PROGRESSIVE ARCHITECTURE

newsletter

December 1949

lished monthly by REIN-LD PUBLISHING COR-RATION, 330 West 42nd et, New York 18, N. Y., S. A. Ralph W Reinhold, irman of the Board; ip H. Hubbard, Presi-t; H. Burton Lowe, Ex-tive Vice President and asurer; Gilbert E. Coch-Vice President and Sec-ry; Francis M. Turner, liam P. Winsor, John G. her, Fred P. Peters, Wal-F. Traendly, Vice Presi-ts. Executive and editorial es: 330 West 42nd Street, v York 18, N. Y. Subscrip-s payable in advance. scription prices to those , by title, are architects, ineers, specification writ-designers, or draftsmen, to governments and gov-ment departments, trade ociations, college and nical libraries, students, lishers, advertisers, and ertisers' executives—$4.00 one year, $6.00 for two rs, $8.00 for three years; ll others—$10.00 per year U.S., U.S. Possessions, ada, and Philippine Re-lic. Latin America—00 for one year, $16.00 for years, $20.00 for three rs. All other foreign sub-ptions — $15.00 for one r, $25.00 for two years, 00 for three years. Single y—$1.00. Printed by Lotus ss, Inc., 508 West 26th eet, New York 1, N. Y.

- The Pan-American architectural conference has been postponed until April. In the meantime, the exhibition on contemporary architecture in the United States, which will have its first formal showing at that time, has been previewed and pronounced excellent by those who saw it. It gives an honest and most encouraging picture of progress in many fields of design in all parts of the country and should be an eye opener for those who see it abroad.

- An unforeseen difficulty as result of new Housing Act is that some cities are rushing through basic slum clearance and housing site plans without sufficient study. In New York, for instance, several civic and professional groups, including the A.I.A. Chapter, have objected to City Planning Commission's plan for housing developments, which they insist includes isolated projects spotted with no relation to facilities or over-all growth of city.

- American Standards Association reports that 700 manufacturers are now producing modular building materials.

- Du Pont engineers have developed a desk for open-office employees which carries a partition along with it. They report that it provides convenience, privacy, and flexibility. The L-shaped desk has a file cabinet and a "partition" of glass or other material. No one is manufacturing or marketing such an item now.

- Auguste Perret, French architect-engineer, pioneer in reinforced concrete design, is in the United States. While here, he will visit with and speak to a number of professional groups.

- No word has yet been heard of Hermann Field, architect, planning consultant to Cleveland College, who disappeared while traveling between Warsaw and Prague last August. Field had for several years conducted planning study groups through Europe, and had reported favorable impressions of the technical planning progress in Poland.

- Sudden popularity of "ranch houses" over nation is new development building phenomenon. In general, ranch house seems to mean one-story plan, little else. Some areas include larger glass areas and more flexible plan in definition. For architects interested in work of this sort, tendency seems to indicate greater freedom in planning and design.

- Construction figures for the third quarter of this year are up slightly over the corresponding period in 1948. Cumulative totals for the year through the third quarter showed a gain in public works, a drop in private building, with slight over-all dollar gain.

- Yale Department of Architecture announces three visiting critics: A. L. Aydelott (now finishing his residence), Harwell Harris, Harris Armstrong.

(Continued on page 2)

newsletter

- Local taxes do not appear to be a major factor in location of industrial plants, according to recent survey. Industries hoping to escape high city taxes by locating in unincorporated areas usually run into special assessments for fire, protection, water, etc., which are often higher than municipal rates, so that tax picture evens up.

- 15,160,000 of the 16,422,000 patients admitted to all hospitals in 1949 were treated in general hospitals, according to American Hospital Association. This does not necessarily prove unimportance of special-purpose hospital; on the contrary it probably indicates that not enough beds were available for specialized care.

- Lever Bros. Co. will build a 20-story structure in New York, to coordinate its now scattered headquarters. Architects are Skidmore, Owings & Merrill. Even without this latest addition to skyline, construction activity in midtown Manhattan now rivals that of '20s.

- HHFA reports that study of fuel savings where insulation is used indicates that original additional cost is usually more than paid for during amortization period.

- An archeologist's and architectural historian's dream was realized recently when an expedition from the American Museum of Natural History discovered a well-preserved city in Afghanistan. The party, including Henry W. Hart, architect, reports that buildings, household articles and even bits of clothing are preserved in Peshawarun, an Alexandrian city known of but until now unlocated.

- U.N. Headquarters principal building is nearing completion. Frame was topped out some time ago; enclosure is rising rapidly.

- A bulletin on Recommended Safe Practice for Hospital Operating Rooms has been issued by the National Fire Protection Association, Boston, Mass. The result of much study by a joint committee; it sells for 25 cents.

- A fireproofed plywood surfaced with an impervious finish is offered by Fox Bros. Mfg. Co. of St. Louis. The resin-bonded plywood is treated with Protexol and the surfacing is Westinghouse's Truwood.

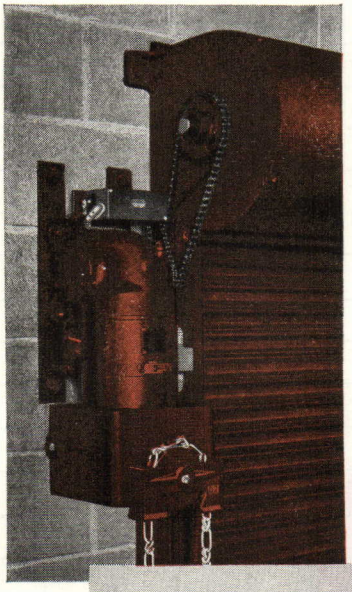
- Frank Lloyd Wright was awarded another honor recently when Cooper Union gave him the Peter Cooper Medal for outstanding achievement in "the advancement of science and art, in their application to the varied and useful purposes of life."

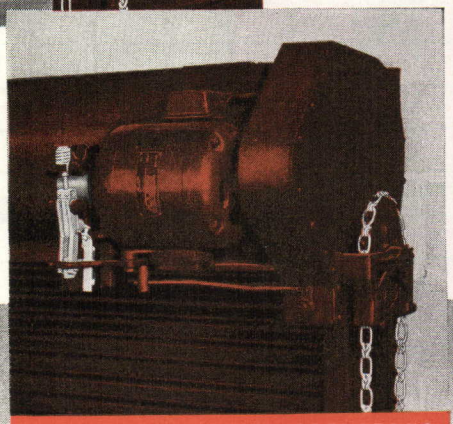
- G.E. announces a new master selector switch which allows the user to select any one of nine different circuits and operate them separately or all at once. The switch is of the rotating type, usable in residential as well as commercial and industrial work.

- California's Stanford University, which has no architectural school, has appointed three "lecturers in architecture" in the Department of Art. They are Ernest J. Kump, Eldridge T. Spencer, Albert Henry Hill.

- New England Chapters of the A.I.A. will hold a seminar on hospital design at the Kenmore Hotel in Boston, Mass., on December 2 and 3. Kenneth Reid is chairman of the arrangements committee.

Rolling Steel DOORS





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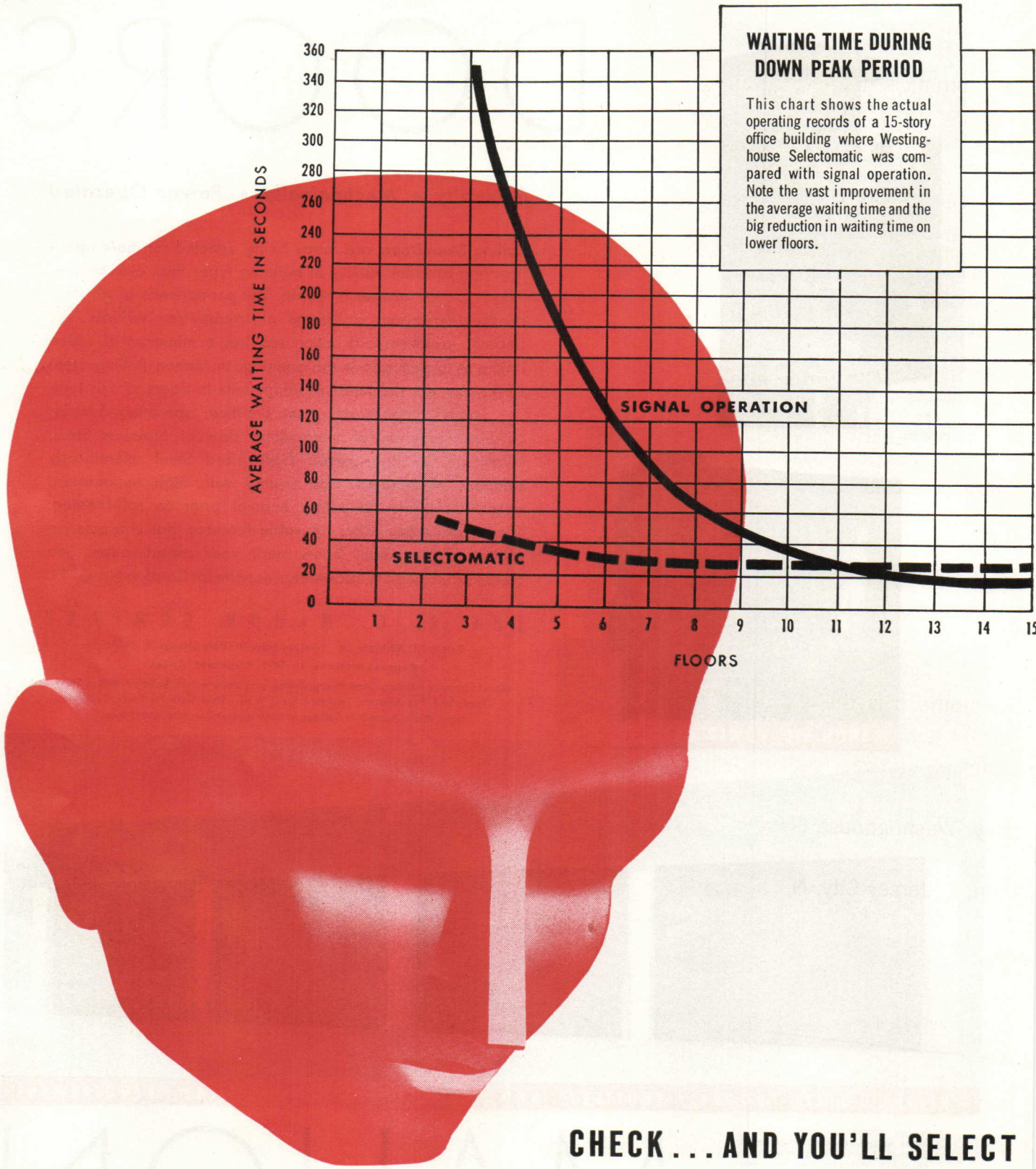

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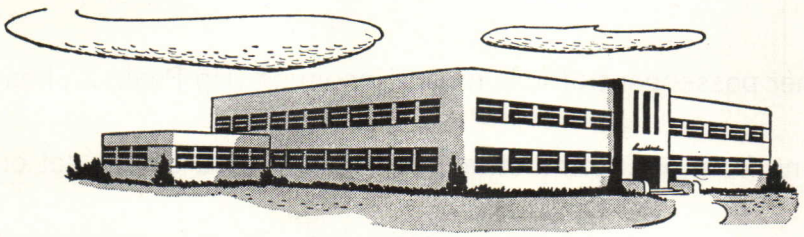

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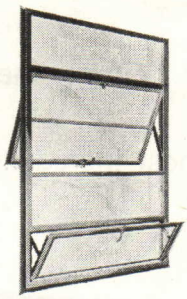
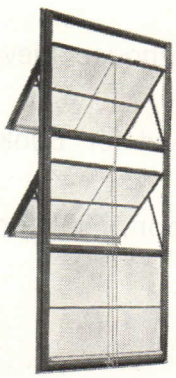


ARCHITECTURAL PROJECTED WINDOWS

Attractive in appearance and convenient to operate. Provide maximum daylight, ventilation and freedom from drafts. Heavy one piece casement type sections in ventilator assures rigidity. Hardware is solid bronze. Screens and underscreen operating hardware are available for all ventilators.



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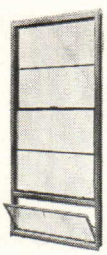
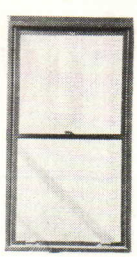
These windows are basically practical in the correct admission of light and proper ventilation without drafts. Sturdily built of unusually heavy special casement sections, they are positively and easily operated. Assure a high quality product incorporating features not available in any other window design.

DOUBLE-HUNG WINDOWS

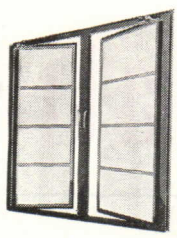
In Two Types—Series 138 and Series 46

Series 138 Windows are equipped with positive action motor-spring type balances and completely weatherstripped with stainless steel. Made from electro-galvanized strip, these fabricated windows are bonderized and finished with a baked-on prime coat of paint. Available in single units or in integrally built twin, triple and panoramic window units, all are available with or without sill ventilators. Series 46 windows are of the counterweighted design. They are specially adapted for use in office and public buildings. Single or twin units may be had in either standard or special sizes and are available with or without sill ventilators. Made from new billet steel, electro-galvanized. Windows are bonderized and finished with a baked-on prime coat of paint.



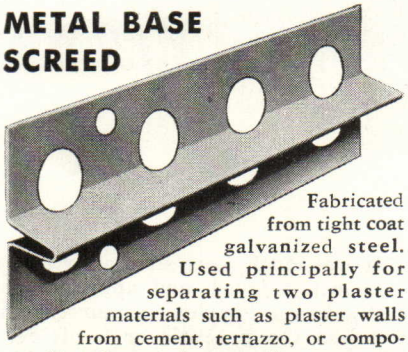


INTERMEDIATE CASEMENT WINDOWS



Constructed of specially designed one-piece sections throughout. Accurate weathering is assured through the final cold-rolling of sections to produce positive contacts between weathering surfaces. Hardware is solid bronze furnished in medium statuary finish.

METAL BASE SCREED

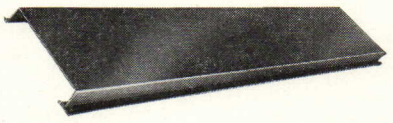


Fabricated from tight coat galvanized steel. Used principally for separating two plaster materials such as plaster walls from cement, terrazzo, or composition base, and separating a cement wainscot from ordinary plaster. Another function is to give a permanent straight edge to which both trades work.

METAL CASINGS

Meet a definite demand for an artistic, sanitary method of trimming around doors and windows. Afford many architectural effects. Metal casings are fire-resistant, vermin proof, easy to maintain and do not shrink or warp.

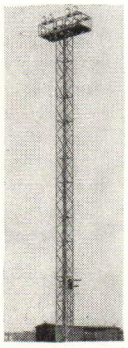
FERROBORD STEELDECK ROOFS



Truscon Ferrobord provides a fire-resistant, economical roof deck for all new construction or replacements. Covered with insulation and waterproofing, it weighs approximately 5 pounds per square foot.

FLOODLIGHT TOWERS

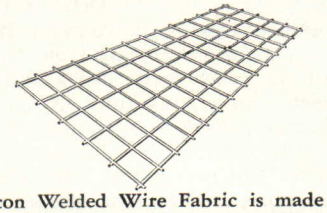
Made in a wide selection of heights, they offer a firm, long-lasting floodlight tower for lighting in stadiums, parking areas, etc.



CURB BARS

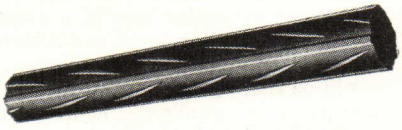
Protect exposed corners of concrete curbs, walls, steps, etc. Designed to give positive anchorage into the concrete. Plate surrounds and protects the corner without splitting concrete into two portions.

WELDED WIRE FABRIC



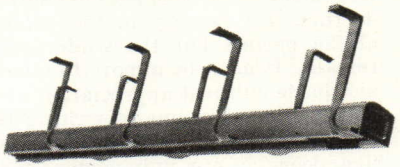
Truscon Welded Wire Fabric is made in various sizes for concrete reinforcing in all types of structures. Each joint is electrically welded for permanence.

CONCRETE REINFORCING BARS



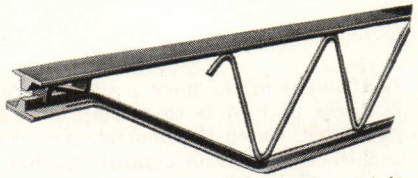
A special rolled section of high grade steel, with a series of longitudinal and diagonal ribs, so designed to provide the maximum bond with the enclosing concrete.

PRESSED STEEL INSERTS



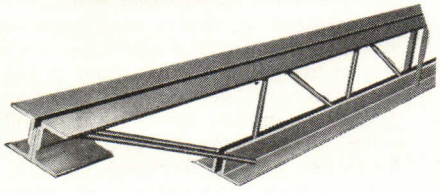
Truscon Slotted Inserts are attached to the forms and are completely imbedded in the concrete. Bolt can be moved along slot to any location, allowing wide variation in position. Used in ceilings, slabs, beams or columns.

OPEN TRUSS STEEL JOISTS



Truscon developed the open truss steel joist to meet the demand for economical, light weight, fire-resistant floors in schools, and other light-occupancy buildings. They are easy to install. Completely shop fabricated, they reach the job ready for placing.

CLERESPAN JOISTS

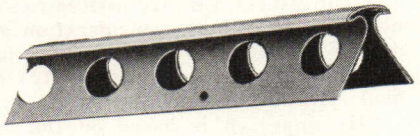


Truscon "Clerespan" Joists meet all clear span requirements up to 80 feet. They eliminate undesirable columns and provide greater unobstructed floor areas, in gymnasiums and auditoriums.

METAL LATH

There is a Truscon Metal Lath for every plastering requirement. Flat laths for ceilings and sidewalls; rib laths to reinforce concrete floors or plaster ceilings; expanded laths for stucco reinforcement; Corner Beads and Cornerite, to protect outside and inside corners.

CORNER BEADS



Recommended as an exposed corner reinforcement. The round nose is strongly reinforced by a deep groove which holds the plaster flush for a perfect bond. It can be wired, stapled or nailed to any kind of wall construction without the use of clips.

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BEYOND THE CITIES

Dear Editor: John, Ruth, and I are most pleased with the article on our work in your October issue. Your editorial staff certainly did a magnificent job with the somewhat sparse material we had available. Furthermore, we sincerely appreciate your personal interest in our office.

The practise of architecture in other than the large centers is truly most interesting as I am sure you are aware. I only hope that the October P/A will convince some of the younger firms that they should move away from New York and the other large cities and start a practise in a small town. Action in this direction, I feel sure, would make architecture much more enjoyable for everyone in the profession, and might give us a more truly regional design throughout the various parts of the United States.

W. W. FREEMAN
Freeman-French-Freeman
Burlington, Vt.

In 1950 one of the most popular regular features of P/A is to be improved and expanded. Caleb Hornbostel, New York architect and architectural teacher at Cooper Union, Pratt Institute, and Design Institute, has been engaged by Reinhold Publishing Corporation to collaborate with Elmer Bennett, P/A draftsman, in preparation of a Selected Details book scheduled for publication in 1951. Four of these details, chosen as representative of best contemporary practice in the United States, will be presented in each issue of P/A, beginning with our February issue.

Architectural men are invited to submit for the authors' consideration any details, ideas, or pertinent suggestions for the magazine and (ultimately) the book. Hornbostel explains:

"My approach is based on the fact that details should be (1) the best answer to a problem, (2) should show one architect's or designer's answer to the specific problem, (3) should explain where it answered and did not answer the problem, and (4) should show a basic solution which can be an inspiration (or starting point) for others. It is my feeling that this series can be a fine and important addition to the architects' working knowledge. We would like to have as many solutions as possible to any given problem before presenting a basic detail as described."

WHAT DO THEY MEAN?

Dear Editor: If Carl Feiss can get the profession to talk and to say what it really means, or, better still, try to discover what it really does mean when it speaks of the architect, both education and practice will be the better for it. When I was on the Institute's committee, I felt that the profession itself in their field should attempt to define what the end product of education should be. I arrived practically nowhere when I asked the practitioners to define what they meant by the term architect.

If architects do only 15 percent of our buildings (and I am inclined to believe this is probably about the size of it) then we are altogether too impotent for the good of the profession and the public. We are doing little or nothing to tell our youngsters in school about the art, science, and adventure of architecture; although they are acquainted somewhat with the other art forms and with practically everything else. Before an architect can become important, our culture must be informed as to what he is, his value to the community, and his essentiality to an improved physical environment. The architect alone cannot do this. He can cry in the wilderness all he pleases but the wilderness will remain. It must be a more fundamental and basic cultural appreciation and understanding than one of writing letters to the editors about things we do not like, decrying our unimportant place in society and generally, at least occasionally, displaying bad manners because we are not appreciated.

There is an essential spirit of greatness we, as a profession, must stalwartly insist upon as a basic behavior among architects, each towards the other; and ultimately this spirit will be felt by the communities in which such men live. The usual practitioner grows weary of trying to influence those around him until finally, grown thoroughly tired and especially worn out at the end of his day, he goes home and attempts to forget rather than to inspire. This inspiring business is difficult! Those who have taught many years well know that people are far more interested in the unimportant detail than they are in over-all views. That is probably why we have far more politicians than statesmen, far more technicians than planners, far more followers than leaders and far more imitators than creative thinkers.

Carl's column may help us to achieve the longer view at the kind of civilization we have today. In the much-publicized and often emulated earlier times, the state, country or neighborhood, even, of the architect was small. It was much more simple for him to be known, enjoyed, and appreciated than it is in our complex community of today unless the practitioner is living in a very small community from which he usually gravitates upward, he thinks, towards the larger and more densely populated, as well as poorly planned, areas.

I welcome any forum of discussion that will help us discover what we really do think on almost any subject. Certainly our own profession deserves our early and most astute observation and action.

Good luck to Carl in his efforts and best wishes to you for recognizing the importance of our trying to discover more critically what should be the function and position of the architect in our 20th century society.

WALTER T. ROLFE
Golemon & Rolfe
Houston, Tex.

CLATTER OF THOUGHTS

Dear Editor: I have always been one of your ardent subscribers since I felt that your magazine was of a type easy to read and comprehend and which also gave forth useful information that could be readily utilized; however, when I commenced reading a column OUT OF SCHOOL by Carl Feiss, I started wondering what sort of jibberish was being published.

After reading comments to you by various architectural educators I decided to read the September and October articles by Feiss. The September article was such that a repeat was not necessary in the October issue. In my opinion, Feiss chatters and clatters, reverberating from one wall to the other, turning circles and loops, completely muddling the situation. He may get to his point at some time in the article, but by the time we readers get there our minds are in a turmoil as much as a *Roman Doric column* would be in our present day architecture.

Feiss may have some good thoughts, but in comparison to the way other material is presented in your magazine, I would suggest that he plan out and construct his work as an architect would in order to exist. I have no time to read his articles as they now appear.

MILTON W. MELZIAN
Pasadena, Calif.

P.S.: For your information, I spent 10 years of my life teaching architecture.

(Continued on page 10)

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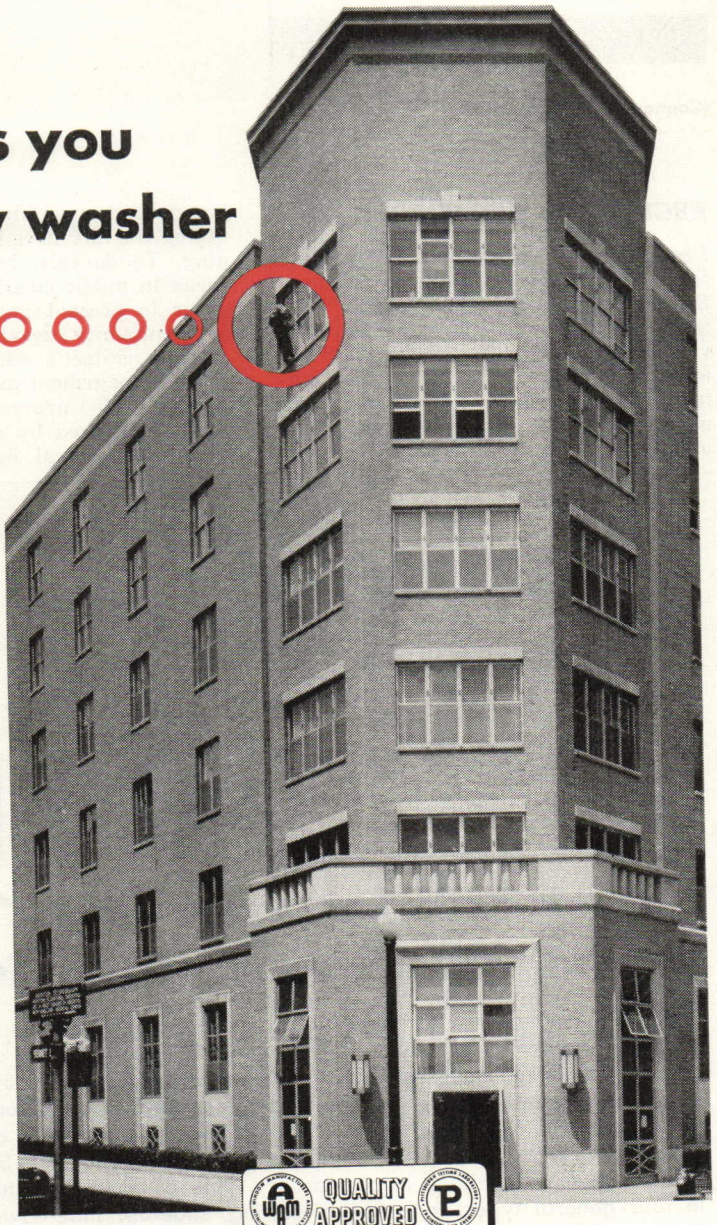

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A.W.M.A. Quality Specifications—Materials, Construction, Strength of sections and Air infiltration requirements—confirmed by Pittsburgh Testing Laboratory
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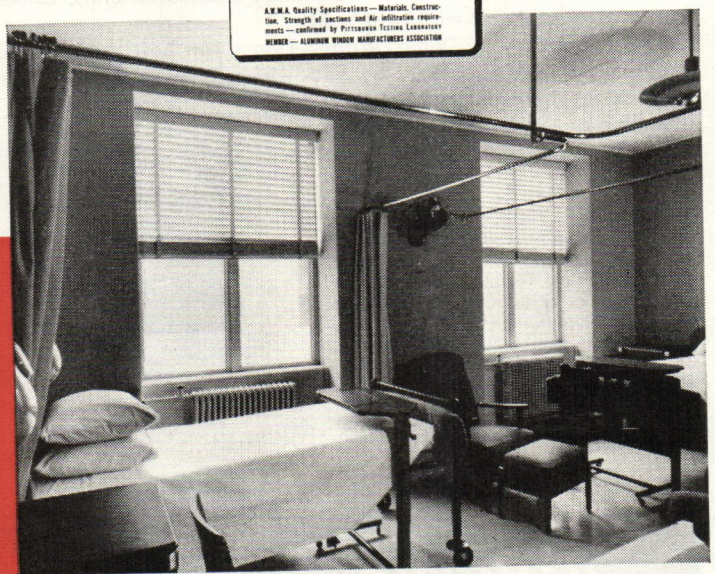

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(Continued from page 8)

ARCHITECT'S KNOWLEDGE

Dear Editor: People's characters are formed by heredity and environment. Basic principles of our American heritage are freedom and progress. Environment is what we make it. Since an architect's job is planning environment, he should take a leading part in making it better, both for individuals and the community. He should have a broad concept of his community needs, taking the initiative in long range planning. To do this, he must be able to speak in public clearly and concisely in order to present good and bad points of community development.

An architect's education should include management and business administration. The arguments of a dreamer must be backed by a thorough knowledge of practical financing. He must know how to appeal to "the pocketbook, the heart, and the head," in that order. Since he deals in human relations and public relations, he must have a true sympathy and understanding of all types of people and their problems. He must learn to be a diplomat and psychologist, knowing how to point out that his best ideas are those that are needed and desired. His schooling will *not* become "obsolete overnight as world conditions change," if he has been taught the *true fundamentals* of art, engineering, and construction. These are as basic as the need for light, air, and laughter. Materials and methods change; but laws of physics, rhythm, harmony, and reasoning are timeless. The strength and beauty of an eggshell or concrete dome, of a pine branch or steel cantilever, of a spiderweb or suspension bridge, of a symphony or schoolhouse—all are based on natural laws that appeal to our emotions, as well as to our reason.

Summing up then, an architect's education continues throughout his lifetime, but the closer he can approach basic fundamentals in his academic training the better he will be prepared to do great work. To accomplish great work he must be both practical and sympathetic, which in turn will give others confidence in his ability. He must be able to express himself so that this ability will be known by all. Only then will he become a leader in his community and have some chance of helping to create an environment that will satisfy the physical, emotional, financial, and spiritual need of his fellowmen.

J. WELLS HASTINGS
Oakland, Calif.

WIPE THAT SMILE . . .

Dear Editor: I am sure Dr. Carl Feiss, author of P/A's new column, OUT OF SCHOOL, deserves all the perfumed bouquets recently presented in VIEWS. I have no doubt he is "well qualified, has a rich background, has lots of ideas, is energetic, has courage, easy facility of expression," etc., and one might add (from a cursory reading of his column) that he writes with a certain flair and wit. *But* is it in spite or because of all this that we readers (poor souls) are brought face-to-face each month with that perpetual hirsute grin—a physiognomy so eternally well pleased (with what, one asks—not itself?)!! . . . In contrast Bernard (IT'S THE LAW) Tomson, though no Adonis, poses for us with the divertingly subtle mien—quasi-stern, quasi-quizzical—of a Giaconda confrere, or kin.

GEORGE W. CONKLIN
Westover Meadows
Simsbury, Conn.

Editor's Note: *Carl Feiss and a (gifted) portrait photographer are now collaborating on a new view, promised for January* P/A.

The Thermostat That Has Everything

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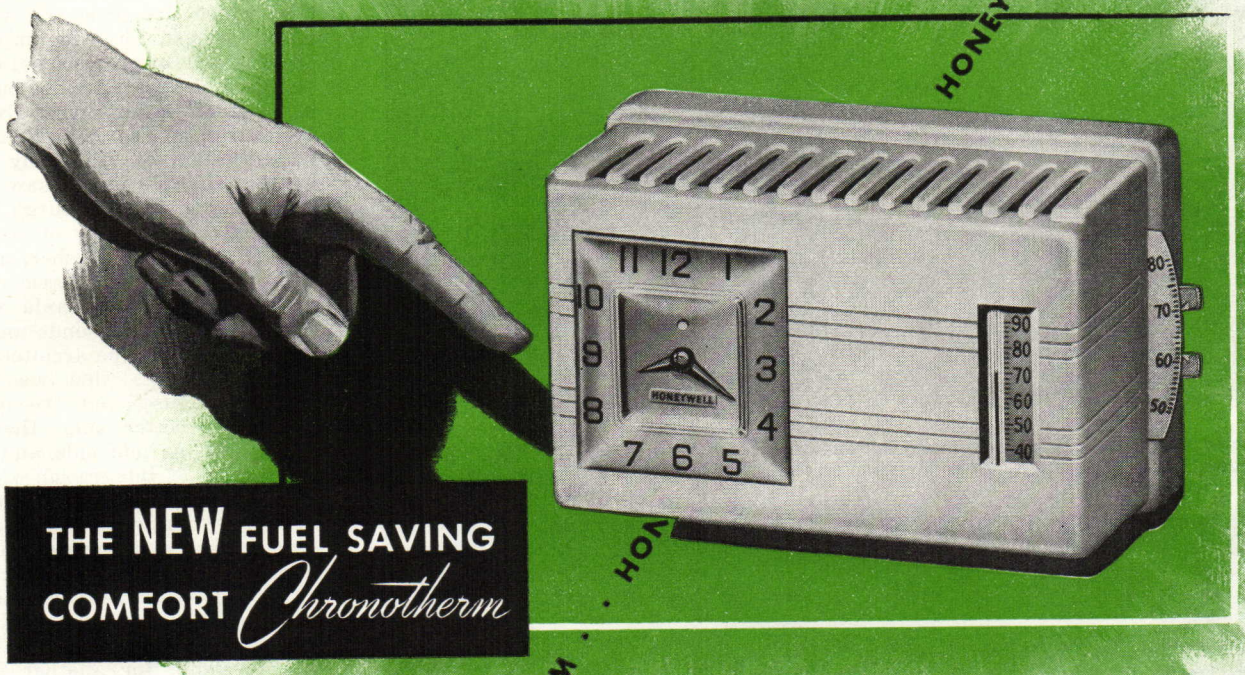

ALL in one package—sensitive, accurate temperature control, with automatic night shut-down for fuel saving, and gradual morning pick-up for twenty-four hour, care-free home heating comfort.

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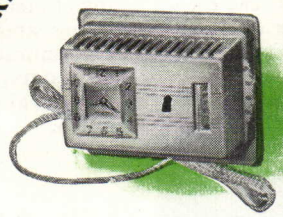
So do as others everywhere are doing, specify Honeywell's famous Chronotherm in every home you design. Minneapolis-Honeywell, Minneapolis 8, Minnesota. In Canada: Leaside, Toronto 17, Ontario.



The new Plug-In Chronotherm is designed to replace all manual thermostats. All the advantages of the regular Chronotherm. Anyone can install it in a few minutes.

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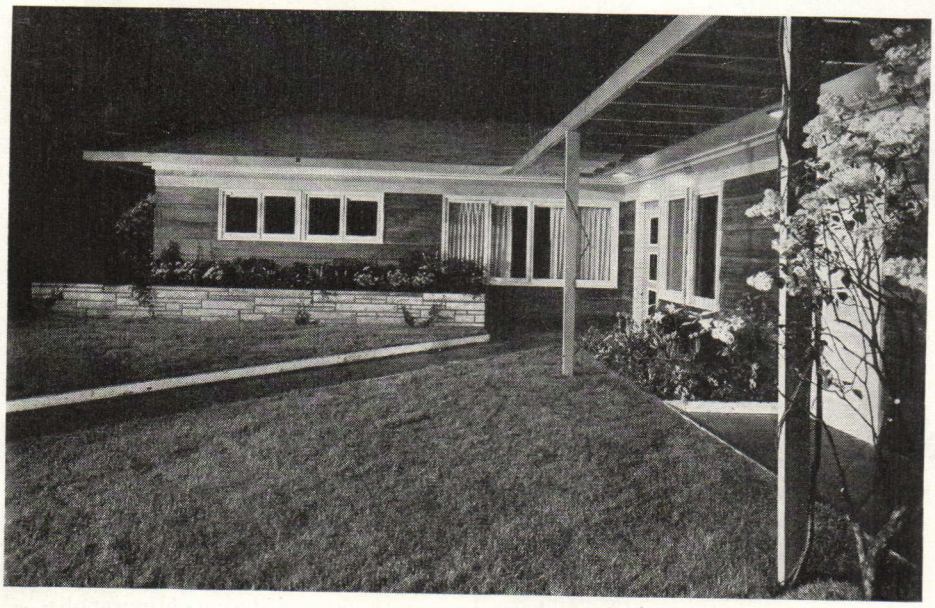
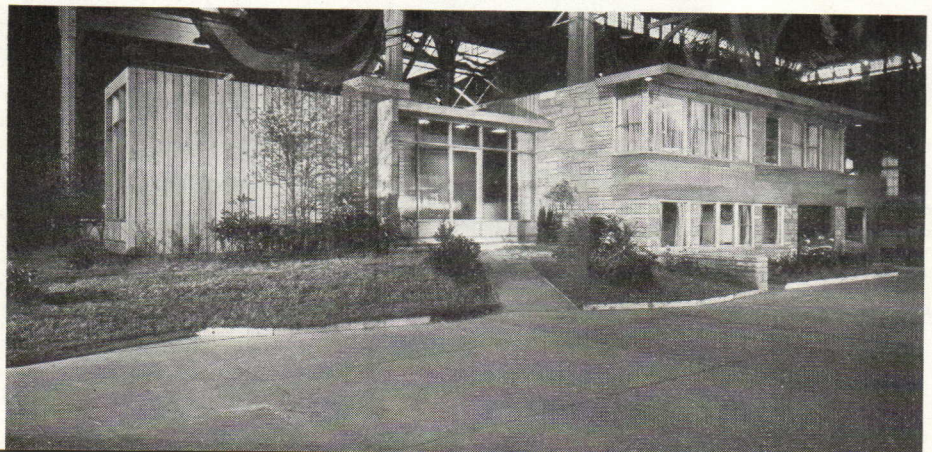
77 BRANCHES FROM COAST TO COAST WITH SUBSIDIARY COMPANIES IN: TORONTO • LONDON • STOCKHOLM • AMSTERDAM • BRUSSELS • ZURICH • MEXICO CITY

Pittsburgh—The model house of the recent Better Homes Exposition created good will for builders and brought many "fan letters" from interested visitors. *Photo: Newman-Schmidt Studios*



Cleveland—For the recent Cleveland Home Show this house was designed to provide a free flow of visitors and demonstrate contemporary standard of decoration, use of new materials and equipment, and easy control of interior areas. *Photo: Courtesy of "Popular Home Magazine," United States Gypsum Company*



Philadelphia—Even on a flat site this model house, shown at the recent Philadelphia Home Show, could be accommodated by nominal excavation for the garage and recreation room at the lower half-level.
Photo: Cortlandt V. D. Hubbard

EXHIBITION HOUSES

Builders associations over the country, always establishing more firmly the annual exhibition to interest the public in new homes, have shown an alertness to the advantages of employing competent local architects to design the model houses which are generally the focal point of interest. The wide implications of this instance of professional influence on residential design are obvious.

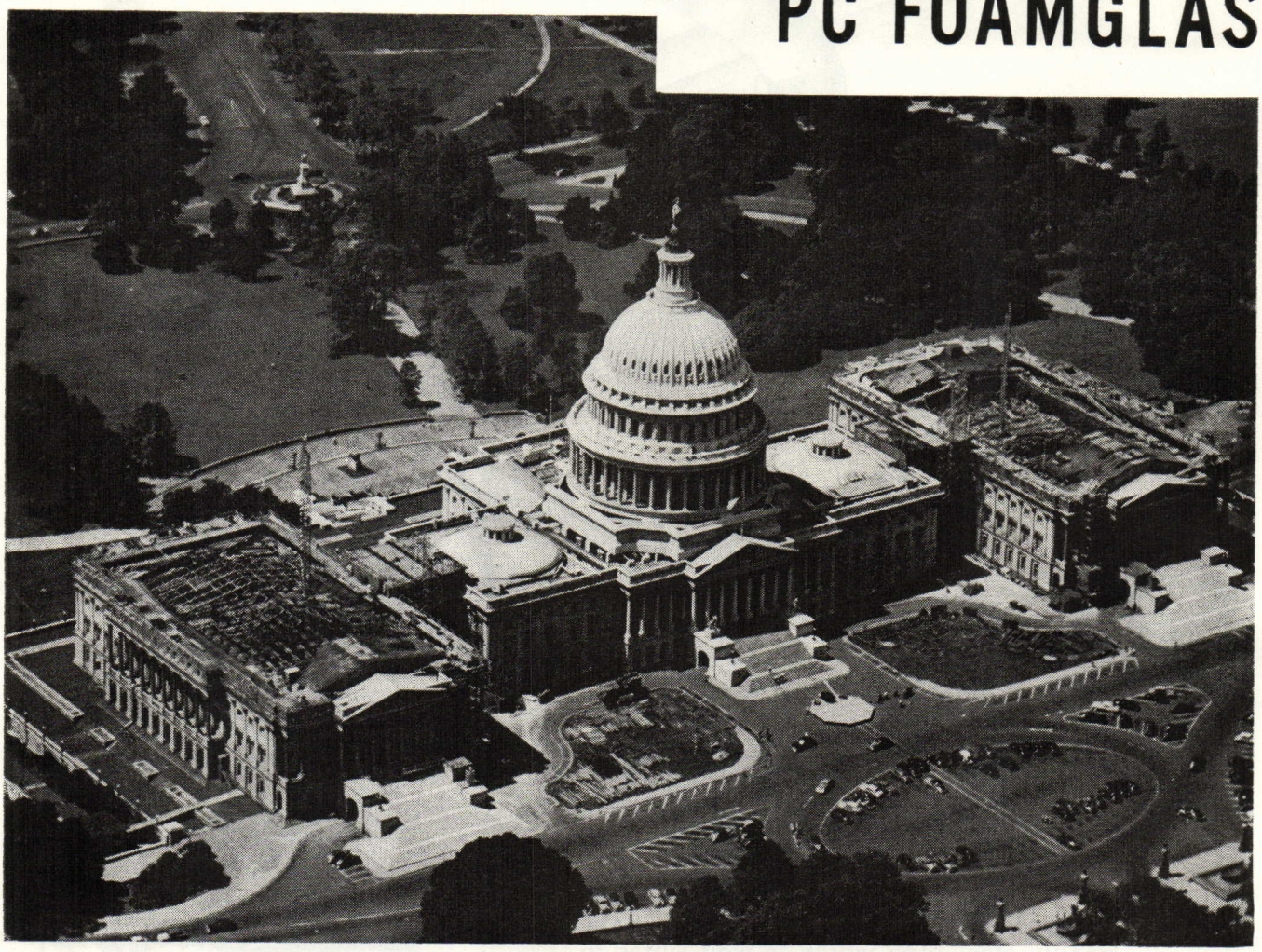
At the 1949 Better Homes Exposition in Pittsburgh, sponsored by Home Builders Association of Allegheny County, more than 150,000 people saw a model house designed by Pittsburgh Chapter of Pennsylvania Society of Architects, A.I.A. (Raymond A. Fisher, architect, and Edw. K. Schade, associate) and landscaped by Pennsylvania Chapter, A.S.L.A. (John O. Simonds and Philip D. Simonds, landscape architects). For publicity purposes this was dubbed "Beautility House" but the plan and design were better than that. Glass walls on the garden side and careful consideration of integration of the living and garden areas were noteworthy. Special attention was paid to acoustical treatment that would reduce noise from mechanized kitchen and laundry equipment as well as the radio and television sets which "tend to destroy the peace and restfulness" of the modern home.

In Cleveland, for another instance, record crowds attending the 1949 Cleveland Home Show, sponsored by Home Builders Association of Cleveland, visited an L-shaped one-story model house designed by a committee of Cleveland architects (Alfred W. Harris, chairman, Ernst Payer, Robert A. Little, and J. Byers Hayes), with interiors by Halle Bros. Co. This house also emphasizes full view of the garden and openness of plan.

For the second year, George Daub, Philadelphia architect, designed the model house for the 1949 Philadelphia Home Show. He attempted in his design to incorporate latest equipment and ideas suggesting a "house of the future," such as ramps to replace stairs, a built-in communication system to save steps for the housewife, acoustical ceilings to modify the clamor of mechanized living, and construction details designed to minimize maintenance cost. Mahogany siding, for instance, was selected for durability and handsome exterior finish.

In the Nation's Capitol—$5,000,000 for renovation . . .

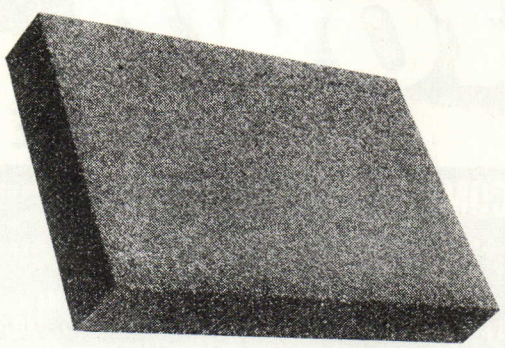
PC FOAMGLAS



This photograph shows the location of the two roofs which were replaced, and in which PC Foamglas Insulation has been installed.
General Contractors: Consolidated Engineering Co., Inc., Washington, D. C.

The two wings of the Capitol at Washington, which contain the Chambers of the House of Representatives and the United States Senate, are being reroofed and redecorated at a cost of about $5,000,000.

An important addition to the new roofs is insulation, which must meet exceptionally exacting requirements. The material selected is PC Foamglas, the permanent insulation, which has met similar requirements successfully for years on all sorts of buildings.

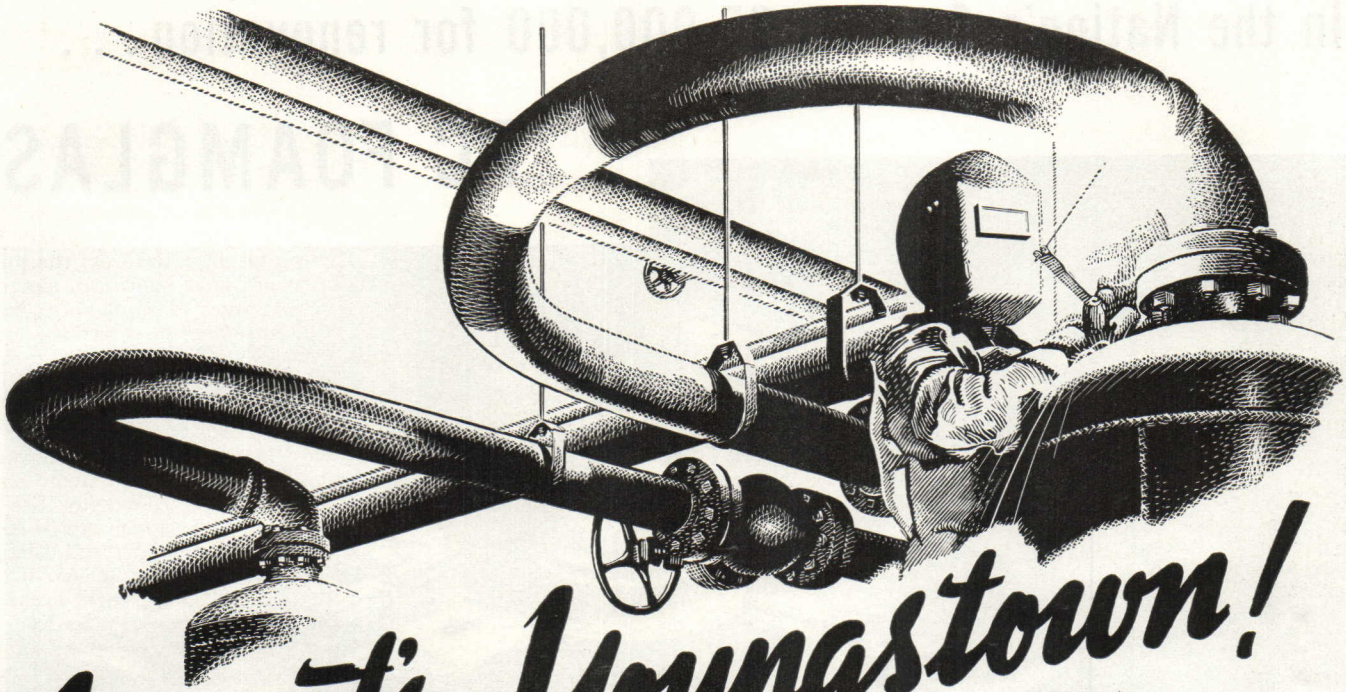


ARCHITECTS, engineers and insulating specialists have come to rely on PC Foamglas to solve their most pressing insulating problems. They have found that the unique properties of Foamglas make it the ideal insulating material for roofs, walls, floors and ceilings of all kinds of structures, from small dwellings to monumental public buildings.

WHAT IS FOAMGLAS?

Foamglas is the only material of its kind, different from the wools, boards and batts, the various fibrous and granular insulating materials with which you are already familiar. It contains no organic matter.

To make Foamglas, a very special kind of glass is subjected to a controlled heating process which produces strong, rigid blocks, composed of millions of tiny closed glass bubbles, full of still air. Because it is made of glass and because of its cellular structure, Foamglas is an exceptionally effective insulating material.



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

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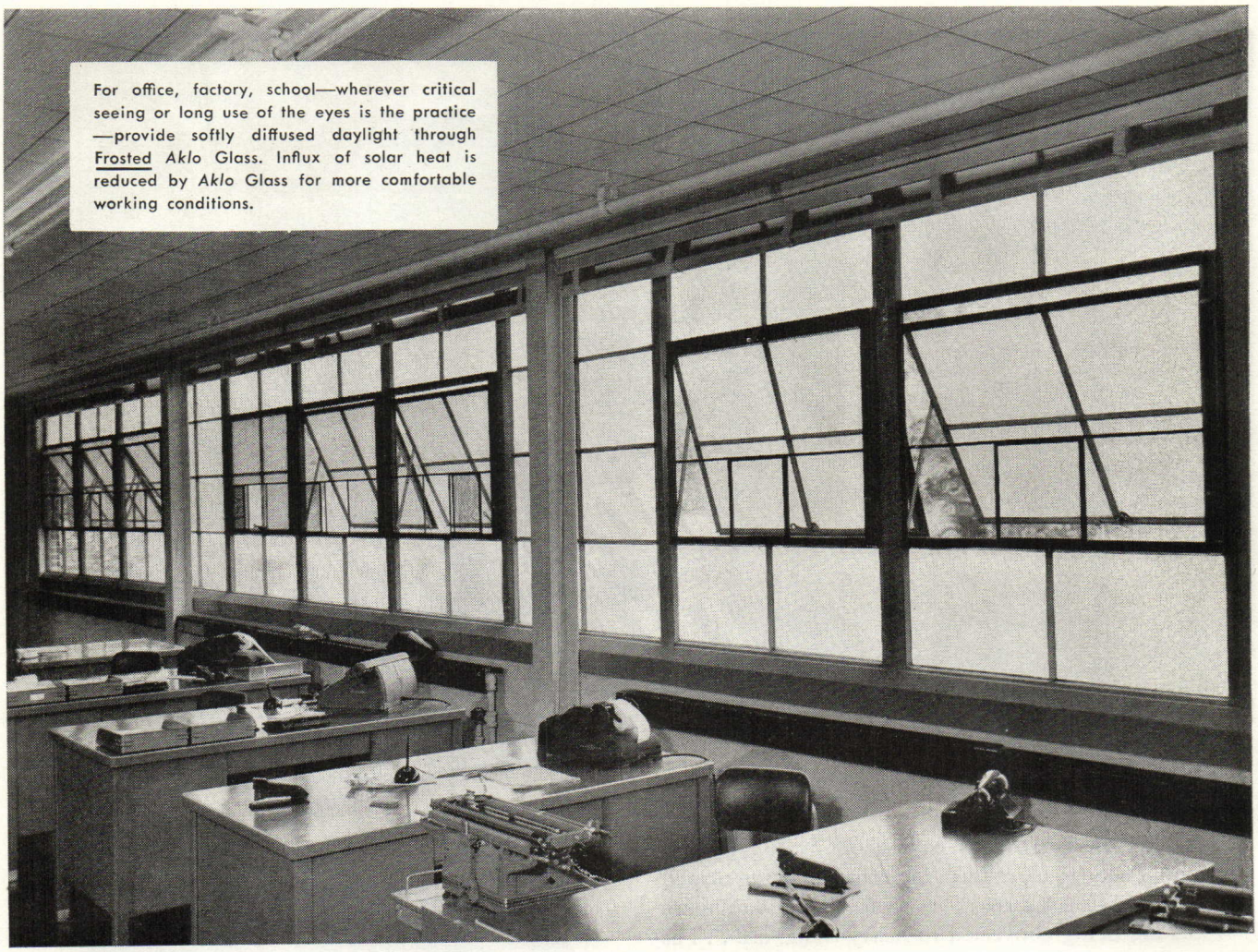

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There's no substitute for properly diffused daylight. With Blue Ridge Frosted *Aklo** Glass in windows you provide daylight of pleasing quality that is easy on the eyes. Workers—in office or plant—enjoy an abundance of softly-diffused daylight without excessive solar heat.

REDUCES GLARE. Frosted *Aklo* Glass is a blue-green diffusing filter between the sun or sky and the eyes of workers. *Aklo's* glare reduction makes seeing more comfortable—less tiring. Easier seeing means better workmanship—faster production—fewer accidents.

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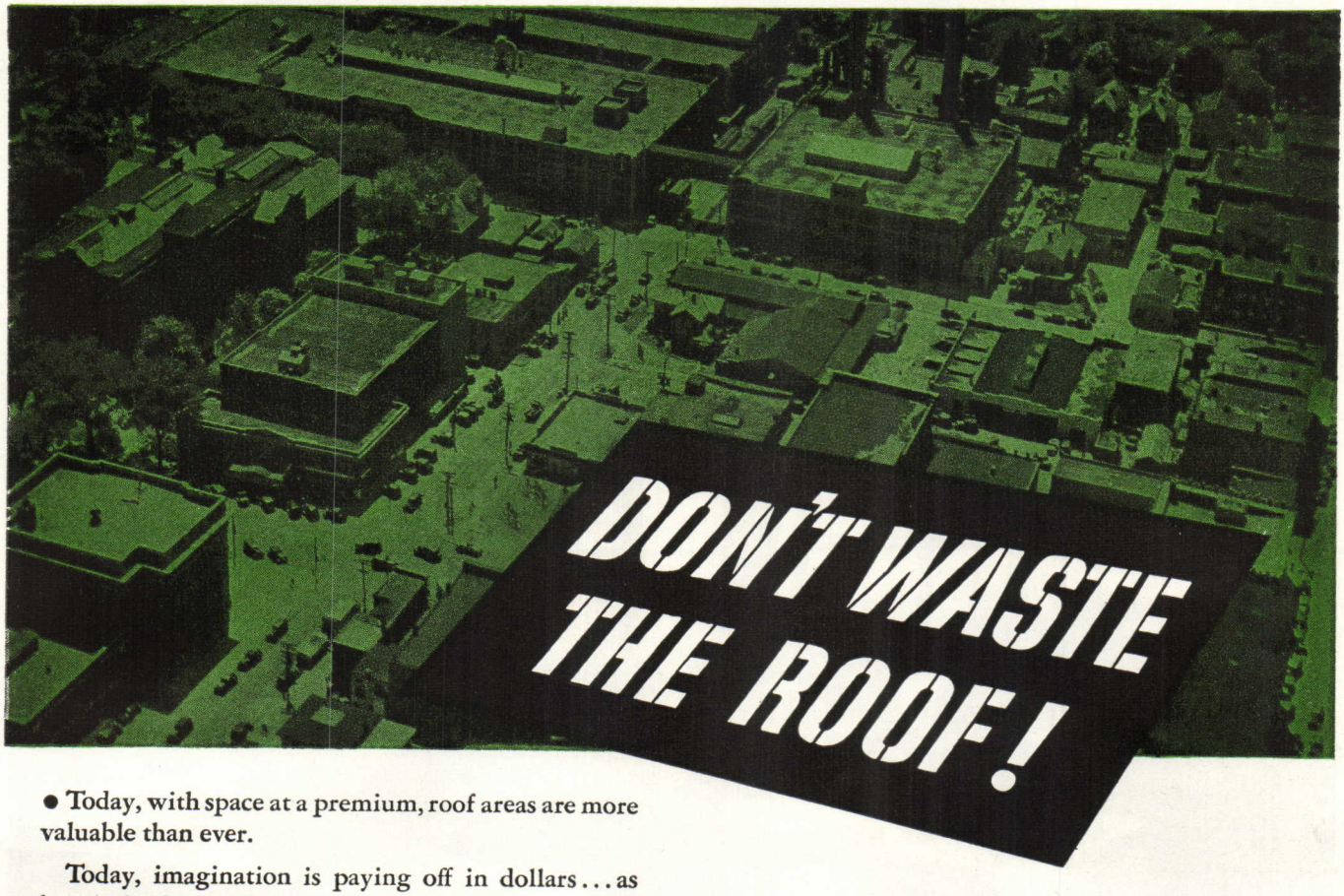

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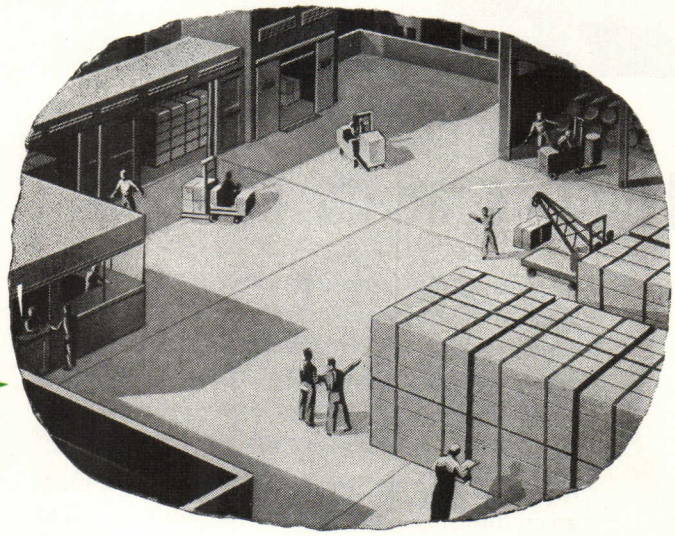
Today, imagination is paying off in dollars . . . as hospital, school, office-building roofs are being turned into recreational areas . . . as factory and warehouse roofs are being converted to heavy-traffic use . . . as apartment and hotel roofs are blossoming into garden paradises!

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

HEAVY TRAFFIC ROOF

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



The RUBEROID Co. built-up roofings

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The right roof for any job — from ONE source!

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

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

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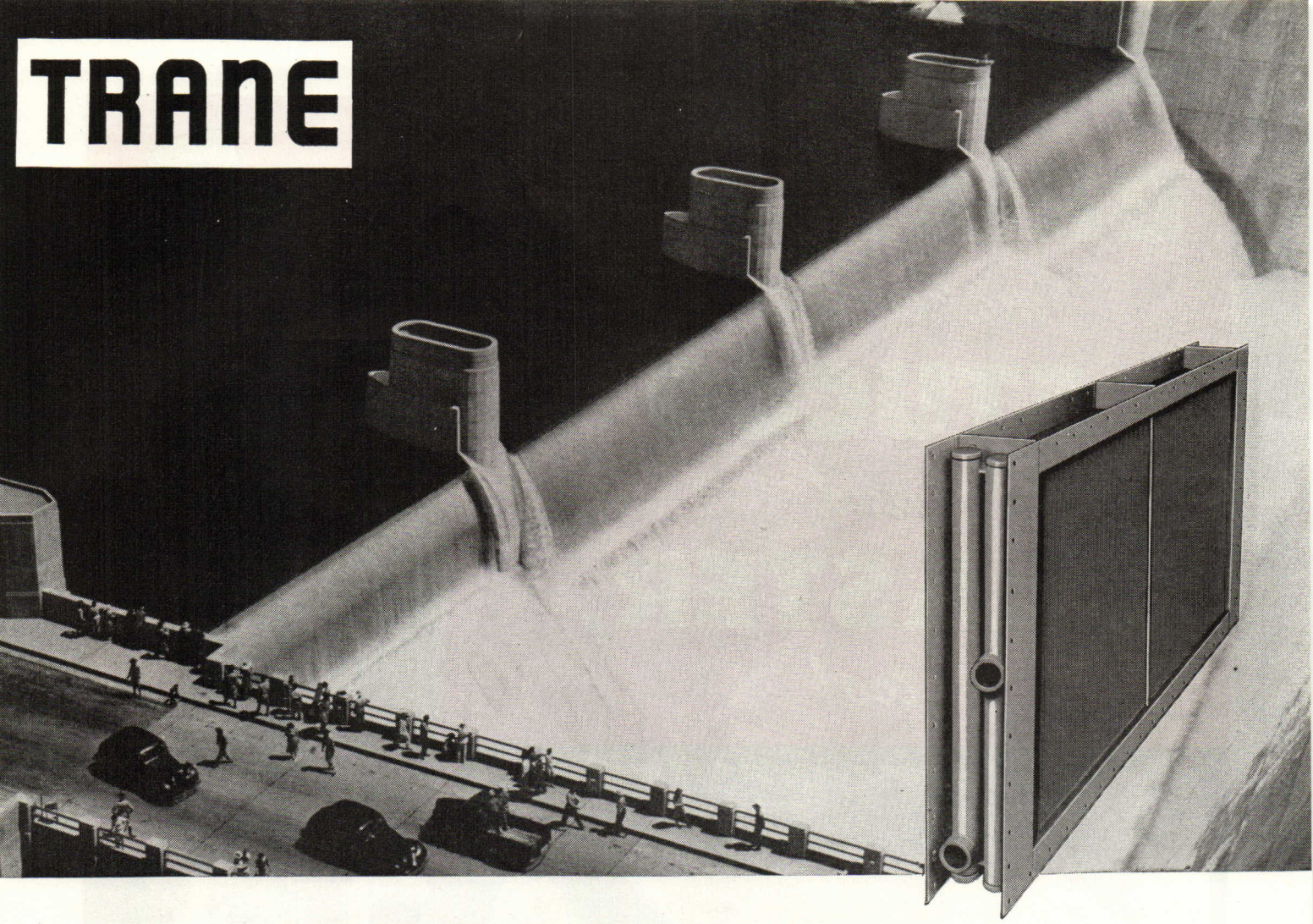

These coils stand dam-high pressures

Boulder Dam on the Colorado River is the highest dam in the world—727 feet. And, since a column of water 1 inch square and 2.31 feet high will exert a pressure of 1 pound, Boulder Dam represents a potential pressure of 315 pounds per square inch.

Impressive as this pressure is, it is dwarfed by the pressures against which Trane Coils are designed to operate.

On Trane *High Pressure* Coils, Type WH, there is no practical pressure limit: *Any pressure that may be required for any normal commercial or industrial service can be handled effectively by a Trane design.*

Even so-called low pressure coils, such as the popular Type E, used on ordinary heating and ventilating work, withstand pressures far over normal requirements. Type E coils used on pressures as low as 5 or 10 pounds are tested for and may safely be used on pressures as high as 200 pounds.

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Why not ask the Trane sales engineer in your area to tell you more about these husky, heavy duty heat exchangers?

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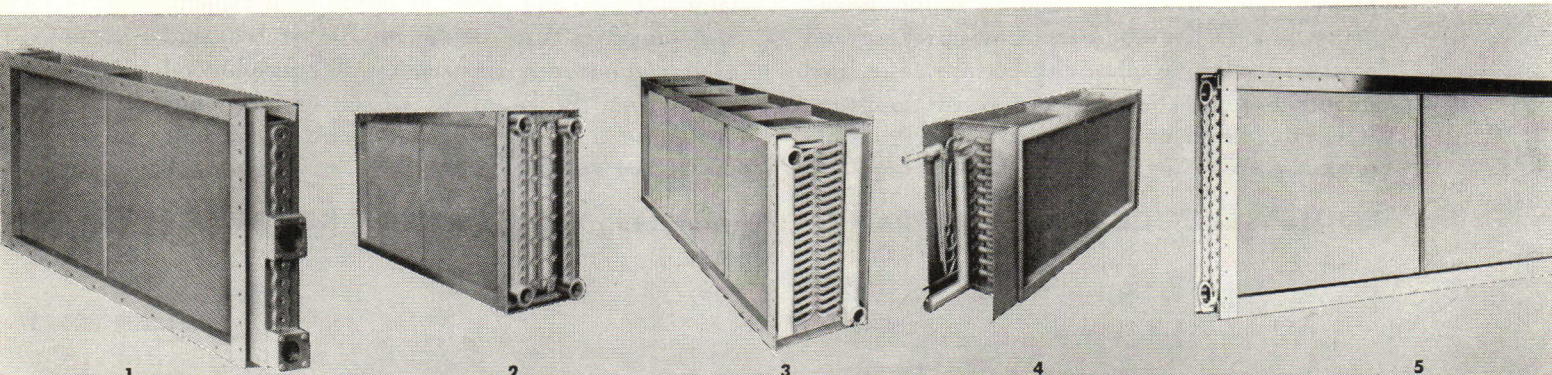
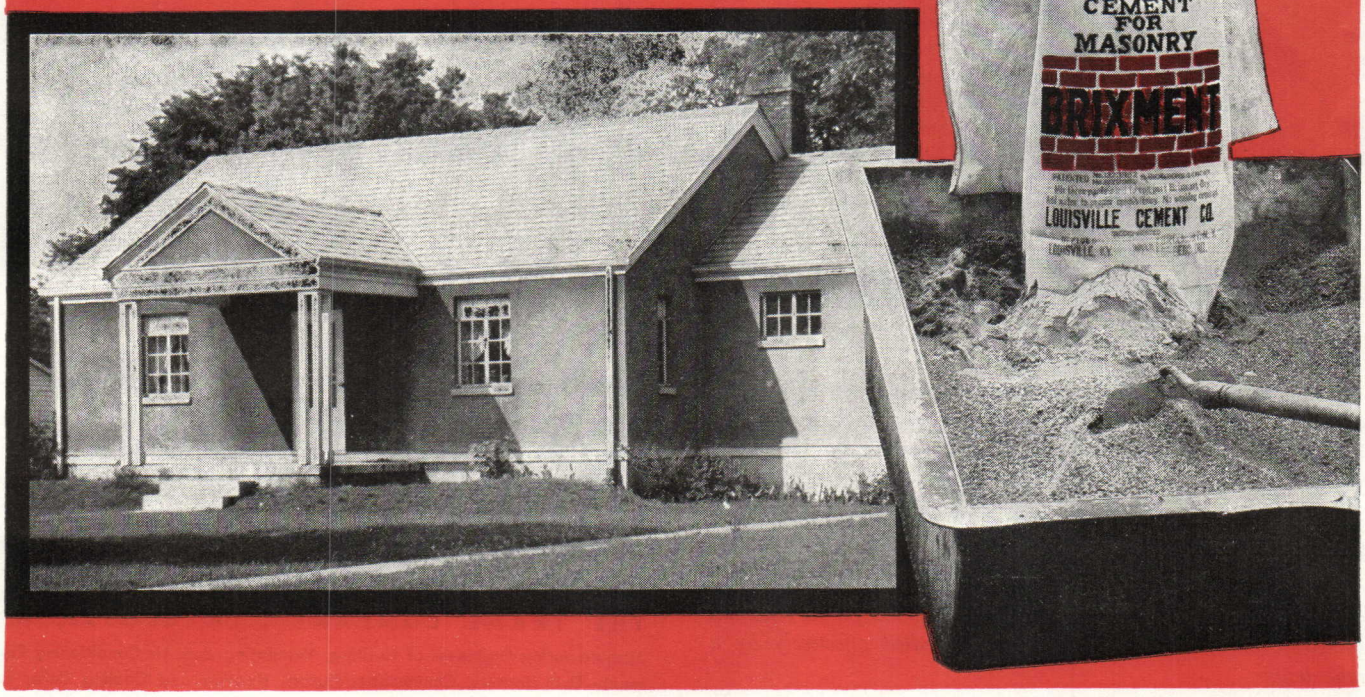
Manufacturing Engineers of Heating, Ventilating and Air Conditioning Equipment—Unit Heaters, Convector-radiators, Heating and Cooling Coils, Fans, Compressors, Air Conditioners, Unit Ventilators, Special Heat Exchange Equipment, Steam and Hot Water Heating Specialties... IN CANADA, TRANE COMPANY OF CANADA,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

Trane heating and cooling coils are available in a huge array of sizes, styles, and types. Shown here: 1. Type SDS, the non-freeze heating coil with famous Trane Kinetic Orifices; 2. Type R cleanable cooling coil with removable headers; 3. Type OS cooling coil with drainable tubes; 4. Type DE coil for direct expansion refrigerants, with exclusive Trane equalizing distributors; 5. Type E, versatile all-around heating coil.



BRIXMENT *makes better* STUCCO *and* PLASTER, *too!*



You yourself know, probably from years of experience, that Brixment has many advantages for masonry—unusual plasticity, strength, bond, water-retention and freedom from efflorescence.

Brixment is equally superior for stucco and plaster, too. It can be used in leaner mixes, hence practically eliminates hair-checking and crazing. Its greater plasticity permits faster and smoother application. It also resists moisture. It is mixed and applied exactly like Portland-cement stucco *except that no lime is required.*

Brixment is being widely used with lightweight aggregate for interior plaster, because it is extremely economical, moisture-resistant and durable.

This 119-year-old company manufactures Portland cement and lime as well as Brixment. We ourselves use Brixment for stucco and plaster in our own construction. We recommend it to you. Write to us direct or ask your dealer for a copy of the handbook, "*Brixment for Stucco and Plaster.*"

LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY

With JOHN HANCOCK it's a POLICY

ARCHITECTS • ENGINEERS:
Cram & Ferguson,
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BUILDERS:
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For this new
home office building,
as for its predecessor
constructed 26 years ago,
The John Hancock Mutual
Life Insurance Company
chose

STANLEY BALL BEARING BUTT HINGES

One thing they have in common . . .

this beautiful new, completely modern building which towers 26 stories into the sky over Boston, Massachusetts, and the old Home Office of The John Hancock Mutual Life Insurance Company that has stood for a quarter century near Copley Square—

both buildings are equipped with Stanley Ball Bearing Butt Hinges, three to a door.

A satisfied client is the best recommendation an architect can have.

If you want hinges that last on buildings *you* plan, make it a policy to specify Stanley. For nearly half a century the Stanley Ball Bearing Hinge has been the "architect's hinge". On *all* hardware, in fact, you'll find the Stanley trade mark good insurance. The Stanley Works, New Britain, Connecticut.

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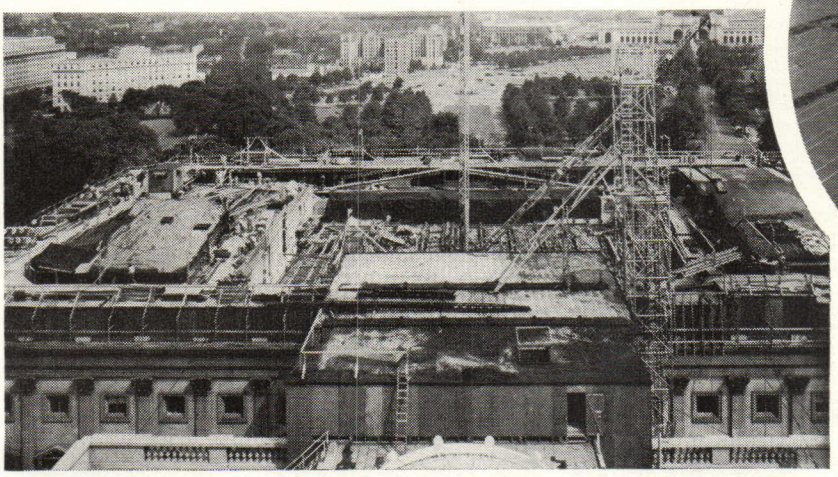
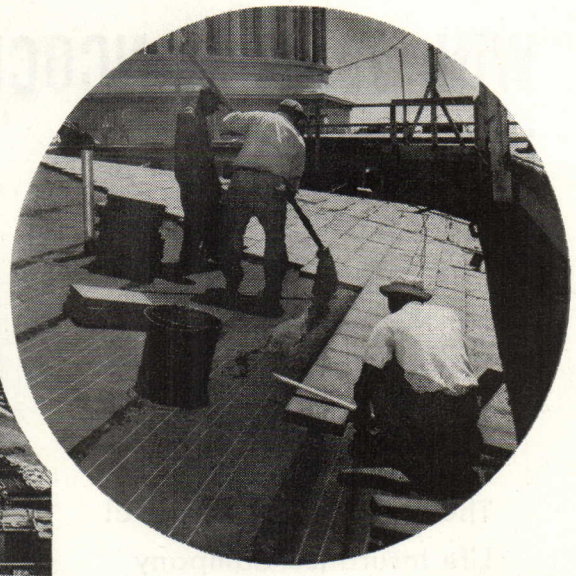
FOR INSULATION



Center section of the old roof has been removed from the Senate Chamber at this point. Later both end sections were also removed and the new roof, containing PC Foamglas Insulation was installed. Roofing Contractor: Lloyd E. Mitchell, Inc., Baltimore, Md.



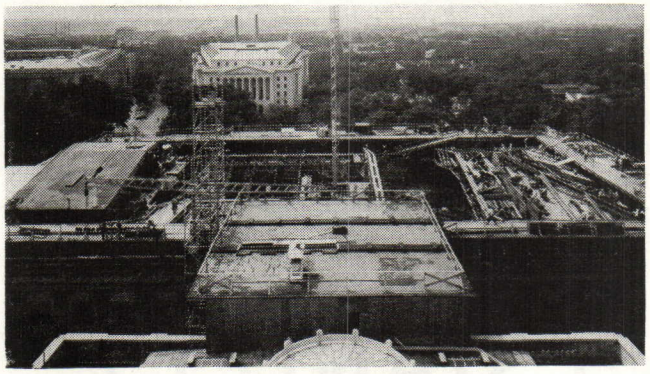
Here you see PC Foamglas being laid on a sloping section of roof deck. The big lightweight blocks are easily handled, lay up quickly, form a firm level base for roofing felts. Foamglas can be cut to fit around pipes and other obstructions right on the job with ordinary tools. Later, roofing felts were applied, and the entire job was finished with a metal roofing material by The Fingles Co., Baltimore, Md.

LIGHT - RIGID - STRONG

Husky big blocks of Foamglas are so light that the large expanses of roofs in which they are used as insulation need no extra structural reinforcement . . . so rigid that they readily support their own weight, become an integral part of the structure, when built into walls . . . so strong that they safely support more than ordinary loads when used to insulate floors, platforms, ramps, etc. in all sorts of structures.

FIREPROOF - MOISTUREPROOF - VERMINPROOF

There is no food for flames in Foamglas, for glass will not burn. Its continuous cellular structure does not permit moisture to penetrate or pass through Foamglas. Vermin cannot eat into or through it, nor can they nest or breed in Foamglas Insulation. Foamglas is also vaporproof, fumeproof and acidproof. It withstands high humidity, minimizes condensation.



At this stage of construction, temporary girders are being removed from the House Chamber, making way for the new steel-supported concrete roof deck on which PC Foamglas is used as insulation. Roofing Contractor: Warren Ehret Co., Washington, D. C.

FIRST COST IS LAST COST

You need fear no costly repairs, maintenance or replacements when you insulate with PC Foamglas. Being glass, Foamglas is impervious to many elements that cause other materials to lose insulating efficiency. In fact, when installed according to our specifications and recommendations, PC Foamglas retains its original insulating efficiency *permanently*.

Its ability to retard heat travel, to reduce condensation, to withstand humidity, make Foamglas an exceptionally effective insulation. Freedom from repairs, maintenance and replacement make PC Foamglas an exceptionally economical insulating material.

SEND IN THE COUPON

Send for a sample of Foamglas. Test its light weight. Step on it. Cut it. Send the convenient coupon for our detailed, authoritative booklets. Consult our insulating specialists. Then you can show your clients where they can use PC Foamglas to the best advantage, whether they are concerned with small modern dwellings or vast public buildings.

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Normal Temperature: Roofs ☐ Walls ☐ Floors ☐

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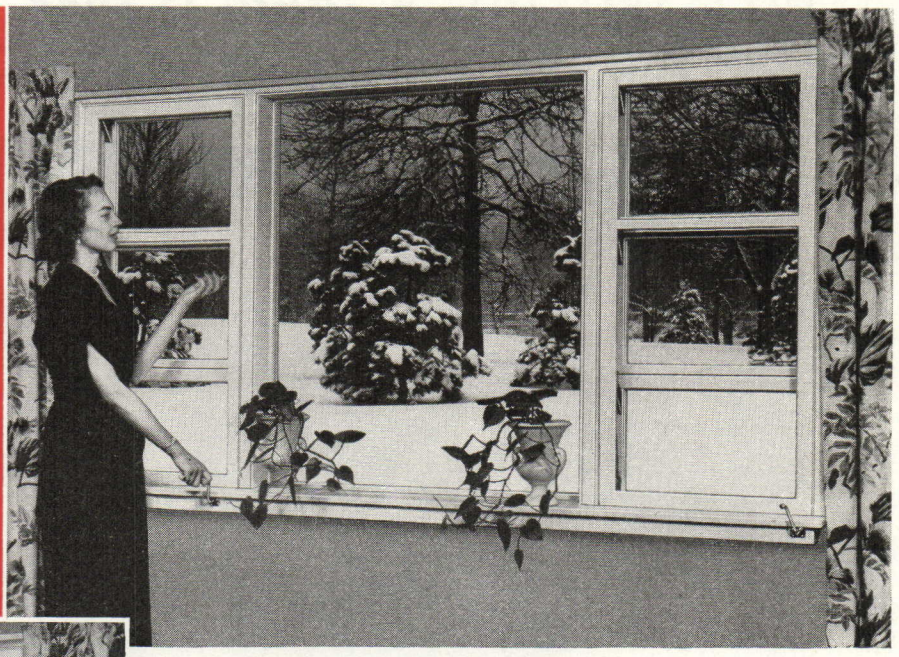
FOAMGLAS INSULATION

. . . when you insulate with FOAMGLAS . . . you insulate for good!

THE ONLY REALLY NEW WINDOW IN CENTURIES!

The Fox-Made Gate City Picture Awning Window

Made of Protexol impregnated genuine white pine, it's dimensionally stable — and resistant to fire, rot and vermin!



Sashes open to the degree desired—provide perfect, healthful ventilation.

Custom-built, Fox-Made Gate City Awning Windows are manufactured from Protexol-impregnated genuine white pine resistant to fire, rot and vermin and are dimensionally stable. They're furnished ready to install, with sash in frame, weatherstripped and hardware applied.

Designed to harmonize perfectly with the architectural beauty of today's buildings, Fox-Made Gate City Awning Windows also offer *more* — functionally — to keep in step with the demands of modern living for beauty, comfort and convenience.

- **GREATER BEAUTY** Embodying the natural charm that only wood can offer, their graceful lines enhance the appearance of every building.
- **GREATER COMFORT** They're warmer in winter — with precision-built storm sash, and pre-weatherstripped for double protection. And, they're cooler in summer — affording complete 100% ventilation to scoop up to twice the amount of fresh air into the home with uniform, draftless air movement.
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- **GREATER SAFETY** Fox-Made Gate City Awning Windows *lock* in position when open, protecting children from falling out — and intruders cannot enter.

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Only KAYLO® ROOF TILE

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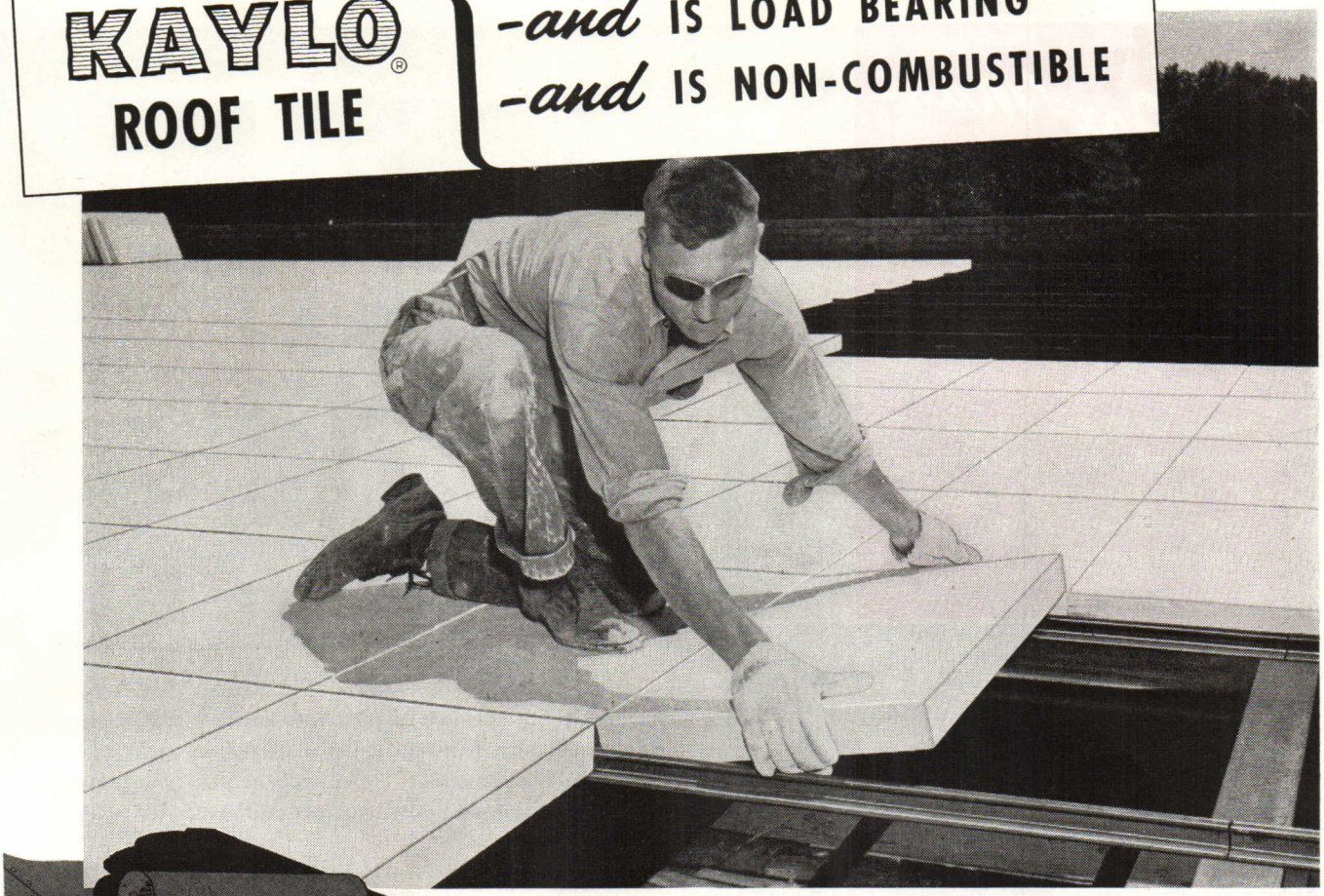
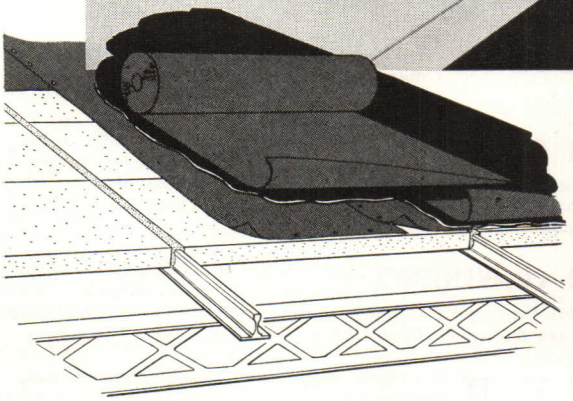




SIMPLE FAST CONSTRUCTION
Kaylo Roof Tile are laid on sub-purlins or structural steel members or nailed to wood joists. End joints are grouted. Roofing material is applied on tile. No special skills or tools are required, and one man easily handles the 23-lb. tile.

Kaylo Roof Tile is composed of one part inorganic materials and four parts sub-micronic voids . . . formed into a wire-mesh-reinforced tile 2⅝ x18x36 inches.

The result is a roof-deck material with characteristics no other single material offers—

INSULATION VALUE equal to 1½-in. standard insulating board. No extra insulation needed on normal jobs.

LIGHT WEIGHT—5 lbs. per sq. ft.—permits substantial savings through lighter roof structure and makes it easy to handle and lay.

STRUCTURAL STRENGTH—will easily carry all normal roof loads with an adequate safety factor—Kaylo Tile, covered with roofing material, forms the completed roof.

FIRE PROTECTION—Kaylo Roof Tile is non-combustible, protects against fire for well over 1 hour under standard test conditions.

See Sweet's File—or write Dept. F-442 for sectional sample and complete information

KAYLO®
INSULATING ROOF TILE

Kaylo Division • OWENS-ILLINOIS GLASS COMPANY • Toledo 1, Ohio

SALES OFFICES: ATLANTA • BOSTON • BUFFALO • CHICAGO • CINCINNATI • DALLAS • MINNEAPOLIS • NEW YORK • PHILADELPHIA • ST. LOUIS • TOLEDO • WASHINGTON

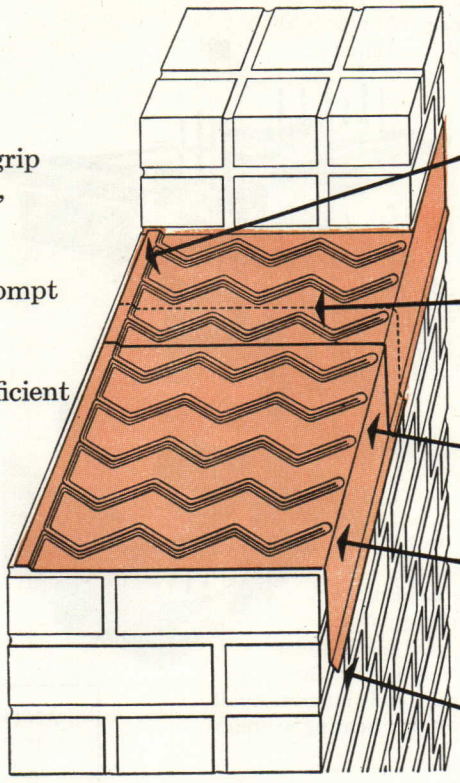
Specify Anaconda Through-Wall Flashing

the flashing that drains itself dry

better because . . .

1. ANACONDA herringbone corrugations grip mortar firmly, strongly—permanently, above and below.
2. ANACONDA design assures proper—prompt—complete drainage.
3. ANACONDA flat selvage makes neat, efficient installation easier—faster.
4. Integral one-piece corner flashings are available.

Standard outside corner flashing unit. Dam on outside, drains in.



Integral dam, the full height of corrugations, provides positive drainage in desired direction.

Lengths are lapped and locked endwise by simply nesting corrugations.

Flat selvage eliminates ridge at drain edge.

Bending counter flashing selvage upward to insert base flashing does not form ridge at drain edge.

Flat selvage provides a counter flashing and permits neat locks to adjacent sheet metal.

For complete architectural data on ANACONDA Through-Wall Flashing, let us send you booklet C-28. Just address The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.

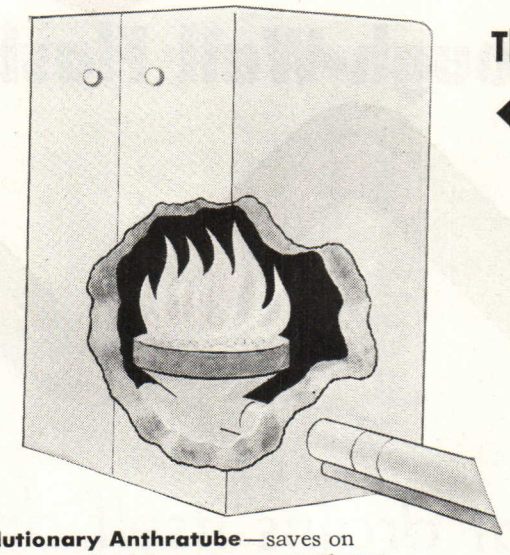
4905

For sure protection ANACONDA

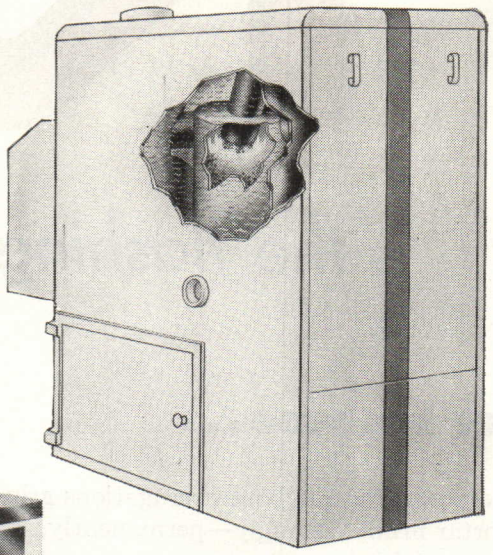
THROUGH-WALL FLASHING

Show your Clients these 3 modern Automatic Anthracite Heating Units

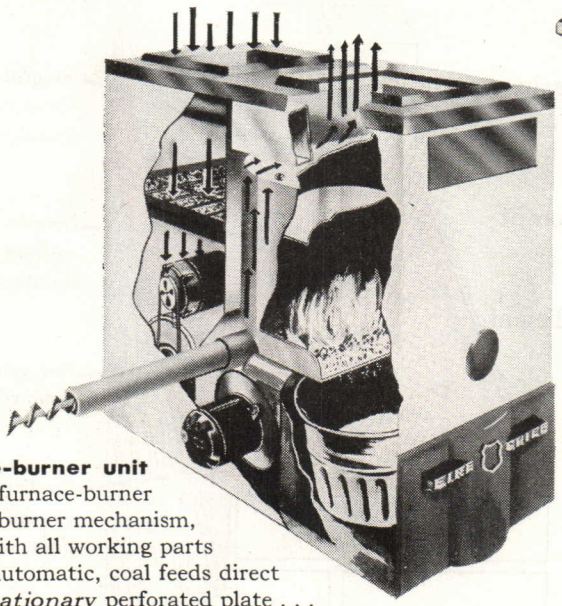
They save up to 52% annually on fuel bills



1. Automatic Anthracite Stokers—Installed in an existing boiler or furnace, or in new houses, automatic hard coal stokers deliver *plenty* of heat quickly . . . save up to 52% on fuel bills . . . eliminate fuel worries.



2. The Revolutionary Anthratube—saves on fuel bills . . . its proved efficiency is over 80%. This scientifically engineered boiler-burner unit, with "Whirling Heat" and other revolutionary features, produces quicker response, superior performance than units using other types of fuel. Fully automatic.



3. Anthra-Flo furnace-burner unit—An entirely new type furnace-burner which features a simple burner mechanism, attached by two bolts with all working parts easily accessible. Fully automatic, coal feeds direct from bin across single *stationary* perforated plate . . . ashes discharge by gravity into container within unit. Available for steam, hot-water and warm-air heating systems.

TODAY YOU CAN OFFER YOUR CLIENTS *modern* automatic heat with Anthracite equipment.

You can show your clients how to save money . . . as much as $100 to $200 every year and yet have *plenty of heat—clean heat—even heat*—and no worry about future supplies or deliveries.

For complete information about (1) new anthracite stokers (2) revolutionary Anthratube or (3) Anthra-Flo, just fill in and return the coupon below.

ANTHRACITE INSTITUTE

101 Park Avenue • New York 17, New York

ANTHRACITE INSTITUTE
101 Park Ave., Dept. 12-C, New York 17, N. Y.

Please send me more information on

1. New Anthracite Stokers
2. Revolutionary Anthratube
3. Anthra-Flo furnace-burner unit

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PLEASE PRINT

Everybody likes it!

New Bruce Ranch Plank Floor wins praise of Architects and Interior Decorators

Bertram A. Weber, Chicago Architect, says: "The new Bruce Ranch Plank Floor impresses me as being very beautiful and practical. I consider it suitable for both traditional and modern architectural types. The interesting informality of this floor, with its random widths and walnut pegs, is particularly good for rambling ranch-type homes."

Elizabeth Whitney, Chicago Decorator, says: "Decoratively speaking, the Ranch Plank Floor is a real 'find' for both traditional and modern interiors. The random widths make it especially suitable for all Colonial and Provincial styles. In modern rooms, the oak grain and walnut pegs contrast delightfully with plain-textured fabrics and the clean-cut lines of contemporary furniture."

Bruce Ranch Plank Floor

Solid oak with walnut pegs • Alternate 2¼" and 3¼" widths • New "Decorator" Finish

A distinctive floor at moderate cost

This new floor has style and glamour, along with all the natural, colorful beauty of oak. With alternate 2¼" and 3¼" widths and walnut pegs, a Ranch Plank Floor gives an effect similar to expensive random-width plank floors. It has traditional charm with a fresh, modern appearance. Yet this floor is inexpensive . . . in fact, costs little more than an ordinary strip floor and is just as easily installed. Mail coupon at right for literature with photographs in color. E. L. BRUCE CO., MEMPHIS 1, TENN.

Mail this coupon for data file

BRUCE

E. L. BRUCE CO.
MEMPHIS 1, TENN.

Send complete information on the new Bruce Ranch Plank Floor to:

*Name*_____

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Carl Amundson

OF HERMAN NELSON

Carl H. Amundson, manager of Herman Nelson's branch office in Milwaukee, Wisconsin, has been with the company since 1939. A graduate in engineering from the University of Wisconsin, Mr. Amundson is widely known among architects, engineers, contractors, and school authorities in his territory. At the opening of the war, he served with the War Production Board. Then he went to Alaska with a group of Herman Nelson Product Application Engineers to work with the Army Air Forces in the application of Herman Nelson Self-powered Heaters for preheating engines and cockpits of bombers. After the end of the war, he assumed managership of the Wisconsin territory.

Familiar with all types of heating and ventilating problems in industrial, commercial, and institutional buildings, are more than 75 Herman Nelson Product Application Engineers like Carl Amundson of Milwaukee. Each of them will furnish you with concise, easy-to-use engineering data and specifications backed by technical knowledge and practical experience.

Whether your heating or ventilating problem calls for unit heaters, unit ventilators, propeller fans or centrifugal fans . . . you'll find that the nearest Herman Nelson Product Application Engineer knows exactly how they should be installed to provide most efficient operation and maximum operating economy.

These men and more than 200 carefully selected Distributors and Stocking Jobbers, with personnel trained in the application of our products, make up Herman Nelson's nationwide sales and service organization.

If you're interested in quality products and conscientious, intelligent service, contact Herman Nelson on your heating and ventilating problems.

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Since 1906 Manufacturers of Quality Heating and Ventilating Products

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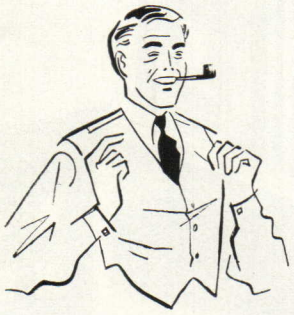
OFFICE BUILDING OF FREEMAN, HAYSLIP & TUFT, ASSOCIATED ARCHITECTS, PORTLAND, OREGON

LCN CATALOG 11-E ON REQUEST OR SEE SWEET'S • LCN CLOSERS, INC., 466 WEST SUPERIOR STREET, CHICAGO 10



"Never called for a service-man"

New Trier Township High School, Winnetka, Ill., reports 18 years of trouble-free service from Telechron-powered clock and program systems.

"In the 18 years since our first Telechron-powered synchronous clock and program was installed," writes R. L. F. Biesemeier, Supervising Engineer of the New Trier Township High School, *"we have never called for a serviceman.*

"Based on our experience, we recommend Edwards Telechron-powered Clock and Program Systems without reservation."

☆ ★ ☆

It's a safe recommendation, Mr. Biesemeier . . . because that service record is typical. Edwards systems operate *without* a master clock . . . eliminating all need for otherwise frequent servicing and adjusting at this point in the system. Send for illustrated bulletin on clock and program systems.

EDWARDS

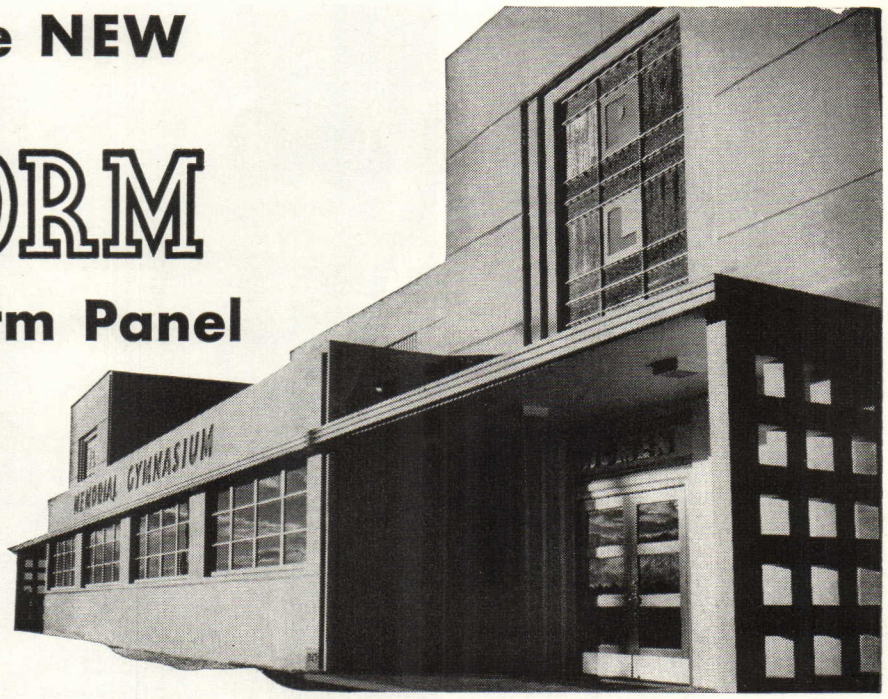
77 years' experience in electrical signaling

CLOCK & PROGRAM · TELEPHONE · FIRE ALARM SYSTEMS

Edwards Co., Inc., Norwalk, Conn. *In Canada: Edwards of Canada, Ltd.*

Specify the NEW PLYFORM Concrete Form Panel

GENUINE DOUGLAS FIR PLYWOOD
PLYFORM
CONCRETE FORM PANEL
INTERIOR-TYPE GRADE B-B
D.F.P.A. INSPECTED



. . . for Smooth, Fin-Free Concrete Surfaces

PLYFORM—the multiple re-use concrete form panel of Douglas fir plywood — is now manufactured in strict accordance with the new grade specifications set forth in U. S. Commercial Standard CS45-48. Both faces are of B (Solid) veneer—smooth and firm, meeting virtually all concrete requirements.*

*The highly moisture-resistant (but not waterproof) glues used in PlyForm permit multiple re-use of panels (as many as 10 to 15 are not unusual). For the greatest possible panel re-use, however, specify Exterior-type Concrete Form grade of Douglas fir plywood—bonded with completely waterproof phenolic resin adhesive. For special architectural concrete, requiring the highest possible finish, the architect or contractor may specify Exterior-type or Interior-type Douglas fir plywood in grades having "A" (Sound) face veneer—or one of the new plastic-surfaced panels.

Outstanding advantages offered by the NEW PlyForm include:

- PlyForm forms may be re-used again and again; they're more economical.
- PlyForm produces smooth surfaces, reducing finishing time and cost.
- PlyForm panels are strong, rigid—yet light and easy to handle.
- PlyForm's large panel size covers quickly, economically.
- PlyForm forms are puncture-proof, water and mortar tight.
- PlyForm offers superior nail-holding qualities.
- PlyForm is easy to work by hand or with power tools.
- PlyForm provides form sheathing and lining in one material.*

BOOKLETS FOR YOU!

Two booklets: "The New PlyForm" and "Concrete Forms of Douglas Fir Plywood" are now available. They will help you gain the full advantages offered by Douglas fir plywood concrete form panels. Write the Douglas Fir Plywood Association office nearest you: Tacoma Building, Tacoma 2, Washington; 1232 Shoreham Building, Washington 5, D. C.; 848 Daily News Building, Chicago 6; 500 Fifth Avenue, New York City 18.

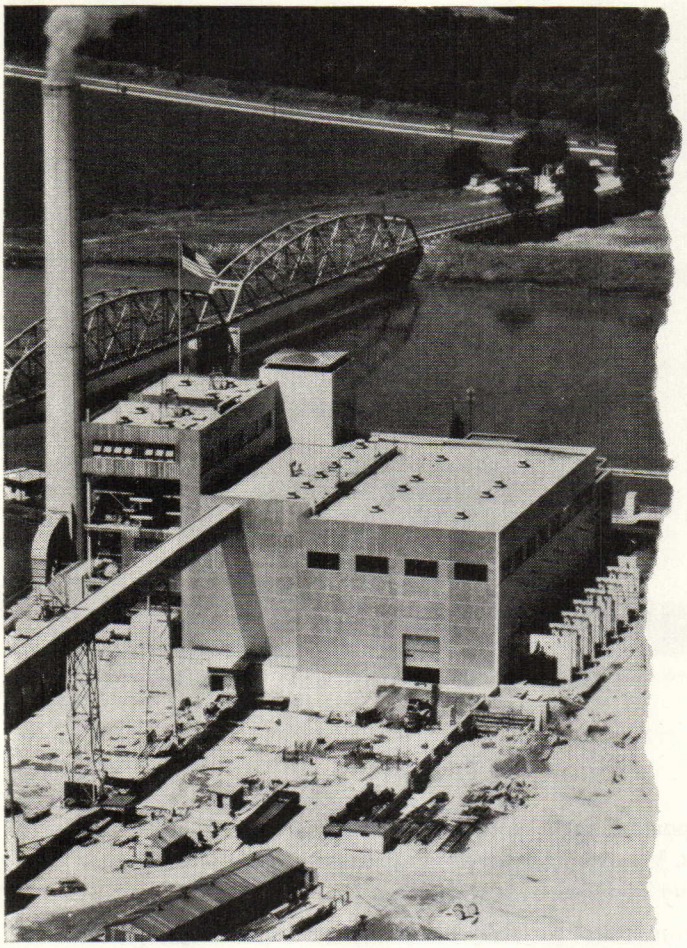
Douglas Fir PLYWOOD

LARGE, LIGHT, STRONG

Real Wood **Panels**

How to Make Power Plants

S-t-r-e-t-c-h-a-b-l-e



Courtesy of The Dayton Power and Light Company, Dayton, Ohio. This structure includes 139 squares of steel Fenestra Type C Panels and 142 squares of aluminum "C" Panels.
Engineers: Ebasco Services, New York City. *Contractor:* Owner.

Power plants must be *expandable.* So—if the future demands it—walls can stretch out to hold added equipment. That's one of the reasons so many modern stations have walls of Fenestra* Type C Building Panels.

Are you designing buildings where the easy dismantling of these good-looking panels would be an important factor in the future moving of the buildings or in rearrangement of curtain walls?

Where the installation speed of Fenestra Panels can help get equipment under cover quickly... economically...

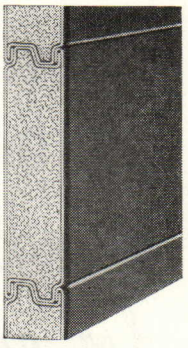
Where noncombustible walls are needed—lightweight walls of great strength that lessen the requirement for structural steel . . .

Where, instead of a 12″ brick wall, you could have "C" Panels with their 3″ layer of enclosed Fiberglas insulation . . . and save money . . .

Where walls should be so smooth that dirt and grease can't get a grip?

What Fenestra Insulated "C" Panels Are

"C" Wall Panels are standardized in 3″ depth and 16″ width, in 18 gage painted steel or 16 B&S gage aluminum. Steel panels vary from 6′ to 14′ in length, weigh only 6.50 lbs. per sq. ft. Aluminum only 3 lbs. Made from two formed members, joined to form a structural unit. Asphaltic impregnated felt is inserted inside the full length to prevent metal-to-metal contact. Double tongue and groove joints make a wall of "C" Panels an integral load-bearing unit. There are 3 positive bearing surfaces per panel. This eases erection, vertical or horizontal. Each panel is vapor sealed, with felt stripping between the formed sides and end closures. Smooth surface permits easy flashing details. Note: In the illustration, the left edge is the outside.



See Sweet's Architectural File—Section 3c/3, mail the coupon, or have one of our engineering representatives call. Also ask about "D" Panels for floors and ceilings, and Holorib Roof Deck.

"USE OUR 25 YEARS' EXPERIENCE IN METAL PANEL ENGINEERING."

*Trademark

Fenestra

METAL BUILDING PANELS

ROOFS · WALLS · FLOORS

DETROIT STEEL PRODUCTS COMPANY
Building Panels Division
Dept. PA-12, 2253 E. Grand Boulevard
Detroit 11, Michigan

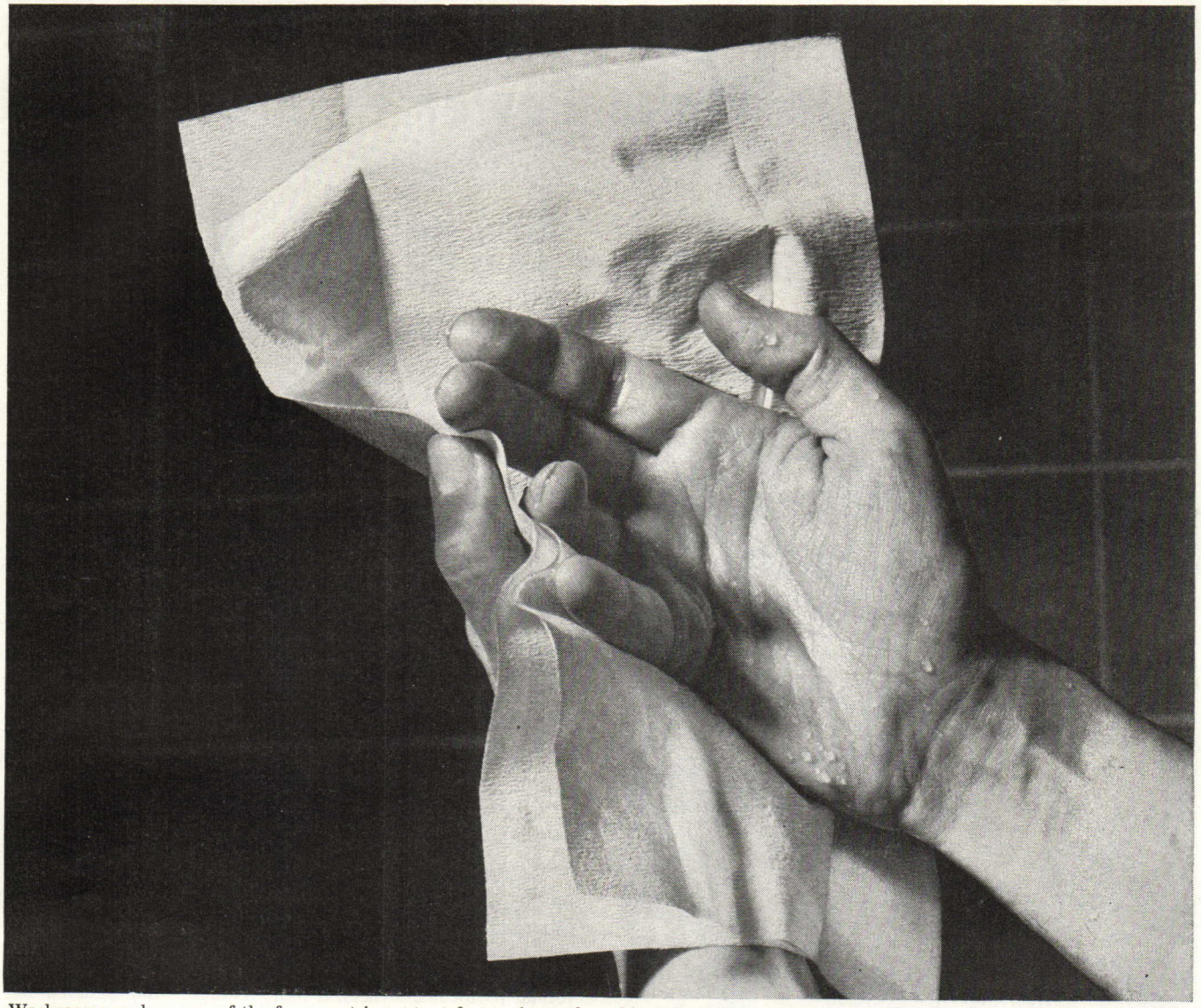
☐ Please have an engineering representative call.

☐ Please send me, without obligation, information on Fenestra Building Panels.

Name_____

Company_____

Address_____



Washrooms rank as one of the four most important factors in good working conditions—according to a survey of workers from 400 plants.

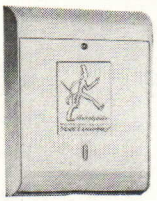
In these hands... a good investment for any company

It's important for a company to make new friends and to keep old ones. Washrooms can do a lot to help. Don't *you* feel rather insulted by a washroom that isn't *right?*

Clean, modern, *carefully planned* washrooms help promote friendly relations. That's why you do your client a real service when you make sure his washrooms *are* right.

ScotTissue Towels are a symbol of the right kind of washroom. Include ScotTissue Towel cabinets in your washroom planning. Send for our free booklet that's filled with helpful suggestions, well-tested plans and diagrams (by an architect specializing in this field) for large and small washrooms, etc. Write to the Scott Washroom Advisory Service, Chester, Pa.

Trade Marks "ScotTissue," "Washroom Advisory Service," Reg. U. S. Pat. Off.

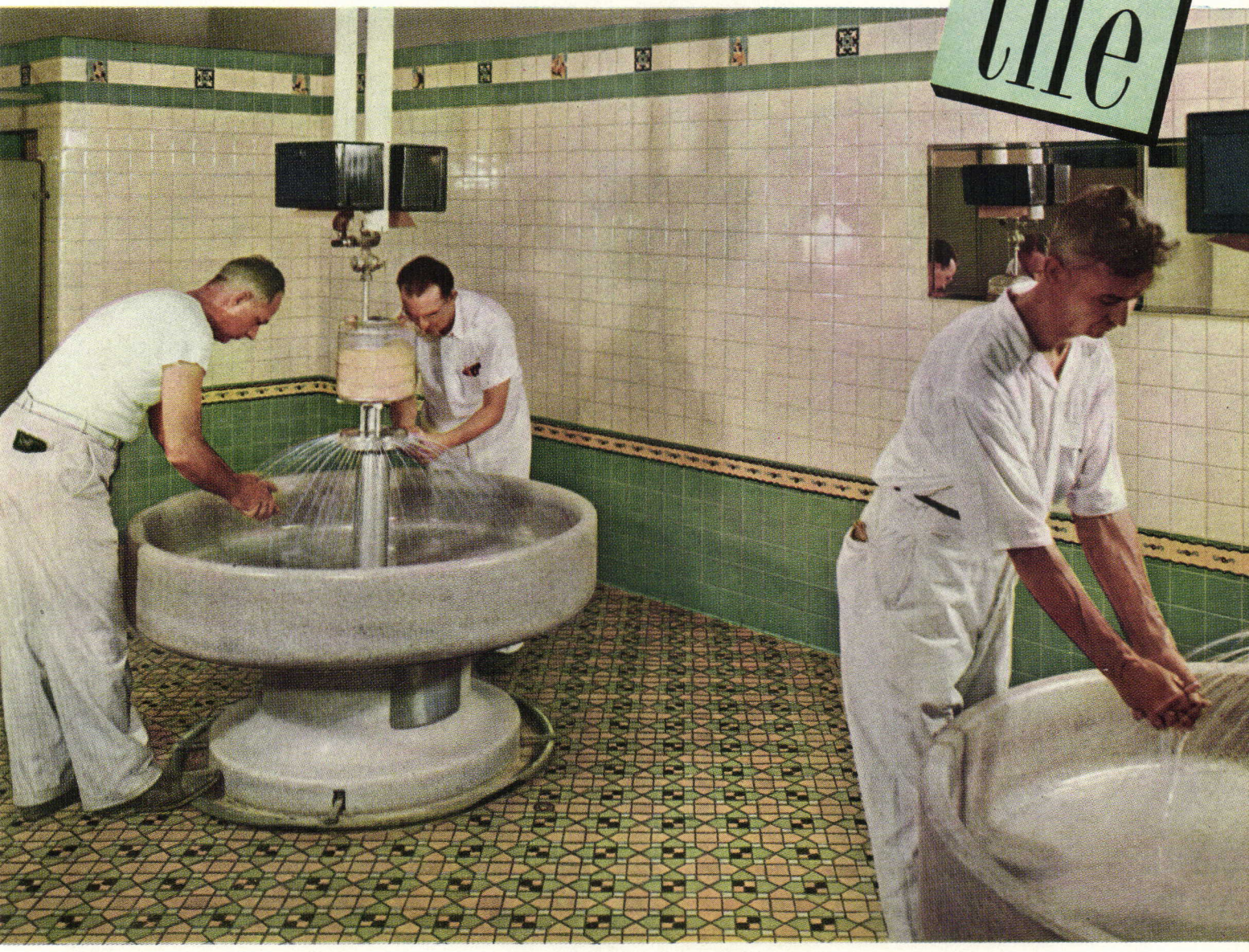


SCOTTISSUE TOWELS

Symbol of the right kind of washroom

ALWAYS *Easy to clean...* ALWAYS GOOD LOOKING

BECAUSE WALLS AND FLOORS ARE GENUINE CLAY tile



"There's no better surface!" That's what one manufacturer says about the genuine clay tile used on the walls and floors of this carefully planned, modern industrial washroom.

He particularly likes the sharp drop in maintenance cost that always goes hand-in-hand with a clay tile installation. For genuine clay tile shrugs off water, soaps, acids and grease, leaving no fade marks, streaks or scars. Moreover, the handsome colors are good for a lifetime—they're fired-in!

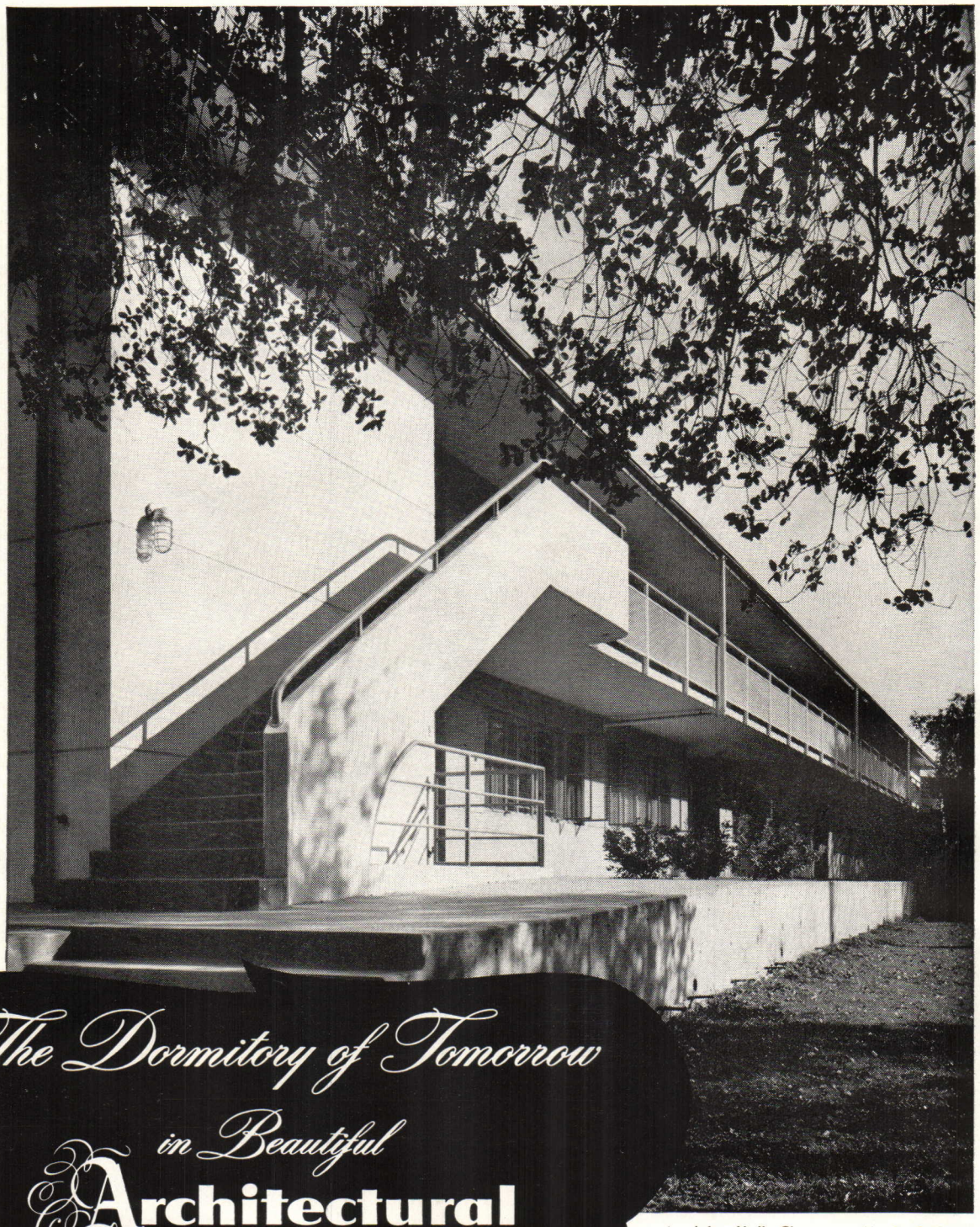
You'll find that clients appreciate specification of genuine clay tile. They know that costly replacement, painting and refinishing are unheard of wherever tile is used. It's in to stay—it stays good-looking!

Today, genuine clay tile is available—there is no need to accept substitutes. For specific information, see Sweets Architectural or A-E-C File. THE TILE COUNCIL OF AMERICA, *Room 3401:* 10 East 40th Street, New York 16, New York. *Room 433:* 727 West Seventh Street, Los Angeles, California.

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

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

THE MODERN STYLE IS CLAY TILE



The Dormitory of Tomorrow in Beautiful Architectural Concrete

Appleby Hall, Claremont Men's College, was designed with concrete walls, floors, stairs, balconies and roof slab to withstand seismic forces. Allison & Rible, architects. E. S. McKittrick Co., Inc., contractor.

THE new dormitories at Claremont Men's College, Claremont, Calif., featuring a simple floor plan and functional design, strike a strong masculine note as executed in architectural concrete.

Architectural concrete is adaptable to any style the architect may conceive. While it is rugged and enduring, it can be molded economically into delicate ornamentation possessing a sculptural quality.

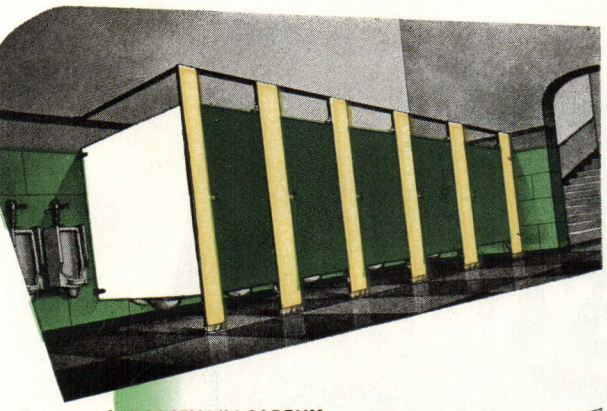
By following the tested principles of quality concrete construction architects can design architectural concrete buildings capable of resisting the climatic conditions prevailing in any part of the country, no matter how severe they may be.

Sanymetal* "PORCENA"

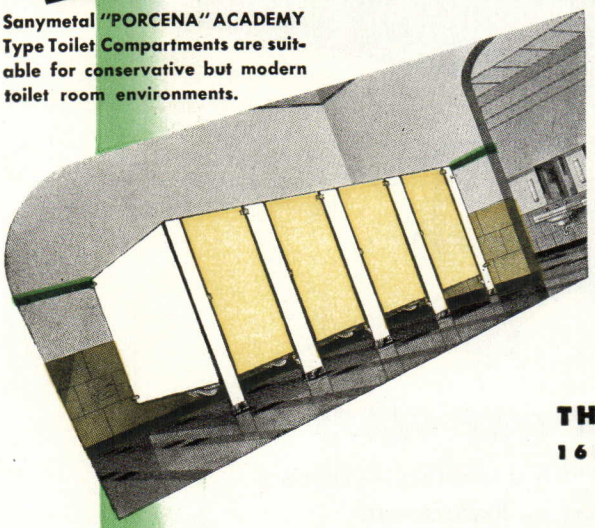
*Trade Mark Reg. U. S. Pat. Off.

(Porcelain on Steel)

TOILET COMPARTMENTS



Sanymetal "PORCENA" ACADEMY Type Toilet Compartments are suitable for conservative but modern toilet room environments.



Why the Bare Functional Type of Toilet Room Is No Longer Suitable

The ascendancy of good taste combined with new concepts of sanitation and convenience in toilet room environments makes the bare functional type of toilet room inadequate according to today's standards.

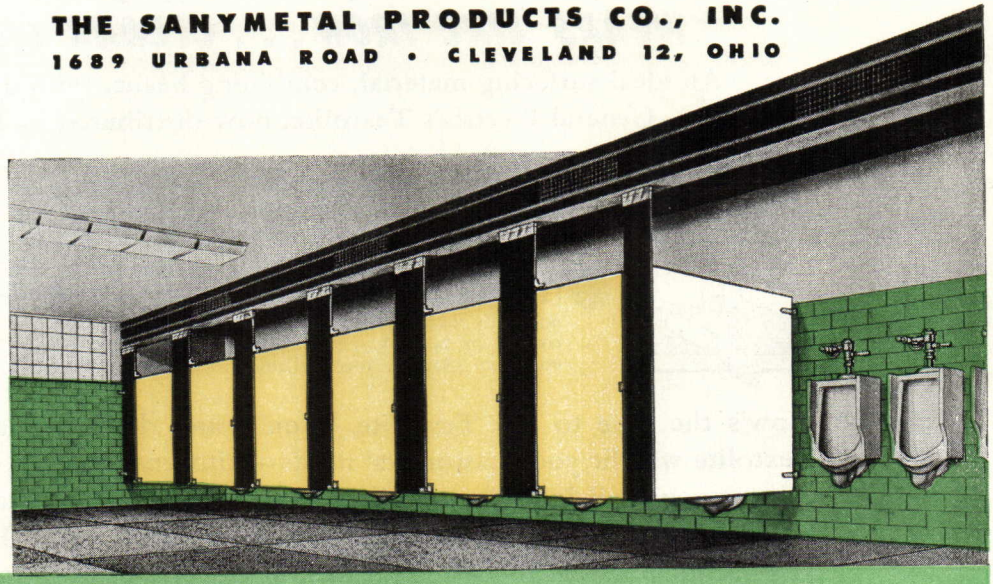
Toilet compartments usually dominate a toilet room, influence the toilet room environment and help to fulfill modern concepts of sanitation and convenience.

Sanymetal "PORCENA" Toilet Compartments are fabricated of ageless and fadeless material, porcelain on steel, which is a glass-hard, stainless material that always looks new, does not absorb odors, is moisture- and rust-proof, and resists the corroding of ordinary acids. The glistening "PORCENA" finish, which can be wiped clean as easily as a porcelain table top, requires no painting or refinishing.

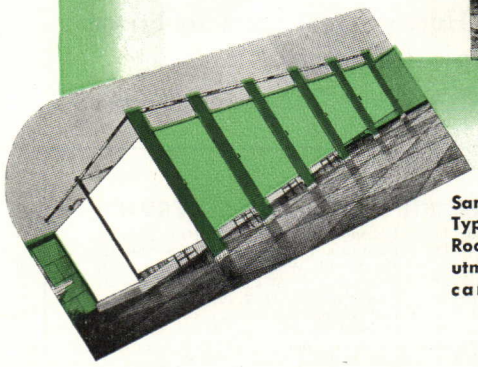
Sanymetal "PORCENA" Toilet Compartments combine the results of over 35 years of specialized skill and experience in making over 100,000 toilet room installations. Ask the Sanymetal Representative in your vicinity (see "Partitions" in your phone book for local representative) for further information about planning suitable toilet room environments. Refer to Sanymetal Catalog $\frac{21b}{6}$ in Sweet's Architectural File for 1949.

THE SANYMETAL PRODUCTS CO., INC.
1689 URBANA ROAD • CLEVELAND 12, OHIO

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



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



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

Write for Sanymetal Catalog 86 which illustrates modern toilet room environments suitable for all types of buildings. Several attractive designs in a wide range of colors available. This catalog is also contained in Sweet's $\frac{21b}{6}$ Architectural File for 1949.

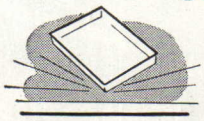
Sanymetal* TOILET COMPARTMENTS, SHOWER STALLS AND DRESSING ROOMS

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

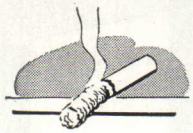
Teamed Up to Boost Your Sales

WEARS LIKE IRON . . . CLEANS LIKE GLASS

An ideal surfacing material, combining beauty with durability — that's General Electric's Textolite, now distributed by *Roddiscraft.*



TEXTOLITE is scratch-resistant, beautiful but tough. It resists scratching better than low-carbon steel!



TEXTOLITE is heat-resistant, not easily charred, blistered or discolored by heat. A special cigarette-proof grade is also available.

TEXTOLITE is stainproof— food acids, alcohol and household chemicals won't discolor it.

And besides that, G.E. Textolite is easy on the eye. Easy to clean, too, with its smooth, lustrous finish.

Now's the time to sell Textolite. You'll find dozens of applications where durable Textolite will fit your customers' needs—kitchens, dinettes, hotels, soda fountains, restaurants, cocktail lounges. Available in a wide variety of standard colors and patterns.

Textolite sales go hand-in-hand with plywood sales. Here's a real team to boost your profits, backed by two great names, General Electric and *Roddiscraft.*

Ask your *Roddiscraft* salesman for color card and samples.

*Reg. U. S. Pat. Office

Roddiscraft

RODDIS PLYWOOD CORPORATION
MARSHFIELD, WISCONSIN

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Milwaukee 8, Wis. . . 4601 W. State St.
New York 55, N. Y. . . 920 E. 149th St.
Port Newark 5, N. J. . . . 103 Marsh St.
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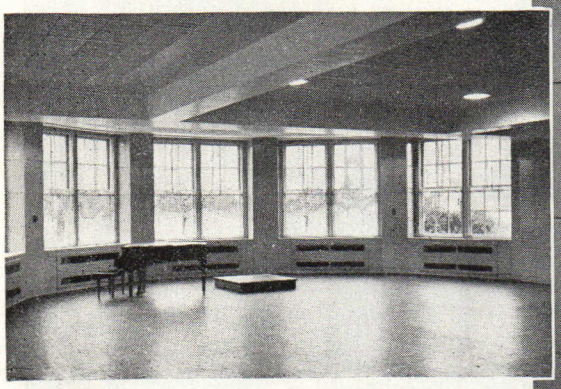
PUBLIC SCHOOL No. 195
Shore Blvd., Brooklyn, N. Y.

Board of Education of
The City of New York

Eric Kebbon—*Architect*
Caristo Constr. Corp.—*Builder*

Here's an excellent example of how Architect Kebbon masters the art of building within a budget while making no compromise with quality. Playroom and lunchroom are lined from floor to ceiling with Enduro-Ashlar Architectural Terra Cotta, slightly less than 2 inches thick. Color is a lustrous medium green that's easy on the eyes . . . while the ceramic glazed finish is easy on maintenance costs.



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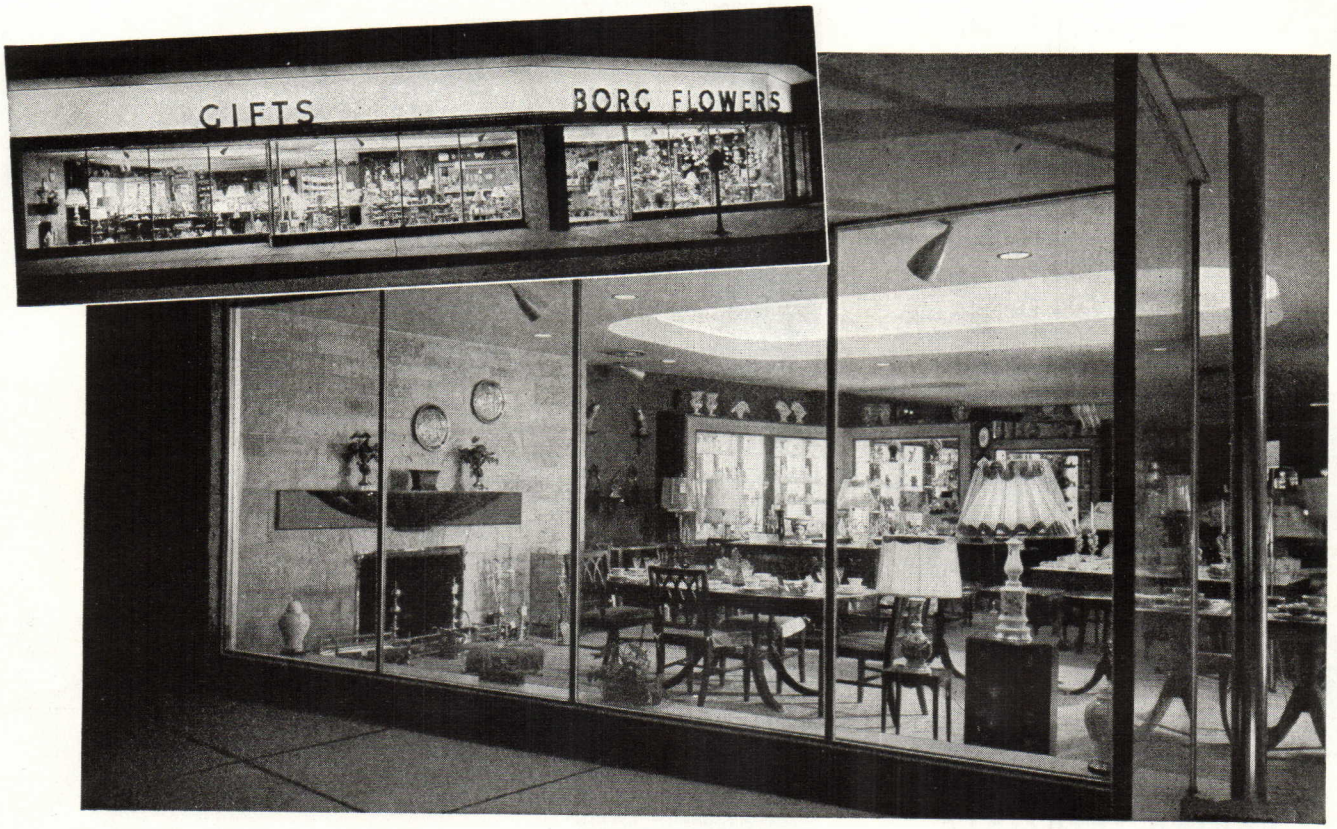

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ABOVE ▲ *Borg Flower & Gift Shop, Chicago. Thermopane installed in Brasco Anodized Aluminum Settings.*

Architect:
Glenn Q. Johnson
Park Ridge, Illinois

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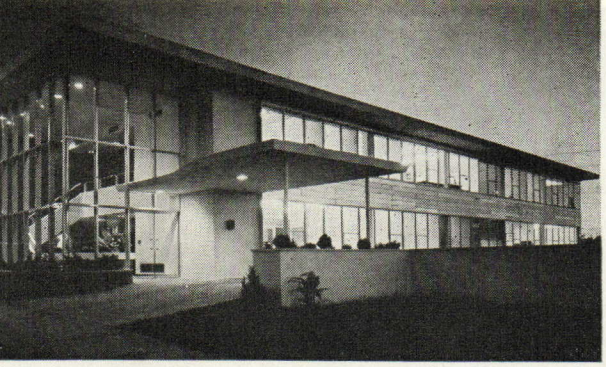
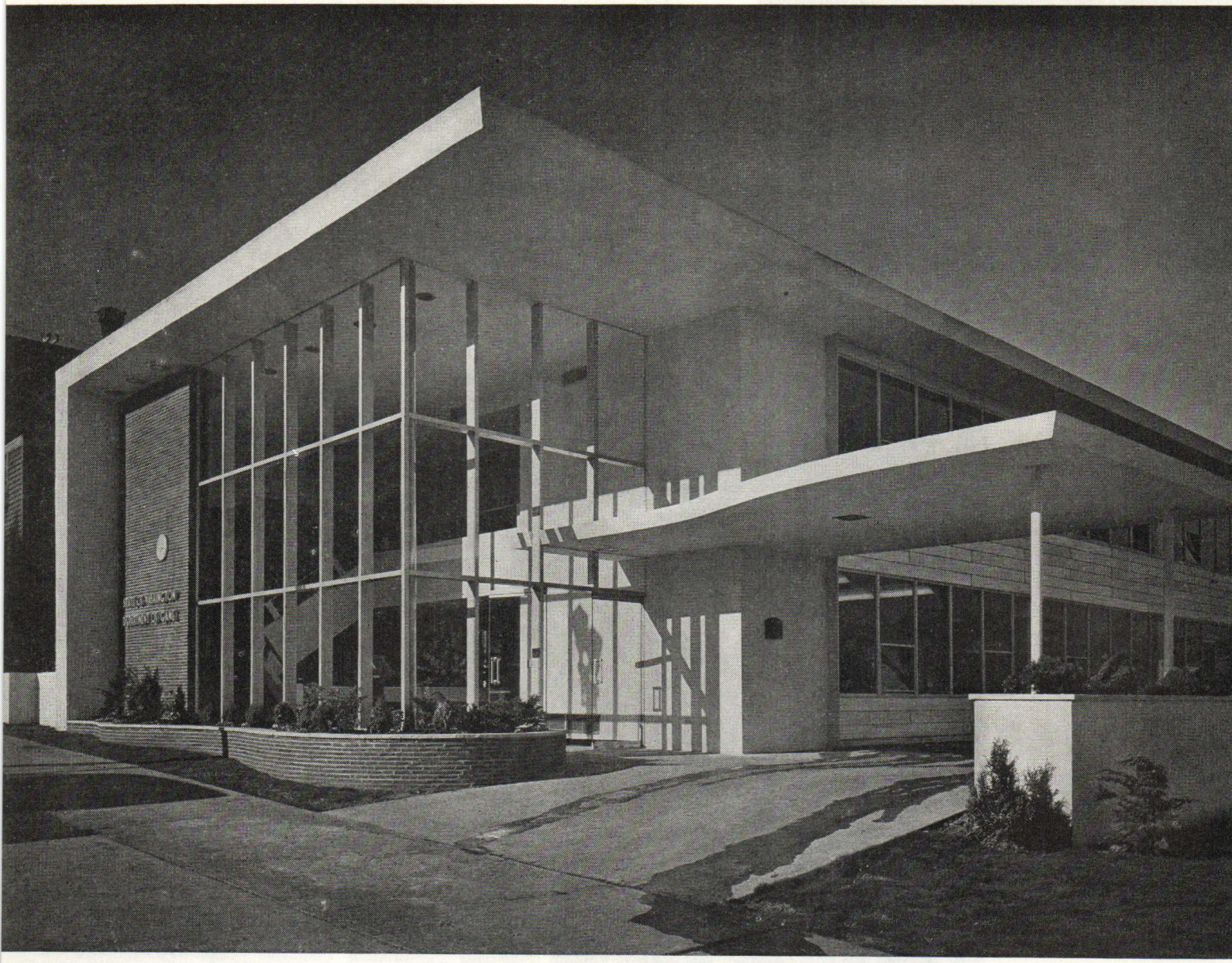


JAMES C. GARDINER & ASSOCIATES, ARCHITECTS
GUSTAV KARLA, CONSULTING ENGINEER

State Game Department Building: Seattle, Washington

Right: curved planting area and floor of quarried stone were selected to echo the outdoors. *Photos: Dearborn-Massar*



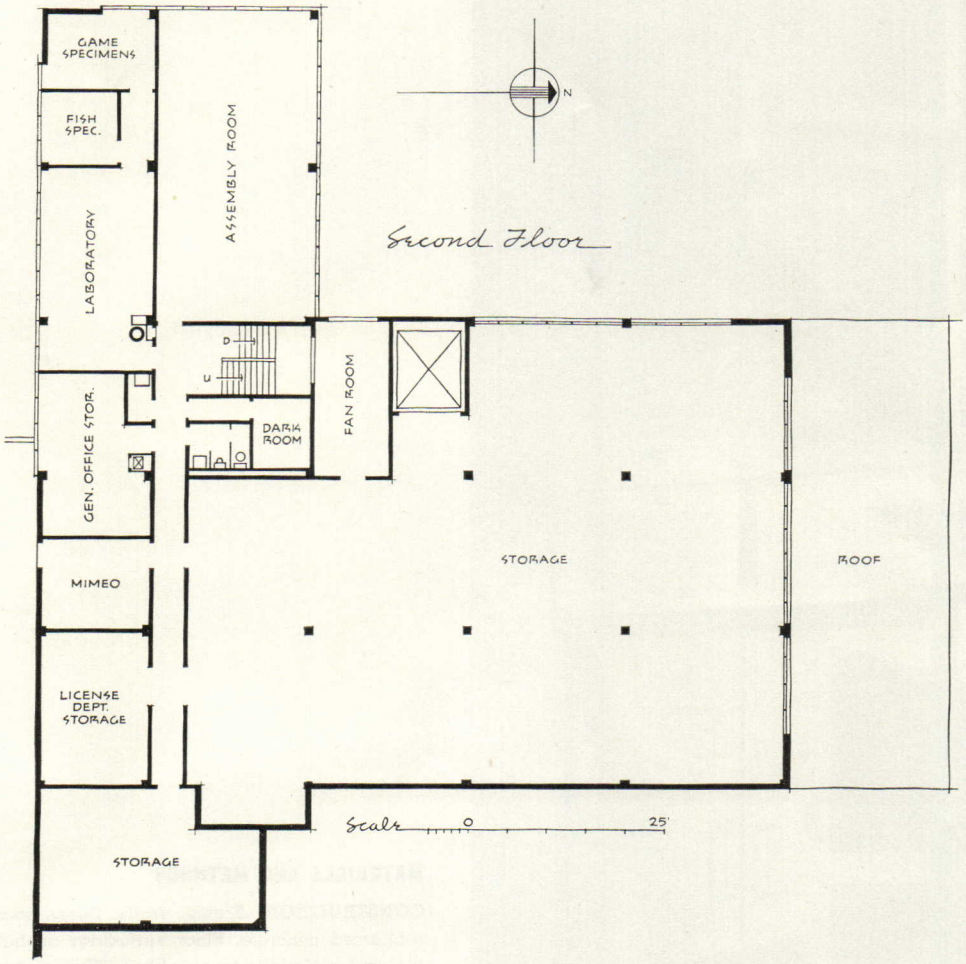
Top: the administration section entrance. The title and seal of the State Department of Game are in cast aluminum on the brick panel (left). The canopy leads to the parking deck—over the warehouse—for office employees. (For Selected Detail on mullioned windows, see page 85.)
Immediately above: general view of offices and parking deck.

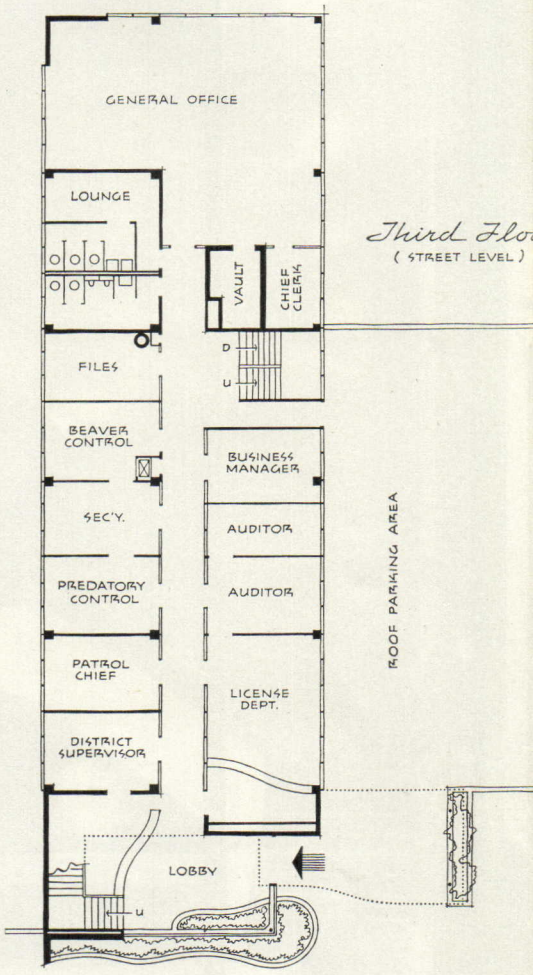
program: A combination office and warehouse for Washington State Department of Game, providing completely separate quarters for the administrative personnel (Licenses, Conservation, Beaver Control). Warehouse section to include storage, laboratories, heating plant, and various machine shops. Ample parking for office force and patrons a must; also a centrally located metropolitan site. A budget of 76 cents a cubic foot imposed limitations.

site: The architect was allowed to choose the site, a sloping city lot with the alley level 20 feet lower than the street; 180 feet wide by 120 feet deep.

solution: A four-story structure—third floor at street level—extending to rear of lot, with a two-story wing at right angles on the street side. Roof of this wing became a parking deck for the office force, while open area at rear provided ample room for department trucks and warehouse parking. The two upper floors—administration—are connected with the warehouse below by a rear staircase. Use of reinforced concrete, combined with stock aluminum sash in a straightforward design, kept costs within the very limited budget.

STATE GAME DEPARTMENT BUILDING: SEATTLE, WASHINGTON

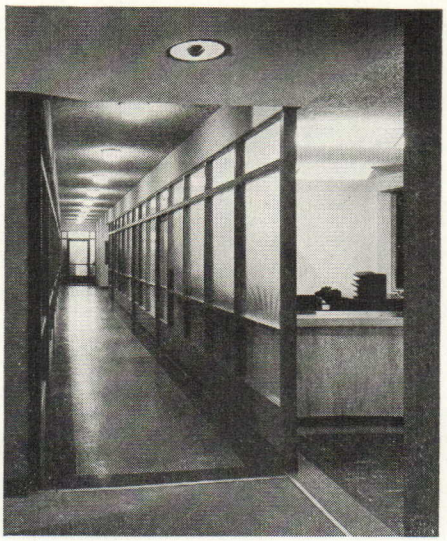




Rear view with the warehouse parking area in the foreground. Tops of the parked cars of the office force are just visible above the two-story wing. The warehouse section stores the bulky and varied assortment of traps, fish nets, beaver pelts, paints, and maintenance supplies handled by a state conservation agency.

Above: view of the lobby through the entrance doors. The information desk is recessed below the stairs to the second-floor offices.

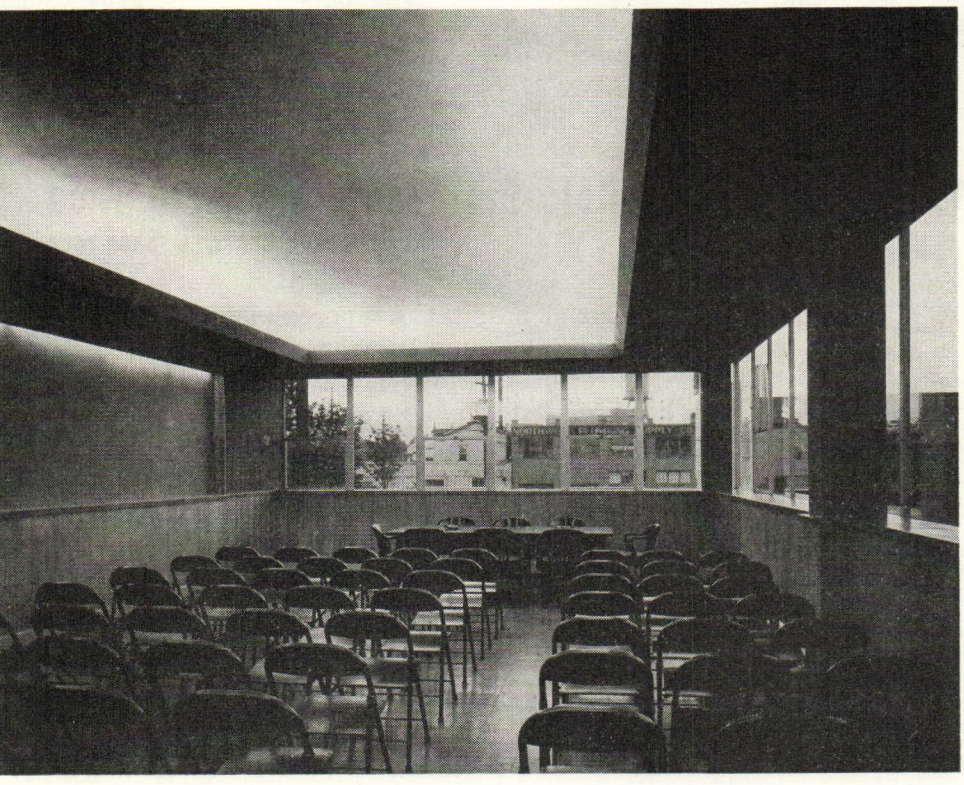
Right: corridor in the office area.



MATERIALS AND METHODS

CONSTRUCTION: Frame, walls, floors, roof: reinforced concrete. **Floor surfacing:** asphalt tile and quarried stone (lobby). **Wall surfacing:** exterior—aluminum spandrels and brick; interior—plaster and concrete, painted. **Roofing:** built-up. **Fenestration:** aluminum sash; plate, double-strength #A and diffused glass. **Insulation:** acoustical—sprayed asbestos; thermal—2" fiberboard. **Partitions:** 2" solid plaster on metal studs. **Doors:** interior—flush and glazed; exterior—tempered plate glass and (warehouse) steel panel.

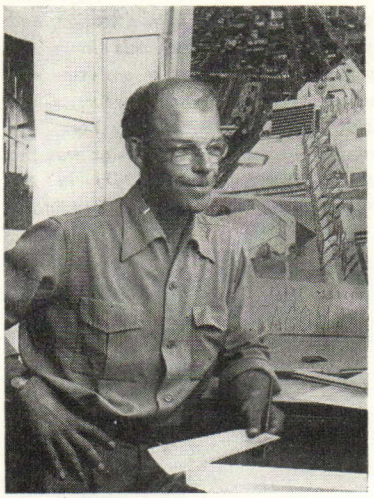
EQUIPMENT: Heating: hot water, baseboard radiation; controls. **Lighting:** offices—fluorescent; lobby, corridor and warehouse—incandescent.



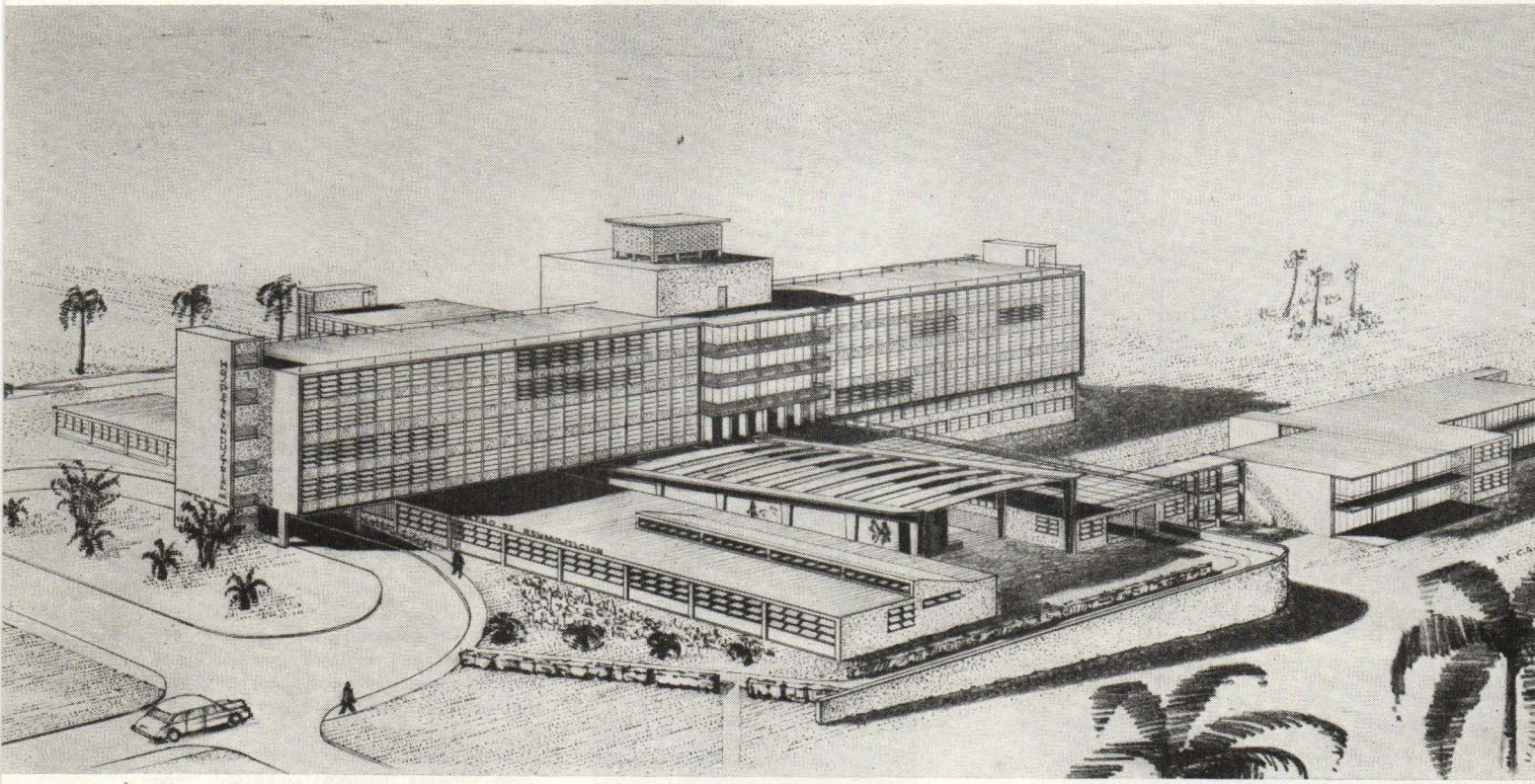
Above: The assembly room, used for departmental and regional meetings. The simply coved ceiling provides indirect lighting; the wainscot is hardwood plywood; floor, asphalt tile.

Left—another view of the assembly room showing the large corkboard panel (left) used for exhibits and demonstrations.

James C. Gardiner: *After a varied schooling, worked from 1939 through 1944 for the Army and Navy—designing and supervising various bases and depots. Since fall of 1944, in private practice in Seattle and Tacoma.*



STATE GAME DEPARTMENT BUILDING: SEATTLE, WASHINGTON



1. Industrial Hospital: Rio Piedras, Puerto Rico

ISADORE ROSENFIELD, ARCHITECT

program: An industrial hospital of approximately 400 beds, sponsored by the State Insurance Fund, for medical care and restoration to social usefulness of industrial workers (or state employees) who become ill or sustain injuries as a result of their occupations. In addition to usual hospital facilities—nursing units, operating suites, outpatient department, etc.—a combined physical and occupational "rehabilitation center" was a program requirement. Another special need: a 100-bed dormitory for outpatient convalescents, who need rehabilitation therapy but live too far from the hospital to make the daily trip.

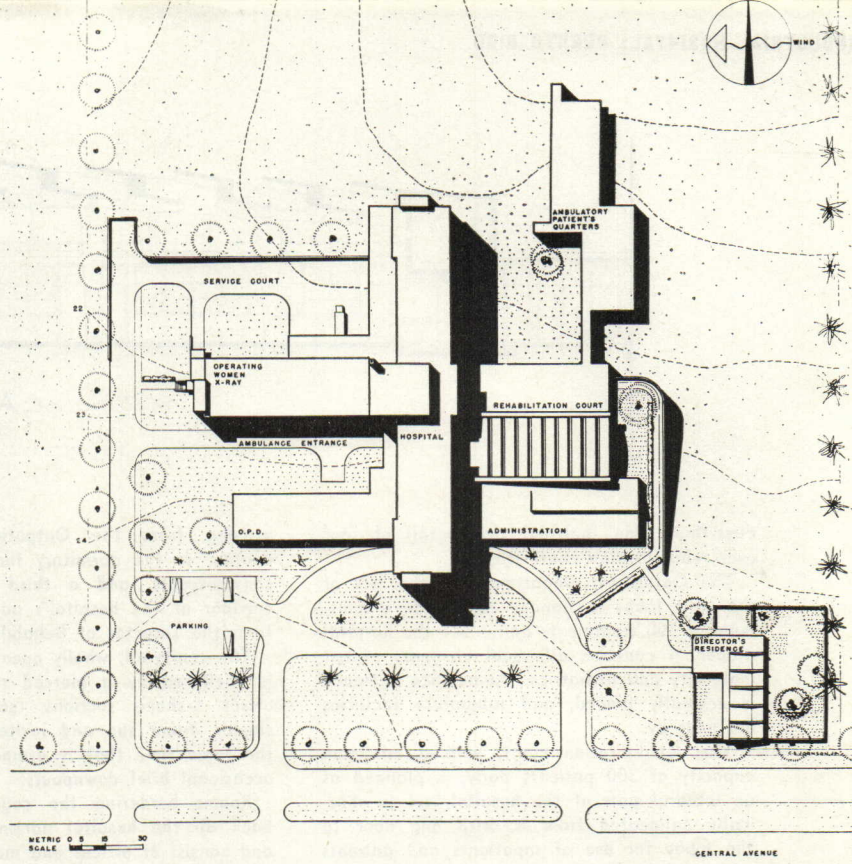
site: The grounds of the proposed Medical Center, immediately adjoining the University of Puerto Rico.

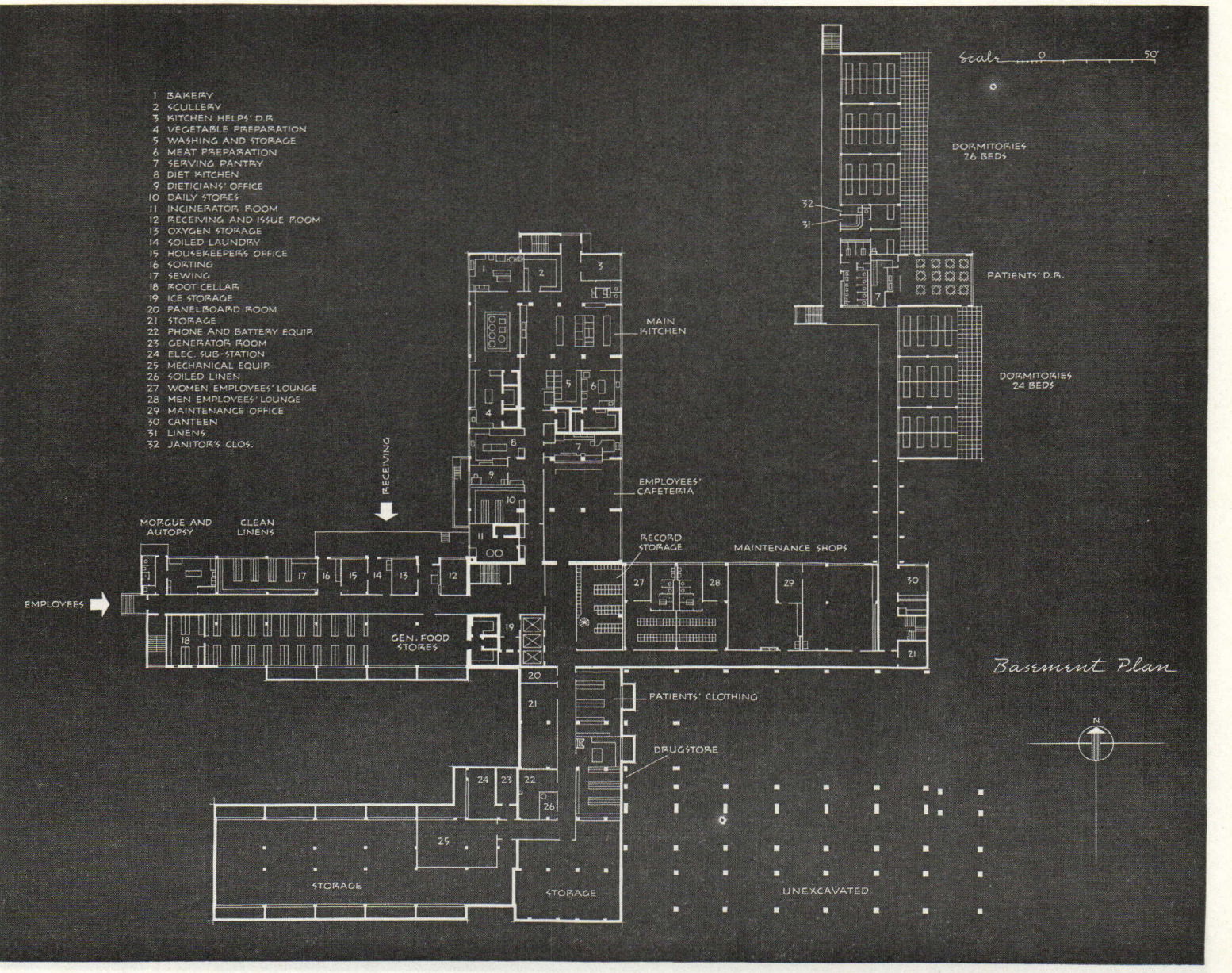
solution: A five-story-and-basement hospital block oriented so that most of the nursing wards face the prevailing eastern breeze; in a wing to the west are the operating rooms (third floor) and a nursing unit for women (second). At ground-floor level (see plan, page 46), a second, one-story wing is provided for the Outpatient Department. East of the main block at this level is the rehabilitation center, organized around a courtyard. To the north of the rehabilitation court, reached by a covered walk, is a two-story, 100-bed dormitory for convalescent patients. The land falls away on this side, providing considerable above-grade floor space at nominal basement level (plan across page) ; the lower floor of the dormitory and the dormitory dining room occur at this level, facilitating delivery of food and laundry from the service court.

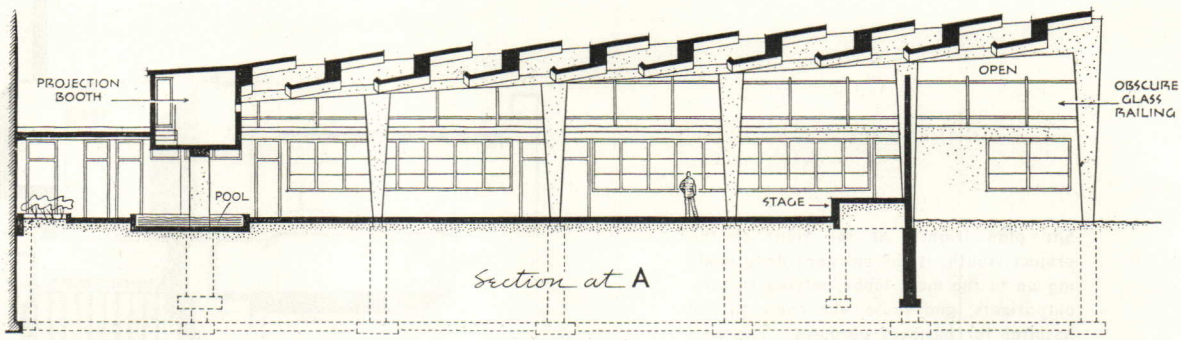
Isadore Rosenfield: *Harvard U.: B.S.; M. Arch. Twenty-seven years' experience in hospital-design work. Currently, hospital consultant, with headquarters in New York; present practice embracing hospitals for the State of N. Y., the government of Puerto Rico, the Atomic Energy Commission, the Veterans Administration, and numerous voluntary hospitals in widely separated areas. Formerly professor and lecturer at N.Y.U.; for 10 years, Chief Architect for the City of New York. His book* Hospitals-Integrated Design *was the first volume published (1947) in the* PROGRESSIVE ARCHITECTURE *Library.*

Site plan (right): at the front of the project (south) is the entrance drive leading up to the main lobby, serving visitors, outpatients, and those who come to the hospital for business purposes. The side driveway, near the western boundary, splits to serve (1) the ambulance entrance in the more southern of the courts; and (2) the service court at the lower level, to the north. The most favored breeze is from the east; hence the north-south alignment of the main hospital block, and the rehabilitation court arranged with its eastern end left open.

Basement floor (below): a central receiving and issuing office adjoining the truck platform provides complete control over deliveries. Most of this lower floor is used for storage; however, the hospital kitchen and employees' cafeteria occupy the above-grade north wing.







First-floor plan (bottom) and detail of roof over rehabilitation court (top).

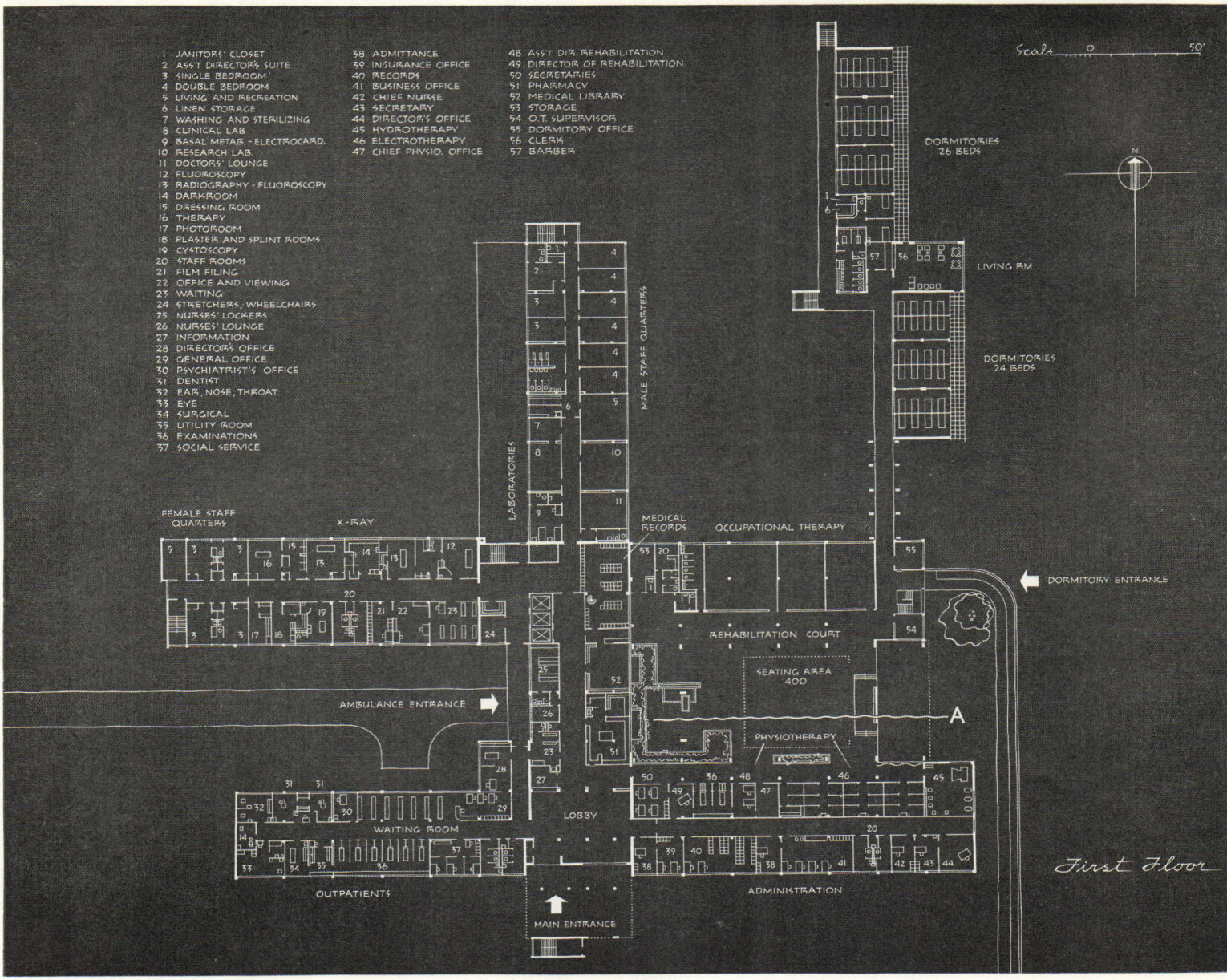
The Outpatient Department at the left of the main lobby is planned to provide a minimum of 300 treatments daily; like the hospital proper, it contains all usual elements except maternity and pediatrics. Ambulance entrance is centrally placed, and laboratory facilities are near by.

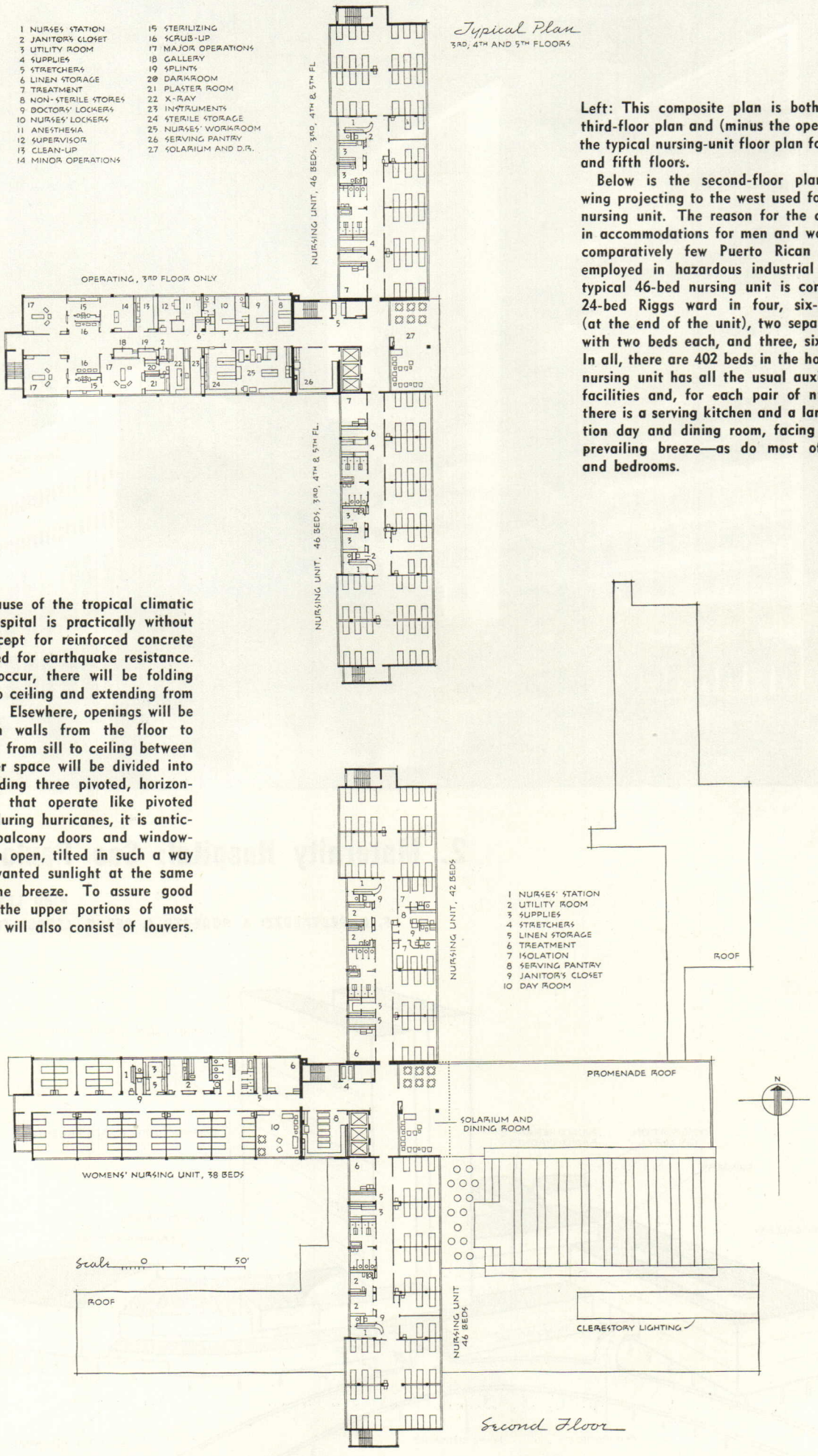
The rehabilitation court, with a minimum capacity of 300 patients daily, is planned as an integral part of the hospital, yet is physically delineated from it, with one door to the lobby for use of inpatients and patients arriving from the Outpatient Department, another to the dormitory for use of resident convalescents, and a third opening to the corridor of the hospital's administration wing from the Director of Rehabilitation's office.

The courtyard, wholly open toward the east, is sheltered by a pierced roof made up of offset S-shape sections (see detail) which shields direct sun and invites the breeze, at the same time that it drains off water from occasional brief downpours.

Rooms bordering the court on the south back up the hospital administration corridor and consist of offices and medical exam cubicles of the Directorate of Rehabilitation, as well as various physiotherapy-treatment facilities. The opposite side of the court consists of offices and shops for occupational therapy. The court itself is used for games and for progressively heavier work tasks; the extreme eastern end (outdoors) is intended for "dirty work" such as ditch digging.

Rosenfield points out that the design of the rehabilitation court "follows the advice and experience of Dr. Harold D. Storms, Director of the Rehabilitation Clinic of the Workmens Compensation Board of the Province of Ontario, in Toronto."





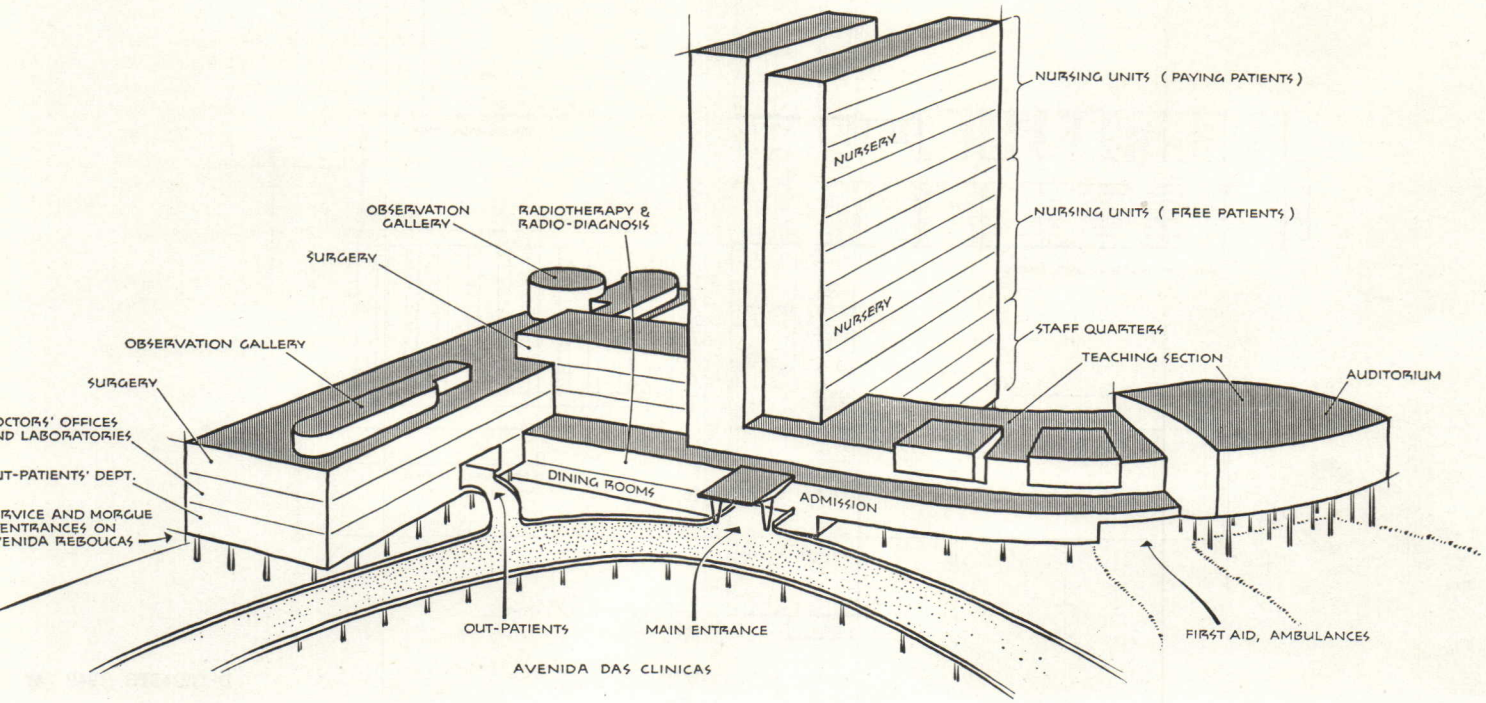
Left: This composite plan is both the actual third-floor plan and (minus the operating wing) the typical nursing-unit floor plan for the fourth and fifth floors.

Below is the second-floor plan, with the wing projecting to the west used for a women's nursing unit. The reason for the disproportion in accommodations for men and women is that comparatively few Puerto Rican women are employed in hazardous industrial tasks. The typical 46-bed nursing unit is composed of a 24-bed Riggs ward in four, six-bed alcoves (at the end of the unit), two separation rooms with two beds each, and three, six-bed rooms. In all, there are 402 beds in the hospital. Each nursing unit has all the usual auxiliary service facilities and, for each pair of nursing units, there is a serving kitchen and a large combination day and dining room, facing east to the prevailing breeze—as do most of the wards and bedrooms.

Construction: **Because of the tropical climatic conditions, the hospital is practically without exterior walls—except for reinforced concrete cross walls provided for earthquake resistance. Where balconies occur, there will be folding doors from floor to ceiling and extending from column to column. Elsewhere, openings will be protected by thin walls from the floor to window-sill height; from sill to ceiling between columns, this upper space will be divided into sections, each holding three pivoted, horizontal, wood louvers that operate like pivoted windows. Except during hurricanes, it is anticipated that all balcony doors and window-louvers will remain open, tilted in such a way as to exclude unwanted sunlight at the same time attracting the breeze. To assure good cross ventilation, the upper portions of most corridor partitions will also consist of louvers.**

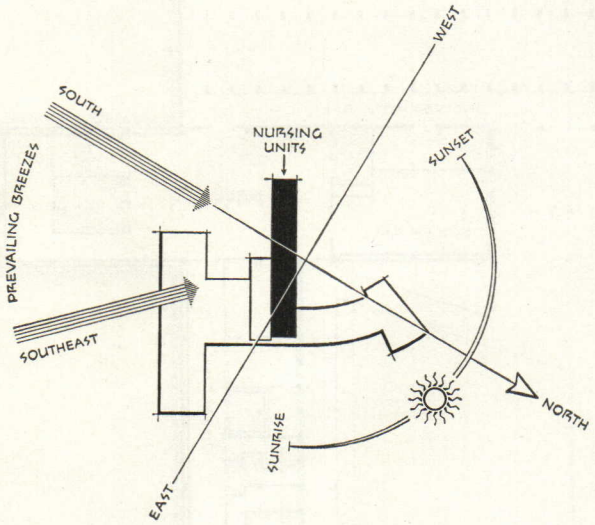
2. Maternity Hospital: Sao Paulo, Brasil

RINO LEVI, ARCHITECT
F. A. PESTALOZZI & ROBERTO C. CESAR, ASSOCIATE ARCHITECTS

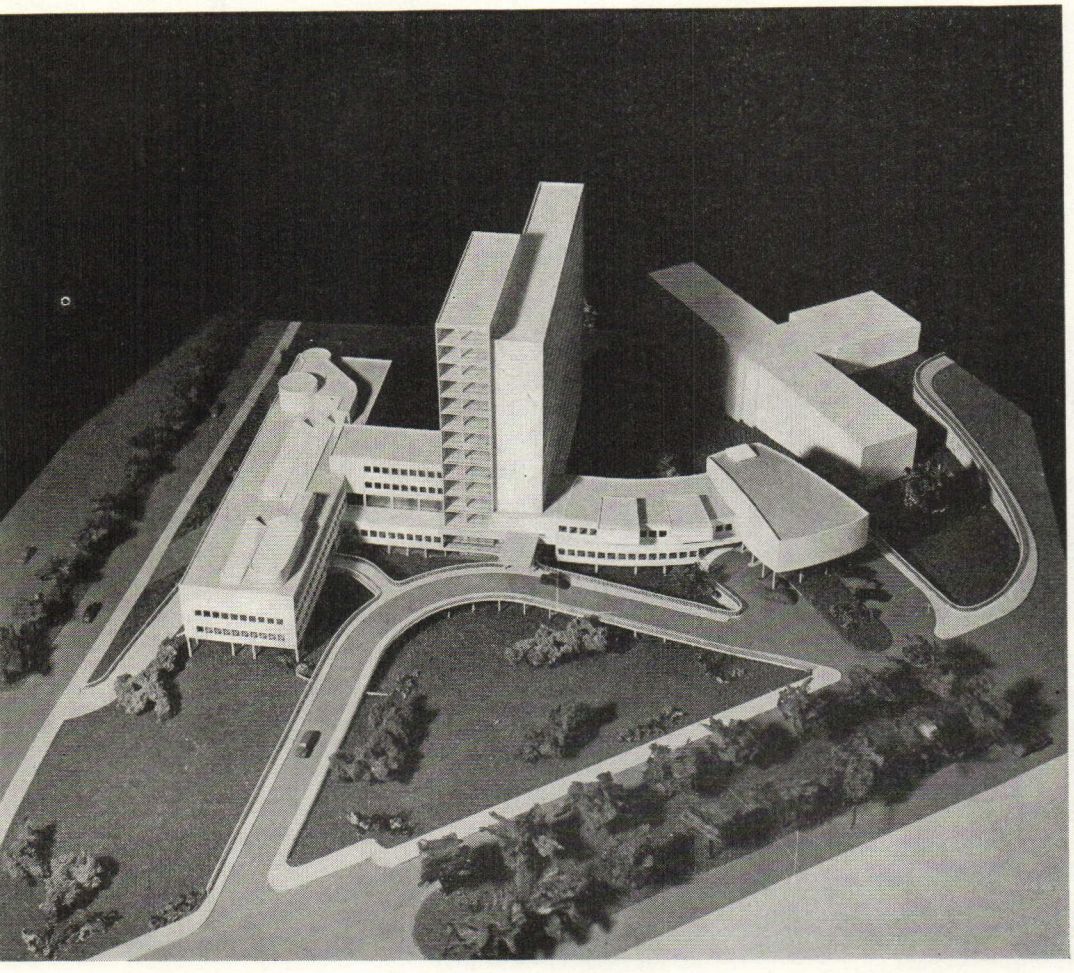


program: A maternity hospital and training center to be built as part of the University of Sao Paulo Medical Center. To obtain the commission, the architects won a design competition based on a program written by Professor Raul Briquet. The final project follows the original program in all major respects.

site: A steep slope on the grounds of the University Medical Center, immediately adjoining the site of the Clinical Hospital. A corner lot, bordered by two avenues—the Avenida das Clinicas, which curves down the slope along the northeast side of the site, and the Avenida Reboucas, straight and approximately level, bordering the southeast, downhill side.



solution: Advantage was taken of the site slope to provide various types of access, at different levels. Main entrances (to the hospital block; outpatient department; first-aid-ambulance dock; and access to auditorium) all occur along an elevated, one-way, loop roadway leading off the Avenida das Clinicas. From the lower Avenida Reboucas, one entrance at grade leads to the morgue floor and a second drive, up a ramp, is the hospital service entrance—linens, foods, equipment, etc. By raising the building group on *pilotis,* most of the configuration of the land is preserved untouched. The lower building mass, along Avenida Reboucas, contains various service and storage areas, the outpatient department, doctors' offices and operating theaters. In the center of the group is the tall mass of the main hospital block. In the low curved wing up the hill (toward the Clinical Hospital) are the student lecture halls, emergency entrance, and admission offices.



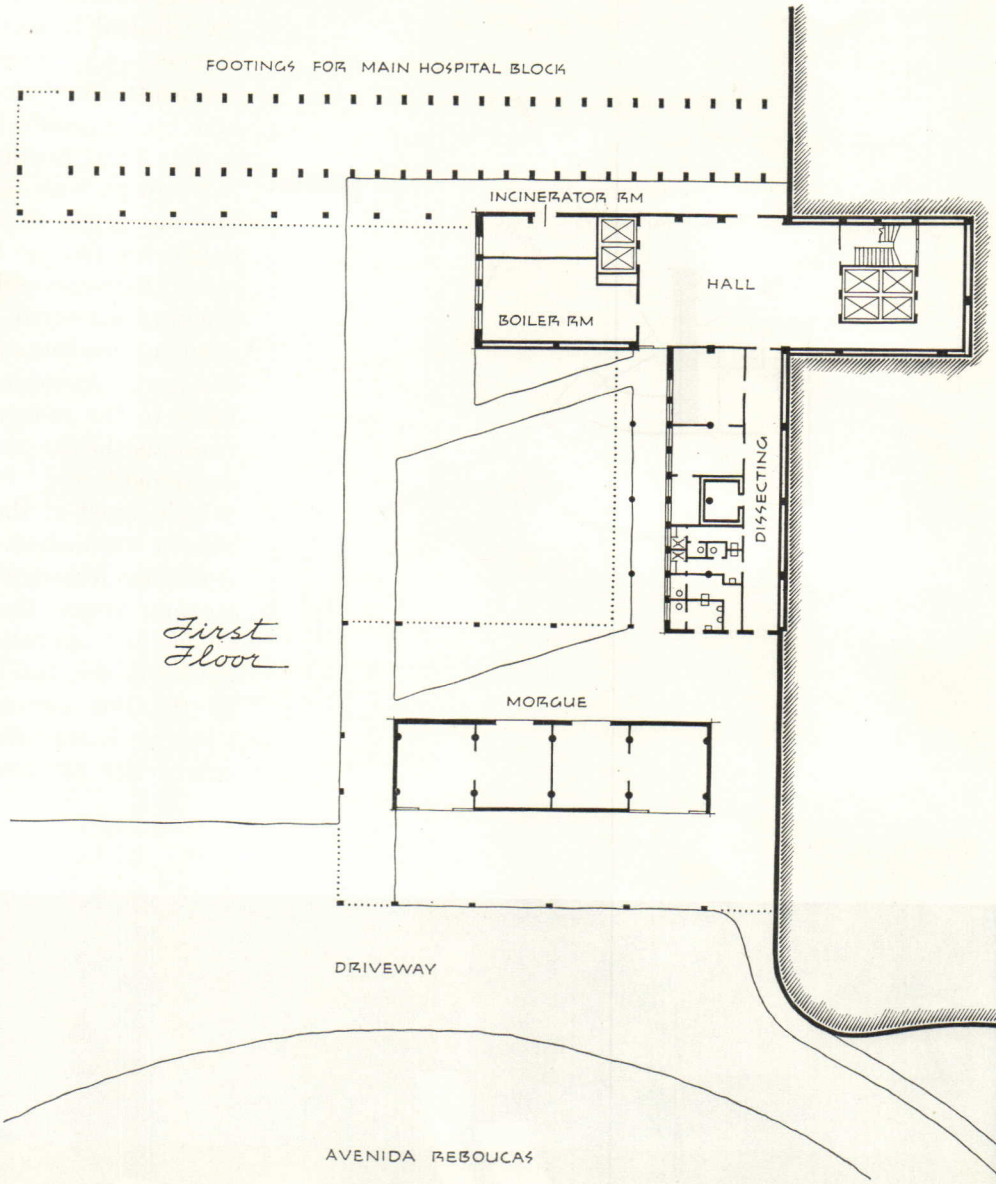
The main entrance to the hospital proper is at the fourth-floor level of the sixteen-floor (over-all) scheme. The fifth floor consists of lecture halls, museum, laboratories, staff quarters, and a library. The remaining ten floors are divided into two similar five-floor units—one for paying patients (the upper five); the other for free patients. Each of these five-floor groups consists of a central nursery floor, placed between pairs of ward floors. Ward floors immediately above and below nursery floors are for postnatal cases; the outer two are for prenatal patients. This arrangement was consciously worked out to minimize traffic between nurseries and wards. Further details are shown on plans on subsequent pages.

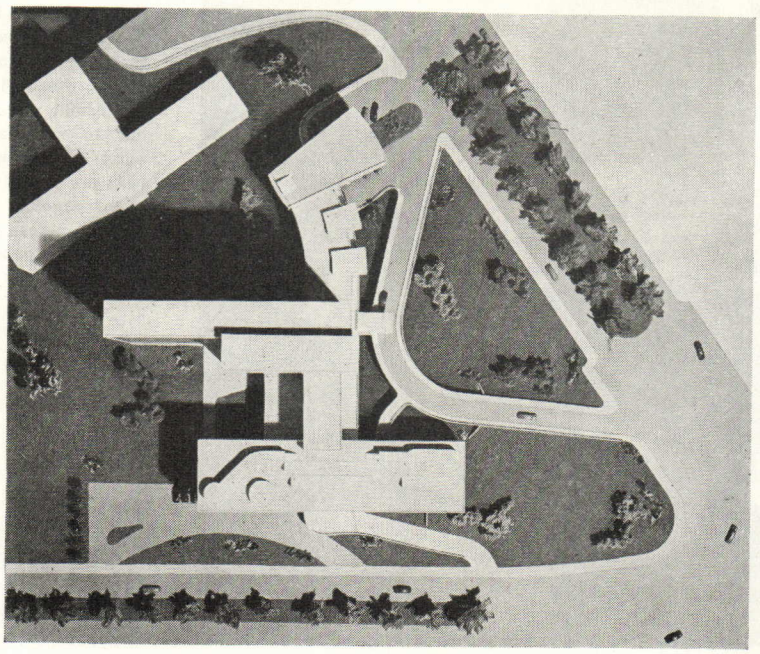
Photo across page: Leon Liberma
This page: Laboratoria da Fotoptica

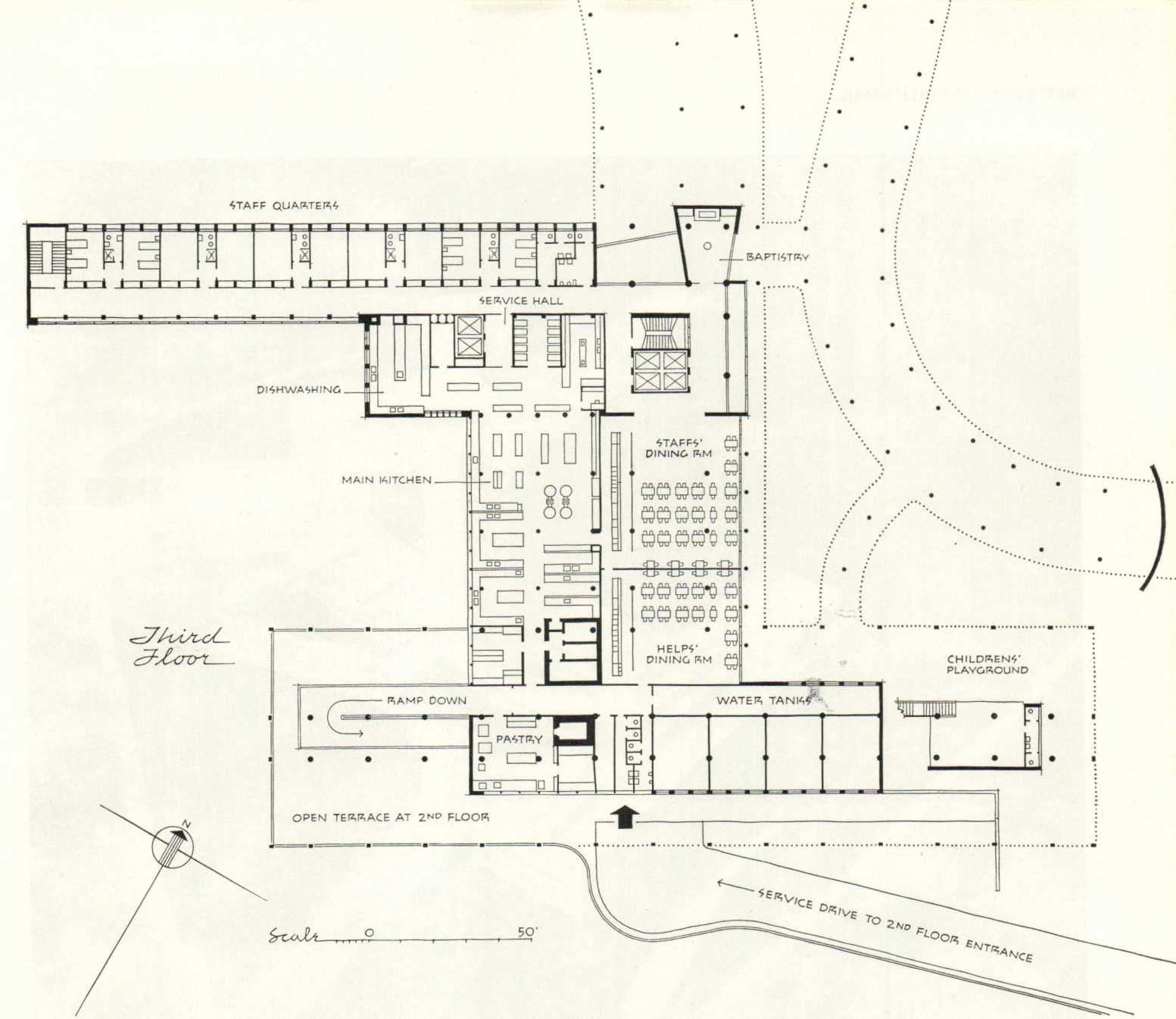
Plan at right shows the smallest of the building's 16 floors—the lowest level—on the downhill portion of the site, fronting on Avenida Reboucas (the street that occurs along the bottom of the model photos on these two pages). At this level, completely separate from other areas, is the morgue, necropsy facilities, and the hospital incinerator.

In the model photos, notice (immediately at right of the at-grade driveway to this level) the long, ramped drive which curves up and into the building at the second-floor level. This is the main supply and delivery entrance, serving both the second floor (not shown)—hospital laundry, storage rooms, shops, etc. —and, via an interior ramp, the hospital kitchen on the third floor (plan on facing page).

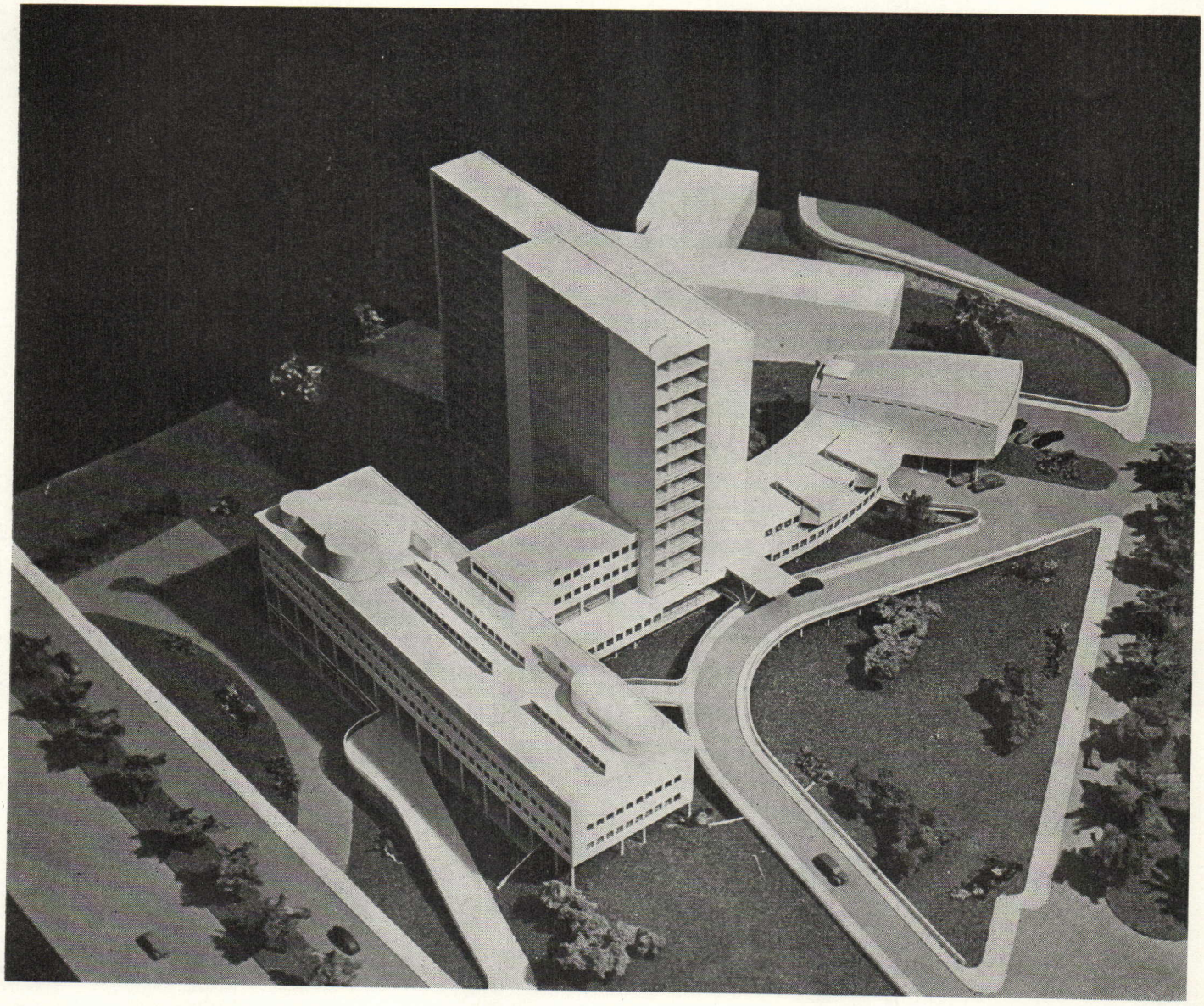
Photos: Laboratoria da Fotoptica







On the third floor, the plan grows larger —reaching back into the upper slope of the steep site. Here are the main hospital kitchen, dining rooms for doctors, nurses, and interns, and (within the perimeter of the main hospital block, along the top of the plan) a series of hospital-staff bedrooms. These rooms, incidentally, all face the favored sunny northwest as do the hospital wards on the floors above. One of the plan elements that the architects emphasize is that this (and other areas assigned to staff quarters) could be readily converted to use as wards should there be need for expansion—at which time, the staff would be lodged in some auxiliary building. The ramp for bringing kitchen deliveries up from the dock on the floor below appears at the lower, left-hand corner of the plan, winding up and back around *pilotis*. The columns (at right of plan) that are arranged in a parallel curved pattern are supports for the elevated main-entrance driveway, leading to the fourth-floor level (see plan, page 54).

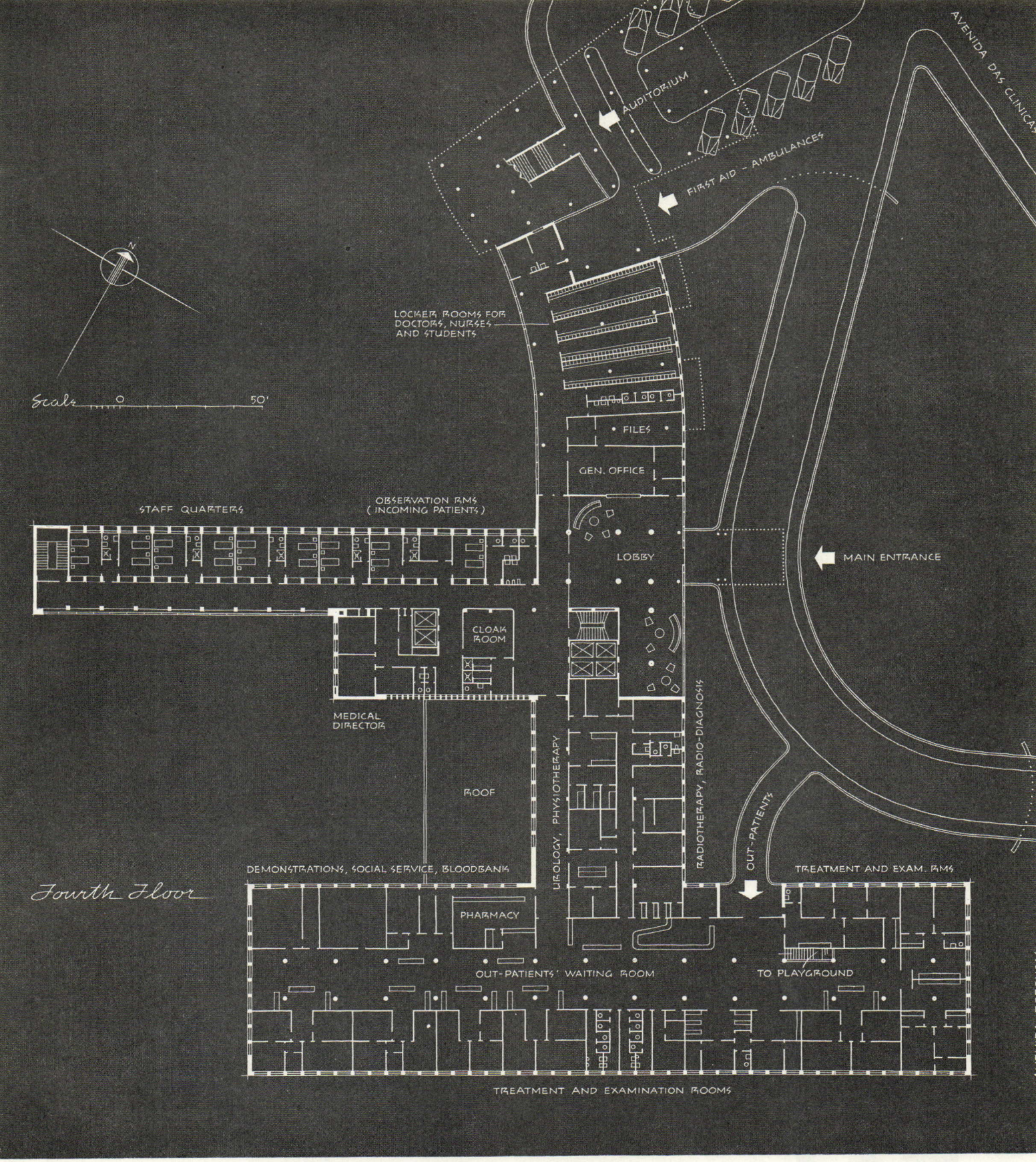


On the fifth floor (not shown) are lecture rooms, a museum of pathological anatomy, laboratories, the library, offices for doctors and, in the hospital block (a duplicate of the fourth-floor plan of this area), additional lodgings for doctors, students, or nurses.

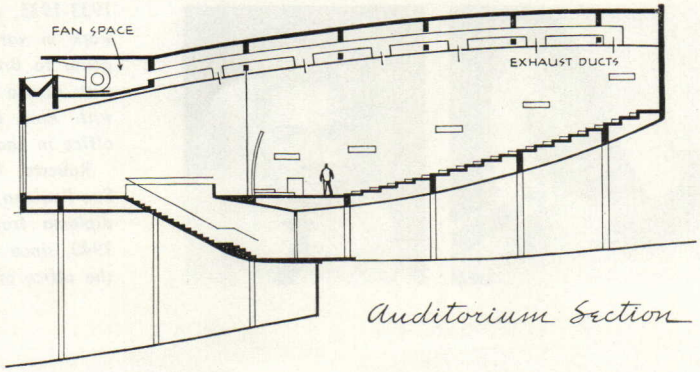
On the sixth floor are the operating rooms for aseptic cases and (in the hospital block) a standard ward for prenatal, pathological, free patients; the seventh floor repeats this general pattern, though the operating rooms on this floor are for septic cases, and the ward accommodates postnatal, pathological, free patients. The eighth floor is the nursery for the free patients, and the ninth and tenth floors are wards for free patients who are normal cases—ninth, for postnatal; tenth, for prenatal patients. The top five floors repeat this general pattern for paying patients.

The fourth floor (opposite page) is the main public entrance floor of the hospital —four separate entrances to different functional areas leading off the curved, raised roadway at right.

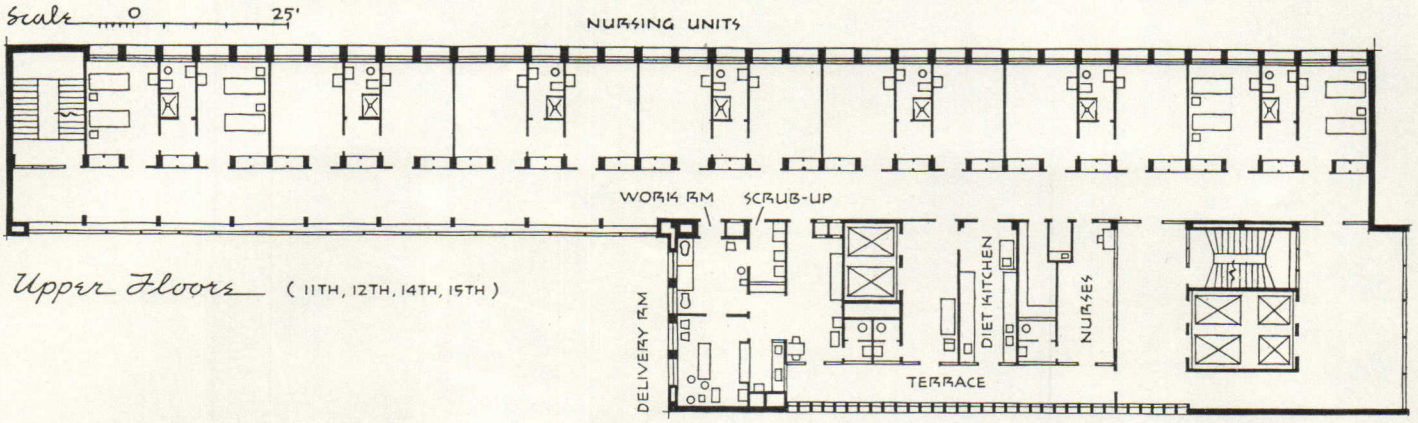
Reading from top to bottom: stairway entrance to the largest of the lecture halls (see section of auditorium at bottom of page, showing method of entering from behind the speakers platform); an ambulance-dock first-aid driveway; the canopied entrance to the huge main lobby where patients are admitted (also visitors' entrance); and, the curved ramp to the Outpatient Department.



Fourth Floor



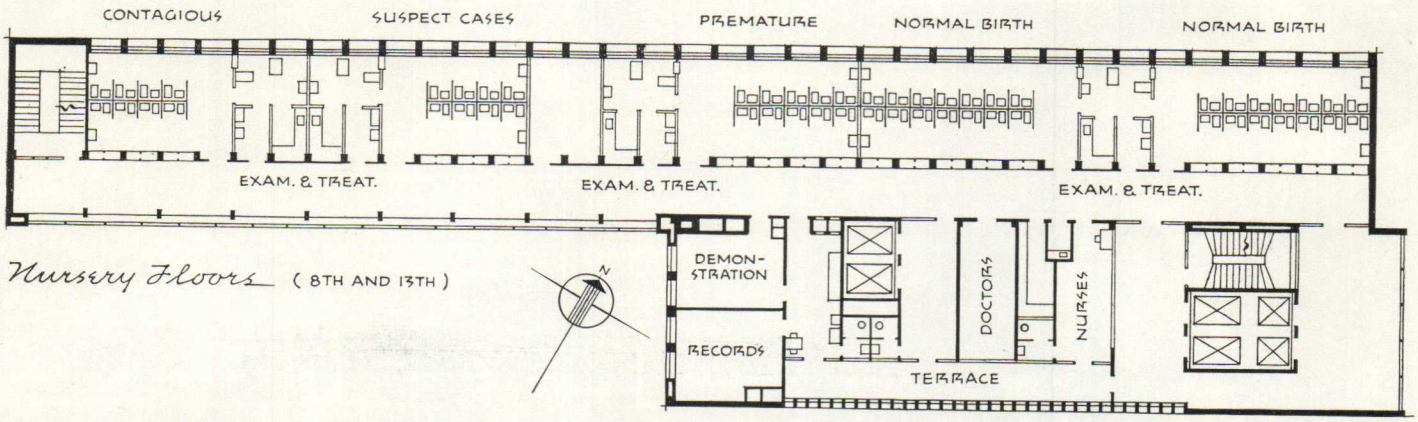
Auditorium Section



Above is the plan of the typical ward or nursing unit—for paying patients. Wards for free patients are similar except that, in normal-case wards, many partitions between bedrooms are omitted to provide a number of four-bed rooms.

In all, there are eight ward floors—four for paying patients; four for free patients. Total accommodation in the free wards is 108 beds—54 for normal cases; 54 for pathological obstetrics. Accommodation for the paying-patient wards totals 112. The rooms of the latter are used in various ways, in line with local custom. In some cases, two rooms and the bath between are used as follows: one room as bedroom for the patient and a companion, the other as a living room. Individual rooms are sometimes used for two patients; sometimes for one patient and a companion.

The two nurseries each provide 28 bassinets for normal babies; 10 bassinets for premature babies; 8 for suspect cases; and 8 for contagious cases.

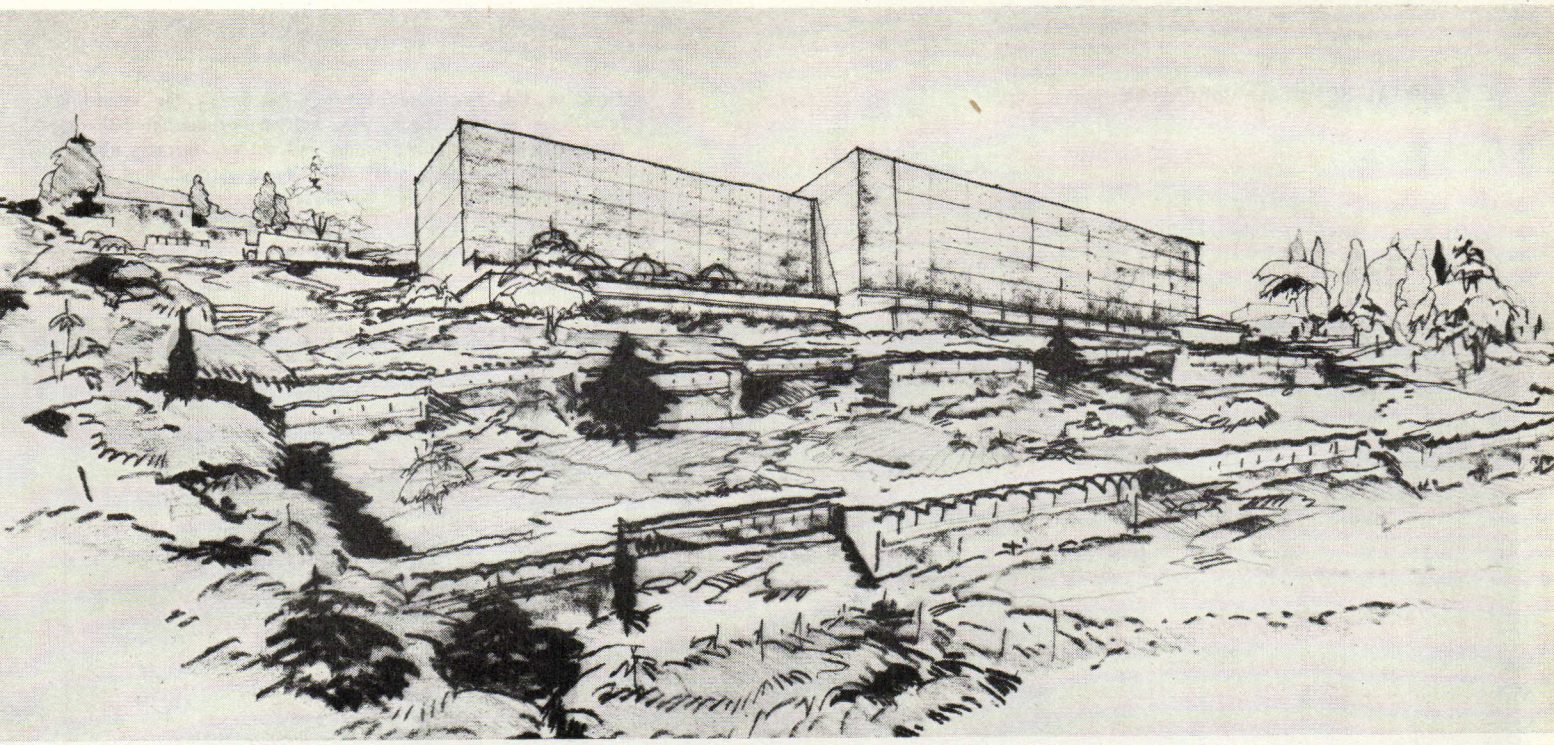


MATERNITY HOSPITAL: BRASIL

Rino Levi *(far left): Schooling in Brasil (Sao Paulo) and Italy (School of Fine Arts and the Politechnic School, Milan; Superior School of Architecture, Rome). After two years' work with a contracting firm in Sao Paulo, he established his own practice.*

F. A. Pestalozzi *(center): Swiss born, he was graduated in architecture from the Ecole Politechnique Federal, 1933; from 1933-1935, with A. H. Steiner in Zurich; work in various offices in Holland. On going to Brasil in 1936, he worked first with Alvaro Vital Brasil; from 1938-1946, with Rino Levi. He now has his own office in Sao Paulo.*

Roberto Cerqueira Cesar *(right): A Sao Pauloan, he received the architectural diploma from the Escola Politecnica in 1940, since which time he has worked in the office of Rino Levi.*



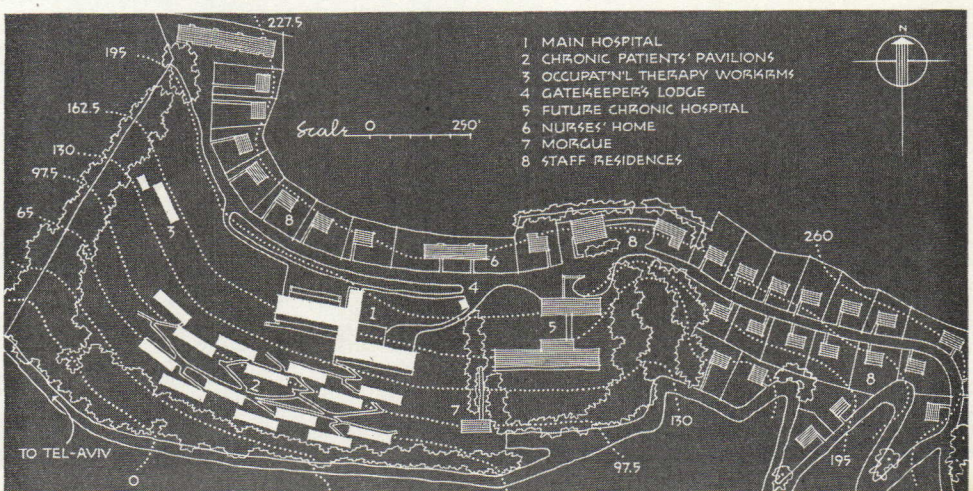
Mental Hospital: Jerusalem

JOSEPH NEUFELD, ARCHITECT
HEINZ RAU, ASSOCIATE ARCHITECT

program: A joint facility for acute and chronic patients, so organized that both groups can make use of main services—medical treatment facilities; occupational and recreational therapy; kitchen, laundry, etc.—without interfering with one another. Initial scheme to serve approximately 90 acute and 140 chronic patients; provision for future expansion, without need for enlargement of basic services. The program was sponsored by a benevolent society, Ezrat Nashim, and a site was made available and the planning commissioned through aid of the Jewish National Fund.

site: A 9¼-acre steep hillside in the vicinity of Jerusalem, with a precipitous drop from north to south.

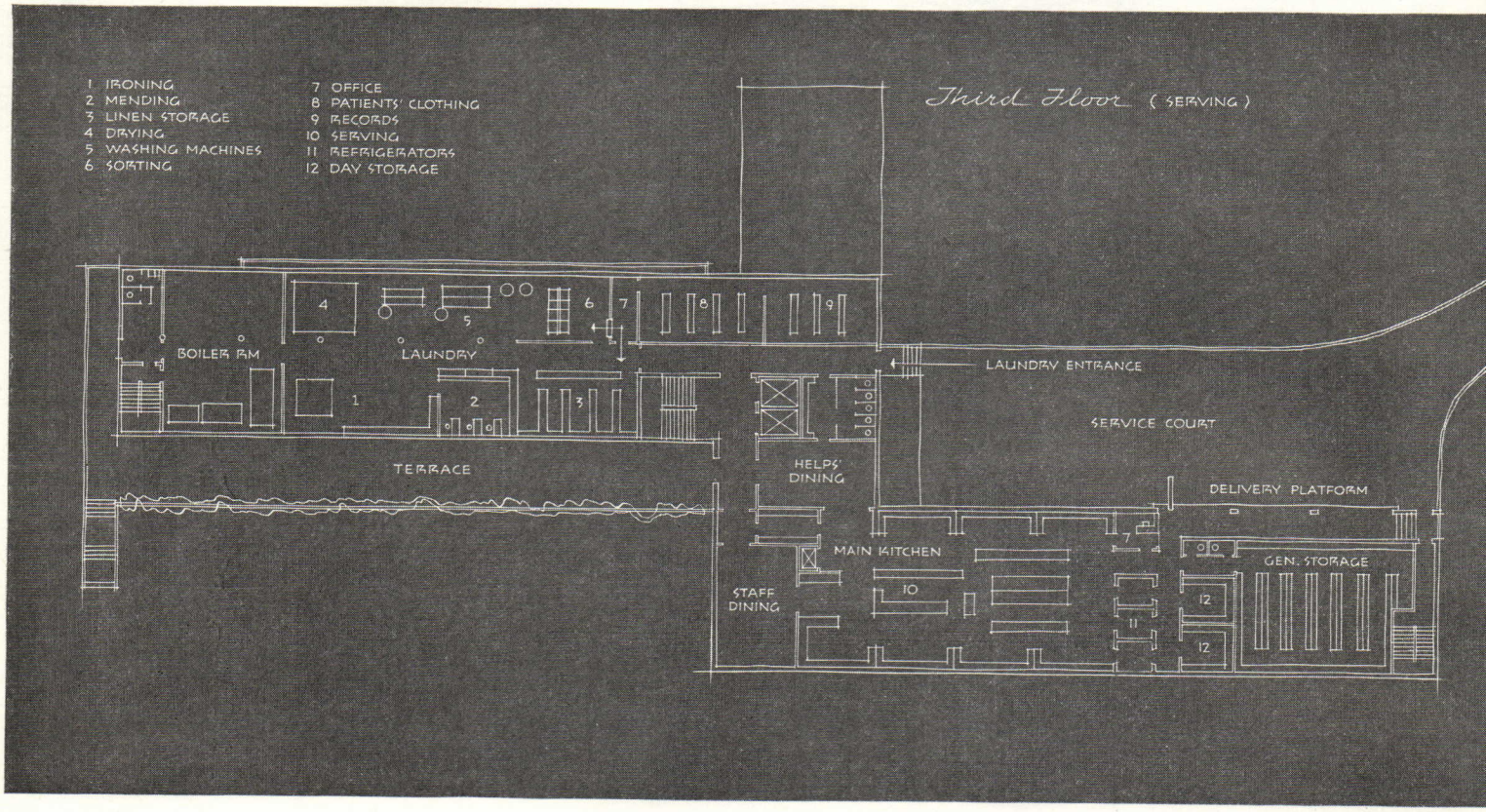
solution: The acute patients' hospital building, including the various services that both acute and chronic patients would use, is organized in a multilevel structure near the roadway at the upper part of the site, with wings extending east and west from a central service core. East of the hospital site a gatekeeper's lodge marks the point where a branch road, following southwest down the natural site contour, provides a separate traffic lane to the service level of the hospital, one floor below the main entrance-outpatient-department floor. For chronic patients, there are two rows of one-story pavilions, in a staggered pattern on two levels of the hillside.

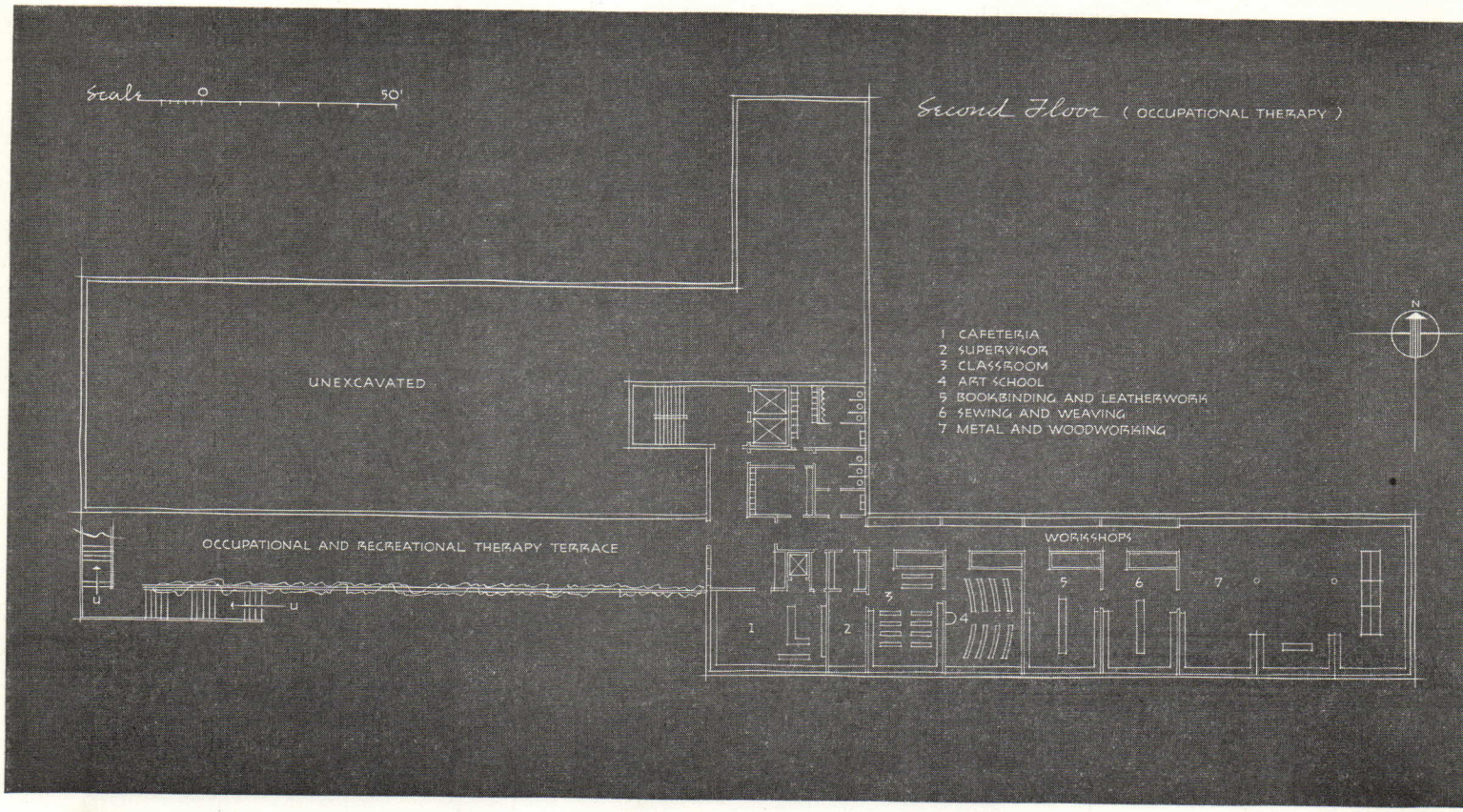


As shown in the rendering and plot plan, the limits of the site made impossible the wide separation of facilities for acute and chronic patients, but the steep grade provides distinct vertical as well as horizontal space between units. Walkways, ramps, and stairs connect the pavilions with the occupational and recreational therapy departments that are located on the lower floors of the hospital proper.

MENTAL HOSPITAL: JERUSALEM

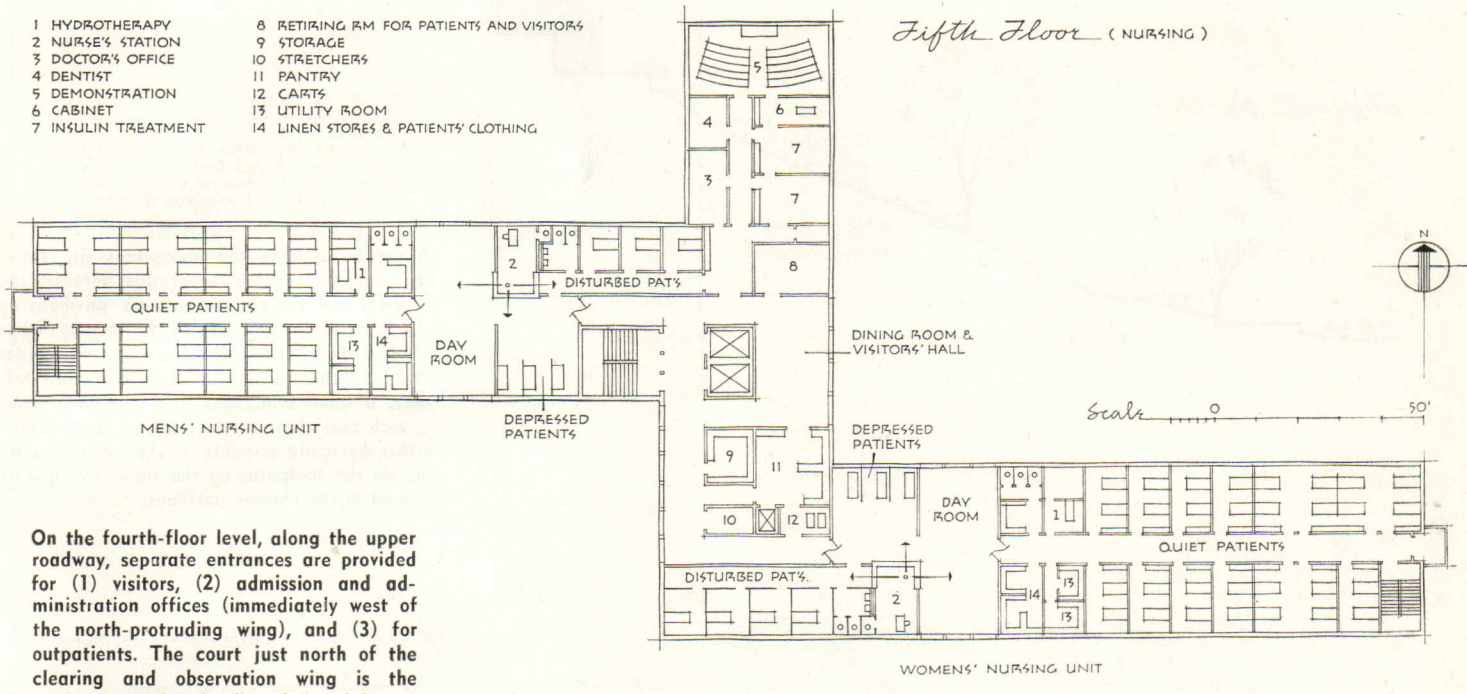
Plans on this page are of two levels below the main-floor level (see section, page 58): bottom—occupational-therapy floor, with its specialized rooms and outdoor terrace; above—heating plant, laundry, staff dining room, kitchen, and storage rooms. Economist's office in east wing controls deliveries.



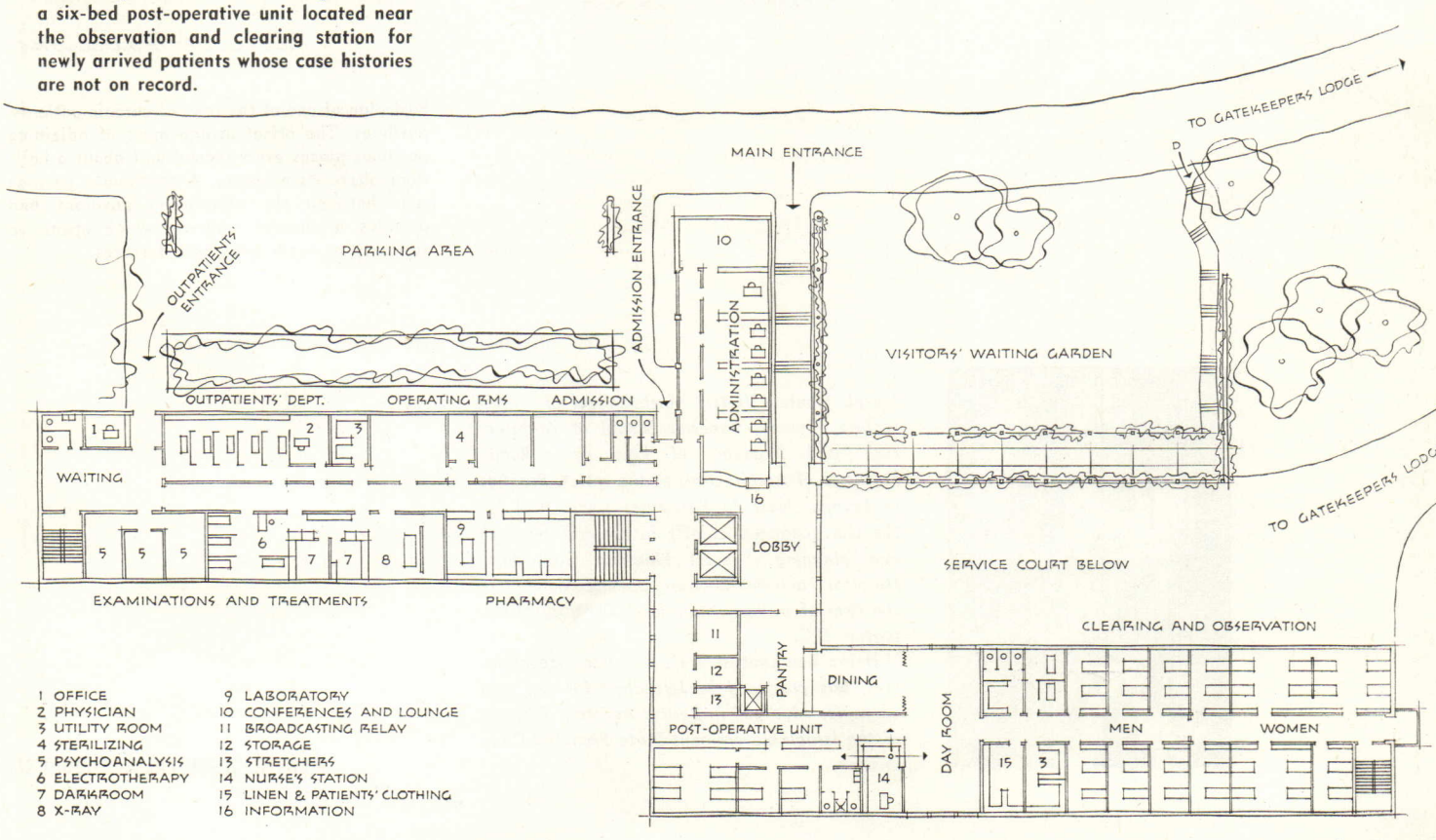


The top floor—a nursing floor, two more of which may be added at a later date—consists of two typical nursing units, one for men (26 beds) in the west wing and the other for women (30 beds). Both wings contact the service core in which there are elevators, the main staircase, dining hall, a pantry, and a visitors' room. This scheme allows complete privacy for the two sexes, while the offset plan not only provides good light and ventilation to the core but acts as a breeze catcher to draw the slow-moving summer air into the building corridors. The northern end of the central wing houses specific treatment rooms, equally usable by both nursing wings. Each nursing unit is organized around a central control office from which one nurse can supervise entrance into the unit; a group of single isolation units for disturbed patients, and a number of booths for depressed patients, as well as the day room where patients who are unable to be in the occupational or recreational departments downstairs spend most of the day. A door closes off the quiet patients' dormitories at the ends.

1 HYDROTHERAPY
2 NURSE'S STATION
3 DOCTOR'S OFFICE
4 DENTIST
5 DEMONSTRATION
6 CABINET
7 INSULIN TREATMENT
8 RETIRING RM FOR PATIENTS AND VISITORS
9 STORAGE
10 STRETCHERS
11 PANTRY
12 CARTS
13 UTILITY ROOM
14 LINEN STORES & PATIENTS' CLOTHING

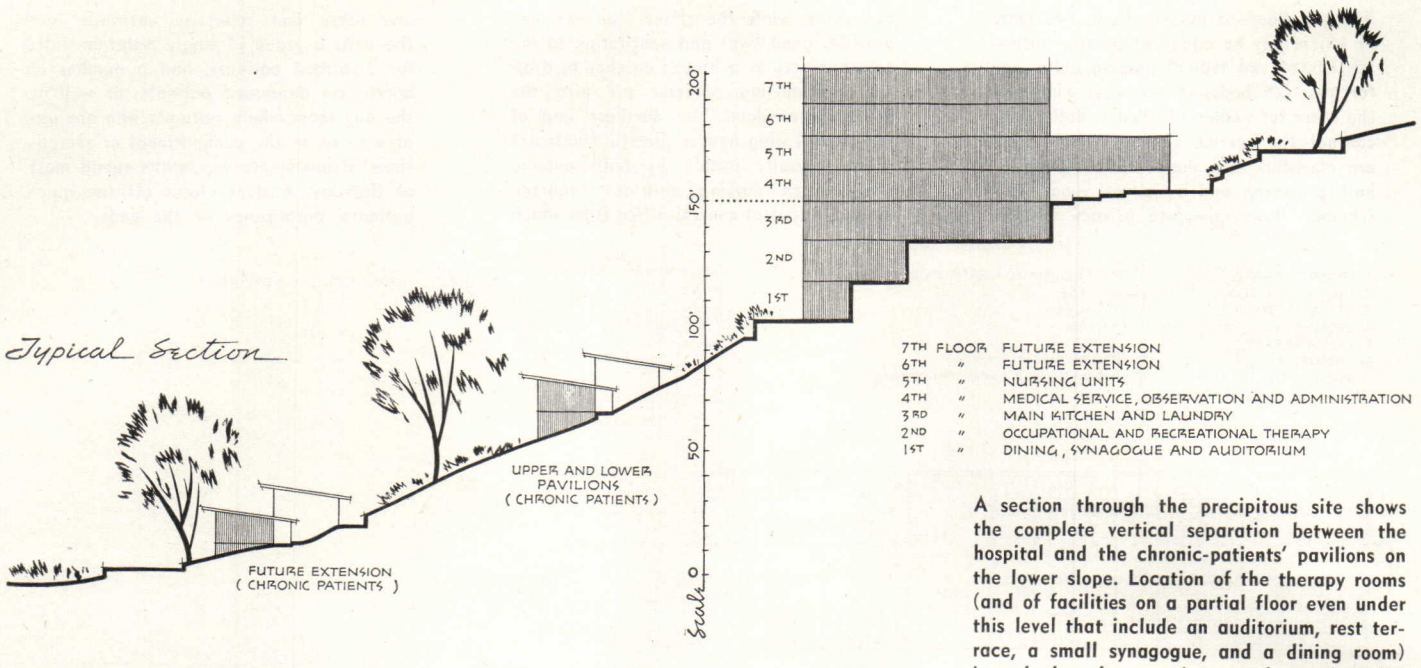


On the fourth-floor level, along the upper roadway, separate entrances are provided for (1) visitors, (2) admission and administration offices (immediately west of the north-protruding wing), and (3) for outpatients. The court just north of the clearing and observation wing is the service court for the floor below (plan at top of facing page). The west wing contains the Outpatient Department, with examining cubicles, doctors' offices, a psychoanalytical unit, fluoroscopy, radiography, and an operating unit for either minor or emergency cases (major neurological operations would be handled in other hospitals). The east wing contains a six-bed post-operative unit located near the observation and clearing station for newly arrived patients whose case histories are not on record.

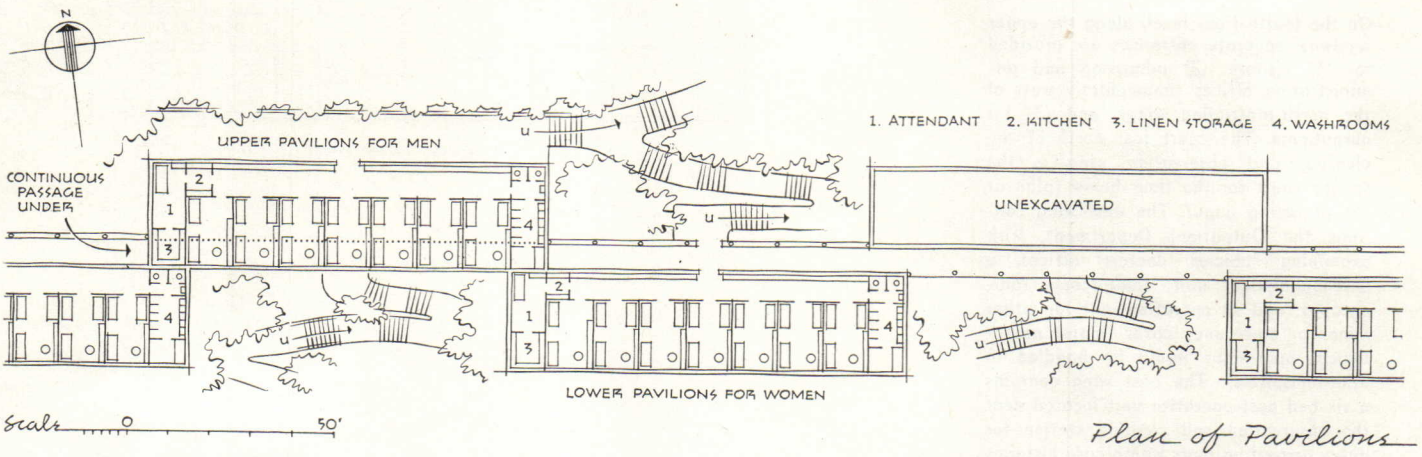


1 OFFICE
2 PHYSICIAN
3 UTILITY ROOM
4 STERILIZING
5 PSYCHOANALYSIS
6 ELECTROTHERAPY
7 DARKROOM
8 X-RAY
9 LABORATORY
10 CONFERENCES AND LOUNGE
11 BROADCASTING RELAY
12 STORAGE
13 STRETCHERS
14 NURSE'S STATION
15 LINEN & PATIENTS' CLOTHING
16 INFORMATION

Fourth Floor



A section through the precipitous site shows the complete vertical separation between the hospital and the chronic-patients' pavilions on the lower slope. Location of the therapy rooms (and of facilities on a partial floor even under this level that include an auditorium, rest terrace, a small synagogue, and a dining room) is such that these services can be used readily either by acute patients in the main hospital or, via the footpaths up the slope, by patients housed in the chronic pavilions.



Part plan of one of the rows of chronic patients' pavilions. The offset arrangement of adjoining pavilions places every second unit about a half-floor above its neighbor. A continuous passage runs between the alternating pavilions and provides a covered walkway which opens up variously to north and south terraces.

Joseph Neufeld *(left): Masterschool of Architecture, Vienna; Superior School of Architecture, and Academy of Fine Arts, Rome; Professor of Architecture at the latter. Practice in Europe, later in Palestine; since 1941, in the U.S., engaged chiefly in hospital research and planning. Special Planning Consultant, Hospital Facilities Section, USPHS. Member of the firm of Burket, Neufeld & DeMars, Washington, D.C.*

Heinz Rau *(not shown), the associate architect, has practiced in Jerusalem for the past 15 years; educated in Berlin; Assistant Director of the Israeli Government State Planning Commission.*

MENTAL HOSPITAL: JERUSALEM

The Specification Specialist

By JOSEPH A. McGINNISS

Mr. McGinniss, a specification writer with his own office, whose practice has included work from the smallest to the largest, writes both from his own experience and as a result of a survey he recently made to discover the spread of the use of "free-lance" specialists in this field.

Specifications are one of the most neglected, procrastinated, and misunderstood portions of the architect's services, and yet when dispute or disagreement arises during construction the specification is the document to which contractors, owners, and architects first turn.

Except in offices of the largest size, it is not customary or economically feasible to maintain a full-time specification writer. In most offices, that function is combined with checking shop drawings, inspecting the job during construction, approving samples, or other work. Specification writing apparently is passed around in various offices and is done by the squad captain, chief draftsman, the architect himself, or by the person who has the least to do at the moment. The weaknesses inherent in such a procedure should be obvious, as intelligent writing of specifications requires a degree of concentration, freedom from interruptions, detachment from office managing and administrative functions that can be obtained only by one who does nothing else.

An obvious and logical answer to the problems of architectural specifications in a great many cases has been found by entrusting their preparation to the "free-lance."

Many offices at the present time have all their specifications written by outside specialists and many other offices—including many of the largest—from time to time turn over to the specialist an individual project.

Experience has also shown that on particularly large projects—where the elapsed time from the commencement of working drawings until the bids are received extends over a considerable period—it is far more profitable to give out the specifications than to assign a full-time specification writer on the staff to this job for six months or a year. Such a man certainly will not be writing specifications continuously, but he will be charged either to the project costs or to overhead. His salary multiplied by 26 or 52, or whatever the number of weeks, and by the bookkeeping factor of 2, 2.5, or 3, will result in a figure in excess of that required by the specialist.

The specialist normally has in his office from three to six, or more, projects in various stages of development at any given time; and, therefore, it is possible for him to be more continuously active than a specification writer in an individual office. By training and experience he is geared to process these projects with proper attention. Because of the vast accumulation of reference material as well as his access to authoritative sources of information and to consultants, he seldom encounters "dry" spots when it is not possible to make forward progress on at least one or more of his projects.

Similarly, due to his past experience, which usually has encompassed projects of nearly every type and size, he is able to anticipate the trouble spots, the items which will normally cause delay; and he is able to initiate steps seasonably to obtain the information and unclog the obstructions to the proper flow of decisions and material from drafting board to typewriter.

A specification writer who is accorded proper recognition as a definite part of the architectural production schedule—and not as a "nuisance"—can be of great assistance in helping to get a job out on time. Of necessity, he can unobtrusively elicit information he requires and by persistent "follow through" force decisions which he himself needs to complete his share of the contract documents—and which others in the office similarly need to complete the drawings.

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The history of architectural practice does not record the first free-lance architectural specification or its author, but undoubtedly it was written at night and over week ends by a regularly employed specification writer for an architect who would otherwise be unable to meet a promised completion date.

From such a hectic and informal beginning the practice of free-lance architectural specification writing has evolved over a period of more than 25 years, until at the present time free-lance or professional specification writers are widely and increasingly recognized as a definite group of specialists serving the architectural profession. No longer is this profession a part-time, night, and week-end emergency aid to the architect. Usually a well-staffed office is maintained with a varying degree of creative and productive facilities designed to perform jobs of any type or size (other than the very smallest) with comprehensive and economical results for the architect and client at reasonable profit.

Recently a survey was made of 25 of the larger centers of architectural activity. Letters were written to the secretaries of the local A.I.A. chapters requesting information as to the existence of these specialists and, if they existed, how extensively their services were utilized. Replies were received from 16 cities. In seven of the answering cities it was found that free-lance specialists existed. In addition to New York, they were found in Detroit, Chicago, Houston, San Francisco, Los Angeles and Seattle.

It is significant to note that where they are functioning comment is almost uniformly favorable. For instance, a Los Angeles architect wrote: "It is my observation that specifications written by a free-lance specification writer are superior to average specifications written in an architect's office. By checking such a variety of work, a free-lance writer gains an invaluable amount of information which shows up in his specifications and in his job check of the working drawings."

The greatest and most valid objection of architects to using these services was expressed by a prominent Cincinnati architect when he wrote: "There appears to be a feeling that first-hand experience with the work as it progresses through the drafting room enables the individual architect personally to write a more complete and thorough specification. The preparation of sufficient notes and information for a free-lance writer would be time-consuming and, in consequence, the writing of the entire specification by an 'in-office' man has proved more efficient."

This boils down to a fear of lack of coordination between the office where the drawings are prepared and the specification writer. This, as I see it, is a matter of personal relationship which, if properly approached by both parties with a mutual desire and will to cooperate, will result in a completely satisfactory and adequate specification.

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There is no hard and fast rule for determining the fee for free-lance specification writing, no rule of thumb or magic formula. Specifications are not written, as some architects mistakenly believe, for X dollars a section. The specification writer has to take many factors into consideration before submitting a proposal. These include the size and complexity of the project, the method of construction contract contemplated, the type of client for whom the building is being designed, the extent and nature of details that the architect is accustomed to making. It is a well-known fact that specifications for buildings for public agencies on either federal, state, or municipal levels are usually much more involved and require much more coordination and revision, due to constantly evolving standards and changing procedures, than comparable work for private clients. A proposal for specifications for public agencies unquestionably must allow for this additional work and, therefore, may be substantially higher than the fee for the specifications for a comparable building for a private institution or corporation.

Many free-lance specification writers prefer or insist on working on an hourly basis. Frank Stanton, a well-known free-lance specification writer of Seattle, presents the case for the hourly basis very cogently: "I have made several attempts to establish a fee basis but with no success. Some architects make very clear and complete drawings, deliver them to me completed or nearly so, and I can get out a spec. in a hurry. Therefore, it is not fair to charge them the same rate as those who make drawings without details and which require a lot of writing to fill in the holes."

That Stanton's policy has worked in Seattle is obvious when he goes on to state: "Due to the large demand for my services, I have been able to pick my clients up to this date, and simply don't work for those who make sloppy drawings or complain about my bills." It is interesting to note further that Stanton has prepared "standards" which he sells to local architects for use on jobs costing less than $100,000.

It has been determined by inquiry and experience that it is not generally feasible for a free-lancer to handle the specifications for a project where the estimated construction cost is so small that the proportion of the fee which the architect is able to spend on specifications is insufficient to pay for specialized analysis and a thoughtful, painstaking approach. To carry the relationship of project size with respect to cost of specifications a bit further: the detail and volume of a specification for a 500-bed hospital or 500-room hotel is not much greater than for a similar building with 250 units. Virtually the same number of trades are involved and the same items have to be covered. The architect's fee for the smaller project is approximately 50 percent of the fee for the larger project, yet the specification writer is entitled to practically the same amount of compensation.

The services of free-lance specification writers are increasingly being used on certain types of projects where there is standardization and a great deal of repetition, such as for veterans' hospitals (during the period when these were handled by private architects) and public housing projects. For example, during the most recent program of the New York City Housing Authority, at least 75 percent of the architectural specifications were written by practicing free-lancers. This considerably simplified the problem of maintaining a steady flow of current specification information from the Authority to the various architects and simplified the problems of review and approval. I understand a similar disposition is found among the public agencies in the Los Angeles area towards the work of the free-lance specification writers. It is logical to assume that a substantial amount of the projects to be done in the next five years in connection with the Housing Act of 1949 will be performed by free-lance specification writers in various sections of the country.

In general, the services of the free-lancer can be advantageously utilized for many projects where his capacity as a competent, experienced, and versatile specialist will benefit the architect. He will contribute his important share to the efficient, effective, and economical fulfillment of the architect's responsibilities.

Store: Los Angeles, California

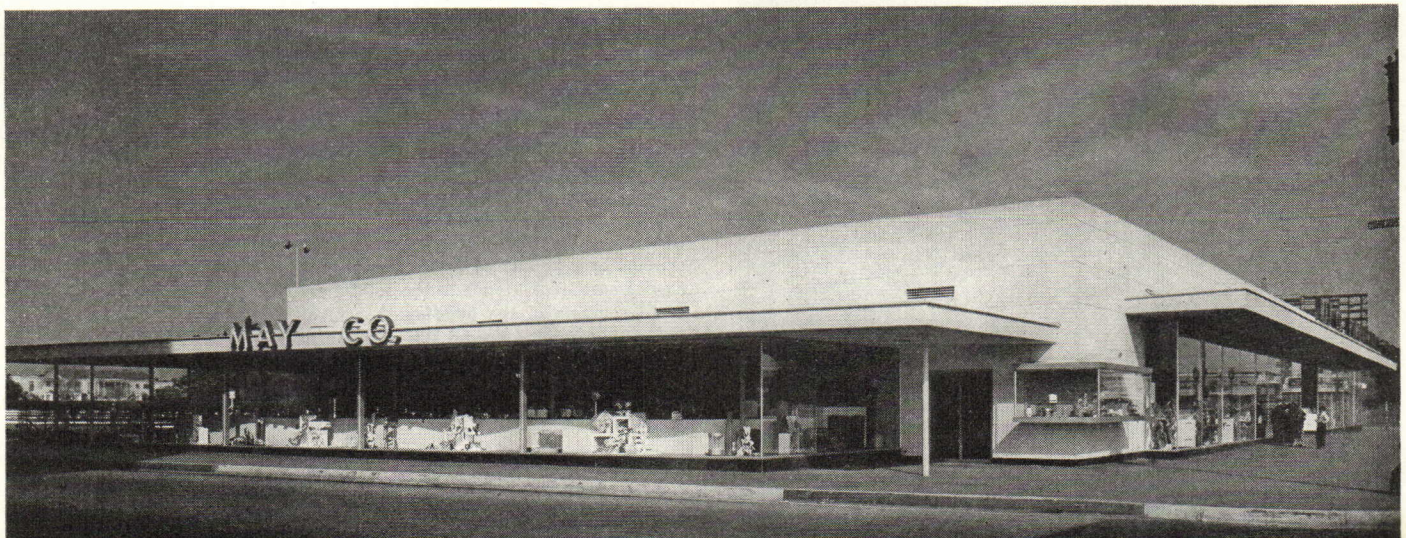
ALBERT C. MARTIN & ASSOCIATES, ARCHITECTS & ENGINEERS

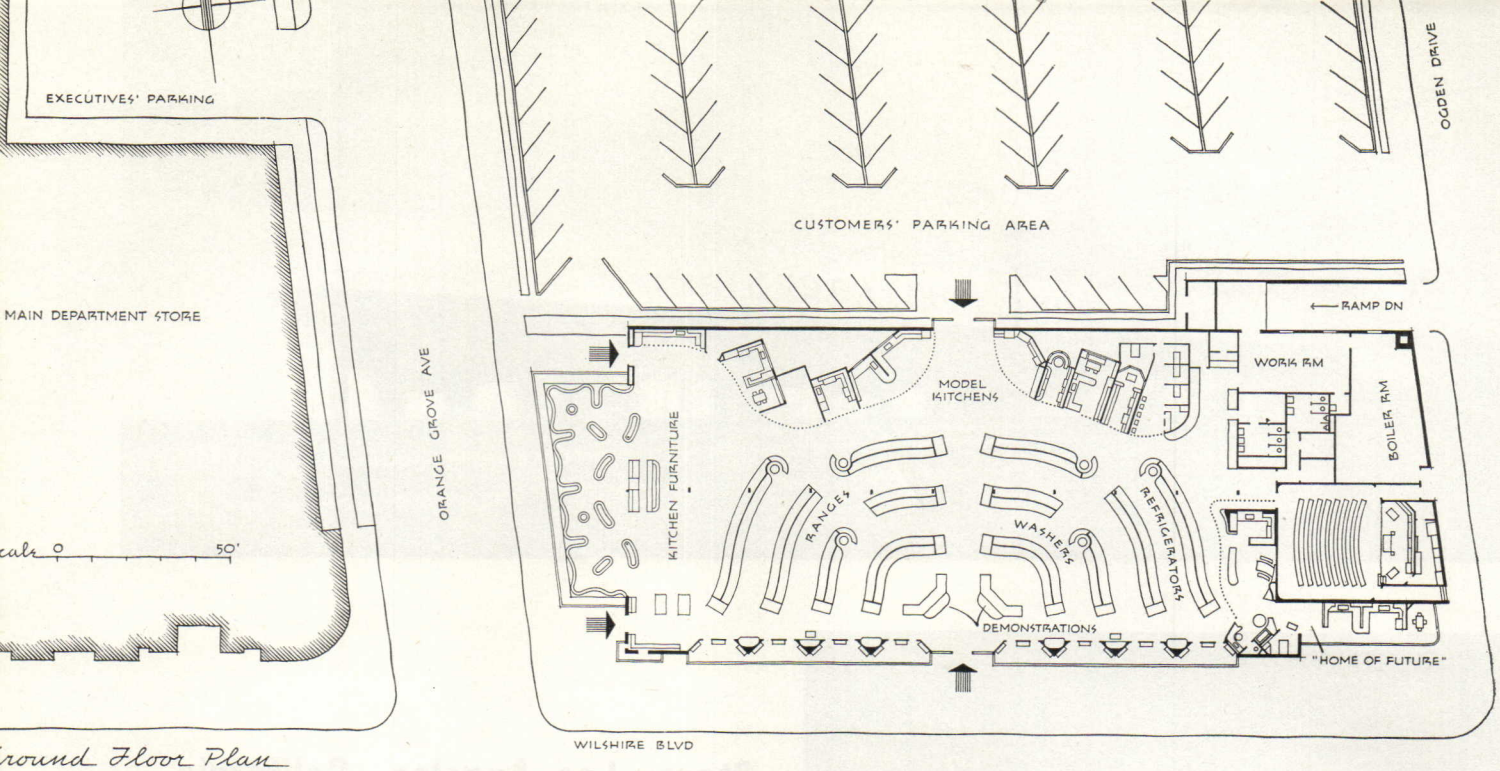
Top: general view from Wilshire Boulevard showing the across-street relation of the appliance store to the May Company's Department Store at left of photo.

Center: close-up of entrance corner (see Selected Detail of display case, page 89.)

Bottom: view across the side street, Orange Grove Avenue, the chief approach for department-store customers. This front and Wilshire Boulevard front (right of photo) both are treated as continuous, open-front show windows.

Photos: Julius Shulman



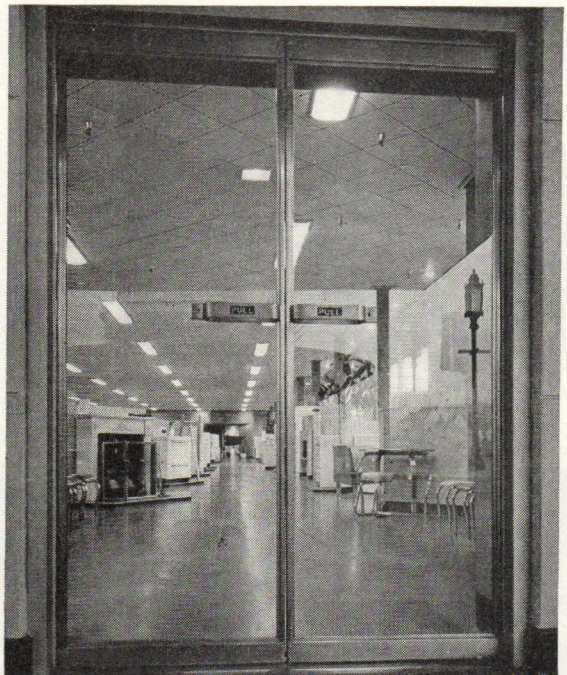


Ground Floor Plan

program: A building for the sale of home appliances—an addition to, but across Orange Grove Avenue from, the May Company's Wilshire Boulevard department store. Strict economy was a major factor as the owners felt that within a score or less of years the one-story building might be replaced by some more permanent, presumably larger, structure. Problem of two major facades—one facing Wilshire Boulevard; the other (considered the main approach) facing the main store.

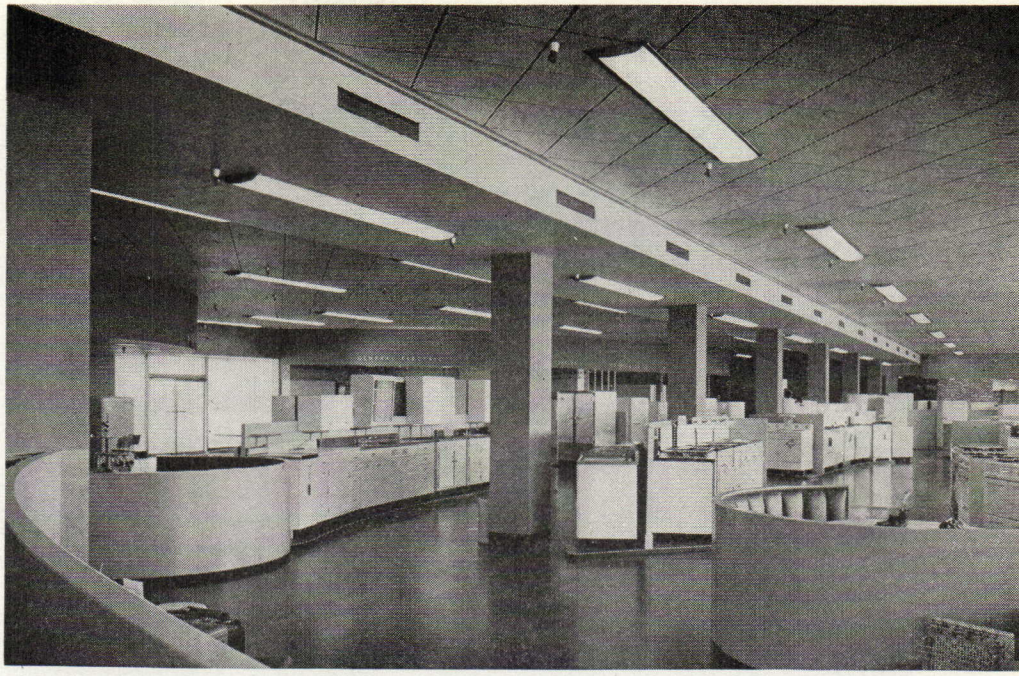
site: Corner level lot, with traffic-crowded Wilshire Boulevard on the south; Orange Grove Avenue and the main department store to the west. Parking space at the rear (north) paralleling that behind the main store.

solution: Arrangement within a long rectangle facing Wilshire Boulevard. Both boulevard and side-street fronts treated as continuous open-front show windows, with entire store, as well as individual items, on display. North wall, practically solid except for the central door to the parking lot and used as background for individual, model-kitchen displays.



Detail of entrance at southwest corner of the store. Structurally the building is wood frame, with the span across the depth of the building handled by two wood trusses. A bracing in the plane of the ceilings by a horizontal truss of steel rods carries earthquake loads to the solid piers at the corners of the building. A central canopy is extended toward Wilshire Boulevard at the plane of the bottom chord of the truss over the large window front.

STORE: LOS ANGELES, CALIFORNIA



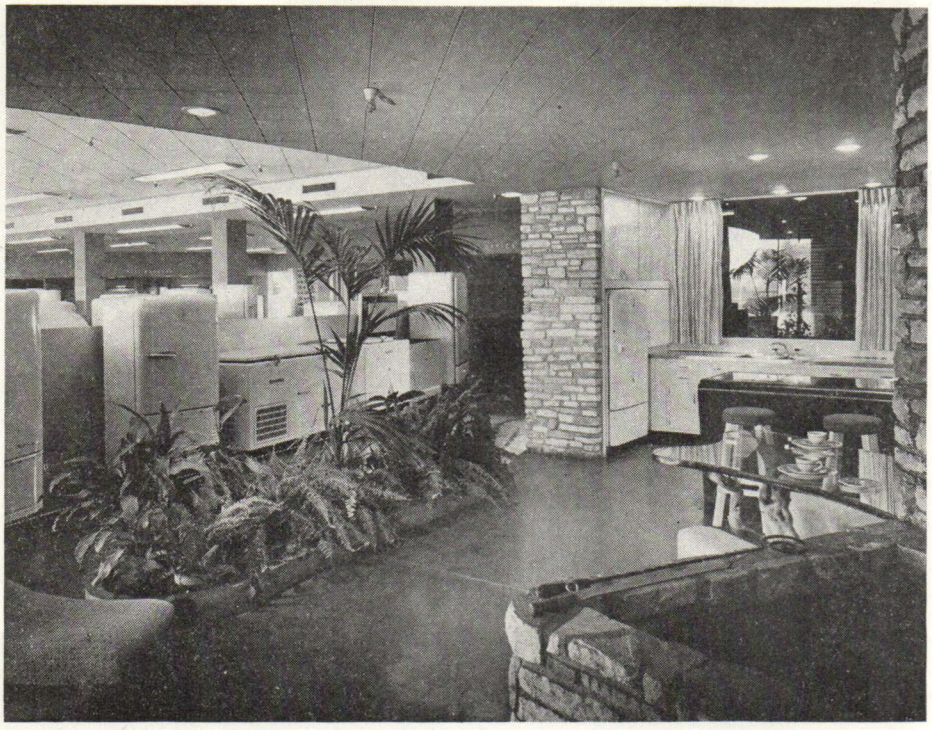
Top: general view of display floor, with door to parking lot visible on north wall (left of photo). Conditioned air delivered to room from plenum above row of central columns. Flush-mounted lighting fixtures provide a level of 50 footcandles in the over-all area.

Bottom: view along Wilshire Boulevard window-wall front. The architects report excellent results with the flooring: "We found we could save half of the floor covering cost by topping the floor slab, immediately following the pouring, with a black-colored cement and quartz aggregate mixture. This was eventually ground to a high polished, lustrous black surface."

Firm founded in 1907 by the senior partner Albert C. Martin *(center): U. of Ill.*

Albert C. Martin, Jr. *(right): U. of S. Calif.; partner in the firm since 1936; responsible for architectural design.*

J. Edward Martin *(left): U. of Ill., partner in the firm since 1944; responsible for structural engineering.*



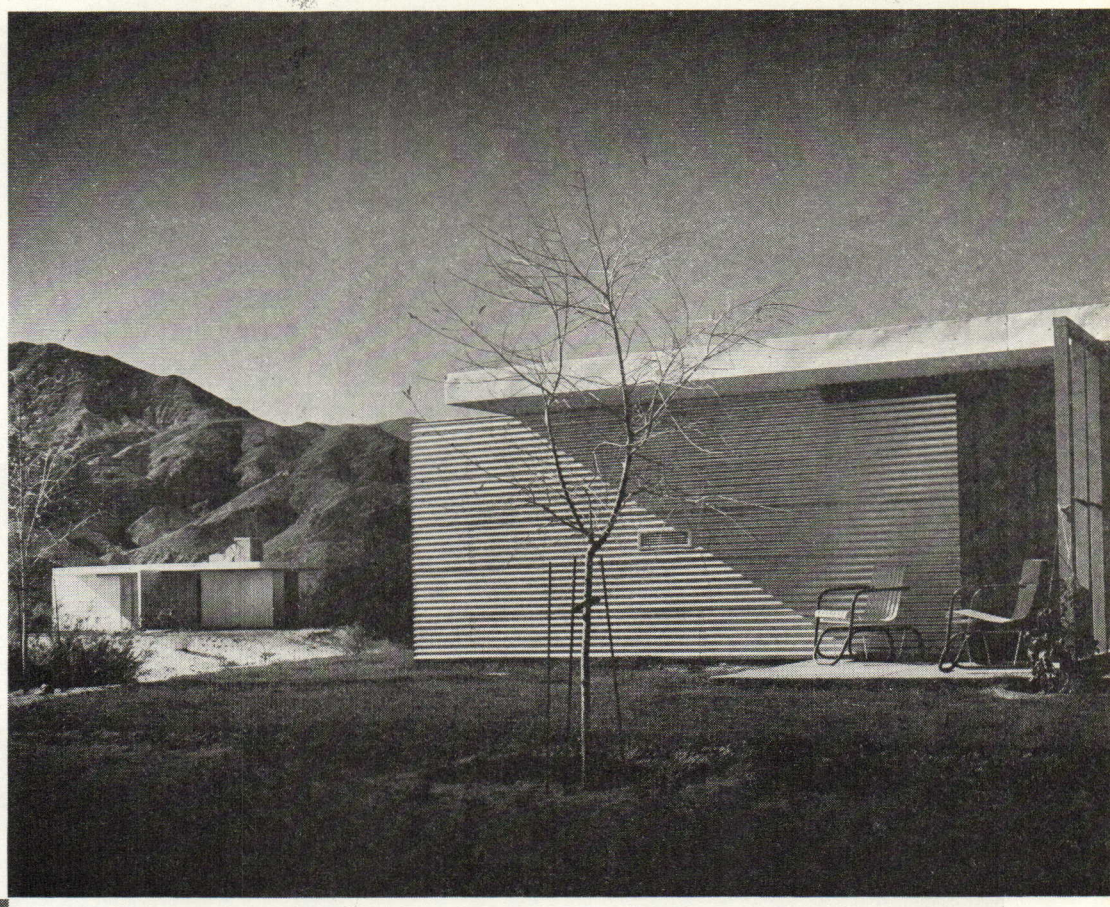
Top: one of the model kitchens, arranged under a lowered ceiling and separated from general display by a planting bed, to assist the impression of domestic scale.

Bottom: the north entrance—opening to the parking lot at the rear of the building. Remainder of this north wall is used as background for display of model kitchens.

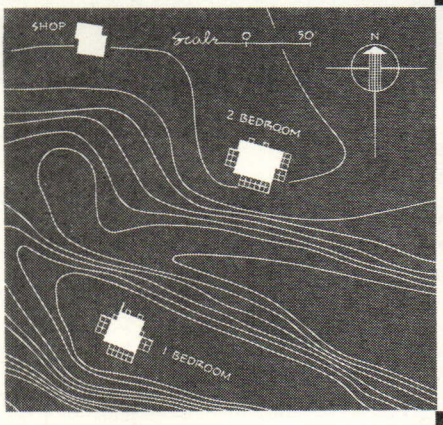
MATERIALS AND METHODS

CONSTRUCTION: Frame (walls, roof): No. 1 common wood; depth of building spanned by a pair of patented wood trusses. **Floor:** concrete slab topped directly with black cement and quartz aggregate mix, polished. **Wall Surfaces:** exterior—cement plaster, scored; interior—gypsum plaster. **Roofing:** composition. **Fenestration:** extruded metal sash; plate glass. **Insulation:** acoustical—perforated cane-fiber tile ceiling; thermal—wool type bats. **Partitions:** frame, plastered. **Doors:** birch slab; metal-bound glass.

EQUIPMENT: Air conditioning: conditioning unit (in northeast corner) with distribution via a plenum down the center of the building; pneumatic controls. **Lighting:** eight-foot fluorescent units; directional-lens incandescent units—all flush mounted; circuit breaker. **Special equipment:** sprinkler system.



The bedroom side of the larger house with the one-bedroom house in the background at left. Aluminum paint on both corrugated and smooth galvanized-iron surfaces supplements the temperature control of the roof cooling unit by reflecting heat.

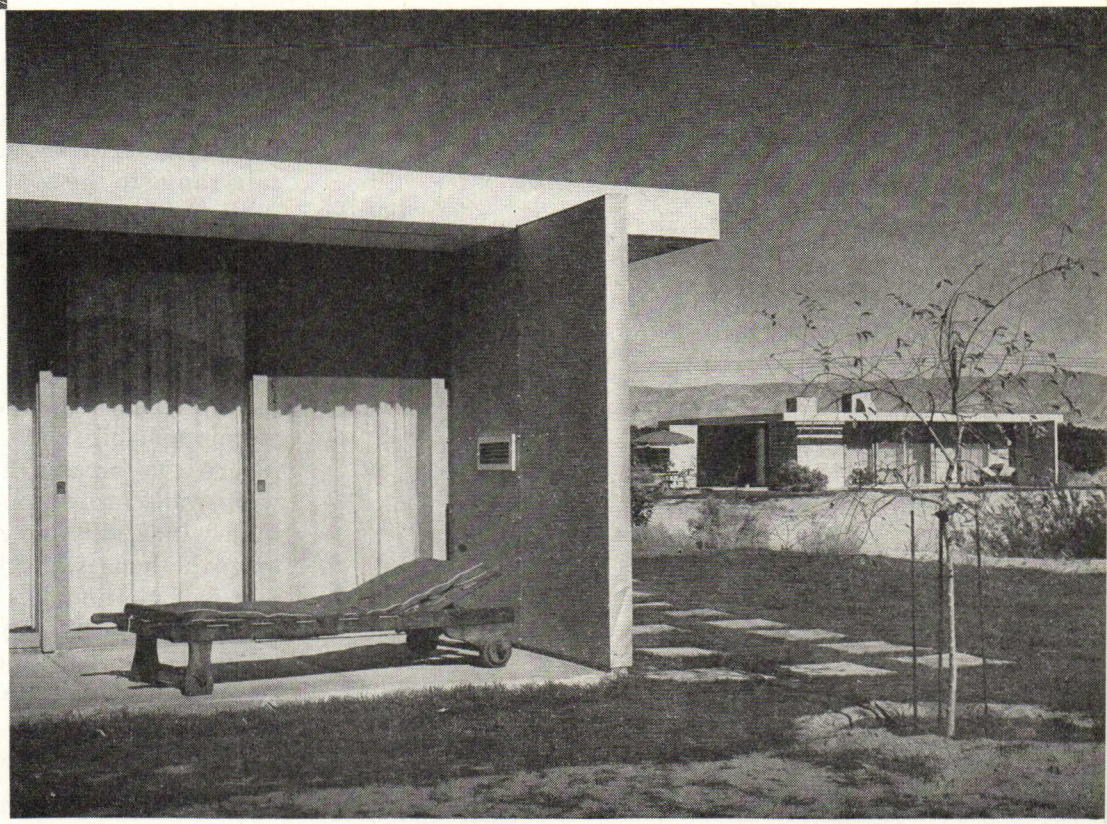


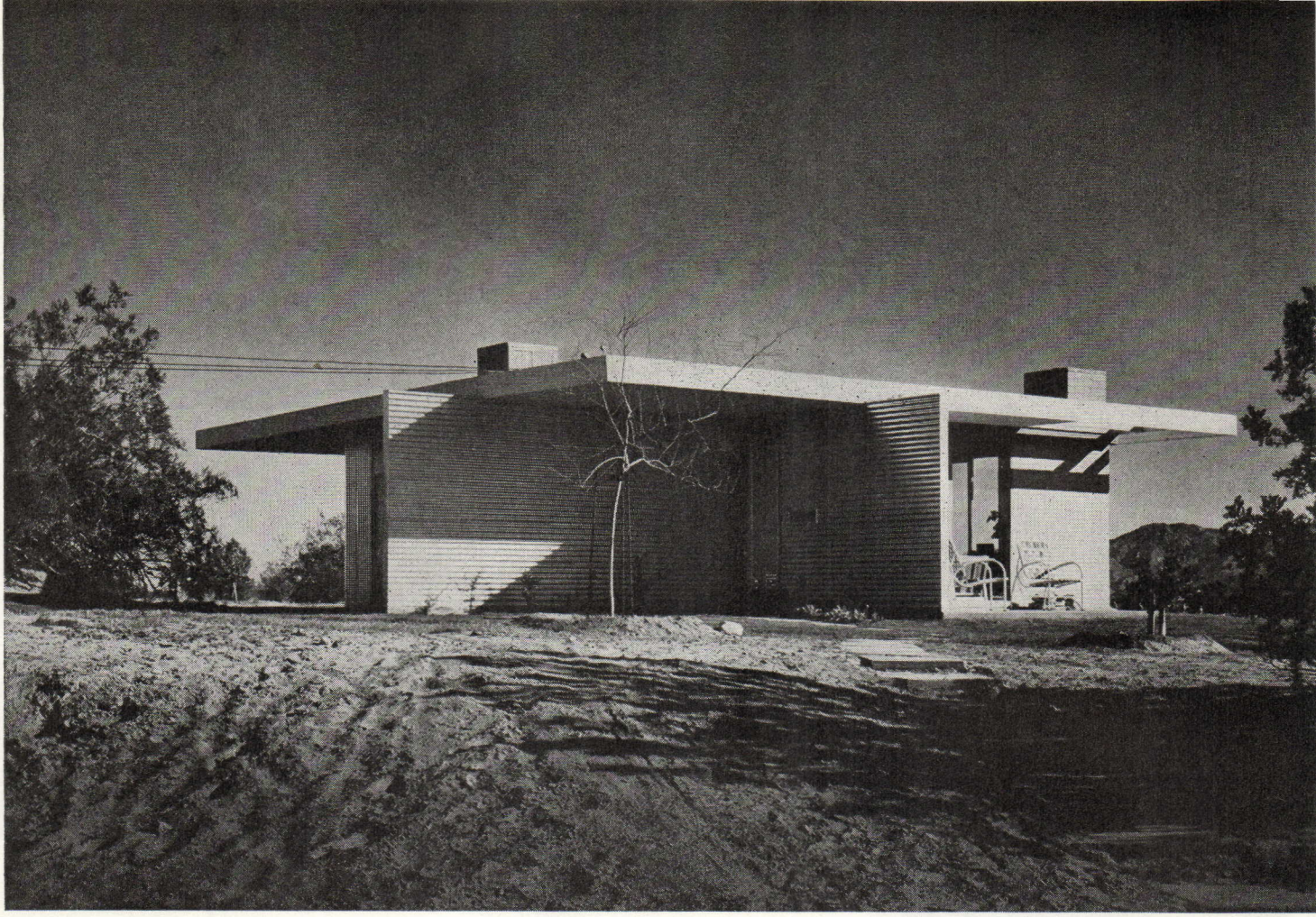
Two Houses: Palm Springs, California

CLARK & FREY, ARCHITECTS

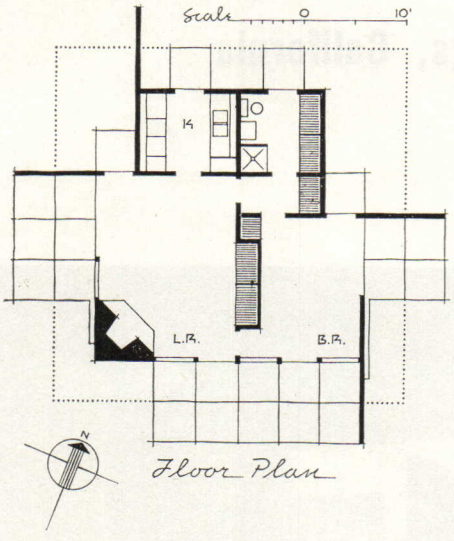
The site plan (above) shows the two houses, separated by an arroyo which gives further privacy, oriented so that living room corners are angled to the southwest for the desert sunsets.

Right: view from the bedroom end of the terrace of the smaller house. Note the flush, chrome-louvered light set into the asbestos-cement wall board with which the wing wall is faced. *Photos: Julius Shulman*





The one-bedroom house: living-room chimney at the corner and southwest terrace (right) with its wing wall providing a windbreak. Doors of the kitchen and bath are behind the wing to the left.

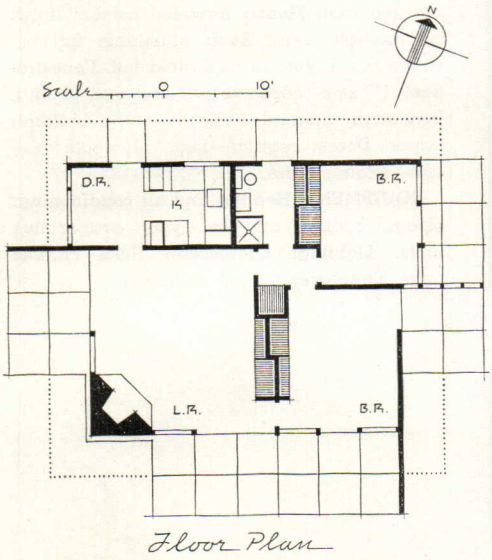


program: The owner wanted a place to relax between work periods in Hollywood, with the possibility of making the project self-supporting by renting a guest house.

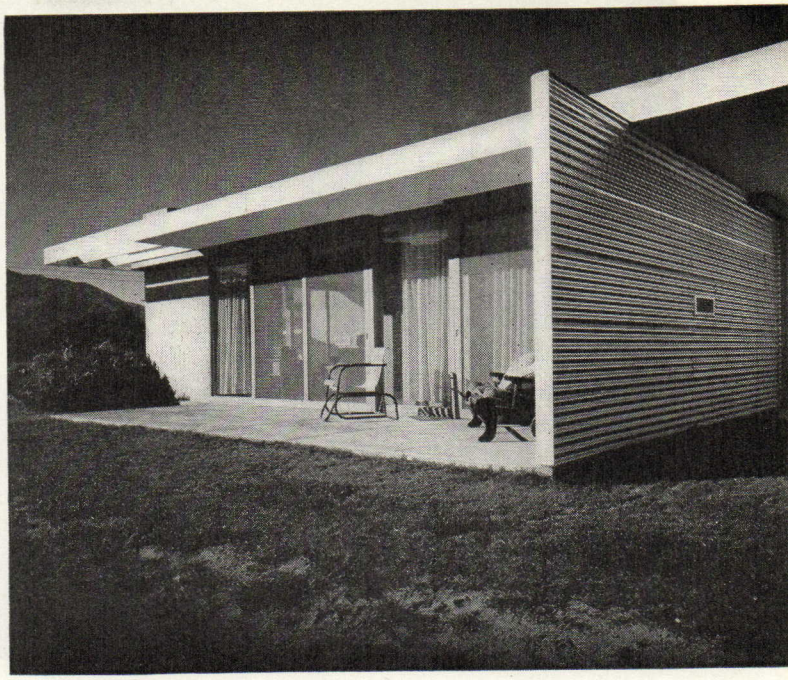
site: A large desert tract near Palm Springs with a mountain range to the southwest.

solution: A two-bedroom house for the owner; a one-bedroom house for guests (or rental); and a shop for power, laundry equipment, a workroom, and a caretaker's quarters. A 4′ x 8′ module was selected as the basis of the design to facilitate the use of standard panelboard. This provided for quick erection and ease in making future changes or additions. Cooling units, aluminum foil, and aluminum paint were used to insure comfortable living in the desert heat; and wing walls protect outdoor terraces from occasional high winds. Sliding glass doors make it possible to open the houses on pleasant days, and the wide expanse of glass makes the dramatic landscape a part of each house in any weather. Walls and ceilings reflect the desert hues in dusty shades of yellow, green, and terra cotta.

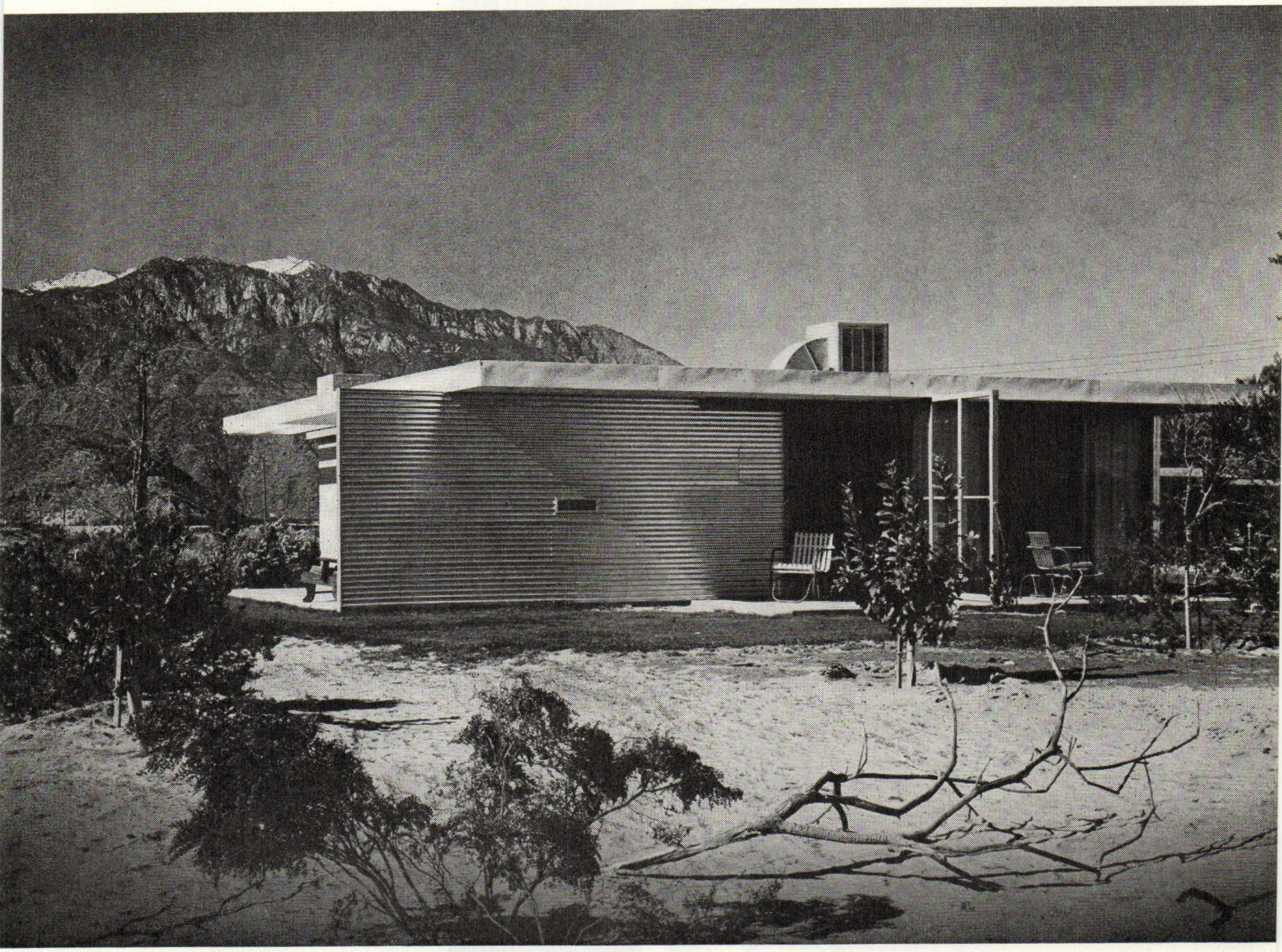
TWO HOUSES: PALM SPRINGS, CALIFORNIA

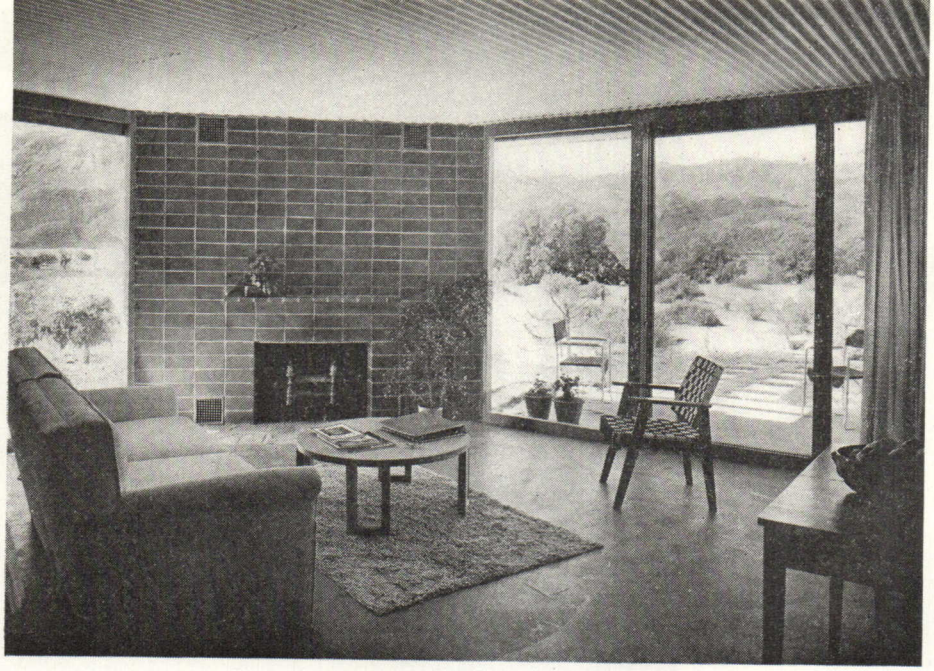


Floor Plan



Above: the front terrace of the two-bedroom house.
Below: the open trellis provides partial separation between the two bedroom terraces. The cooling unit on the roof serves a plenum over the hall.



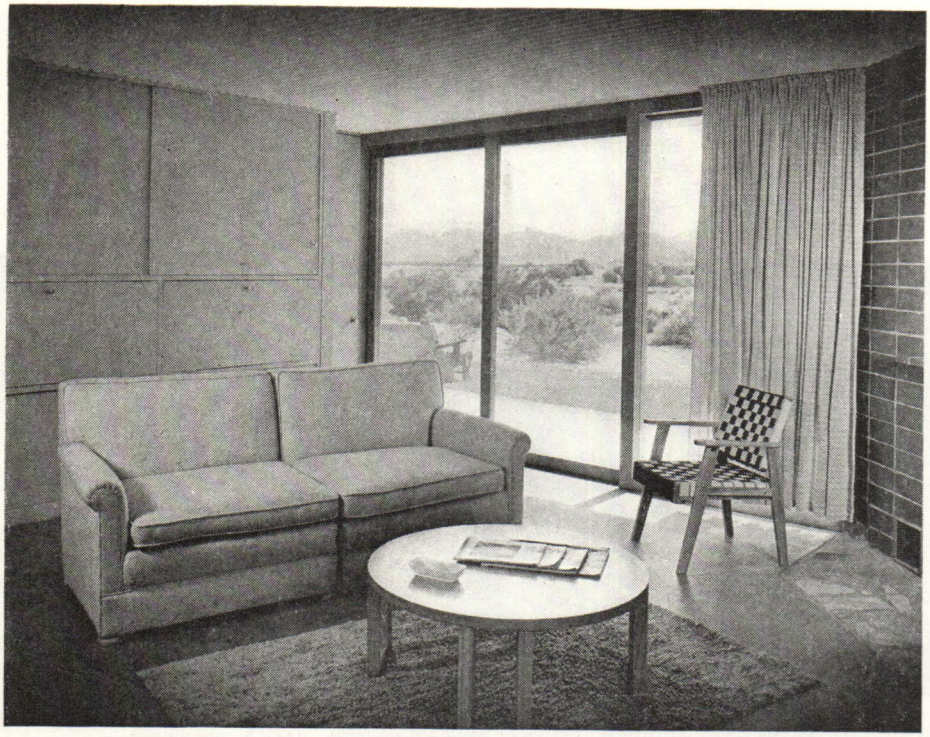


TWO HOUSES: PALM SPRINGS CALIFORNIA

MATERIALS AND METHODS

CONSTRUCTION: Frame: wood. **Walls:** exterior—corrugated galvanized iron, aluminum paint; interior—painted asbestos-cement wallboard. **Ceiling:** painted corrugated galvanized iron. **Floors:** troweled cement finish on concrete slab. **Roof:** aluminum foil between two layers of asphalted felt. **Fenestration:** 1" steel casements—fixed and sliding. **Insulation:** thermal—reflective type building paper. **Doors:** regular—flush plywood; special—sliding glass.

EQUIPMENT: Heating and air conditioning: electric radiant and fan type; evaporative units. **Lighting:** fluorescent; flush chrome units. **Fireplace:** built-in circulator.



Views in the two-bedroom house.

Top: fireplace corner of living room, arranged so that the evening fire and sunset can be enjoyed simultaneously. The wide glass doors—painted Venetian red—slide back in pleasant weather to make the distant horizon a part of daily living.

Left: another view of the living room, showing the wall of closets and one bedroom door. The corrugated galvanized-iron ceiling, warm brick, flagstone hearth, and smooth floor give variety to simple lines.

Below: the front bedroom with the terrace beyond. The flush chrome lights (over bed) are used throughout.

John Porter Clark *(left): Cornell U. Then in architectural offices in Pasadena. Own practice since 1932; in partnership at Palm Springs, Calif., since 1939. 1942-46, Army Engineering Corps. Also Chairman, Palm Springs City Planning Commission, 1939-42.*

Albert Frey *(right): School and architectural training in Zurich, Brussels, and with Le Corbusier in Paris. From 1930, worked with Lawrence Kocher, U.S. Dept. of Agriculture, and Howe & Lescaze. Partnership with Clark since 1939. Author of "In Search of a Living Architecture."*

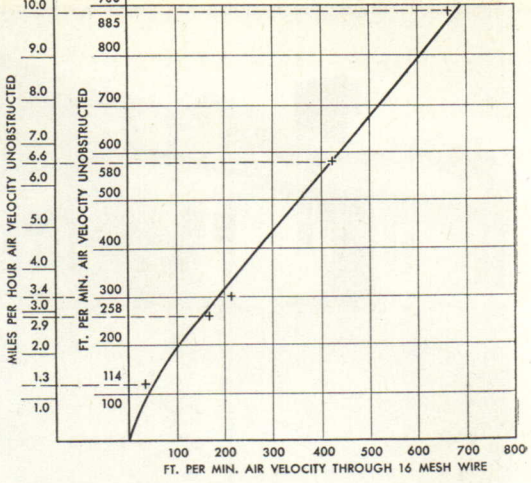


Figure 1 (right): chart showing effect of 16-mesh per inch insect screen in reducing air movement at various wind velocities. (Chart from *Housing and Home Finance Agency Technical Bulletin No. 8.)*

Weather-Conditioning of Roofs for Residences, Part 2

BY GROFF CONKLIN

ventilation

A Forest Products Laboratory-Housing and Home Finance Agency test* made in 1947 has shown that a house, with fill-type insulation and a vapor barrier of type unstated, did not actually need ventilation in the winter to prevent moisture condensation. Nevertheless, according to Forest Products Laboratory Report R1710,* "It is to be expected that some vapor will work into the roof space through the barrier or through places not fully protected by a barrier, such as trap doors and around pipes and ducts. The amount is small, and, if uniformly distributed over the roof, would no doubt be unimportant. However, the condensation tends to collect in the coldest parts, and the concentration of moisture may be enough to cause trouble. A combination of vapor barriers and ventilation is obviously the safest procedure."

On the other hand, Wilkes, Hechler, and Queer, in the *Transactions of the American Society of Ventilating and Heating Engineers, Vol. 46, 1940,* state that "In some instances *reflective* insulated structures are vented for summer conditions. However, the vents should be closed for the heating season." Whether or not these men would today state that attic louvers should be closed in winter, in a home provided with reflective insulation, is problematical. If the installation is perfect no ventilation would be needed; but perfection is unattainable. Of course, if a genuinely tight installation has been achieved, closing the louvers in winter will somewhat lower the heat loss in the attic by keeping the attic air more still, thus reducing convection losses. The air temperature may also remain higher, since the radiant heat of the sun will warm up the attic even on the coldest days, undisturbed by the biting air currents coming in through the open louvers.

In any event, ventilation is needed in the roofs of attics of all modern homes, no matter how insulated, if only to add to summer comfort, and also to reduce possible dangers of moisture condensation behind insulations of any type. *Inadequate* ventilation is one of the major causes of moisture troubles in residential roofs. There is an old rule of thumb that the ventilating area in an attic should have a cross-section equal to a basic minimum of half an inch for every square foot of ceiling area in the rooms below. Often this minimum area is provided by louvers, and then the home owner promptly screens the openings. A FPL-HHFA study, which appears in the HHFA Technical Bulletins No. 6 and No. 8, contains data on the reduction of air flow through screened louvers that are quite conclusive. The tests showed that in relatively still air (wind velocity of 1.3 mph) the air velocity through an unscreened louver was 114 fpm (see Figure 1). Through louvers covered with 16-mesh wire cloth it was only 36 fpm. With a wind of about 10 mph, the air velocity through the unscreened louver was 885 fpm, and through the screened louver was 668 fpm. 16-mesh screen actually reduces the clear opening of a louver 30.1 percent—when the screening is kept constantly clean. When it becomes covered with dust, leaves, lint, and other debris, the air flow is, of course, much more greatly reduced.

The consequences of this fact are that there should be a new rule of thumb to establish the amount of attic ventilation needed for winter moisture controls. Louvers that are to be screened should have a total cross-section equal to at least 1 sq. in. per sq. ft. of ceiling area. Everything else being equal, the more ventilation in the attic, the better, both from the aspect of decreasing winter condensation dangers and of increasing summer comfort. The slight added cost of the larger louvers will soon be paid for by the reduction in damage caused by moisture condensation.

There are a number of special design problems in providing natural attic ventilation which must be considered if the ventilating area is to perform its task efficiently. For example, a triangular louver in the peak of a gable is consistently more efficient than a square or round louver some distance below the peak, according to the Forest Products Laboratory. (See Figure 2.) In houses with two or more gables, the necessary ventilating area for the attic

* *Described with regard to vapor barrier in Part I of this article. See November 1949 P/A.*

Figure 2 (left): a triangular louver in gable peak is more efficient than square or round louvers located some distance below peak. This home is in Vermont.

Photo: Richard Garrison

should be divided so that equal areas are located in each gable peak.

In houses with hip roofs, screened louvers should always be placed in the eaves, with a total area equal to about 1 sq. in. for every 10 sq. ft. of ceiling area. Globe ventilators, with a total free ventilating area equal to about 1 sq. in. for every 30 sq. ft. of ceiling area should be installed in the ridge to create circulation from eaves to peak. Louvers to be inserted in the faces of hip roofs are available; these hip louvers are also satisfactory, provided, and only provided, that their free area is amply large enough. Most of the standard makes that are available are much too small for the requirements of a moderately sized home.

Whenever the attic insulation is installed between the rafters rather than in the attic floor, the ventilation problem becomes considerably more difficult. Condensation behind such attic rafter insulation is an extremely common cause of trouble, even when a vapor barrier is included. A constant air flow from eave to eave is essential in such instances. Globe ventilators are impractical when the insulation is between the rafters, since one ventilator would be required between each pair of rafters at the peak. Consequently, an eave louver between each pair of rafters on both sides of the roof is the only practical way of providing the necessary ventilation in such installations. No winter closures for eave ventilators should be provided; the circulation of air in this instance is important at all times.

When the insulation is partly in the rafters and partly across collar beams, a combination of eave louvers, gable-peak louvers, and louvers to ventilate the space behind the attic side walls is required.

In flat or shed roofs the problem of ventilation is somewhat the same as it is when insulation is installed between rafters. Usually one solid structural member is used for both ceiling joist and roof support, thus completely sealing off the air spaces between each pair of timbers. Screened eave louvers, roughly 3" to 4" in diameter if circular, and ¾" wide if continuous along the eave, should be provided on both sides of the roof, circular louvers to be provided between each pair of structural timbers.

The problem of the existing home suffering from condensation as a result of unprotected insulation installations is somewhat more difficult to solve. Enlarging the louvers in the attic may take care of part of the problem, but this often is expensive and occasionally, as in homes with brick gables, impractical. A membrane vapor barrier cannot be installed without removing the attic insulation and the inner wall surfaces, and this too, is an expensive proposition. Paint vapor barriers are perhaps the only solution, though rarely entirely effective ones. Under all but the most extreme conditions, however, two coats of aluminum paint on the ceiling, attic finish, and wall surfaces will keep the vapor transmission just under the danger line. Aluminum paint must be used instead of the somewhat more efficient asphalt paint (aluminum paint, two coats, has a vapor transmission factor of 0.950, compared with 0.308 for asphalt paint) since the asphalt paint cannot be covered by any interior finish, either paint or wallpaper, without eventually showing through. If two coats of aluminum paint are covered with two more coats of glossy lead and oil paint as a finish, however, the danger of too much moisture condensation beyond the paint barrier is rather remote, and no further condensation troubles should be expected except in the most aggravated climatic conditions.

A well-insulated, well ventilated roof, with an adequate vapor barrier, will definitely prevent unnecessary heat loss and eliminate the danger of excessive moisture condensation in the winter, provided the installation and construction work is well done, and the amounts and quality of material and area of ventilation are ample for the worst climatic conditions to be expected.

summer ventilation

Ventilation and insulation for summer comfort may change the design of a roof considerably, if the most effective results are to be obtained. For example, the larger the louvers, the more effective the natural ventilation. However, there is a point beyond which too-large louvers will actually cause excessive winter heat loss; consequently, the changes for summer comfort should not necessarily be in the materials and louvers provided for adequate winter protection, but rather in the addition of new elements.

For example, if a roof is designed to be insulated with a convective material, the addition of a single layer of reflective foil, good both sides, between the roof sheathing and the insulation, will reduce downward heat flow in the summer to a remarkable extent. A minimum of 1" of free air space between the roof sheathing and the foil, and the foil and the insulation, should be provided so that the full insulating value

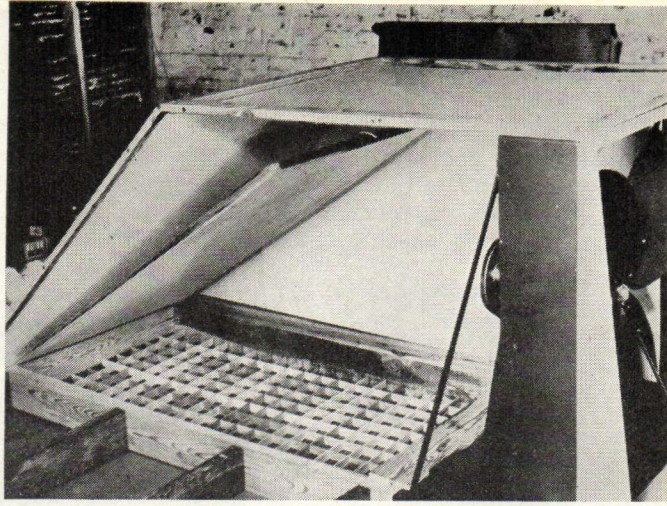


Figure 3 (right): cut-a-way view of an attic fan installation. Trap door closes over wooden grille when plenum fan is not in operation.
Photo: courtesy Texas Engineering Experiment Station.

of a motionless air space may be obtained. This value is stated by Dill, of the Bureau of Standards, to be highest when the air space is approximately 7/8" wide.

In homes located in really hot parts of the country, or regions where both excessive summer heat and winter cold exist, even this precaution will not achieve real summer comfort. And since a cool home in the summer is not only pleasant but often a considerable aid to good health, architects working in regions where summer temperatures frequently go over 80F should ask their clients to consider the long-term values of other methods of reducing heat inside the house.

There are three major ways to achieve greater summer coolness, the most important of which is *forced* ventilation. The others, which are light roof coverings and moistened roof surfaces, will be discussed later.

The most efficient, and also the most expensive, type of forced attic ventilation is the plenum-type attic fan installation, which draws air up from the rooms below through a ceiling grill, and forces it out through attic louvers, (see Figure 3). In Texas, where it gets really hot in the summer, the Engineering Experiment Station of the Agricultural and Mechanical College at College Station, Texas, has worked out a useful handbook on the types, sizes, and installation of attic fans, with emphasis on the plenum type. This bulletin is called *The Installation and Use of Attic Fans,* and is written by Research Associate W. H. Badgett. It presents a number of important suggestions on ceiling grill construction and location, required grill sizes for various sizes of homes and of fans, and the construction of the plenum box for the fan. Size of fan, naturally, depends on the cubage of the area to be ventilated, the rate of air exchange desired, and the power of the fan being purchased. Rate of air exchange recommended for various parts of the country has been established in the Attic Ventilation Code of the Propeller Fan Manufacturers' Association, Detroit, Michigan. This Code states that in the New England states, New York, Pennsylvania, Michigan, Wisconsin, Montana, Washington, and parts of New Jersey, Virginia, West Virginia, Ohio, Indiana, Illinois, Minnesota, Wyoming, North Dakota, Idaho, Oregon, and California, the attic fans should be large enough to change the air once every 1½ minutes. In all other parts of the country, they should be large enough to change the air once every minute.

The actual reduction in temperature resulting from the use of a plenum-type attic fan has not been determined, as far as this author knows. It may be rather small. However, the well-known cooling effect of air in motion across the skin achieves a much higher degree of physical comfort than the temperature differential might indicate, since it encourages evaporation of perspiration.

Other types of forced ventilation in the attic are fans set in pre-existing louvers or windows, or in louvers cut especially to fit them. Some fans are provided with metal louvers ready to install. Unless the attic is extremely tight, and a grill or open attic door is provided so that the air from the rooms below can be pulled up by the fan, the most this type of installation will do is keep the attic itself cool. In moderate climates non-plenum attic fans will add considerably to the comfort of the home, but wherever uncomfortably hot summers are experienced, the plenum type is to be preferred.

There are a number of important technical factors which must be borne in mind when preparing for the installation of attic fans. For the plenum type the ceiling grill must be located centrally so that it will pull air more or less equally from all the rooms that are to be ventilated, and large enough to fit the air demands of the fan being installed. Fans in general should be chosen carefully, with due attention to optimum size, durability, silence, cost of operation, and amount of required maintenance. Most large fan manufacturers have design departments which can help architects arrive at satisfactory formulas for various types and sizes of homes, and also to advise on the necessary louver sizes for efficient air exhaust.

white roofs

The cooling effect of a glossy white roof covering is worth note by architects looking for novel methods of weather conditioning residences for summer comfort. Building Materials and Structures Report BMS-64, *Solar Heating of Various Surfaces,* published by the Bureau of Standards in 1941, revealed some rather startling facts about the relative heat-reflecting efficiencies of different roof colors and textures. Tests were made on 17 materials or surfaces, exposed to midsummer Washington heat on a panel held at inclinations of 90°, 60°, 45°, and 30° from the horizontal, over a period of five days (see Figure 4). A section of the surface covered with lampblack was used as a control; it showed daily mean rises in temperature ranging from 20.9° when

Date (1939)	Aug. 2	Aug. 3	Aug. 1	July 31	Aug. 7
Panel inclination from horizontal	90°	90°	60°	45°	30°
	°F	°F	°F	°F	°F
Black (lampblack)	20.9	21.0	37.4	46.3	48.5
Galvanized iron	16.1	15.3	28.1	32.0	37.7
Roofing shingle, aluminum	19.4	20.2	34.1	40.7	41.6
Roofing shingle, green	19.5	20.7	33.3	41.3	43.4
Roofing shingle, red	21.5	23.1	37.2	44.8	46.0
Aluminum foil	9.8	8.3	15.0	17.3	19.7
White road-marking paint	12.3	12.1	19.7	22.9	24.7
Aluminum paint	14.6	14.5	24.4	29.0	29.3
Glossy white paint	8.9	7.9	12.1	13.0	15.5
Flat white paint	9.1	8.3	13.2	15.6	17.2
Ivory paint	10.2	9.3	14.9	16.8	19.2
Canary-yellow paint	10.9	10.4	16.7	19.2	21.6
Pearl-gray paint	13.3	13.7	20.3	24.3	25.6
Silver-gray paint	13.9	14.2	20.3	24.6	26.3
Light lead paint	15.1	15.2	22.9	27.4	29.7
Slate paint	16.8	17.1	26.7	32.4	35.4
Medium-green paint (trim color)	20.4	20.5	35.3	42.7	46.3

Figure 4 (left): daily mean rise in temperature in degrees Fahrenheit of test panels exposed to the sun. (Table from *Building Materials and Structures Report BMS-64*, Bureau of Standards, U. S. Department of Commerce.)

in a vertical position to 48.5° when 30° off horizontal. Glossy white paint, on the other hand, showed mean temperature rises of only 8.9° at vertical to 15.5° at 30° from horizontal. This was one case in which a material was somewhat better than aluminum. Aluminum foil's temperature rise was from 9.8° to 19.7°. Aluminum roofing shingles showed a temperature rise from 19.4° to 41.6°—only a little better than lampblack. A standard roll roofing with crushed green slate as a surface, such as is commonly used on homes in the middle price range, had temperature rises from 19.5° to 43.4°.

Every degree of temperature a color or material rose in this test was a degree on the immediate *underside* of the reflecting surface: i.e., a degree which had penetrated the surface and, had it been on an actual roof, would have gone straight into the roof sheathing, the attic insulation, or the attic air if there was no insulation.

It has, of course, long been known that white is a remarkable heat reflector. Men wear light clothes in the summer because they are cooler; they reflect more heat than dark cloth. However, the application of this theory to home roofs is something that very few architects and home owners have thought of.

The costs of such a roof, whether tile or porcelain enamel, are, of course, somewhat higher than those made of more common materials, but the added comfort factor, which is made apparent by the Bureau of Standards figures, might in many installations make the difference worthwhile. The white roof is exceptionally handsome, though some customers may object to it on the ground that it is "different." It seems not to suffer too much from dirt or grime in the atmosphere, though porcelain enamel manufacturers advise periodic washing, which may be a maintenance problem militating against use of the idea.

Of course, whenever materials like tile or porcelain enamel are used, they create what is in effect a moisture barrier on the wrong side of the roof, just as do aluminum shingles, and all asphalt-based or asbestos shingles, and all types of metal roofing. Unless thoroughly adequate ventilation and an impervious vapor barrier is provided, moisture condensation will very soon cause trouble. Actually, the only roofing surface which does not act as a more or less efficient vapor barrier on the wrong side of the roof is one made of wood shingles. These are fairly permeable to fine water vapor, while at the same time being proof against actual rain water or melted snow.

water-cooled roofs

The final technique that the architect has at his disposal for increasing summer comfort in residences, outside of air refrigerating units themselves, is the water-cooled roof. It is likely that this method will prove to be of more value in summer conditioning existing homes than in the design of new dwellings, since the latter can be provided with all the necessary cooling elements—insulation, vapor barriers, and forced-air ventilation, as well as the white roof if desired—that would be needed even in the hottest climates found in this country. A water-cooled roof takes fairly constant maintenance, and consequently is not preferable to other methods which are more or less automatic.

In existing homes, however, water-cooling often may be the least expensive and most efficient method of increasing summer comfort. There are three methods of providing this type of summer protection: the water pool, which is suitable only to absolutely flat roofs; the sprinkler installation, which can be used on both flat and pitched roofs; and the trickle type, which is of value only on roofs with a considerable pitch.

The construction of most flat-roofed houses is amply strong enough to stand the added weight of the 6″ pool of water, which is most efficient for summer cooling. Whether the roof is waterproof enough is something else again. Certainly no roof which has been exposed to the elements for a number of years can safely be used as a pool base unless the whole surface is carefully gone over, and new layers of pitch and tar paper to make an absolutely waterproof new surface. If the roof has a 6″ watertight coping to hold the pool, there is no reason why it cannot serve well as a pool base.

According to Houghten, Olson, and Gutberlet in the *Transactions of the American Society of Ventilating and Heating Engineers, Vol. 46, 1940*, 6″ of water on top of a built-up roof consisting of 2″ pine boards, five plies of felt, three of which were set in pitch, and double-poured pitch and slag roofing, permitted maximum heat flow on a hot summer day of 2.8 Btu. per hr. per sq. ft., as compared with 11 Btu. per hr. per sq. ft. for dry surface. This reduction in heat transmission unquestionably means much cooler conditions inside the house. A similar roof section covered with a 1″ deep pool had maximum heat flow of 4.7 Btu. per

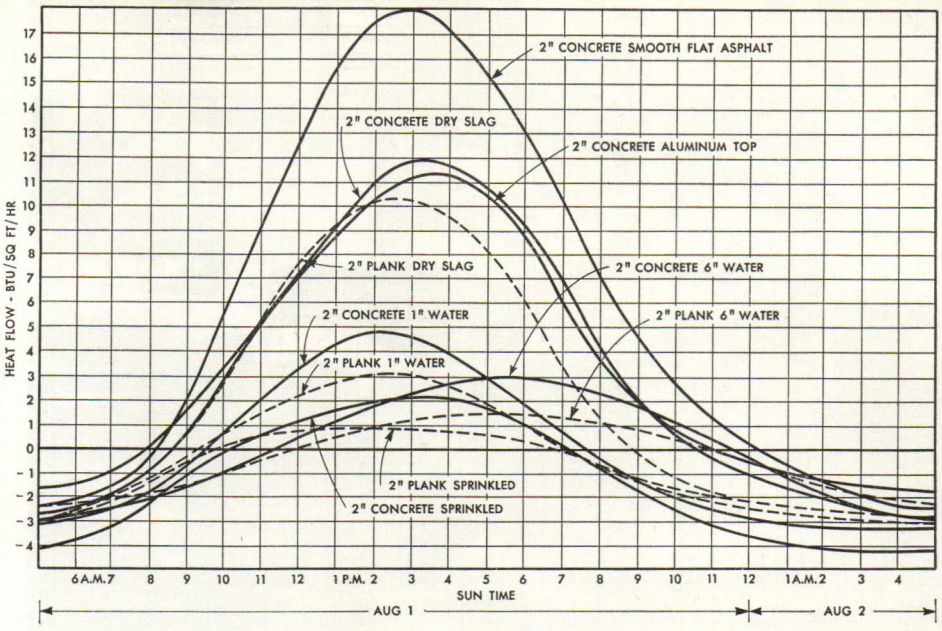


Figure 5 (right): relation between time and heat flow through inside surfaces of several horizontal roofs; corrected to design day, August 1. (Chart from *Transactions A.S.H.V.E., Vol. 46, 1940.*)

hr. per sq. ft., about 60 percent higher than the 6" pool.

The disadvantages of a water pool are sometimes marked. It makes an excellent breeding place for both algae and mosquitoes, unless preventive chemicals are added. Furthermore, all the pollutions of the atmosphere—dust, pollen, soot, oil vapor, leaves, and so on—will naturally settle on the pool's surface, thus dulling it and reducing its reflectivity, in essence turning it into a heat trap. Pools usually have to be drained and fresh water put in every week or so, to renew the brightness of the surface. This means an added maintenance problem for the home owner.

While the 6" pool had a maximum heat transfer factor of 2.8 Btu. in the A.S.V.H.E. tests just mentioned, the same type of roof construction sprinkled with just enough water to keep it damp had a heat transmission rate of only 2.1 Btu. Inasmuch as the installation of a roof sprinkler system is moderate in cost (estimated at from $100 to $400, depending on the size and complexity of the roof), and as such a system can be used both on flat and pitched roofs, it seems to be a preferable method of cooling residential roof surfaces. Since it relies on a high rate of evaporation rather than on reflectivity for its cooling effect, there is no need for any great quantity of water; just enough to keep the roof surface damp. The dusts and soots of the atmosphere will not affect the evaporation rate, either, so that the cooling effect will remain about as efficient in a location with a polluted atmosphere as in one in which the air is relatively clean.

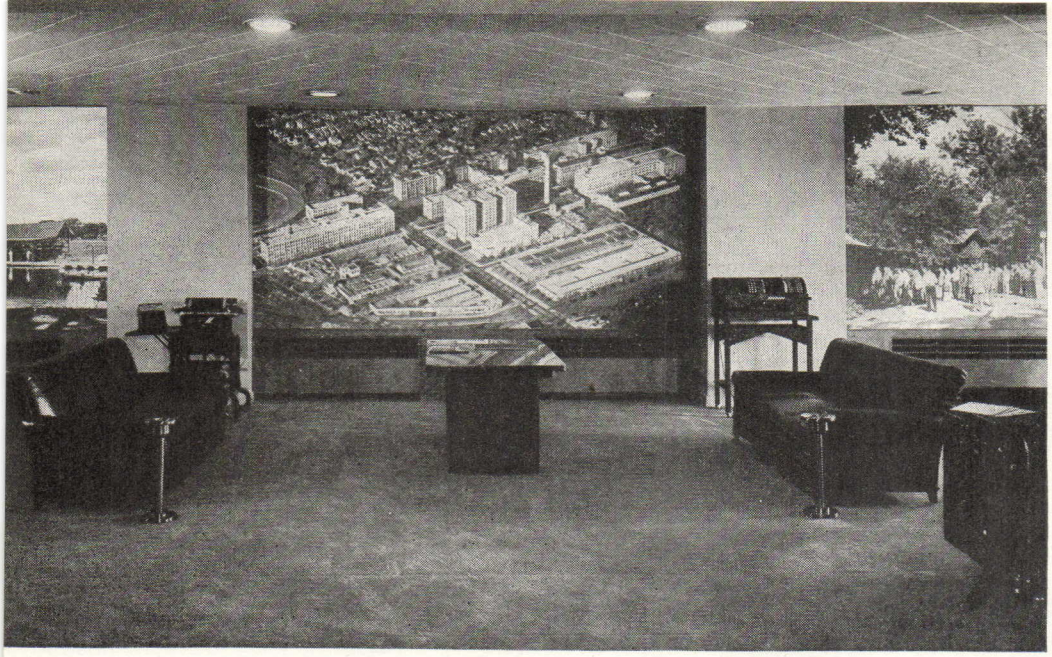
The April Showers Company, Washington, D. C., and the Water Cooling Corporation, New York, N. Y., both have had considerable experience in designing water sprinkling systems for roofs, the latter primarily for industrial installations. The sprinkler systems, like the pools, can be used on concrete roofs as well as on wood base roofs; the cooling effect on concrete is only slightly inferior to that on wood, as the A.S.V.H.E. tests show. One of the peculiarities of the roof sprinkler system is that it works better when the roof is poorly insulated than when it is well insulated. This may make the system more desirable in southern climates, where winter insulation is unnecessary, than in the north where it is essential.

Sprinkler systems are controlled by thermostats which turn the water off and on as the temperature of the roof surface falls and rises. This thermostatic control assures automatic operation, and a very low water consumption, considering the comfort achieved. There are some maintenance problems in the sprinkler system, of course, as in any mechanical equipment, but they are minor and should not be important in the over-all consideration of the usefulness of water sprinkling as a cooling method.

Probably the cheapest technique for roof cooling is the trickle method, usable only in pitched roofs. This involves, simply, placing a perforated pipe along the ridge of the roof and permitting a flow of water through the perforations just heavy enough to keep the roof damp. The major difficulties with this system are that it sometimes means too much water on one end of the roof and not enough on the opposite end; that it cannot be effectively controlled by a thermostat, since the temperature changes will be unequal; and that, since effective cooling depends on dampness of the complete surface, it usually results in some wasted water. In order to keep the roof damp at the eave, more water than is needed at the peak must be used, with a consequent runoff. Moreover, dirt on the roof will make the system less efficient by causing the water to form into rivulets, thus cooling only parts of the surface. However, in rural areas where water supply is abundant and cheap, the atmosphere relatively clean, and installation costs a decisive factor, the trickle method of cooling may be a useful idea.

It is obvious that what is generally needed to control the external environment of northern New York State, where winter temperatures may go down to 30° below zero and summer temperatures often up to 90° or 100°, is quite different from what is needed in Arizona, where the temperature range is from 50° to 120°. Architects will have to plan for year-round weather conditioning entirely in terms of the weather they want to condition, the home that is to be conditioned, and the home owner's tastes and financial abilities.

The fact is, however, that despite the still-large gaps in the research data on various aspects of the problem, climate can be controlled practically everywhere in the continental United States, so that homes can be relatively comfortable at all times of the year, and genuinely economical to heat whenever conditions of cold are encountered. This marks quite a considerable advance over the days not so long past when the average home was designed for durability, strength, and appearance, and the weather was allowed to do everything it could to make the house uncomfortable all the year round.



Left: monochrome-type photomural mounted on walls of a manufacturer's reception room.

All photomurals and photos, except as noted: courtesy Kaufmann & Fabry

Photomurals

By HENRY GLASS

To achieve maximum effects from photomurals, one should know how they are produced and how they may be employed. Basically, they are made in about the same manner as any other photographic enlargement. An 8″ x 10″ negative is sufficiently large for the production of most photomurals. Sensitized paper, exposed to an enlarged image of the desired size, is run through a developing, fixing, and washing process. When dried, the resulting photo is ready for mounting. If the mural is to be exceptionally large, it may be made in sections. Experienced technicians and efficient equipment are required to obtain a high standard of tone quality, developing, and printing.

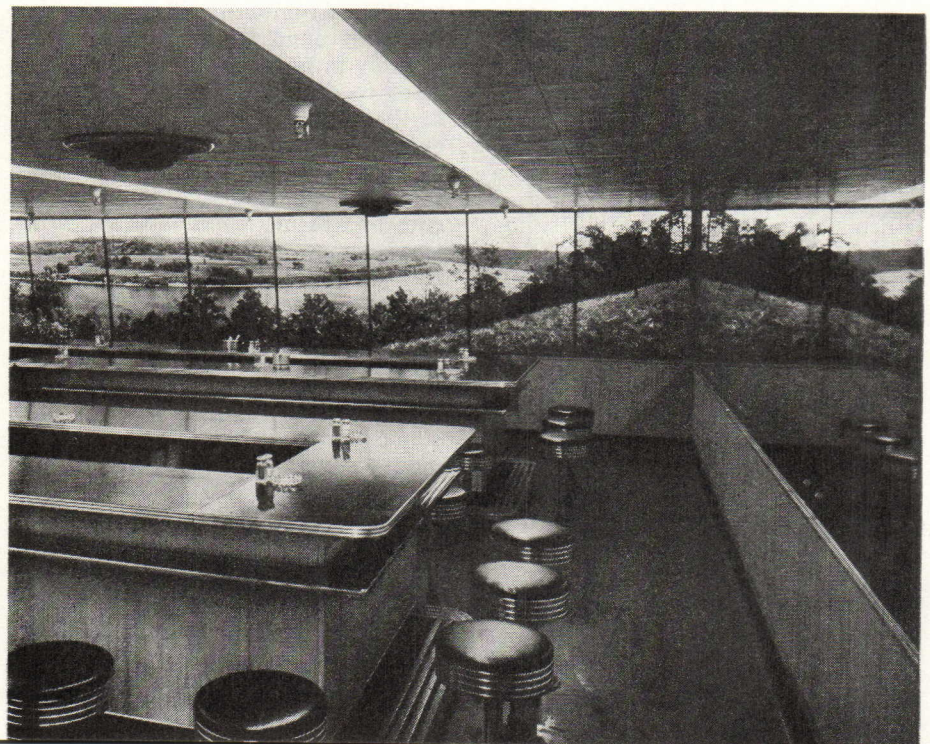
There are two basic types of opaque photomurals: monochrome and full color. In the monochrome type, any number of tones and hues is available. Those colors most frequently used, with a white background, are black, brown, blue, and green. In the full-color type, transparent oils are applied to the photo after it has been developed and dried.

Photomurals may be displayed in several ways. When mounted directly on a wall, cracked surfaces must be reasonably repaired; smooth painted surfaces should be made rough. The areas are then covered with canvas to provide a good base for the adhesive used with the photomural, and to eliminate possible damage to the mural if the wall or plaster should crack. For the application of both canvas and mural, a good wheat paste is recommended. After the installation is complete, the mural should be given at least two coats of special clear lacquer. The lacquer is usually furnished, along with installation instructions, by the photomural supplier. Murals mounted on walls are permanent in nature and can rarely be moved without damage.

Photomurals can also be mounted on panel board, a job normally done by the supplier. Anchoring the panels on a wall involves no particular problem; this type of mural may easily be removed and reused in another location. They are usually delivered ready for installation, complete with lacquer finish.

lighting

To light opaque photomurals cor-



Left: restaurant photomural produced in full color on translucent film and illuminated from behind.

Right: murals employed to entertain travelers in waiting room of a bus terminal.

Above: murals applied to curved surface over ticket windows in a railroad station.

Right: reception room in administration building of a university.

Photo: Elmer L. Astleford

rectly, an even light distribution of 30 to 50 footcandles should be provided over the entire mural area. Fluorescent or cold cathode lighting is more desirable than incandescent. As these murals have no reflective qualities, they can be located almost anywhere. Unusual effects may be obtained by installing murals within shadow boxes; adequate electrical outlets must be provided for this method.

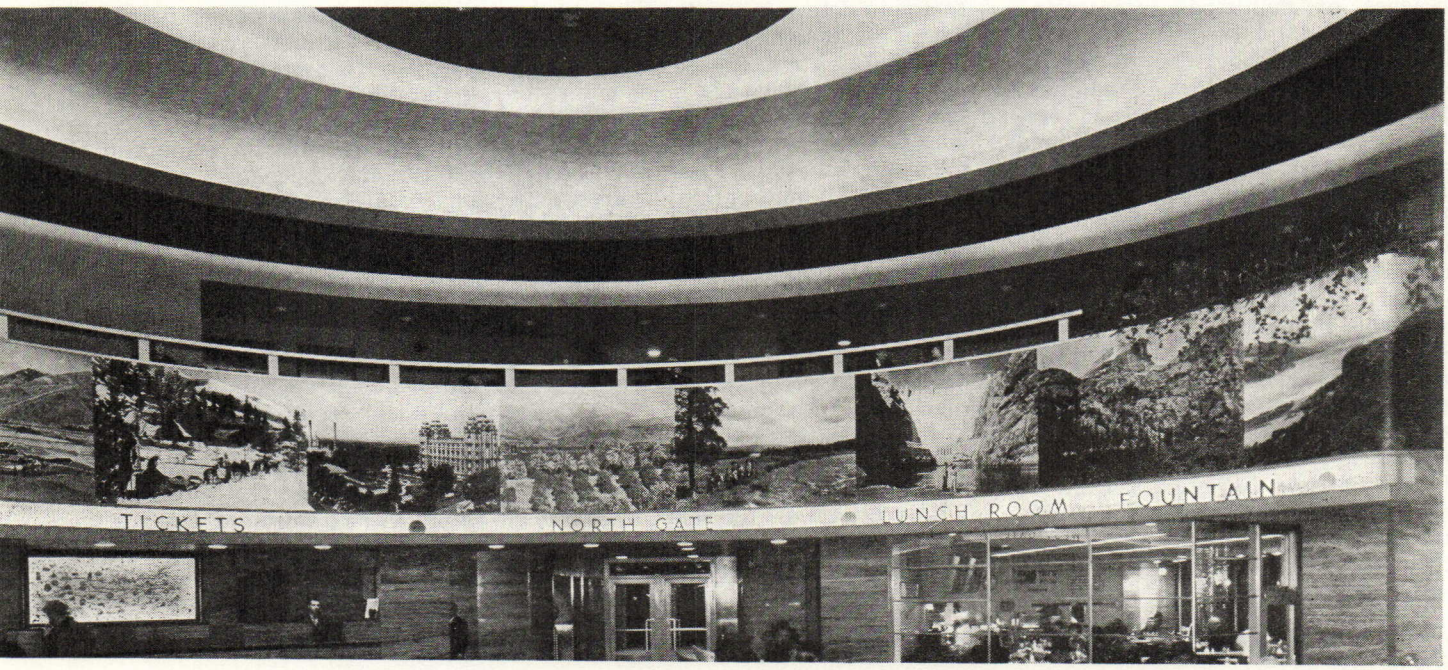
Another type of installation is the transparent mural, which requires illumination from behind, and suitable access for the maintenance of electrical facilities. This type is produced on a special transparent film which is mounted between two sheets of window glass. The front pane is clear, with a minimum double thickness, or 3/16"; the rear glass is similar, but frosted.

durability and maintenance

The life of a photomural is dependent upon the nature of exposure, whether it be outdoors or indoors. Those used outside are weatherized by the supplier. The first photomurals were produced in the early 30's, and many of those are still in existence and in excellent condition. One cannot definitely say what the life of a photomural may be; however, as many have been in use for more than 15 years and still show no signs of having disintegrated or deteriorated, they certainly present an economic means of decoration.

Opaque murals are maintained in the same manner as oil paintings. Any dust or film deposits can be easily removed from the protective lacquer with a damp cloth, or, if necessary, with mild soap and water. Because transparent photomurals have a clear glass front covering, they are cleaned as window or mirror glass. Only normal electrical maintenance is required.

It is up to the designer to exploit the possibilities of photomurals. They may not only be used decoratively, but also commercially, as a means of carrying sales messages. They have the inherent characteristic of creating the illusion of space. In commercial displays, the use of the merchandise can be dramatically and realistically portrayed by the photomural. They can add atmosphere, mood, and beauty.



In areas beyond the reaches of intercepting municipal sewers, the architect must provide for the disposal of domestic and industrial wastes. Here, a sanitary engineer discusses the determination of quantity and character of wastes and the methods of treatment that may be employed. In a future issue of **P/A**, *the author will continue his discussion with an analysis of design principles and mechanical equipment related to this subject.*

Sewage Treatment for Institutions in Rural Areas: Part 1

By ROBERT C. GLOPPEN

The architectural profession, perhaps more than any other single group, is aware of the positive trend of decentralization of population throughout the United States. Architects are the designers of spacious suburban homes as well as low-cost housing developments; of industrial plants in rural areas where lower labor costs and tax rates exist; of stores, schools, hospitals, and other institutions which go to make up the community. It is the architect who realizes the many problems presented by the nation-wide movement toward the rural areas. He is faced with the problem of adequate water supply for domestic consumption and fire protection; he must also provide suitable means for the disposal of domestic and industrial wastes when his developments are outside the reaches of municipal intercepting sewers.

In years gone by, the problem of disposal of sanitary waste was simply solved by constructing an outhouse, or possibly a septic tank, and allowing nature to take its course. Both of these devices have long since become outmoded. They are especially unsuitable where a housing development, school, hospital, or industrial establishment accommodates a sizable number of people. Today, such developments are served by a modern sewerage system and an efficient, mechanized sewage treatment plant—the result of the realization that healthful living conditions cannot be maintained if untreated human wastes are discharged into the water courses. The menace to public health created by untreated sewage has continually received increased attention and, as a result, preventative legislation exists today in every state of the Union. Water Pollution Control Act No. 845 reflects federal concern over this problem.

The architect must provide facilities for treatment and disposal of wastes to be produced by the occupants of the buildings that he designs. In some cases, he may enlist the services of a consulting sanitary engineer, in others he may make his own solution; in any event, each development involves a study of the various methods of modern sewage treatment.

Quantity and Character of Waste

These studies involve, first, an analysis of the quantity and character of the wastes to be handled—a vital factor in determining the nature and extent of treatment facilities to be provided; second, the body of water into which the sewage plant effluent is to be discharged must be examined to determine the extent of its ability to assimilate this effluent without polluting it for bathing purposes, creating offensive odors, or destroying aquatic plant life or fish. The state health departments can be of immeasurable assistance with the latter as they have accurate information on practically every stream and body of water within the boundaries of their respective states.

Determination of the quantity of waste to be handled is a matter of careful judgment and is based upon a knowledge of the habits of the people to be served. The quality of the collecting sewer system is of considerable importance, since ground water infiltration and surface water finding its way into the sewers are delivered in the form of sewage and must be handled by the sewage treatment plant. It is considered good practice to construct a separate system of sewers solely for conveying the sanitary sewage and excluding, insofar as possible, all waters not in need of treatment before discharge into the receiving stream.

In an average American community it can be expected that each individual within that community will contribute approximately 100 gallons of waste each day. This quantity is made up of the water carrying the body wastes, bath water, laundry water, cooking and other domestic waters, and infiltration and surface water that inevitably find their way into the sewers. While the figure of 100 gallons per person per day is a reasonable average figure, it does not follow that this figure is applicable to all domestic communities. In fact, this figure will vary considerably with the section of the country and the nature of the community under consideration.

The strength or concentration of the sewage is the next consideration. It can be seen that sizes or capacities of the various elements of the treatment plant are governed by the quantity of sewage, its strength, or both, and serious underdesign or overdesign could result from grossly inaccurate estimates. Obviously, the best method of determining the quantity and strength of the sewage is by actual measurement of the flow and analysis of its character; unfortunately, this cannot be done when a development is being planned and no

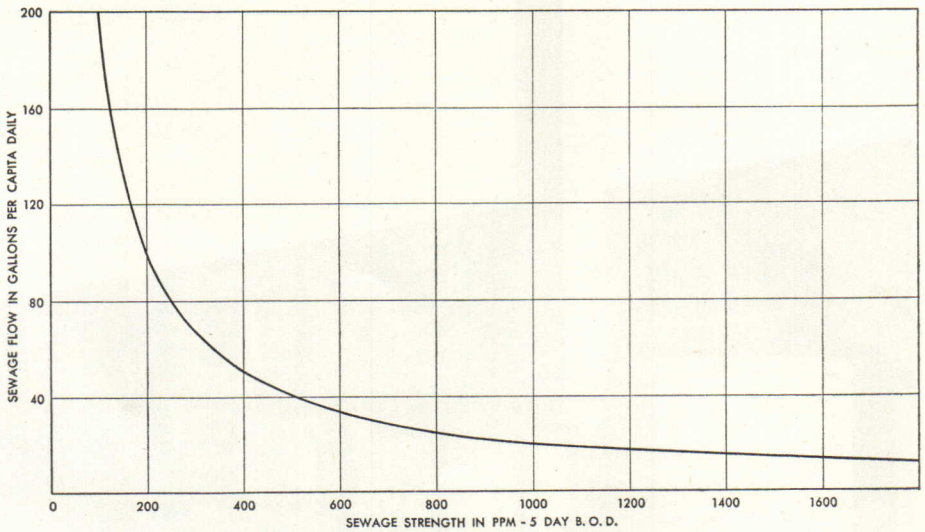


Figure 1: relation between sewage flow in gallons per capita daily and biochemical oxygen demand in parts per million. Basis 0.167 lbs. biochemical oxygen demand per capita.

sewage flow exists. Therefore, it is important that a careful estimate of the probable sewage flow be made, based upon the nature of the development and the logical habits of those who will occupy it. From this estimate a reasonably accurate determination of the sewage strength can be made.

In the sanitary engineering field, it is generally accepted as a fact that each individual contributes 0.1668 pounds B.O.D.* and 0.21 pounds suspended solids daily to the sewerage system. Since the B.O.D. and suspended solids form the basis of the design of the treatment works, it follows that with the design population known and the per capita sewage flow carefully estimated, the strength of the sewage can be determined and the design of the plant may proceed. Sewage strength is generally reported in terms of parts per million (ppm) B.O.D. and suspended solids, and is determined by dividing the daily B.O.D. (or suspended solids) in pounds per capita daily by the sewage flow (in gallons per capita daily) multiplied by the weight of a gallon of water divided by one million. For example, the B.O.D. of the sewage from an individual discharging 100 gallons of waste daily would be:

$$\frac{0.1668}{\frac{100 \times 8.34}{1{,}000{,}000}} = 200 \text{ ppm 5-day B.O.D.}$$

which is considered a normal domestic sewage. Of course, if the daily B.O.D. were diluted in more or less waste flow daily, the sewage would be stronger or weaker proportionately. (See Figure 1.)

Biochemical Oxygen Demand (the quantity of oxygen required for biochemical oxidation in a given time at a given temperature, the determinations usually being for 5 days at 20 C).

Methods of Treatment

With the quantity and strength of the sewage thus determined, consideration must now be given to the various methods of treatment to determine which is most applicable to the particular circumstances. The septic tank, for many years given first consideration in sewage treatment problems, is no longer acceptable as a means of treating the wastes from even the smallest communities. Actually, it does not treat the sewage but merely serves as a rather inefficient device for separating the solid matter from liquid, since the liquid overflow cannot be discharged to the receiving stream without additional treatment. Further, the liquid discharged from the septic tank does not lend itself to treatment by the usual biological means and is most successfully handled on sand beds or tile fields. The cost and maintenance of such sand beds or fields is usually beyond the reach of the small community.

The Imhoff tank is probably one of the oldest devices in the field of sewage treatment. It is known as a two-story settling tank and differs from the septic tank in that it has separate compartments for the liquid sewage and the settled solids; the fresh, raw sewage does not pass through the accumulated solid matter as is the case with the septic tank. Today the Imhoff tank, while considered somewhat inefficient, still does occupy a definite position in modern sewage treatment, especially in the case of the smaller community. However, the Imhoff tank effluent may not be discharged into the receiving stream without further biological treatment unless reasonably large volumes of diluting water are available at all times. Such volumes of diluting water are not generally available and the Imhoff tank finds greatest favor when used in conjunction with the trickling filter as a means of secondary treatment. (Filters are discussed in later paragraphs.)

Chemical precipitation is a more efficient method of partial treatment, and while it is not particularly adaptable to the small treatment plant handling domestic sewage, it is suited to the treatment of strong industrial wastes and other wastes which are not readily handled by accepted biological treatment methods. The process is accomplished by addition of chemical precipitants to the raw sewage, usually alum, ferric chloride, etc. After a short period of rapid mixing the mixture is allowed to remain in a settling tank for about two hours. The chemical and sewage form a heavy floc which settles out, leaving a fairly clear supernatant liquid which is discharged as the plant effluent. This method produces large volumes of sludge which in turn makes necessary large sludge digestion and drying facilities. Other requirements which add to the impracticality of the process for small domestic treatment plants include the need for a constant supply of the chemical with the mixing and feeding devices. The quality of efflu-

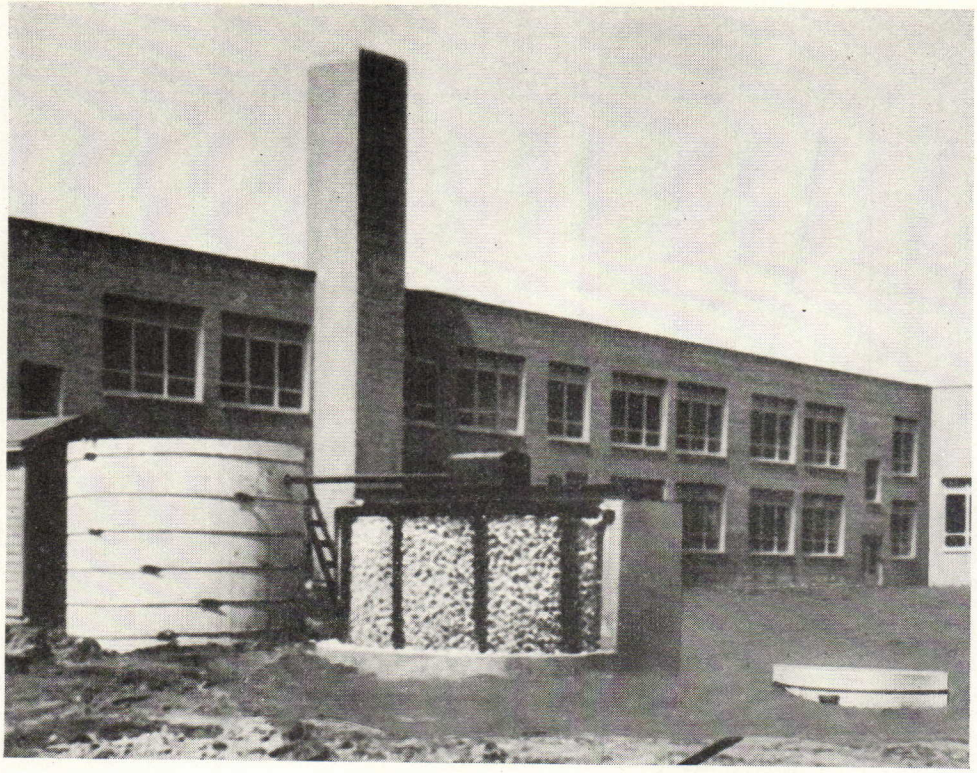


Figure 2 (above): construction photo of small trickling filter plant to serve grade school in background. Left to right: small wood building, lift station; Imhoff tank, wood stave construction; trickling filter with "waterwheel" distributor; final settling tank, wood stave construction. Drying beds not shown.

ent produced is generally not suitable for discharge into the receiving stream without further treatment unless adequate diluting water is available at all times.

The trickling filter system of sewage treatment occupies the most favorable position in the treatment of domestic waste. It is a reliable process which consistently produces a good effluent with a minimum of supervision and mechanical equipment. The process is divided into two groups, the standard rate (or low rate) filter group, and the high capacity (or high rate) filter group. Fundamentally, the groups are similar, the difference lying in the filter itself, the filter loading, and the method of applying the sewage to the bed. Both methods incorporate the same plant elements consisting of a screen, preliminary settling tank, trickling filter, final settling tank, sludge digestion tank (if an Imhoff tank is used, the preliminary settling tank and sludge digestion tank are combined in one structure), and sludge drying beds.

The difference in the filters is of utmost importance, especially from the standpoint of construction cost. There are several variations of the trickling filter process, all worthy of attention, but in dealing with the small community or development, the two systems mentioned above are most favorably received.

A very efficient, compactly arranged trickling filter plant has been developed (see Figure 2), which very adequately meets the requirements of the many small communities in need of complete treatment. It consists of an Imhoff tank, followed by a small standard rate filter and final settling tank. Mechanical equipment is at a minimum. Operational attendance is reduced to a daily visit by the maintenance man.

The activated sludge process is a very close second in favor for the treatment of domestic wastes since it provides a very high degree of treatment. It is particularly desirable in cases where the plant effluent is to be discharged into a dry run or a body of water commonly used for bathing, boating, and other recreational purposes.

The plant elements of the activated process are quite similar to those of the trickling filter process and consist of a screen, preliminary settling tank, aeration tank (or tanks), final settling tank, sludge digestion tank, and drying beds. The general arrangement and function of the various plant units are quite parallel, but the oxidation process is quite different.

Likewise, there are various methods of oxidation within the activated sludge process itself. One method introduces air to the settled sewage by means of air compressors and diffusers; another by means of a mechanical aerator which circulates and sprays the sewage into the air. Both methods are equally effective, the difference being that the first method passes air through the sewage while the second method passes the sewage through the air.

An ingenious "package" activated sludge plant has been developed (see Figure 3), which is especially adapted to small communities, schools, institutions, and isolated industrial

installations. It is a compact, complete treatment plant possessing all the advantages of the large plant, yet arranged in such a manner as to occupy very little space and to effect a very material saving in construction cost through the advantage of common wall construction.

From these brief descriptions of the treatment methods, it may be seen that, all factors being equal, each process is capable of a certain degree of treatment and falls within one or two general classifications which may be termed "primary" or "complete" treatment.

Primary treatment provides facilities for the separation of the settleable solid matter from the sewage and a means for collection and further treatment (digestion) of these solids until they are stabilized and suitable for ultimate disposal. The partially clarified liquid is discharged as the plant effluent.

Complete treatment provides facilities for further (secondary) treatment of the partially clarified effluent by biological means. It is the complete treatment plant that must be considered for new installations, unless suitable quantities of diluting water are available in the receiving stream.

Table 1 sets forth the average percent over-all reduction to be anticipated from the various treatment methods described. From this table it can be seen that when dealing with a normal domestic sewage, say 200 ppm B.O.D., an effluent having a concentration of 134 ppm would result if only the Imhoff tank or plain sedimentation were employed. An effluent of this character would not be satisfactory for discharge, unless the receiving body of water contained large volumes of diluting water at all times capable of assimilating this pollutional load without creating a nuisance. On the other hand, the trickling filter plant and the activated sludge plant will provide effluents of 30 ppm and 10 ppm respectively, which obviously could be discharged into a reasonably small stream with perfect safety.

In the development of rural districts, there are comparatively few localities so situated as to permit the use of primary treatment; complete treatment plants, therefore, are usually required.

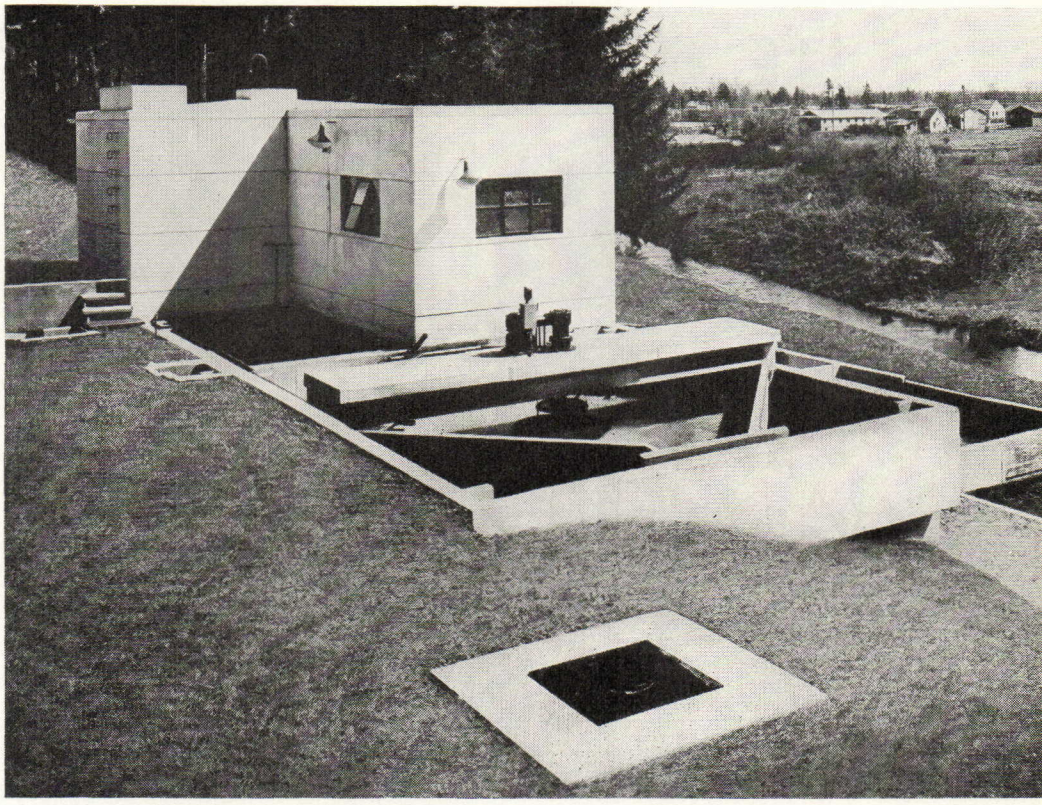


Figure 3 (above): "package"-type activated sludge plant in a western state. Combination aeration tank and final clarifier in foreground. Primary settling tank to left of control building. Tall structure at left rear is sludge digestion tank. Extreme right, sludge drying beds and receiving station.

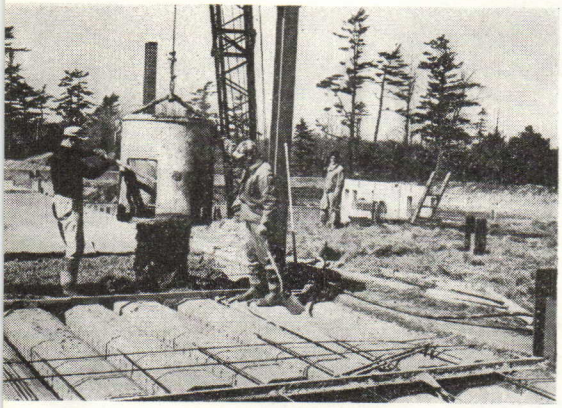
TABLE I

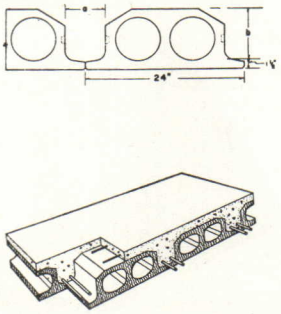
AVERAGE OVERALL PLANT REDUCTION

Type of Treatment	Classification	Percent Reduction
Septic Tank	Not Acceptable	
Imhoff Tank (only)	Primary	33%
Plain Sedimentation	"	30-40%
Chem. Precip.	"	40-50%
Trickling Filter (Low Rate)	Complete	75-85%
Trickling Filter (High Cap.)	"	75-85%
Activated Sludge	"	90-95%

PRODUCTS

product data for multi-purpose, lightweight soffit blocks





Blocks provide integral forms for reinforced concrete joists and slabs; become part of floor and ceiling.

SIZES AND WEIGHTS

Width	Length	Joist Width (a)	Joist Depth (b)	Weight per sq. ft.	Block Depth	Joist & Slab	U factor including 4-ply built-up roofing
24"	48"	4", 5" or 6"	6"	12 lbs.	7½"	6" 2"	.17
24"	48"	4", 5" or 6"	8"	14 lbs.	9½"	8" 2½"	.16
24"	48"	4", 5" or 6"	10"	16½ lbs.	11½"	10" 3"	.15

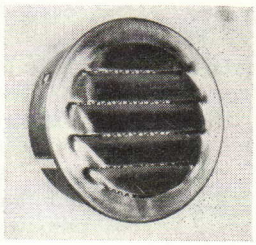
Multi-purpose soffit blocks for economical concrete floor and roof construction are now marketed by Durisol, Incorporated, New York, manufacturers of lightweight, insulating construction materials. In addition to becoming an integral part of the flooring and ceiling, these blocks provide thermal and sound insulation, as well as acoustical control.

The new blocks, which combine chemically mineralized wood shavings with portland cement, measure 24" x 48" and are available in depths of 7½", 9½", and 11½" to form joists 6", 8", and 10" respectively. The manufacturer asserts that their use in building construction requires less shoring lumber, lumber of smaller dimensions, and less concrete to attain floor strength comparable to ordinary poured concrete; further, an acoustical ceiling and an excellent plaster base are provided at no extra cost. These soffit blocks are particularly useful in high schools and public buildings; two men can lay more than 240 sq. ft. of blocks per hour.

all-aluminum, midget louvers solve many ventilation problems

Many ventilating problems can be solved by installing "Midget" all-aluminum louvers produced by the Midget Louver Company, Norwalk, Connecticut. Manufactured in four diameters—1", 2", 2½", and 4",—these louvers can be employed in gable ends, eaves, soffits, side walls, and above sills in unexcavated cellar areas.

To install, one drills a corresponding size hole and simply taps the louver into place; removal of siding and sheathing is not necessary. As swedge fasteners assure permanent anchorage, no nails or screws are needed. Behind water deflecting louvers, an aluminum screen keeps out insects. A cover and clamp are available for unusual cases where it may be necessary to cover louvers in severe weather.



Available in four diameters, louvers save labor and material.

plastic shield seals fluorescent tubes, polarizes light

To help eliminate the dangers of beryllium poisoning from broken fluorescent tubes, the Polite Corporation, Whitestone, New York, has developed a plastic shield which can be easily placed over any standard fluorescent tube. With the Polalite Shield in place, the tubes can be handled without danger, as the contents are sealed in the plastic sleeve.

The shield polarizes light and permits it to pass downward and outward to an angle of 45 degrees; light at greater angles appears sharply reduced. Standing off to one side, an equipped tube appears as a dull light without brilliance or annoying glare. Another feature of the sleeve is its built-in reflector, an advantage for fixtures that have no reflectors or those that have reflectors dulled from long use.

new scale for slide rule

The Pickett 800 Log Log Rule simplifies the long established log log scale arrangement by the use of a double or back-to-back scale. The manufacturer claims that the new scale performs four things not previously accomplished in other slide rules. 1) It places the six log log mated scales together to make three double scales, with numbers and their reciprocals back-to-back for greater accuracy and easier reading. 2) It provides the extra area needed to place C scales on both sides for easier operation, without enlarging the rule. 3) It permits inclusion of the DI scale, which is often omitted. 4) The blank space saved by using back-to-back scales not only permits addition of the extra C and DI, but also transforms the maze of lines on the traditional log log arrangement into an easier to use and understand rule.

The rule is 12⅛" x 1½" x 5/32" in size, and its magnesium alloy body weighs less than four ounces. The rule is manufactured by Pickett & Eckel, Incorporated, Chicago.

(For additional product news, see Selected Producers' Bulletin, page 126.)

this month's products

air and temperature control

Type E Air Diffuser: square diffusing unit for flush ceiling installation. Provides 35% aspiration and even distribution of air over full arc of 360°. Can be combined with any type lighting fixture. Available in nine different neck diameters ranging from 4" to 14". Anemostat Corp. of America, 10 E. 39th St., New York, N. Y.

Unitbilt Boiler-Stoker Unit: stoker ironwork already installed in boiler furnace, simplifying final assembly work and reducing installation time and expense. Cleanout doors in front and rear of base. In 10 sizes, with steam radiation capacities of 2190 to 8500 sq. ft. Brownell Co., 432 N. Findlay St., Dayton 1, Ohio.

Wall Type Convector: 10⅜" high, 5½" wide, in lengths from 2' to 6' in 6" increments. May be used on steam or forced hot water installations. Cabinet has removable front which includes horizontally slotted outlet grill. Unit available with choice of 3 types of 1¼" finned pipe heating elements. C. A. Dunham Co., 400 W. Madison St., Chicago 6, Ill.

Gas-Fired Winter Air Conditioning Furnaces: designed for outlet capacities ranging from 60,000 to 100,000 Btu. Equipped with single port, fountain type gas burner mounted on single plate, allowing easy access for installation and servicing. Units are 26" wide, 54" deep, 52" high. J. L. Gillen Co., Dowagiac, Mich.

National Art Convector: distributes heat with steam or hot water. Non-ferrous heating elements consist of aluminum fins permanently bonded to copper tubes; spacing designed to prevent clogging with dust. Adaptable to any type pipe connections. Convectors and steel enclosures furnished in standard 6", 8", 10" depths, and 20", 32" heights. National Radiator Co., Johnstown, Pa.

Convector Units: cabinet types, made in both recessed and free standing types, in sizes ranging from 20" x 16" to 20" x 62", with total depth of 6". Capacities for hot water are from 2000 to 8900 Btu with 185F water, and from 11 EDR to 62 EDR for steam at 215 F and air at 65F. Tenney Engineering, Inc., 26 Avenue B, Newark 5, N. J.

492 Series Winter Air Conditioner: oil-fired unit. Heavy gage welded body and economizer; flange mounted oil burner; resiliently mounted blower. In sizes ranging from 63,000 to 80,000 Btu. Thatcher Furnace Co., Garwood, N. J.

Trane Convector-Radiator: designed for installation under picture windows. Provides warmth over glass expanse, neutralizes drafts at source. Free standing, semi-recessed, and fully recessed models available in lengths up to 88". Units are 12" high, in 4-, 6-, 8-, and 10"-depths. Trane Co., La Crosse, Wis.

construction

Fireproofing Cement: for application on steel beams and industrial shapes; when applied in layer only 1¾" thick, cement will retard effect of great heat for three hours. Light weight, can be easily troweled on without use of forms. Eagle-Picher Co., American Bldg., Cincinnati, Ohio.

Truwood: veneer, applied to Protexol-impregnated, fire-resistant plywood base, claimed to withstand fire, acids, scratching, and staining. No painting or finishing necessary. For use in buildings (paneling, trim doors, etc.) and in products where rigid fire and strength specifications must be met. Available in bulk sizes up to 4' x 8' panels in any base thickness desired, also in millwork custom-built to any specification and quantity. Fox Bros. Mfg. Co., 2700 Sidney St., St. Louis, Mo.

Rock-Fast Cavity Wall Tie: especially engineered to space cavity walls exactly. Moisture drip feature protects tie against corrosion. Manufactured with 6" stem, 2" spacer for 2" cavity; and with 8" stem, 4" spacer for 4" cavity. Produced in high strength zinc clad wire, steel alloy copper clad, or stainless steel wire. Rockford Fastener Co., P.O. Box 353, Rockford, Ill.

doors and windows

Altrico Alloy Trim: aluminum baseboard, window trim, and door frame requiring no cutting or fitting. Material incorporates lock striker plate, door hinge pockets, nail and screw holes; installation possible as soon as structure is roughed in. Altrico Sales Co., 1046 Penobscot Bldg., Detroit, Mich.

Packaged Inside Metal Storm Sash: now shipped in cartons completely assembled, glazed, including all necessary clips, screws, and installation directions. All steel residence casement windows made by manufacturer are machined to take storm sash (except for windows manufactured in company's California factory for use on West Coast). Also available, but not on stock basis, are storm sash for all Fenestra Fixed Residential Windows. Detroit Steel Products Co., 3209 Griffin St., Detroit 11, Mich.

Keylock Screenmaster Storm and Screen Door Latch: enables locking of screen and combination doors from outside with key. Exposed parts of solid brass; latch bolt mechanism reversible without disassembly, making possible quick, easy installation on right or left hand doors swinging in or out. Engineered Products Co., Flint 4, Mich.

Truss Door: flush door, hollow core construction, incorporating four wires that hold door in permanent alignment; will not warp while in storage or after installation. Truss Door Div., Kennebec, Inc., Bingham, Me.

Ualco Modular Sized Casements: claimed to be world's first aluminum casement windows in sizes based on Modular System of Dimensional Coordination of Building Products. Facilitates use of aluminum casements in buildings of brick, brick veneer, and concrete block, without excessive cutting and shaping to form window opening. Union Aluminum Co., Sheffield, Ala.

Sash Snubr: device to permit raising and lowering window or holding it at any point. Consists of stainless steel holder and pressure spring that exerts pressure upon rubber roller. For installation in window sash. Unit replaces ropes, weights, pulleys. Verb Mfg. Co., Inc., Box 550, Coffeyville, Kan.

electrical equipment, lighting

Fota-lite: thin glass sheet, engrained with sealed-in louvers by means of photographic process, for use with fluorescent or incandescent lighting. Material allows direct illumination to pass through, at same time blocking direct light angling to side. Translucence of louvers creates diffusion of indirect light at side angles. Stock glass sheet may be cut to size. Corning Glass Works, Corning, N. Y.

Sunlighter: embodies sun lamp as well as two light lamps. Covers large areas, providing healthful benefits received from solar ultraviolet rays. Unit remains cool to touch. Recommended for classrooms, gyms, bowling alleys, hospitals, factories, also for stock barns. Leader Electric Co., 3500 N. Kedzie Ave., Chicago 18, Ill.

Butt-on Type Slimline Lampholders: for use with 75w slimline fluorescent lamps. Small over-all size; single-contact, high voltage end has internal spring mounting, allowing easy insertion and removal of lamp. Available in black or white. Sylvania Electric Products, Inc., 500 Fifth Ave., New York, N. Y.

Fluorescent Lamp: produces peach-hued light said to be flattering to human complexions, house furnishings, food displays, and to blend well with other lighting shades. Westinghouse Electric Corp., Bloomfield, N. J.

finishers and protectors

Infracote: plastic coating designed to prevent fading and bleaching. Applied to transparent surfaces such as windows, glass brick, showcases, etc., by brush or spray. Eliminates need for awnings, curtains, mats. Available in one and five gal. carboys. Lite Control Products Co., Nutley 10, N. J.

sanitary equipment water supply, drainage

Ever-Soft Water Softener: now equipped with stainless steel tank; remains rust resistant and non-corrosive regardless of water conditions or chemical properties of regenerating brine. Ever-Soft Corp., 208 Fancourt St., Pittsburgh, Pa.

"One-Two" Pump: dual purpose pump for both farmhome and occupational use; will provide water at low pressure for irrigation, soil soaking, and similar jobs; can also supply water under pressure for home use and fire protection. May be installed with single or double jet assembly or for pumping at water levels from flooded suction to settings of 100 ft. to water working level. Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago, Ill.

Explosion-Proof Sump Pump: fully enclosed explosion-proof motor and switch in new Series MC sump pump for use in hazardous locations. Copper and bronze construction throughout; nominal capacity of 4000 gal. per hr., will operate against 23-ft. discharge head. Penberthy Injector Co., 1242 Holden Ave., Detroit 2, Mich.

specialized equipment

Model 50 Bruning Whiteprinter: produces 10,000 sq. ft. of prints—black and white or colored reproductions of anything typed, printed, written, or drawn—ranging from postcard size to 42 in. wide and any length. Prints delivered flat and dry, stacked in receiving tray on front of machine. Unit requires no plumbing connections or ventilation ducts. Charles Bruning Co., Inc., 4754 W. Montrose Ave., Chicago 41, Ill.

Chime-Matic: automatic audio-visual signaling equipment, part of all new Executone fully-intercommunicating systems, simplifies and speeds call-origination. Pressing any button automatically announces call at station selected by means of modulated chime and signal light. Executone, Inc., 415 Lexington Ave., New York, N. Y.

Work Desk: of functional design, yet decorative enough for living quarters. In walnut or primavera with leather or plastic covered top, and base of satin chrome steel. Compartment holds and conceals typewriter when not in use; storage spaces for typewriting materials, stationery, etc.; sliding file basket beneath desk top equipped with pendaflex file. Herman Miller, Zeeland, Mich.

All-Automatic Electric Range: four burners, including deep-well cooker, each with seven speed controls; adjustable lamp floods fluorescent light on any part of range top; warming drawer keeps food warm without drying out; waist-high oven. Unit finished in all-white titanium porcelain enamel. Perfection Stove Co., 7609 Platt Ave., Cleveland 4, Ohio.

AGA-Certified Gas Connector: flexible metal tubing, which allows gas range or heater to be moved away from wall for simple installation and cleaning; completely leakproof and corrosion resistant. Available in 3-, 4-, and 5-ft. lengths. Techniflex Corp., Port Jervis, N. Y.

Thor Sink: combination clothes washer and dishwasher, designed to eliminate necessity for allocating space and plumbing for conventional laundry tubs and adjacent washing machine. One set of controls and one mechanism operate both units. Sink top of porcelain enameled pressed steel, undersink cabinet of baked enamel sheet steel. Over-all dimensions: 60" deep, 27" wide, 36" from floor to work surface. Thor Corp., 2115 S. 54th St., Cicero 50, Ill.

Vemco Versatilt: drafting machine, employing spring counterpoise attached to support bracket, permitting machine to function smoothly on drawing board. Index mechanism, for setting off 15° positions, includes large thumb grip affording secure grip. V. & E. Mfg. Co., 758 S. Fair Oaks Ave., Pasadena, Calif.

surfacing materials

Abesto Fiberated Lumiclad: roof surfacing material, based with waterproofing agent and charged with full amount of fine aluminum flake bound together with powdered asbestos; provides watertight reflective surface said to wear for years at very low cost; will not crack or check. Abesto Mfg. Corp., Wabash & Second, Michigan City, Ind.

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

1-317. Dependable Heating Equipment (Cat. 81), 28-p. catalog illustrating entire line of boilers, radiators, radiant radiators, and radiant baseboards. Ratings and selection data, dimensions, capacities, piping diagrams, accessories. Burnham Corp.

★ **1-318. Radiant Heating,** AIA 30-C-44, 20-p. illus. handbook. Presents simple method of designing low-temperature radiant panel heating systems using copper tube. Typical ceiling panel, wall panel, and floor panel plans, cross sections, elevations, typical installation photos, practical suggestions on fabricating and installation, heat loss factors, requirements. Copper & Brass Research Assn.

1-319. Dunham Heating Products, circular illustrating pumps, unit heaters, three types of radiation, and heating accessories. C. A. Dunham Co.

1-320. Exhaust Fans (Unit X6259), 16-p. illus. booklet describing several types of ventilating fans for commercial, industrial, and institutional buildings. Performance data, dimensions, specifications, selection and installation data, diagrams, general information. Emerson Electric Mfg. Co.

Four bulletins on packaged air conditioners, describing units, variety of applications, specifications, ratings, dimensions. General Electric Co.:

1-321. Packaged Air Conditions for Large Capacity Jobs (PM79-0401)
1-322. Packaged Air Conditioner (PM79-0301)
1-323. Packaged Air Conditioner (PM79-0201)
1-324. Packaged Air Conditioner for Homes, Offices, and Small Stores (PM79-0101)

1-325. Circulator Fireplace (Form F.C. 3R), 4-p. folder on all-metal fireplace unit incorporating heavy steel blades claimed to boost heat radiating surfaces 45% over conventional type. General information, advantages, dimensional details, plan views, photos. Majestic Co.

1-326. A Guide to Quick Heating (M-3080), 12-p. illus. catalog showing line of wall-attachable, wall-recessed, and portable electric space heaters. Types, sizes, requirements, selection data, general information. Markel Electric Products, Inc.

Catalog on convectors employing copper tube, aluminum fin, cast iron header heating element. Descriptions, illustrations, construction, installation data, dimensions, ratings, diagrams of piping connections for steam and hot water. Another catalog describing commercial steel boilers. General information, specifications, ratings, dimensions, engineering data, diagrams. National Radiator Co.:

1-327. National Art Convectors (555)
1-328. Commercial Steel Boilers, AIA 30-C-1 (507)

1-329. Symbol Chart, wall chart (17" x 22") illustrating architectural and engineering symbols dealing specifically with heating and air conditioning; decimal equivalents on reverse side. Chart printed on enamel stock, tinned at top and bottom with loop for hanging. Wall Catalog Co. ($1.00 per copy; make check or money order payable to Wall Catalog Co.)

CONSTRUCTION

3-113. Special-Purpose Sheet Steels (P.O. 5149), 12-p. illus. booklet describing properties and uses of stainless steels, enameling iron, zinc-coated metal sheets. Types, finishes, specification directions, applications, advantages, weight loss comparisons. Armco Steel Corp.

Two folders, one on lightweight plaster aggregate to replace sand in plaster, the other on acoustical plaster. Advantages, directions for use and mixing of aggregate. Dant & Russell, Inc.:

3-114. Dantore Plaster Aggregate (4801)
3-115. Dantore Acoustical Plaster (4802)

3-116. The Leak Point of Every Roof Now Eliminated, 8-p. illus. booklet showing new, standard method of installing counter flashing by use of rolled metal form called Fry Flashing Reglet. Advantages, typical installations, drawings. Fry Reglet Co., Div. of Watts Electric & Mfg. Co.

3-117. Dicalite in Concrete Construction, data sheet on lightweight powdered material added to concrete to make it easier to handle, place, and finish. Great Lakes Carbon Corp.

★ **3-118. Skyscraper Construction for Every Building** (AD 156), 26-p. illus. booklet on lightest weight, hot rolled beams, for use in light occupancy structures, industrial buildings, and residences. Advantages, uses, installation data, table of spacings, sizes, weights, properties, drawings, specifications, index. Also brief descriptions of accessories. Jones & Laughlin Steel Corp.

Three booklets, the first dealing with all-welded roof trusses, the second on all-purpose steel joists, the third describing two forms of steel roof decking. General information, technical data, tables, photos, drawings. Macomber, Inc.:

3-119. All Welded Roof Trusses
3-120. Now One Type of Steel Joist Serves the Builder, AIA 13-G
3-121. Steel Roof Deck (June 1949)

3-122. Aquella and Concrete Masonry Construction, 16-p. illus. booklet on surface coating for control of water seepage and dampness on interior and exterior porous masonry surfaces. General information, typical applications. Prima Products, Inc.

DOORS AND WINDOWS

4-226. Amweld, AIA 16-A, 8-p. illus. folder describing steel doors, frames, and sliding closet units. Sizes, construction features, drawings. American Welding & Mfg. Co.

4-227. Bilco Doors for Special Services, 4-p. illus. folder describing roof scuttles, sidewalk, elevator, and ash hoist doors. Features, construction details, types, sizes, data on stock sizes. Bilco Co.

4-228. Calder "400" Door Operator, 4-p. illus. folder on remote control garage door operator, electronically controlled, that opens or closes door by pressing dashboard button in car. Advantages, typical installation photos. Calder Mfg. Co.

4-229. Cornell Rolling Doors, AIA 16-D-13, 8-p. booklet on rigid and folding, upward acting doors in steel and wood, rolling and sliding grilles. General descriptions, recommended uses, operation, specifications, dimensions, drawings, photos. Cornell Iron Works, Inc.

4-230. Ingersoll KoolShade, 153-p. loose-bound notebook showing advantages of bronze screening fabric slatted with horizontal bars to stop greatest possible amount of sunlight; applied to windows like ordinary insect screens. Description, heat comparison charts, tests, sun load data, methods of hanging, other information, index. Ingersoll Steel Div., Borg-Warner Corp.

Two booklets on patterned glass in many designs, for partitions, entire walls, or windows where views are undesirable. Advantages, installation photos, illustrations of several patterns. Another booklet describes blue-green window glass that filters incoming daylight, reduces solar heat by absorbing solar infrared rays. Description, proper selection, advantages. Blue Ridge Glass Corp.:

★ **4-231. New Adventures in Decorating** (BRD-901)
4-232. Patterned Glass (J-9836)
4-233. Blue Ridge Aklo Glass (BRA 3-0749FSR)

★ **4-234. Five Steps for Writing a Simplified Specification,** 24-p. catalog to help architects in writing finishing hardware specifications when architectural hardware consultant is not available. General conditions, design, finish, specific types and functions, window hardware and other miscellaneous items. Illustrations of locks, push plates, door pulls, etc. and their functions, index. Lockwood Hardware Mfg. Co.

4-235. Mengel Flush Doors, AIA 19-E-1, 8-p. illus. booklet on hollow and solid core flush doors. Design and construction, special doors, sizes and weights chart, specifications. Mengel Co.

4-236. The Mark of a Modern Building, AIA 10-F (G81700), 40-p. illus. booklet on glass block designed to simplify selection of correct pattern for job requirements. General and technical data, construction details, specifications, patterns, photos, illustrations. Pittsburgh Corning Corp.

4-237. Security Doors, AIA 33-G, 16-p. illus. booklet describing manually and electrically operated elevator and industrial doors, dumbwaiter doors. Types, descriptions, specifications, features, plan views, photos. Security Fire Door Co.

4-238. USF Hollow Steel Doors and Frames, 4-p. illus. folder. Units for installation in multiple dwellings, office buildings, institutions. Construction advantages, door and frame specifications, details. United Steel Fabricators, Inc.

ELECTRICAL EQUIPMENT, LIGHTING

5-226. Custom-Built Cold Cathode Lighting, 4-p. bulletin showing four typical installations of custom-built cathode lighting. Technical advantages. Federal Enterprises, Inc.

Manual containing layout and installation directions for electrical distribution system. Types of busways, possible applications, typical layouts, suggested specifications, recommended estimating procedures, engineering index, thumb index. Other manual describes installation procedures of low voltage control system. Typical wiring diagrams, working advantages, typical code extracts affecting low voltage control. Square D Co.:

★ **5-227. Busway Systems** (SA 577)
5-228. Low Voltage Control

5-229. Presenting Powerstat (8491), 8-p. folder on various types of light dimming equipment for motion picture theaters. Advantages, ratings, specifications. Superior Electric Co.

5-230. The New CL-242 (F-527), 4-p. illus. folder describing louver-shielded fluorescent lighting fixtures engineered for simplest possible installation. Units can be surface mounted, singly or in continuous rows, and pendant mounted in five different arrangements, singly or end-to-end. Description, advantages. Sylvania Electric Products, Inc.

5-231. Unistrut Bulletin FF-3, 4-p. folder describing quick, easy method of hanging fluorescent fixtures by means of especially constructed wireway system providing perfect alignment, wider spacing of hanger stems, and flexibility of installation. Description of method, advantages, ordering directions, details. Unistrut Products Co.

FINISHERS AND PROTECTORS

6-179. Cuprinol, AIA 19A3 & 25B-17, circular on wood preservative for protection against rot and termites; applied by spraying, brushing, or dipping. Advantages. Cuprinol Division.

6-180. Stoncote, 4-p. folder on flexible plastic protective coating for walls, floors, machinery; provides non-oxidizing, acid, alkali, oil, and water resistant film. Description, advantages, colors. Stonhard Co.

6-181. Tennant Floor Treating Materials (Bul. 81.11), leaflet describing characteristics and uses of floor seals, waxes, and special purpose materials. Typical installation photos. G. H. Tennant Co.

INSULATION (THERMAL, ACOUSTIC)

9-142. Finer Acoustical Products, 4-p. folder describing perforated acoustical tile made of wood fiber and incombustible acoustical tile, both of which may be spray painted without loss of sound absorption. Description, properties, thicknesses, sizes. Dant & Russell Sales Co.

SPECIALIZED EQUIPMENT

19-490. Bruning Drafters (Bul. A-1062), 4-p. illus. folder presenting several models of drafters that reduce number of instruments ordinarily handled to make drawings. Descriptions, operation, advantages. Charles Bruning Co.

19-491. Calcinator, 4-p. folder on gas-fired automatic garbage and refuse disposal unit using constant flame to dehydrate and calcine trash. Description, specifications, ratings. Calcinator Div., Valley Welding & Boiler Co.

19-492. New Chicagomatic Tubular Stools (1111), 4-p. folder illustrating leather upholstered, tubular stool featuring patented base said to prevent column from working loose at base; cast iron construction throughout. Specifications and prices, drawings. Chicago Hardware Foundry Co.

19-493. A Cabinet Kitchen That is Really Different, leaflet illustrating variety of modern kitchen cabinets, drawer cases, and shelves constructed of birch plywood and lumber with soft-tone natural finish. Photos, specifications. Granite Woodworking Co.

19-494. Distant Reading Electric Thermometers (2451-C), 8-p. illus. bulletin on various types of thermometers giving accurate temperature readings between minus 100F and plus 400F, on points up to 1000 ft. distant. Types, sizes, services for which each type is best suited, installation and operation instructions, prices, technical data. Illinois Testing Laboratories, Inc.

SURFACING MATERIALS

19-495. Dodge Vinyl Cork Flooring, 8-p. booklet on cork flooring requiring no waxing at any time. Description, advantages, test results, installation photos. Dodge Cork Co.

19-496. Timbertone Structural Papers, AIA 28-c, file folder containing group of structural paper samples and 6-p. catalog illustrating patterns, with specifications for hanging paper, instructions for measuring material, and maintenance. Prices. Timbertone Decorative Co., Inc.

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Shenandoah Life Insurance Company uses COPPER and Common Sense!

On the new home office building (right) for the Shenandoah Life Insurance Co., Inc., Roanoke, Va., this specially designed cupola (left) and the hipped roof are covered with over 40,000 lbs. of copper for lasting protection. Gutters, coping, facia and inside drains are also constructed of copper. Architects and Engineers: Smithey & Boynton; General Contractor: B. F. Parrott & Co., Inc.; Sheet Metal Contractor: Valley Roofing Corp.

Monumentally situated on a high knoll in Roanoke, Virginia, the new home office building for the Shenandoah Life Insurance Co., Inc. is an inspiring combination of functional design and architectural beauty.

This building's all-copper roof and cupola have made history in Virginia's construction field. Gutters, coping, facia and inside drains are also all of copper —and all constructed in accordance with the scientific principles of sheet copper construction developed in the Revere Research Laboratories.

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This book has been widely distributed to architects and sheet metal contractors, and probably is in your office files. Be sure to refer to it; and if you do not have a copy, write for one now on your office letterhead.

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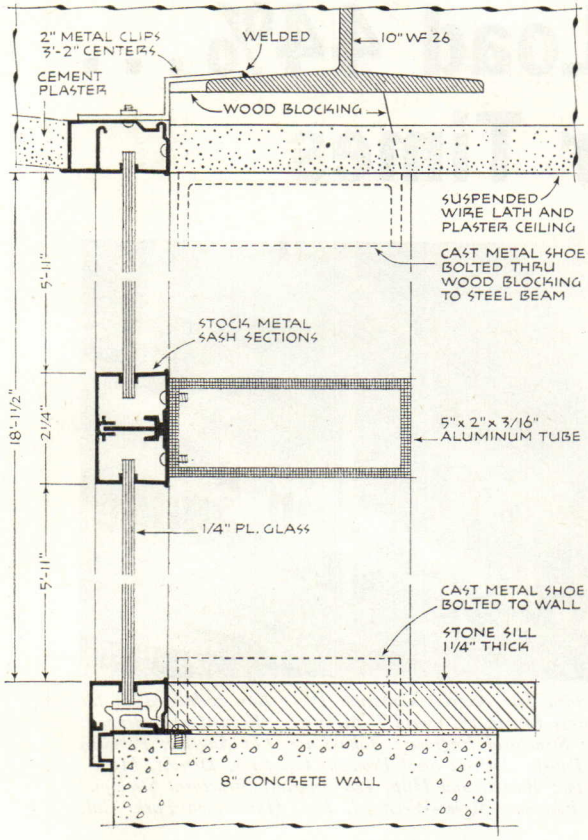
OFFICE AND WAREHOUSE BUILDING: glass wall in lobby



Wall Section 3" SCALE

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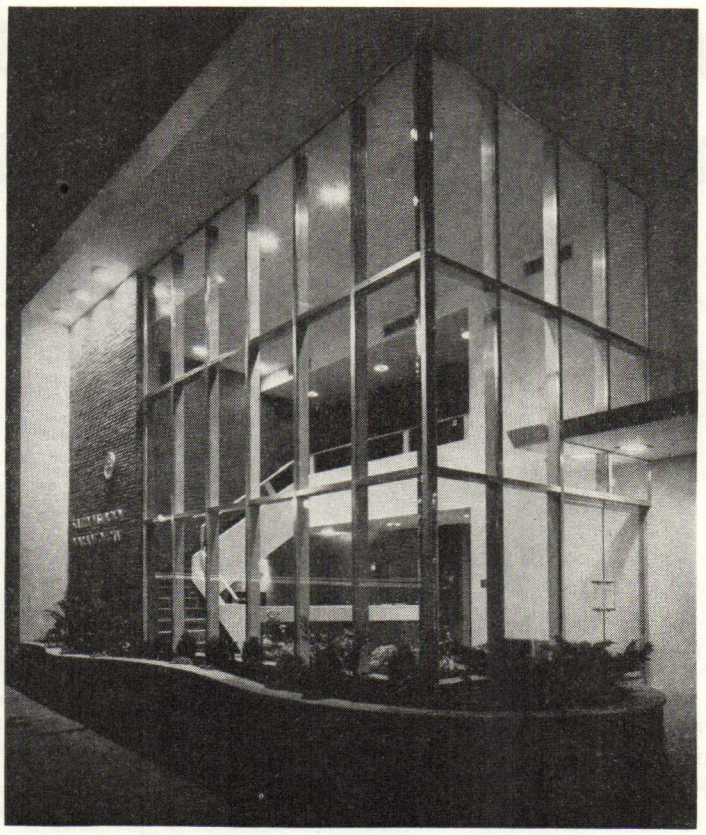
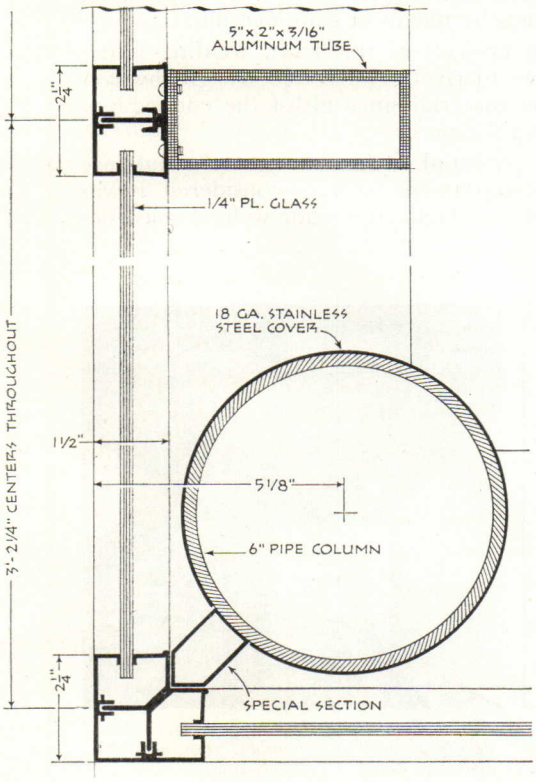
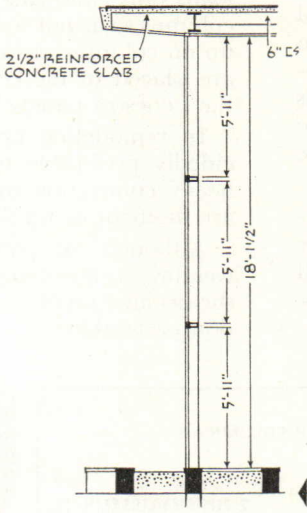
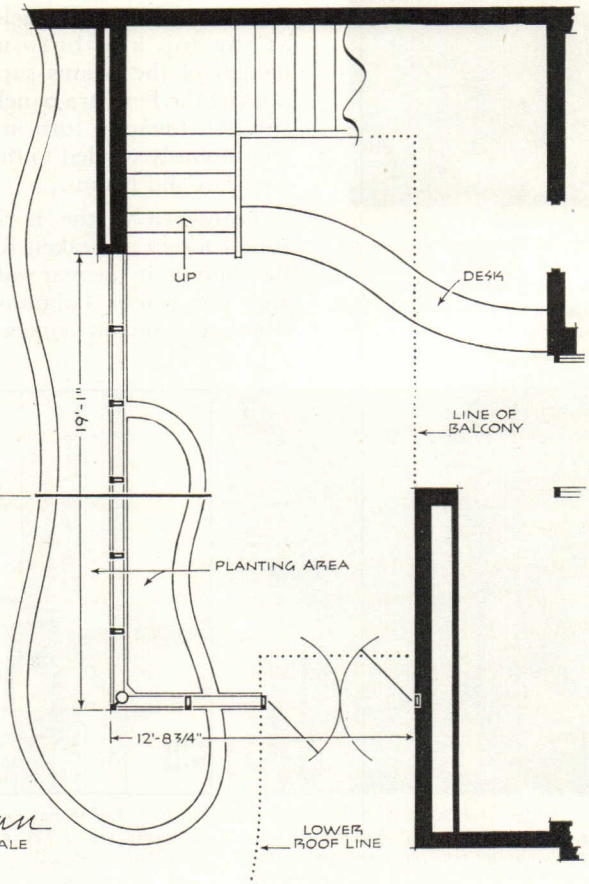




Plan at Corner 3" SCALE



Section 1/8" SCALE



Plan 1/8" SCALE

WASHINGTON STATE GAME DEPARTMENT
Seattle, Washington

JAMES C. GARDINER & ASSOCIATES, Architects
GUSTAV KARLA, Consulting Engineer

Welding Cuts Dead Load 44%... Increases Space Four Times

By Walter R. Steyer, *President*
Steyer-Weisbrod, Inc., Huntington Park, California

IN remodeling the Los Angeles Coliseum Press Box, arc welding has made possible the erection of a modern, three-level structure having over four times the available space without exceeding the live and dead loads of the original building. Where the former concrete press box accommodated only 98 persons on one level with 18″ of space per person, the new, rugged, all-welded structure has generous facilities for 178 people with 42″ of space per person.

The new Coliseum Press Box has been erected through arc welding in a scheduled time of 4 months and at a cost of only $150,350.00. To achieve earthquake and wind load requirements, light steel framing and Fenestra panels are used. In erection, members are first bolted, aligned and then welded with "Fleetweld 5" electrodes using Lincoln "Shield-Arc" DC welders. The center lines of "H" columns are rigidly connected to the longitudinal beams with moment connections. Butt plates are added in the field at the top and bottom flanges of the beams supporting the Fenestra panels (Fig. 4). These in turn are continuously welded to the columns and beams.

Fig. 2. Welding type D Fenestra panels with Lincoln "Fleetweld 5" electrodes. Total dead weight of floor including ceiling and finish surfacing is only 14 lbs. per square foot.

Transversely, the horizontal forces are taken by the columns in the rear wall and the center columns. Rigid or moment connections are developed in this direction also. This approach leaves the front columns free to carry vertical loads only, allowing them to be of minimum size pipe columns so as not to impair visibility. To avoid doubling up on columns at expansion joints, the expansion joints are placed in the center of the beam spans supporting the Fenestra panels by means of cantilevering.

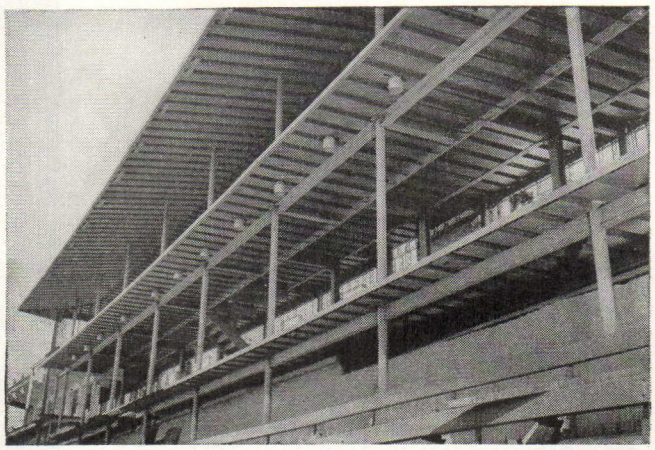


Fig. 1. All welded Los Angeles Coliseum Press Box acclaimed as the "Outstanding press box in the world." Architects: Bennett and Bennett, Pasadena, Cal.; Structural Engineer: John Case, Los Angeles; Fenestra Floor & Roof Panels: Detroit Steel Products Company, Detroit, Mich.; General Contractor: Barrett and Hilp, Los Angeles; Structural Steel and Fenestra Panel Erection: Steyer-Weisbrod, Inc., Huntington Park, Cal.

In remodeling projects of this kind, welding is decidedly preferable to riveting. Riveted design involves heavy connecting material since all of the connections are moment or rigid type.

Although the potential savings in cost through arc welding on this project were carefully considered, it was the decided saving in weight that made welded construction preferable.

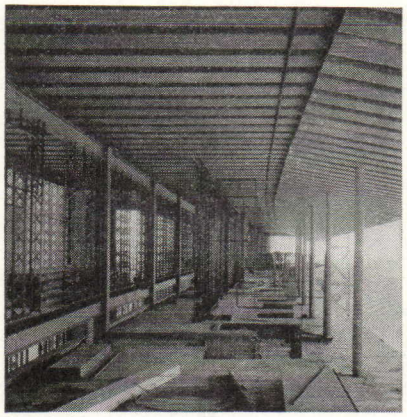


Fig. 3. Upper level shows all welded light steel frame with expanded steel studs for partitions. Front columns are pipe for maximum visibility.

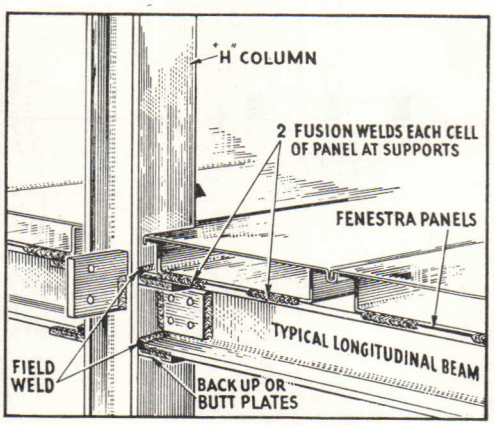


Fig. 4. Typical beam-to-column connection shows use of butt plates on beam flanges and details of Fenestra floor panels.

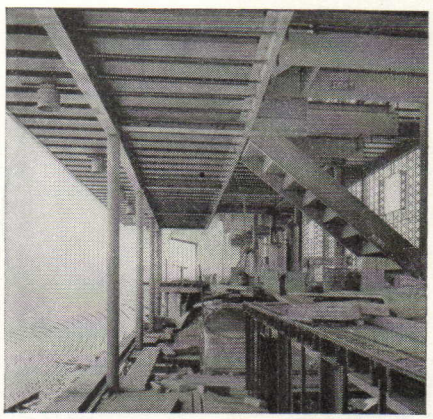
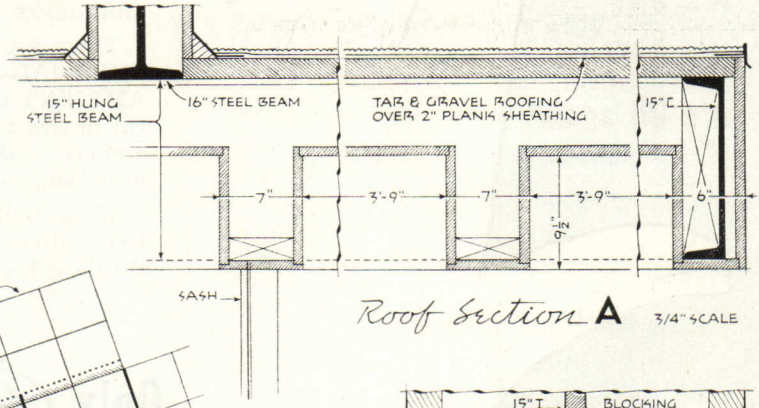


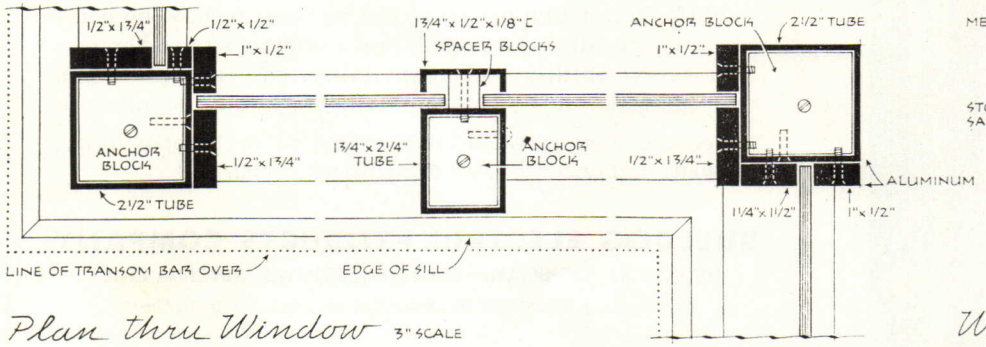
Fig. 5. Lower level showing beam and column details as well as all welded stairway. Note cantilever detail of upper flooring.

MARVIN ANDERSON STUDIOS

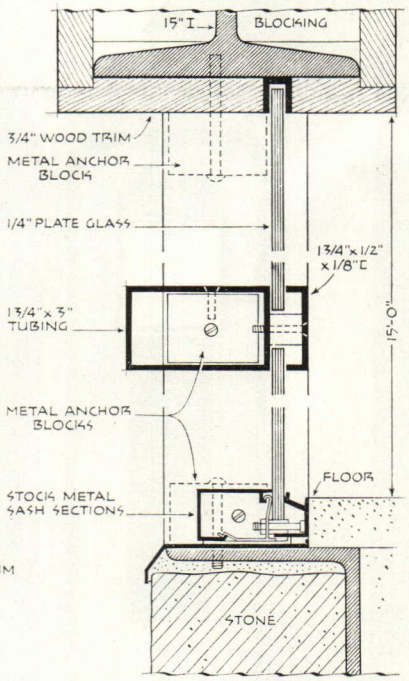
Roof Framing Plan 1/16" SCALE



Roof Section A 3/4" SCALE



Plan thru Window 3" SCALE



Window Section B 3" SCALE

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Architects

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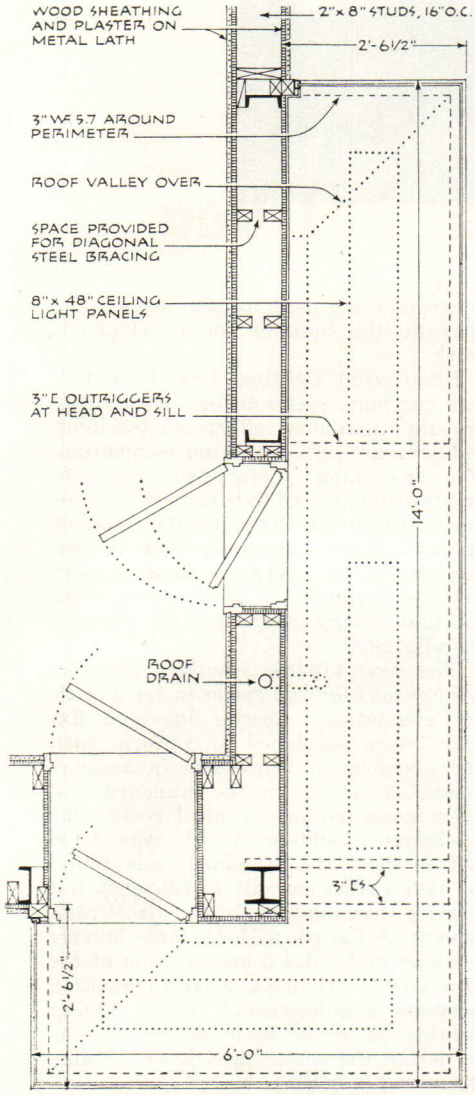
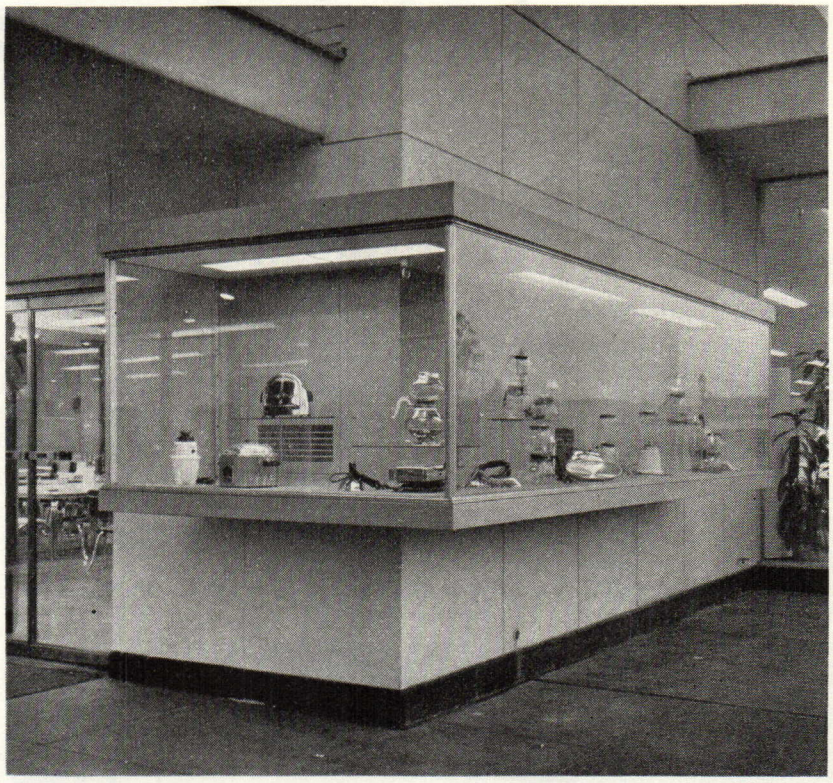
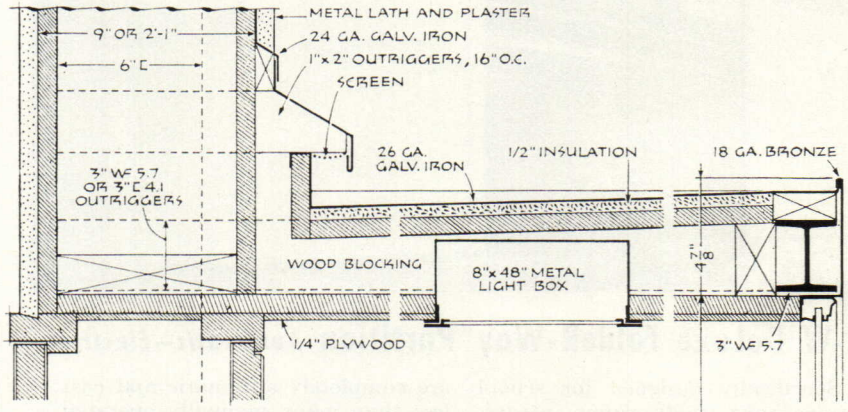
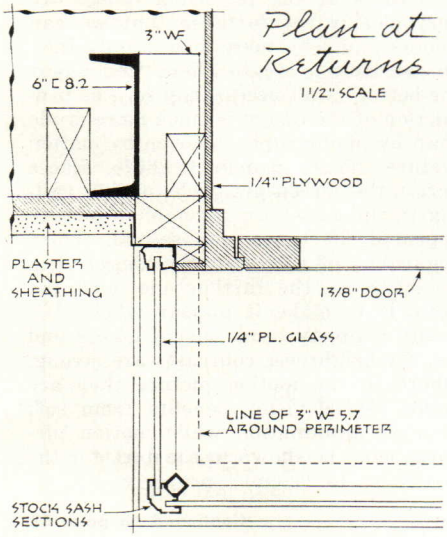


Plan 3/8" SCALE

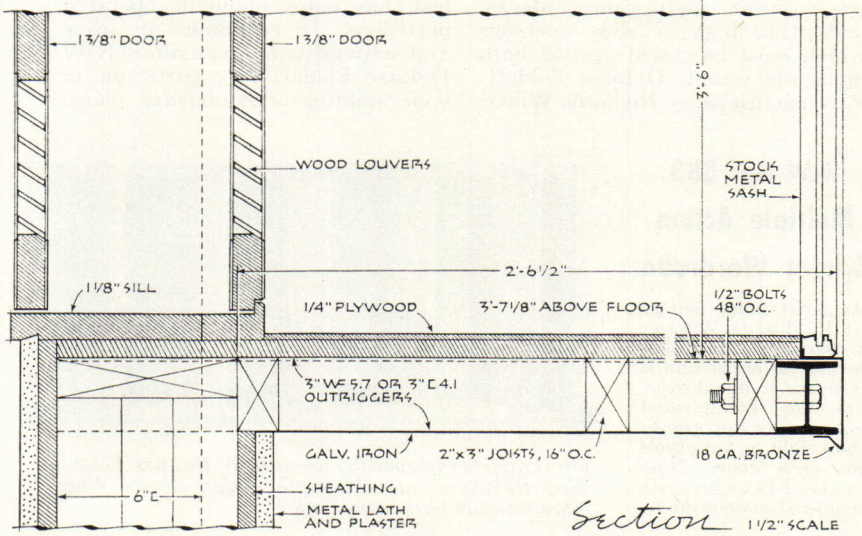


JULIUS SHULMAN





Plan at Returns 1 1/2" SCALE



Section 1 1/2" SCALE

THE MAY COMPANY APPLIANCE BUILDING
Los Angeles, California

ALBERT C. MARTIN AND ASSOCIATES
Architects and Engineers

technical press

By JOHN RANNELLS

illuminating engineering

The annual Technical Conference of the Illuminating Engineering Society comes up with a sheaf of papers covering a wide range of subjects. These are mostly studies of practical applications but enough theory and research are included to show a healthy growth of new ideas and even a critical examination of old ones, now and then. Men working for the big lamp manufacturers—General Electric, Westinghouse, Sylvania—contribute the bulk of the papers, as they do the bulk of the development work.

Fluorescent lighting, like the horseless carriage, seems to be here to stay and its stimulating effects on the lamp industry are still gathering momentum. For one thing photometric measurements of lamps and fixtures were laboriously "handmade" through the years of the incandescent monopoly. Now recording photometers give the answers more quickly, enabling the laboratories to investigate many new kinds of lighting installations.

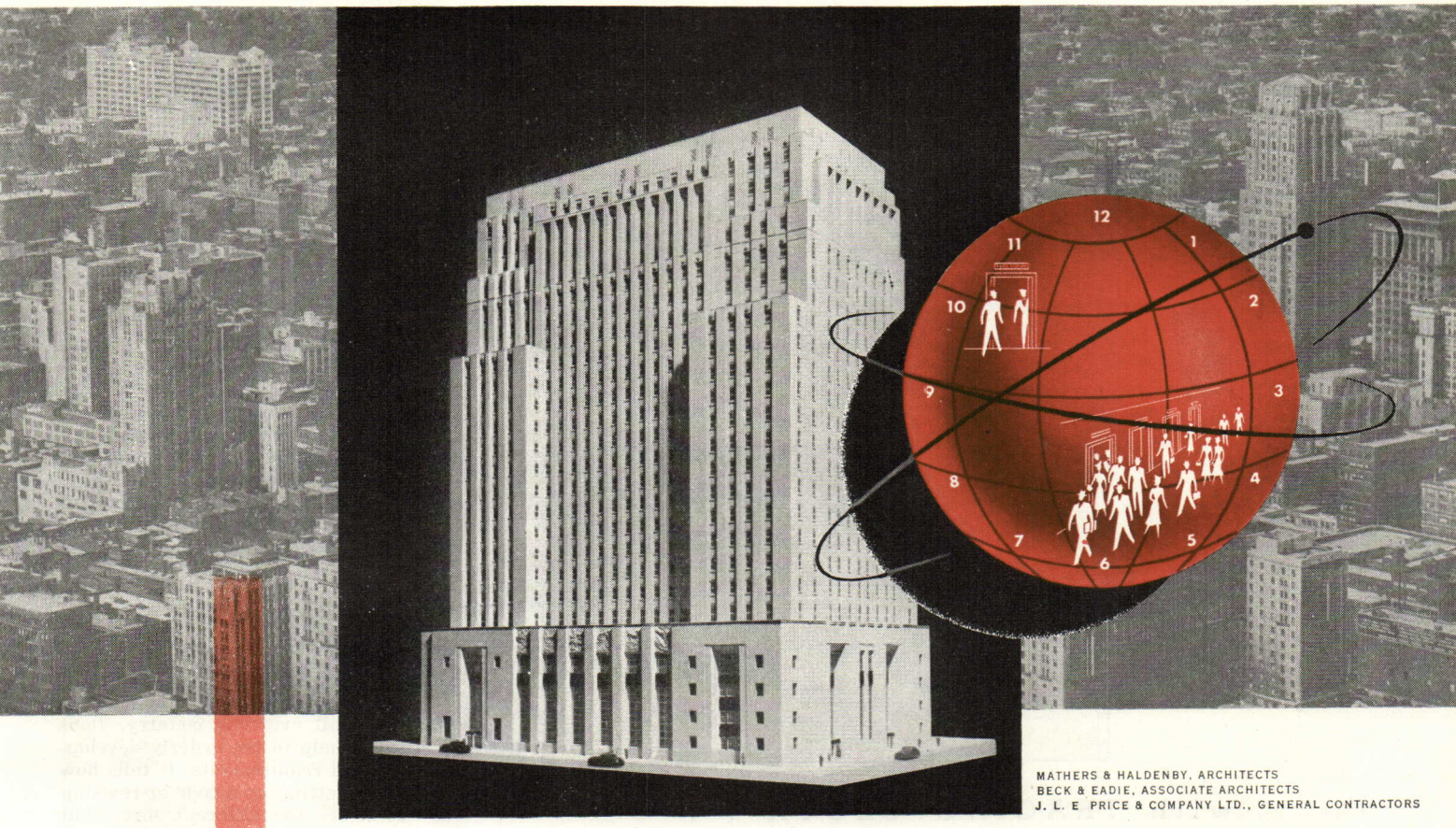
The new (1948) *Standard Practice for School Lighting* comes in for a critical evaluation.[1] Special louvered fixtures were developed to conform with the divisions of brightness in angular zones, as set up in the standard and then measured in a typical room. The 45-degree shielding, which was tried out to meet the standard, was found to have rather low direct efficiency but it more than made up in the direct component. A fixture with variable louvers is suggested—also a modification of the standard to provide a smooth transition between angular zones and a higher brightness in the 0- to 30-degree zone to permit the use of the efficient 4 lamp 40 watt luminaire.

A number of papers are concerned with lighting for the home—for sewing, for the piano, color, television. The paper on television[2] is an extra good lesson for us visual-minded architects. The facts of the television image are very clearly set forth so that we can understand why mere size is only incidental. Here is a case where "the bigger the better" ain't necessarily so. The production of the image is much more crude than by photography or even by motion picture. There are just 262½ traces across the screen per cycle, or 525 (filling in the gaps) for a complete picture repeated 30 times per second. Thus, regardless of tube size, the bigger such a picture is, the farther one must get from it to make it appear whole. It's really a pretty crude visual image and yet the brightness contrasts are strong, where in the motion picture they are weak. So television benefits from soft general illumination while motion pictures must be shown in the dark for the contrasts to "count" properly.

(Continued on page 92)

[1] *Application of Recommended Brightness Limitations to School Classrooms. F. C. Winkler & John Neidhart, Westinghouse Electric Corp.*

[2] *Studies of the Visual and Lighting Problems of Television in the Home. E. W. Commery, General Electric Co., Cleveland, Ohio.*



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The Bank of Nova Scotia Building will add still another note of modernity to the fast changing skyline of Canada's commercial and financial capital. And its elevatoring will add an advanced note of electronics to tenant service. For Otis AUTOTRONIC Traffic-Timed ELEVATORING is the only system that is timed to the 6 traffic patterns of the entire business day. It is the only system that measures passenger waiting time during rush hours, and automatically gives special service to the "forgotten man." It reduces passenger waiting time during all types of traffic.

In addition, Otis AUTOTRONIC Traffic-Timed ELEVATORING is dramatic. A passenger merely "touches," not pushes, an electronic directional arrow in the landing fixture. The arrow glows, the call registers, and a car arrives promptly—as if by magic.

Otis Booklet B-721-P explains how AUTOTRONIC ELEVATORING will increase the service prestige of NEW and MODERNIZED buildings and help to hold tenants at profitable rentals for years to come. Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.

Otis

AUTOTRONIC
traffic-timed
ELEVATORING

35 other NEW and MODERNIZED office buildings, hotels, banks and department stores have also bought this entirely new concept of elevatoring.

technical press

(Continued from page 90)

Lighting for classrooms—either artificial or daylight—has become a vital factor in architectural design (especially since the construction of schools has become an important factor in the public budget). A thorough study of the use of daylight[3] has been made at Southern Methodist University at Dallas. Of course, Dallas is just one location, with its own latitude and climate—yet the methods developed here (louvers, diffusing glass, desk arrangements) can be used anywhere. A full-scale test building was used for the experiments which give recommendations for window treatments on sun or non-sun exposures, for decoration, etc.

preparation and revision of building codes

Materials and Structures Report BMS 116 will be a great boon to many code committees all over the country. It is designed to help in the orderly development of good requirements. It tells how to go about setting up a code or revising one—describes the different sorts that have been popular—the possible detrimental effect on a community of too stringent requirements, etc. There's a wonderful lot of meat packed into 15 thin pages, plus a sizable bibliography. This report is available from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. 15 cents.

producers' council bulletin 55

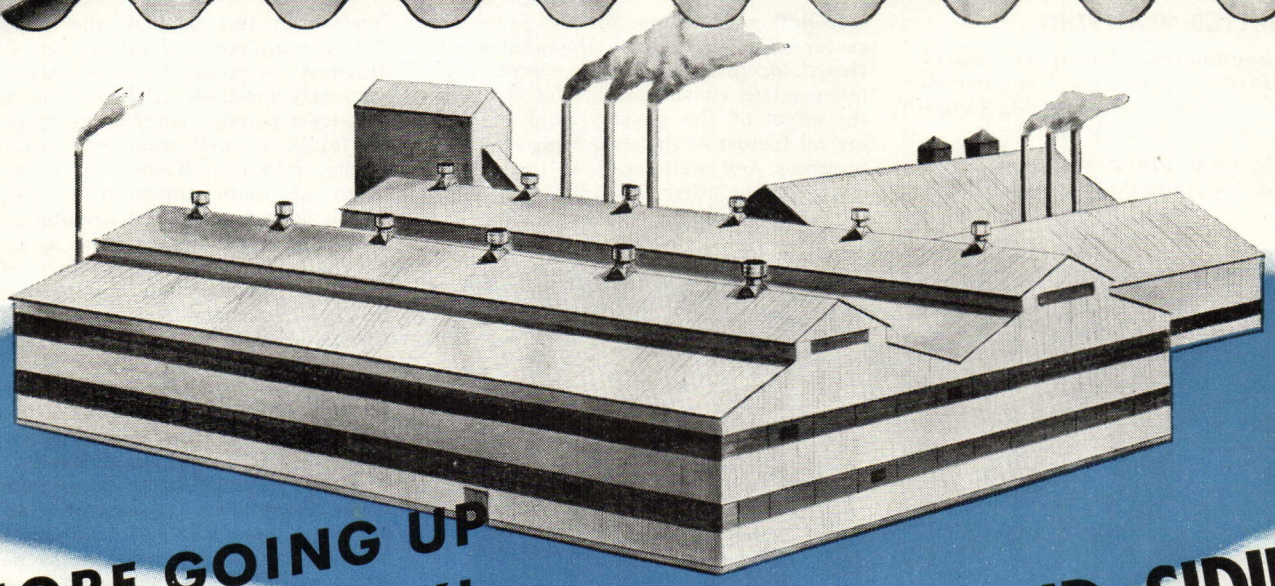
The occasional grab-bag bulletins sent out by the Producers' Council have always been interesting but they have also been pretty miscellaneous. This one, Fall 1949, is a school construction issue and somehow the miscellany of products leaflets (windows, tile, drainage fittings, etc.) that make up the bulletin do hang together when they're tied to one general subject.

There are two real contributions in this issue that go far beyond the usual products information: "Modern Gymnasium Seating" by the Gymnasium Seating Council and "Control of Daylight with Glass Block" by Pittsburgh-Corning. The former, by Harold R. Sleeper, is set up as two separate studies on space utilization and on seating—full-bodied information, very carefully prepared and fully presented. The latter is a wonderfully clear presentation of the elements of sunlight and daylight, with diagrams so well worked out that this fairly intricate subject seems simple. The research was carried out in a full-sized room set up to rotate so that data for all angles of sun could be assembled readily. Of course all the types of block, directional, diffusing, etc., are well presented, too.

[3]*Daylight in Classrooms. R. L. Biesele, Jr., Head of Department of Electrical Engineering, Southern Methodist University.*

IGURE IT IN ALUMINUM

THE METAL THAT *Lasts*



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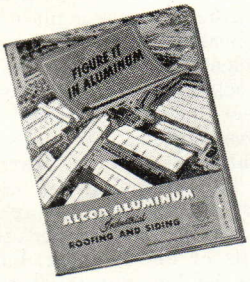
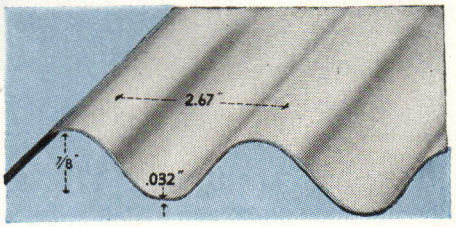
Most enthusiastic boosters for Alcoa *Industrial* Roofing and Siding are the contractors who have erected it; the plant owners who have tried it. They have found through experience and cost analysis that aluminum-clad buildings are quick and inexpensive to erect; that exterior maintenance costs are practically eliminated.

Alcoa *Industrial* Roofing can't rot, warp or shatter. It needs no protective painting. Light in weight, it goes up fast, makes for lighter dead load. Tough, corrosion resistant, it will support heavy live loads; will last for years without regular maintenance or heavy upkeep costs.



WRITE FOR ENGINEERING AND APPLICATION DATA

This free book gives detailed information on engineering and erecting buildings using Alcoa *Industrial* Roofing and Siding. Call your nearby Alcoa Sales Office or write, ALUMINUM COMPANY OF AMERICA, 1868M Gulf Bldg., Pittsburgh 19, Pennsylvania.



Here are the Details

THICKNESS: .032 inches.

LENGTHS: 5, 6, 7, 8, 9, 10, 11, and 12 feet.

WIDTHS: Roofing sheet, 35 inches. Siding sheet, 33¾ inches, coverage 32 inches.

CORRUGATIONS: ⅞ inch deep. 2.67 inches, crown to crown.

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PURLIN SPACING	CLEAR SPAN	UNIFORM LOAD p. s. f. (Safety Factor, 2)
6'6"	76"	29
6'0"	70"	35
5'6"	64"	41
5'0"	58"	50
4'6"	52"	63
4'0"	46"	80

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BOOKS

FOR BETTER PLANNING

The Co-ordinated Classroom. *Darell Boyd Harmon. Published and distributed by American Seating Co., Grand Rapids, Mich., 1949. 48 pp.*

Probably most architects know something of the remarkable work of Dr. Darell Boyd Harmon, for ten years director of a Texas State Department of Health program and more recently, as independent consultant in the study of the effect of the physical and psychological factors of the classroom upon the progress and well-being of the school child. On the other hand, until the publication of this booklet, the materials for a complete understanding of Dr. Harmon's message have not been conveniently available. Although one of the strongest points about his theory is that it forms a well rounded, organized whole; it was published in parts, and many of these appeared in journals which do not reach the architect.

As a result, misconceptions as to both the nature and the importance of his work are common, and this has been a loss, for Harmon's ideas should be known to every architect. It is not necessary to agree with everything he says, or to admire the architecture done under his direction, to profit from his work. The subjects he discusses are arousing such interest generally, that architects are likely to be expected to know about them. At least, it is unlikely that anyone who has read this booklet will design new classrooms as the great majority of classrooms are designed today. Furthermore, the architect who has no thought of designing a school will find here new avenues of thought that add to his equipment for solving other problems, particularly in manipulating light as an element of design.

The idea is fairly common that Harmon offers a formula, that if one agrees with him one is compelled to employ certain specific devices, making every room a near duplicate of those of Rosedale School. This is not as surprising a misconception as it may sound, since pictures of classroom details have been more widely disseminated than the reasoning from which they were developed. Harmon does demonstrate how little one can afford to neglect any single factor of the many analyzed. This does not imply, however, any compulsion to adopt specific corrections or techniques, let alone a complete prescription, in classrooms, still less in spaces put to different use. That there is no attempt to impose specific solutions is plain from the present booklet, and will be made abundantly clear upon publication of a series of schools currently building, for which he is serving as consultant.

Such misconceptions have obscured the more valuable part of Harmon's work, which is outstanding not because of any particular device he may have invented or popularized, or because of specific details of his thinking, but because of how he has put together the various elements into an integrated whole, and then proved how much greater their impact is upon the human body than anyone would suppose. As a matter of fact, a large proportion of the devices and correctives involved, were

(Continued on page 98)

This floor is Armstrong's Linoleum. It combines beauty, long service, and easy maintenance at moderate cost. New developments have made colors brighter, increased wearing qualities, and have made Armstrong's Linoleum a better value than ever. Six types—Plain, Jaspé, Marbelle®, Spatter, Embossed Inlaid, and Straight Line Inlaid. Wide choice of colors and patterns gives great freedom for custom designing. Produced in rolls six feet wide and up to ninety feet long, this floor can be installed with a minimum of seams. Three gauges: Heavy (1/8″), Standard (3/32″), Light (5/64″). Furniture loads up to 75 lbs. per sq. in. will not permanently indent this floor. Can be specified for both conventional and radiant heated suspended subfloors that are in good condition.

They're both Armstrong's Floors

This floor is Armstrong's Asphalt Tile. Recommended particularly for concrete floors in direct contact with the ground, Armstrong's Asphalt Tile also fills the need for an attractive floor at low cost. Its tough composition is not affected by alkaline moisture, gives good service even under heavy traffic. Performs satisfactorily over radiant heated concrete floor slabs. Wide choice of plain and marbleized colors can be combined in countless variety of designs. Five types: Standard, Greaseproof, Industrial, Conductive, and Greaseproof Conductive. Available in 9″ x 9″ and 18″ x 24″ tiles, and in feature strips. Two gauges, 1/8″ and 3/16″. Either gauge can be installed over wood as well as concrete subfloors.

For additional data on Armstrong's Resilient Floors—Linoleum, Asphalt Tile, Arlon Tile, Linotile®, Rubber Tile, and Cork Tile — consult Sweet's Architectural File, section 13e, catalog 2. For samples and specifications, as well as help in solving unusual flooring problems, architects are invited to write to any Armstrong District Office or directly to the Armstrong Cork Company, Floor Division, 8912 State Street, Lancaster, Penna.

How to choose materials for sound conditioning in schools

Noise-quieting efficiency is not the only factor to consider when selecting acoustical ceiling materials for schools. Other factors, such as cost, fire resistance, appearance, moisture resistance, and insulation value are also important. Since these factors vary in importance in different school areas, it is often advisable to select materials which best meet the requirements of an individual area.

Noise reduction versus cost. In the gymnasium and lunch room, high sound absorption is vital. Armstrong's Arrestone, an enameled metal pan unit with a noise-reduction coefficient of .85, is recommended for these areas. In classrooms, corridors, the library, and the music room, cost should be considered as well as efficiency since these areas comprise a large portion of the school's total ceiling space. Armstrong's Cushiontone is best suited to these areas, being both efficient (.75) and economical.

Installation methods affect cost. When acoustical materials can simply be cemented to the existing ceiling surface, and labor costs are held down, the total cost is comparatively low. Under normal conditions, all Armstrong materials can be applied directly in this manner except Arrestone, which is mechanically suspended on metal runners.

Lowest in total cost is Cushiontone; next, Travertone; then, Corkoustic; and highest, Arrestone.

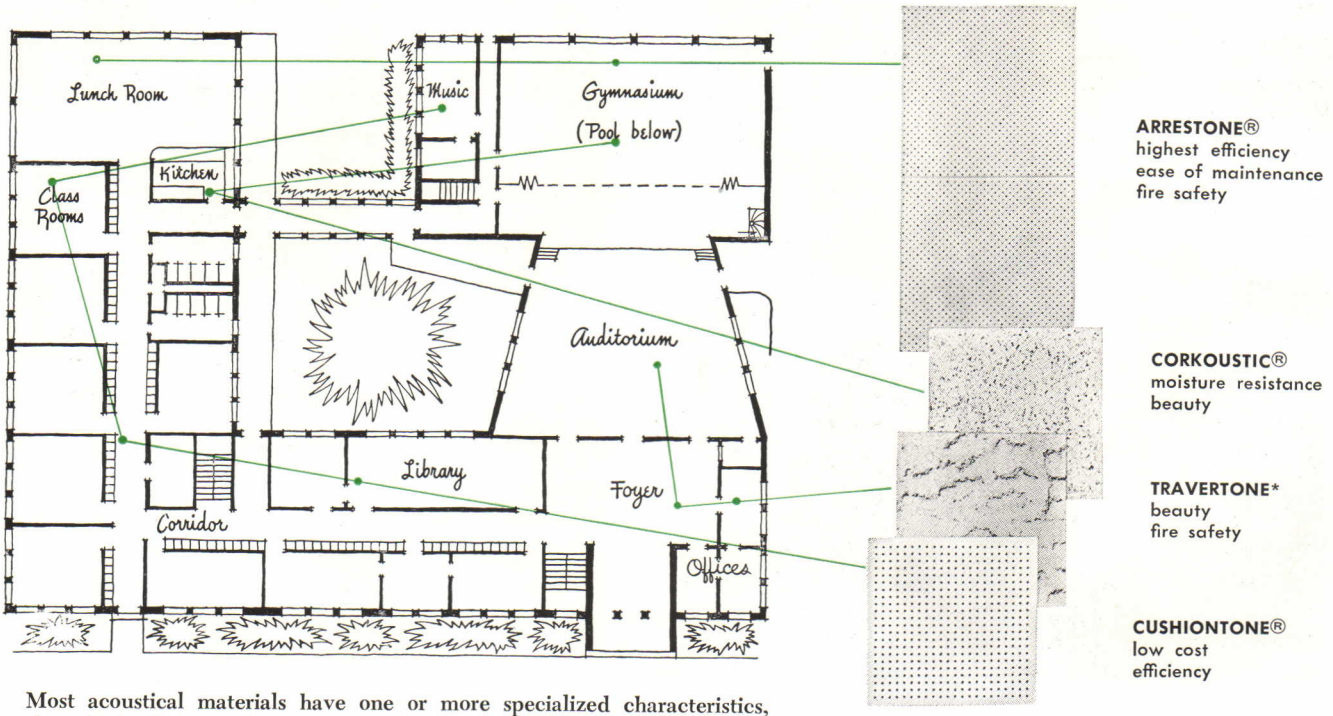
Where unusual ceiling beauty is desired—in offices, the auditorium, or the foyer—Travertone is recommended for its attractive fissured surface. Armstrong's Corkoustic also has high decorative value. All the Armstrong materials have a smooth, white painted finish both on face and beveled edges.

Fire resistance is required of acoustical materials by many city building codes. Two of the Armstrong materials are incombustible: Arrestone, a metal pan unit with a mineral wool sound-absorbing pad; and Travertone, mineral wool in tile form. Standard Cushiontone can be obtained with a special fire-retardant paint finish.

In high moisture areas—the kitchen, swimming pool, and locker rooms—the acoustical ceiling must be highly moisture resistant. Only Corkoustic is recommended, because of its extremely low-density cork structure.

In one-story buildings or on top floors, heat loss is an important consideration. Corkoustic, with a thermal conductance of only 0.18 B.T.U., offers unusually high insulation value.

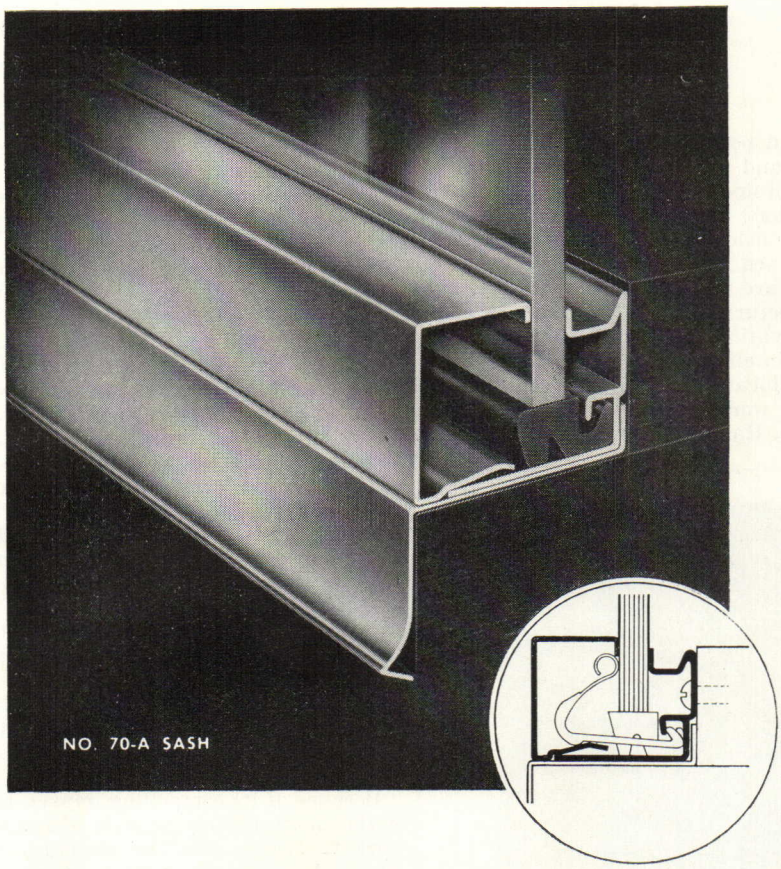
All the Armstrong materials offer high light reflection, good thermal insulation, and are easy to maintain. For full details and assistance in making the proper selection, consult your Armstrong acoustical contractor or write Armstrong Cork Company, 1412 Stevens Street, Lancaster, Pennsylvania.



Most acoustical materials have one or more specialized characteristics, such as high efficiency, low cost, ease of maintenance, beauty, resistance to extreme humidity, or fire safety. Proper selection depends upon their ability to meet the most important requirements for each school area.

*TRADE-MARK REGISTRATION PENDING

ARMSTRONG'S ACOUSTICAL MATERIALS



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These additions to the Premier line help to realize Pittsburgh's aim of providing architects and builders with the most complete and most modern selection of store front materials available.

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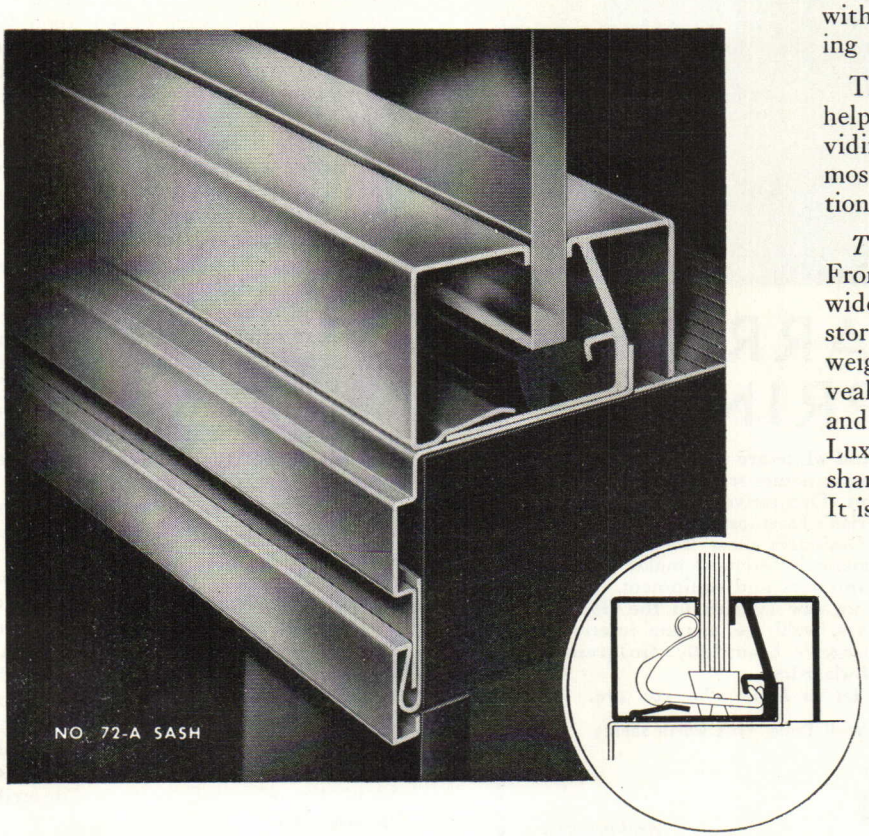

PITTCO STORE FRONT METAL

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(Continued from page 94)

in existence long before, although many were adapted and refined by him, and similarly the bases from which his thesis is developed are theories quite generally accepted.

What does differentiate Harmon's work from many partial studies is that he offers a coordinated analysis of all —or apparently all—of the important physical or "psycho-physiological" factors that affect the child in the classroom, and of the manner in which they do so, at least as regards light, color, sound, and posture. Temperature, ventilation, and sound being reasonably well understood already, are less developed than light and posture, and it is in these fields that architects will find most to learn. From this study, a series of norms are derived, to serve as goals in architectural design. The manner of their derivation is explained as a guide to their intelligent application and to their modification to suit different conditions or work in other fields.

Finally, Harmon offers a totally new concept of the importance of proper classroom environment to the welfare of the child. The statistics gathered in Texas, with the cooperation of disinterested professional bodies, each competent in its field, provide compelling reasons why no architect can afford to ignore these studies. The salutary effect of compliance with the performance standards evolved was so great, and so far reaching, as to appear exaggerated. However, the methods and the comprehensiveness of the tests are more convincing than the usual laboratory tests on a limited number of individuals. For three years the theories were checked and refined in partial tests, while thousands of children were examined for physical deficiencies selected by doctors as probable indications of improper conditions in the classroom. Then a series of classrooms was altered to come within the norms set by theory, and the children who occupied these rooms compared with control groups, not in an antiquated school, but in a fully modern one. The percentages of improvement, not only in eye defects, but in general health, even in dental health, and in resistance to disease and in the learning process, must have surprised even the research teams.

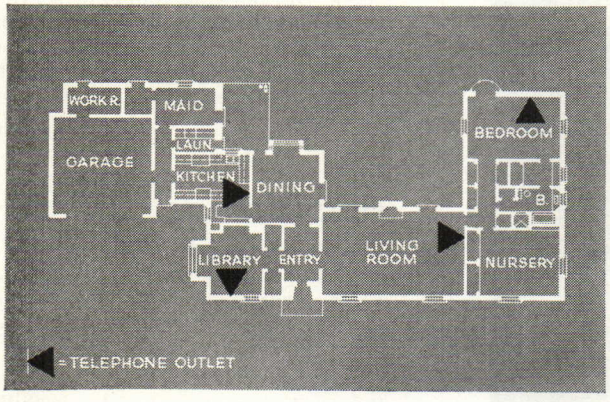
Because of its compelling impact, this is the most difficult part of Harmon's work to accept. Yet the statistics are given; they have been analyzed in various ways; they were based upon very large numbers of children, in different localities, over a period of six months, and rechecked for two years afterwards. They bear out theories that are entirely plausible. It is reasonable to suppose that adverse influences, such as glare, induce muscular tension—in fact, some very interesting experiments are in progress elsewhere, based upon this reaction in adults—and few would question that the instinctive distortions of posture in order to escape glare create further muscular stresses. It is generally recognized that such tensions and distortions have a permanent effect upon the child's frame. It is also not hard to believe that if a child has only a given quantity of energy to expend upon his various activities such as learning, digestion, resistance to disease, and growth, his performance in these respects may well be impaired by the waste of energy consumed by these muscular tensions and the nervous tensions that accompany or create them. One check on the analysis is available to anyone, namely, to look at published pictures of recently designed classrooms that have not taken advantage of such studies, and notice how often the children subjected to adverse conditions adopt the strained postures described by Harmon.

A tabulation, figure 23, is of particular interest in that it shows that whereas posture defects occur in quite direct proportion to the disturbing cause, a relatively moderate deviation from the established norm apparently had almost as great effect, in the case of visual

(Continued on page 100)

Jerome G. Armstrong, Architect

TELEPHONE RACEWAYS ARE A PART OF ITS BEAUTY



Telephone raceways are a sign of a better built home.

The beauty of the home you build can also be enhanced by things that *don't* show. For, when you conceal telephone wires you run no risk of detracting from the attractiveness of walls and woodwork.

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Your Bell Telephone Company will be glad to help you plan modern, built-in telephone facilities for any home you build. Just call your telephone business office and ask for Architects and Builders Service.

BELL TELEPHONE SYSTEM

Reviews

(Continued from page 98)

and dental difficulties, as extremely bad conditions. This accords with the theory, but is a sharp warning to the architect.

Due to familiarity with the subject, it may be that Dr. Harmon has underemphasized, insofar as he is addressing architects, that the eyes of young children are not fully developed, just as their bones are not as hard as those of adults, and similarly that the learning activity of young children is far more constant and intense than among adults, and of different character.

It is unfortunate that the most fundamental parts of the booklet are not the easiest to read. Sometimes what might be the contents of a whole book are compressed into a single paragraph. To an architect whose familiarity with child psychology is casual, this means rereading the paragraph twice, which, after all, is less work than reading a book. Harmon has felt obliged at times to express himself in the professional jargon of the specialists and to qualify his statements with meticulous care, lest he be accused of oversimplification or misstatement by these same gentlemen. Your reviewer found even the heavier passages were rewarding, but for those who wish a reasonably adequate view at minimum effort, Part III, entitled "Notes on Planning a Coordinated Classroom," may suffice, and the illustrations are generally simple and clear. Parts I and II, on the other hand, are of still greater value to the creative designer, and provide the background for extension of the principles discussed into fields other than the formal classroom, where it is necessary to take into account different kinds of activity and the differences between adults and children.

LESSING WHITFORD WILLIAMS

WHAT AND WHERE TO BUY

Furniture Forum. *Quarterly, edited by C. Hollis Christensen. Phillip L. Pritchard, publisher, 254 W. 54th St., New York 19, N. Y. Domestic rate $4.50 a year*

A quarterly of specialized interest to architects appeared this year (Volumes 1, 2, and 3 published and Volume 4 due off the press this month) cataloguing expertly the increasing output of best contemporary designers of furniture, lighting, fabrics, and accessories. Space also is devoted to "things to come" in a section on student and experimental design. This is a practical handbook for the architect or designer who regards furnishing and decoration of his building as an integral part of the design assignment.

Easy to use, attractive to look through, *Furniture Forum* offers precise information about the objects and products illustrated; provides a list of retail outlets where these may be purchased; brings, in fact, to the architectural office the advantages of a competent nation-wide shopping service. It is so candidly an up-to-date medium for merchandising items carefully selected for quality—that it is at once acceptable for the designer's own reference shelf.

C.M.

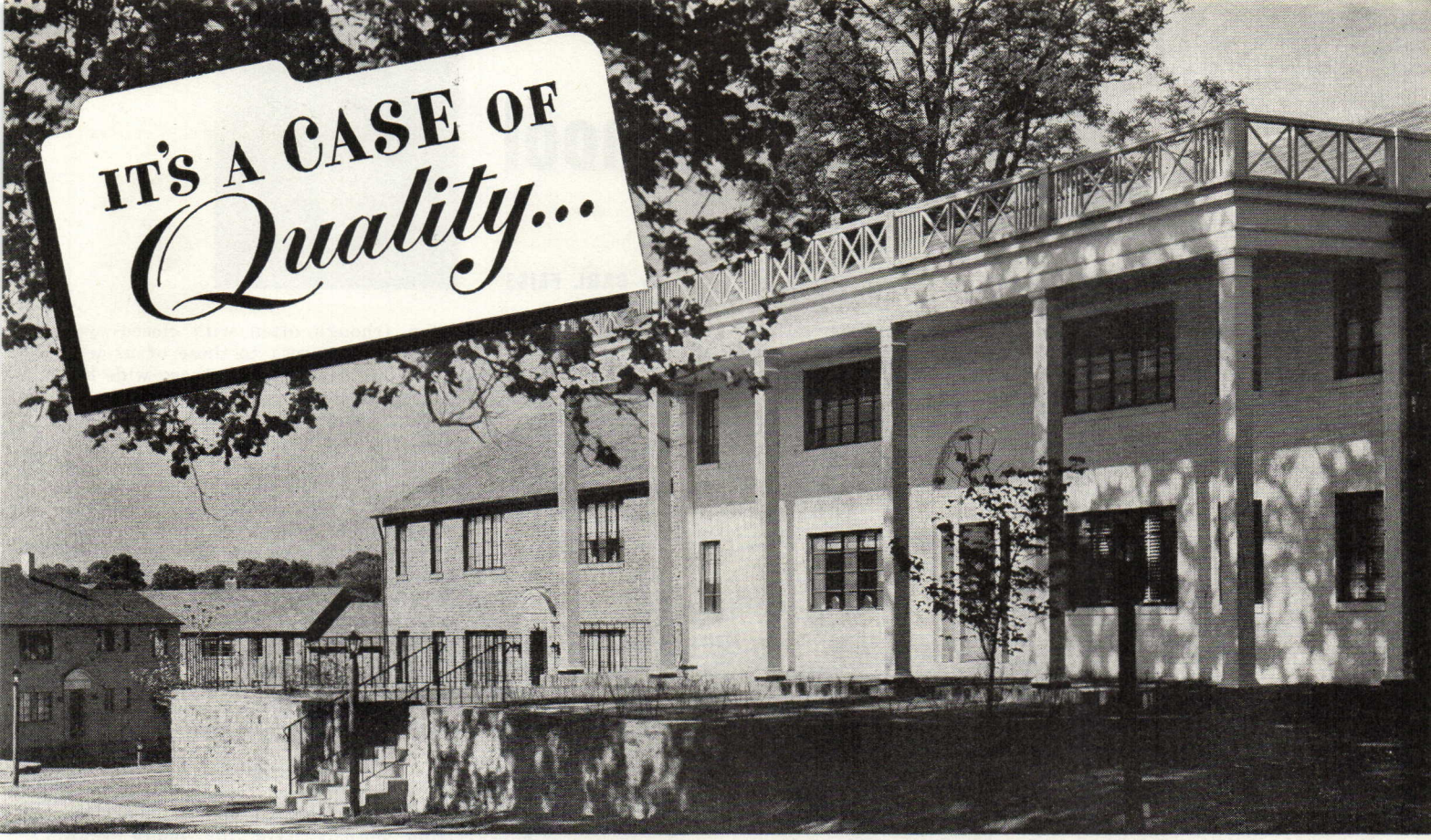
SULLIVAN'S LIFE

The Autobiography of an Idea. *Louis H. Sullivan. Peter Smith, Publisher, 321 Fifth Ave., New York 16, N. Y., reprinted by arrangement with A.I.A., 1949 (copyrighted 1922, 1924, by Press of A.I.A.). 330 pp. $3.50*

Renewed appreciation of Louis Sullivan lends special emphasis to this latest appearance of his *The Autobiography of an Idea,* previously published by the A.I.A. and now reprinted in a commercial edition. Architects who have long sought the book in obscure shops and stalls will want to send at once for a new, complete copy. The author and his book should need no introduction to our P/A audience.

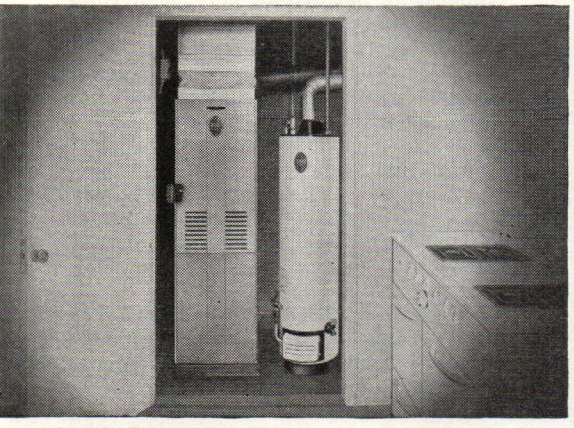
C.M.

IT'S A CASE OF *Quality...*



View of *Drexelbrook,* Drexel Hill, Pa. *Architect:* James G. Ludwig, West Chester, Pa. *Builders:* Daniel G. Kelly and Fred P. Meagher, both of Upper Darby, Pa.

...with 1,223 Personalized heating systems



1,223 APARTMENTS at *Drexelbrook* are equipped with Bryant *Personalized Heating.* Shown are the Bryant Model VS-304 Winter Air Conditioner and Bryant *Red Seal* Automatic Gas Water Heater in closet installation. 50 community laundries also are equipped with Bryant Water Heaters.

New evidence of the ever-increasing acceptance of *Personalized* Heating for apartments comes from *Drexelbrook,* where the Bryant name plate appears more than two thousand times.

This 137-acre wonderland of garden-style apartments is one of the largest and most modern developments of its kind in the world. It is a product of far-sighted planning that provides unsurpassed comforts and conveniences for its occupants.

Bryant *Personalized Heating* stands high on the list of tenant advantages at *Drexelbrook.* Each family enjoys *independent, automatic control* of all heating in its own home. Living areas are never overheated, never underheated. There is always plenty of hot water on tap—at the temperature desired by the user; for each family has its own *individual* hot water service.

Aside from its advantages for occupants of multi-family housing, Bryant *Personalized Heating* also provides these advantages for *management:*

Personalized Heating is maintained at *low* cost; large staffs of janitor-firemen or heating maintenance men are unnecessary and, in most cases, a single custodian is master of *all* equipment. Service or repair, if necessary, is entirely local, handled within a period of minutes and at *minimum* cost. Waste heat is virtually eliminated, and there are few, if any, tenant complaints.

These advantages of Bryant *Personalized Heating* benefit *all* who finance, invest in, build or manage multi-family housing. Ask the Bryant Distributor nearest you to tell you the complete story.

Let the pup be furnace man
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says the Drexelbrook construction team, DANIEL G. KELLY, Realtor, and FRED P. MEAGHER, Builder

"Bryant *Personalized Heating* aids construction by affording tremendous space savings. This outstanding equipment provides the same advantages in heating for apartment dwellers as those enjoyed by occupants of individual homes."

out of school

By CARL FEISS

Boswell reports that Sir Joshua Reynolds, on April 20, 1781, praised *Mudge's Sermons* to Samuel Johnson. Johnson's comment: "Mudge's sermons are good, but not practical. He grasps more sense than he can hold; he takes more corn than he can make into meal; he opens a wide prospect, but it is indistinct."

My problem is going to be to develop "practical sermons" for architects—without too much "corn." Unfortunately, if Johnson ever did elucidate how to make a sermon practical, Boswell forgot to mention it. But then, nobody since Sam Johnson seems to have expected either ministers or college professors to be practical. Yet some practical men listen (though often with closed eyes and gentle snores) to those of us who spend our days opening those wide but indistinct prospects.

Let us therefore be practical and discuss the training necessary for the practical practitioner. Tell me, my architectural friends who dwell in the world of business, did your architectural training fit you for office practice? I am now talking about the business of building. When I went to school, *entourage* was more important than estimating and, having no inkling that business methods would ever be needed, I innocently bent my efforts in pursuit of the elusive "medals," which were the nirvana of all young architectural aspirants of 25 years ago.

●

Now a good many of our friendly critics from abroad have for many years claimed that business is too much with us in America. We are a bourgeois society—a nation of shopkeepers and shoplifters; we have prostituted our love for our mothers with sentimental greeting cards and a nationwide campaign to sell boxes of candy on a day supposedly devoted to her; deep value of the spirit is lost in the tinsel of our days. Several visiting architects have deplored the necessity of cheapening architectural work by converting it into a business—it must remain a profession. No school has the justification to spend time teaching other than the wide prospects of design and structural theory; and yet we are not certain of ourselves, because we have not defined the real meaning of the professional role we assume so surely.

Webster has defined "profession" as "the occupation, if not purely commercial, mechanical, agricultural, or the like, to which one devotes oneself; a calling in which one professes to have acquired some special knowledge used by way either of instructing, guiding, or advising, or of serving them in some art; calling; vocation; or employment." That is loose enough and indistinct enough as a definition to permit any of us to discuss for some time what we are, and what we are training our young men to be. Now this dictionary goes on to say that "business" is "any particular occupation or employment habitually engaged in especially for livelihood or gain." Does that let us out? Are we so well endowed or so constituted that our enjoyment in building buildings (this calling in which we profess to have some special knowledge) is free of the habitual search for a livelihood, and (I blush!) perhaps even for just a little gain? Or are we

(Continued on page 104)

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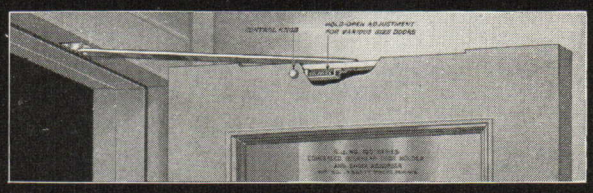
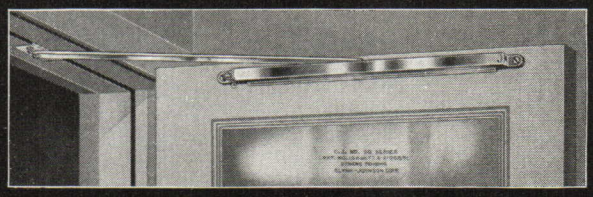
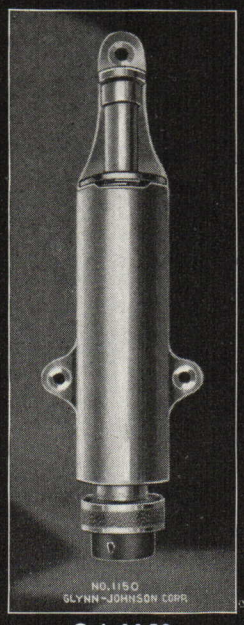
For more than a quarter century G-J Door Devices have been enjoying the unqualified recommendations of leading architects in specifications for public buildings throughout the country. Not only because of the fine quality and unvarying dependability of the products themselves, but also because the G-J line includes devices for ALL types of doors and their various controlling problems.



G-J 100
Concealed Type Overhead Door Holder



G-J 90
Surface Type Overhead Door Holder



G-J 1150
Plunger Type
Door Holder

G-J F-9
Door Holder
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G-J FB-13
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out of school

(Continued from page 102)

on some mystic borderline of practical idealism?

Our buildings are objects specific in nature, designed and built from the fruits of labor and the almighty dollar which pays labor in our capitalist society. That is as it should be. Not long ago I stood in the vast cavity at Marble, Colorado, in an almost inaccessible mountain wilderness, out of which had been extracted, block by block, the sophisticated stones of the Lincoln Memorial. A railway had been built, mills constructed, artisans employed, to solve the practical problem of converting Bacon's dream of a modified Greek temple into a dollar value reality. Somehow marble had to come out of the heart of a mountain, drop 8200 feet to sea level, and travel 1901 miles, to be converted into a building bought and paid for. The dramatic ruins of mill and quarry, today lost in a wild mountain fastness, close the deal.

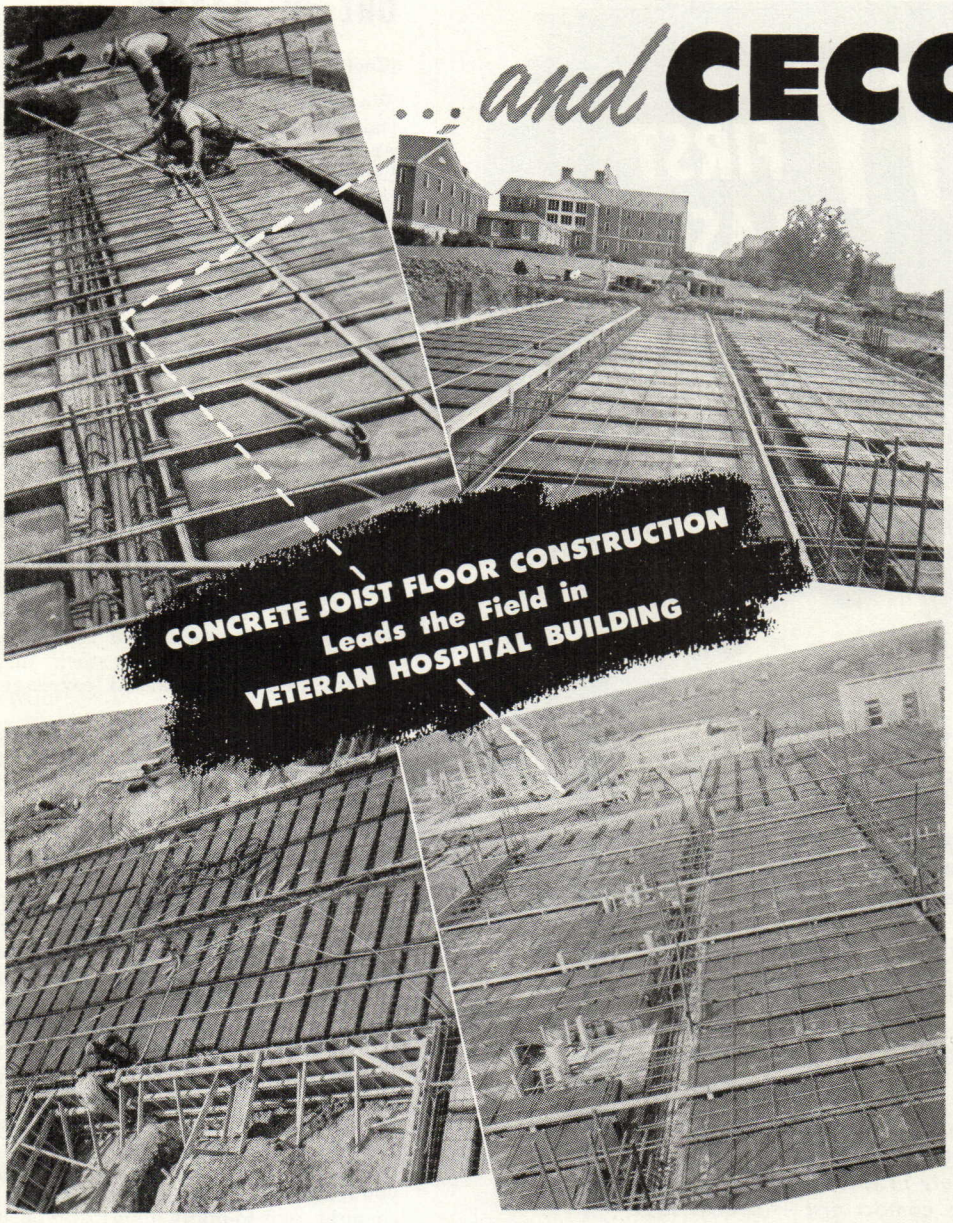
Let me remind you, in this fourth column, that in the first I told you I would be discussing constantly the question: *education for what?* At present the architect lapses into schizophrenia in his conflict between two basic urges of design and business. His schooling in all likelihood did not include simple bookkeeping and accounting—not even five hours. He may have had a course in professional practice, which explained in detail the standard A.I.A. contract document, but did not go into elementary business law or the law of contracts for the state in which he will practice. A very few schools are teaching estimating, but usually only quantity cost estimating and not quantity and labor cost estimating, as in Gordon Tamblyn's comprehensive system. I also wonder how many schools are investigating the cost of mechanical equipment, installed. Then there are the common problems of all businessmen: income tax; unemployment insurance; social security; fire, liability, and property insurance; rent; office overhead (including equipment); secretarial costs; travel; and organization membership.

The fact that there is a discrepancy between architectural practice and schooling in matters of business is clearly illustrated by many recent issues of the bulletin of the A.I.A. Time and again, this bulletin has stated that business methods for architects are badly needed. As an example, the November 1948 issue discusses accounting methods, subcontractors' bids, and liability and disability insurance. Insurance has been a major subject in the bulletin for some time.

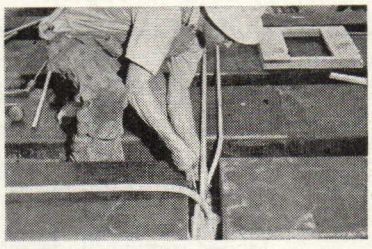
Students often ask me why so few architects do inexpensive small houses or, conversely, why so few of a city's small houses are done by architects. The answer always is that the headaches involved in small house design—the office overhead in the average firm—cannot be met by six percent or even ten percent of the house cost. Also, that the average client for a single house does not feel that he can afford a six percent charge against his house; and the average speculative builder, who perhaps builds a maximum of 40 houses a year, feels the same way. Just the other day, Denver's Manager of Revenue, who is in charge of reappraising the city, informed me that it is seldom today that architects are responsible for houses in this city costing under $15,000 to $18,000. Since the major housing need is in the $5000 to $8000 bracket, and $10,000 to $12,000 now is most commonly under construction, the architect is a very real luxury to the house-hungry public. Hence those who deal in stock plans effect a substitute—an artificial insemination of architects' ideas. We have here a common, concrete example of the effect of business costs today on what at one time in our history was considered a logical field of architectural endeavor.

(Continued on page 106)

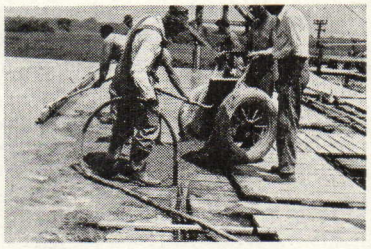
...and CECO is first in Service



Erecting steelforms on open wood centering preparatory to placing reinforcing steel. Use of steelforms mean a saving in lumber.



Placing electrical conduits in a bridging joist. All conduits are thus placed, eliminating necessity of extra space for service ducts.



Concrete is being poured here over the steelforms and around the reinforcing steel. The final step is removal of steelforms and lumber after concrete sets.

As a building method, concrete joist construction leads the field in the Veteran Hospital Building program. Here, as in other buildings, strength and durability are of prime importance. Concrete joist construction meets the need in supplying rigid, strong floor constructions which are fire resistive and sound proof. Construction costs are low since steelform jobs require less concrete, less lumber, less labor. Steelforms are used over and over again at a nominal rental charge.

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out of school

(Continued from page 104)

We are not teaching the compromises that the situation demands. While the architectural periodicals constantly publish small houses done by architects, these are seldom, if ever, low or medium cost unless one or more of the following business actions have taken place:

(1) Acceptance of a business loss or *no* profit on the part of the architect.

(2) The sale of plans and elevations to a builder, contractor, or manufacturer, who builds and supervises the construction. Architect's name is used in promotion.

(3) The sale of plans and elevations to a popular periodical. Architect's name is used in promotion.

(4) Large-scale or group financial plans, usually with mortgage insurance, and stock or standard plans and elevations. Usually in collaboration with a real estate firm, which often absorbs office overhead into sale or rental costs. The architect may buy stock in the project in full or partial coverage of percentage.

(5) The employment by a building, contracting, or real estate firm of a registered architect as member of its staff (on a salary instead of a percentage basis) with the express purpose of house design at low architectural cost per unit.

There are innumerable combinations of such common business compromises. Mind you, I neither praise nor blame any of the above; but I welcome debate on their "professional" aspects, since they are substitutes for the architect's self-imposed restrictions against contracting responsibilities. These are, to the best of my knowledge, common practice and *hors curricula* (Low Latin, but not what you think).

Now, to the average high-principled youngster of the classic school of thought, and to many a starving oldster, compromises with business such as these are not to be considered; or, if considered, not for open conversation. That architects actually compete for compromises with their own rules is practical expediency but not quite *de rigueur* (Beaux Arts lingo for "not quite cricket"). We certainly do not talk about them in school.

●

Not long ago I was talking to a well-known architectural educator, who attacked me on the grounds that I was spreading architecture too thin; that city planning, interior design, landscape architecture, stage design, and other standard fields of university training had nothing to do with "architecture." In his school they just taught "architecture." Certainly any business training was outside the pale altogether. And yet, in the university in which my friend teaches is an outstanding college of business administration, which could

(Continued on page 108)

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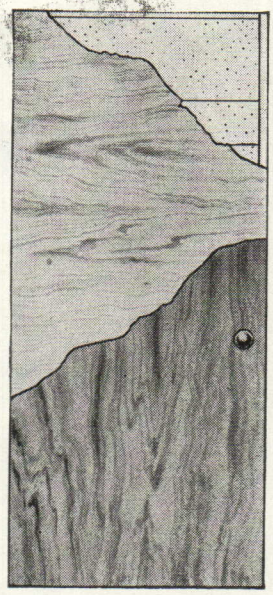
You'll find many applications where one of these types is just what the client ordered



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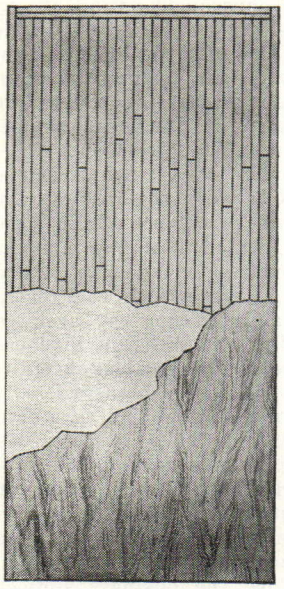
Utilizes the same core material as the Weldwood Fire Door but edge bandings are not fireproofed. Recommended for locations where a labeled door is not required. Standard thickness: 1¾". Also available in 2¼", 2" and 1⅜".



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out of school

(Continued from page 106)

prove of invaluable service to his school and the future of his men. It is not a question of thinning out architectural training but of rounding it out.

Since the architect has such difficulty in reconciling his art and his business, perhaps he can't take on many more ideas. Maybe the hothouse and the ivory tower are his home and workshop after all. Maybe Dr. Giedeon and the 33 signators of the 1947 Resolution on Architectural Education to UNESCO were also wrong. For those of you who have not read *Building for Modern Man* by Thomas H. Creighton (plug), I will explain that as a result of the two-day conference on architecture (part of the Princeton Bicentennial Celebration) the conferees of the symposium on education sent a petition to UNESCO under Dr. Giedeon's leadership. This resolution, urging the UNESCO to set up a committee "to draw up a plan for a fundamental reform of training for architects and planners in all countries," stated in part:

"We desire to state in particular that any new program must include development of knowledge of social, economic, and emotional factors involved as well as technical competence—for it is through the understanding of the interrelation of these that the architect and planner of our time may be properly equipped, not only to make his special contribution more significant, but further to equip him for essential collaboration with other specialists in allied fields."

Later the C.I.A.M. met in England, with an observer from UNESCO on hand, and discussed the problem. I've lost track of subsequent action, if any. At all events, the words "economic factors" in the original resolution might, but probably do not, include the training of sound business procedures and the development of business acumen and judgment in the "profession."

Now you may wonder what connection there is between the resolution to UNESCO and the subject of this practical sermon, which is on the inclusion of business courses in an architectural curriculum. I agree with the resolution; but, knowing that the architect is proverbially an indifferent businessman (historically the greatest exception being Jules Hardouin-Mansard, who became a multimillionaire as chief architect for Louis XIV), it seems wise to point out that, to develop his abilities in the wide but indistinct prospects of the resolution, the architect must be able to make a living. If the architect is to be the great man we would all like him to be, the business subjects mentioned above, and the acumen and ability to adjust practice to business necessity, should be no more serious a problem in the office than the turning out of a good set of working drawings.

(Continued on page 110)

Question:

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Answer:

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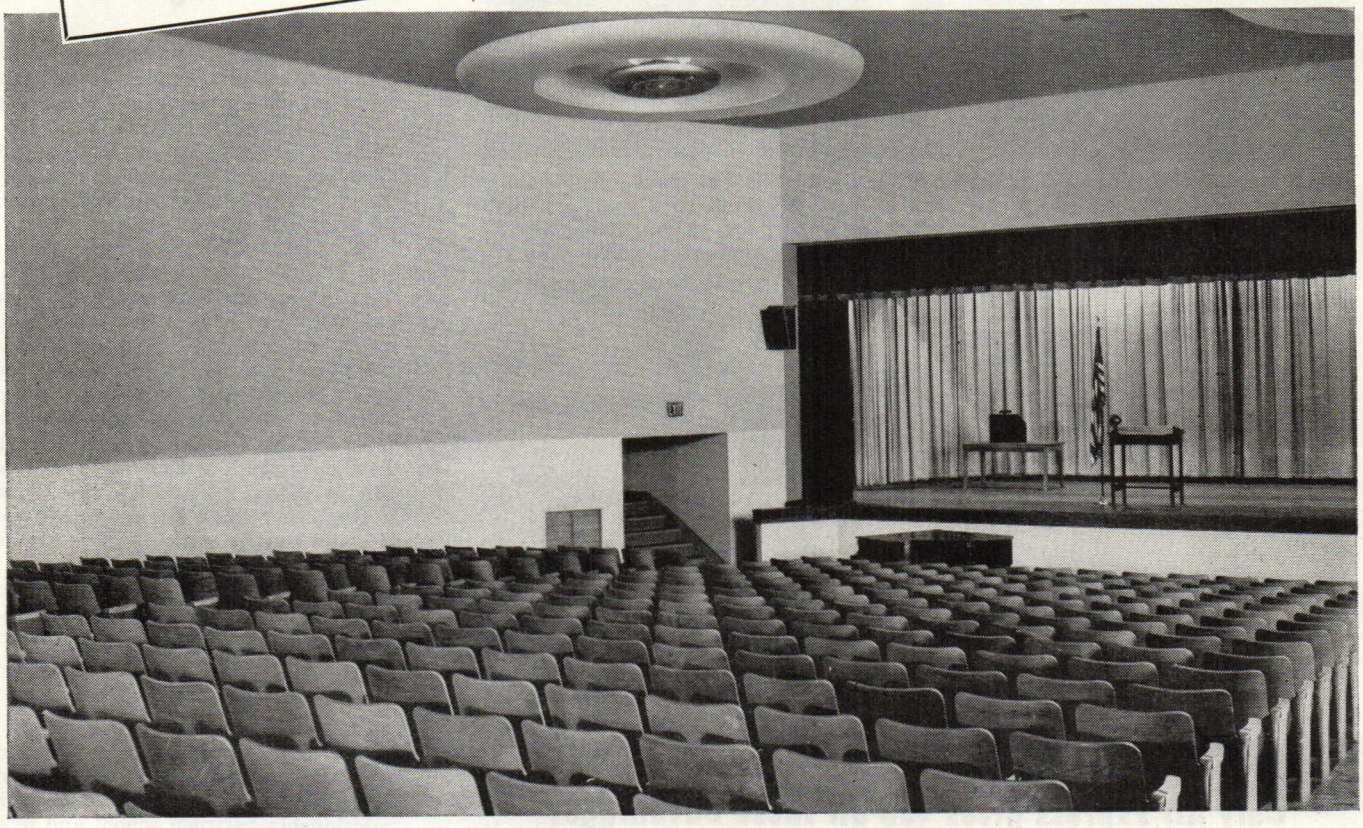

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out of school

(Continued from page 108)

A training in sound business practice becomes another tool in the fabrication of sound design. Making a livelihood by itself is not architecture—but you cannot make architecture without a livelihood. I am therefore recommending for the serious consideration of educator and practicing architect the study of the facts of life. If you don't know what I'm talking about, you probably went to an architectural school.

●

Letters to the Schoolmaster. I enjoy receiving letters about the column—even adverse comments—because they show a lively interest in what we are talking about. Of course, the most pleasure comes from some idea stimulated by the column and expanded by a correspondent.

You know, I was trained as a designer. My wife being Phi Beta Kappa corrects my spelling, which is an excellent use of a Phi Bet. Hers also has been a disillusionment. Anyway, writing isn't easy for me. I like talking better, so if I could sort of keep up an easy running conversation with people, I wouldn't be constantly thinking about how to write like Emerson or Chesterton or Mumford and all the litterati.

One other thing I want to ask you to do, and that is write in suggestions on topics for me to cover. The more you write, the easier my job will be and I can spend more time with my brats in school, which I should be doing right now.

●

John Rannells, New York, in a recent letter commenting on this series, wrote, "The crux of the trouble is the lack of relationship between school and profession. Imagine such a situation in medicine, where the profession rules the schools with a strong hand, or law, or even chemistry, where the leading researchers are strong in the schools. Architects are indeed backward—in education and in what should be their special field—the community."

Whether or not the need for reform in architectural training is apparent to everybody in architecture, it would be obviously unwise for the practicing architect to move in on the schools to set up the relationships Rannells mentions. The question at the moment would be who should lead, the halt or the blind?

In these exploratory articles on the complicated subject we are treating, we are feeling our way along the tortuous and dark corridors of today's architect's mind. Using practice as it is in both school and office, we are trying to reconcile the aims of both, and then to search for higher objectives than are to be found in either.

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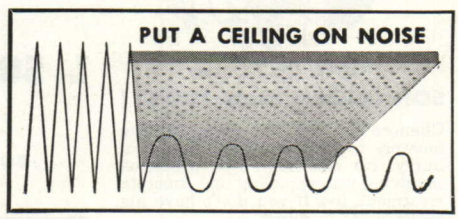

it's the law

By BERNARD TOMSON

On-the-spot investigation and discussion with local practicing architects, on the occasion of the writer's appearances as speaker before the Kentucky and the Cleveland Chapters of the A.I.A., brought sharply into focus the effect that imperfect licensing requirements have on the practice of architecture and the income derived therefrom.

In Kentucky, although it is provided that ". . . no person shall practice architecture without having a license, . . . it being the purpose of this chapter to safeguard life, health, and property, and to promote public welfare," the statute also states that "Nothing . . . shall prevent *engineers, mechanics, or builders* from making plans and specifications for buildings . . ." This has had the fantastic result of permitting anyone to practice architecture. Accordingly, only a small number of architects are registered in Kentucky, while large numbers of unlicensed persons practice architecture.

In Ohio a similar situation exists. There, too, although the statute provides that no one shall practice architecture without a license, it is further provided:

"This act shall not be construed so as to prevent persons other than architects from filing applications for building permits or obtaining such permits providing the drawings for such buildings are signed by the authors with their true appellation as engineer or contractor or carpenter, et cetera *(sic)*, but without the use of any form of the title architect, nor shall it be construed to prevent such persons from designing buildings and supervising the construction thereof for their own use."

This provision, although not quite as broad as the Kentucky section, would permit a contractor, a carpenter, or an "et cetera," to draw plans where he files the application for a building permit.

●

The Ohio statute has been the subject of litigation. It is now fairly clear that in Ohio the "et cetera"s may not practice architecture generally, but are specifically permitted to practice architecture in relation to those projects which they themselves will construct. Even this result was not easily obtained. The statute was interpreted this year by the Ohio Attorney General. Under the procedure followed, a public official posed a problem to the Attorney General as follows:

"J.W.L., who is skilled in drawing plans and specifications for erection of buildings, drew and furnished plans for the erection of a public building at the Guernsey County Home. J.W.L. did not contract to supervise the work of erecting the building. There was no express agreement for compensation for his services in making the plans and specifications. J.W.L. is not and has never been the holder of a certificate of qualification to practice architecture in the State of Ohio under Section 1334-9 S.C., but he is a contractor and is skilled in drawing plans and specifications for the erection of buildings. He submitted to the County Commissioners of Guernsey County, Ohio, a bid for the erection of the building in question but the contract was awarded to another contractor at a lower bid. J.W.L. has presented a bill to said County Commissioners in the amount of $600 for his said services in drawing and furnishing said plans and specifications.

(Continued on page 114)

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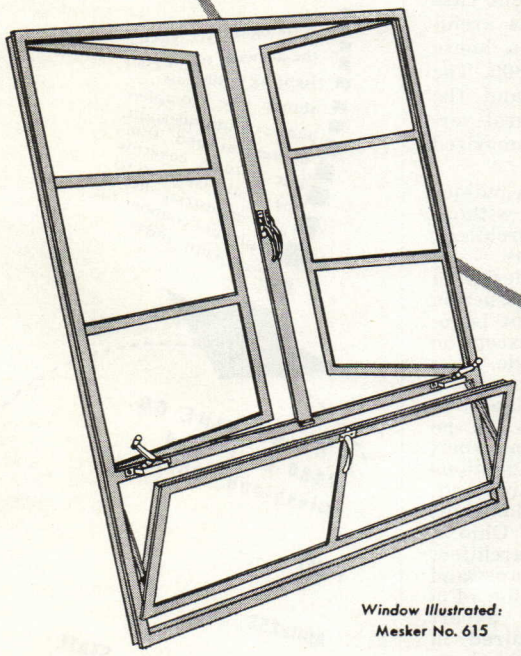

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it's the law

(Continued from page 112)

"By authority of 380 L. A. 449, Maxfield, App. v. Bressler, it would seem that J.W.L. could collect from said Board of County Commissioners the fair and reasonable value of his services for drawing and furnishing said plans and specifications."

In his answer, the Attorney General held that the contract to pay for design (as distinguished from design plus construction) was illegal and void; and that the contractor could not, therefore, recover from the Board of County Commissioners. He cited also another Section of the General Code of Ohio, which requires that a governmental building be designed by a "competent architect," which he held was a licensed architect. The language of his reasoning indicates a step forward. He said, in part:

"This section (1334-17) prohibits such practice by those other than a certificate holder. That the legislature has the right to prohibit such practice has never been seriously questioned, since such practice demands learning, skill, and integrity; and it is within the police power of a legislature to regulate such practice, because the plans and specifications are for a building which may be used by the members of the public, and as such it is a business involving the public safety and health, and therefore a matter of public policy."

This decision, however, is in strict contrast to another holding: that emergency veterans' housing was not a "public building" and therefore was not required to be designed by a licensed architect.

•

The law as it apparently exists in Ohio was also summarized in a recent case where builders, not licensed as architects, designed for an owner a house with an estimated cost of $12,800. The owner decided not to build and the builder sued for the architectural services rendered. The Court summarized the Ohio law as follows:

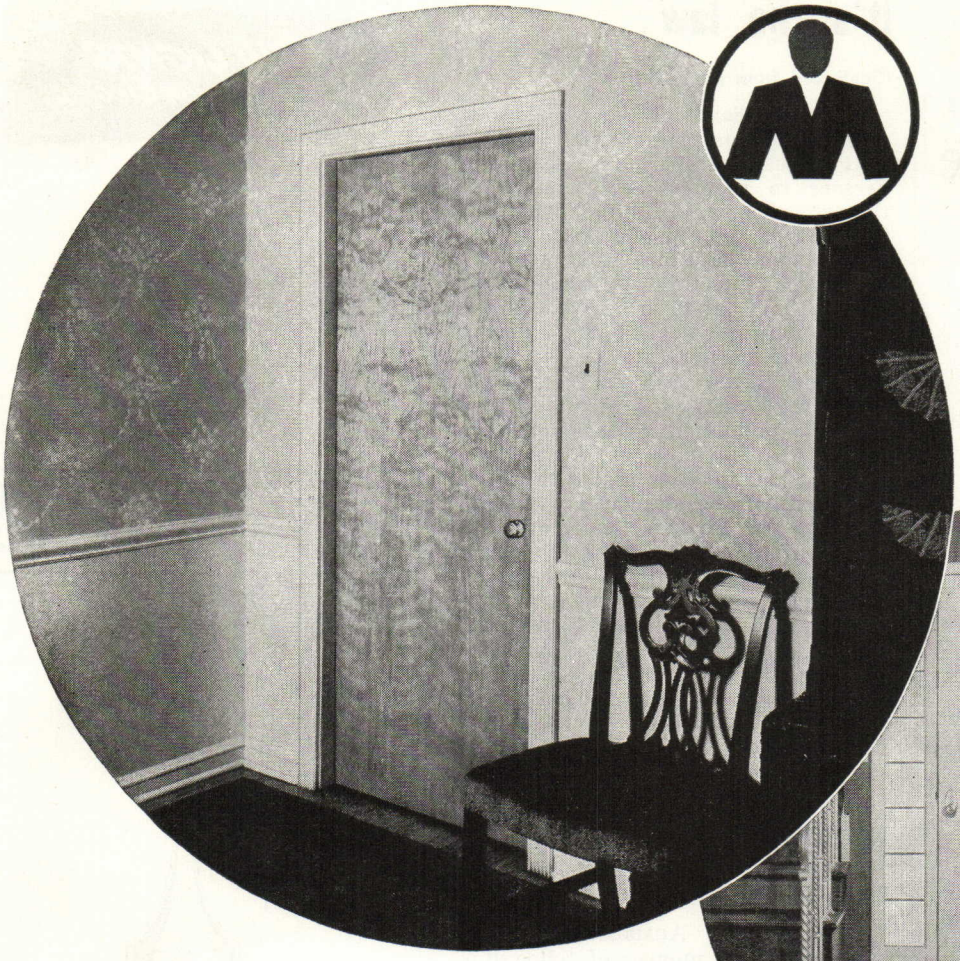
"(1) An owner may employ a builder to construct a building for him without the services of a registered architect, there being no such requirement.

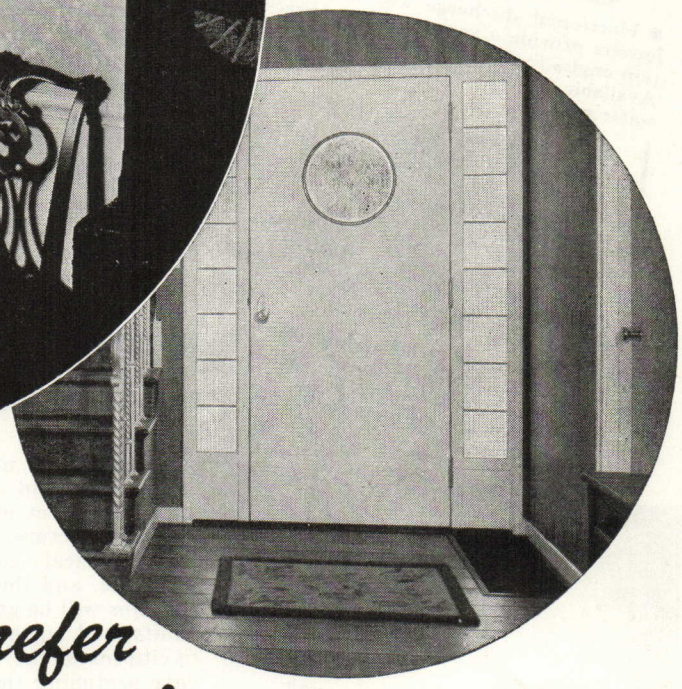
"(2) That an owner may design a building and supervise the construction thereof for his own use without being a licensed architect under the exception in Section 1334-17, General Code.

"(3) That a builder who is not a registered architect may contract to furnish plans and specifications for the construction of a building for an owner, provided the plans and specifications are prepared by a registered architect.

"But the court is of the opinion that, under the laws of the State of Ohio, a builder who is not a registered architect may not prepare complete plans and specifications for the construction of a building for another, when expert knowledge and skill are required in such preparation; and that such laws apply to persons engaging in single isolated architectural transactions as well as persons attempting to practice architecture as a business or profession."

(Continued on page 116)





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it's the law

(Continued from page 114)

The significance of the existence of statutes such as those discussed cannot be overlooked. It permits incompetent persons to practice architecture and thus to jeopardize "life," "health," "property," and "public welfare." In those states where this situation exists, the local architectural organizations must be militant to bring home to the public and to the legislators the danger inherent in such statutes on the books. In other states, such as New York, where the practice of architecture is generally prohibited to those not qualified, it is equally important for the local organizations to see to it that the letter and spirit of the statutes are scrupulously obeyed. The practice of architecture by incompetents bilks the public and cuts into the livelihood of the architect, who has spent many years preparing to practice. Such a situation should not be tolerated by architects and, if properly brought home to the public, will not long be permitted to exist.

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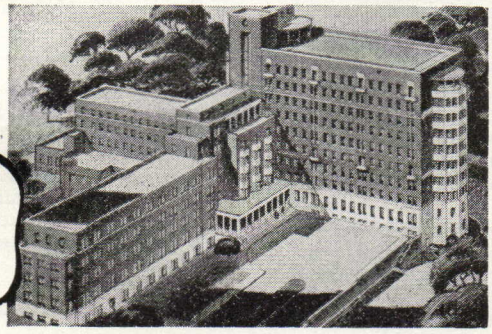

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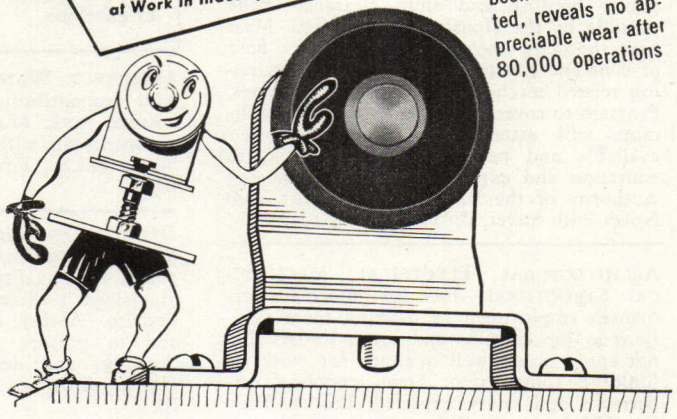

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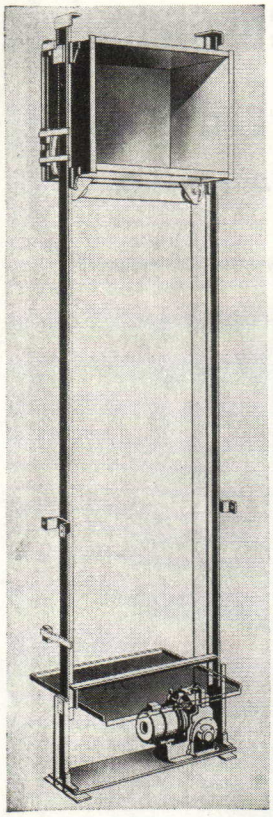

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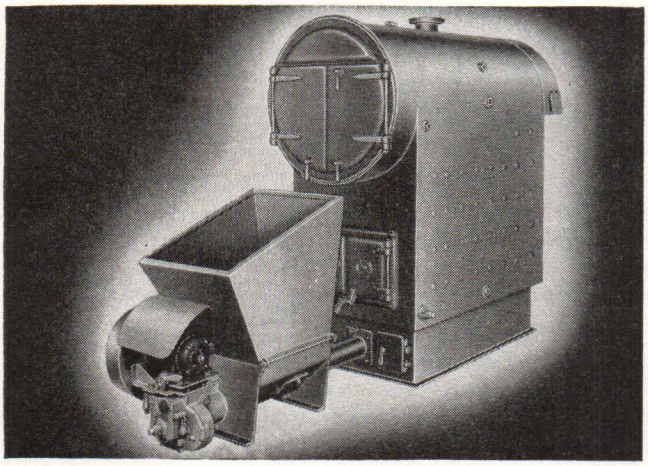

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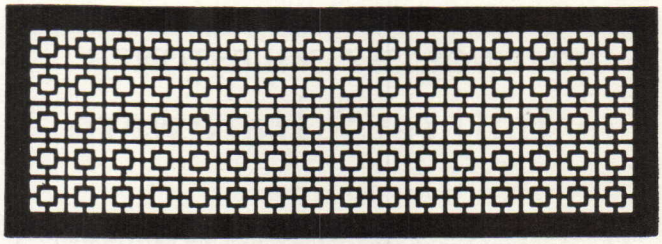

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P/A Selected Producers' Bulletins

● Permalite, the lightweight plaster aggregate made of perlite expanded by the Great Lakes Carbon Corporation, is now being employed to fire-protect all of the structural steel roof supports of both the Senate and House Chambers in the Capitol, Washington, D. C. Two carloads, or 8000 cu ft. of aggregate, will be used to complete this fireproofing. The combined thickness of the scratch coat over metal lath and the brown coat will only be 1¼".

● Among the display effects possible with the patented inside-serviced marquee developed by Poblocki & Sons, Milwaukee (see June '49 P/A, page 100) is the use of a stereopticon machine to project stationary or moving images onto a section of the attraction board. Trailers of future programs can also be shown, exactly as those on the indoor screen.

● Ex-trand, a new, improved corner lath reinforced with an extra steel strand at the corner, not only provides greater strength where most needed, but also its smooth-edge construction prevents cuts and injuries to the hands. Available in 2" x 2" and 3" x 3" sizes in 96" lengths, Ex-trand is packed in bundles of 600', fully protected for shipment and storage. Manufacturers are the Wheeling Corrugating Company, Wheeling, West Virginia.

● The increase of sheet, plate, and strip aluminum shipments is reflected in figures released by Donald M. White, Secretary of the Aluminum Association. In August, shipments totaled 47,892,491 pounds, compared with 41,711,932 pounds in July. Production of primary aluminum totaled 104,009,815 pounds during August, as against 111,553,030 pounds the previous month. Preliminary estimates of shipments for September indicated a continuing upswing, reported White, and the October orders were expected to show a decided improvement over those received in September.

● "De luxe cool white" and "de luxe warm white," General Electric's new fluorescent lamps, have been developed to compliment human complexions and to bring out the "full beauty" of all colors. The new lamps have been made possible by the development of a special fluorescent powder. Designated as "DR" phosphor, this product was developed to eliminate the color-rendering deficiencies that have characterized fluorescent lamps in the past. "De luxe" lamps will be preferred in living areas where colors and complexions should appear their best.

(Continued from previous page)

● For the first time an art museum and a merchandising center have cooperated to present to the public the best examples of modern design in home furnishings. The Merchandising Mart in Chicago, world's biggest wholesale buying center, and New York's Museum of Modern Art announce a joint program of three annual exhibitions; the first showing, to be called "Good Design," will open in the Merchandising Mart on January 16. Additional selections will be shown in June, while in November each year a comprehensive exhibition will open simultaneously in the Museum of Modern Art in New York and in the Merchandising Mart based on the year's previous displays. Both showings will remain on view through the end of the year. All home furnishing designers, manufacturers, and distributors are invited to send photographs and drawings of their work to: Edgar Kaufman, Jr., Director, "Good Design," Museum of Modern Art, 11 W. 53 St., New York 19, N.Y. Submissions should be made not later than three weeks before each market opening.

● The U.S. Rubber Co. has announced production of a new smooth surface, plastic coated fabric designed for upholstering home, office, hotel, and hospital furniture. The material, known as Royal Grain Naugahyde, can be cleaned with soap and water; it is flexible and easy to tailor around curves, corners and edges. It has high resistance to wear, and is not affected by alcohol, oils, grease, acids, and alkalis.

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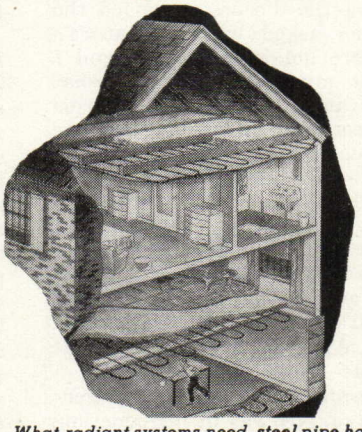

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P/A P.S.

CARNEGIE INSTITUTE MUSEUM'S DEPARTMENT OF FINE ARTS, with the sponsorship and active assistance of the Pittsburgh chapter of the American Institute of Decorators, is conducting an excellent seminar series on design matters, open to the general public and attended by as many as three or four hundred people. I happen to know about it because I was asked to go over and speak about the relationship of the decorator and the architect.

When it's possible to get attendance of that sort, indicating a thirst for knowledge on the part of the public, it seems to me to indicate that other groups in other cities could do the same. I don't mean to imply that arranging a serious and worthwhile lecture series is an easy task. A great deal of work and planning and arranging has gone into the Pittsburgh enterprise. But I'm sure that it is going to pay off for the designers in that area.

●

DURING THE COURSE OF MY TALK I SAID SOMETHING ABOUT SYMMETRY, and pointed out that very few design problems called for a symmetrical solution. During the discussion period the question was asked whether nature's products were not symmetrical; and I replied that my impression was that people, for instance, have two arms and two feet and two ears, but one arm is usually longer than another, and the two profiles of any individual are markedly different. Then I went on to say that architecture, in any event, didn't grow in that same way, and required reasonable solutions to activities and ways of life, through which it was fairly impossible to draw a major axis. After the meeting, Lamont Button came up to say hello, with a friend. "I want you to meet this gentleman," he said by way of introduction. "He's symmetrical." You just can't win an argument with that man around.

●

SOME OF YOU MAY REMEMBER that last December (exactly a year ago; how time does fly!) P/A ran an editorial which we headed "Architecture —Not Style." Our theme was that too much talk was going on about various "styles" in modern architecture, and not enough good work being accomplished. It's been extremely interesting to watch the way that simple statement (applauded by most architects, condemned by most critics) has been kicked around since then. *The Architectural Review,* that excellent English publication, ran a most thoughtful piece by Lewis Mumford, in which he said, "Contrary to Mr. Thomas Creighton's position in PROGRESSIVE ARCHITECTURE, the modern architect, in abandoning his long, tedious flirtations with historic styles associated with different cultures than his own, has not earned the right to disregard style entirely . . ." My only argument with Mr. Mumford, I think, is in the definition, or the understanding, of the word "style." Mumford's turn of phrase which has resulted in the adoption of *Bay Region Style* as a design tag was, I think, unfortunate. I've just had a visit from a good designer who told me that he'd finished a house recently that he thought we'd like to publish—"quite Bay Region in its conception." It's built in the center of Ohio.

●

ERIC DE MARÉ ALSO DECRIED OUR EDITORIAL in the *Review.* To him it "sounds most honest-to-goodness until one begins to pull it apart." Then he begins to object to it because "pure materialism can never be enough." *Magazine of Art* republishes Mumford's piece in its current issue, and finally, in the A.I.A. *Journal* for October, John F. Harbeson takes a crack at the same editorial (written, he says, by "one of our bright young magazine editors;" thank you, Mr. Harbeson—it's been some years since I've thought of myself as either bright or young) because we said that "art is not put into architecture self-consciously." We were depending on Eliel Saarinen as authority for that statement, but I'll take the rap for it.

I think both Mr. de Maré and Mr. Harbeson are, for quite different purposes of their own, misinterpreting the editorial statement. They both know, I am sure, that we were not taking a stand against beauty, or symbolism, or monumentality, or distinction, or stylish attainment. All we were saying was that an architect, sitting down to solve a problem—the creation of the best possible environment for certain human activities—cannot begin by thinking in terms of style or beauty. He has social and technical problems to solve, and by and large the design professionals are solving them rather poorly. It is an easy way to duck the basic responsibility when we immediately begin to talk of symbolism and the difficulties of "expressing" a "confused, disharmonious, unstable, schizophrenic and transitional society" which de Maré says "cannot possibly produce a spontaneous, harmonious style."

I KNOW OF TOO FEW HOUSES IN CENTRAL OHIO WHICH ARE DESIGNED PROPERLY for the climatic conditions there. When I have seen a few, then I'll be willing to distinguish between the various styles which may be adopted as symbols and the various degrees of beauty which may be "added" to the design. But I'd be willing to bet that when those houses appear which are really good solutions to the problem, they will already have begun to provide their own stylish beauty, innate and harmonious and spontaneous rather than "put in" and self-conscious.

●

BUT THEN, OF COURSE, SOMEONE WILL TAG THEM OHIO CENTRAL STYLE, the Museum of Modern Art will hold a symposium to determine their relation to the International Style and the New Empiricism, and designers in Texas will begin copying them.

●

A NUMBER OF ARCHITECTS ARE CONCERNED ABOUT CONTEMPORARY FURNITURE AND FURNISHINGS. Those who are not located in the few big centers where chairs and tables and lamps and fabrics can be shopped for, find it difficult to advise clients, either as an additional professional service or simply to make sure that buildings they are proud of are well furnished.

One furniture company—with a good line of pieces — asked us recently whether architects around the country would want to deal with them directly—at professional discounts—rather than advising their clients where to reach normal retail outlets. Several other manufacturers are already operating in this way. I suspect, although I have no figures to back me up, that many designers of buildings are today providing decorating services, at least to a limited extent.

Several architects have opened shops of their own, from which they can provide their clients with well-designed articles, and at the same time acquaint the community at large with pieces of furniture and other accessories that are not yet widely distributed. For instance, Long & Thorshov, architects, now operate *The Modern Center,* a furniture and furnishings store in Minneapolis. It strikes me that this should be a welcome service for other architects in the same area. I doubt whether the same attitude should prevail toward this activity as we adopt with regard to an architect's business interests in other segments of industry. With knowledge of, lay interest in, and ability to purchase modern furniture and furnishings almost nonexistent in many areas, it seems to me that the architect has a responsibility which goes beyond mere advice. Any comments?

Thomas H. Creighton