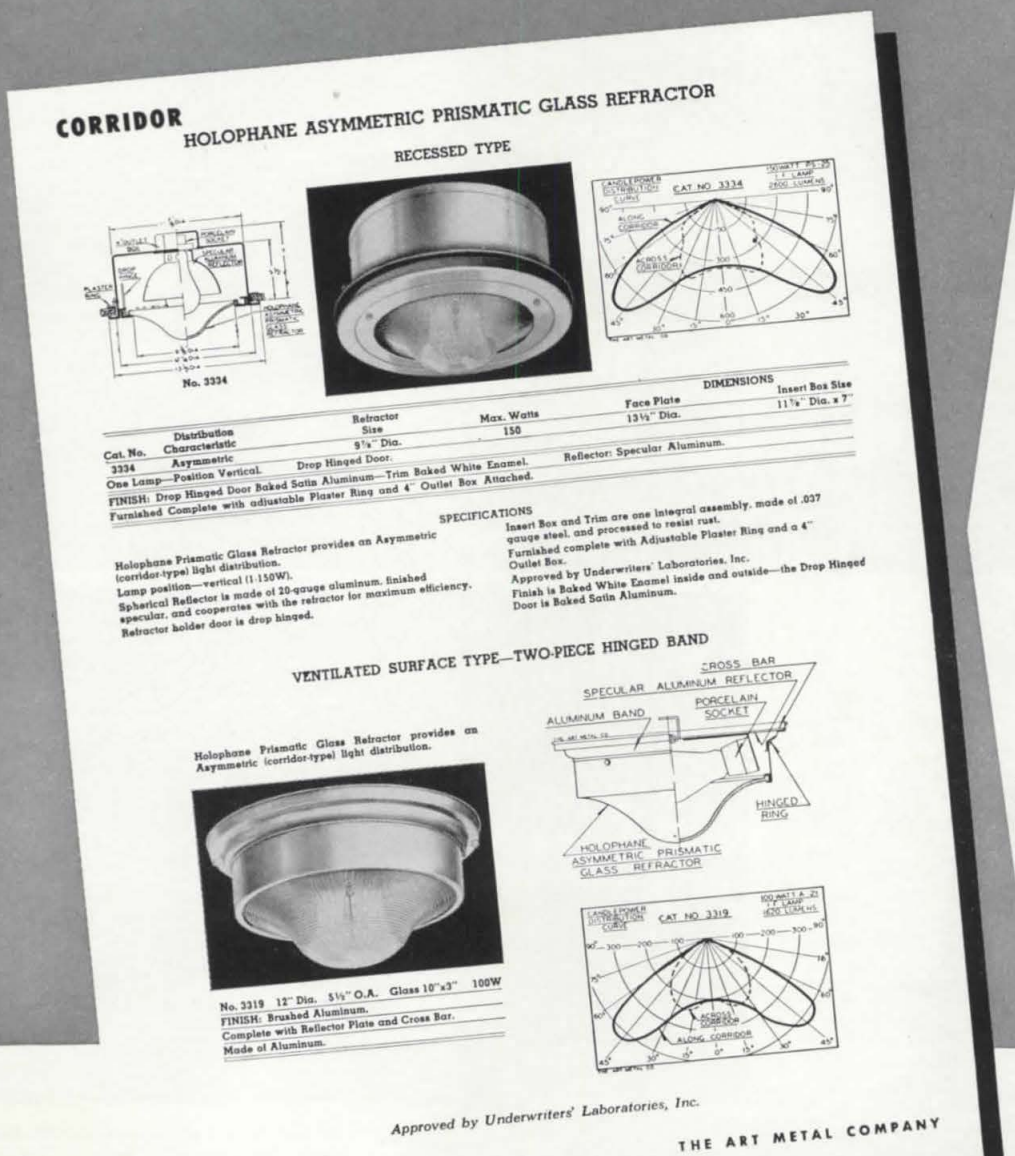

CORRIDOR HOLOPHANE ASYMMETRIC PRISMATIC GLASS REFRACTOR

RECESSED TYPE

No. 3334

Cat. No.	Distribution Characteristic	Retractor Size	Max. Watts	Face Plate	DIMENSIONS Insert Box Size
3334	Asymmetric	9⅞" Dia.	150	13½" Dia.	11⅞" Dia. x 7"

One Lamp—Position Vertical. Drop Hinged Door.

FINISH: Drop Hinged Door Baked Satin Aluminum—Trim Baked White Enamel. Reflector: Specular Aluminum.

Furnished Complete with adjustable Plaster Ring and 4" Outlet Box Attached.

SPECIFICATIONS

Holophane Prismatic Glass Retractor provides an Asymmetric (corridor-type) light distribution.

Lamp position—vertical (1-150W).

Spherical Reflector is made of 20-gauge aluminum, finished specular, and cooperates with the retractor for maximum efficiency.

Retractor holder door is drop hinged.

Insert Box and Trim are one integral assembly, made of .027 gauge steel, and processed to resist rust.

Furnished complete with Adjustable Plaster Ring and a 4" Outlet Box.

Approved by Underwriters' Laboratories, Inc.

Finish is Baked White Enamel inside and outside—the Drop Hinged Door is Baked Satin Aluminum.

VENTILATED SURFACE TYPE—TWO-PIECE HINGED BAND

Holophane Prismatic Glass Retractor provides an Asymmetric (corridor-type) light distribution.

No. 3319 12" Dia. 5½" O.A. Glass 10"x3" 100W

FINISH: Brushed Aluminum.

Complete with Reflector Plate and Cross Bar.

Made of Aluminum.

Approved by Underwriters' Laboratories, Inc.

THE ART METAL COMPANY

Page 36

This page of CORRIDOR LIGHTING is one of many specific lighting types

Explicit Catalog Data

- 99 Product Illustrations
- 51 Cross Section Details
- 47 Light Distribution Curves
- 24 Coefficient of Utilization Tables
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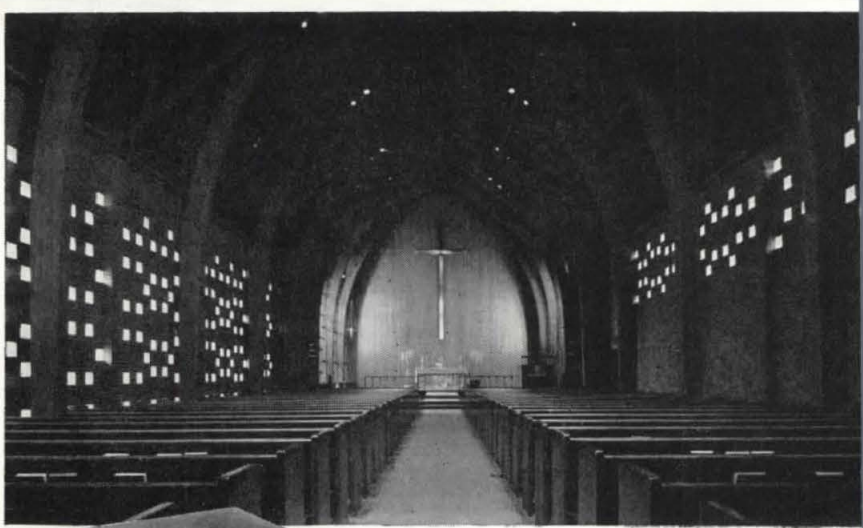
Manufacturers of Unified Lighting Equipment for Office, Store, School, Hospital and Hotel

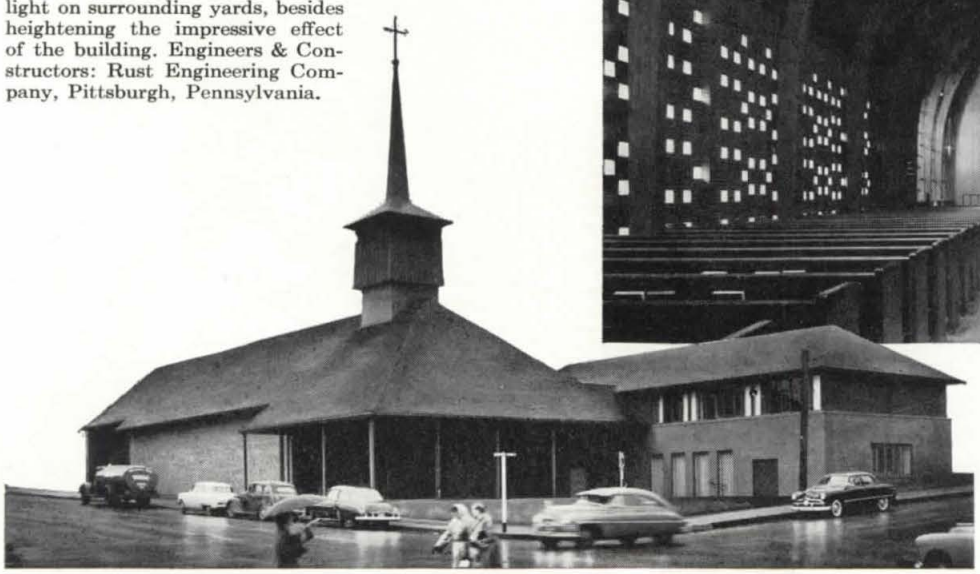
There's an Art Metal Incandescent Unit for every lighting need.

Art Metal Unified Lighting standardizes the design, style and finish of each unit, to achieve an architecturally integrated installation.

Architectural adaptability..

THIS distinctive, modern structure—a building of United States Sugar Corporation, Clewiston, Florida—utilizes PC *Functional* Glass Blocks as curtain walls, admitting floods of daylight, properly diffused for comfortable vision. At night, the interior illumination casts protective light on surrounding yards, besides heightening the impressive effect of the building. Engineers & Constructors: Rust Engineering Company, Pittsburgh, Pennsylvania.





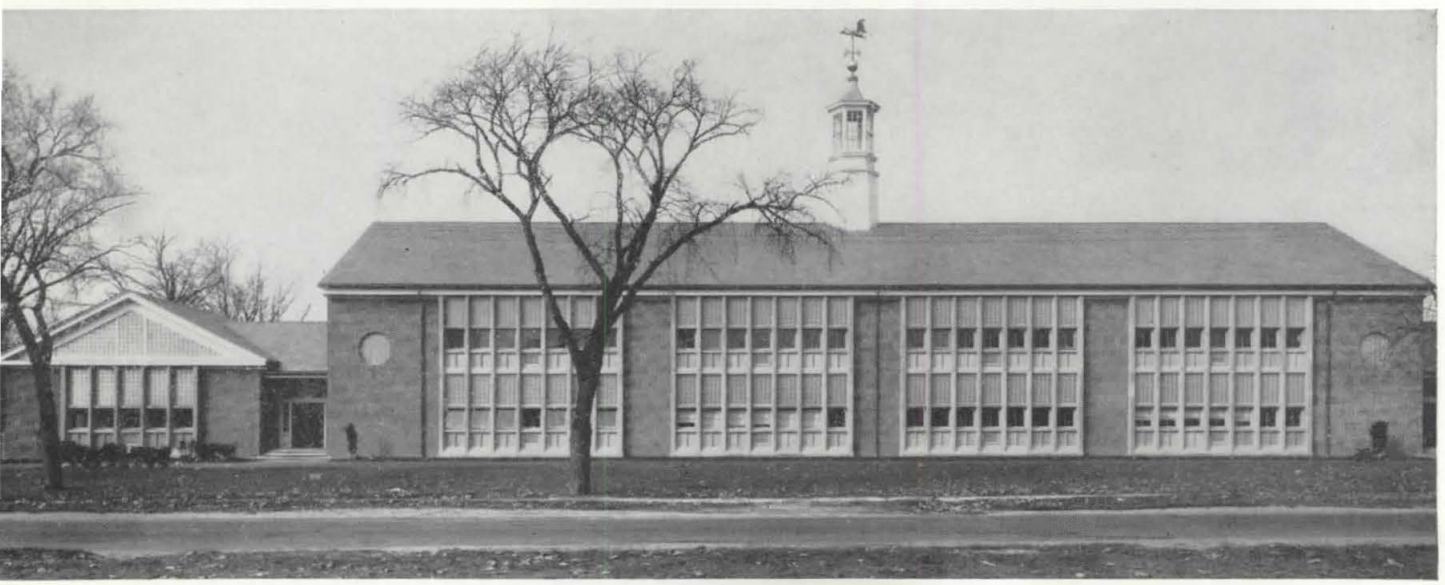
AT the Zion Lutheran Church, Portland, Oregon, PC Decorative Glass Blocks are used in a very interesting manner. In the interior view, note how ingeniously these glass blocks have been placed. In buildings of all types, PC Glass Blocks add a highlight of beauty, make interiors more cheerful. And they assure privacy, cut off distracting outside views, *are easy* to clean. Architect: Pietro Belluschi, Portland, Oregon.

PITTSBURGH ® PC CORNING

GLASS BLOCKS

DISTRIBUTED BY PITTSBURGH PLATE GLASS COMPANY:

...an important feature of
PC GLASS BLOCKS



HOW the †*PC Vision-Lighting Plan* is used in a structure of traditional design is shown above. The new Stone School at Walpole, Mass., utilized modern PC Glass Blocks with telling effect. This is another example of the adaptability of PC Glass Blocks to any architectural style. Besides, the PC *Functional* Glass Blocks installed at this school make the most of daylight. They make sure that adequate daylighting is admitted, diffused and directed for optimum eye comfort. What's more, PC Glass Blocks—*functional* and *decorative*—reduce excessive heat losses, cut fuel expense, lower maintenance costs. For they have more than twice the insulating value of ordinary single-glazed windows; require no periodic painting and puttying; no repairs or replacements. Architects: Perry, Shaw & Hepburn; Kehoe & Dean, Boston, Mass.

† *The PC Vision-Lighting Plan is a construction for daylight openings consisting of orientation-keyed areas of PC Functional Glass Blocks (selected for sun or non-sun exposure) used with vision-ventilation areas as required. Standard sash is available from many sash manufacturers for such combinations with glass blocks.*

Specify the functional glass block especially designed for precision work . . .

New, exclusive features in PC *Functional* Glass Blocks make the *PC Vision-Lighting Plan* even more effective for daylighting areas where critical seeing tasks are performed. These include light-directing prisms on the interior faces of certain patterns, light-spreading corrugations on outside faces, a fibrous glass insert to diffuse still further the light transmitted by the block itself, and the PC Soft-Lite* Edge Treatment, which creates a better, more comfortable "eye-ease" panel appearance.

*T.M. Reg. Applied for

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Pittsburgh 22, Pa.

Without obligation, please send me your FREE booklet on the use of PC Glass Blocks in industrial, commercial and public structures.

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The mark of a modern building

BY W. P. FULLER & CO. ON THE PACIFIC COAST, AND BY HOBBS GLASS LTD. IN CANADA

Yes, it's the back door—of the new Ohrback Department Store at Prudential Square on Wilshire Boulevard in Los Angeles—designed to get a full share of business from the shopping center's big parking area. Architect: Weldon Beckett & Associates, Los Angeles.

LOOK WHAT'S HAPPENED TO THE BACK DOOR!

It's not on an alley any more—not in the new shopping centers.

Entered from a huge parking area, it takes on importance equal to or surpassing the front door.

And so it makes sense to plan the rear entrance with the traffic-building power of a Visual Front—the "open" front that lets people *see* in, so more will *come* in.

This isn't just a thought for new stores. Old stores, old neighborhoods—faced with the loss of business to the new super shopping centers—might well consider the rejuvenating effects of parking areas and modern back doors. It could be their salvation.

Of course, the double front opens up great opportunities for design ideas and design work. For more information on materials for Visual Fronts, see your Libbey·Owens·Ford Distributor. And write us for a copy of our Visual Fronts book.

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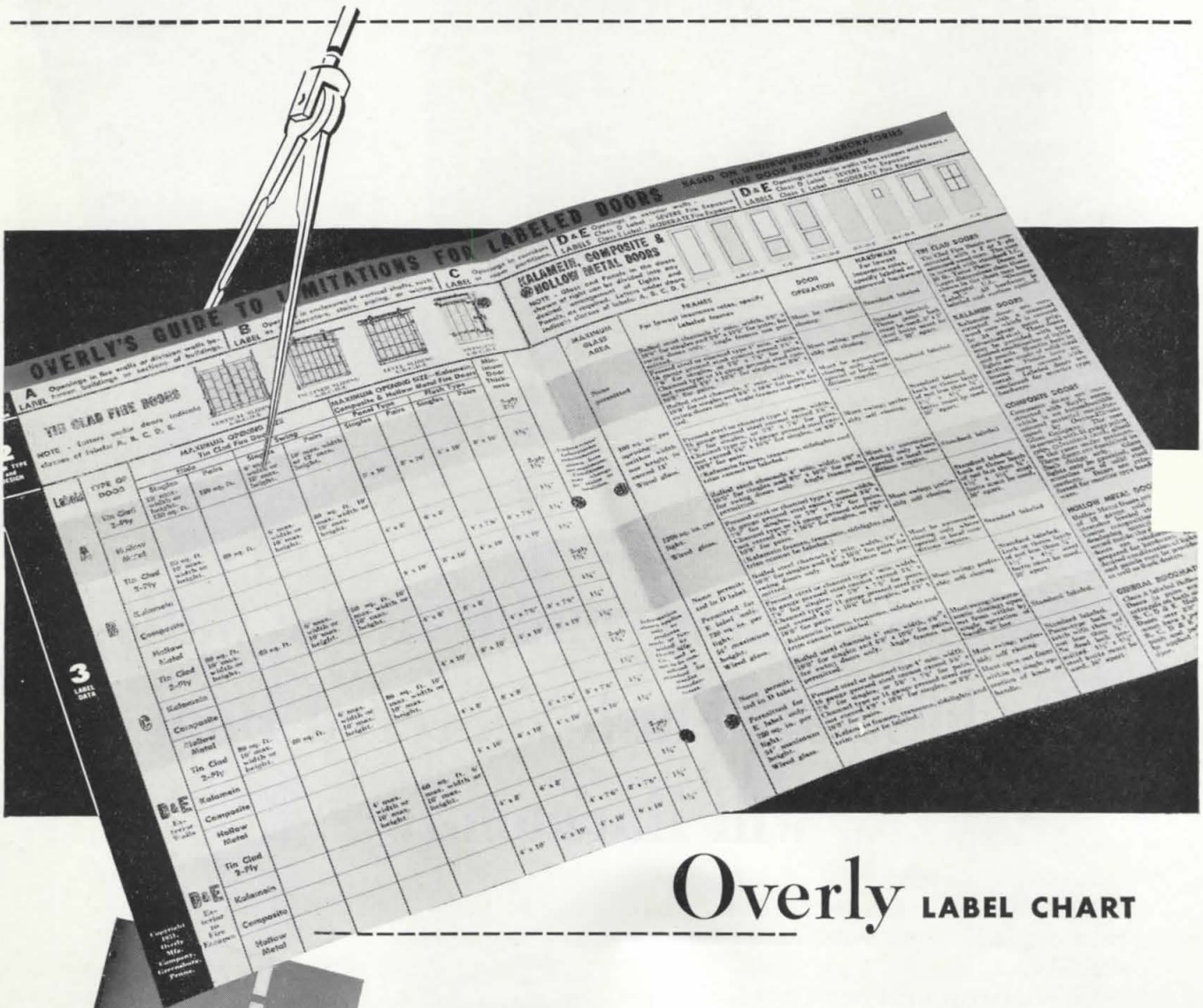

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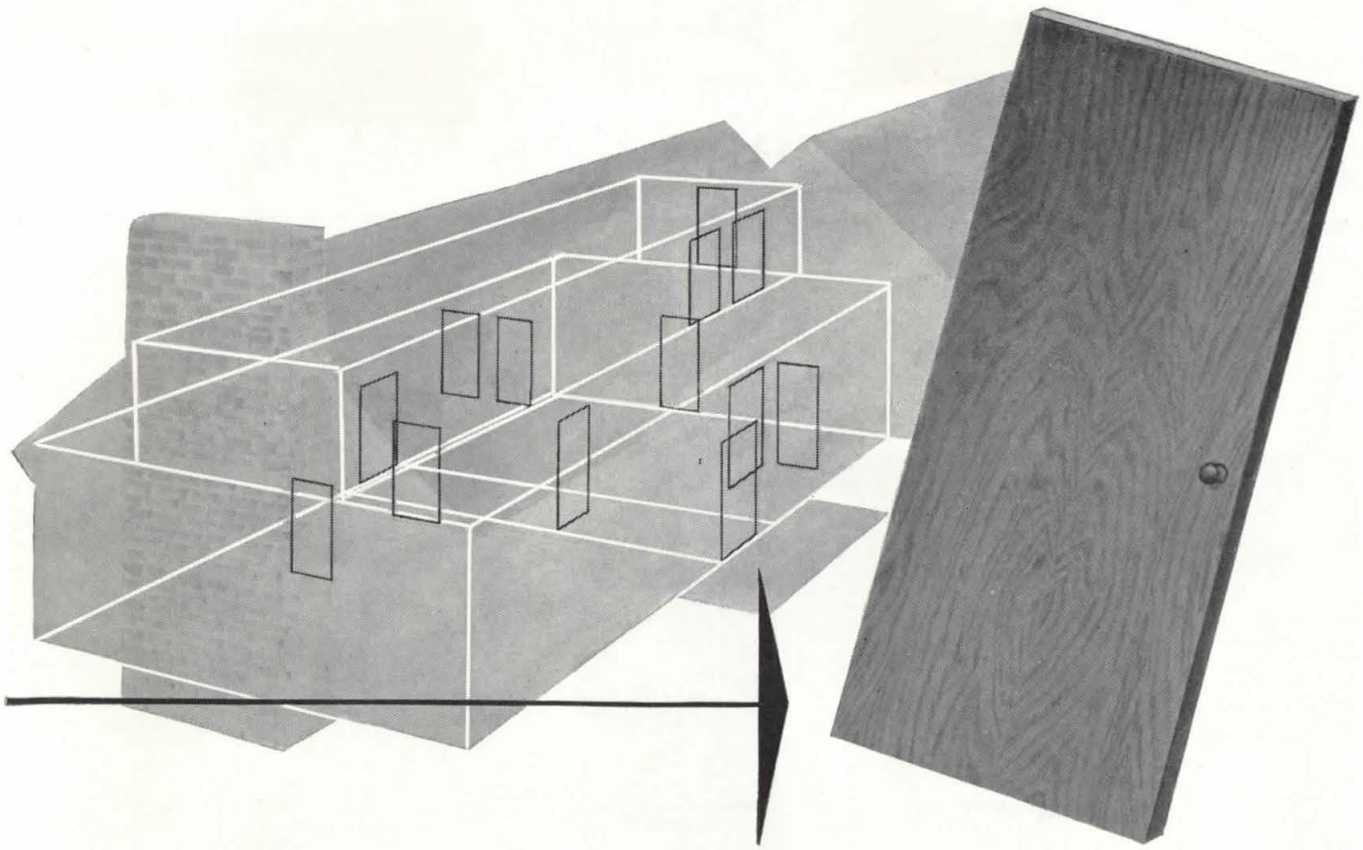

No matter how you fill in the walls Roddiscraft Flush Veneered Doors will Harmonize

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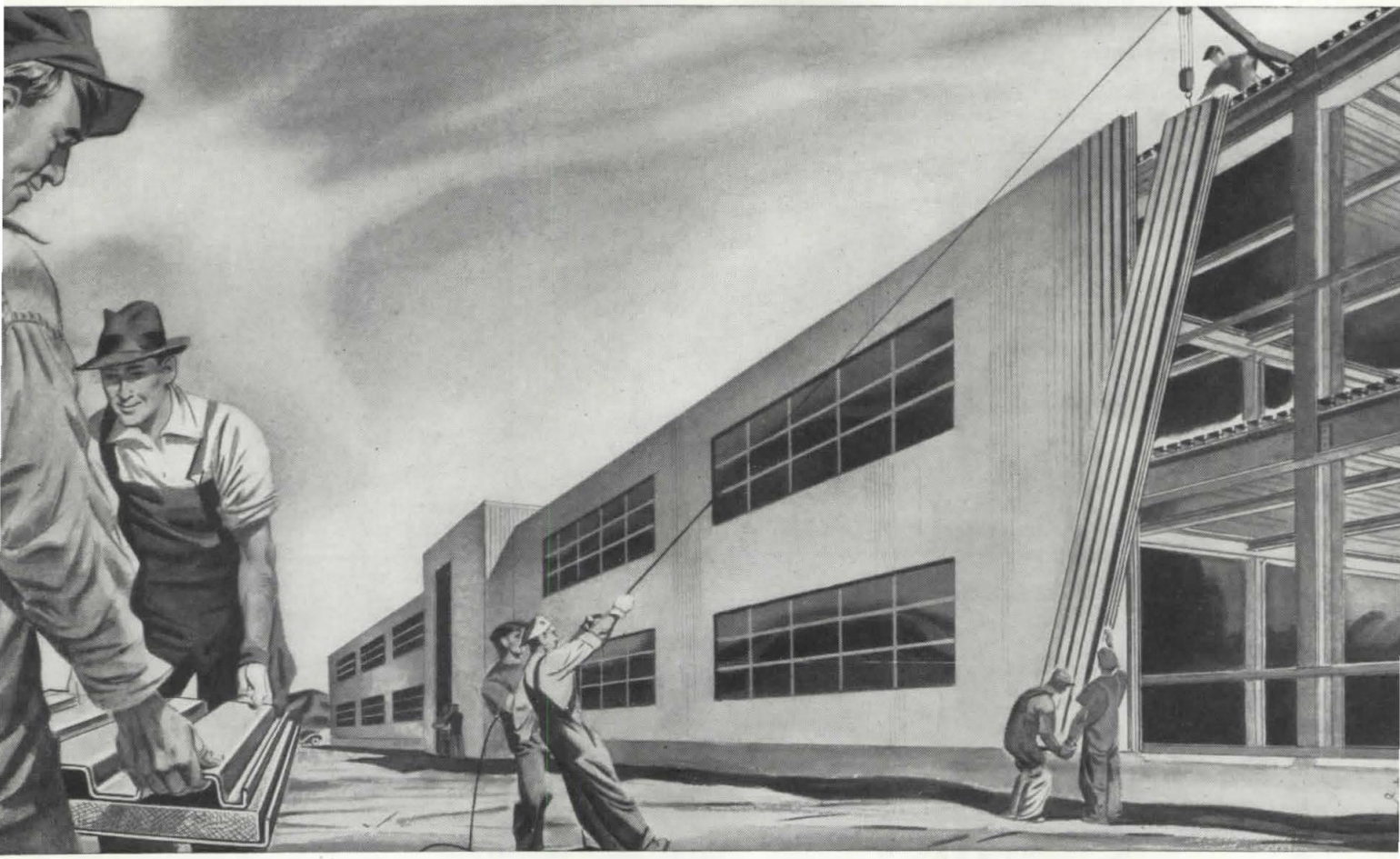

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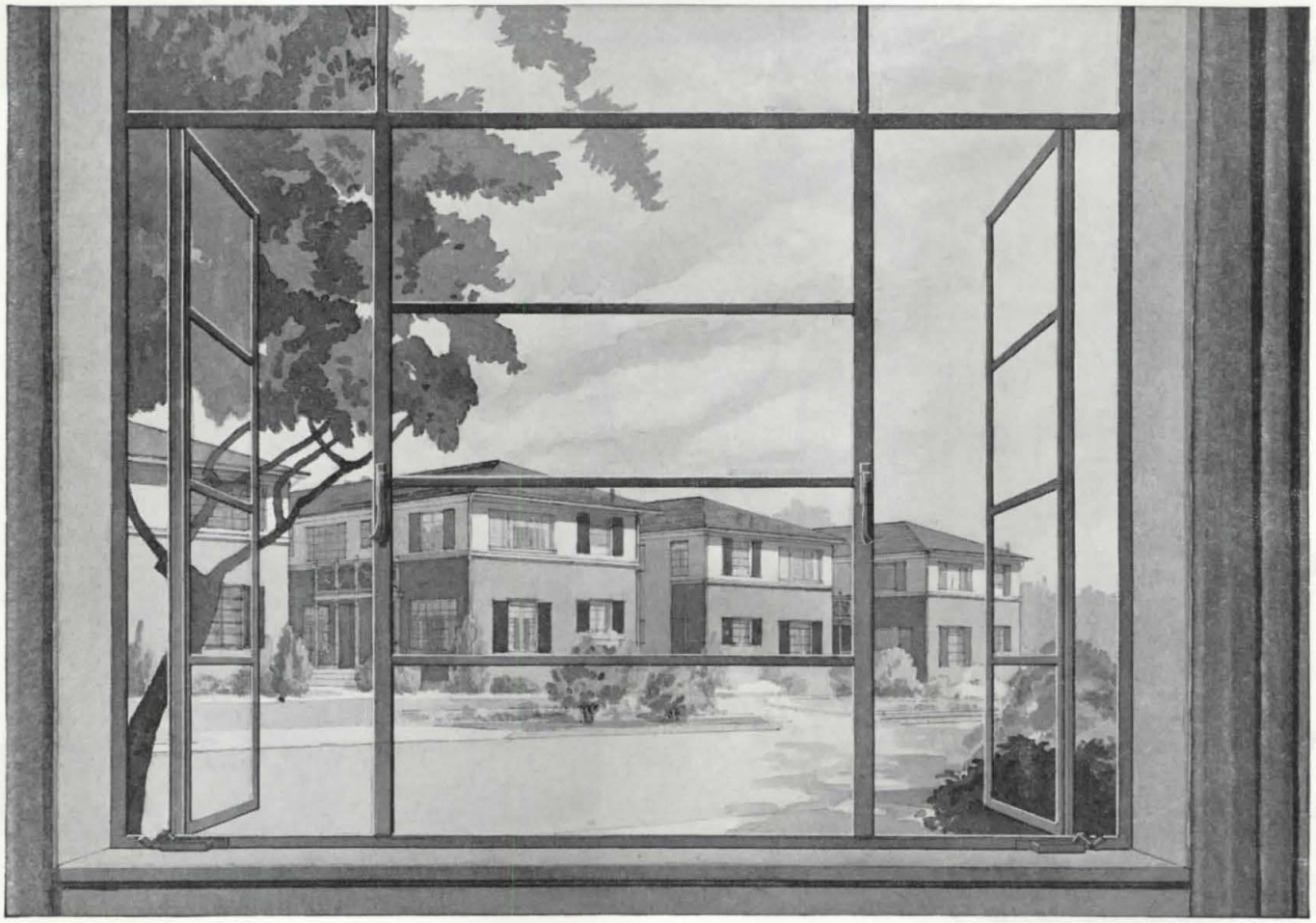

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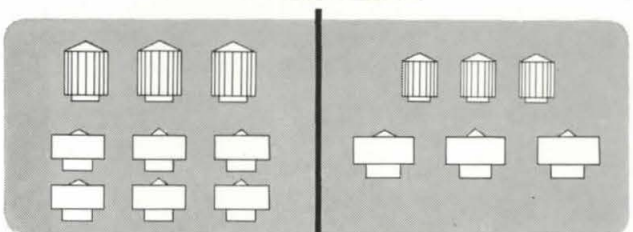

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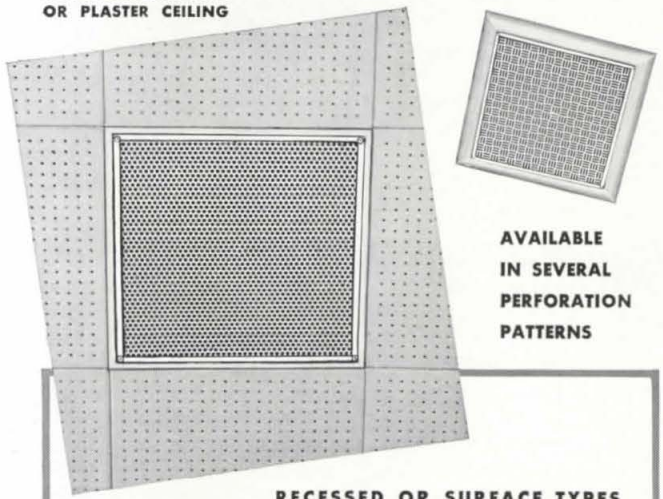

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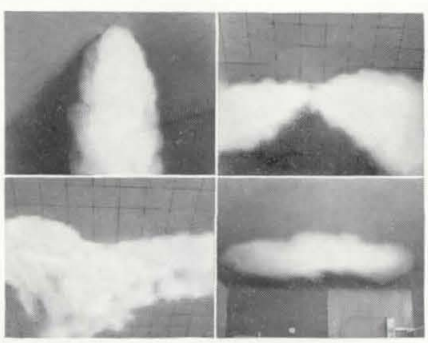

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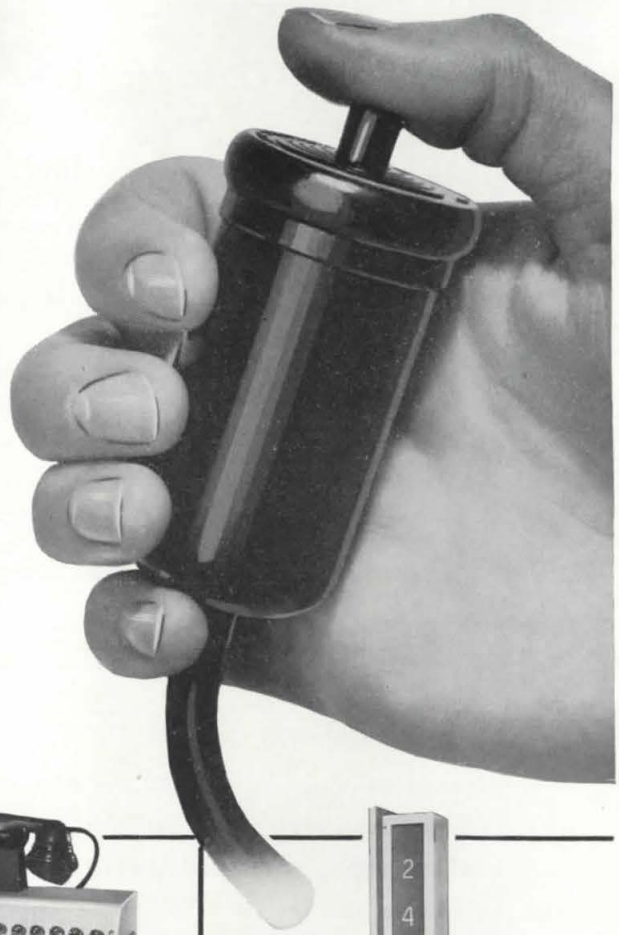

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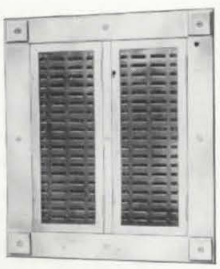

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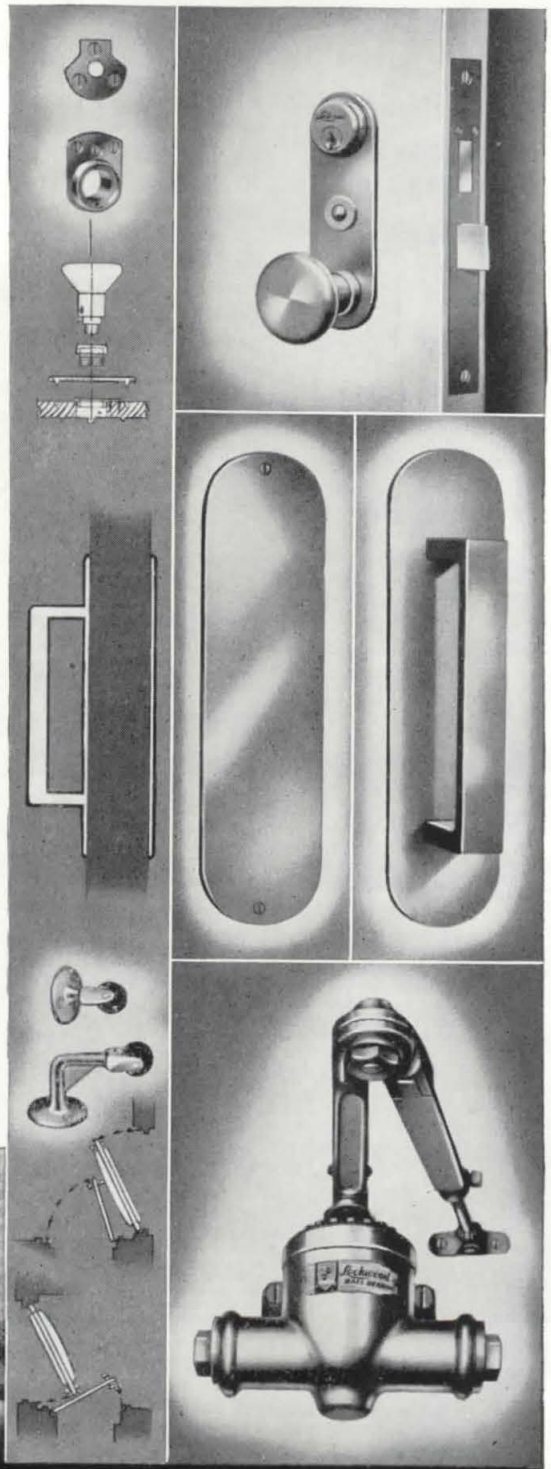
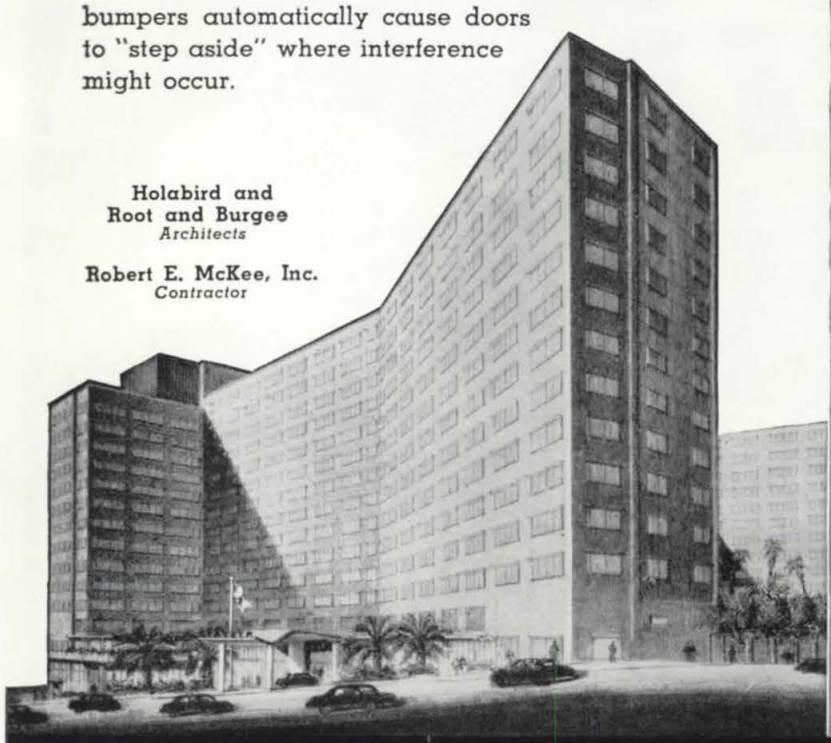
Center: Ambassador Design door pull and push plate used on passage and service quarters doors.

Bottom: Lockwood's Ball Bearing Rack and Pinion Door Closer assures quiet and efficient door operation with a minimum of maintenance. Lockwood designed roller bumpers automatically cause doors to "step aside" where interference might occur.





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Listed below are an even dozen of the many modern hospitals in which Federal Seaboard Architectural Terra Cotta is providing interiors or exteriors of lasting beauty:

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Perth Amboy General Hospital, Perth Amboy, N. J.
Roosevelt Hospital, Middlesex Co., N. J.
Tuberculosis Hospital at Rio Pedras, P. R.
U. S. Naval Medical Center, Bethesda, Md.
U. S. Veterans Administration Hospital, Lyons, N. J.
U. S. Veterans Administration Hospital, Waco, Texas
Elizabeth General Hospital, Elizabeth, N. J.
U. S. Veterans Administration Hospital, Fort Hamilton, Brooklyn, N. Y.

VETERANS HOSPITAL, ALTOONA, PA.
Marlier, Wolfe & Johnstone—*Architects*
Mellon-Stuart Co.—*Builders*

In light shades of trim to harmonize with the building's brick facing, in black bands to give maximum contrast where needed, Enduro-Ashlar Architectural Terra Cotta was specified for this recently completed VA hospital.

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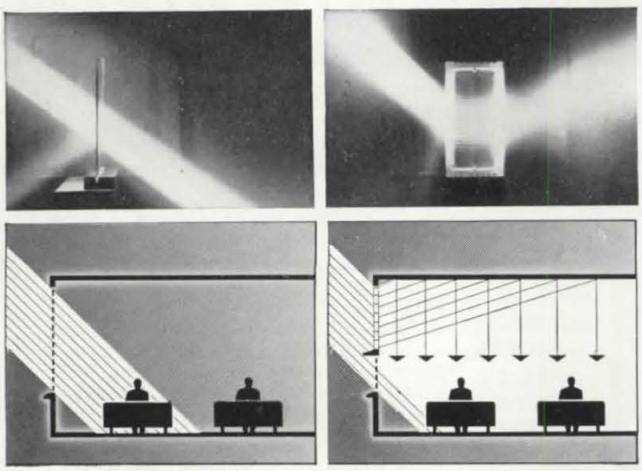

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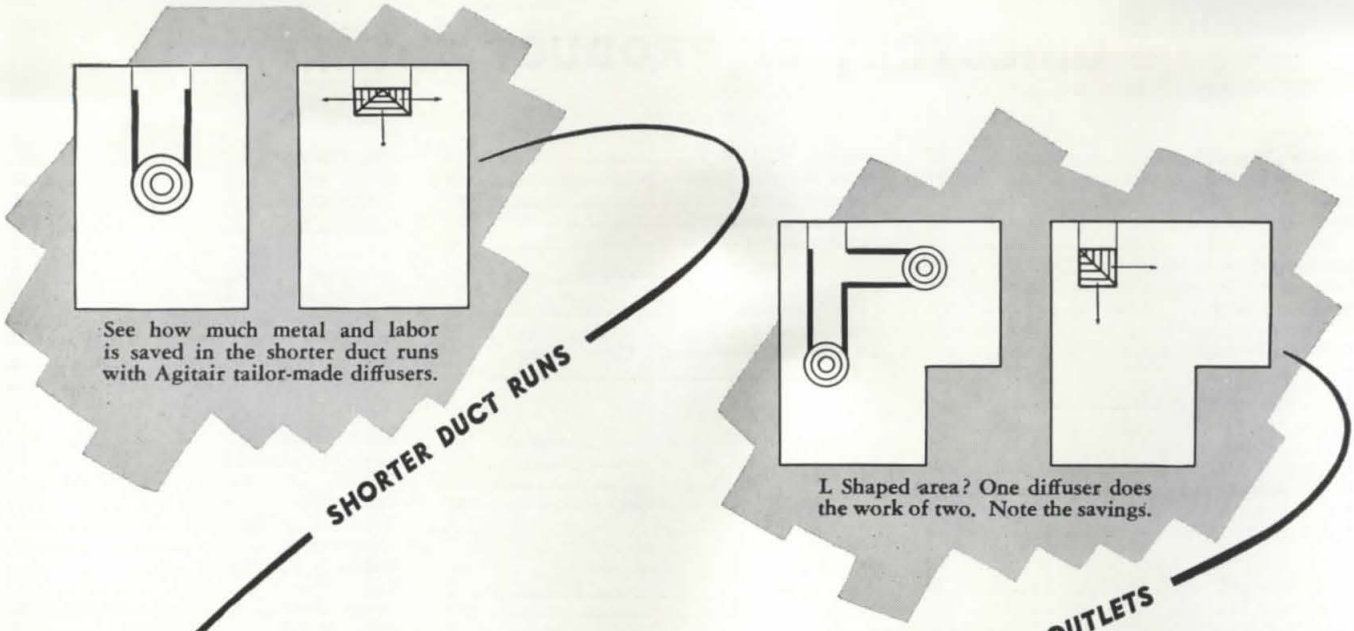

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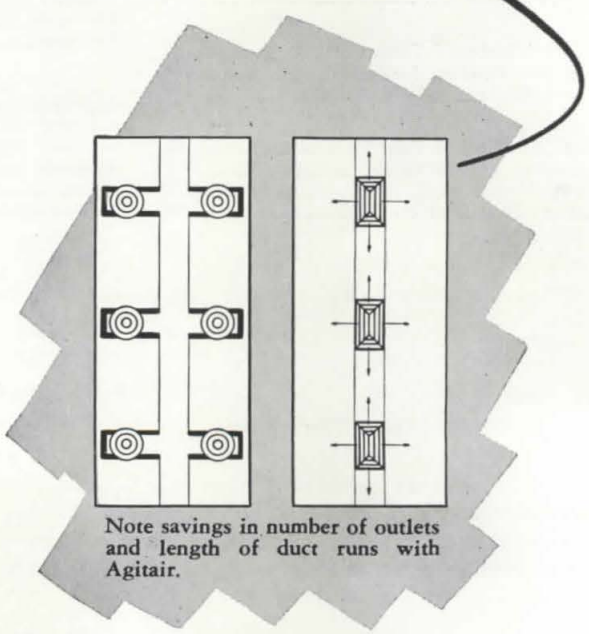

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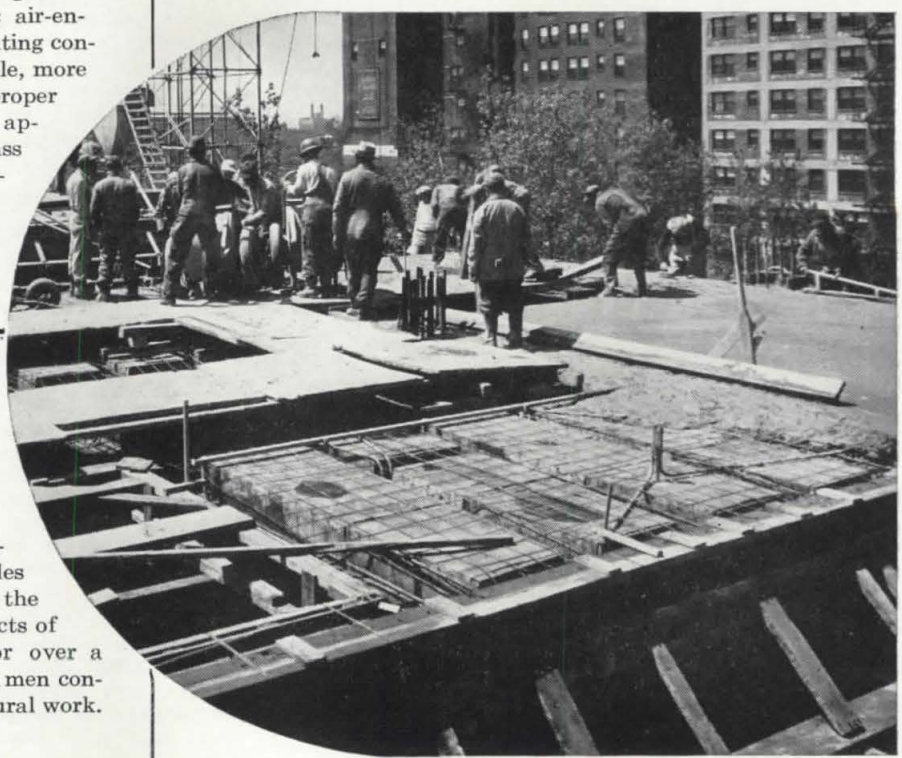

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P.S.

TRYING TO DECIDE what to write about this month, I have been leafing through the morning's correspondence. I'm afraid that I don't see anything that suggests a column. There's a letter from a man in California whose letterhead says "Designer" but who isn't satisfied with that designation. He has added under that modest title: "Also cabinet working, roof framing, heating, plumbing, air conditioning, metal working, machine tool design, architecture, portrait painting." He says, "I would like to write an article for your magazine. You name the subject." It's like sitting down to a table loaded with all sorts of delicacies. You don't know where to begin, and the great choice sort of takes away your appetite.

Then there's a letter from an architect in Minneapolis, who doesn't like us: "It has been the studied opinion in this office for several years that PROGRESSIVE ARCHITECTURE was . . . the least useful of all magazines." That's a pretty sweeping statement (I had thought that we were a shade above *Comic Parade* in usefulness) and it's the sort of thing that could spoil an editor's day. But underneath it on the pile is another letter that says: ". . . P/A, the first and only magazine in the architectural field that has adhered to and practiced a fine, consistent editorial policy right from its inception . . . keep it up . . . we applaud you." That's also extravagant. Personally, I've always liked *The Architectural Review*. Anyway, my day now seems to be balanced between praise and condemnation.

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ONE OF THE MOST SATISFACTORY living places I've seen for a long time is the house José Luis Sert has created for himself on Long Island, from what was a dairy barn. The principal room is a huge area to which he had to do practically nothing but open up one side (it has one of the most beautiful Belgian brick floors I have ever seen) and finish and furnish, with his fine sense of color.

I was out there last Sunday as one of a group privileged to see Alexander Calder (the sculptor known primarily for his mobiles) put on his famous Circus. It was a rare treat! As I understand it, *the Circus* was first evolved about 25 years ago, in Paris, for a group of close friends, and has been "presented" every few years since—when the mood strikes.

The preparation was almost more interesting to watch than the performance. About six theatrical suitcases full of wire circus figures, strips of carpeting, bits of silk, lights, and props of various sorts were first dumped out on the floor. Out of the mélange rose eventually a simulation of the front of a circus tent, a hanging light whose wiring was so complicated that it smoked and sputtered through the performance; and ultimately, poking his head through the front of the "tent" and blowing a whistle, Sandy Calder. "Messieurs et Mesdames!" he began. "Presentant . . ." and then the show began.

It began, that is, in the sense that a square of fabric was rolled out on the floor, wood-block definitions of a ring were set on it, and then the first of the wire figures — an acrobat — was walked out and set in place. The show didn't actually begin, though, because some adjustments had to be made to the figure, with a pair of plyers that Calder pulled out of the hip pocket of his dungarees. Finally all the springs and wires were in place and in working order, and the acrobat turned several somersaults and landed safely on his feet. End of that act. The setting was put away, a new piece of cloth was spread on the floor, new figures appeared, and the whistle blew again. Each succeeding scene was more complicated than the others before it. My favorite was a Maharaja who was a sword thrower. After several attempts, he threw a hatchet through a figurine identified as "sa premiere maitresse." The lady was carted away by two characters with pinwheel feet, who were attached to a stretcher; and then a new wire-constructed female was walked out to take her place and presented with great formality as "sa deuxieme maitresse." I haven't had as good a time in many moons; I completely forgot about the deadlines for June P/A for a few hours.

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SPEAKING OF THE JUNE ISSUE, we are going to give you next month a story of the planning and current construction activity at Oak Ridge. Jay Belcher and George Sanderson representing P/A, Bill Hedrich of Hedrich-Blessing, and Ambrose M. (Rich) Richardson of Skidmore, Owings & Merrill's office have just been down there photographing. George took a little trip around that part of the country before landing at Oak Ridge, and you might enjoy some of the dead-pan reporting in a memo he has just handed me.

"Easter Sunday I went to Black Mountain, about fifteen miles from Asheville, and taxied over to Black Mountain College. There were two gents who looked as though they might be faculty members, and I asked them if there was any resident architect now at the college. One of the gents turned out to be Saporta, T. H. C.'s friend, enroute to Raleigh, where he will work with Kamphoefner. There is no architect at Black Mountain now, but the students continue to design and build their own buildings.

"After looking over Lawrence Kocher's big dormitory-classroom building, which shows signs of wear, we went out to see a rather ungainly, fiercely functional little butterfly-roofed ceramics building — excellent light for the studio-kiln work, but of naive, if not crude design.

"Most recent building — which is touching when you consider the students' determination — would have been so much better with some design or structural guidance. It is perched on a very steep hillside, and it follows a number of contemporary clichés, including windows from wall to wall, with blank end walls. This doesn't check out at all for the blank wall is toward a most superb lake and mountain view and faces east and should have had some openings.

"Also they tried to cantilever things out from a pair of lally columns and it didn't work; things began to sag and now they are in the process of putting in a strong concrete wall to hold the building up.

"Nothing for us at Black Mountain, I fear . . .

"After returning to Asheville, I took in the vast (originally 125,000 acres) estate, "Biltmore," that the Vanderbilt family built near-by. The chateau-like great house (Richard Morris Hunt) and grounds (Frederick Law Olmstead) are awesome and impressive, and the site and land and natural setting are really wow stuff.

"Monday I went out to the offices of the Six Associates in Biltmore Forest. There are now just five principals in the Six Associates office. I think there might be a swell story to tell about the office setup. In this case, all of the principals were reasonably successful individual practitioners, but the mere fact of pooling of resources has made them into a big-time outfit.

". . . Harry Tour suggests a PROGRESS REPORT on the town of Norris, Tennessee, which has apparently gone to the dogs — from much-touted model planned town to letting anyone do anything they want. Now all is neon lights, hot-dog stands, ribbon slums. Conclusion?

"In the morning I met Bill Hedrich and his assistant in Knoxville and we drove to Oak Ridge, there to meet many people and discuss plans. Then we toured the town and Bill and I decided which shots to attempt . . ."

The rest of it you'll see reported more formally in the main body of the magazine next month.

Thomas H. Creighton