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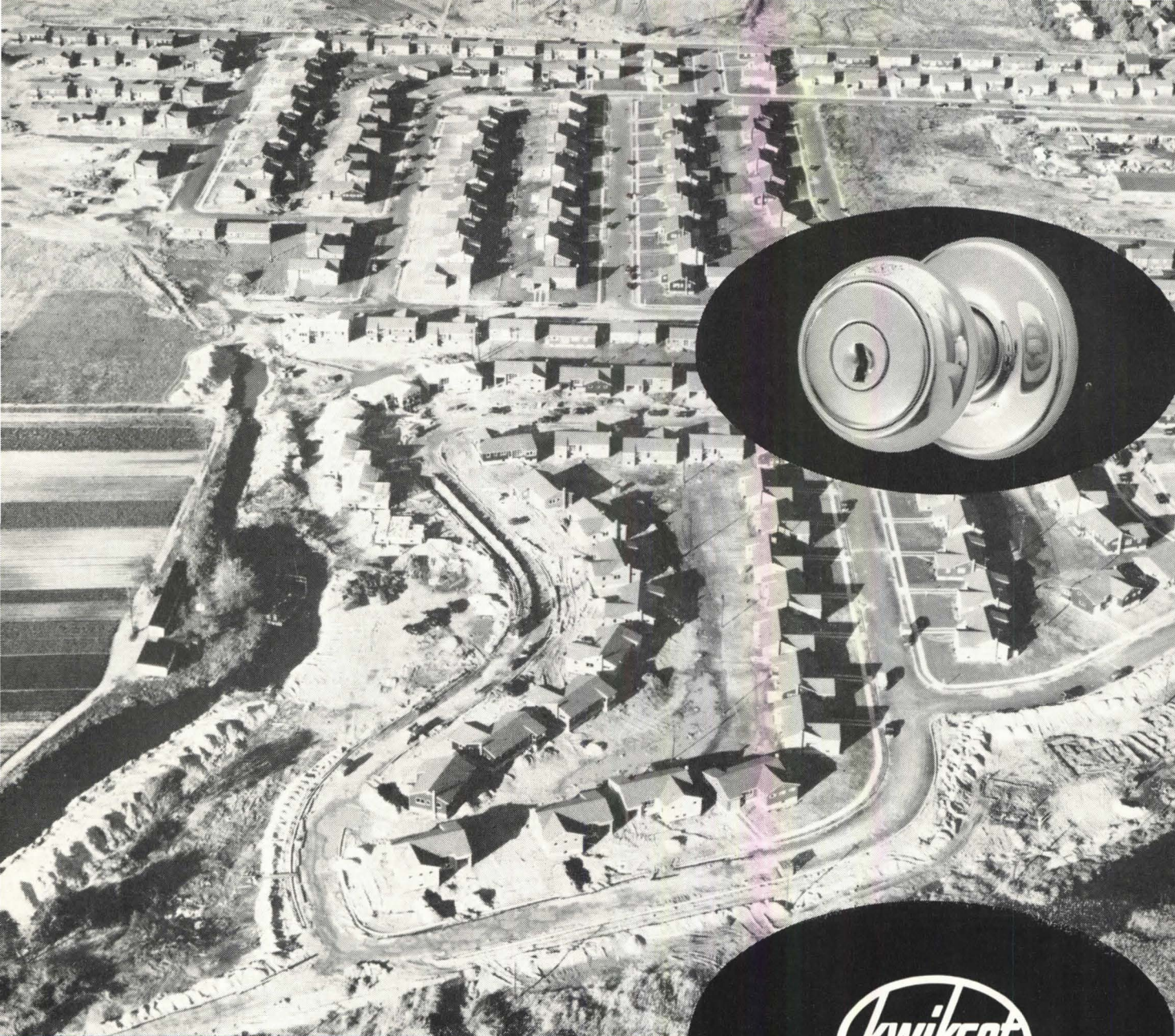
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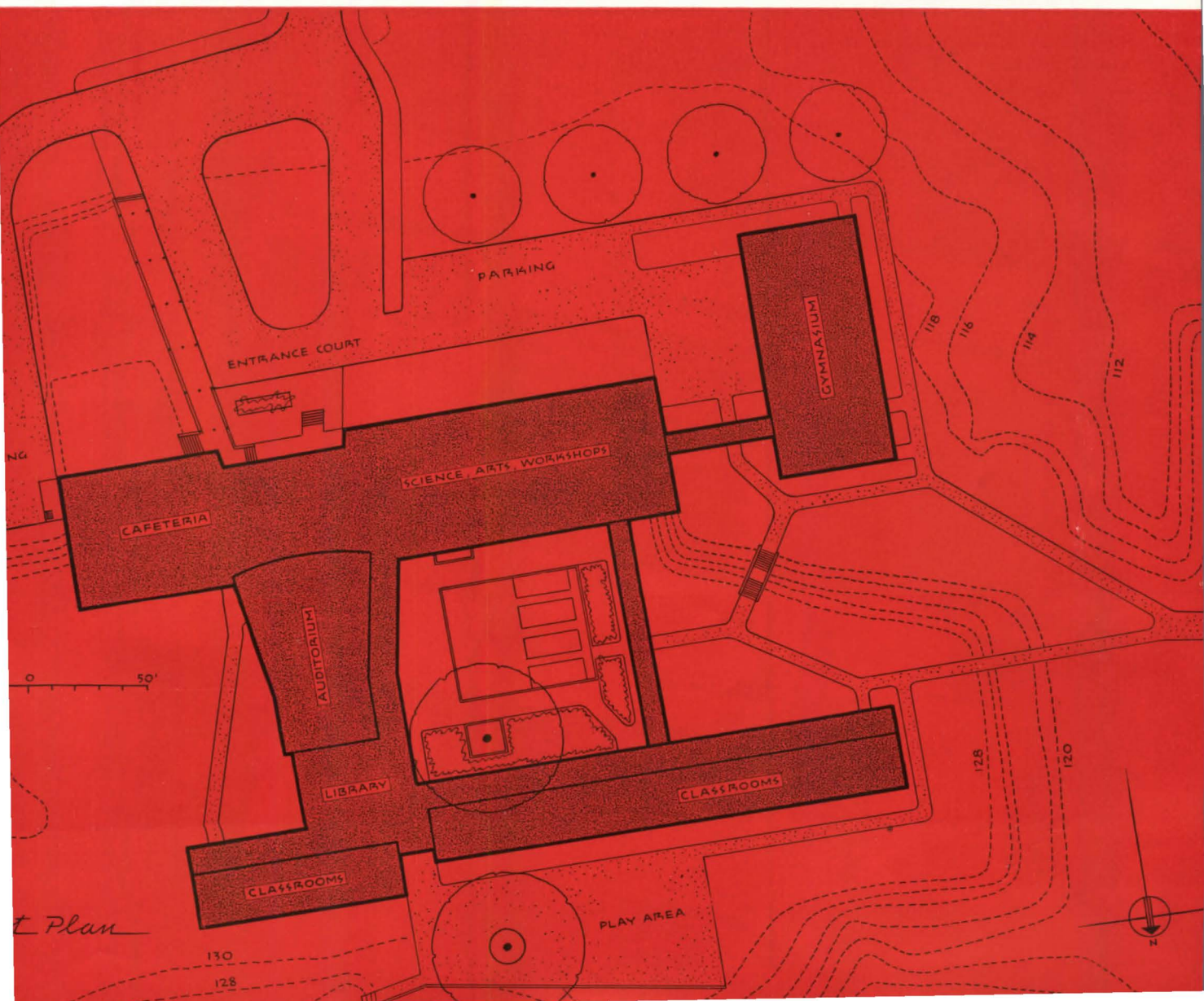
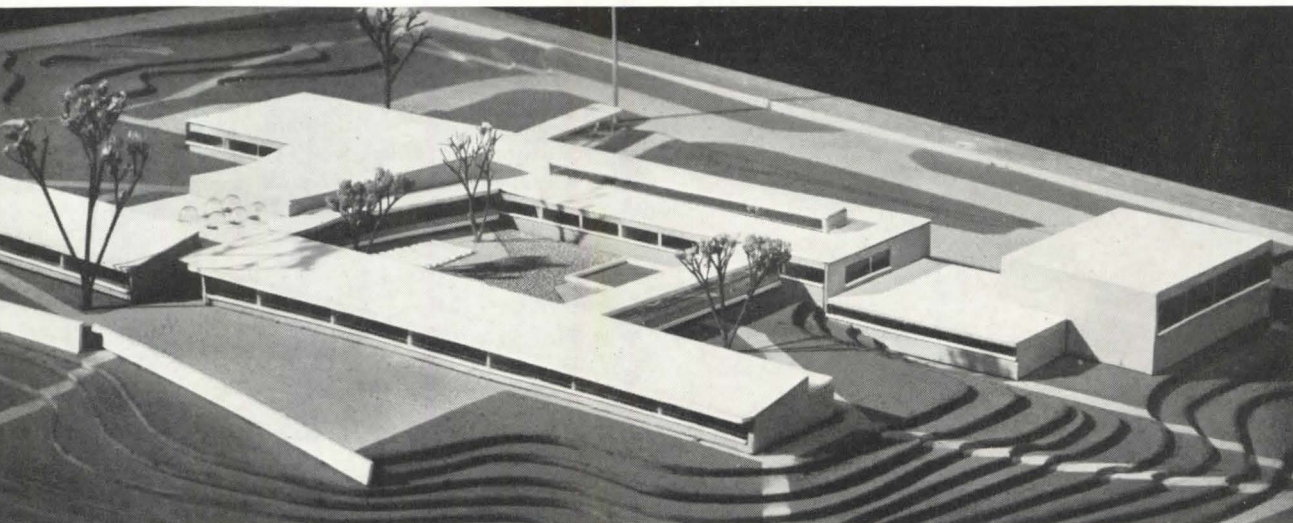


PROGRESS PREVIEW

high school

Viewed from the south side, the model (below) of the new junior high school for Attleboro, Massachusetts, designed by The Architects Collaborative, Cambridge, reveals emphasis on openness of the plan.

Classrooms are behind the glazed walls facing the patio and the paved play area, enjoying a view of the countryside from the hilltop site of the school. Main entrance to the school and also the gym-



PROGRESS PREVIEW

(Continued from page 15)

The plan of the Attleboro junior high school was developed from a competition drawing for an elementary school (left) that won a prize for T.A.C. and brought the architectural group to favorable attention of the Attleboro school authorities.

Model: TAC

Photo: Robert D. Harvey

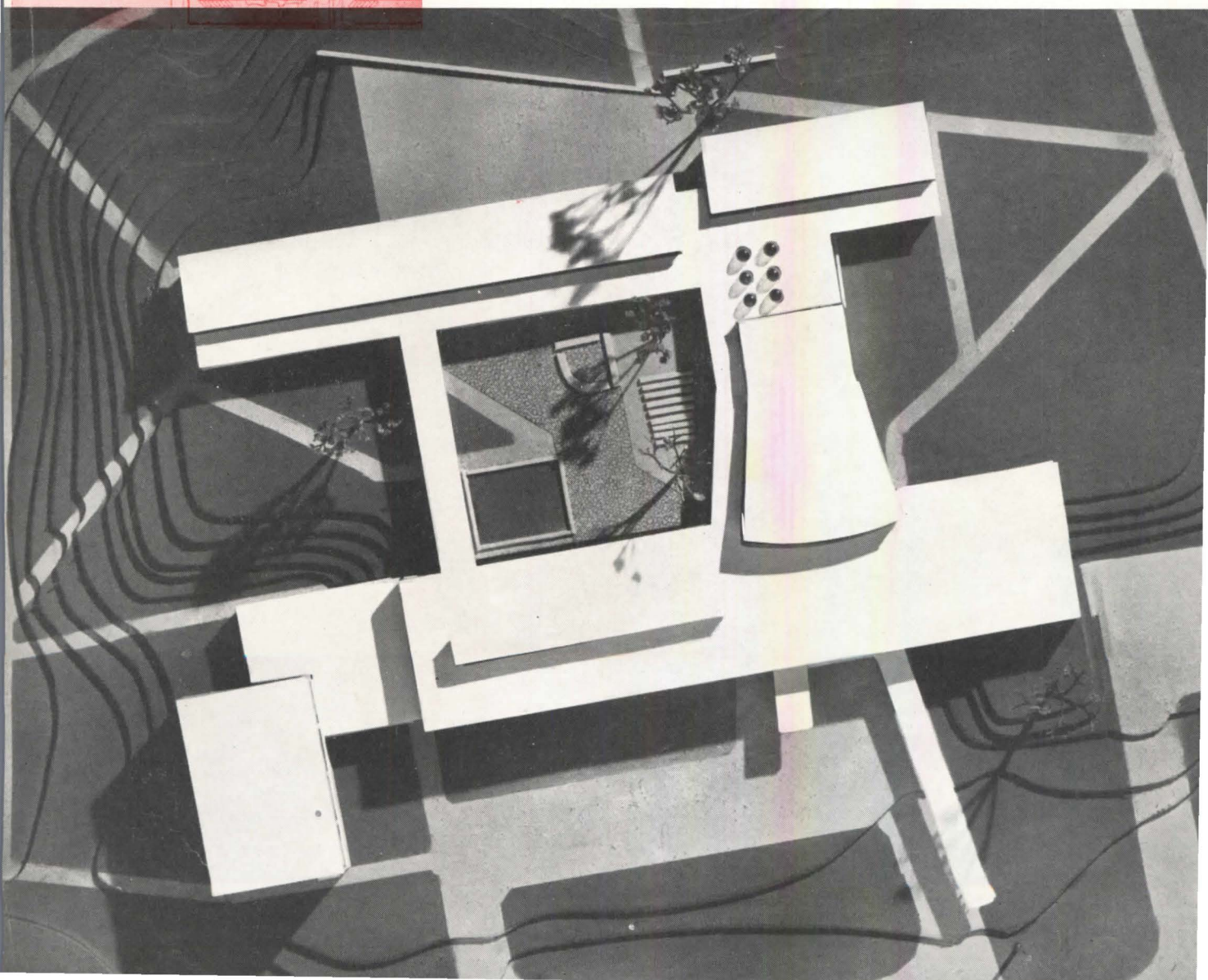
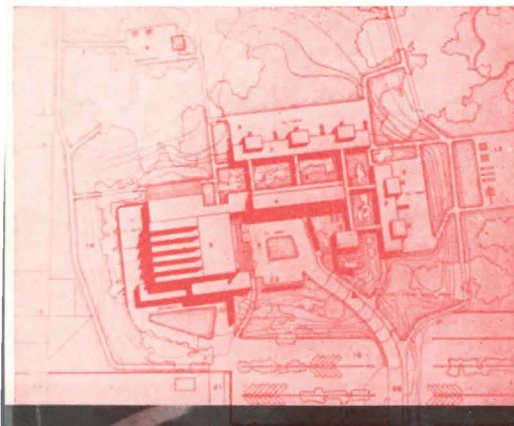
nasium, to which easy access is desirable, are located on the north side. The auditorium is located between the two major blocks of the school—the classroom and library wing along the south side and the entrance wing containing science and art rooms, workshops and the school cafeteria, as well as offices.

Walter Gropius, head of the architectural group, intended the school to exemplify progressive design for a well rounded modern school program. As the \$800,000 structure occupies a pleasant suburban location, it seemed natural to open the building to the adjacent fields and to spread the units along the low hill. The school, in use this term although

not entirely completed and furnished until this month, accommodates 450.

There are nine regular classrooms (three each for mathematics, English, social studies). These are contained in one wing, lighted by clerestory as well as the glass walls on the south side. In the same wing, the school library is lighted by plastic bubbles (*model, below*).

The stage of the adjacent auditorium is large enough to seat 150 persons, thus usable for music practice. In general, workshops, arts and science rooms grouped in the north wing near the gymnasium, are remote from the classrooms and library. Storage space has been provided for each department of the school.



As a larger amount of aluminum sash is being specified each year, there is an increasing demand for aluminum window data. To fill this need, the following compendium of technical information and design data has been assimilated for P/A by the Technical Committee of the Aluminum Window Manufacturers Association. Through the work of this committee, the A.W.M.A. has become the first sash group to establish specifications based on performance standards. These specifications are available on request from the Association, 74 Trinity Place, New York, N. Y.

aluminum windows—selection and detailing

by L. M. Dunn*

physical characteristics

In determining the proper gage for an aluminum window, one must consider its function, and size, as well as whether it is to be fabricated of solid or tubular material. In general, lighter gages from .125" to .188" are specified for windows to be installed in residences or low-cost housing projects, while .062" to .188" are found to be more suitable for industrial, commercial, and monumental windows in factories, office buildings, etc. A sill member should never be lighter gage than the accompanying window frame, as it will usually be subject to wear and use; in commercial buildings, for example, maintenance men have to stand on the sill in order to clean the glazing. Sill members should never be less than .062" and windows of higher specification the sill member should be .078", .094", or more. Aluminum windows should be able to resist concentrated and uniform load requirements (the conditions of these tests have been set forth by the A.W.M.A.'s Technical Committee) that are in proportion to the duties they are to perform (Fig. 1). A smaller window of less strength should never be installed in place of a window of higher specification (regardless of the fact that the opening may be small) in order to enable a window of lower speci-

fication to pass the required performance test). Such precaution will insure that units passing the same specifications for a specific window type will be used throughout a building, as well as accommodating the largest opening.

When properly performed, either mechanical joining or welding is satisfactory for aluminum windows. If two sections overlap, mechanical joining can be effectively accomplished. For abutting sections, welding or mechanical joining may be used. If gas welding is chosen, it is important that the flux be removed after the welding process is completed, otherwise, the residue may subsequently act as a corrosive substance. Although inert arc-welding cannot be used for inaccessible locations, this method and also flash welding present no residue problem. In any event, it will usually be less expensive to use the method preferred by the individual manufacturer for his own standard windows.

Finishes tend to fall into four basic types. Although there are variations of these, the architect will usually be able to keep his costs lower if he specifies one of the following:

- (1) *Mill finish*—a natural finish, the least expensive of all.
- (2) *Satin finish*—produced by: (a) etching in caustic; (b) belt polishing; (c) rubbing with emery cloth or steel wool.
- (3) *Bright finish*—produced by buffing.
- (4) *Alumilite finish*—an electrolytic

type of finish developed by the Aluminum Company of America. In effect, this process provides a much thicker and more protective oxide coating than is naturally present on the aluminum. It provides an excellent appearance and can be specified for any one of the three finishes above.

Whichever finish is selected, it should be covered by a temporary protective coating, such as lacquer, to shield the window surfaces until installation has been completed.

Aluminum windows can have different colors, by introducing pigments in conjunction with the Alumilite process. In some applications, the actual alloying constituent of the metal is used to pigment the oxide coating, providing a pleasing gun-metal shade. Most other colors, however, are more suitable for interior use, as 10 years is probably the maximum service life that can be expected of colors exposed to the elements, but these colors will hold up indefinitely for interior use. Although exact color match with the Alumilite treatment is not always practical on a commercial basis, reasonably satisfactory matches may be obtained for all practical purposes. Additional data is available on color for special requirements; it is advisable, however, to consult with a prime-metal producer before preparing the final color specifications.

Protective treatments, factory applied, are a requirement of aluminum windows, mainly for appearance's sake. For protec-

*Member, Technical Committee, Aluminum Window Manufacturers Association

tion during construction, a clear, water-white, methacrylate-lacquer, resistant to alkaline mortar and plaster; is recommended. A coating applied to an aluminum surface must be able to withstand the action of lime mortar for a period of at least one month in an atmosphere of 100 percent relative humidity at room temperature; the coating used shall also be a type to which glazing compound will adhere. Before application, the manufacturer must remove all fabrication compounds, dirt accumulations, and steel-wool fibers deposited by abrasion cleaning.

Anodizing the aluminum before lacquering will permit easier maintenance, when it is desired to preserve the appearance of windows. The finish will add somewhat to the total cost—the increase will vary from producer to producer, depending on the facilities available, and the particular job requirements.

Hardware used to control and lock ventilating units must be well constructed, to withstand the intended operation and to resist loads normally applied to it. In addition to having long life under repeated operation and being resilient to twisting, shock, and abusive treatment, the basic hardware material should not cause the aluminum to corrode; if it does, it must be treated so as to render it passive. Nonmagnetic stainless steel and "white bronze" are strong, durable materials which have demonstrated their suitability for hardware components. A few other bronzes may also be used after being heavily chrome-plated and insulated from direct contact with the aluminum window surfaces. Zinc is widely accepted for die-cast hardware, and plastics may be used to advantage.

Because of their strength, durability, economy, and attractive appearance, aluminum alloys are enjoying a rapid acceptance as aluminum window hardware. When they are specified, caution must be taken to avoid a possible galling or seizing which could result from direct aluminum-to-aluminum contact. This condition may be prevented in the design stage by providing inserts, bushings, and similar components of stainless steel, plastic, oilite bronze, or other suitable material.

Performance specifications, including standard sizes, have been developed by the A.W.M.A. Technical Committee for the use of the entire industry. These specifications

are based on performance requirements rather than specifically designated physical characteristics. To establish the tests now used by the independent Pittsburgh Testing Laboratory, windows were placed under actual installation conditions and the consideration of weather-tight conditions was observed at all times. (*Figures 2, 3, and 4*).

performance factors

Air-infiltration resistance of an aluminum window varies by window type, and whether the window is mass-produced or custom-made. After the required resistance has been determined for a building, the window type will be indicated. The standard measurement of air infiltration is in terms of cubic feet per minute, per lineal foot of crack length, when a window is adjusted for normal operation and subjected to a static air pressure equal to the pressure exerted by wind at a velocity of 25 mph.

If an architect desires specific knowledge regarding the air-infiltration characteristics of a particular window, he should ask the manufacturer for copies of tests made on a window identical in construction with the window to be furnished. The tests should be performed by a recognized, independent laboratory and should prove that air infiltration does not exceed the maximum limit of the specifications. If mass-produced windows are considered, the tested model should be a production-line window. The Technical Committee has found that a performance test is far superior to feeler-gage tests used to measure the size of a crack between sash and frame. Performance counts first.

It is generally considered that sliding aluminum windows will give better service, if all contact points between sliding sash and frame are weatherstripped. Not only does weatherstripping give excellent air-infiltration control, it also permits the sash to slide more freely in the frame. The recommended specification reads "there shall be no aluminum-to-aluminum contact between window members that are required to move relative to one another and at the same time remain in contact." The nature of the window design will usually determine the location of the weatherstripping. For double-hung windows, weatherstripping is placed on the lower rail of the bottom sash; or, if placed on the sill, it must

be properly protected to prevent damage by window washers.

Satisfactory weatherstripping should

- (1) Control air infiltration.
- (2) Withstand external atmospheric conditions.
- (3) Hold up mechanically under use.
- (4) Resist corrosion.
- (5) Resist galvanic action.
- (6) Be easily replaceable.
- (7) Keep dirt accumulation to a minimum.
- (8) Be very durable in relation to material.

Stainless-steel, Monel-metal, felt, plastic weatherstripping are often used to accomplish these objectives.

In the case of projected, casement, awning windows, where the hardware mechanically forces a tight closure and where sliding action exists, metal-to-metal contact can be satisfactory without weatherstripping.

Given only nominal maintenance, the life of aluminum windows under normal circumstances would be expected to equal that of the buildings in which they are installed; no painting is required. This condition obtains, of course, only if the windows are properly designed, fabricated and installed. Such a period of service may not always have been considered desirable; however, if a window today plays the Quality Approved Seal of the A.W.M.A., architect and client can be assured they are obtaining a lasting building product.

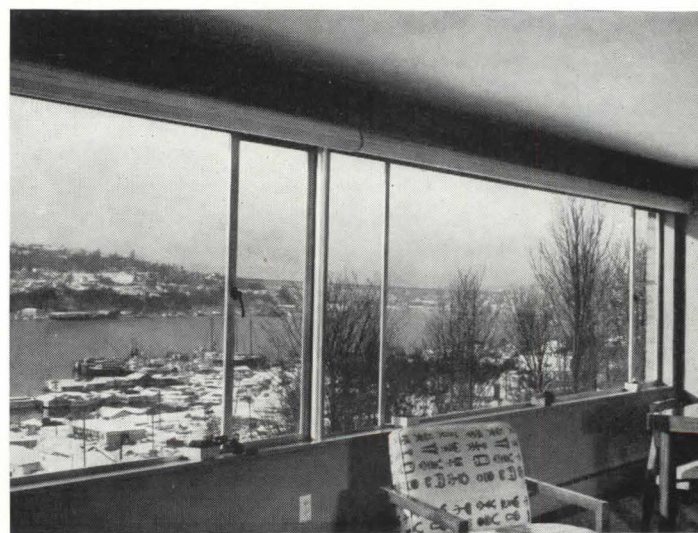
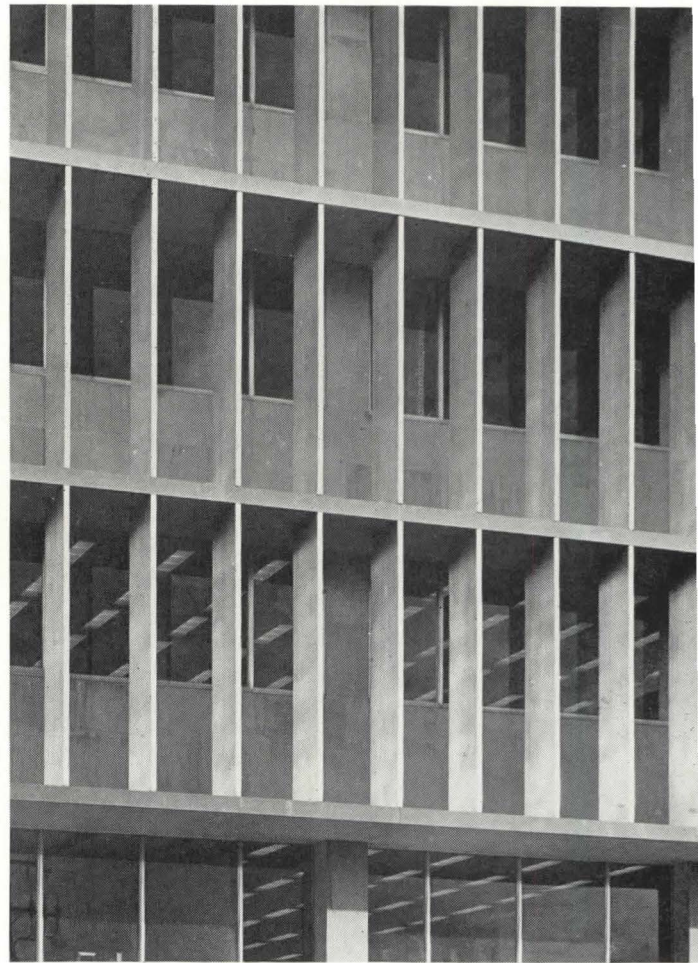
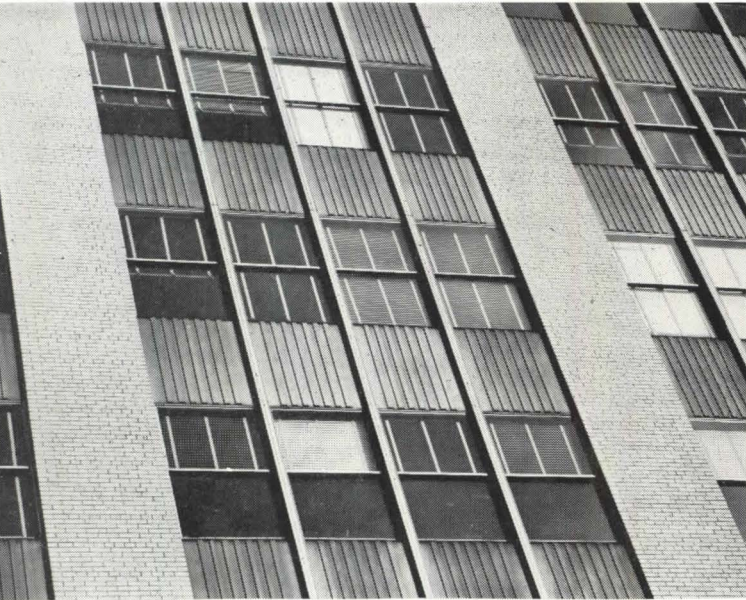
Aluminum windows can serve in an environment in which normal atmosphere exists. This would include coastal, inland, dry, hot, cold, city, rural, and industrial areas. The 63S alloy, generally employed for the extruded sections of windows, contains sufficient magnesium and silicon to impart the strength required and at the same time is an alloy which can be extruded at high speed for economic advantages. This alloy has a natural silvery appearance, provides an excellent base for any protective or decorative coating and has a high inherent resistance to atmospheric weathering.

Aluminum-alloy windows have been used for the past 20 years in all types of environments, including a wide variety of industrial and seacoast atmospheres (Figure 6). Based on this experience, alu-

Year round air-conditioning required fixed aluminum sash (right) in Pan-American Life Insurance Building, New Orleans; Architects: Skidmore, Owings & Merrill; Claude E. Hooton, Associate. Detail of 100 Park Avenue, New York (below), shows double-hung, aluminum sash; Architects: Kahn & Jacobs.

Photo: Torkel Korling

Photo: F. S. Lincoln (courtesy of Alcoa)



Aluminum fixed-sash and casement windows (above) in Lakeview Boulevard Apartments, Seattle; Architects: Chiarelli & Kirk. Extruded, double-hung aluminum sash (left) at Georgia Baptist Hospital, Atlanta; Architects-Engineers: Stevens & Wilkinson.

Photos: Dearborn-Massar and F. S. Lincoln

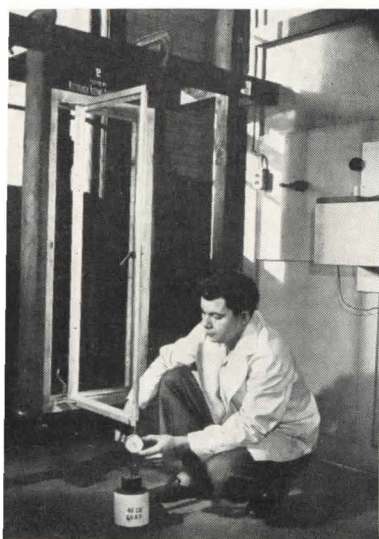
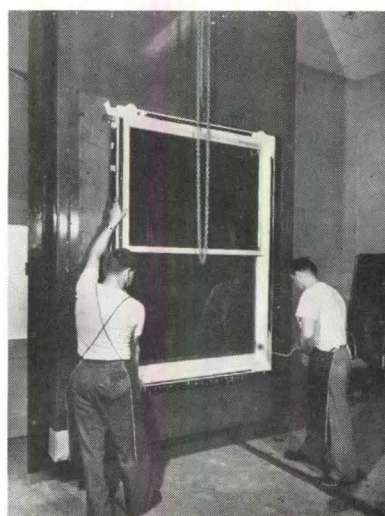
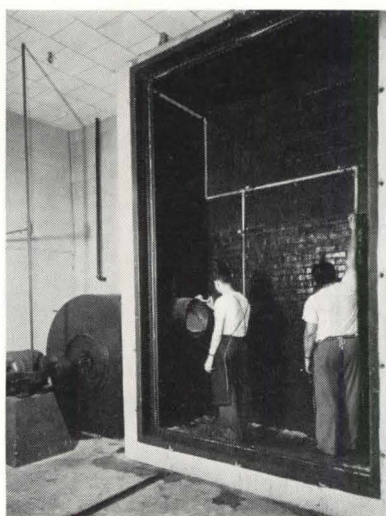


Figure 1—standard performance test on a residential casement window (left). A concentrated load of 45 lbs. positioned as shown must not force the window beyond norms established for vertical deflection by the Technical Committee.

Figures 2, 3, and 4—testing facilities of an individual Association member (below).

Double-testing chamber (left) contains blower vent and water pipe to check air and water infiltration. Installation of aluminum window in air-pressure test chamber (center). Testing equipment can play 500 gpm of water on a window (right).



Photos: courtesy of The Adams & Westlake Co.

windows may be expected to have adequate life in most industrial environments. As a rule of thumb, if a human being can work comfortably in an industrial atmosphere, aluminum windows will serve satisfactorily.

According to F. L. LaQue, chairman of the Advisory Committee on Corrosion, of the A.S.T.M., there are three basic classes of permanence which can be used as criteria in specifying aluminum windows for factories:

Class I: The metal will perform satisfactorily regardless of the industrial atmosphere.

Class II: The metal will partially resist the industrial atmosphere; windows might not last the life of the plant. Relatively speaking, these would still be considered desirable if they outlasted other types of sash under the same conditions.

Class III: The metal will not resist the atmospheric conditions of the plant.

Architects and engineers designing plants with unique atmospheric conditions would be well advised to consult a prime-metal producer concerning the expected performance of aluminum windows on that

specific job. Reference to charts on the reaction of aluminum to chemicals ordinarily considered harmful is not always a fair solution to this type of problem. It is not necessarily logical to presume that aluminum windows should not be specified, if the harmful chemicals are present only as atmospheric vapors in dilute concentrations.

Galvanic action in terms of the corrosion resistance of a material cannot be expressed quantitatively; it is only a relative term. No construction material is entirely resistant to all conditions to which it might be continually exposed. It should only be compared with other materials under similar conditions.

Unlike many other metals, aluminum has the ability to form a thin, adherent film of hard oxide, instantaneously, on freshly exposed surfaces. As this film is extremely protective, it retards oxidation and generally eliminates the need for paint maintenance. Except for the possible over-all corrosion caused by highly contaminated atmospheres, such as found around chemical plants, the only corrosive actions of any

concern to aluminum windows are: (1) galvanic attack excited by nonaluminum metals; (2) drainage of salts from aluminum metals over aluminum windows; (3) poultice attack which aluminum and other metals suffer when held for extended periods in intimate contact with absorbent materials.

Galvanic attack is not as serious a problem in atmospheric exposures as when dissimilar metal couples are fully immersed in a corrosive liquid. Consequently, galvanic corrosion involved in window installations can be easily controlled by the selection of dissimilar metal and the design and use of protective measures. Where practical, the dissimilar alloy can be made from other corrosion-resistant aluminum. Otherwise, the most compatible nonaluminum metal possessing the physical characteristics needed should be selected. Materials that will in general perform well with aluminum are: nonmagnetic stainless steel, and zinc-coated steel. Components of copper or nickel alloys should be used under specific conditions. In atmospheric service, galvanic attack is ap

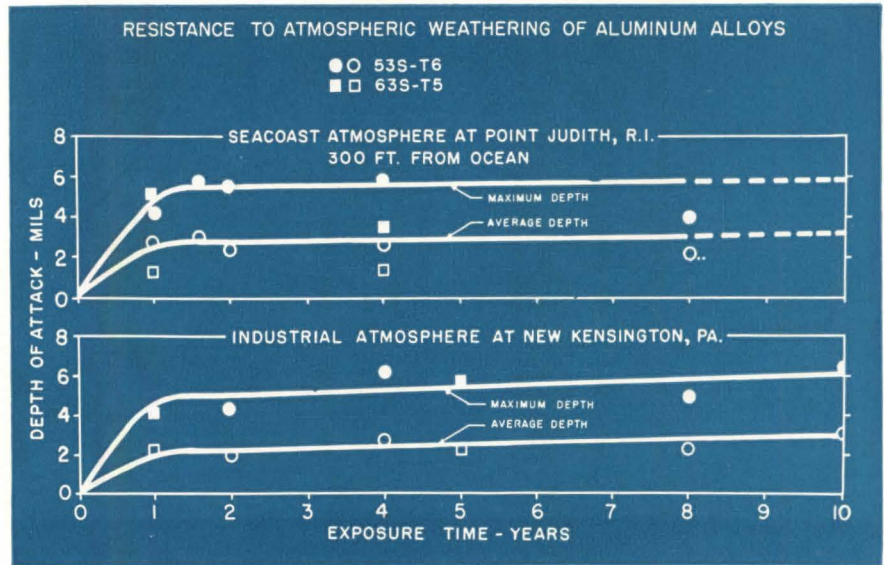


Figure 5—relatively large aluminum windows can be installed with ease (left). Man at left, however, demonstrates what should not be done. To preserve accuracy of precision construction, a workman's weight should be supported by a ladder rather than by muntins or sash.

Figure 6—aluminum alloy corrosion chart (above)

ined to the faying surfaces of the ts. This type of corrosion is minimized prevented by providing weathertight ts between the components, either by anical tightness, or mechanical tight- plus the use of such protective coat- as lacquer, zinc chromate, bituminous t, nonconductive and nonabsorptive ets, or mastic seam compounds. Lo- ing the joints to provide free drainage moisture away from the couples, is es- al.

ne use of water-absorptive building rials (such as wood or insulation d) between aluminum and the dissimi- metals (such as steel) can result in t galvanic corrosion, if the absorptive rials remain wet or damp. An elec- l contact between dissimilar metals d easily be effected by a metal fast- ; however, no galvanic attack could oc- f the metal parts were fully insulated one another. Where this cannot be ted, the use of a uniform layer of r-resistant mastic between the alumi- and nonmetallic member will gener- prevent galvanic attack.

Corrosion of aluminum windows can also be caused by wash from dissimilar metals, notably of copper and nickel. Such drainage contains salts of copper and nickel which plate out over the aluminum surface and create tiny galvanic cells between the aluminum and the copper or nickel particles. Iron salts are considerably less harmful in this respect. It is important, therefore, to prevent drainage or drippage from flashing, gutters, valleys, or ornaments of copper or nickel alloys from coming in contact with aluminum windows. This type of corrosion can be prevented by maintaining a paint coating over the dissimilar metal parts.

Poultice attack, as the name implies, may result from extended contact of aluminum or any other metal with a water-absorptive material. These materials hold moisture against the metal surface for longer periods of time than the freely exposed surfaces; they also screen oxygen away from local spots of the metal. This situation creates small galvanic cells between spots having different amounts of oxygen or moisture present. The absorp-

tive material itself does not have to be corrosive and certain types of products create greater poultice attack than others. Poultice attack on aluminum windows might be caused by wood, insulation board, or poorly impregnated building paper, if these were to remain continually wet and in contact with the aluminum. Poultice attack is best prevented by not allowing construction materials to become wet. One successful precautionary measure is to make non-metallic construction materials water-resistant by painting; another measure is to seal out moisture from a joint by means of a mastic calking compound.

Where aluminum windows come in contact with masonry, the prime consideration is to be sure that a close fit exists between frame and masonry. It should be determined whether the frame is going to set behind masonry or butt against the masonry reveal. When cement block is used, special attention should be given to specification and application details. Where possible, it is advantageous to use cement blocks that are made especially to receive windows. An architect should inspect the

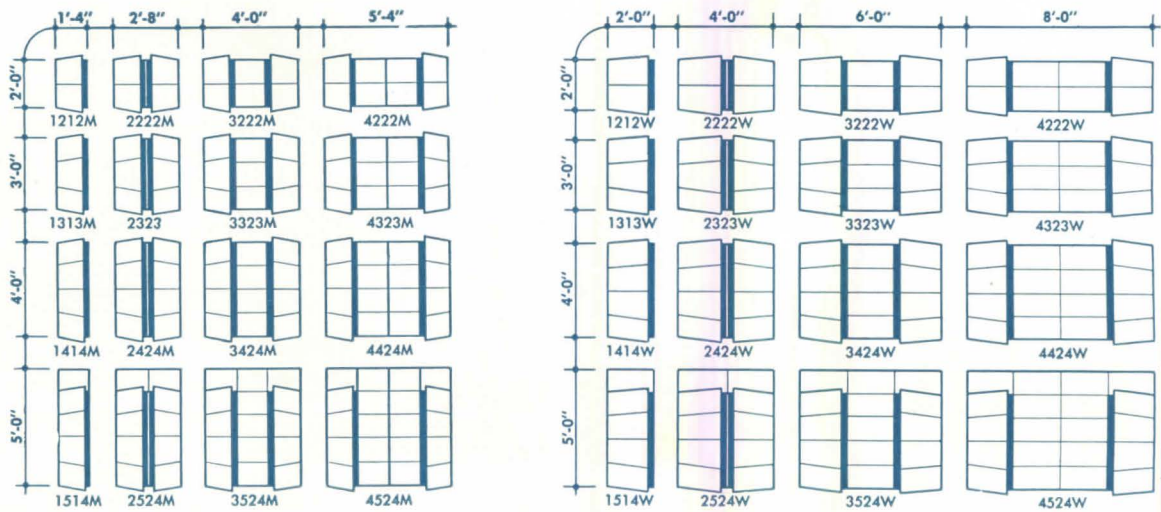
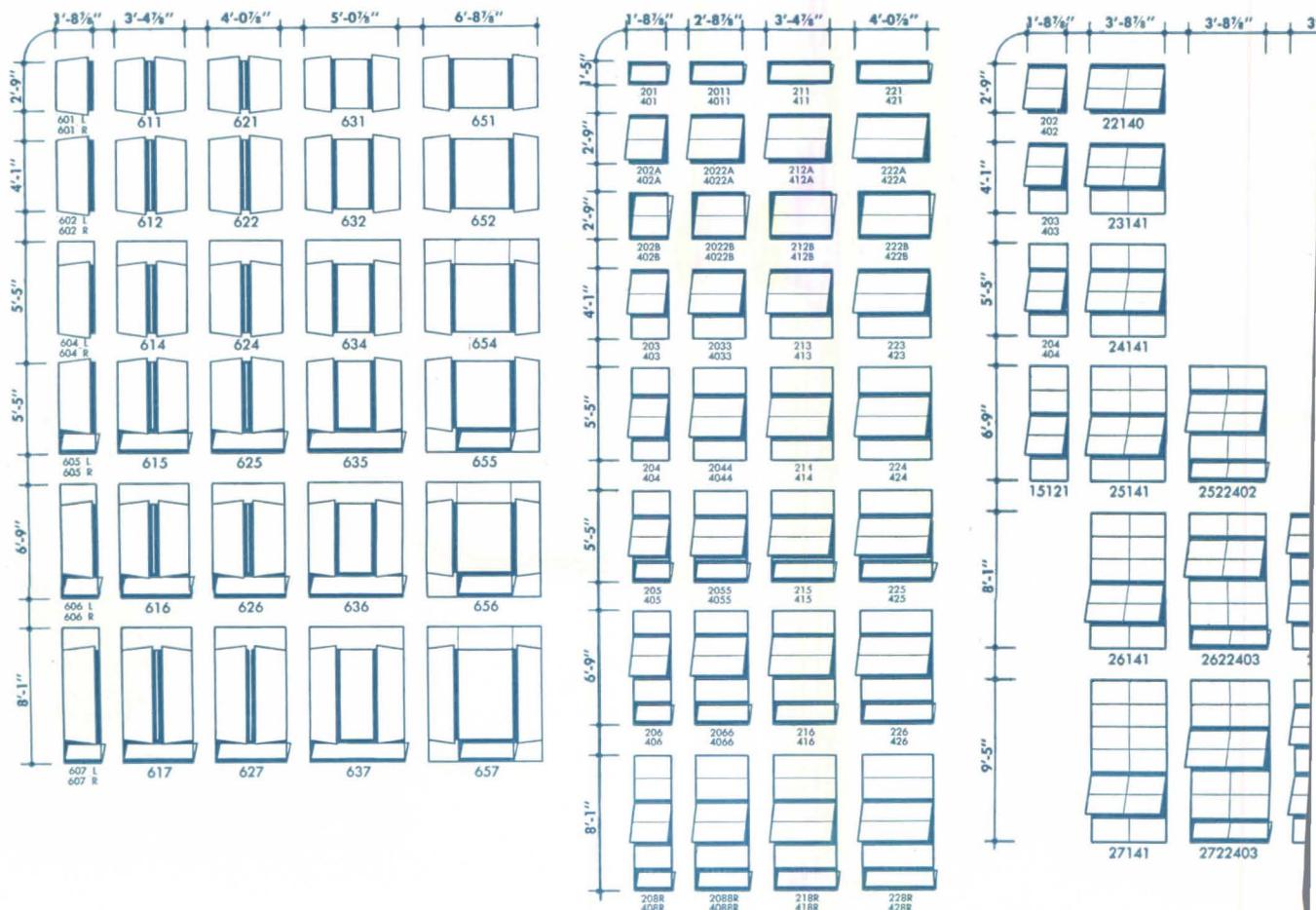


Figure 7—modular standards for residential casement windows (above left); larger units are known as “western modular” (above right). Dimensions of standard casement windows for commercial and monumental buildings (below left); standard projected windows—vertical and horizontal muntin types—for residential, commercial, and monumental buildings (below center and right).



manufacturer's recommendations for installation and anchorage to insure that adequate caulking is provided. Every effort should be made to eliminate any crevice which might allow water to collect around the window frame.

Installation factors

The aluminum window manufacturer will usually show in his own literature the best method of anchoring his windows to structural frames; his representative should be consulted in the event that special designs are needed. To insure proper anchorage, the following fundamental check points should be kept in mind:

Anchorage must hold the window

Strong anchors are required for commercial windows as they must meet the needs of the window cleaner.

Windows must be supported securely in order to withstand normal use of window cleaner.

Additional anchors are normally required at mullions.

Windows should be manufactured to obviate any staining on the exterior window surfaces.

All anchoring devices used in the installation of aluminum windows must be of aluminum, nonmagnetic stainless steel, or corrosion resistant materials compatible with aluminum. Steel anchors may be used, provided that they are adequately protected by paint.

Large aluminum window manufacturers use detachable fins in residential construction which serve as anchoring devices in masonry. The window is in effect built into the masonry or fastened directly to the woodwork.

Use of aluminum's lightness relative to large individual windows can be illustrated with ease (*Figure 5*). Four to six small windows can be handled as one unit; two men can speedily lift four to six windows mullioned together. But it should be remembered that large assemblies made up of individual units in the field are feasible only up to a certain

point, because of the controlling factor of transportation. In such instances, assembly at the site provides a simpler solution.

A mastic type of glazing compound that does not require painting should be specified. As aluminum-colored mastic alone is insufficient precaution, a compound should be labelled, without qualification, that it does not need painting. A glazing compound should remain elastic enough to perform properly when subjected to the rigors of atmospheric environments. Mastic-type compounds are advantageous, as they permit a broken light to be replaced easily, as opposed to those glazing materials which become hard and brittle. Aluminum windows can be prepared either for inside or outside glazing. Interior glazing is advantageous for light curtain-wall construction, as the need for exterior scaffolding is usually eliminated.

Aluminum windows require little maintenance to preserve their appearance and efficient operation. Their care consists of merely washing the sash, along with the glass; the frequency of washing depending on the locality of the installation. Caustic or acid cleaners should not be used. There are many solutions marketed today that are satisfactory for washing both glazing and sash. The aluminum surfaces then should be dried, along with the glass. Periodic cleaning contributes to preservation of appearance.

If it becomes desirable to brighten aluminum windows that have become dull from dirt and smoke, they should be scoured with a good grade of kitchen cleanser. After being rinsed and dried, they should be given a coat of liquid wax. In severe cases, it may be necessary to clean windows with fine steel wool well lubricated with liquid wax; excess dirt and wax can be removed with a clean cloth. Such a process will make the windows gleam, keep brighter longer, and make maintenance easier.

design factors

To reduce unnecessary fabrication costs through design and stock sizes is a problem which should be worked out with the indi-

vidual manufacturer concerned. If a manufacturer's representative is consulted at an early stage, he can usually make minor suggestions for proper application, anchoring, trim, and glazing, which can result in substantial savings for the owner. Some general factors which assist an architect in maintaining minimum costs are:

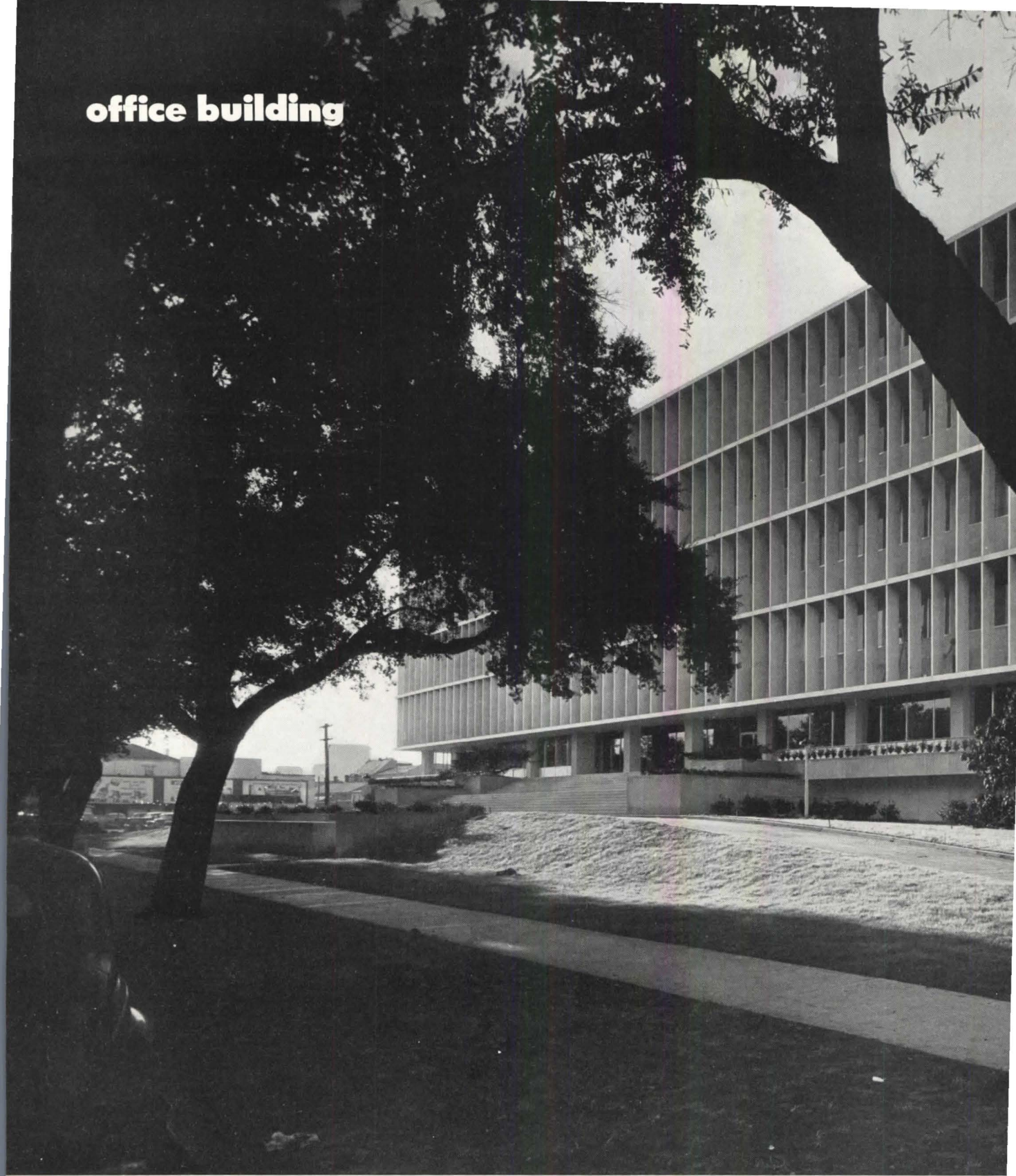
- (1) Maximum use of one type and size of window throughout a building.
- (2) Uniform design of windows.
- (3) Only minor adjustments, at most, on a standard design recommended by a manufacturer.
- (4) Stock designs.

Although there is a tendency on the part of some architects to consider that stock units may possibly be inferior, it should be remembered that they too are required to meet the same tests for performance as custom windows when so specified.

The A.W.M.A. published its first modular standards in 1952 for residential, commercial, and monumental applications in casement and projected-type windows. A number of members already offer modular double-hung windows. Groupings for modular double-hung and awning-type windows are now under consideration by the Committee. In addition to modular standards for residential windows, "western modular" sizes are available for the benefit of those who prefer larger units (*Figure 7*). Standard sizes have also been established for basement windows. Most manufacturers offer "picture" windows not only in a wide range of heights and widths but also accommodating either 1/4" plate glass or double-glazing up to one inch.

Aluminum windows can be specified for any type of curtain wall. When standard windows are not suited for the required conditions, it is usually not difficult for a manufacturer to alter his fabrication processes to meet the specific design requirement. For example, it is relatively easy to use a frame member from an inexpensive die to suit a particular condition; an adapter can be readily applied to standard windows to serve the same purpose. A proper window design also utilizes the lightness of aluminum for a saving in labor.

office building

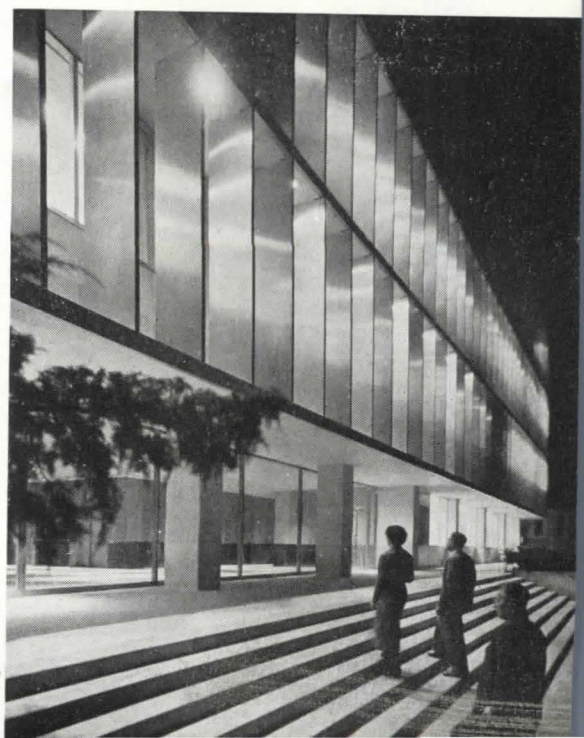


location	New Orleans, Louisiana
owner	Pan-American Life Insurance Co.
architects	Skidmore, Owings & Merrill and Claude E. Hooton
partner in charge	Robert W. Cutler
structural engineer consultant	Jens Braae-Jensen
mechanical engineers consultants	Cary B. Gamble Associates
landscape architect-engineer	Ralph Ellis Gunn
general contractor	George J. Glover Co., Inc.



A building that will, in our opinion, rank with the best in the record of architecture of our time, is the home office of the Pan-American Life Insurance Company. The sunshade grillage of aluminum vertical fins, and cantilevered canopies that protects all four walls of the six-story building grew out of several architectural considerations — climate, orientation, and a New Orleans tradition.

Photos: Torkel Korling and
Clarence J. Laughlin



office building

S. TONTI STREET

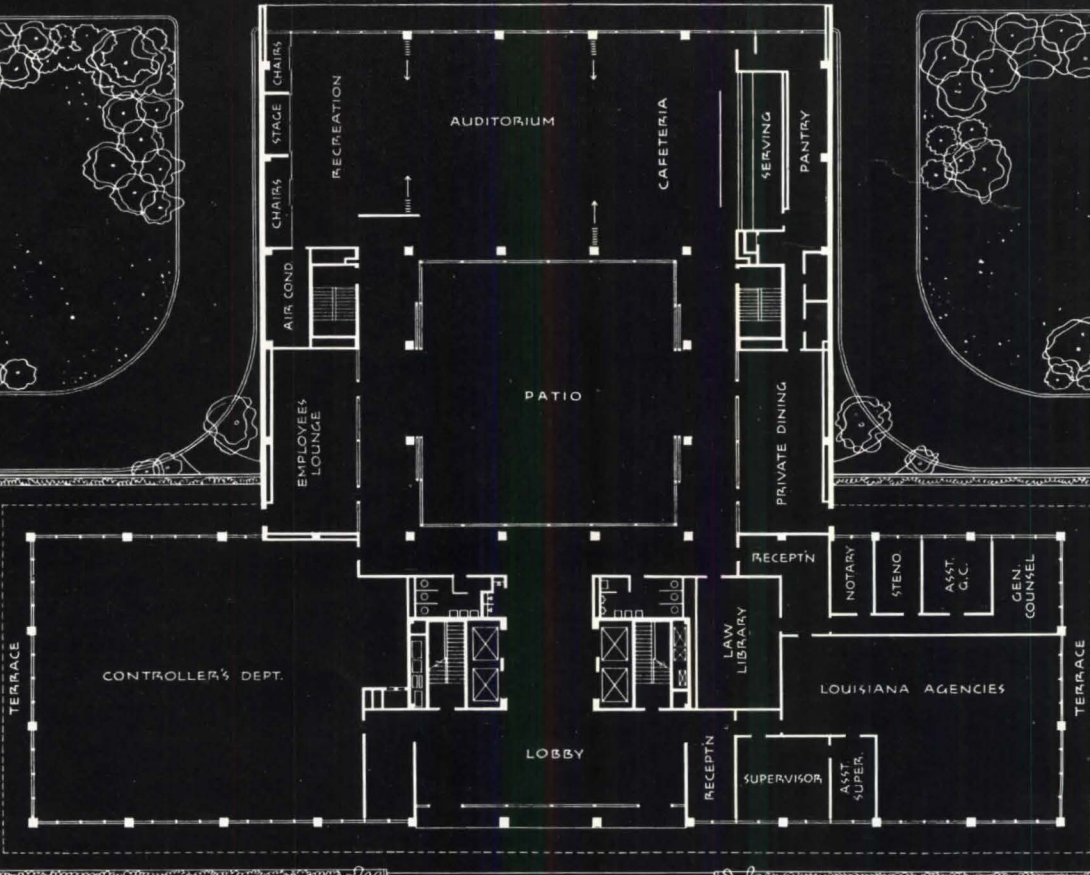
CLEVELAND AVENUE

Scale 0 50' 100'



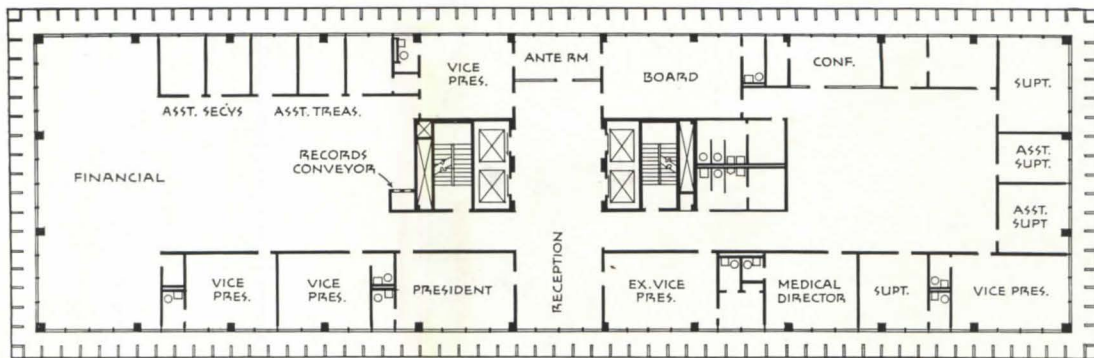
First Floor and Plot Plan

PARKING AREA

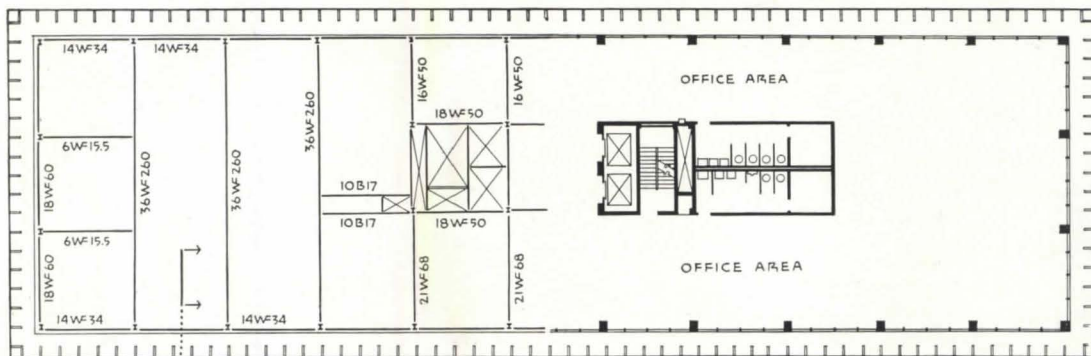


DRIVEWAY

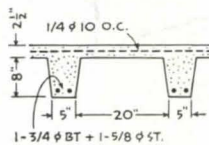
CANAL STREET



Fifth Floor

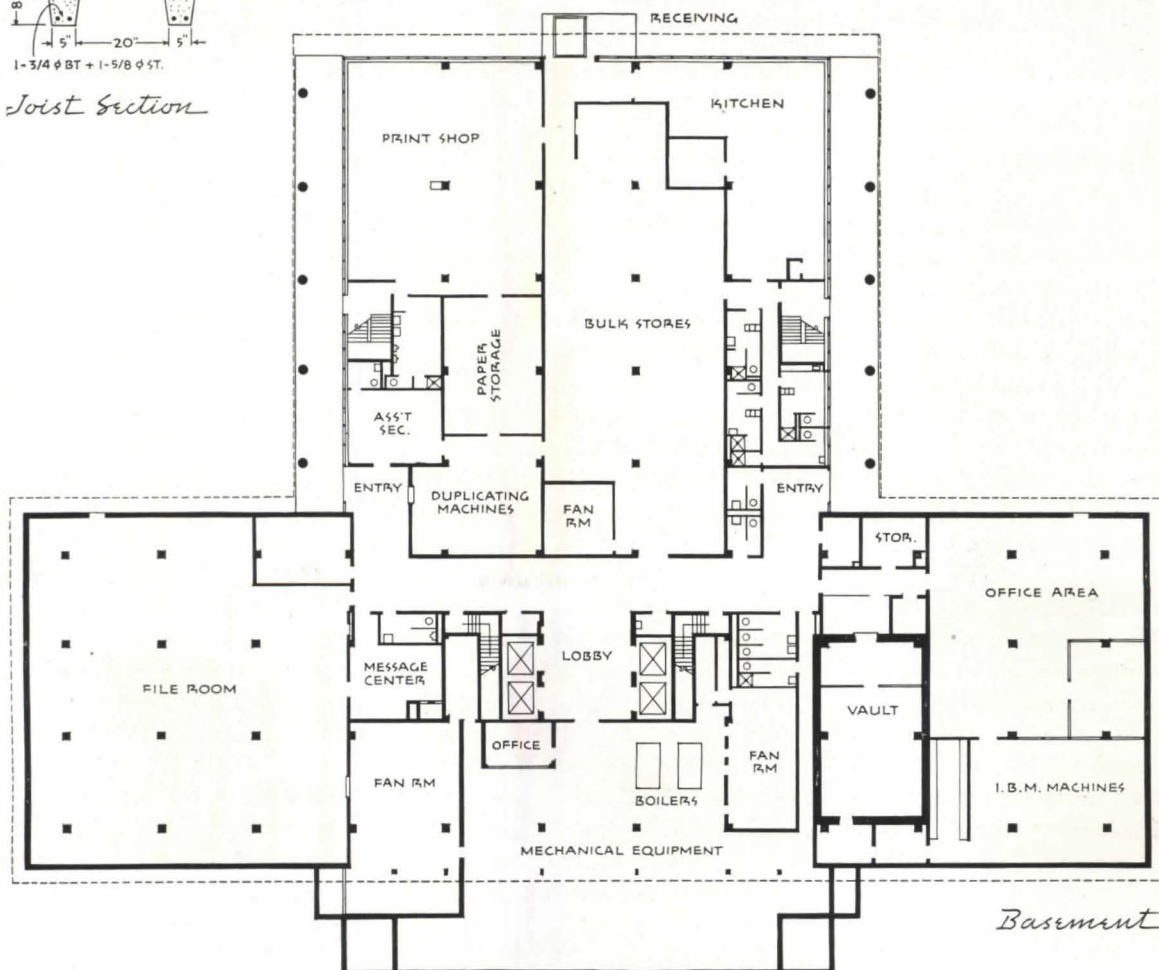


Third Floor



Typical Floor Framing

Isist Section



Basement



office building

The site is an entire city block. The problem, as the architects state it, was "to design not only an efficient and permanent building to house the offices of a major life insurance company, but to do so in such a manner that the resulting structure would stand as a monument to the founders of the company, three of whom are still living and active in company policies."

Although the site borders Canal Street, the city's chief business artery, it is north of the downtown area, and the surrounding neighborhood is mainly residential. Hence, there was neither need nor temptation to erect a tall spire, to cope with site limitations or to dominate the scene. Rather, the architects were able to conduct objective analyses to determine the most efficient and most pleasant interrelation of departments and areas to serve the company's needs. The result, to oversimplify it, is a six-story office block with a two-story

wing and parking area at the rear.

In the latter, at ground-floor level, are the truck dock, store rooms, duplicating departments, print shop, service rooms, and the building kitchen; the upper level (that encloses a landscaped patio) includes employees' lounge, recreation-auditorium-cafeteria, and private dining room.

In the forward, six-level mass, there are no interior columns above the ground-floor level, the 60-foot depth of the building being spanned by the structural steel frame. Departments are disposed where most convenient—vaults, file room, etc., on the ground floor; agency offices, controller's department, some private offices, and a law library, on the first; medical, actuarial, and underwriting departments, on the second floor; general offices, on the third and fourth; and executive offices, financial department, board room, etc., on the top floor. Connecting all departments, in addition to

stairways and elevators, there is a motor-driven record and mail conveyor, operates on the endless belt principle deposits its plastic trays automatically on the floor to which they are directed.

The architects refer to the canopies aluminum-fin sunshades (*detail, page 89*) that protect the window walls of the building as "a logical contemporary acknowledgment of the demands of a climate that had already inspired the lacelike galleries and balconies that are an historic trademark of New Orleans." A conscious element of the design concept is a subtle color treatment that has richness, warmth, and light. The limestone of the exterior is warm in tone; against this base to be seen the glint of aluminum, the sparkle of glass areas, the deep sheen of the tile used on the wall of the ground floor of the rear wing, and the red terrazzo of the terraces.

The low rear wing of the building (bottom of page) encloses on the upper floor a landscaped patio (below and at right). Surrounding the patio are the employees' lounge, a private dining room, and a huge rear room that, by means of collapsible partitions, may be variously used as a cafeteria, recreation room, or auditorium.



office building

The structural frame is of steel beams, girders, and columns supported on pile caps and concrete piles. Floor and roof slabs are of reinforced-concrete, metal-pan construction. Borings indicated soft clay and silt, with water table but 3'-0" below the surface. To drive piles into a firm sand layer, with a bearing capacity of 30 tons per pile, required 60-foot lengths. Due to the poor bearing capacity of the soil, the ground floor, entrance steps, and even the driveways are also supported on piles.

The client specified that office areas be free of columns. To meet this requirement, at the same time keeping sizes of structural elements within reason, rolled steel girders were employed to span the 60-foot depth of the tall portion of the building. The sun shades are cantilevered from the main structure.

The complete air-conditioning system is a zoned, central system, with the office por-

tion of the building being served from two fan rooms located on the ground floor and two located in the elevator penthouse. The four outside zones are supplied through window-stool blows—adjustable registers placed in window stools which give occupants individual control over the amount of air admitted to offices. Interior zones are supplied from the same units, with ceiling outlets. The cafeteria and work spaces in the two-story wing are supplied by conventional ductwork. Both the cafeteria and the business-machine room on the ground floor of the tall building use acoustic, ventilating ceilings for air distribution.

The system employs two centrifugal refrigeration machines and two deep wells, together with gas-fired steam boilers. All air through the main units is electrically filtered, and pre-cooling of fresh air and ventilating air for the machine room is accomplished with well-water coils. All re-

turn air is taken through the suspended ceilings and back to the central shaft locations. Thermostats control the five major zones, and sub-master thermostats measure average air temperature, taken with sampling ducts from several offices, to control temperature in that particular zone.

Heating coils are located in the by-pass of the air-conditioning units, and the system is capable of cooling and dehumidifying, dehumidifying without cooling, cooling certain areas while heating others, or heating the entire building and adding moisture as required. The entire layout of the system is in conformance with the modular scheme of the structure, so that it is possible to install partitions on 5-foot centers, parallel to any wall of the building, without affecting the air-distribution system. The light troffers in office areas are similarly integrated with the building module and placed on 5-foot centers.

The main lobby (below) and fifth-floor executives' lobby (left) both have walls finished in natural African mahogany paneling; elevator doors and recesses are surfaced with aluminum, and ceilings are either acoustical plaster or tile. Floor of the main lobby is the same red-and-white-marble terrazzo used on exterior terraces.





In the uninterrupted office work spaces (two photos above), perforated metal-pan ceilings and rubber-tile floors assist sound control. The 4-foot light troffers are spaced 5 feet on centers, leaving one foot between to be used as an air-conditioning outlet or as a blank, should a



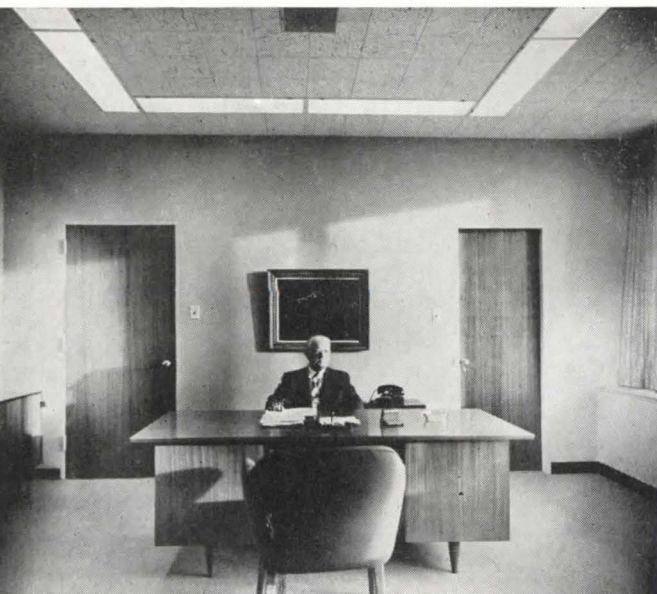
partition occur at this point. Office lighting is designed to maintain an average intensity of 75 foot candles for all inside areas.

The cafeteria-auditorium-recreation room in the rear wing of the building (left) has an acoustical, ventilating ceiling; folding partitions allow subdivision of the room.





office building



In executive offices, much of the furniture was designed by Knoll Associates; wood used is natural African mahogany. The office (left) of F. W. Gleason vice president and secretary of Pan-American, who served throughout as co-ordinator between owner, architects, and contractor. Walls of the board room (above) are also finished in this mahogany, and restrained color schemes throughout take their cue from the various fabrics or floor coverings selected. Details of the vertical aluminum sunshade (far right, acrosspage).

construction

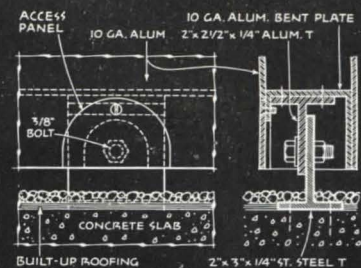
Foundation: concrete grade beams; concrete piles—Raymond Concrete Pile Company. **Frame:** structural steel—Jones & Laughlin Steel Corporation. **Walls:** hollow tile and limestone—Rockwood Alabama Stone Company. **Floors, roof:** concrete-pan system—Southwest Steel Corporation. **Interior wall surfacing:** plaster; toilets: plaster; structural glazed tile—Stark Ceramics, Incorporated. **Floor surfacing:** asphalt tile with rubber base—American Mastic Tile Company; terrazzo; nonslip terrazzo stairs. **Ceiling surfacing:** acoustical metal pans and acoustical plaster—Armstrong Cork Company and Johns-Manville Corporation. **Roof surfacing:** built-up roofing with marble slag over membrane and applied cement—Barrett Division, Allied Chemical & Dye Corporation. **Insulation:** thermal: glass fiber—Owens-Corning

ing Fiberglas Corporation. **Roof drains:** Josam Manufacturing Company. **Partitions:** hollow tile; gypsum block—United States Gypsum Company; toilet partitions: structural glazed block and ceramic tile—Stark Ceramics, Incorporated and American-Olean Tile Company. **Windows:** aluminum sash and exterior, aluminum sun control louvers—General Bronze Corporation; plate glass—Pittsburgh Plate Glass Company. **Doors:** interior: stainless steel and glass; wood—U. S. Mengel Plywoods, Incorporated; stainless steel elevator doors—Dahlstrom Metallic Door Company; aluminum roll-up overhead and stainless steel, glass entrance doors—General Bronze Corporation. **Hardware:** locksets and door closers—Yale & Towne Manufacturing Company; hinges—The Stanley Works; panic exit—Von Duprin Division, Vonnegut Hardware Company. **Paint:** Sherwin-Williams Company.

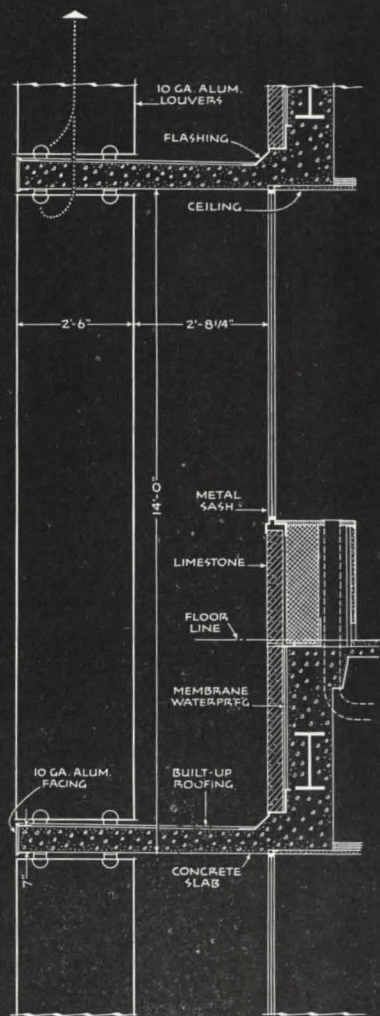
equipment

Kitchen: stainless steel and baked enamel equipment—S. Blickman, Incorporated; ranges—Hotpoint, Incorporated. **Intercommunication:** amplified voice system—Executone, Incorporated; vertical record conveyor system—Virginia Metal Products Corporation. **Elevators:** hoisting equipment—Westinghouse Electric Corporation; African mahogany cabs, stainless steel trim—Globe-Van Doorn Corporation. **Lighting fixtures:** office and auditorium areas: two-tube recessed slimline troffers with Holograph lens—Smithcraft Lighting Division, A. L. Smith Iron Company; lobby area: recessed incandescent, louvered bottom—Solar Light Manufacturing Company. **Electric distribution:** service-entrance switch, air-circuit breaker, wiring, conduit, wiring devices—General Electric Company; panelboards, convertible circuit-breaker—Trumbull Electric Manufacturing Com-

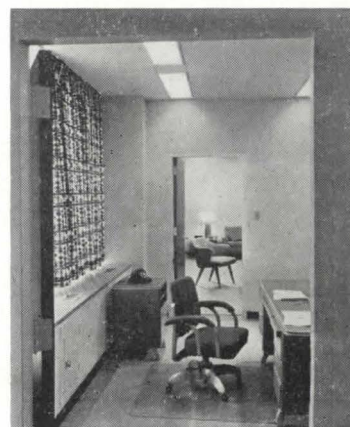
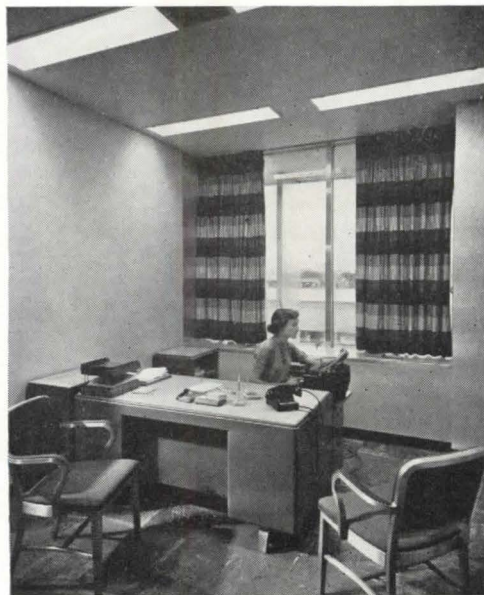
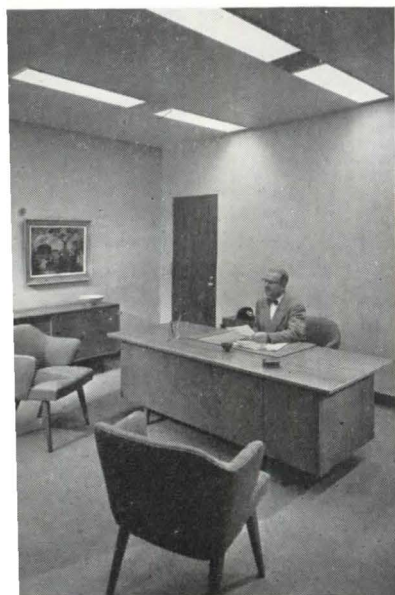
pany. **Plumbing and sanitation:** wall-hung water closets, vitreous china lavatories, manual shower controls—Crane Company; water closet support fittings—J. A. Zurn Manufacturing Company; black composition-rubber toilet seats—C. F. Church Manufacturing Company; steam-heated, storage-type water heater—Richmond Engineering Company; flush valves—Sloan Valve Company; type "L" copper pipe; sprinklers in all lawns and planting areas; emergency, pneumatic-tank system for water supply—De Laval Steam Turbine Company. **Heating and air conditioning:** year-round centrifugal unit; boiler—Pacific Steel Boiler Division, United States Radiator Corporation; pneumatic controls—Powers Regulator Company; compressor—Worthington Pump & Machinery Corporation; grilles—Barber-Colman Company; electronic filters—American Air Filter Company; built-up, completely-zoned cooling and heating units; window-stool blowers—Trane Company.



Connections - ELEVATION AND SECTION



Section thru Vertical Louvers



From the very beginning of the electrical industry, copper has been the universally used metal for carrying current. Now, in 1952, the world's supply of copper seems no longer to be adequate for all of the many uses for which it is best suited. For electrical purposes, aluminum, for which there is a potentially adequate source, will be used in considerable volume in the next year. In a given application, an aluminum conductor will be larger than the equivalent copper conductor, will weigh less, will require more insulation because it is larger in diameter, may cost more, will require changes in the terminal arrangements on electrical equipment, and will most certainly require new techniques of installation. What is most important is that a shortage in copper or even difficulty in obtaining sufficient aluminum, should not be accepted as a valid reason for a reduction in the capacity of a wiring system in a commercial building.

power-distribution systems for commercial buildings

by H. H. Watson*

There is an acute temptation, in this period of material stringencies and rising costs, to initiate any discussion of the electrical system of a building with a promise of cost reductions and materials savings. Realistically, the electrical engineer is faced with the problem of providing increased amounts of electrical energy for the higher levels of illumination and the increased use of air conditioning which now prevails. The electrical engineer further takes a dim view of any cutback in the dimensions or quality of his design, because most of the economies to be made by close attention to detail have long since been factored out by the accuracy which is possible in electric circuit design. The lowest costs will accrue from an intelligent use of the particular material best suited to the application.

Whether the commercial building is a 40' x 110' "taxpayer" or a 400' x 200' twenty-story office building, the property is almost invariably served by a set of power lines from the utility system. After proper handling by appropriate service

entrance equipment and provision for metering, the power is distributed over a system which ranges from a few branch circuits out of a panelboard to a complicated arrangement of transformers, feeders, sub-feeders, panelboards, and branch circuits with all the necessary protection and switching equipment. (Figure 1 shows in diagrammatic fashion the basic elements of a normal distribution system in an average building.)

In the early days of electrical wiring, insulated copper conductors were often fished through iron water pipe instead of being supported on insulators. The result has been that the traditional method of wiring commercial buildings uses insulated wire pulled into rigid conduit. The present American Standards Association standards for rigid conduit is still not far removed dimensionally from conventional iron water pipes.

Rigid steel conduit is the standard wiring method to which all other methods are compared; it is universal in its application and can be installed for all electrical uses in commercial buildings. The National Electrical Code and all codes and or-

dinances derived from the National Electrical Code either permit or require use of rigid conduit in commercial buildings. There are only a few infrequently encountered applications in such buildings where rigid steel conduit is not acceptable. The standard finish for conduit is a corrosion-resistant coating of metallic zinc applied by hot-dip galvanizing, sherardizing, or electro-galvanizing. It is permissible, however, for dry installations to use enameled conduit.

Because rigid steel conduit is universally acceptable, fittings and accessories are available for any conceivable installation condition. Long usage, a production in great volume have resulted in about a high degree of standardization. The interchangeability of materials produced and widely stocked by manufacturers is so complete that the problems of special material are practically nonexistent. This high degree of standardization and the broad field of application provide further advantages in problems of repair, rearrangement, and extension. Further, the use of rigid conduit as an accessory

*Commercial Engineer, General Electric Company, Bridgeport, Conn.

systems described later will result in finite economies.

The conditions of installation and of frequent use of conduit, however, are generally somewhat less severe than the conditions under which rigid conduit can withstand. For these less severe conditions, the National Electrical Code recognizes electrical metallic tubing which has the inside diameter of rigid conduit but has thinner walls. Electrical metallic tubing (EMT) larger than 2" diameter or with an enamel finish is not recognized by the Underwriters' Laboratories. In general, except as restricted by local ordinance, EMT can be used in place of steel conduit for both exposed and concealed wiring in commercial buildings. In this connection, it is important to note the requirement of the National Electrical Code which does not permit the use of EMT when it is exposed to mechanical damage during installation. This restriction is important and is the controlling factor in many types of construction.

Obviously, the location and number of electrical outlets required by occupants of commercial buildings are not fixed. These

requirements vary from the frequent relocations of equipment in retail stores to the occasional alterations encountered in rentable office space. Less frequent are changes in the public spaces in banks and in public buildings. However, no matter how infrequently changes may be required, the problem of installing new circuits or outlets in fire-resistant construction is costly and time-consuming. Under the general National Electrical Code classification "Underfloor Raceways," several duct wiring systems have been designed for installation under the floor level. These systems have mechanical protection equal to that provided by conduit but, in addition, provide very simple means of moving, adding, and removing outlets throughout the floor area. Another advantage is the relatively large number of circuits that may be accommodated.

Underfloor raceways are made up of the duct or raceway, the junction boxes, the outlets specially designed for the system, and the necessary hardware and fittings. The duct may be made of fiber or steel and is approximately oval in cross-section. Lengths of duct terminate in junc-

tion boxes to which access is gained through a hand-hole flush with the floor surface. The ducts are installed, generally, in a network arrangement so that a duct will run under each location where an electrical outlet is desired or where it is contemplated an outlet may be needed in the future. Outlets, when placed at the time of duct installation, are supported by inserts which provide access into the duct. Wherever an outlet is to be installed later, a flush floor fitting is provided which can be replaced by an outlet; conversely, an unwanted outlet can be abandoned by removing it and substituting a flush floor plate. Further, special boring and threading tools make possible the installation of outlets in the duct at points not previously prepared. These tools are used for cutting an appropriate hole in the duct and for inserting a fitting to receive the outlet. A variety of outlets is provided for 120-volt power and for telephone and signal systems. Parallel runs of the duct systems are frequently installed for the segregation of power circuits from communication circuits. (Figure 3 shows such a system in the United Nations Secretariat

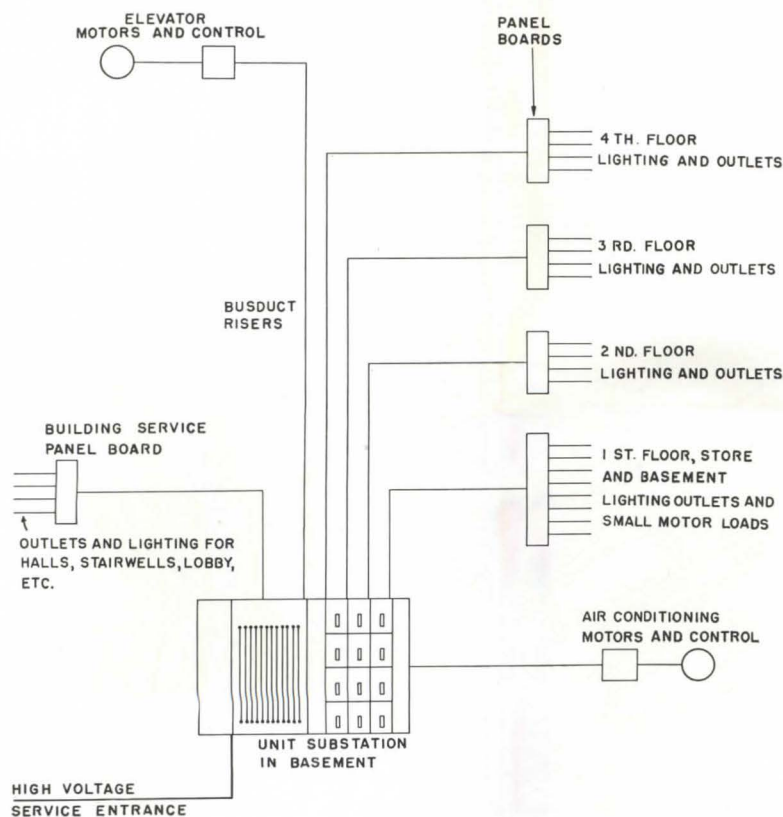


Figure 1—schematic circuit diagram for a distribution system in a store and office building.

Building before the concrete floor was poured.) The great advantage of an under-floor duct system is the ease of changing or adding outlets. This system is not limited in its use to supplying power to outlets in the floor. Such a system can also be used to supply circuits located in walls and even in movable partitions.

The use of the individual cells of cellular-metal floors as the enclosures for the electric circuits is one of the many outstanding advantages to be obtained by the use of this type of floor. (*Figure 2 shows an installation of wiring in a cellular metal floor.*) In essence, this system is an adaptation of the underfloor duct principle in which a header duct is installed at right angles to the axis of the cells and serves as a raceway to supply the circuits in the cells. This system provides complete flexibility to the electrical installation and has the added advantage that it can be used for supplying the lighting circuits in the ceiling of the floor below. Just as in the underfloor duct system, the electrical components of the cellular-metal floor system are standardized and complete installations can be made from standard components.

Busways are another type of distribution system used extensively in commer-

cial buildings. Busway systems essentially consist of 2, 3, 4, or 5 copper bus bars contained in a sheet or ventilated steel or aluminum housing. They are generally furnished in standard 10-foot lengths with shorter sections, elbows, tees, crosses, and other fittings available to suit the specific application. The various elements are all prefabricated and are bolted together on the job to form the complete installation. A number of types of busways are available for use as feeders from transformer banks to main service switches, as distribution feeders, and as branch circuits to the individual power-consuming device. From an installed-cost standpoint, a busway system is comparable to a conduit and wire system. The labor component of a busway installation is considerably less than that of a conduit and wire system; busway elements are practically 100 percent re-usable. Thus, when changing conditions require rearrangement, the busway system shows important economies.

There are two forms of "feeder type" busway systems designed essentially to transmit power rather than to distribute it—a low reactance system and a high reactance system. The low reactance system is used where low voltage drop and resistance to high short-circuit stresses are

important. The high reactance type is limited applications to short runs where voltage drop is not a design consideration. In both of the feeder-type systems, cable tap boxes may be installed at the points between sections for immediate taps along the run. (*A low reactance feeder-type busway is shown in Figure 4.*)

Another type of busway is the plug-in type, available in ratings from 225 to 600 amperes. This system is fitted with plug-in taps every 12 inches along the run. Available plugs, plug-in fusible switches, plug-in circuit breakers, in ratings from 30 to 600 amperes, are made for insertion in the bus system as protection tap-offs to feed motors, panelboards, and other equipment. Although widely used for these purposes in the industrial field, in feed production lines, many other applications are found as risers in commercial buildings, or to feed groups of machines such as are installed for air-conditioning systems. (*Figure 5 shows a plug-in busway acting as a riser in a department store.*)

In the branch circuit field there is also available a plug-in busway system rated at 50 amperes, in 2, 3, and 4-pole construction. This system has a conti-

Figure 2—cutaway of cellular metal floor showing addition of electrical system:

1. Vertical ell to extend the header to panel or cabinet.
2. Junction unit where the wires make a turn from the header into the floor cell.
3. Floor outlet for electrical service; placed where desired.
4. Floor covering adapter.
5. Standard header duct.

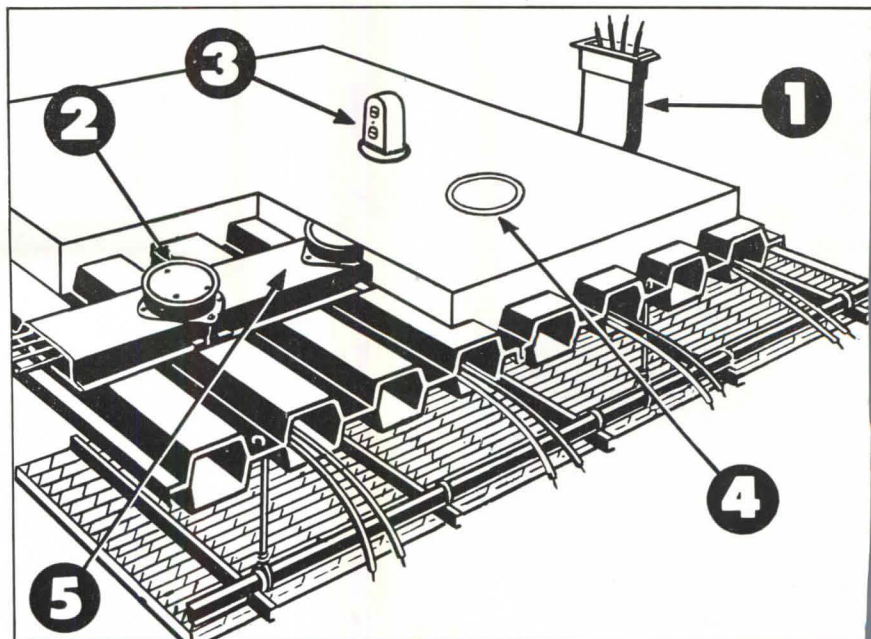




Figure 3—underfloor duct wiring system in United Nations Secretariat Building.

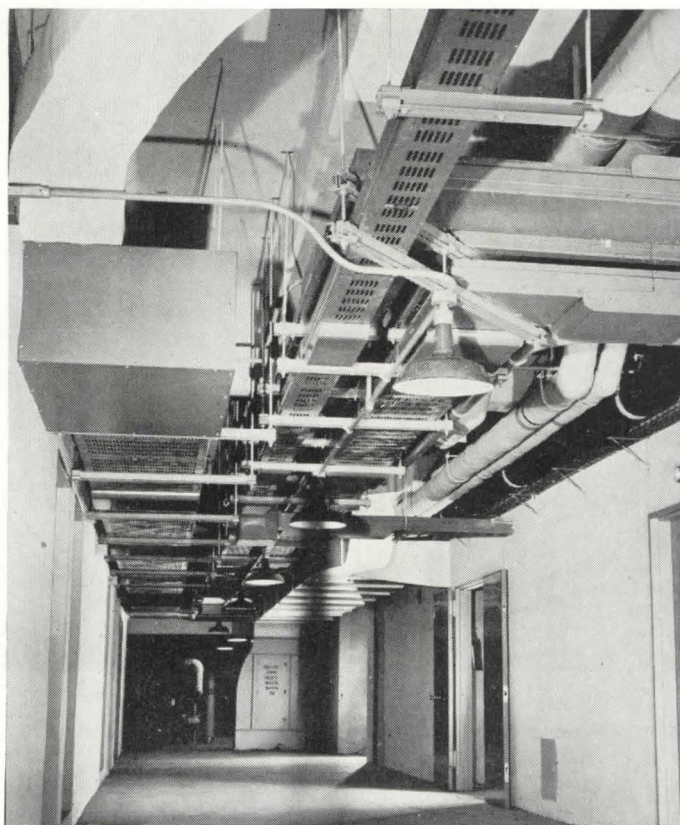


Figure 4—feeder-type busway distribution system in United Nations Secretariat Building.

ing the housing into which may be plugged of various types to feed lighting fixtures, small motors, or appliances. Trolleys are also available for installation in this system to feed various portable loads. This arrangement has been used quite extensively in department stores, and in offices and industrial plants as an economical branch circuit. The 3- and 4-pole construction provides flexibility for obtaining balanced circuit loading and switching convenient fixture groups, such as is required for night lighting or emergency systems.

Any article on wiring materials would be incomplete without reference to fabricated cable assemblies, such as flexible cable, nonmetallic sheathed cable, high-voltage interlocked armor cable. These materials consist of the insulated conductors and the associated mechanical parts assembled in the factory ready to be installed as received on the job. They

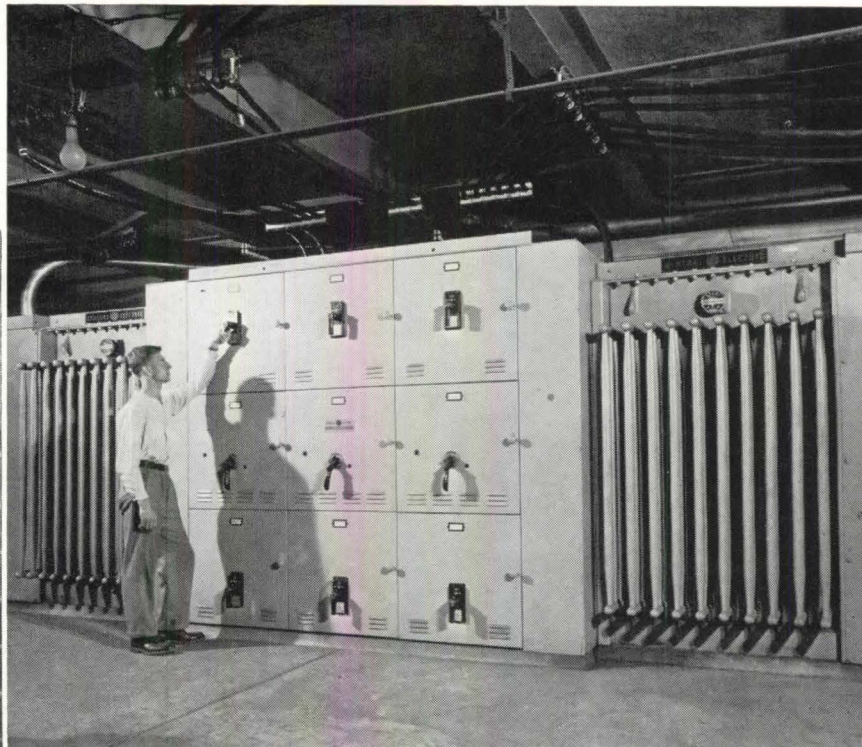
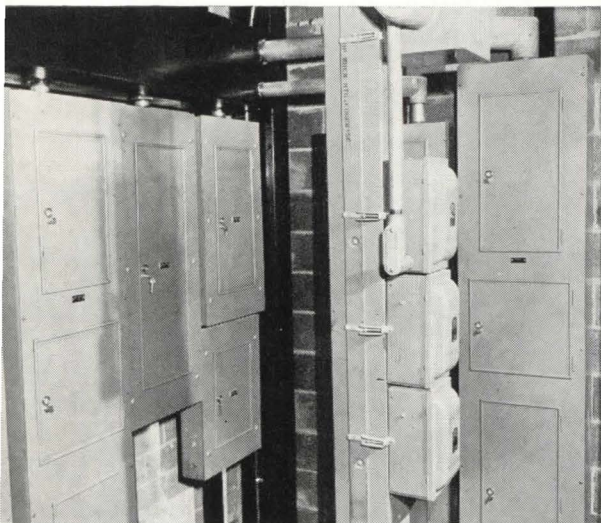
are acceptable only to a limited extent in concealed work and frequently are not permitted by local codes in certain classes of buildings. The major advantage of these types of cable systems is that no detailed dimensional electrical layout is needed and installation is made by random location of the material, taking advantage of its flexibility when obstructions are encountered. Cable systems are generally lower in first cost and, where they are exposed after installation, the cost of repair or rearrangement is very economical.

Rubber for many years was the standard material for insulating the low voltage wires used in distribution in buildings. To a considerable extent, thermoplastic insulation is replacing rubber. However, there is now available an improved higher temperature rubber insulation known as Type RH; on larger sizes of wire, it permits higher current densities. Hence, both smaller cross-section of copper and lower cost of wire for a

given load are possible. Still greater savings can be made by the use of Type AVA wire, in which the insulation is asbestos and varnished cambric. Because this type of insulation can withstand much higher temperatures, current densities can be so increased that a cost reduction of as much as 40 percent is possible. The reduction in conduit size adds largely to the reduced costs. In selecting these smaller diameter wires to run at higher temperature, care has to be taken that the voltage drop (or loss in electrical pressure due to resistance) is not excessive. Many well-engineered wiring systems use regular Type R wire because the limiting factor is not current-carrying capacity but voltage drop. In this instance the use of a premium grade of insulation may not be required except where long life of the insulation may be a factor.

Associated with each of the wiring systems that have been discussed is an assortment of fittings and boxes which serve to give mechanical support and provide an

Figure 5—plug-in type busway acting as riser in a department store (below). Plugs feed the panel-boards.



enclosure for the splices and terminations of the conductors. These accessories are well standardized. The National Electrical Code and the Standards of Underwriters' Laboratories, Inc. cover this material so accurately that there is little option as to what particular box or fitting is to be used for any particular purpose. The tendency of the architect or contractor to specify the minimum size of junction box or outlet box may result in minor savings in material, but the cost of conduit boxes of adequate size will be recovered many times over in subsequent maintenance expense.

Among the newer practices in distribution systems, the use of unit substations offers economies that cannot be neglected in any layout. The unit substation is essentially a "package" incorporating the service entrance equipment, the transformers, and the feeder switching and protective devices. These substations are designed for location in the building but not necessarily in separate enclosures, and are located as nearly as possible to the "algebraic" center of the load.

The high-voltage supply from the utility lines can be carried to the substation in interlocked armor cable and distributed from the substation over any other system or combinations of the systems described previously. The savings are prin-

cipally in the material and labor of installation of the feeders and branch circuits. Likewise, there is a saving in power losses and voltage drop because the secondary circuits are shorter. Since it is self-contained, the unit substation can frequently be located in space that is of little value, even on the roof. In the unit substation there is proper coordination of the overcurrent protective devices so as to maintain a maximum continuity of service under fault conditions. This is an invaluable advantage in large stores where even minor outages of lighting result in serious shoplifting. (*A typical unit substation is shown in Figure 6.*)

The high levels of illumination now being demanded in commercial buildings, coupled with air-conditioning loads, has raised the power requirements for these buildings up to levels previously encountered only in industry. Up to now, commercial building lighting has been supplied largely from 230/115-volt, 3-wire grounded neutral, single-phase feeder circuits or, where the utility furnished power from a network system, from a 208Y/120-volt, 3-phase, 4-wire supply. The use of incandescent lamps, which shows the best over-all economy when designed for 110-120 volts, is the basic reason for these voltage levels remaining as they are. While the intrinsic economies of higher voltage

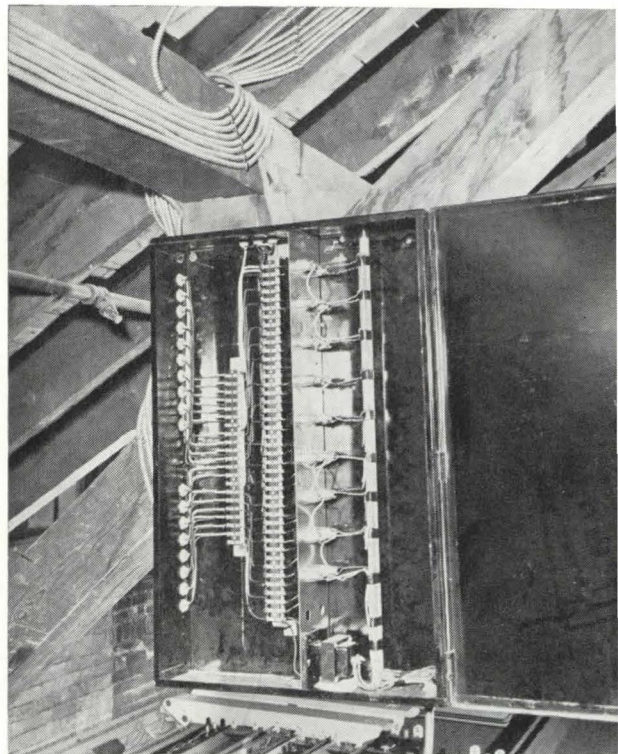
have long been recognized by engineers. Any move to adopt higher voltages has been hindered by lack of appropriate sources for operation at increased voltages, by considerations of safety, and by the fact that, generally, the power requirements in commercial areas has not been able to justify the higher voltage levels.

The introduction of fluorescent lamps in 1939 did much to change previous lighting practices. The fluorescent lamp requires a ballast between the lamp and power supply. This ballast can be designed to operate on any voltage, including voltages higher than the 120 volts ordinarily used for lighting. During World War II, a large amount of aircraft manufacturing was illuminated by fluorescent fixtures equipped with ballasts rated at 265 volts, so they could be connected directly to the 480Y/277, 3-phase, 4-wire distribution system which supplied power for manufacturing. Large numbers of fixtures in these lighting systems were controlled by magnetic ballast controllers from industrial type lighting button stations.

Modern commercial buildings and particularly, office buildings with large electrical requirements for elevators, fire-pumps, air conditioning, and other systems, have heretofore been unable to take advantage of the economies of higher voltage for fluorescent lighting.

6—typical unit substation (across-

Figure 7—remote control relays grouped in a distribution panel having high and low voltage components.



for this is that no practical means of control was available to handle individual office circuits at higher voltages. The maximum rating of conventional flush switches is 250 volts and when these switches are used to control the inductive loads of fluorescent lamp ballasts the current must be reduced by 50 percent. The restrictions are contained in the National Electrical Code; they represent sound engineering practice. The introduction of the remote-control wiring with its approved use of solenoid relays for handling load current at 24 volts, now makes it possible to use 480-volt lighting in office buildings. The relay provides the required switching means for individual office

remote-control system used for 480-volt lighting is identical with systems already in considerable use in industrial occupancies. The relay which performs the actual switching is operated from a 24-volt wall switch at 24 volts. Basically a momentary impulse of power is required to open or close the relay, a control power transformer serves the purpose of the switching on circuits in an office as large as an entire floor. The relays are usually mounted at the fixture or in a central location as will permit the shortest

runs of the power wiring. Thus, the power wiring and conduit or other raceway material to the wall switch is eliminated. (Figure 7 shows an installation of remote-control relays grouped at a distribution center.)

Any apprehension which might accompany the adoption of higher voltage is of little moment here, because the public encounters only a switch operating at the safe value of 24 volts. Further, the design of fluorescent lampholders, unlike the familiar incandescent lamp socket with its exposed screw shell and center contact, has been standardized to eliminate exposed live contacts. These two factors—a low-voltage switch and a dead-front lampholder—are features which contribute to safety. The 480-volt circuits have for many years been common to power applications so that distribution problems and standard apparatus for these voltages have been carefully worked out. A five-story, 180,000 square foot office building recently designed with 480Y/277-volt distribution showed savings of \$30 per kva of installed electrical equipment and a net saving of 4 pounds of copper per kva. The total reduction in cost for the 480Y/277-volt system, compared to a 208Y/120-volt system, was \$45,000. In this design, power was received at a unit substation at 13.8 kv and distributed first by busduct feeders

and then by rigid conduit branch circuits, with remote-control relays for switching the individual lighting circuits. Provision of 120-volt power for convenience outlets was made on a basis of 1 watt/square foot from 480- to 120-volt dry-type transformers. Of the total cost reduction of the higher voltage system, 65 percent was in the substation and power equipment, and 35 percent in the wiring. Hence, with power supplied by the utility from a 480Y/277 network and no transformer required, a good saving would still exist.

No discussion on wiring systems would be complete if it did not make a plea for adequate wiring. The architect and the engineer under pressure to keep costs down are prone to recommend an electrical network for the commercial building which barely meets the power requirement for the initial occupants. Where the building will be known to have a definite life, as in the case of a temporary "tax payer," such recommendations are probably fair. But it is a gross disservice to the owner of any building to recommend an electrical system that does not recognize an increase in the use of electricity of at least the rate which has prevailed over the past two decades. The loss in rental for the time required to rewire an office may often exceed the initial cost of an adequate wiring system for that office.

Congo cup



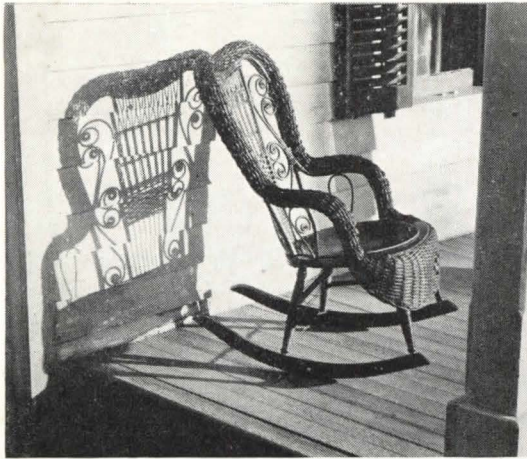
bootjack



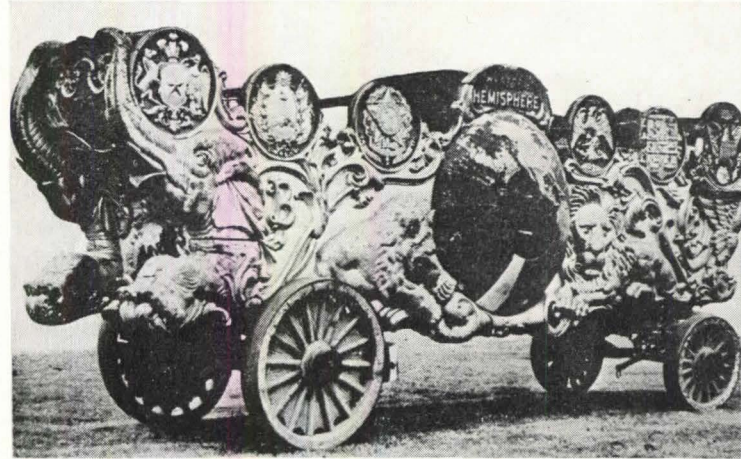
Gaudi chimney



Peruvian goblet



rocking chair



circus wagon

"And am stucco'd with quadrupeds and birds all over . . .",

Walt Whitman.

"All things counter, original, spare, strange;
Whatever is fickle, freckled (who knows how?)
With swift, slow; sweet, sour; adazzle, dim; . . .",

Gerard Manley Hopkins.

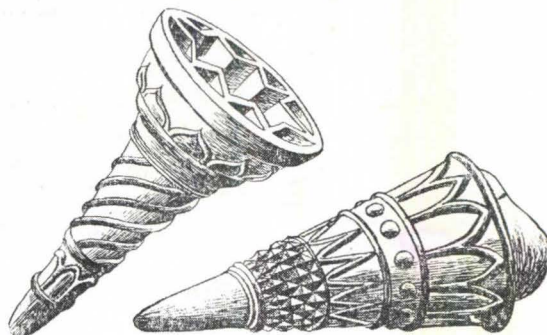
Confessing a nostalgia for the fantastic, I write as one for whom the theater will never have the brilliance that Maeterlinck's *Bluebird* had for me on my fifth birthday, who would rather come upon the gingerbread house (in *Hansel and Gretel*) than almost any other building in the world (excepting the temple at Orissa).

In my teens, Sean O'Casey's *Within the Gates* held out promise of equivalent luster; the transients of a park (park) played out in microcosm on their narrow benches the dark official monument (every monument) the terrible mess of the world of men. (I particularly remember the Sal Army workers' uniforms, much more piercingly mauve-blue vermillion-trimmed than any slate-and-scarlet uniform in the heightening of familiar reality in key with the baldn the play.) The early Saroyan also held this power of mag tion. Surely the jackpot moment in *Time of Your Life* w

(Continued on pa

ice cream cones

Illustration credits: page 169



hotels and motels

One argues that motels will ever make hotels obsolete. Hotels show no sign of being replaced as a facility for those who travel by train or plane; or for meetings of local organizations, conventions, etc. Any motor traveler, however, can testify that the two types of accommodations compete directly for his overnight dollar. With growing emphasis on tourist resorts—swimming pools, locations in the mountains, on lakes, by the ocean, etc.—the motel increasingly invades the resort-hotel field. Whatever the eventual balance to be struck, the motel's convenience and (sometimes) modest cost are sufficiently appealing so that, according to a recent article in *Fortune* magazine, there are now some 30,000 of them in business in the U. S.—4000 built since World War II. To meet this competition, both types of caravansary are in the process of notable improvement in plan, design, and equipment.

In hotels, for example, where air-conditioning used to be featured in a few public rooms, the bedrooms are now frequently equipped with guest-operated controls that will produce the climate of one's choice. In the design of the typical room, a definite trend is toward the living-bedroom rather than a mere bedroom. This month's INTERIOR DESIGN DATA (Pages 9-135) explores in detail examples of this trend in the resort-hotel field. Another trend is the increasing use of most of the perimeter of the street floor for shop-rental space, with hotel public rooms kept to interior or upper-level locations. To simplify garaging—perhaps added by the motel's complete ease in this regard—new hotels almost invariably have a garage "built in."

Motels have come along at a great rate. Not only have they grown in number, but appointments in some of them have become as luxurious and rates as high as those in the resort hotel. While most still serve simply as overnight stopping places, there is a clear trend toward development of the motel—or whatever it should then be called—as a resort in itself. For instance, in the case of one of the projects shown in this issue (Pages 110-111), the accommodations are not even open to the passing motorist; rental units must be reserved well in advance. Another new factor in the field is the motel "chain," with a series of projects of similar standards and design, all operated by one corporate management.

These are admittedly but random highlights. Now in preparation are two books, to be published by Reinhold Publishing Corporation in the PROGRESSIVE ARCHITECTURE LIBRARY series, that will explore both these building types in full detail. One, to be called *Motels*, is being written by Geoffrey Baker & Bruno Funaro. The other, by Charles Warner, Harold Leeds & Henry Shotwell, is tentatively entitled *Hotels and Hotel Remodeling*.



location	Moorhead, Minnesota
architects	Thorshov & Cerny, Inc.
architect in charge	Newton Griffith
engineers	Ralph D. Thomas and Associates, Inc.
general contractor	Standard Construction Co.

hotel interior

An exceptional story surrounds the design of the Frederick Martin Hotel. The structure was designed by Magnus O. Foss, of Moorhead, Minnesota. But Thorshov & Cerny, Inc., of Minneapolis, were responsible for design of all public spaces, of the stationery, glassware, silver, match folders, etc., as well as selection of fabrics, furniture and color schemes, and outfitting the place from top to bottom.

It happened this way. After the shell of the building was completed, funds of the group that launched the job ran out; work was suspended, and the building stood incomplete and useless. The contractor who

had built the shell decided to purchase it and, through a realty subsidiary, carry the job to completion. No major plan changes could be made, but the Minneapolis architects had the total interior-design problem. First units completed were the cocktail lounge, and the adjoining ballroom on the top floor. Subsequently, they designed the first-floor rooms—coffee shop, bar, and lobby.

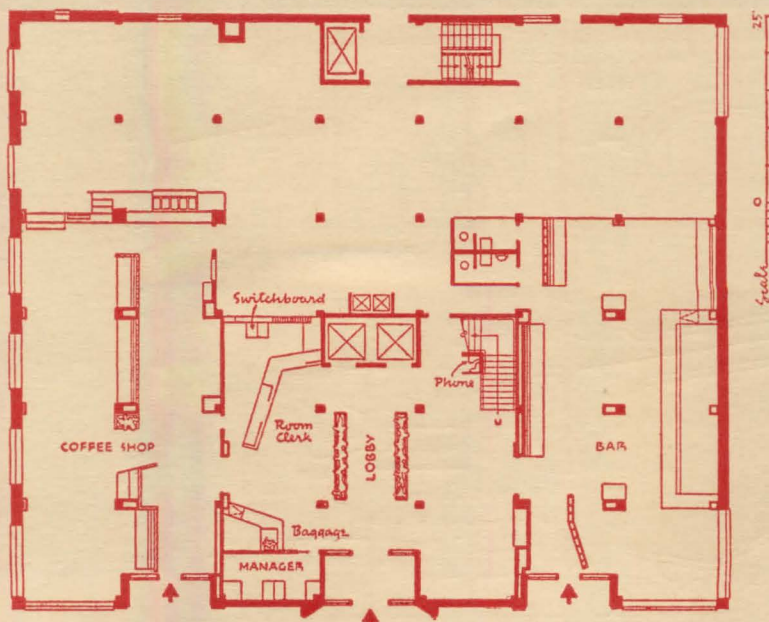
Handling the interior design and furnishing of all the guest rooms was next on the agenda. The fabrics purchased determined basic color schemes, with one standard fabric used for each floor. Rooms

on the east and west were treated while rooms to the north were in a monizing color. Corridors are gray, one wall in an accent color, born from guest-room schemes. Throughout design approach was to achieve "f without flash." They wished to provide "big hotel look" but not so sophisticated that it would discourage local patrons.

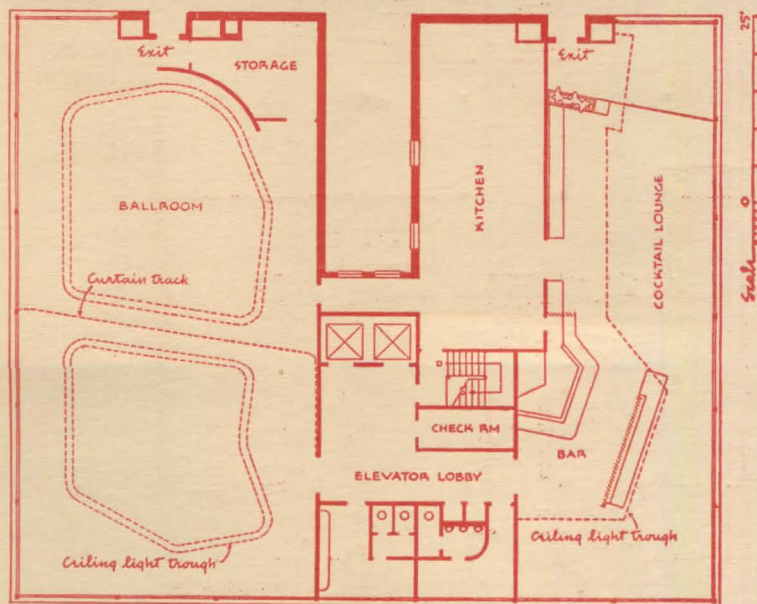
Since opening, the hotel has done good business, not only with regular guests but for conventions, local meetings, etc. Groups have even come from the Twin Cities—almost 250 away—for weekend trips.



the street floor, the architects designed the lobby (above), the coffee shop (above, right), and the bar. Color plays an important role throughout. Main themes merge with colors selected for stationery and other accessories—white, and scarlet. In the lobby, these colors are used against a background of rich walnut paneling; the flat ceiling is gray; the dropped ceiling, red. In the coffee shop, the draperies are yellow; the ceiling, yellow and white. Opposite the windowed wall shown, is a wall of pine siding painted a rich red. Photos: Everett Kroeger

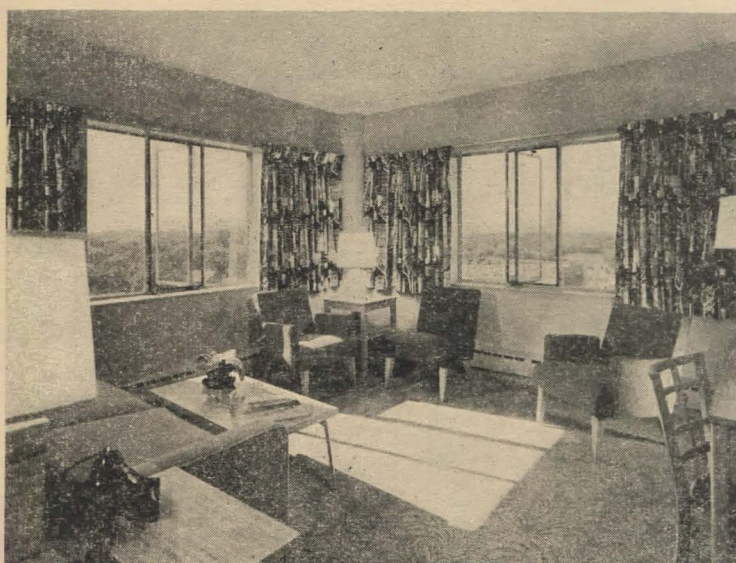


First Floor Plan



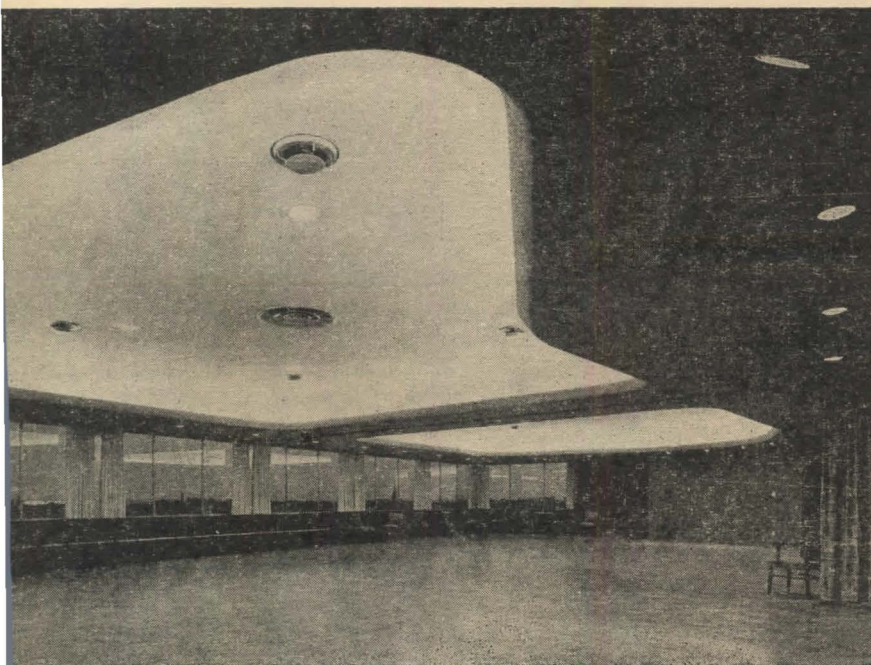
Seventh Floor Plan

View windows run from wall to wall on three sides of the top (seventh) floor. The bar and cocktail lounge (above) has a quarry-tile floor with dropped ceiling and backwall of natural redwood strips in the bar area; elsewhere, carpeting is the floor covering, and the plaster ceiling is painted blue.

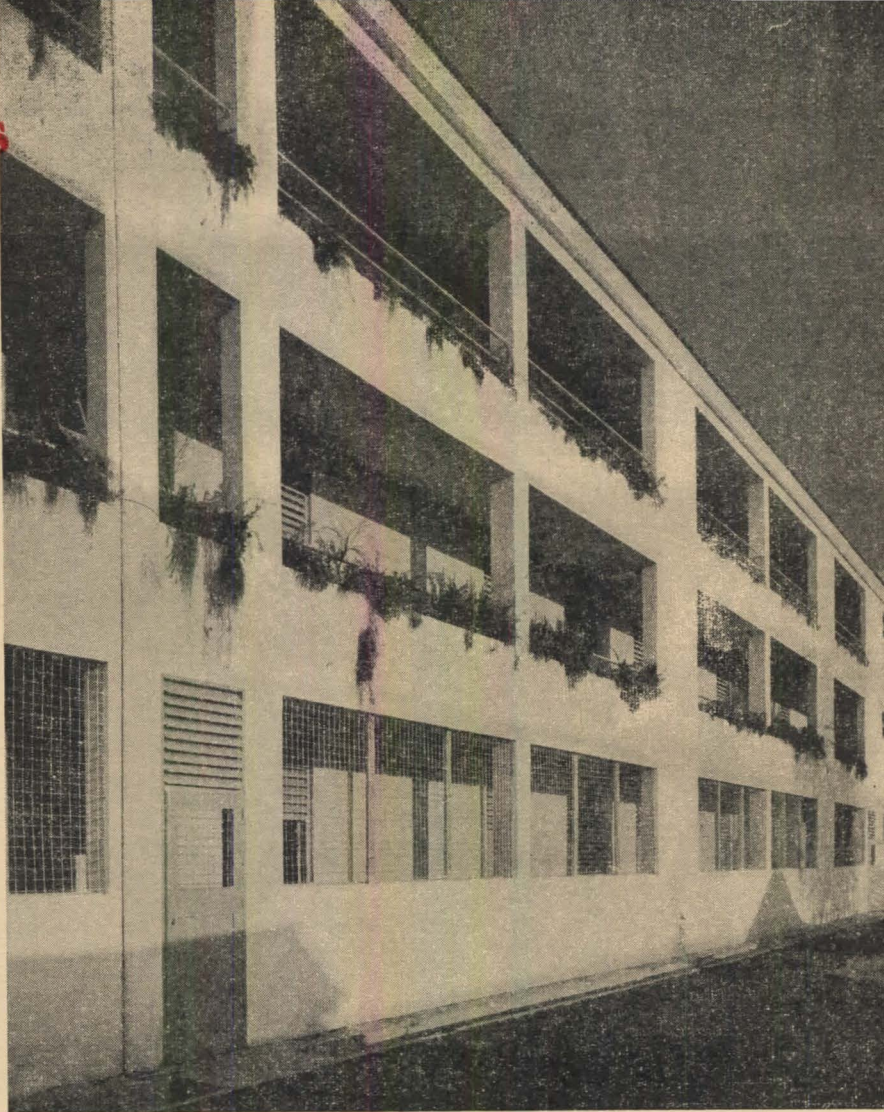
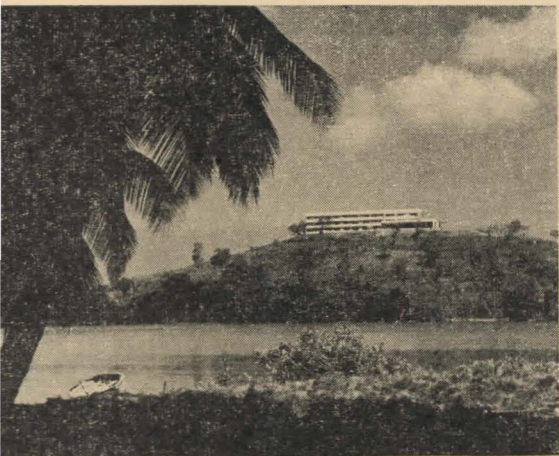


The architects selected all furnishings, planned their arrangement, designed the accessories (including wastebaskets!) and even chose the bed linens. Typical guest rooms (two photos at right) have color schemes built around the drapery fabric.

The ballroom (below) may be divided into two smaller spaces by means of a curtain on a ceiling track that occurs between the two free-form ceiling coves. Dropped, hard-plaster ceiling areas are gray; the recessed surfaces, finished with acoustical plaster, are painted white.



HOTELS & MOTELS



location	St. George's, Grenada, B.W.I.
architect	Anthony C. Lewis
furnishings consultant	T. Eaton Co.
general contractor	Ash & Watson, Ltd.

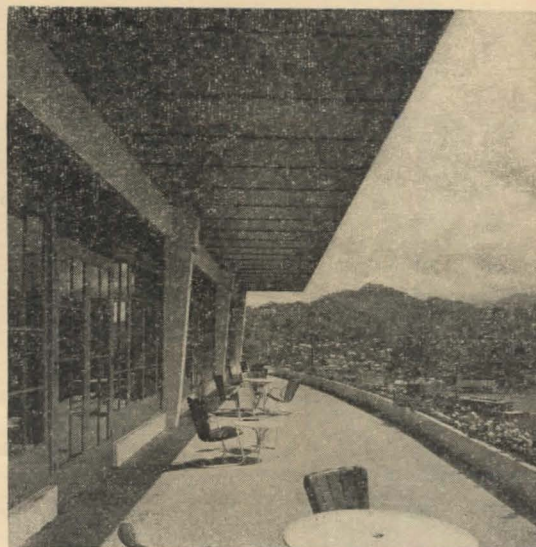
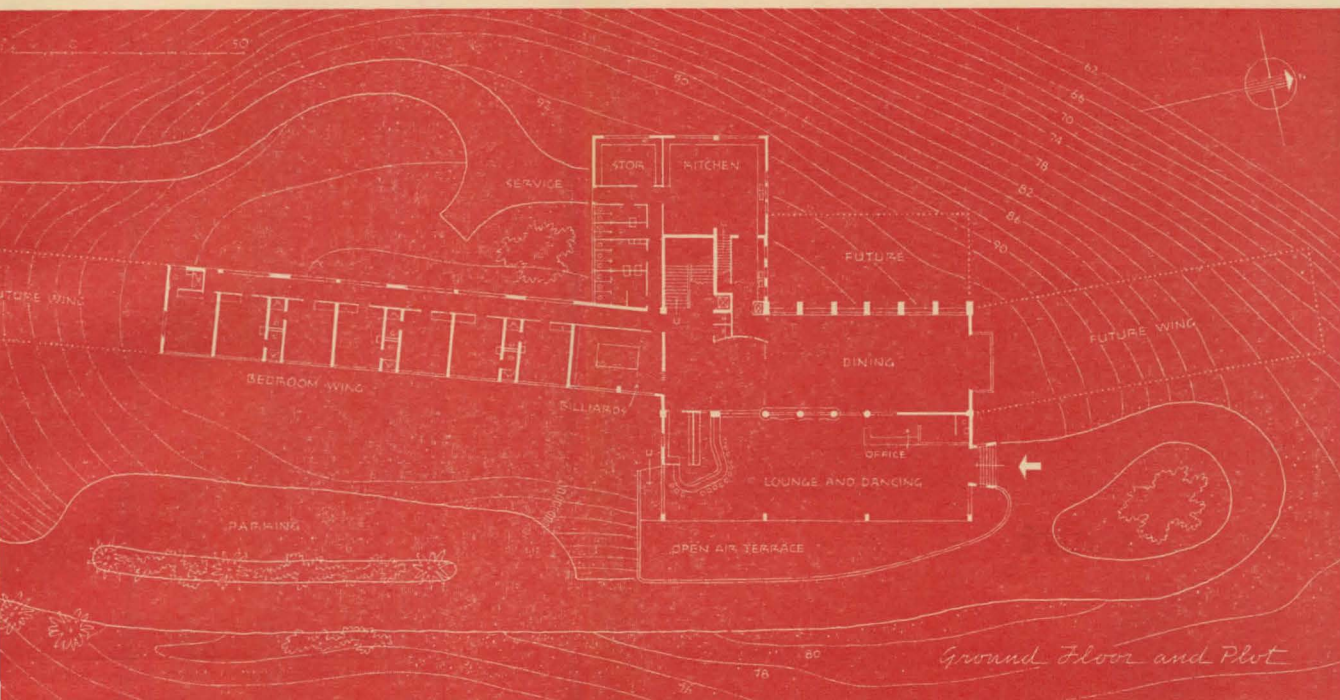
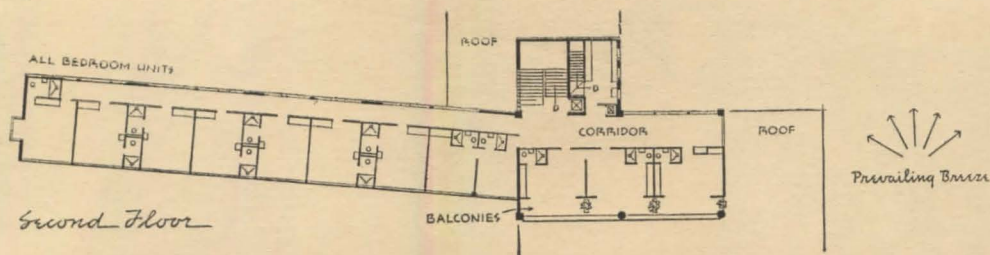
resort hotel

A 30-bedroom resort hotel—a future wing to the north will add another 20 rooms—this structure was built in 1949. One hundred feet above sea level on a peninsula, it overlooks the capital of Grenada and the Carribean beyond.

Chief design problem was to take advantage of the prevailing northeast to south-east trade winds and minimize the heat and glare of the western exposure. Hence, all bedrooms as well as public spaces are oriented to the favored compass point, and exterior bedroom walls are composed of windows and louvers; additional louvers

above bedrooms doors create a venturi effect, and the architect reports that "rooms are magnificently cool when every portion of the windows are open." Public spaces are one interrelated area, with lounge, bar, and dining room separated by plant troughs or a change in level.

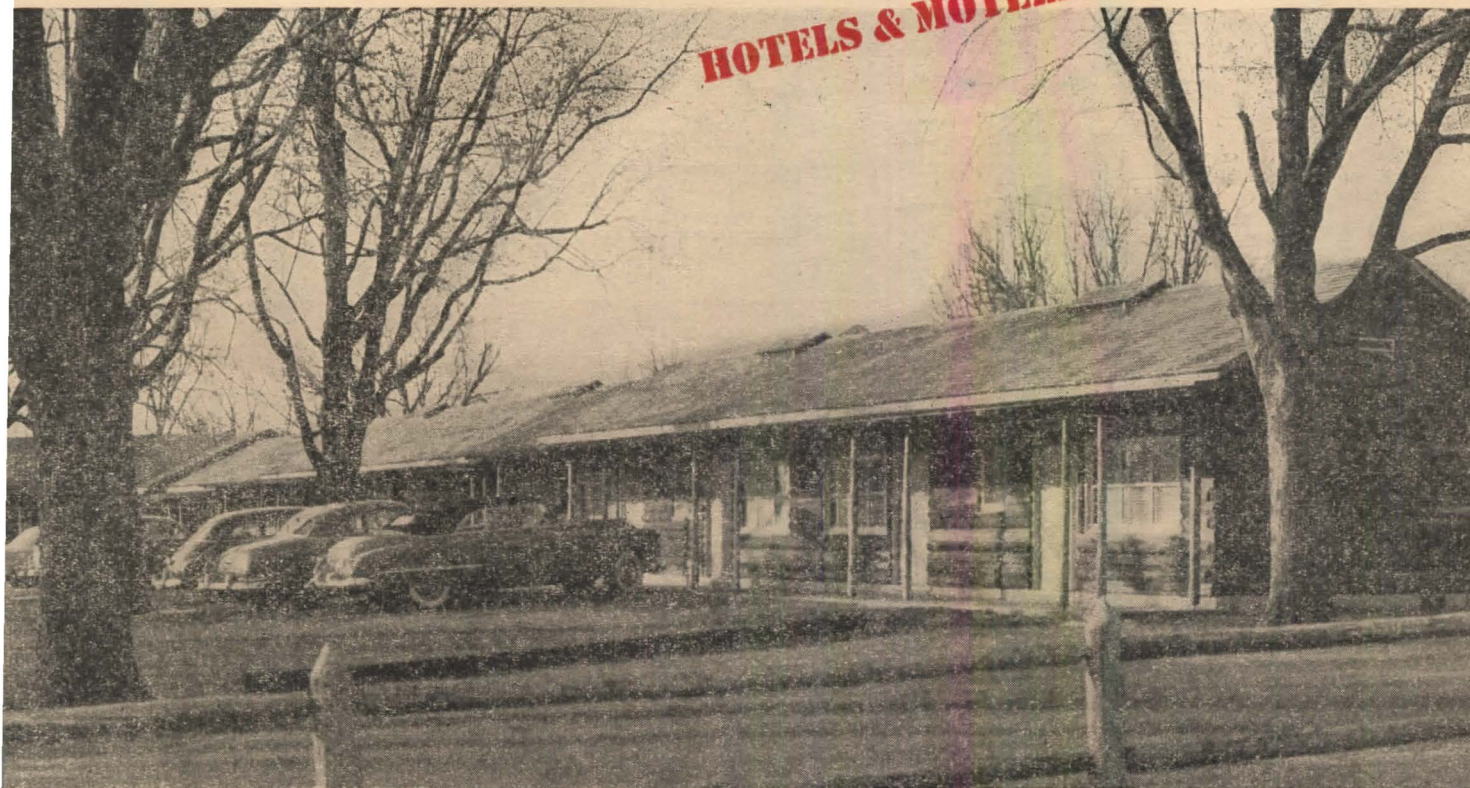
Structurally, the hotel consists of forced concrete frame and floors, wood-framed, insulated roofs, surfaced corrugated asbestos; partitioning is hollow clay block. Flooring in public rooms is terrazzo; pine in bedrooms. Neither heating nor air-conditioning was required.



The first floor (not shown) duplicates the second, except for a sun terrace above the dining room. Access corridors (large photo acrosspage) are open promenades. Eyebrows above guest-room windows (detail, far left, acrosspage) simplify window cleaning. The dining room (above) overlooks the lobby-lounge area, off which an open terrace (right) commands an eyefilling view of town, sea, and distant hills.

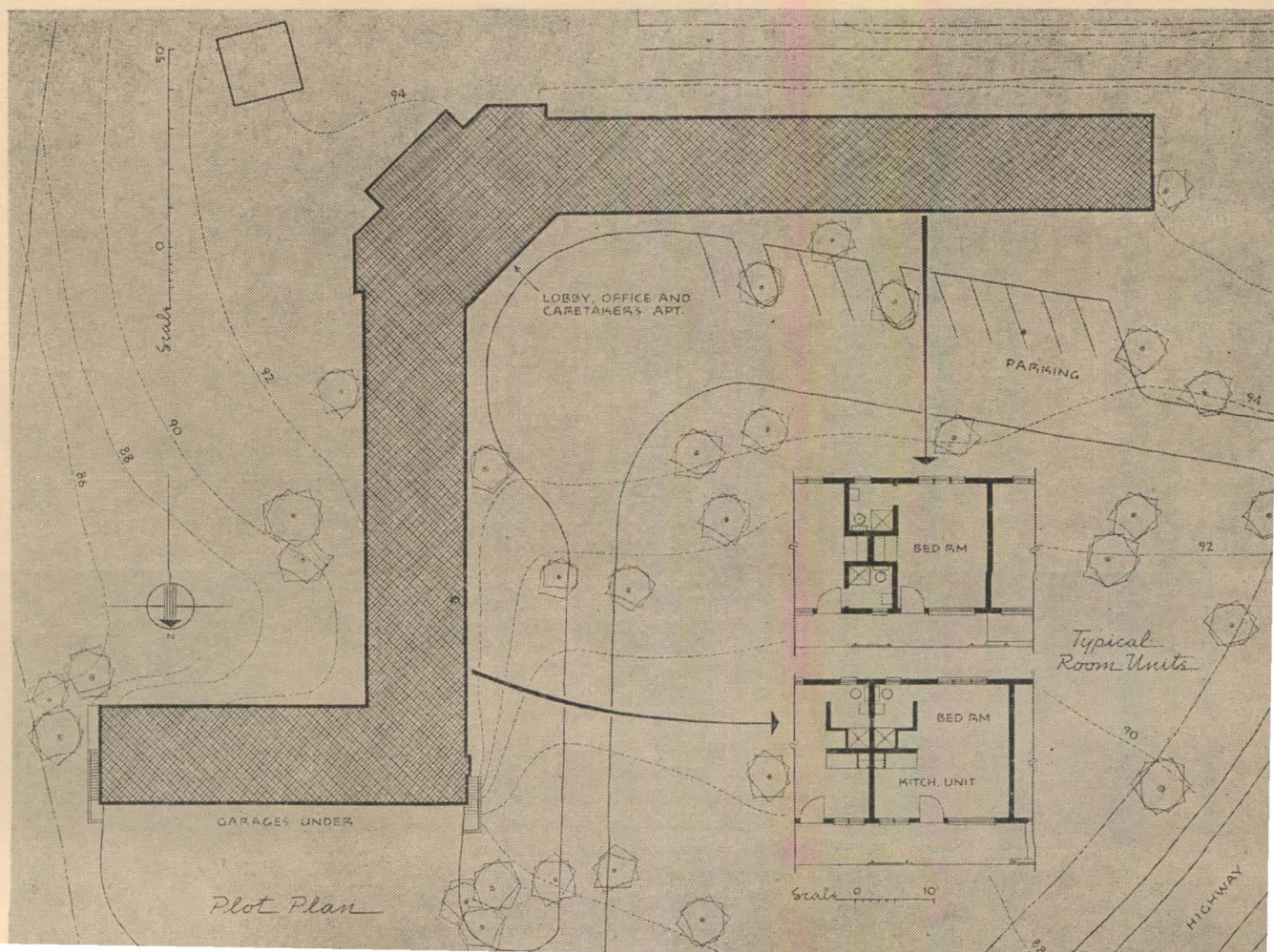
Photos: Tom Leonard

HOTELS & MOTELS



motor court

location | Green Lake, Wisconsin
architects and engineers | Auler, Irion & Wertsch, Inc.



unit motor court—10 of the units including kitchenettes—this spreadout project is located on the curve of a Y intersection of highways to neighboring towns. To the north, there is a grade drop of 10 feet from one corner of the well-wooded site to the other. The motor court, prominently placed on the upper contours, is shaded the year around.

It is laid out in a sweeping C plan, with an east wing (above garages) at the northeast corner of the group, the units sloping down to meet the slope of the site. A covered porch, with gradual ramps, connects

all units for easy servicing.

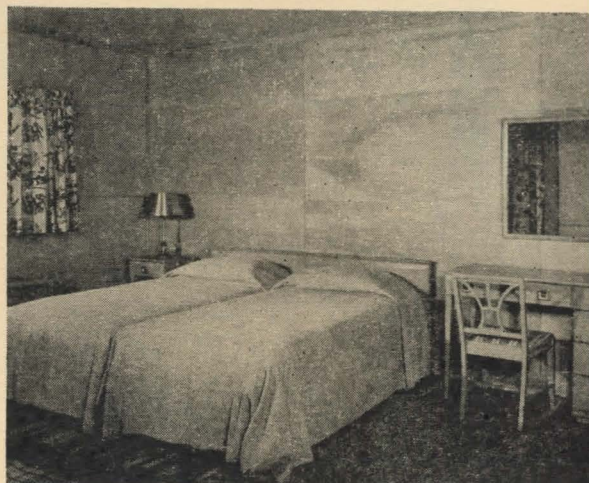
Use of solid-log construction was facilitated by the owner's interest in a log-producing company. The logs were fastened together with 8" spikes, with joints calked with yarn and compound. Interior walls are finished in birch plywood; flooring in the rental units is hard maple.

At the joining of the two long wings is the lobby-office unit that also includes a caretaker's apartment and a basement heater room. A coal-stoked furnace serves a steam-heating system, with convectors in each of the rooms.



Normally, guests leave cars immediately outside their rooms. For severe winter conditions, however, there are enclosed garages under the northeast wing of the building (above). Finish of the typical rooms (right) includes hard maple floors and light oil-stained birch plywood walls. Gypsum board is the ceiling surface.

Photos: Theodore H. Irion



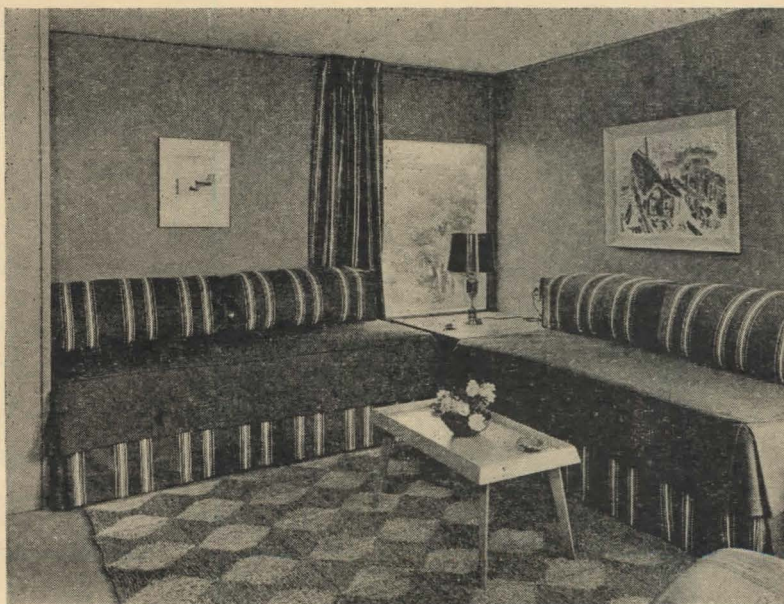
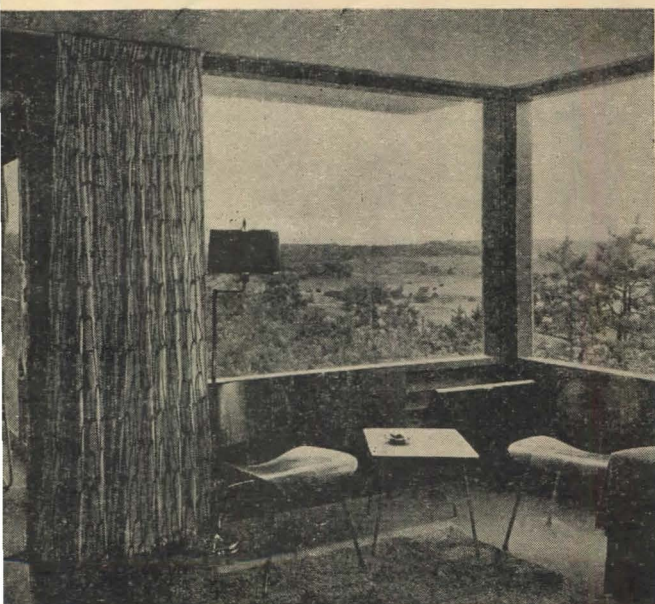
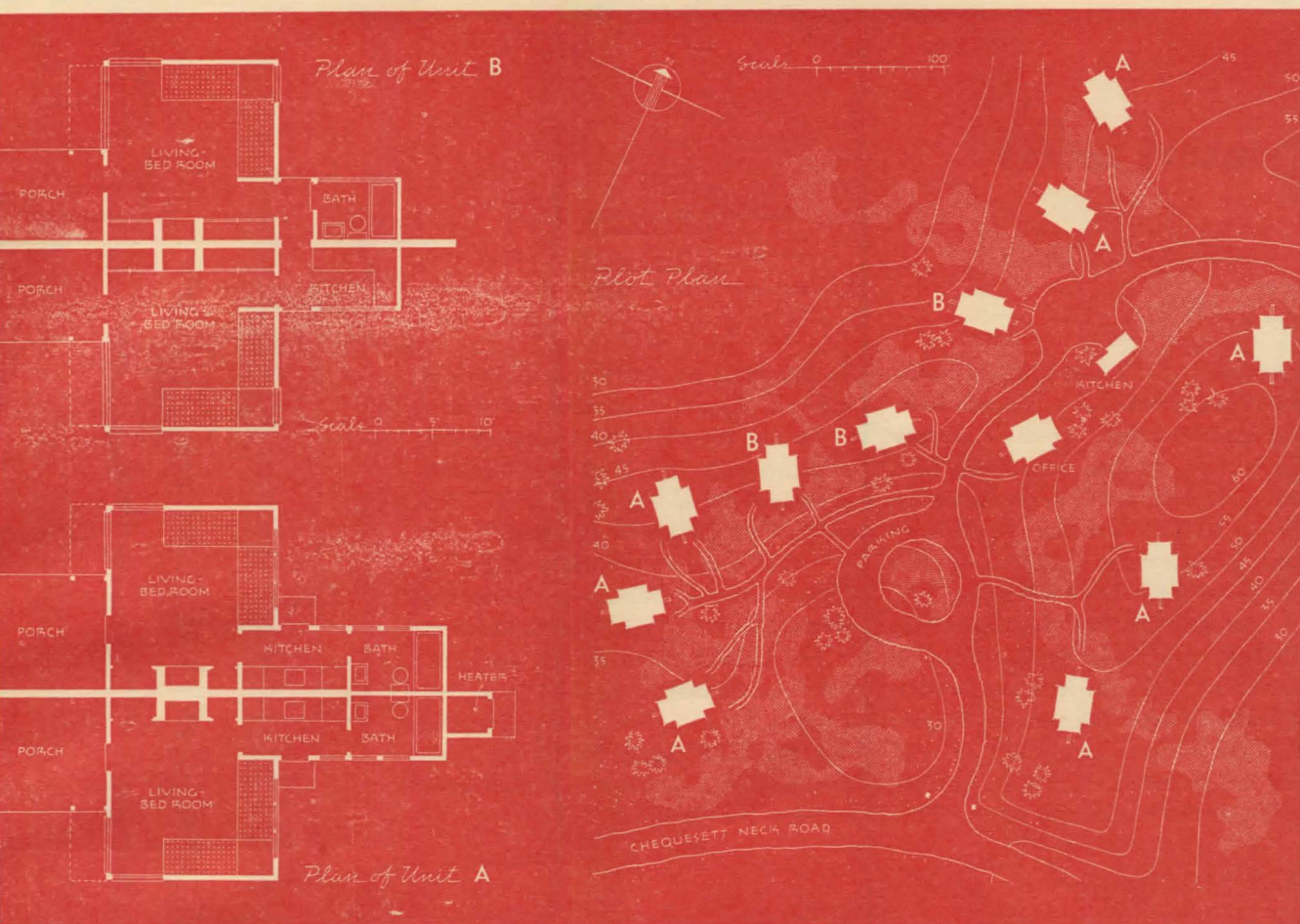


vacation motel

location	Wellfleet, Massachusetts
architects	Saltonstall & Morton
landscape architect	Stanley Underhill
builder	Edward T. Whiting

More than a motel and not quite an inn, this group is made up of a series of cottages, each with two housekeeping apartments; or, in the case of Type B, a unit that may be used to accommodate a family of four. Each unit has a living-bedroom, kitchen, bath, and porch. A separate unit houses a casserole kitchen where prepared casserole dishes, salads, and basic groceries are available. The group is not for the use of the passing motorist. Rather, the units are rented on a vacation basis, for a week or more. Extraordinary attractions include maid and porter service, firewood with fires laid each morning, and a first snack in the refrigerator on the tenants' arrival.

A program requirement was that the houses be spaced sufficiently to provide complete privacy. Fixed glazing and ventilation were selected, to minimize the need to check on the houses during weather or when tenants are away. A concrete-block wall divides each house into two apartments, physically and acoustically, and exterior extensions of these keep the porches private, as well. The houses are of frame, with waterproofing board on the exterior and insulating board as interior surface. They have gas refrigerators, stoves, and heaters. Prefabricated heat-distribution cores are part of the fireplace construction to increase heating efficiency.



At the typical corner window (above, left) drop panels below the glazing introduce ventilation via screened louvers. In one corner of a living-bedroom in a Type B house (above, right), the panel occurs above the window. Outside colors echo the surrounding countryside—sage green, dusty gray, beach plum; inside, each apartment has its own color scheme—and original watercolors and drawings.

Photos: Bishop & Scott

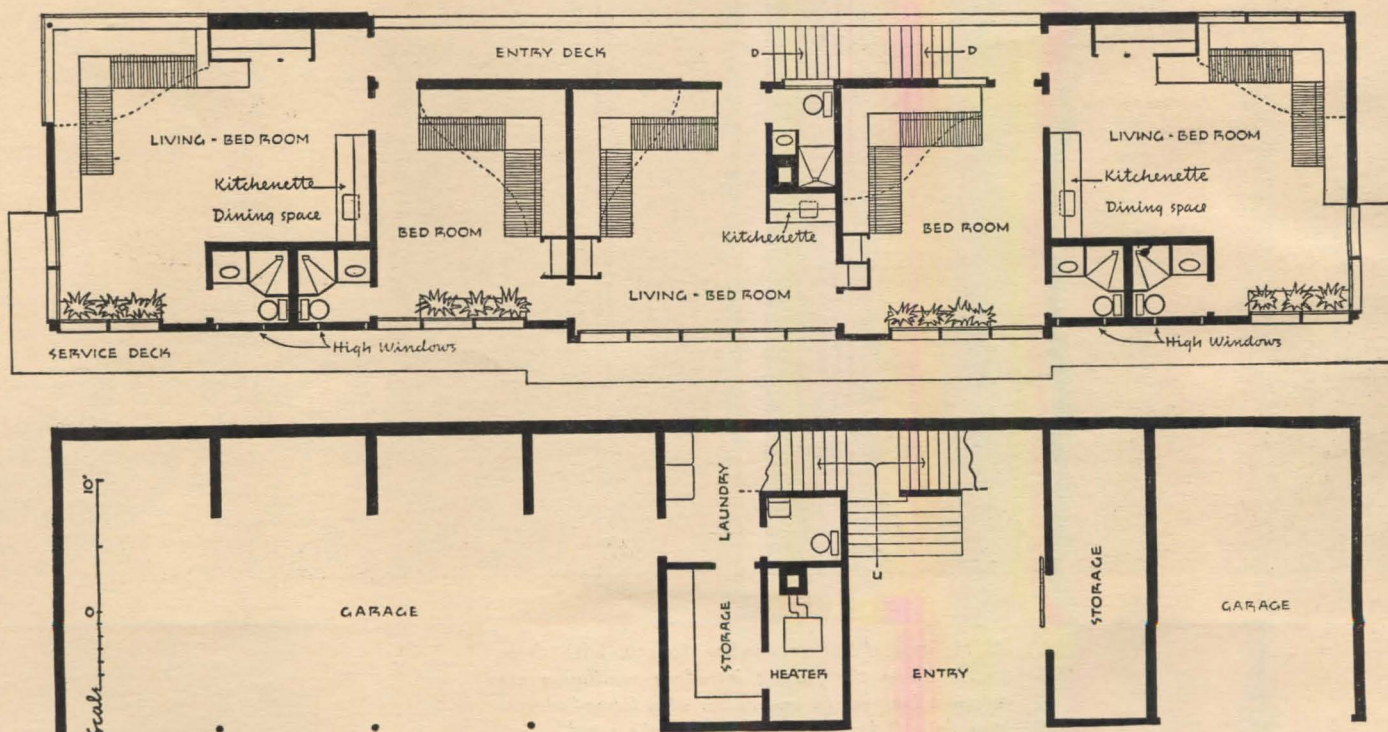
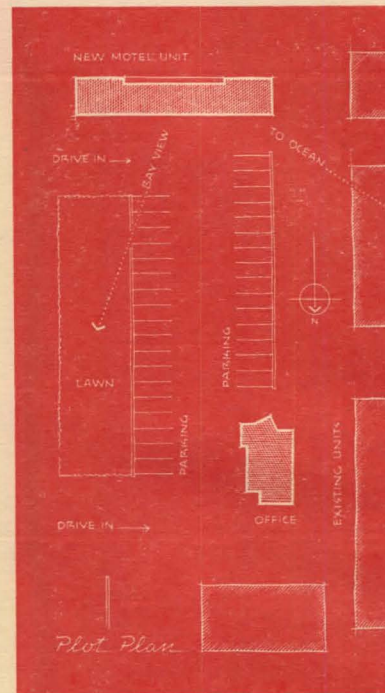
resort motel

location	Ocean Lake, Oregon
designer	W. F. Severin
contractor	W. F. Severin

As indicated on the plot plan (*at right*), the building shown is an addition to an existing establishment. Purpose of the new units is rental to those vacationing for a week or more. In plan, it was desirable that the units be laid out so that one would accommodate a couple, while two or more could be joined to house a family.

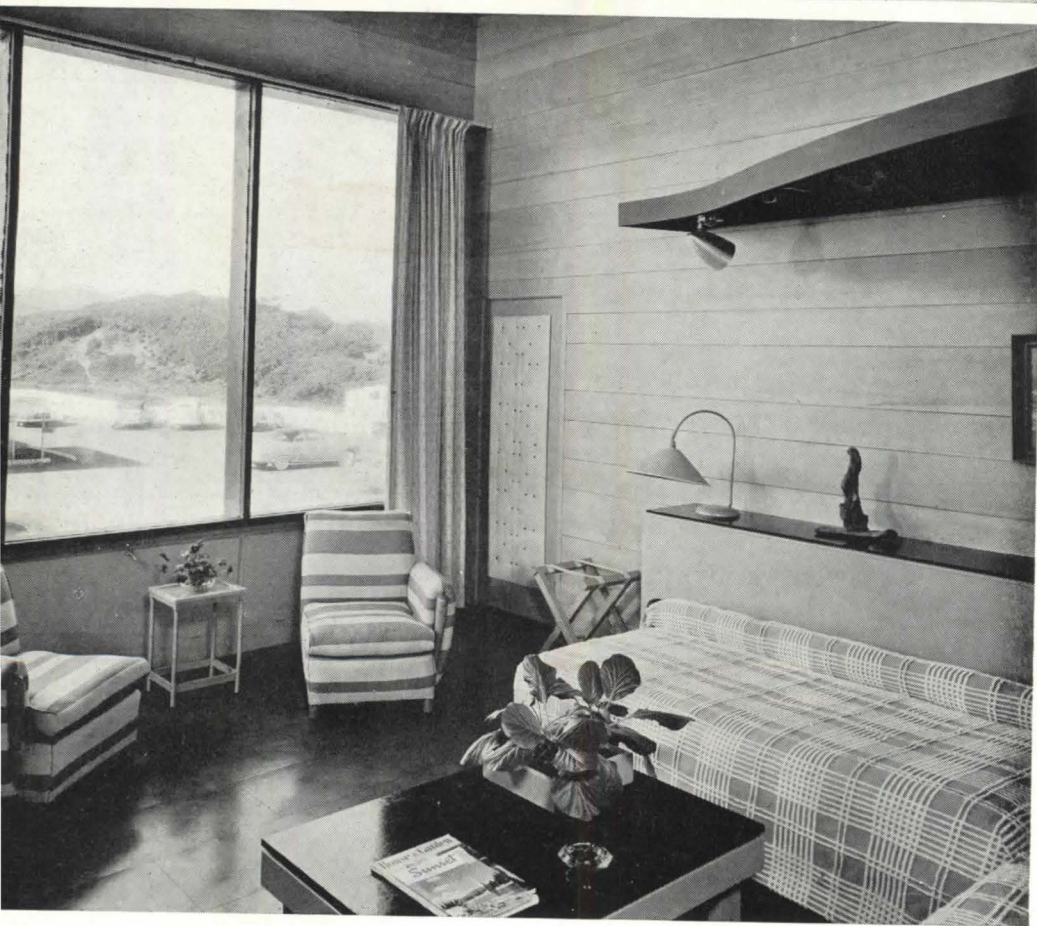
A site problem was that intervening buildings cut off ocean and bay views extending in a wide arc from northwest to northeast. To cope with this, the designer raised the units to an upper-floor level, using the ground-floor space for garages, storage, service rooms, and access. Thus,

the units gain the view across the roofs of other buildings. This solution was abetted by the fact that there was an existing concrete retaining wall along the south side of the site. By adding buttresses at either end and on 12-foot centers along it, not only was the old wall strengthened but the buttresses became footings for pipe-column supports for the 6" x 12" laminated beams to which the superstructure is anchored. Otherwise the building is of frame, worked out on a 4-foot module, with load-bearing sash and fixed glazing. Ventilation is via louvered openings that occur either above or below the glazing.

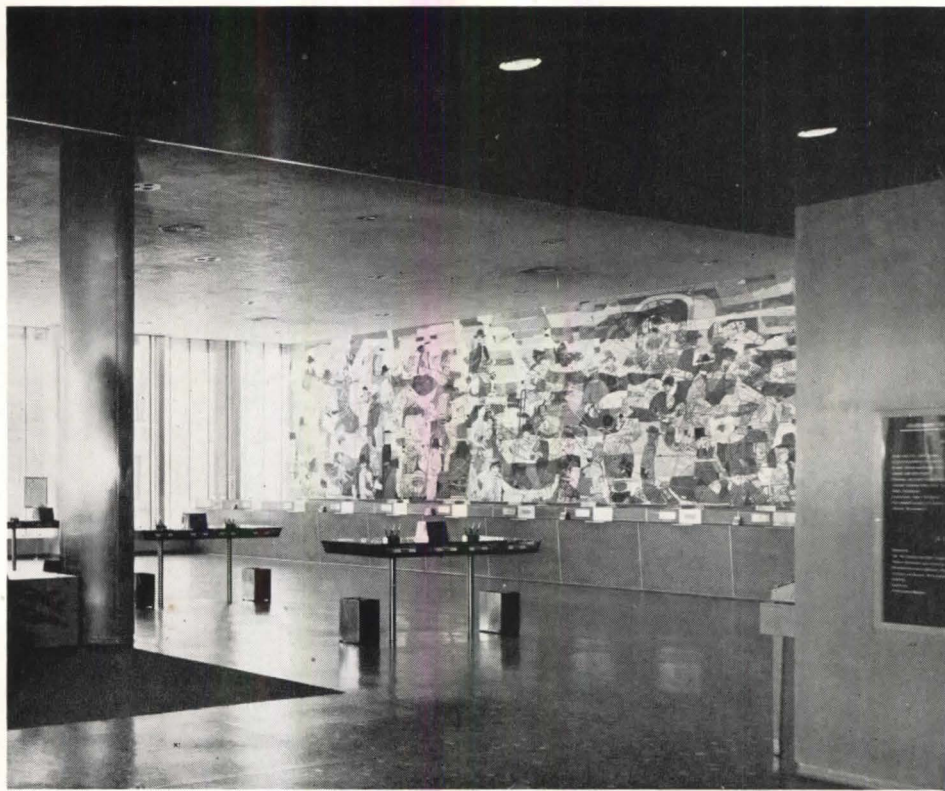
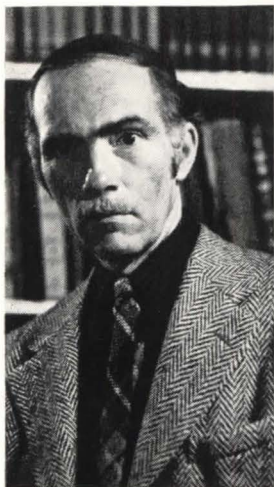


Ground and Upper Floors

HOTELS & MOTELS



Photos: Carroll C. Calkins

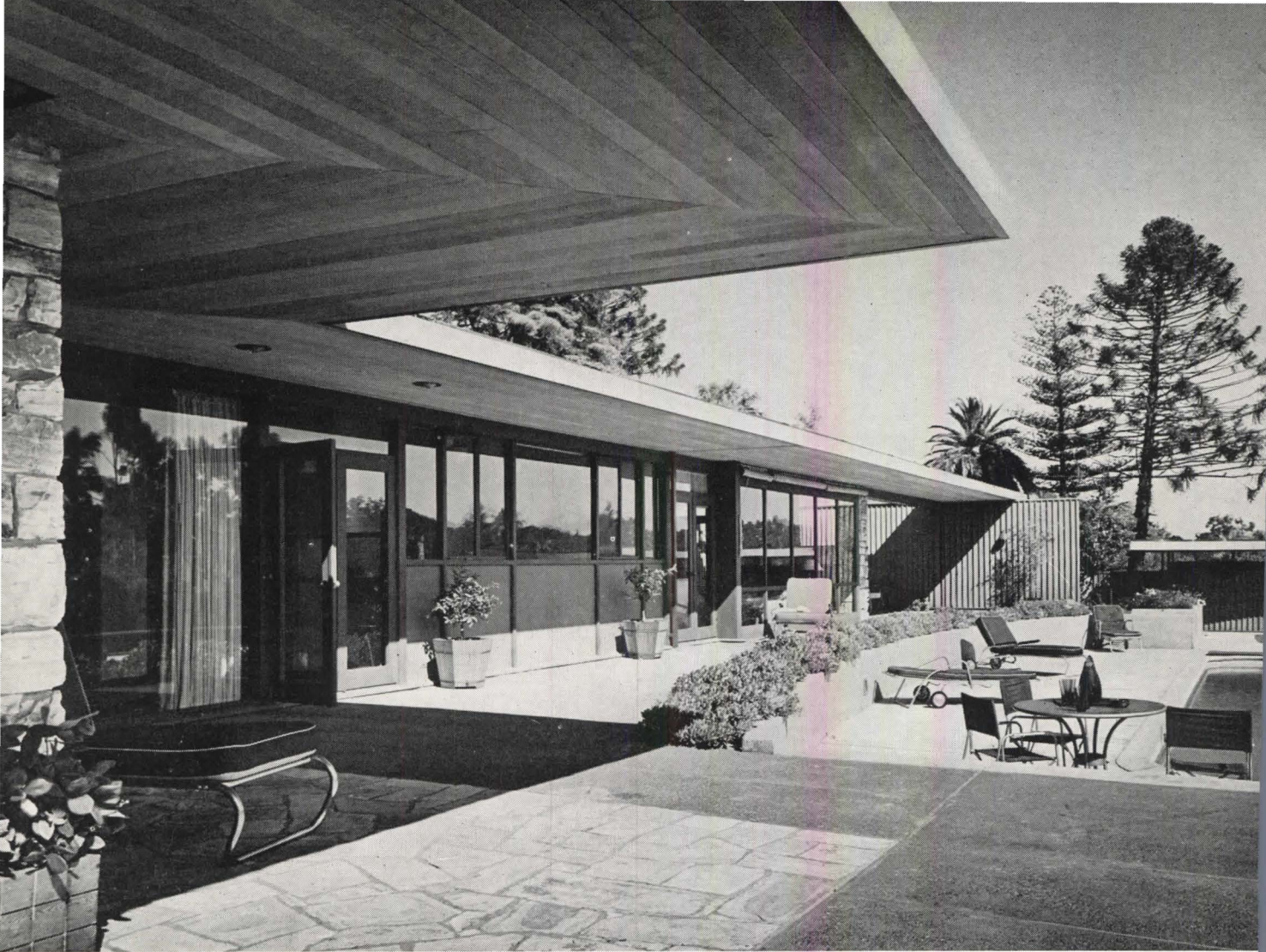


mural painting

Wild turmoil of the Oklahoma Land Rush on April 28, 1889, when 50,000 men, women, and children raced into lands that were to yield riches beyond greediest dreams, is the subject of the lively and rich-hued mural painting recently completed by Fred Conway, Missouri artist, in the banking room of First National Bank and Trust Company, Tulsa, Oklahoma. Conway secured the \$25,000 commission as winner of an invited competition conducted in 1950 by Philbrook Art Center, Tulsa. The mural is 70' x 30' and won praise of the competition jurors as "eminently suggestive of Oklahoma, alive and zestful in atmospheric rather than descriptive." Robert Carson, of the firm, Carson & Lundin, New York, architects of the bank building, pronounces the mural congenial with the architecture and color of the bank interior.

Photos: Hopkins Photography





house by Henry Hill

The home of parents and four children, this is a remarkable instance of a commission in which the clients gave the designer so explicit a program that the very first sketch became the adopted *parti*. Typical excerpts from the clients' statement:

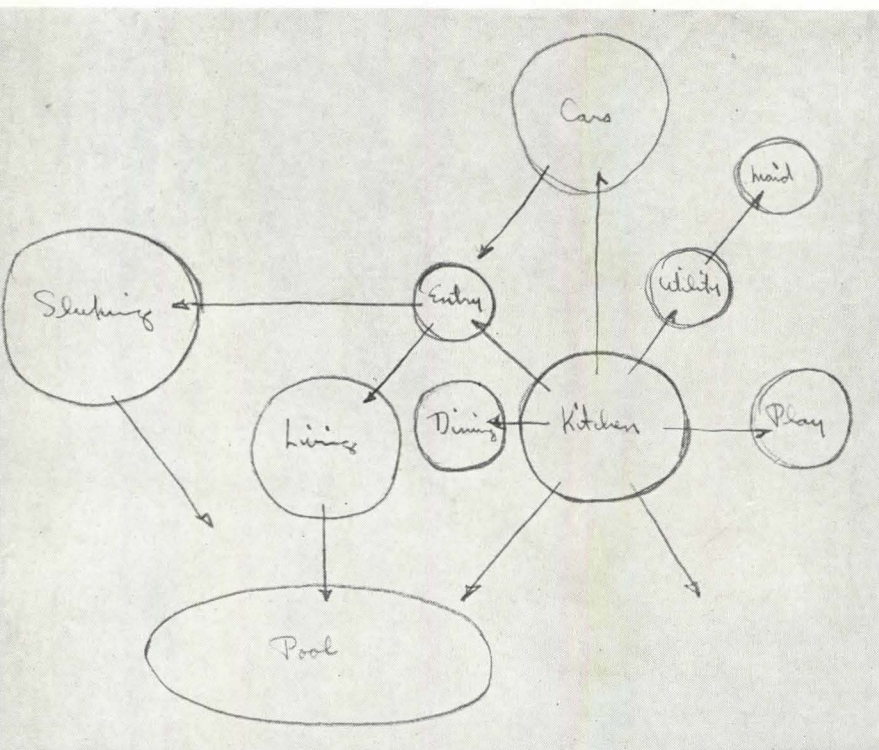
"We like informality, comfortable living, and ease of maintenance. We choose modern convenience over traditional style . . . Informal entertaining consists of from one to five couples for cocktails and dinner, or an afternoon swimming party followed by a barbecue . . . All of us enjoy outdoor living immensely . . ."

After listing the rooms needed, they even tabulated their special storage require-

ments and went into such things as: "The kitchen should have easy access both to the dining room and to outside living areas. The kitchen-dining idea we like from the family standpoint; however we also want a dining room, away from kitchen noise. The playroom should not be near bedrooms but have good access from kitchen and outdoors."

The site is a narrow, east-west-oriented lot, with access from the north, and a considerable slope to the south. As the project shows, the solution is a 175-foot-long house with all major rooms facing the south side, with service rooms and circulation located along the north wall.

location	San Rafael, California
landscape architects	Eckbo, Royston & Williams
general contractor	Farre Brothers

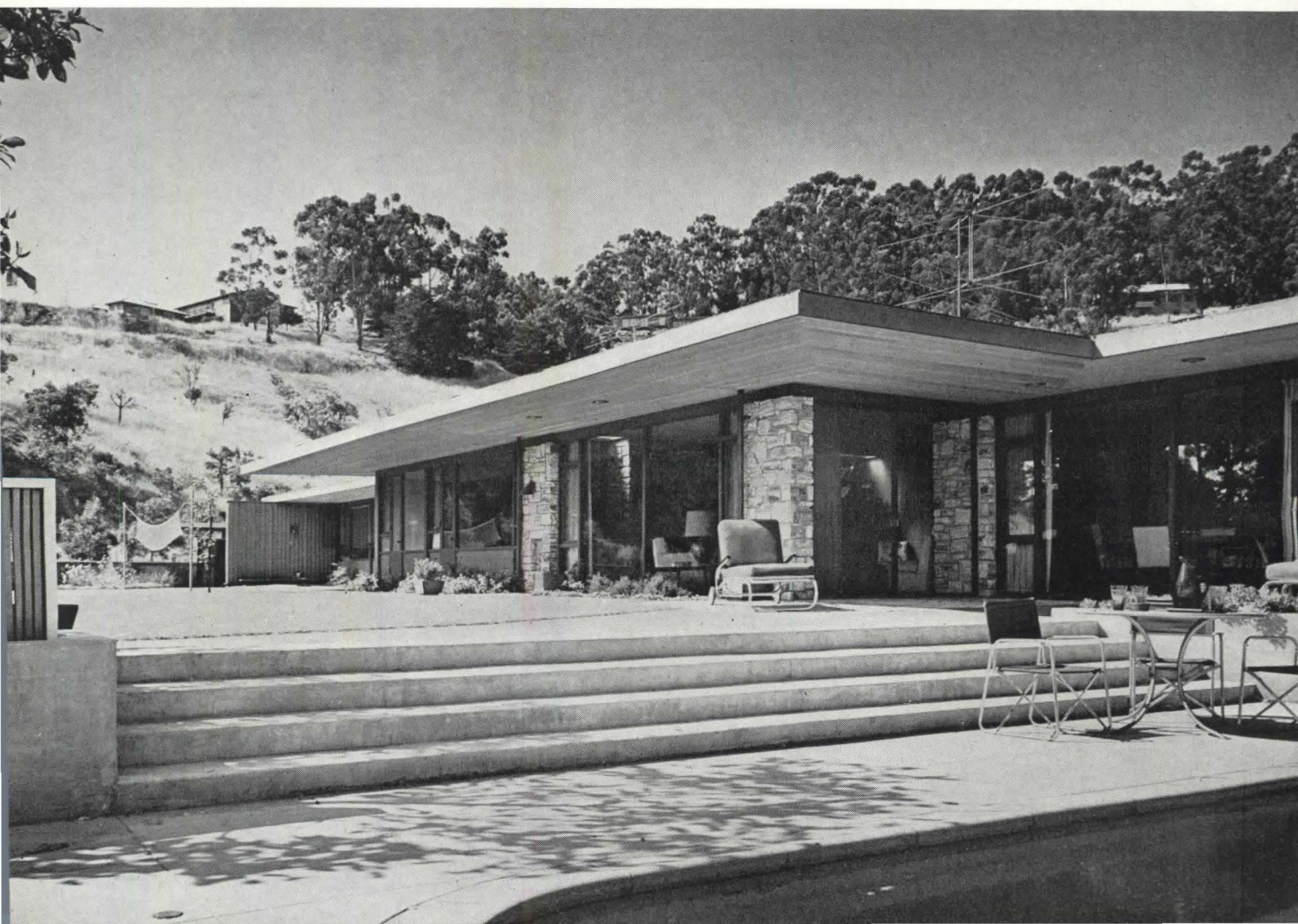


The first sketch (left) summarizes basic inter-relationships. Subsequent sketches coordinated things more firmly and became increasingly detailed; but the synthesis remained constant.

Looking along the south wall bordering the swimming pool (acrosspage), the areas seen (from left to right) are dining room, kitchen, playroom, and outdoor living room.

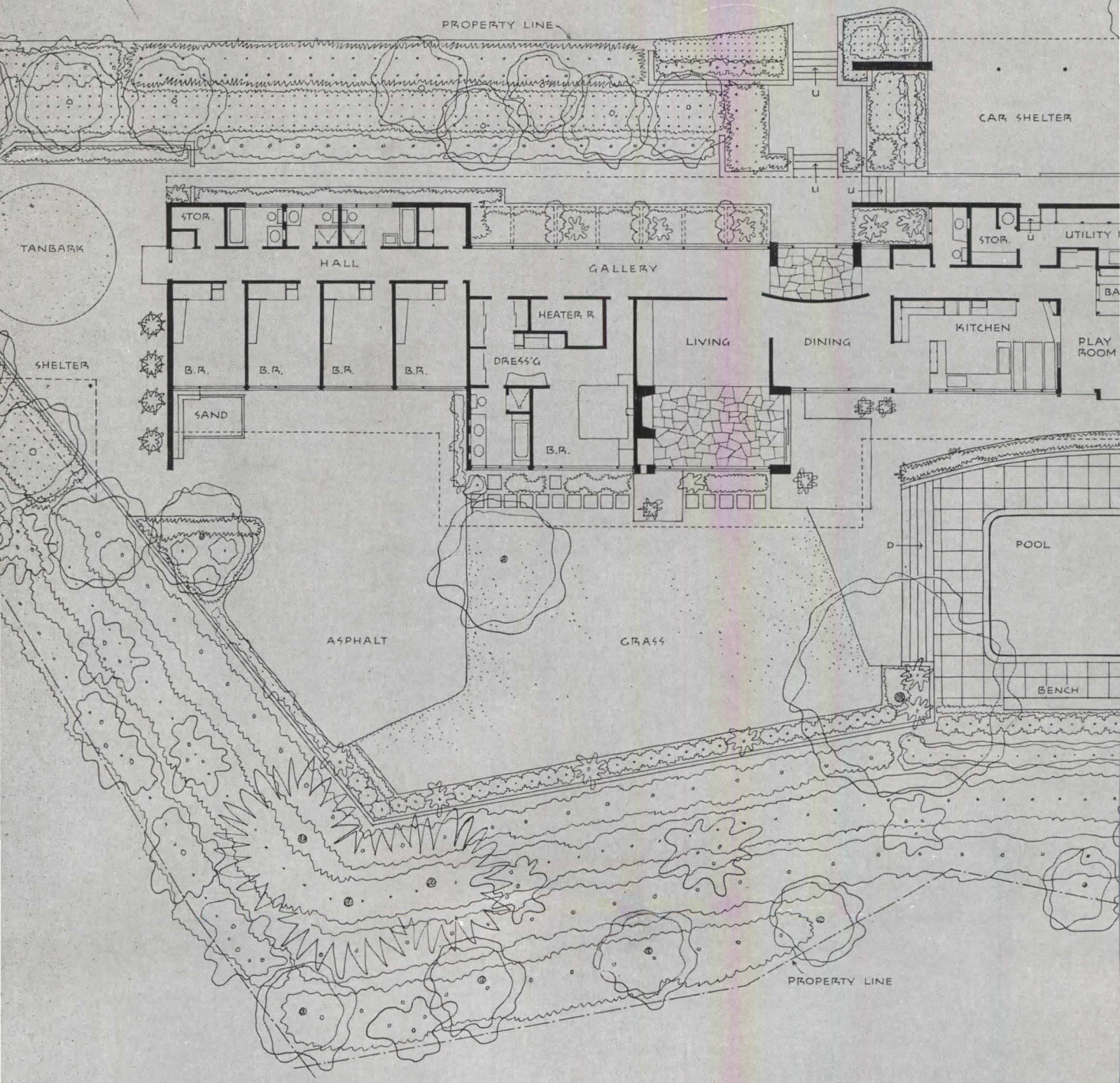
Seen from the poolside (below), the living room and master-bedroom mass is in the foreground; the children's bedroom wing beyond.

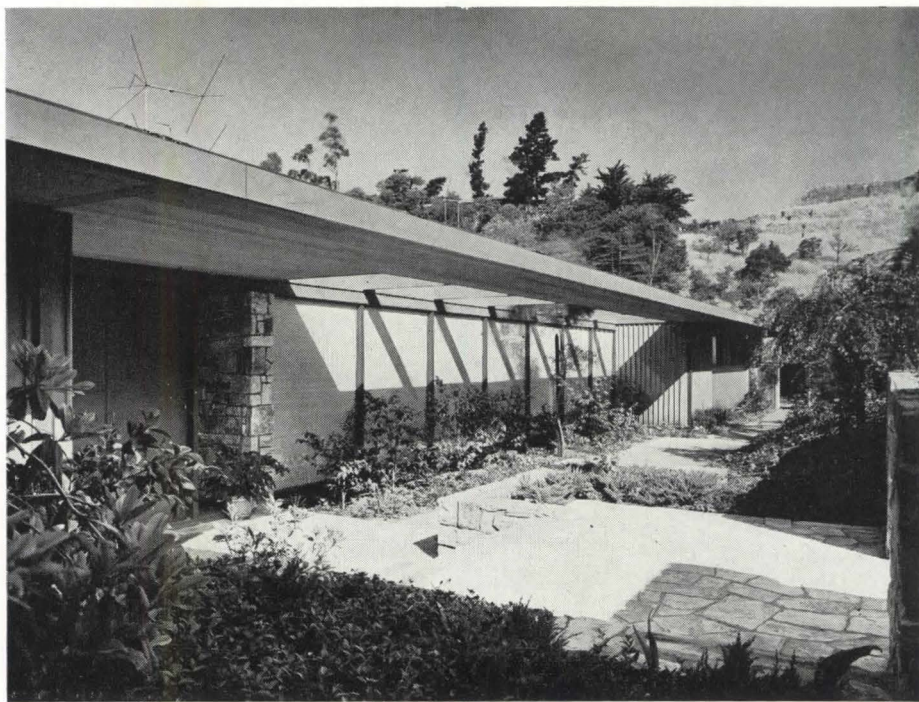
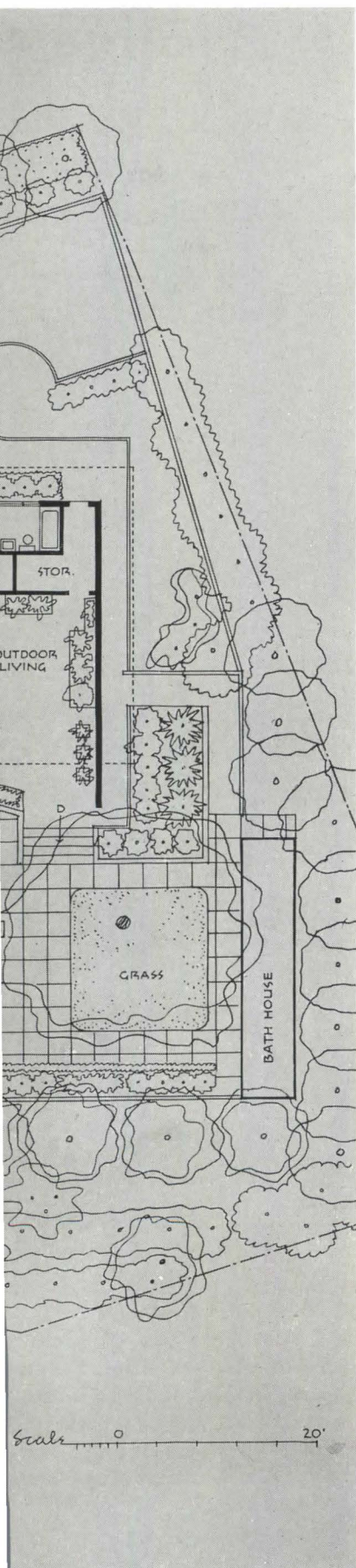
Photos: Morley Baer



house

First Floor and Plot Plan

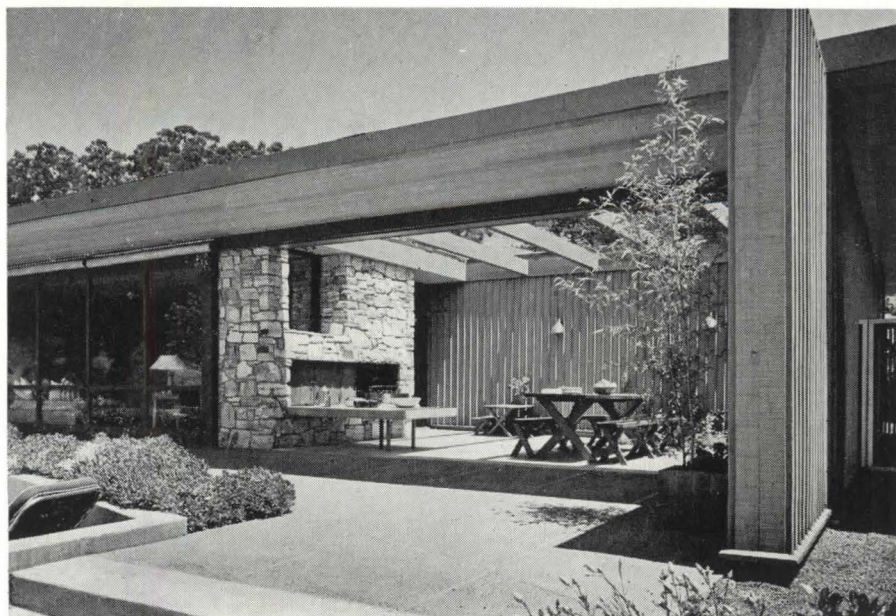




The house itself serves as a screen for privacy from the north approach road. The main hallway, 130 feet in length, allows direct access to all areas. A glazed gallery borders the bedroom wing (above). Looking in the other direction (right), a stepped walkway leads up to the carport, whose roof overlaps the roof of the main house.

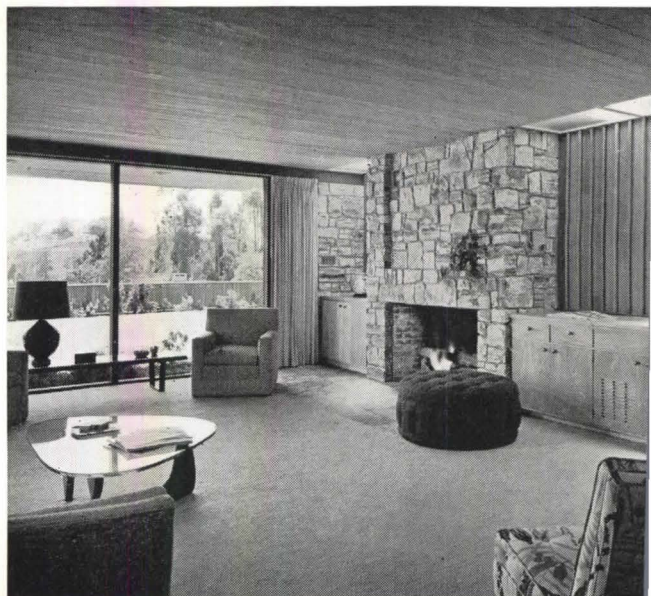


The indoor and outdoor playroom areas (below) are so designed that by moving a 20-foot sliding glass wall, the exterior playroom can be an enclosed space with no ceiling, while the interior playroom becomes a loggia with no wall on the south.





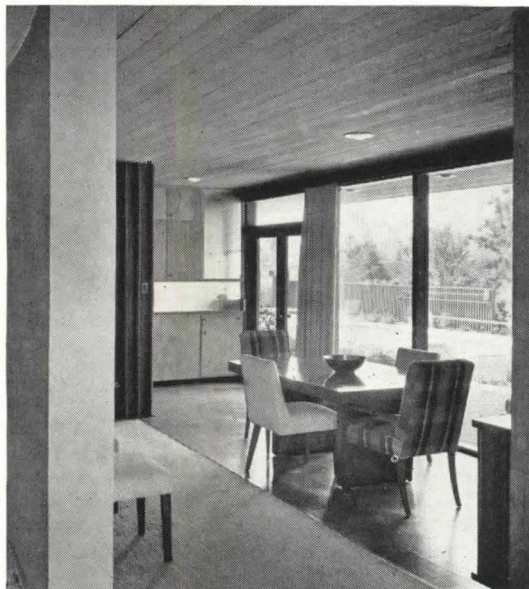
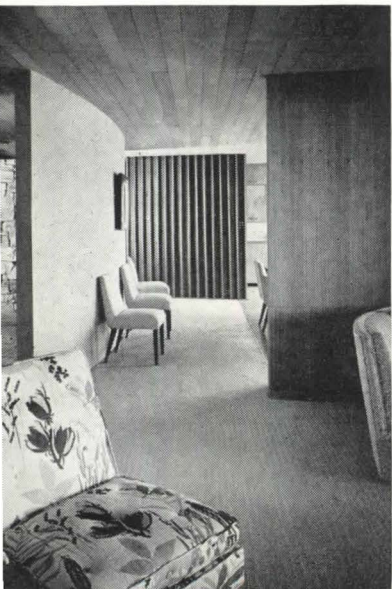
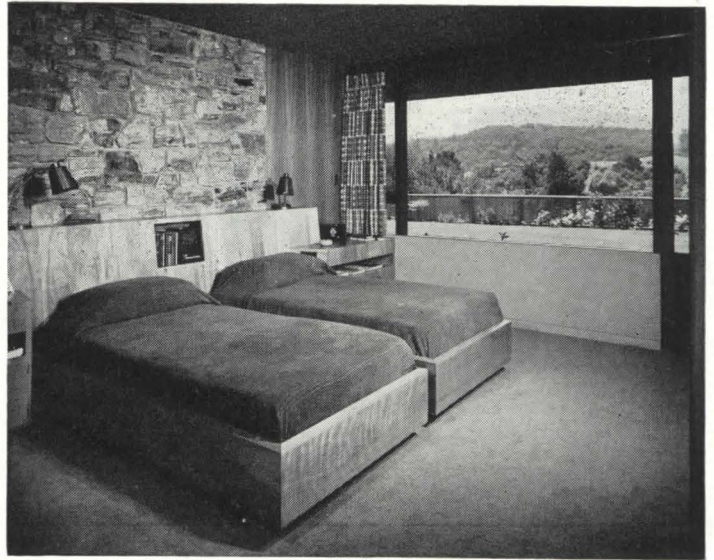
In the living room (above and right), stone of the terrace extends as flooring; pier masonry is echoed in the fireplace construction, and the re-sawn pine of ceiling and soffit forms a continuous visual plane. The skylights either side of the fireplace are artificially lighted at night.



In Hill's own words, the finished design consists of "interior and exterior walls and their finishes that form an interplay of glass, wood, and stone; all supporting the clearly defined major roof form, with its underside sheathed in re-sawn pine, stained gray-gold." Structurally, the house is of fir frame, with occasional masonry elements. Frame portions have exterior surfaces of redwood boards and battens or waterproof

plywood; interior walls are plaster, redwood, stone, birch plywood, or pine mahogany. Floors are concrete surfaced with cork, rubber tile, stone, or ceramic tile. For heating, a radiant system is used, with copper coils embedded in the floor slab. In the living, circulation, and bedroom areas, ceilings are of the same re-sawn pine used on soffits of roof overhang. Plaster is used on bath

The owners' bedroom (right) has a door out to the garden terrace across which is a distant mountain view. The adjoining dining room (two photos immediately below) is screened from the entry by a curved, plastered wall, and double doors in the southern window wall open onto the terrace. Just out of the photograph of the kitchen (bottom of page), in the foreground, there is a built-in dining corner for quick family meals. An intercommunication system connects kitchen, owners' bedroom, and one of the children's bedrooms.



gs; acoustical tile, in the kitchen and e areas. Batt-type insulation occurs in filing construction. The sash are steel ents. Roof framing is of wood, except diagonal steel member across the room that carries the cantilever over- of the roof east of the corner pier. lights occur over casework on the ce wall of the living room and above essing area of the owners' bedroom.





largest wood arches ever used

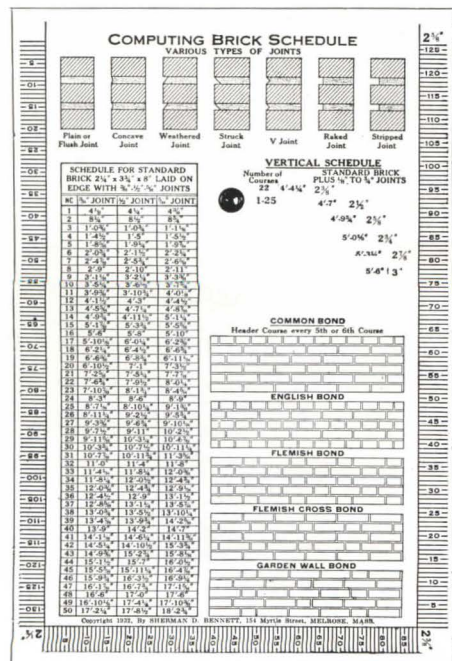
Nine elliptical-shaped, glued laminated arches were designed for a new airplane hangar recently built for the Continental Can Company at Morristown, N. J. The main arches are 180' clear-span, 48' high at center, and are spaced 20' on center. A constant cross-section, 11" x 39", is maintained throughout the length of the arches and the weight of each supporting member is approximately 20,000 lbs. All arches

were designed for a 30 psf live load and a 15 psf dead load, with half-balanced load condition. The design analysis was based on three-hinged arch principles; the three-hinged arch action was insured by using a pin connection at the peak and a rocker plate at the base. A bolt through the arch base resists uplift which may be encountered during high velocity winds. Built up of laminated, structural grade Douglas

Fir lumber and bonded with casein the arches were fabricated on the West Coast by Timber Structures, Inc. shipped by rail to the job site. The lumber had been kiln dried to an average moisture content of 12 percent to insure a thoroughly dimensionally stable section.

The hangar was built at a cost of \$250,000; Wigton-Abbott Corporation was the engineers and contractors.

Computing Brick Calculator: cardboard device indicates, by means of rotating disc, number of brick courses required and corresponding total vertical heights, corrected for thickness of joint to be used in each case. Courses from 1 to 25 appear on one side of calculator, and 26 to 50 courses on opposite side. In addition, device has set of 6 scales (one for each course height), illustrations of various brick jointings and wall bonds, tables for computing horizontal dimensions of brick walls, table of weights for solid brick walls of varying thicknesses, and table of fireplace dimensions. Calculator sells for \$1. Sherman D. Bennett, 154 Myrtle St., Melrose 76, Mass.



air and temperature control

Hunter Window Fan: quiet, powerful fan will cool several rooms at once in apartment or small home. Electrically reversible, serves as intake or exhaust fan; high and low speeds regulate air velocity. Cabinet finished in light ivory; spiral-shaped, silvered grille gives minimum projection into room. Adjustable side panels fit into any standard window. Hunter Fan & Ventilating Co., 400 S. Front St., Memphis 2, Tenn.

Mitchell D-182 Dehumidifier: 1/8 h.p. refrigeration equipment operates on 60-cycle, 115v a-c circuit. Device is capable of removing 17 to 24 quarts of water from 10,000 cu. ft. of air in 24 hours. Mitchell Mfg. Co., 2525 Clybourn, Chicago, Ill.

Quickdraft: foolproof mechanical unit for installation on chimney end of smoke pipe of coal, gas, and oil-heating plants; creates normal draft the instant heat is called for even when pipes and chimneys are cold; device prevents smoking, sooting, clogging, and condensation, and corrects most heating plant difficulties caused by poor draft, inefficient combustion, and deficient stacks. Available in all smoke pipe sizes. Quickdraft Co., 808 10 St., N. E., Canton 5, Ohio.

doors and windows

Light-Stopping Window Shades: made of flame- and abrasion-resistant vinyl plastic, shades exclude glaring sunlight and prevent nighttime silhouettes from showing through to outside. Can be thoroughly washed with soap and warm water. Available in mist-gray color only, in 36", 42", 48", and 54" widths and in 6', 7', and 8' lengths. Chas. W. Breneman Co., 2045 Reading Rd., Cincinnati, Ohio.

Prepackaged Aluminum Awnings: can be assembled and installed in as little as 15 minutes per window; only tools required are pliers and screw driver. By joining various size face-sheet sections together, awnings and door canopies can be custom-fitted to large double windows, porches, and patios without costly custom-tailoring. Finish is baked-on white enamel. Chas. W. Mfg. Co., 3620 W. 11 St., Houston, Tex.

Industrial Pivoted Steel Windows: built-in, heavy-duty windows incorporating built-in, heavy-duty pivots which are hinged to ventilate. Made in all standard sizes, with either bar, spring-latch, or cam-latch-type operation. Steelcraft Mfg. Co., Rossmyrne, Ohio.

Auto-Check: concealed-type, automatic operator, completely silent, pneumatically operated and hydraulically controlled, furnished complete with spindle-arm and head fittings. Remote controls of various type can be used for operating doors including mats placed on both sides of door. Push or pull button, etc. Unit, 15" x 15" x 9", is sealed against dirt and moisture. Specially suitable for supermarkets. Mfg. Corp., Spotswood, N. J.

electrical equipment, lighting

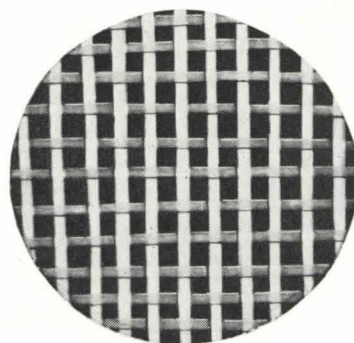
Focalite: versatile, all-angle spotlight use in window displays, shadow boxes, showcases, and other highlighting applications. Made of aluminum with satin finish. Is instantly adjustable and will always maintain focused position. Designed to accommodate PAR 38 spot, flood, or color reflector lamp; equipped with 6-ft. cable and plug. Amplex Corp., Dept. FP, Water St., Brooklyn 1, N. Y.

2FRP-90 Luminaire: industrial fluorescent

supporting structure for waterproofing

se Glasfab is an inert material composed of Fiberglass yarn, it is not subject to rotting and other types of deterioration; it provides roofing and other waterproofing installations with a nondeteriorating support. As Glasfab holds waterproofing materials in uniform suspension, it will eliminate cracking, alligatoring, and result in the eventual breakdown of waterproofing. Its flat-fiber structure and permit unusual flexibility of fabric, allowing tight application to uneven shapes and contours. Application on corners and

other uneven surfaces is noticeably simplified. As a supporting structure to bitumens or other waterproofing materials, Glasfab acts in a manner similar to reinforcing rods in concrete. Although it weighs only a fraction of formerly used materials, Glasfab is said to have good tensile strength. The accompanying photo (right) shows a 15-diameter enlargement of this product. Its open weave permits "through" penetration of bitumen so that the glass fibers are completely surrounded and locked in the roof coating. Glasfab is produced in widths



of 2" to 45" and in rolls of 50 to 500 yards. As an indication of its lightness, a 300' roll 36" wide weighs only 9½ lbs. Twinsburg-Miller Corporation, Twinsburg, Ohio.

sliding-door hardware

sliding-door hardware line developed by Grant Pulley & Hardware Company, is specifically directed at the low and moderate housing fields. Known as Rocket Sliding-Door Hardware, this product is available for single (photo A) and mul-

tiples (photo B) sliding door applications. This hardware may be used for varied types of installations, notably for by-passing wardrobe doors, interior room doors, cabinets, and store fixture applications. Only one-inch headroom is required. Quiet opera-

tion is assured as metal-to-metal contact between roller and track are eliminated by the use of nylon ball-bearing rollers which are spun-riveted to carrier housing and tested for rigidity. The front face of the track is primed for paint and therefore can be used as fascia trim. All door sizes up to 50 lbs. per door can slide on Rocket hardware. Carrier design produces vertical door alignment and floor guide regulates door deviation. Mounting time is as little as a few minutes. Grant Pulley & Hardware Company, 31-85 Whitestone Parkway, Flushing, New York.

suitable for operation of two T-17 fluorescent lamps rated at 85w, 90w, and 100w; sturdy lamplock holds lamps with secureness in high vibration areas. Lamps are indexed to indicate lamp operation by respective starters. Westinghouse Electric Corp., Box 2099, Pittsburgh 30, Pa.

washers and protectors

Cor-O-Last and Con-Creto: two new wall treatments applied by pressure method, now available for distribution through recognized distributors. Cor-O-Last, long-lasting exterior coating, covers wall with tough water-, fire-, and mildew-resistant coating equivalent to 3 coats of ordinary paint. Con-Creto covers surface defects in interior walls, sound-deadening, easily washable, insulating qualities, and resists acids, alkalis, scratches, and fire. Both products can be used with or without sand finish. Available in pastel colors. Con-Cor Paint Co., 60 Main St., Kansas City, Mo.

specialized equipment

Jr. Fire Hose Station: compact fire station for small premises; dwellings, shops, farm buildings, etc.; furnishes immediate and indefinite supply of water. Steel cabinet, designed for recessed installation between studs or for wall-mounting. Closes standard fireman's linen hose permanently connected adjustable nozzle; hose is attached to valve control regular water supply. Various models offer different hose-lengths, glass-door, and other features. W. D. McGuffey Co., 566 W. Lake St., Chicago

Sink: kitchen sink and cabinet combination contains top-loading automatic dish-

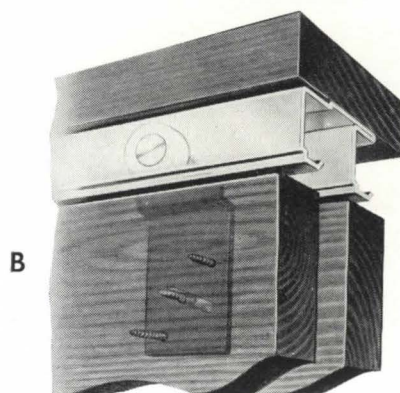
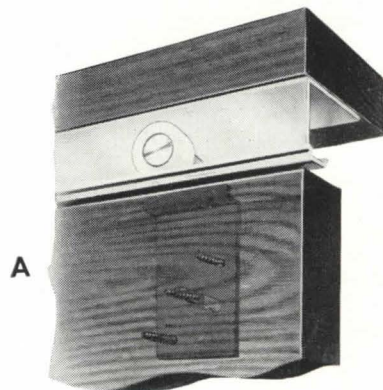
washer that washes and dries up to 100 items of china and utensils in 30 minutes. Sink is provided with swing-type faucet assembly; sink drain opening is sized for easy, inexpensive installation of garbage disposer. Removable, enameled shelves below sink provide storage space for detergents and other cleaning supplies. General Electric Co., 310 W. Liberty St., Louisville, Ky.

Tru-Copy-Photo Dual Model: copy machine makes photo copies up to size 18" x 24" of anything typed, printed, written, or drawn, in 3 to 5 seconds exposure. Equipment includes powerful set of cold lights, unbreakable glass top, removable filter, two timers (one for photo copy work and the other for making plates), high compression cover, and positive lock handle. General Photo Products Co., Inc., Chatham, N. J.

surfacing materials

Decorated Gypsum Wallboard: new, 3/8"-thick board, comes in sheets 4' wide and in lengths of from 7' to 10'. Exposed surface shows reproduction of fine woods in choice of three colors—knotty pine, dark walnut, and bleached walnut. Suitable for renovation of offices, living rooms, shops, etc.; can be applied with simple carpentry. Pabco Products, Inc., 475 Brannan St., San Francisco 19, Calif.

Supercel: first American-made cellulose wallpaper paste that is nonstaining, even with dark toned wallpapers; excess paste can be wiped off without leaving smudge or mark. Remains mixed without restirring or lumping; slow-drying to allow ample time for arranging paper into place for smooth seams and perfect match of wallpaper patterns. Reardon Co., 7425 Page, St. Louis, Mo.



★ *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

1-162. High-Pressure Air-Distribution Products (F 4960), 4-p. bulletin. Information on velocity and pressure-reduction devices, for use with grilles and conventional round or square ceiling outlets, on air-distribution systems under static pressures of any magnitude. Noise-level and pressure-drop tables, duct diagrams, illustrations of equipment. Barber-Colman Co., Rockford, Ill.

1-163. The Radiant Radiator (864-B), 4-p. folder describing combined radiator, cabinet, and grille unit for installation as concealed or free standing radiator that gives both radiant and convected heat. Ratings, dimensions, advantages. Burnham Corp., Irvington, N.J.

1-164. Home-Heating Equipment (A645 F), 20-p. catalog. Illustrations and descriptions of year-round air-conditioning units, forced-air furnaces, single and dual wall heaters, water heaters, and accessories. Specifications. Coleman Co., Inc., 2 & Francis Sts., Wichita 1, Kan.

Booklet presenting line of attic fans, automatic shutters for use with belt-driven and exhaust fans, window and pedestal fans. Features, construction, installation data, specifications, photos. Other booklet provides general and technical data on fans and ventilators, including installation methods, layout details, size and type of equipment. Information is divided into residential, commercial, industrial, and technical sections. Hunter Fan & Ventilating Co., 400 S. Front St., Memphis, Tenn.

1-165. Hunter Fans, 1952 (3306)

1-166. How to Cool for Comfort, AIA 30-D-1 (5004-A).

1-167. The National Packet, AIA 30-C-14 (595), 8-p. catalog. Information on design, construction, and operation of gas- or oil-fired, domestic-heating plant comprising boiler, burner, controls, water heater, accessories. Advantages, ratings and specifications, roughing-in dimensions. National Radiator Co., 221 Central Ave., Johnstown, Pa.

construction

3-140. Tomorrow's Living . . . Today! (A5-432), 8-p. brochure illustrating three types of prefab wood houses ranging in price from \$7000 to \$12,000. Plans, optional

features. Gunnison Homes, Inc., New Albany, Ind.

3-141. Architectural Specifications and Information for Builders, 4-p. folder. General and technical data on several types of waterproof, sisal-reinforced building papers. Uses, sizes and weights, illustrations, availability. Sisalkraft Co., 205 W. Wacker Dr., Chicago 6, Ill.

★ **3-142. Unistrut School Construction**, 68-p. brochure. Report of a research project conducted by University of Michigan and sponsored by Unistrut Products Co., on standardized steel framing system of low-cost schoolhouse construction; structure can be expanded or reduced in size, and even unbolted and moved to new location. Research history and data, problem and proposed system, typical minimum-size school, plans, diagrams, construction schedule, component parts, details, bill of materials, illumination design, acoustical test data. Unistrut Products Co., 1013 W. Washington Blvd., Chicago 7, Ill.

doors and windows

4-159. All-Lite Aluminum Windows, 6-p. folder. Residential casements, picture windows, and awning windows made of extra heavy extruded aluminum. Sizes, details, specifications, hardware data, photos. All-Lite Metal Window Co., Bristol, Pa.

4-160. Kewanee Building Products (B-450), 8-p. catalog. Display of steel and aluminum basement, utility, and security-type windows for commercial and industrial uses; also screens, storm sash, formed steel lintels, basement coal chutes, ashpit doors, window wells, other products. Kewanee Mfg. Co., Kewanee, Ill.

4-161. For the Life of Your Hospital! 4-p. folder describing awning windows of aluminum or wood, designed for draftless ventilation and quiet operation; self-locking device automatically seals windows against air infiltration. List of installations, illustrations. Ludman Corp., Box 4541, Miami, Fla.

4-162. Kennatrack for Interior Sliding Doors, AIA 27-A, 12-p. booklet. Illustrations of single and double sliding-door tracks and accessories. Types, details, diagrams, sections, photos. Jay G. McKenna, Inc., E. Jackson Blvd., Elkhart, Ind.

4-163. Mengel Doors, AIA 19-E-1, 12-p. booklet presenting hollow-core and solid-core flush doors (hinged, cabinet, swinging, and sliding units) for interior and exterior uses. Color plates, specifications, construction features, stock sizes and weights. Mengel Co., 4 St. & Colorado Ave., Louisville, Ky.

4-164. Reynolds Aluminum Residential Windows, AIA 16-E (BP 309-F), 20-p. catalog. Advantages of aluminum construction in casement, awning, and double-hung windows. Standard and modular sizes, specifica-

tions, details, recommended glass size, installation drawings. Reynolds Metal Co., 2000 S. Ninth St., Louisville, Ky.

4-165. Seventy-Fifth Anniversary, 16e-1, 32-p. catalog. Display of aluminum and steel windows with pivoted or projected ventilators; also industrial doors, residential casements, and double-hung windows. Specifications, types and sizes, construction details, installation and erection details, storm sash, and hardware data. J. S. Co., 2009 W. Allegheny Ave., Philadelphia 32, Pa.

4-166. Lifetime Aluminum Windows, 16-p. catalog illustrating standard and similar aluminum casements, hopper ventilators (especially suitable for homes and schools), double-hung windows, shutters, and jalousies. Construction and installation details, sizes, typical installation photos. Aluminum Co., Inc., Sheffield, Ala.

★ **4-167. Doors, AIA 19e-1 (5103)**, 30-p. booklet offering variety of flush wood doors and partition panels. Advantages, specifications and weights, typical openings, door veneer data, finishing instructions. U.S. Wood Corp., 55 W. 44 St., New York 18.

4-168. Windalume, 16L, 8-p. bulletin describing aluminum double-hung windows adaptable to any design style or type of construction. Advantages, standard sizes, specifications, details, typical installation diagrams. Windalume Corp., 323 56 St., New York, N.J.

electrical equipment, lighting

5-105. Hospital & Commercial Signaling Equipment (HSE-1), 32-p. bulletin covering complete line of signal equipment, including visual annunciators, code relays, fire stations, grounding intercouplers, sockets, corridor lights, nurses' call systems, paging systems, etc. General information wiring diagram for nurses' call systems, photos, index. Cannon Electric Co., Humboldt St., Los Angeles 31, Calif.

★ **5-106. Higher-Voltage Lighting Circuits for Commercial Installations (GEA-5670)**, 12-p. bulletin describing advantages of new 480Y/277-volt electrical distribution system, incorporating voltage lighting circuits; use of higher voltage permits wiring to carry much greater load so that number of circuits are substantially reduced, with saving of copper and lower equipment cost. Performance in typical application, photos, layout diagrams. General Electric Co., Schenectady, N.Y.

5-107. Lighting Equipment, AIA (52), 68-p. catalog illustrating fluorescent and incandescent lighting fixtures for commercial, industrial, and institutional installations. Types, construction, coefficient of utilization tables, mounting and other details. Kayline Co., 2480 E. 22 St., Cleveland, Ohio.

5-108. Architects' and Engineers' Data Book, AIA 31-R (B-2161-E), 330-p., revised electrical data book. ed information on almost every type trical equipment; three general equip- sections include power plants, elec- distribution, utilization and accessory ment. Applications, features, selection, sions, specifications, charts, illustra- engineering data. Westinghouse Elec- corp., 306 Fourth Ave., Pittsburgh 30, Contact nearest Westinghouse District for copy of data book.)

ishers and protectors

Phenoline 300 (600), 4-p. brochure rmosetting phenolic resin coating for rting structural and mechanical equip- against corrosion; may also be used to and seal floors. Applications, corro- ests, prices. Carboline Co., 7603 For- lvd., St. Louis 5, Mo.

Satin Luminall, AIA 25-B-21 (115), brochure containing specifications on ased interior paints. Complete infor- on preparation of plaster and other of surfaces; prepainting procedures ating mildew, efflorescence, and bleed- ains; section on mixing and applica- National Chemical & Mfg. Co., 3617 S. t., Chicago 9, Ill.

ulation (thermal, acoustic)

Insulite Roof Insulation Manual 2-p. manual containing latest instruc- for applying two different types of tion—wood fiber board and asphalt- gnated board, both treated for mois- resistance—over roof decks. Descrip- of products, performance data, step- application instructions, coefficients t transmission and thermal resistance, nsation chart, typical fuel savings is. Minnesota & Ontario Paper Co., e Div., 500 Baker Arcade Bldg., apolis 2, Minn.

Zonolite Vermiculite, AIA 3-D-3, brochure describing fill-type insulation, ing plaster, concrete aggregates, and cal plastic. Uses, properties, fire tests, ations, general information. Zonolite 5 S. La Salle St., Chicago, Ill.

itation, water supply, drainage

5. Gas-Fired Automatic Incinor, 5-J-41 (CP-2), single data sheet con- specifications for five models of ic automatic incinerators approved e with all types of gases. Illustrations, ages. Bowser, Inc., Cairo, Ill.

pecialized equipment

6. Duraline Scale Selector, 6-p. Full-size illustrations and detailed otions of architect's, engineer's, and ical draftsman's aluminum scales. ages. Universal Drafting Machine 7960 Lorain, Cleveland, Ohio.

19-227. Bathroom Fixtures, Kitchen Equipment (F-518), 20-p. booklet on bath- tubs, lavatories, water closets, and fittings for domestic, commercial, industrial, and in- stitutional uses; also kitchen cabinet sinks and cabinets. Specifications, illustrations. Universal-Rundle Corp., New Castle, Pa.

19-228. VMP Conveyor, AIA 35-H-2, 35- B-2, 35-i-I, 4-p. folder. General data on simply designed, vertical transmission sys- tem, operating by pushbutton, capable of carrying up to 4½ tons of books, records, or other material in 1 hour. Drawings of views, sectional plans, and suggested arrange- ments. Virginia Metal Products Corp., Orange, Va.

surfacing materials

19-229. Walnut Veneer Types, 20-p. booklet. Illustrations in natural color of about 50 different walnut veneers. Contents table. American Walnut Manufacturers Assn., 666 Lake Shore Dr., Chicago 11, Ill.

19-230. Shingle Style Book (P-899), 24-p. booklet displaying wide variety of asphalt shingles for residences. Types, spec- ifications, color plates, data on dampproofing and waterproofing; also, description of two types of built-up roofing material. Allied Chemical & Dye Corp., Barrett Div., 40 Rector St., New York 6, N.Y.

19-231. Flintkote Building Materials (BK-216), 12-p. booklet presenting line of asphalt shingles, siding, built-up roofing, decorative and structural insulation board, and insulating wool. Types of each product,

dimensions, photos, illustrations. Flintkote Co., 30 Rockefeller Plaza, New York 20, N.Y.

19-232. G.P.X. (P-2R), 4-p. folder on plastic-faced Douglas fir plywood that is impervious to moisture, weathering, grease, alcohols, etc., and is highly abrasion-resist- ant; material has almost unlimited applica- tions—interior and exterior walls, concrete forms, counters, shelving, etc.—for home and industry. Uses, advantages, specifications. Georgia-Pacific Plywood Co., Marsh St., Port Newark 5, N.J.

19-233. Joanna Wall Fabric, 4-p. folder. Description of strong cotton wall fabric heavily coated with vinyl plastic; water- proof, non-fading, scuff-resistant, is easily applied. Advantages, specifications. Joanna Western Mills Co., 22 & Jefferson Sts., Chi- cago 16, Ill.

19-234. Fab-Rik-O-Na, 4-p. folder on cloth wall coverings in variety of woven textures, in modern, decorative colors; tough, durable surface will not rip or scratch, is not easily marred. Available types, advantages, specifications, typical applica- tion photos. H. B. Wiggin's Sons Co., Bloom- field, N.J.

vertical traffic

20-9. Special Car Designs (B-805') (1521), 4-p. folder illustrating 27 different passenger elevator-car interiors, designed in keeping with interiors of modern buildings. Each illustration numbered for reference so that detailed data may be obtained from manufacturer. Otis Elevator Co., 260 11 Ave., New York 1, N.Y.

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4/52



Architects: Raymond B. Spencer & Associates, Memphis, Tenn.

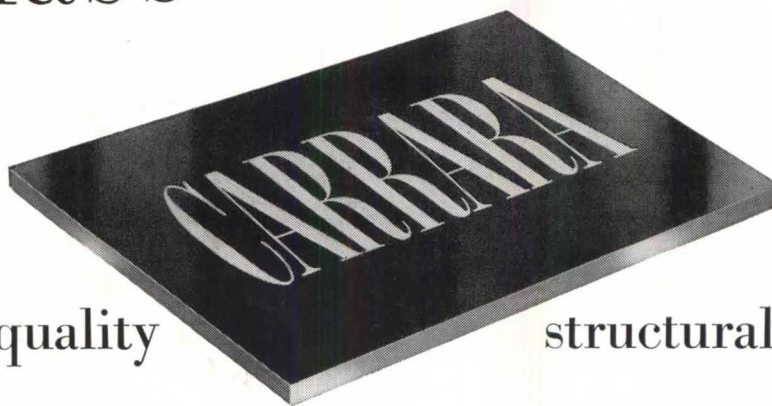
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Designers: Frank T. Hilliker & Associates

Architects: Benjamin Shapiro & Robt. E. Tisdale

Fabricator: Melman Fixture Co.

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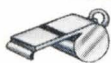
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resort hotel rooms by Charles H. Warner, Jr.*

We seem to have come a long way in developing new design patterns for hotel guest rooms of all types. The patterns emphasized on the following pages, even though directed toward resort hotels, indicate desirability and acceptance of such general ideas as studio-type rooms, well-planned storage and dressing areas, maintenance-conscious furniture, and so on. Specifically, in the resort hotel guest rooms on the following pages, there is in evidence a very special aura of intimacy and comfort. Resorting guests must be made to feel a suggestion that their encampment can be pleasant and of long duration.

The attainment of this aura poses difficult problems, particularly when the hotel is of a vertical design. The fact is that the transition from the lushness of the land (whether tropical or otherwise) to the room is tedious and impersonal. Generous use of space and all possible design ingenuity must be employed to make the rooms personal and comfortable.

Three important considerations for guest rooms are: (1) the balcony in lieu of ground space; (2) the living-room aura; (3) copious dressing areas and storage (where building perimeter permits, these elements could be visually removed from the room itself).

Although not shown on these pages, the transition elements—elevator lobbies and corridors—must, in the case of the rooms, be reduced to human proportions.

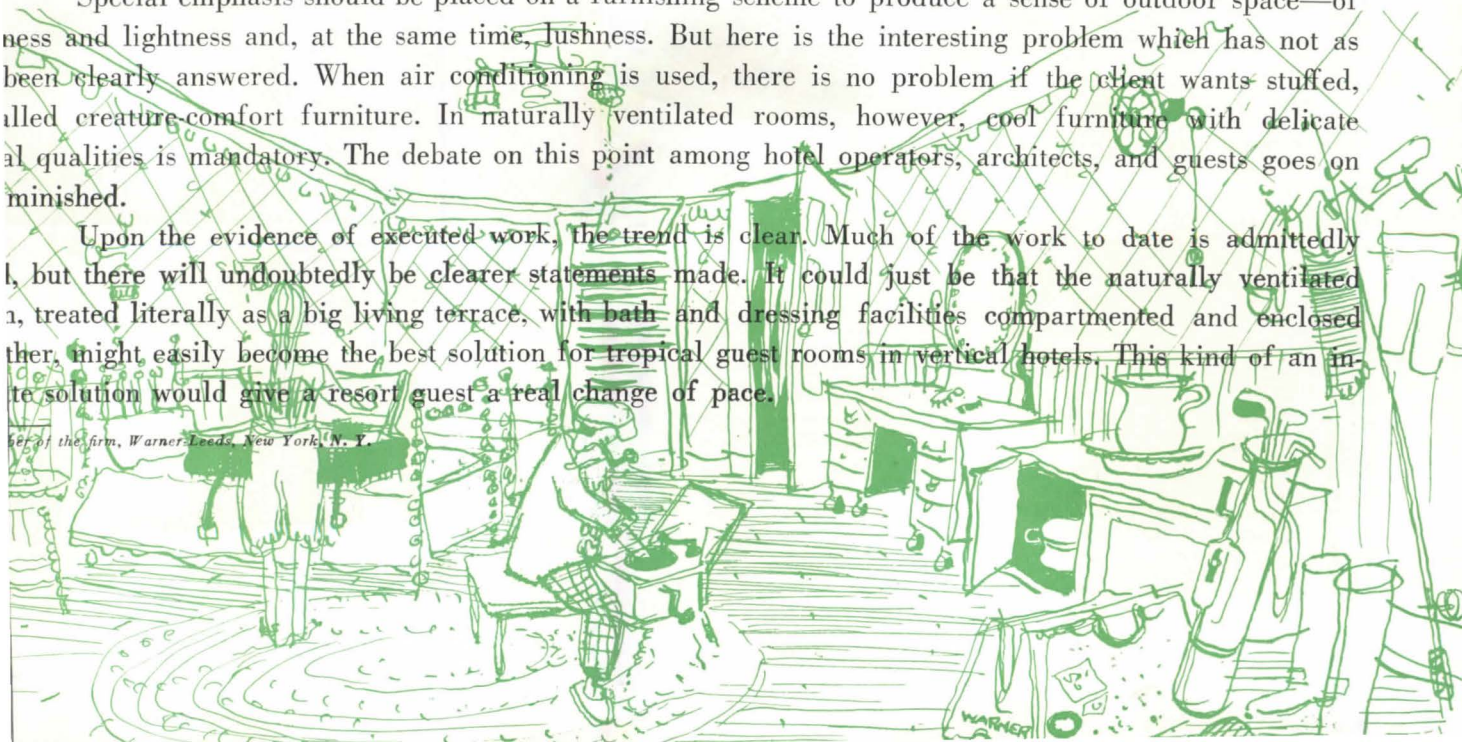
Devices which help transition elements are: (1) variety in elevator lobbies (glimpses of these lobbies as guests in transit must be considered); (2) for double-loaded corridors—room entrances recessed and lowered, varied lighting; (3) the use with single-loaded corridors of lateral view and open-air elevator lobbies.

With the mention of double- and single-loaded corridors, the pros and cons of air conditioning vs. natural ventilation for tropical guest rooms must be discussed. Obviously, if site size permits extensive building perimeter and if a year-round prevailing wind is present, happily synchronized with the most pleasant weather, the single-loaded corridor producing natural room ventilation is certainly the most desirable solution. In lush climes, there are wonderful sounds, smells, and usually a totally fresh atmosphere. Room air conditioning and the containment of it deny guests the privilege of a new environment. Again, obviously and conclusively, there is a need for air conditioning for tropical rooms where the physical situation for a resort hotel is not advantageous for the ideal solution with natural ventilation. In the tropics, this debate on ventilation influences the design of the character of the room confusing.

Special emphasis should be placed on a furnishing scheme to produce a sense of outdoor space—openness and lightness and, at the same time, lushness. But here is the interesting problem which has not as yet been clearly answered. When air conditioning is used, there is no problem if the client wants stuffed, upholstered creature-comfort furniture. In naturally ventilated rooms, however, cool furniture with delicate qualities is mandatory. The debate on this point among hotel operators, architects, and guests goes on indefinitely.

Upon the evidence of executed work, the trend is clear. Much of the work to date is admittedly limited, but there will undoubtedly be clearer statements made. It could just be that the naturally ventilated room, treated literally as a big living terrace, with bath and dressing facilities compartmented and enclosed within, might easily become the best solution for tropical guest rooms in vertical hotels. This kind of an integrated solution would give a resort guest a real change of pace.

Member of the firm, Warner-Leeds, New York, N. Y.



resort hotel rooms

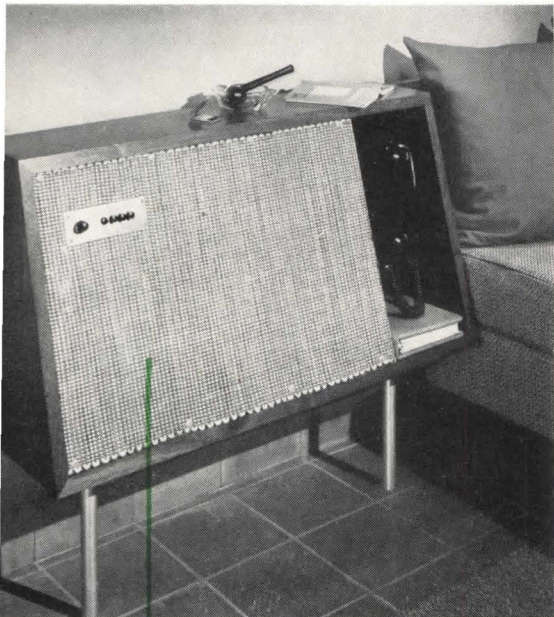
location Caribe Hilton, San Juan, Puerto Rico

architects Toro, Ferrer & Torregrosa, Puerto Rico

collaborating architects Warner-Leeds, New York

interior designers Warner-Leeds, New York

random-oak flooring



radio-telephone cabinet

fiber-textile grille cloth



data

Armchair: U.430/birch frame/removable foam-rubber cushions/washable zippered covers/model developed for Caribe Hilton to Warner-Leeds specifications/list: \$108.00/Jens Risom Design Inc., 668 Fifth Ave., New York 19, N.Y.

Slipcover for Chair: "Morocco"/cotton printed fabric to W-L colors/Textron, Providence, R.I.

Desk Chair: DCW/Charles Eames design/black/list: \$29.50/Herman Miller Furniture Co., Zeeland, Mich.

Sofa-bed: Marshall Field design/frame: "Swing-bac" by Harvard Mfg. Co., 6201 Woodland Ave., Cleveland 4, Ohio/Mattress ("Goodyear") and Spring: The Englander Co., Inc., 538 Johnson Ave., Brooklyn, N.Y.

Fabric for Sofa-bed: "Caribe Hilton"/W-L design/all-cotton/vat-dyed/50" wide/list: \$10.50/Arundell Clarke, 25 East 73 St., New York, N.Y.

Chest, Radio-Telephone Cabinet, Tables, Desk-Dressing Table: W-L designs/mahogany with "Formica" tops and sides/Carrom Industries, 1503 N. Sedgwick St., Chicago, Ill.

Radio: Western Electric Co., 195 Broadway, New York 7, N.Y.

Radio-Grille Cloth: designed by Geraldine Funk/Puerto Rico Fiber Textile Shops, San Juan, P.R.

Cabinet Air-conditioning Unit: Toro, Ferrer & Torregrosa design/mahogany with metal lining for planting box/

Carlson-Fedder Corp., 224 W. Greenfield Ave., Milwaukee 4, Wis.

Air Conditioning: "Weathermaster"/Carrier Corp., 385 Madison Ave., New York, N.Y.

Luggage Stand: 80-B/chrome finish/black webbing/list: \$8.85/Lake City Products, 612 N. Michigan Ave., Chicago 11, Ill.

Terrace Chair: A-18/satin-finish anodized-aluminum frame/white-plastic webbing/list: \$21.20/The Troy Sunshade Co., Troy, Ohio.

Terrace Table: W-L design/slatted-wood top/anodized-aluminum frame/Treitel Gratz Co., Inc., 142 East 32 St., New York 16, N.Y.

Curtain Fabric: "Indianhead"/solid

color cotton/Textron, Providence, R.I.

Curtain Hardware: Kirsch Co. Mich.

Curtain-making: Bil-Art Studio, West 53 St., New York, N.Y.

Floor Lamp: satin chrome/Esso, 154 West Erie, Chicago 19, Ill.

Wall Bracket: satin chrome/politan Lighting Fixture Co. 39 St., New York 16, N.Y.

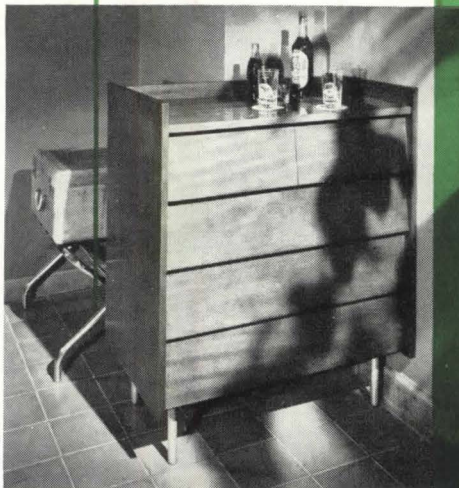
Pottery Lamp: terra cotta/v

Hal Lasky, Puerto Rico.

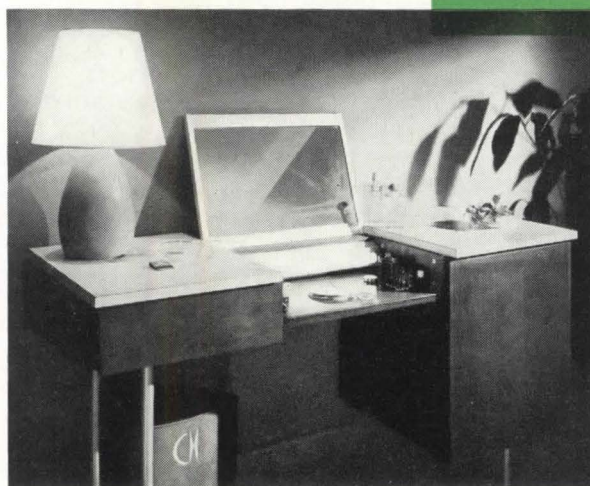
Lamp Shades: "Fiberglas"/by Polyplastex United, 1385 f Ave., Bronx, N.Y./mar Carre, 333 Fourth Ave., 10, N.Y.



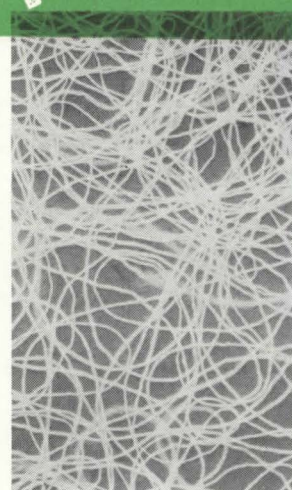
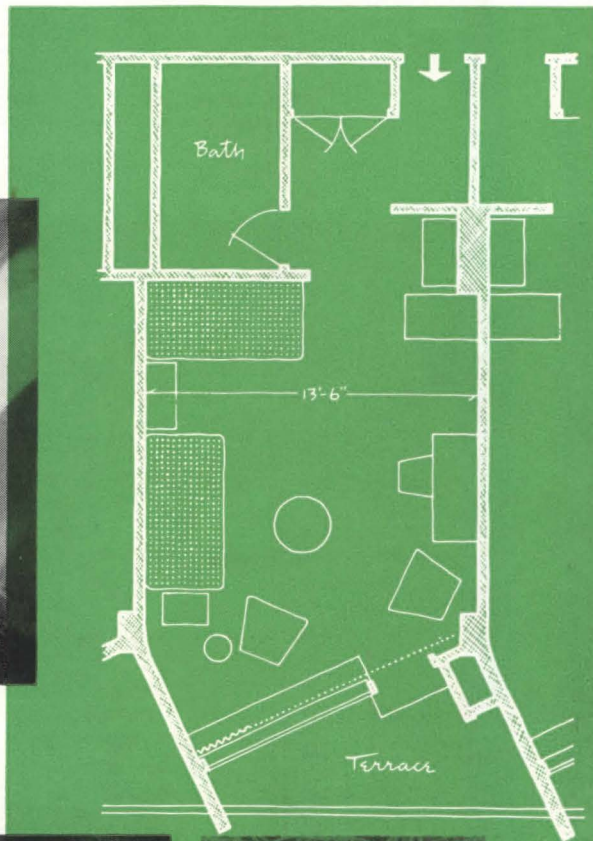
wall-guard luggage stand



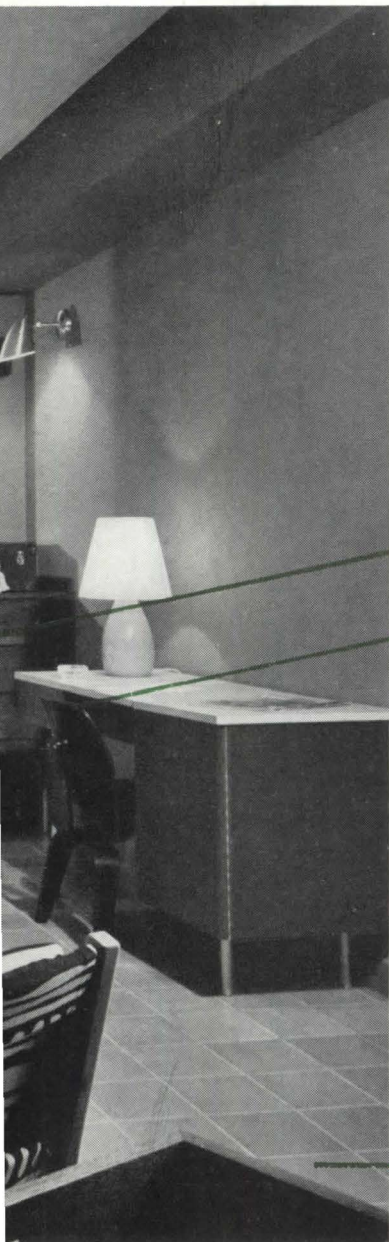
plastic-topped chest can be a bar



desk doubles as dressing-table



fibreglass shade



Photos: Ezra Stoller

plastered and random-oak flooring.

basket: gray plastic with white a to W-L design/Feldco Publ-
s, 612 N. Michigan Ave., Chi-
Ill.

cotton loop/Needletuft Rug
n, Cabin Crafts Inc., Dalton,

Knob: The Schlage Lock Co.,
th Ave., New York, N.Y.

Closer: Yale & Towne Mfg. Co.,
rd, Conn.

ement tile/Mosaicos Ramirez
e, Ponce, P.R.

Valentine & Co., 11 East 36
w York, N.Y.

cement-tile floor and base

Arranged to make the most of a fine bay or ocean view, this living-sleeping room is typical of the 300 air-conditioned rooms at Caribe Hilton. Appropriate in quality to tropical living, its details are meticulous considerations of easy house-keeping and durability. Tables and cabinets are plastic-topped to be impervious to burns and stains. Furniture supports are high off the floor—to clear mops and brooms. The native cement tile develops a smooth patina from soap and water and the cotton rugs are laundered in the hotel washing machines, along with the cotton curtains, bedspreads, pillow cases, and removable chair covers.

In color scheme, all rooms are vertically consistent. The reasoning behind this system is a nice demonstration of the way interior and exterior get all mixed up in contemporary architecture. For the housekeeper, it is a formula for easy maintenance: for instance, all _03 rooms have one scheme, while _04 rooms have another. Six successive color schemes allow maximum variety on each floor. And

(Continued on page 132)

resort hotel rooms

Caribe Hilton, San Juan, Puerto Rico

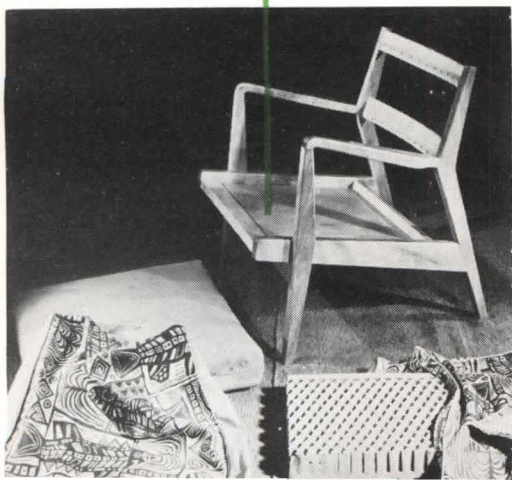
Continued

washable-cotton draw-curtain



aluminum terrace chair

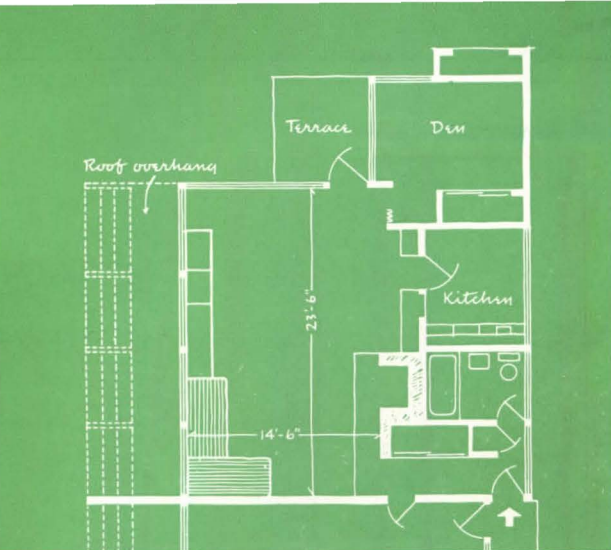
armchair developed for Caribe Hilton



(Continued from page 131)

for exterior enchantment, the vertical bands of curtain colors make a playful pattern against the light-gray façade.

Visible is the compatibility of all elements in the room. Not shown is careful integration of such related matter as matchbooks, insignia, key tags, maids' uniforms—all designed by the architects in charge of interior design.



location | Holiday House, Escondido Beach, California

architect | Richard J. Neutra, Los Angeles

data

Chair: Mexican design/pine frame
woven palm/retail: \$30.00/east-
distributor: Fred Leighton Inc.,
East 8 St., New York, N. Y.

Tables: designed by Neutra/built
by Bob.

Window Hardware: C. L. Frost & Sons,
East Rapids, Mich.

Lighting Fixture—Terrace: "Pry-lite"/
used with "snap-on" front/Pryne &
Inc., Pomona, Calif.

Window Hardware: Kirsch Co., Stur-
tevant, Mich.

Door Hardware: The Schlage Lock
2201 Bayshore Blvd., San Fran-
cisco, Calif.

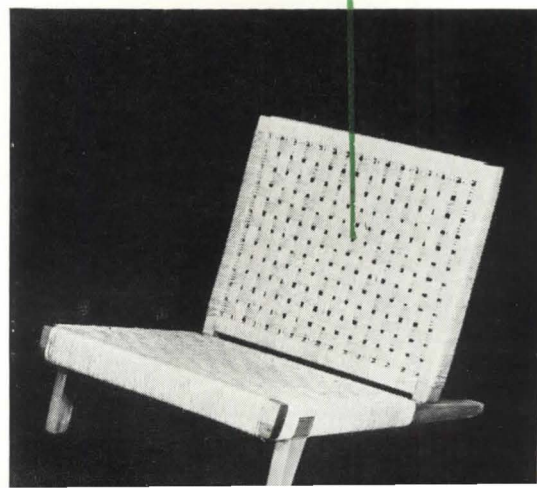
Stove: electric unit/Thermador Elec-
trical Mfg. Co., 5119 District Blvd.,
Los Angeles 22, Calif.



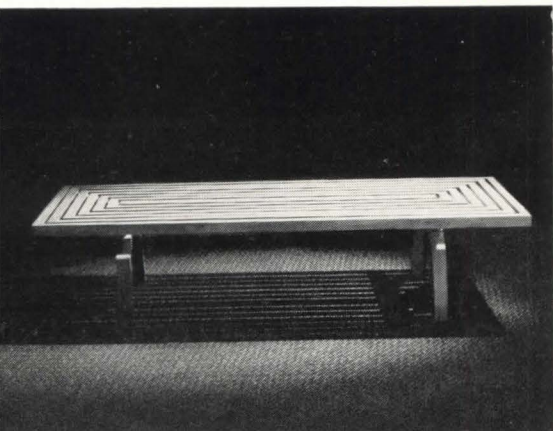
mexican chair, pine and woven palm

Most rooms for overnight or vacation stay are housed in a single-story timber structure facing the Pacific. Each is a housekeeping unit with private terrace, separated from its neighbor by plywood spur walls. In this enlarged unit, furnishings are generally owner-selected but the neat cabinets are specially designed. Minutes to the sea view are the perfect orientation, the glass walls, and the complete reserve of this living room.

Room Photo: Julius Shulman

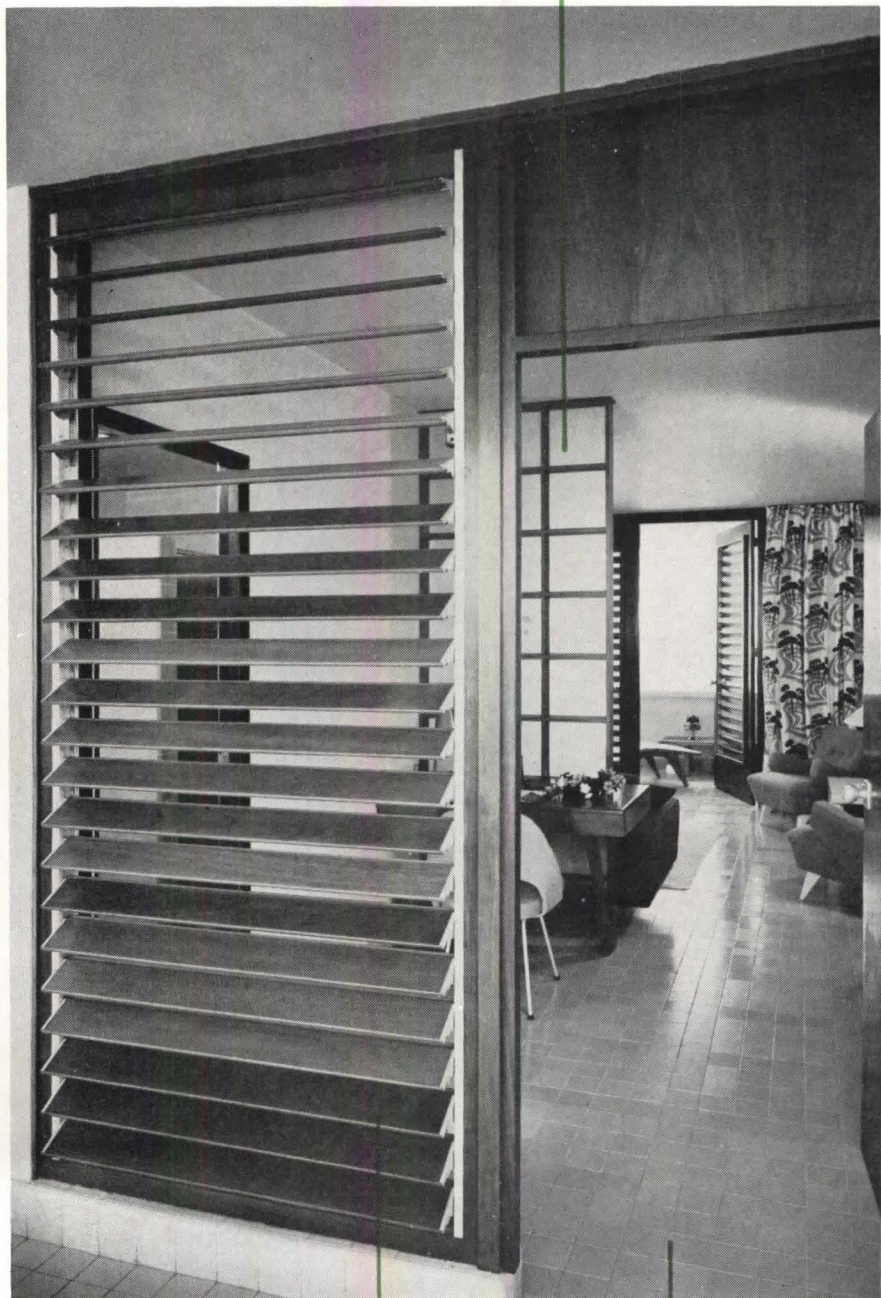


terrace table



terrace chair

translucent screen



mahogany shutters

glazed tile

data

Armchair: #35/net: \$112.00/Knoll Associates, 575 Madison Ave., New York 2, N. Y.

Desk Chair: #72 USB/Saaren design/molded-plastic shell covered with foam rubber/aluminum legs/net: \$51.00/Knoll.

Sofa-bed: innerspring mattress and base/ 36" wide/black-enamel metal frame with pivot mechanism/movable back and arms/available with permanent or removable cover/net: \$170.00/Knoll.

Terrace Chair: #400-K/Edward Stone design/oak frame/split-oak withes/ 28" wide/list: \$115.00/manufacture: Fulbright Industries/distributors: Waldron Associates, New York; Interiors for

Living, Chicago; Showroom Inc., Miami; Arnold Panning, Los Angeles.

Terrace Table: #1002-K/Stone design/solid oak/steam bent legs/15 1/2" high x 23" wide x 66" long/list: \$90.00/manufacture, distributors: same as above.

Chest, Wardrobe, and Dressing Table: designed by Stone Associates/native mahogany and mahogany plywood/manufacture in Panama.

Screen: mahogany frame/"Lucite" by E. I. du Pont de Nemours & Company, Wilmington, Del.

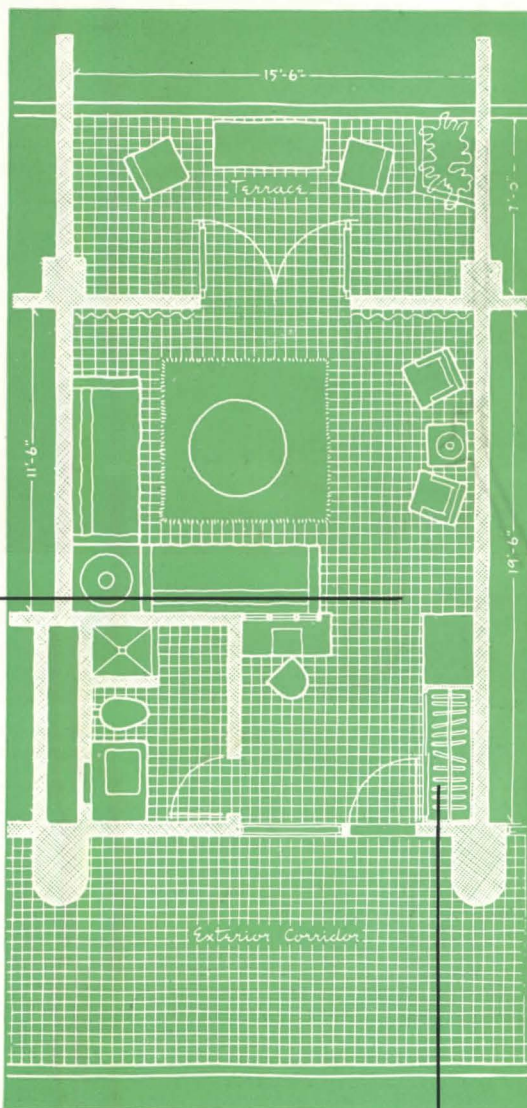
Walls and Ceiling: painted plaster.

Floor: glazed tile/gray/Gladding & McBean, 9th & Harrison Sts., San Francisco, Calif.

location	El Panama, Panama City, R. of P.
architect	Edward D. Stone & Associates, New York
associate architects	Mendez & Sanders, Panama City
interior decorator	Florence B. Hayward, Los Angeles



pivoting back opens sofa-bed to sleeping width



chest, wardrobe

is typical of the 300 guest rooms at El Panama. It is cooled naturally by tropical breezes, as only jalousies separate it from the wide exterior on one side, and a private terrace on the other. Because of the screen that separates the dressing area, jalousies can be open to the corridor without loss of privacy in the guest room. The separate dressing area is a wise use of space in a hotel. Luxurious because of its convenience and comfort, it also leaves the living area free of clutter.

Again, as in the other resort hotels shown, the living room arrangement is favored. The sofa-beds make comfortable seating and also swing open easily to sleeping width. In each of the three examples shown in this section, all casegoods were architect-designed. The desks, chests, and cabinets not only work for the specific instances, but also are handsome solutions for hotel needs in general. Some of these would be happy additions to a manufacturer's standard line.

Room Photos: Ezra Stoller



Above: New Britain General Hospital, New Britain, Conn. Planned by Justin M. Kearney, Hospital Consultant. Installation, Edwin L. Powell & Co., Inc., Boston, Mass. Pastel Green Kalistron covers corridor wainscoting.

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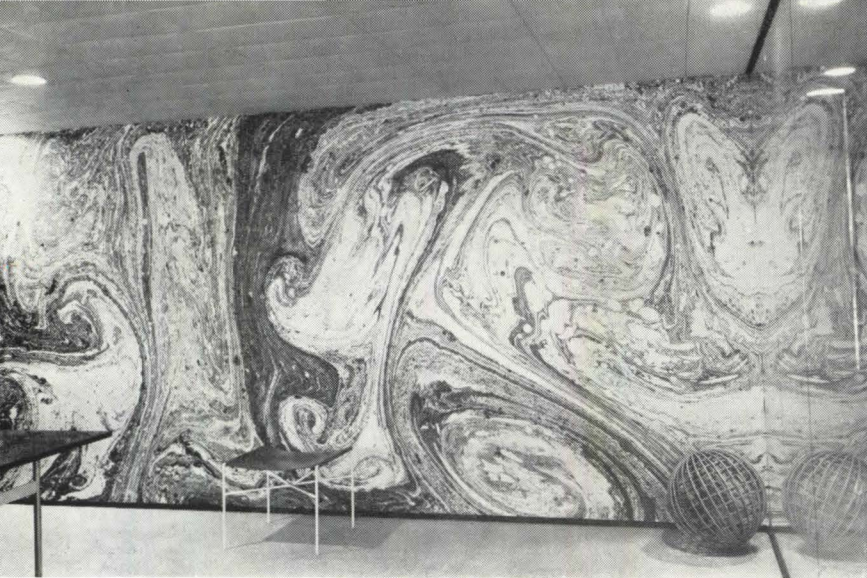
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ADDRESS _____

Distributed by: U. S. PLYWOOD CORPORATION, N. Y. C. and
 by: DECO SALES, 408 Freylinghuysen Ave., Newark, N. J.
 In Canada: PAUL COLLET & CO., LTD., MONTREAL

†TRADEMARK

Color fused to
 underside of
 transparent vinyl
 sheet . . . backed
 by flocking

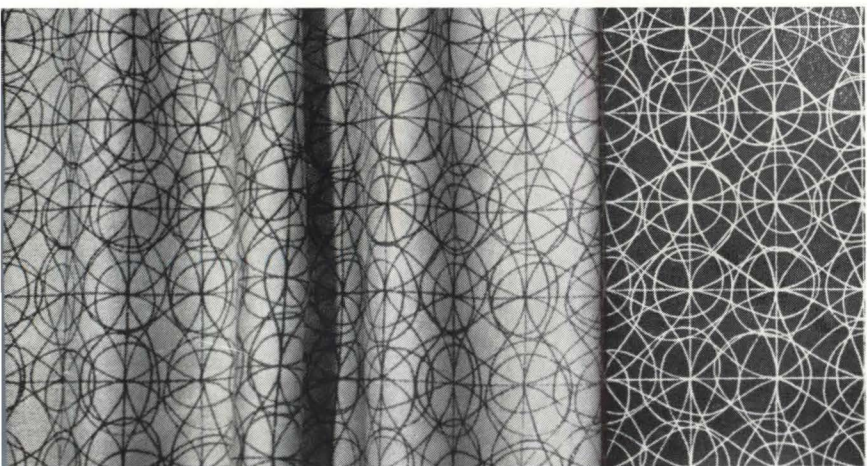


"Marbalia" Mural: designed by Erwine Laverne/ non-repetitive wall covering in single sheet 21' long x 9' high/ custom colors/ list: \$150.00/ Laverne Originals, 160 East 57 St., New York, N. Y.



Cocktail Table: from a group designed by Guy Barker/ included are square and round tables with glass or slate tops/ shown: #615/ black wood legs with shell stone top/ 23" wide x 46" long x 17" high/ list: \$149.00/ Richards-Morgenthau Co., 225 Fifth Ave., New York, N. Y.

"Fugue": coordinated fabric and wallpaper designed by Ross Litell/ standard or custom colors/ fabric: 48" to 50" wide/ list: \$7.95 on Peruvian linen or Swiss batiste; \$8.85 on Copra cloth or "Fiberglas"/ wallpaper: 30" wide x 15' long/ list: \$6.90 per roll/ Laverne Originals.



Japanese Lanterns: white oiled paper, black lacquered top and bottom, brass fittings/ candles or electric light may be used/ cylinder C-1: 8" dia. x 21" long—over-all 25"/ list: \$9.50/ cylinder C-2: 10½" dia. x 29" long—over-all 34"/ list: \$12.00/ globe A-2: 10" dia. x 12" over-all/ list: \$6.50/ available with or without brackets/ list for brackets: \$2.25 for C-1 and A-2; \$3.00 for C-2/ Kneeder-Fauchère, 1122 Sutter St., San Francisco 9, Calif.



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—also 4 sizes for openings of these dimensions
 with proper allowance for clearances.
Architects: Carr & Cunningham, Cleveland.

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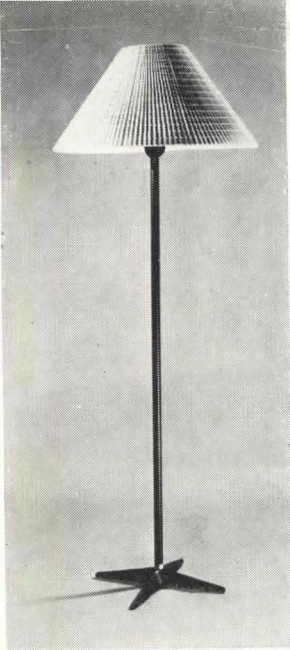
Please send me your folder on *Securit* Interior Glass

Name (please print) _____

Address _____

City _____ State _____

"Calypso" Blinds: designed by Geraldine Funk for the Puerto Rico Fiber Textile Shop/ can also be used as curtain or room divider/ white and natural fibers with white cotton warp/ also available in other colors/ any width up to 12'/ list: \$1.80 per sq. ft./ Edward Fields, 509 Madison Ave., New York 22, N. Y.



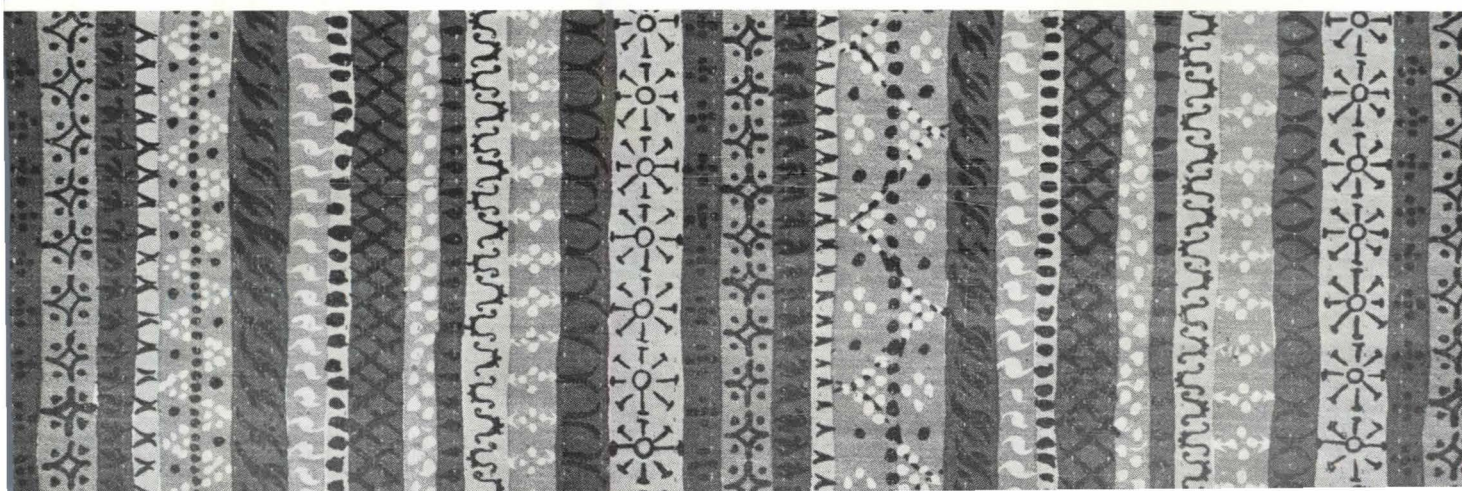
Floor Lamp: #9804/ designed by Gerald Thurston/ 55" high/ three-way lamp/ black cast iron base and black-finished iron shaft/ natural "Aspenslat" shade/ approx. retail: \$30.00/ Lightolier Inc., 11 East 36 St., New York, N. Y.



Anodized Aluminum Furniture: designed by Farkas-Baermann/ group includes a sun screen, card-dining table, lounge and side chairs/ Firestone's plastic "Velon" webbing/ shown: low armless chair #640 and ottoman #630/ list: \$32.00 and \$14.00/ Donson Corporation, 3700 N.W. 78 St., Miami 38, Fla.



"Baroda Stripe": designed by Tammis Keefe/ hand-screened antique satin flecked with metallic thread/ pattern is approximately half size shown/ color range includes forest, yellow, turquoise, and blackberry/ 50" wide/ approx. \$5.50 per yard/ "Pricilla": same antique satin as above/ solid colors to match "Baroda Stripe"/ approx. retail: per yd./ Golding Decorative Fabrics, 470 Fourth Ave., New York, N. Y.



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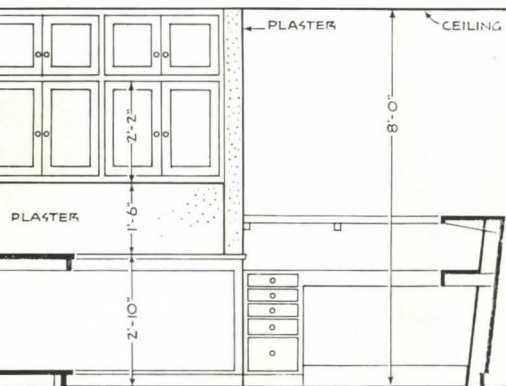
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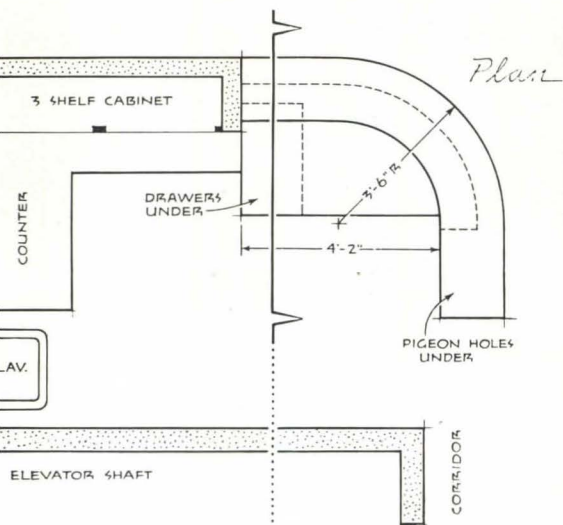
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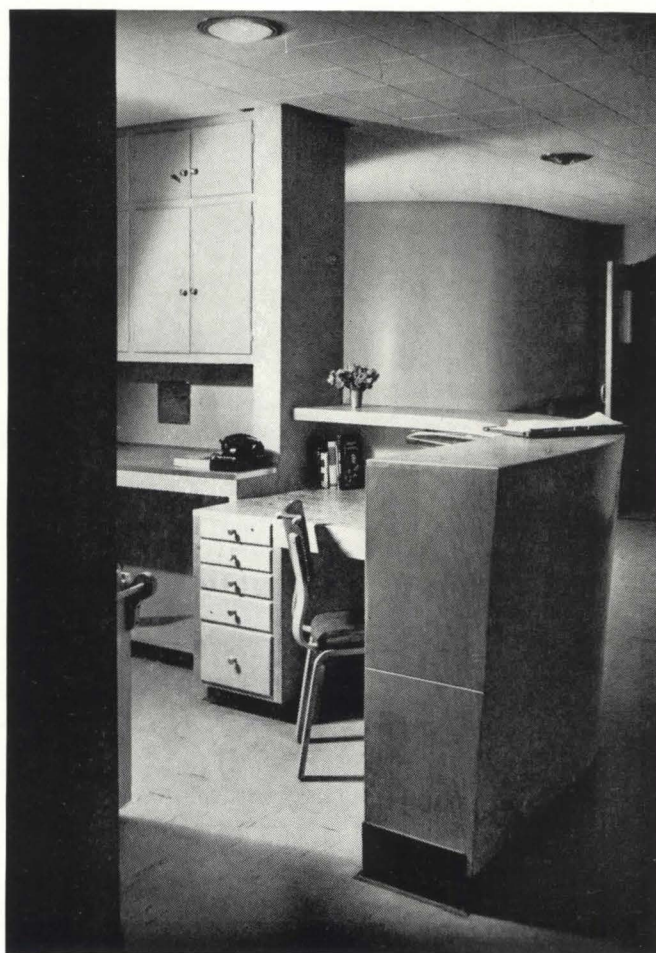
RODDIS PLYWOOD CORPORATION
Marshfield, Wisconsin



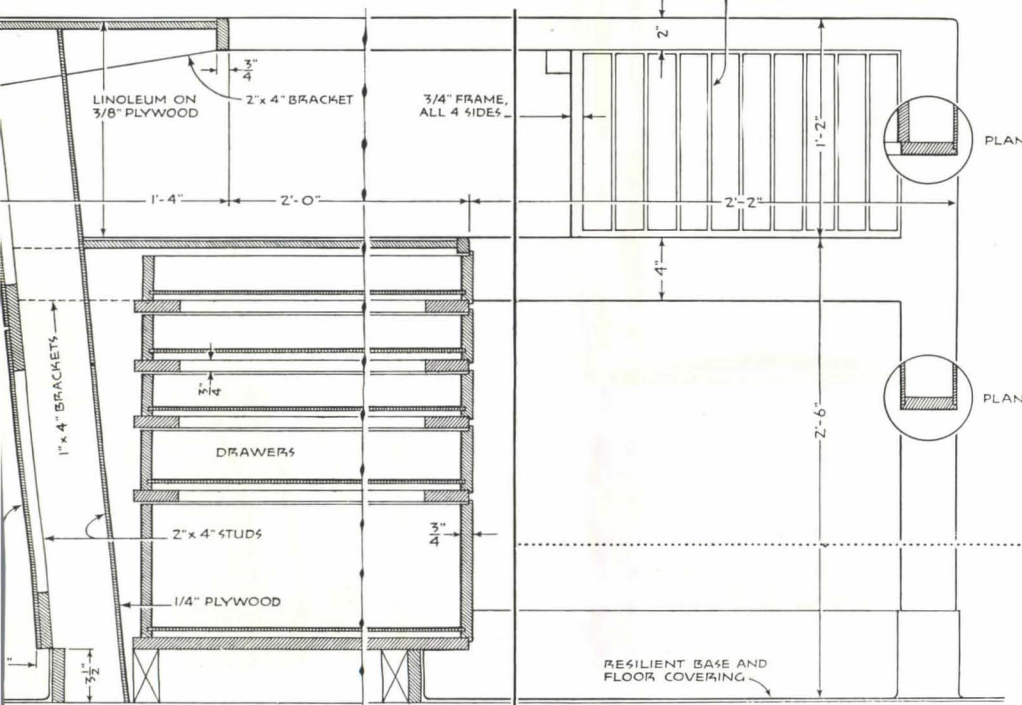
Elevation 1/4" SCALE



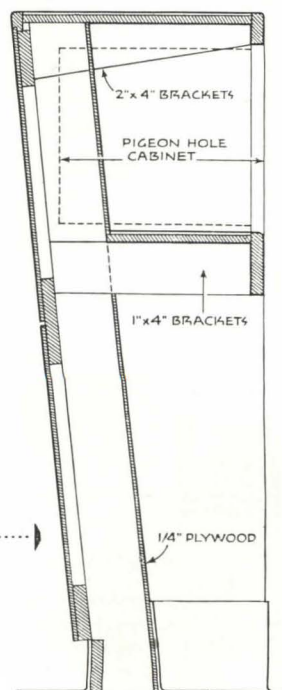
Plan 1" SCALE



JULIUS SHULMAN



Section 1" SCALE





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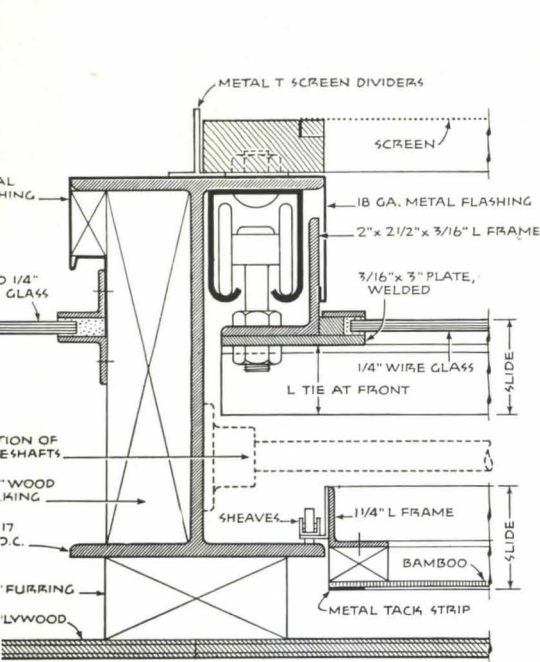
*Mississippi Glass Co. does not construct or install jalousies. For estimates and other information, see your local supplier.



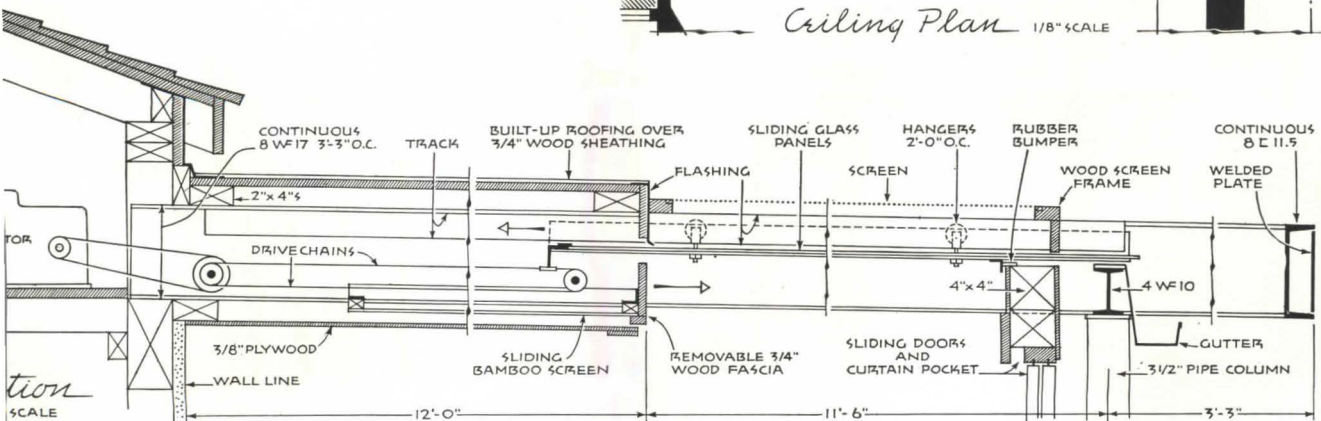
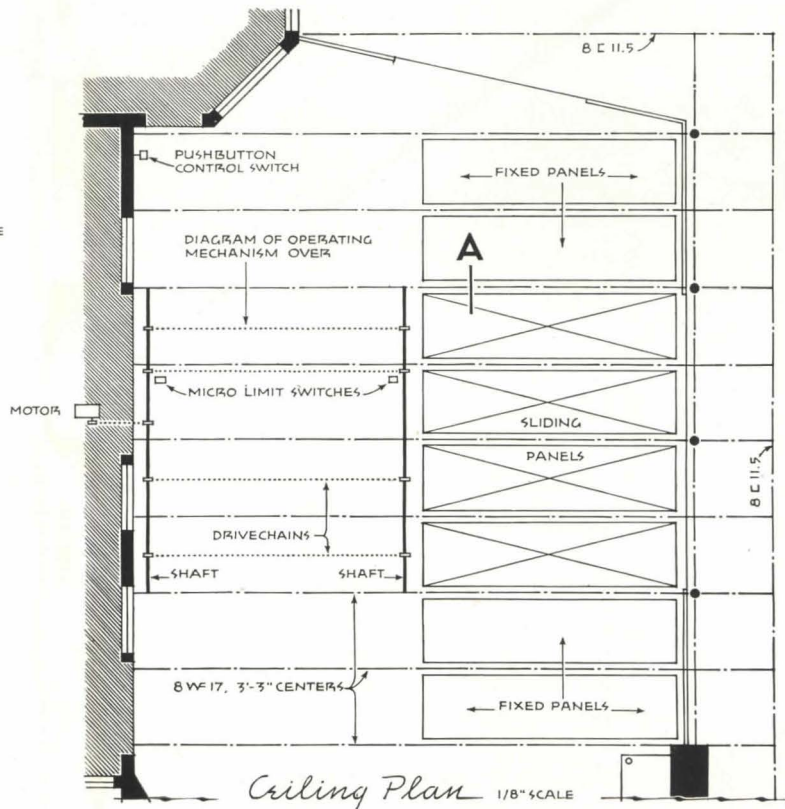
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Section A 3/4\"/>



R RESIDENCE, Pacific Palisades, Calif.
ert Kliegman & Frank E. Martin, Associate Architects

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At right: Morgan Tri-Panel Interior Door M-1073

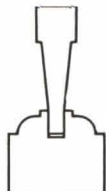
M-117 Exterior Door



1 1/4" Thickness
Heavy 1 1/4" Hip-Raised . .
Panels—2 sides

Above: Morgan Tri-Panel
M-117 in Morgan M-33
Entrance

M-1073 Interior Door



1 1/4" Thickness
with 3/4" Hip-Raised
Panels—2 sides



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Dispensary in The American Brake Shoe Company, Rochester, New York

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CHECK WHAT'S READY-MADE

IN ALUMINUM!



Reynolds Aluminum Residential Casement Windows in the Armour Towers Apartments, Kansas City, Mo.—Luther Willis, architect; Colliers Const. Co., contractor. These corner-welded casements are adaptable to many architectural functions. Reynolds Awning Windows are also ideal for institutional and commercial use. These and Reynolds Double-Hung Windows are all made of Reynolds own extruded shapes, superbly finished.



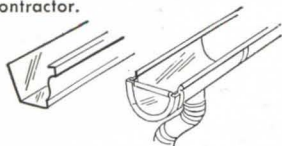
The best promoters of aluminum's versatility as a building material are the designers and builders themselves. Each great step forward in architecture has been brought about by a new freedom from the shackles of *weight* ...and the lightness and strength of aluminum have introduced a new era in building.

To these structural advantages, aluminum adds inherent beauty... forever free from rust...needing no protective painting. And its radiant heat reflectivity is an important bonus in roofing and siding...a means of combining, in insulation, high thermal efficiency with positive vapor barrier.

For these advantages, aluminum is specified in many forms. But the most economical forms, where they fit your purpose, are the building products *mass-produced* by Reynolds, the leaders in the field. Their applications are more versatile than may at first appear! Write for literature. Reynolds Metals Company, Building Products Division, 2014 South Ninth St., Louisville 1, Kentucky.



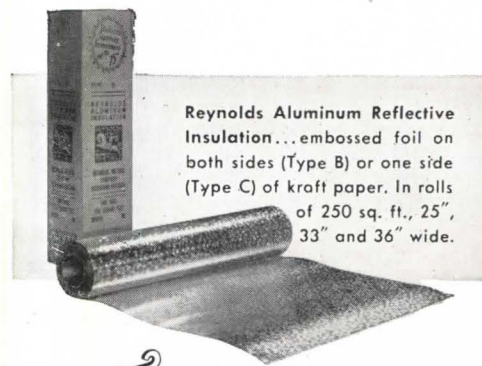
Five miles of Reynolds Lifetime Aluminum Gutters in this Overland Park, Kansas, development. H. Duncan & Mulhern, architects; George Miller, contractor.



Remember, too, Reynolds Lifetime Aluminum Flashing — in convenient rolls or flat sheet.



Six buildings on Long Island roofed with Reynolds Lifetime Aluminum Industrial Corrugated—.032" thick with corrugations 7/8" deep.



Reynolds Aluminum Reflective Insulation...embossed foil on both sides (Type B) or one side (Type C) of kraft paper. In rolls of 250 sq. ft., 25", 33" and 36" wide.



Military demands for aluminum limit supply of these products. Reynolds is rapidly expanding aluminum production. Keep checking your supply source.



REYNOLDS ALUMINUM

"The Kate Smith Evening Hour" on Television, Wednesdays — Tallulah Bankhead in "The Big Show" on Radio, Sundays — NBC NETWORKS

SELECTED DETAIL

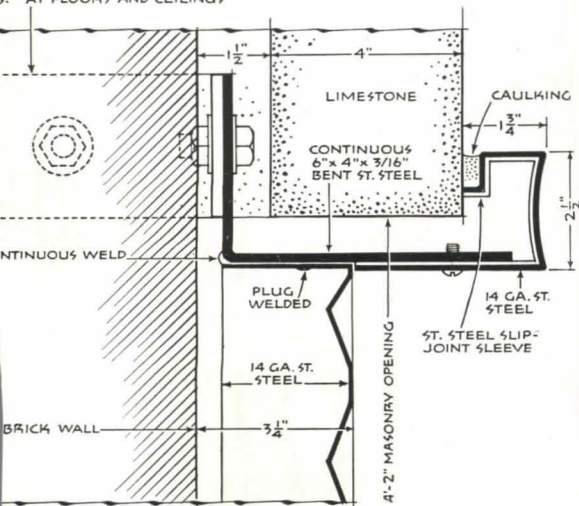
commercial building: window spandrel



PHOTOGRAPHIC SECTION, U.S. STEEL CORP.

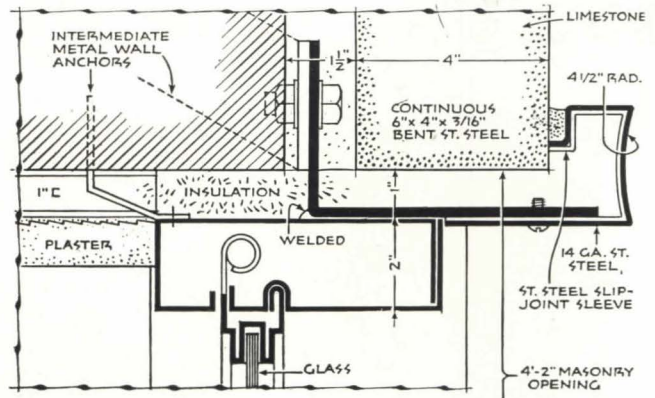
PHOTO BY COURTESY OF THE COMMITTEE OF STAINLESS STEEL PRODUCERS OF THE AMERICAN IRON AND STEEL INSTITUTE.

1/2" x 3/8" CLIP L, WITH SLOTTED
S. AT FLOORS AND CEILING

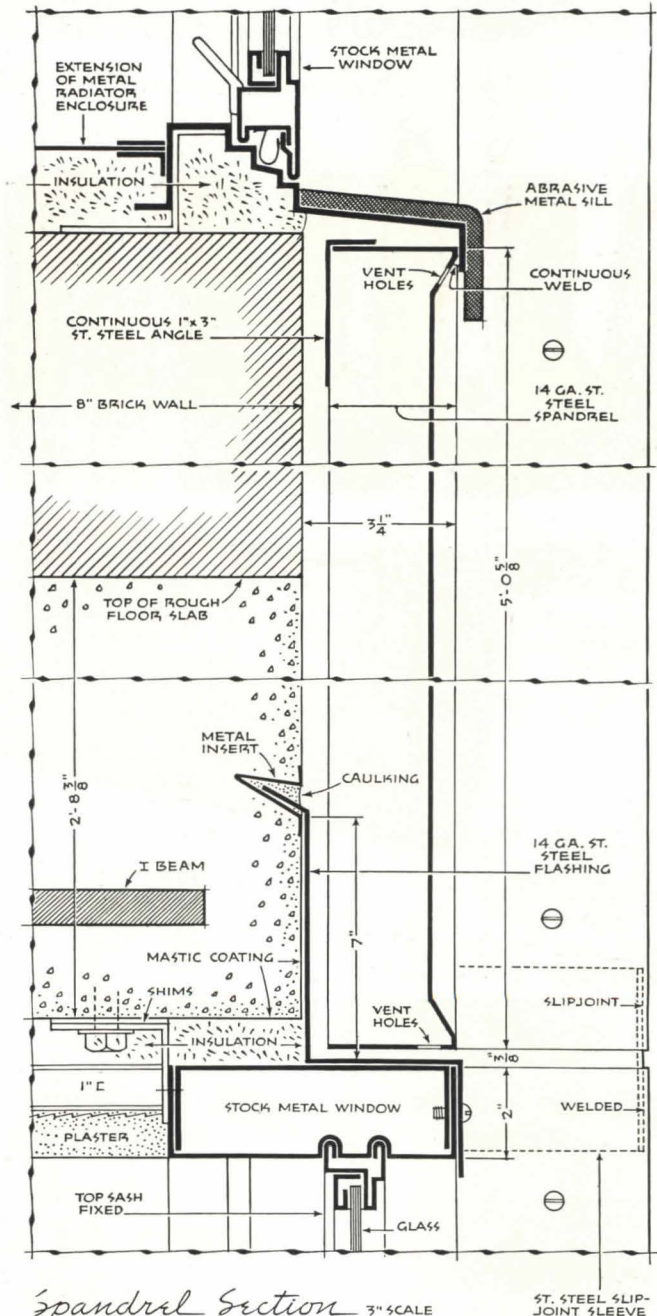


an at Spandrel Jamb 3" SCALE

WILLIAM PENN PLACE BUILDING, Pittsburgh, Pa.
K. Harrison, M. Abramovitz, W. Y. Cocken, Associate Architects



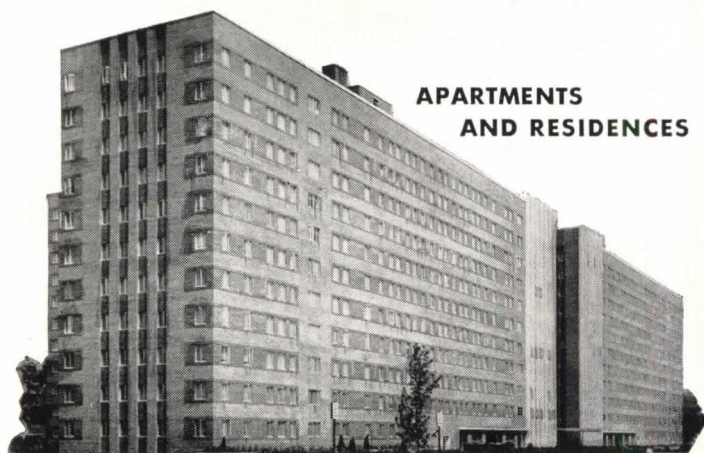
Plan at Window Jamb 1/4" SCALE



Spandrel Section 3" SCALE

ST. STEEL SLIP-JOINT SLEEVE

for any kind of building—one k



APARTMENTS
AND RESIDENCES

Twin Oaks Apartments, Kansas City, Mo.
Architects: Voskamp & Slezak



SCHOOLS

Textile Laboratory, Georgia Inst. of Technol.
Architects: Bush, Brown, Gailey, Heffernan

Quality

ALUMINUM



For client protection insist on
windows bearing this Quality Seal



TESTED FOR QUALITY
MATERIALS



TESTED FOR SOUND
CONSTRUCTION



TESTED FOR STRENGTH
OF SECTIONS

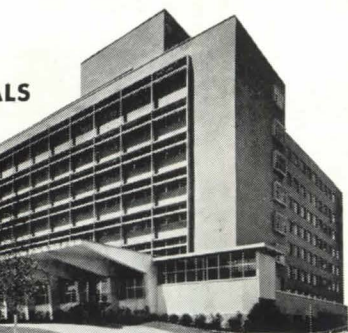


TESTED FOR L
INFIL

AVAILABILITY OF ALUMINUM WINDOWS

Don't be misled by false rumors. There is no need to use substitutes. Aluminum windows ARE AVAILABLE for immediate and future use. Present NPA Order M-4A permits unrestricted use of "Quality-Approved" aluminum windows, as class "B" building product under CMP. Consult individual manufacturers of "Quality-Approved" aluminum windows for up-to-the-minute information on their delivery schedules.

windows does the job best!



Atlanta Baptist Hospital, Atlanta, Ga.
Architects: Stevens & Wilkinson, Inc.

COMMERCIAL AND INDUSTRIAL BUILDINGS

Philadelphia Inquirer Rotogravure Bldg., Philadelphia, Pa.
Architects: Albert Kahn Associates



Crowell-Collier Building, New York, N. Y.
Architects: Leonard Schultze & Associates



Approved

WINDOWS!

schools and hospitals...for apartments and residences... commercial and industrial buildings—the one sure way of getting clients “the best” in windows is to specify “Quality-Seal” aluminum windows for every building you design. Aluminum windows help clients save money year after year on maintenance costs. They never need painting or costly repairs. They don't rust or rot. They always operate easily and will last beautiful for the life of the building.

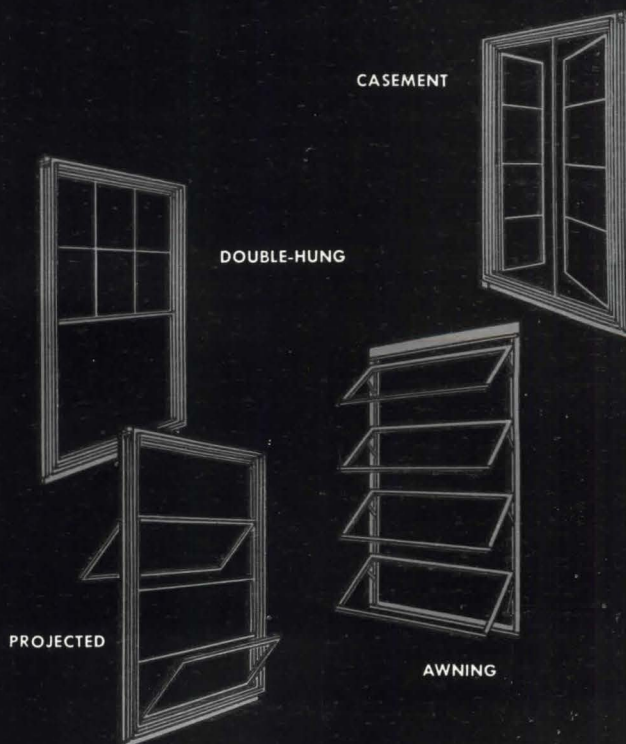
Specify the *one* kind of aluminum windows that gives these advantages—the kind that bears the “Quality-Seal.” When you do, you can be sure of windows that are tested and approved by an independent laboratory—which will assure complete satisfaction for you and your client.

“Approved” aluminum windows are available in double-hung, projected and awning types. For detailed specifications and names of manufacturers, consult Sweet's (Section 10) or write direct to Dept. PA-4.

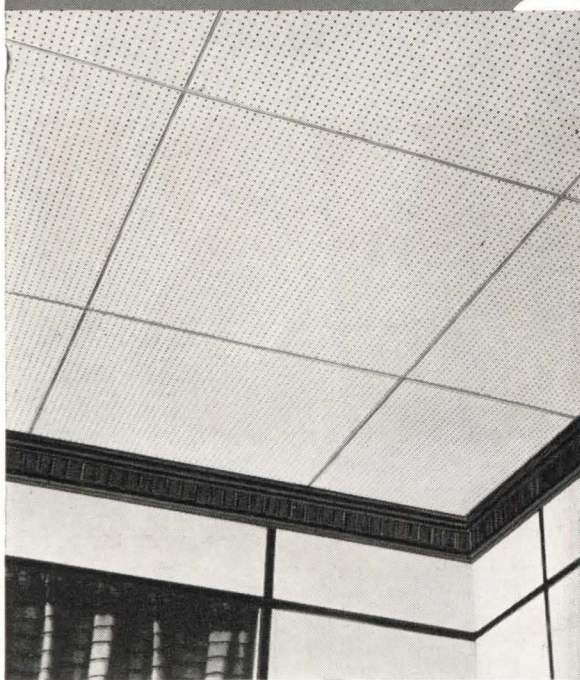
*Aluminum Window
Manufacturers Association*

74 Trinity Place, New York 6, N. Y.

A TYPE FOR EVERY NEED



*I want the same efficient
acoustical material used in
broadcasting studios!*



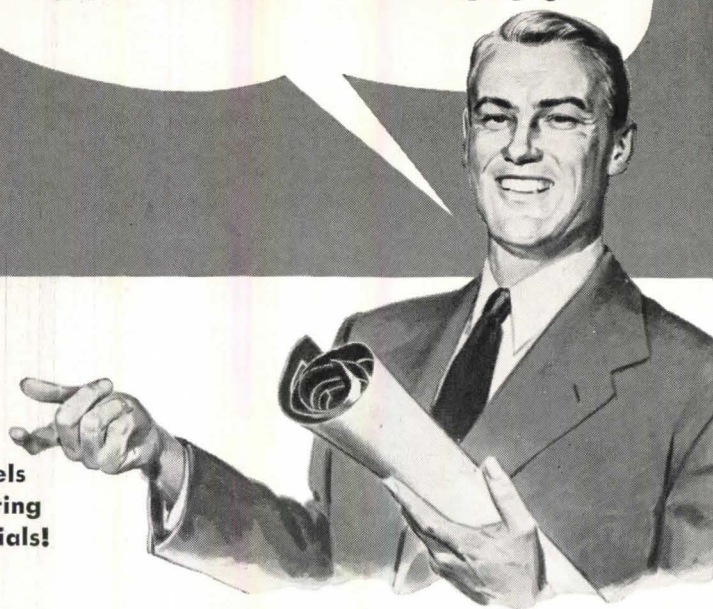
You'll find Johns-Manville Transite Acoustical Panels among the most efficient and versatile noise-quieting ceilings—and they are made of non-critical materials!

● **MADE OF ASBESTOS**, Transite Acoustical Panels are particularly resistant to fire and moisture, and provide noise-quieting ceilings that are exceptionally flat and true. They are architecturally desirable for use in offices, hospitals, homes—and of course in kitchens and cafeterias, chemical laboratories, broadcasting studios, etc.

The 12" square panels consist of a perforated asbestocement Transite facing, 3/16" thick, backed up with a sound-absorbing element available in several thicknesses and types depending on acoustical requirements.

Six hundred perforations per square foot help to give

*Good! We'll
specify **TRANSITE***
Acoustical Panels!*



Transite Panels extremely high sound-absorbing efficiency. The panels are extremely durable, can be washed, painted and repainted.

Other J-M Acoustical Ceilings include Fibretone*, a drilled fibreboard; Sanacoustic*, perforated metal panels backed up with a noncombustible, sound-absorbing element, and Permacoustic*, a textured, noncombustible tile with great architectural appeal. Write today for our free brochure, "Sound Control." Johns-Manville, Box 158, Dept. PA, New York 16, N. Y. In Canada, write 199 Bay Street, Toronto 1, Ontario.

*Reg. U. S. Pat. Off.



Johns-Manville

Movable Walls—Terraflex and Asphalt Tile Floors—Corrugated Transite*—Flexstone* Built-Up Roofs—Etc.



GET *Beauty*

A LA CARTE...



GET *Service*

A LA MODE

You can order *exactly* the kind of floor beauty and design you want from the Flexachrome* menu!

And *with* beautiful plastic-asbestos Flexachrome tile that is *always* in style, you'll get service that's *topped off* with years and years of low-cost maintenance.

What a *range* of rich, true colors you have to choose from! 25 of them. Plain. Marbleized. Subdued. Brilliant.

With the wide range of *sizes*... custom-made inserts... and tile-at-a-time installation... you have endless pattern possibilities to fit any mood.

And always remember *this* about Flexachrome... it is *highly resistant* to greases, acids and alkalis.

As far as *wear* is concerned... it's a well known fact that guests can dance on it to their hearts' content... walk all over it... day after day,

for years and years and years. And all without the floor *ever* showing that "morning-after" look!

Flexachrome is a cinch to keep clean... thanks to its smooth, tight, close-textured surface.

Initial expense is kept down by Flexachrome's reasonable material cost and quick, easy installation.

So look in your classified telephone directory for your Tile-Tex* Flooring Contractor... and have him "tell all" about Flexachrome. It makes "good listening." Call him today.

THE TILE-TEX DIVISION, *The Flintkote Company*,
1234 McKinley Street, Chicago
Heights, Illinois.

Tile-Tex

PLASTIC-ASBESTOS

FLOORS AND WALLS

The Flintkote Company of
Canada, Ltd., 30th Street, Long
Branch, Toronto, Canada.

*Registered Trademark, The Flintkote Company

Don't confuse

FOAMGLAS[®]

with any other insulation

No other material can give your clients this unique combination of important advantages: a high degree of insulating efficiency—long, trouble-free service—hence rock bottom insulating economy. That is why more and more architects are recommending FOAMGLAS.

FOAMGLAS is a continuous material, consisting of millions of minute air cells sealed in glass. Hence its exceptional ability to prevent or retard the flow of heat and cold, plus the durability which *retains* that original insulating efficiency—indefinitely.

FOAMGLAS performs successfully in both low and high temperature applications. It is light in weight, for

roofs and ceilings—rigid and strong for core walls and free standing partitions—has high compressive strength for use under floors and sidewalks.

Don't confuse FOAMGLAS with ordinary insulations offered in the form of wools, fibers, boards or batts. It is made of a special type of glass, powdered, mixed, heat-treated, slow cooled. This process produces the cellular glass structure that makes FOAMGLAS outstanding for insulating efficiency and economy.

These are a few of the main reasons why your clients who know their insulation will prefer FOAMGLAS. When you are figuring on insulation send for a sample of FOAMGLAS and copies of our informative booklets.

The best glass insulation is cellular glass. The only cellular glass insulation is FOAMGLAS. This unique material is composed of still air, sealed in minute glass cells. It is light weight, incombustible, verminproof. It has unusually high resistance to moisture, chemicals and many other elements that cause insulation to deteriorate.



Pittsburgh Corning Corporation
Dept. X-42, 307 Fourth Avenue
Pittsburgh 22, Pa.

Please send me without obligation a sample of FOAMGLAS and free booklets on the use of FOAMGLAS for: Normal Temperature Commercial Industries ☐ Refrigerated Structures ☐

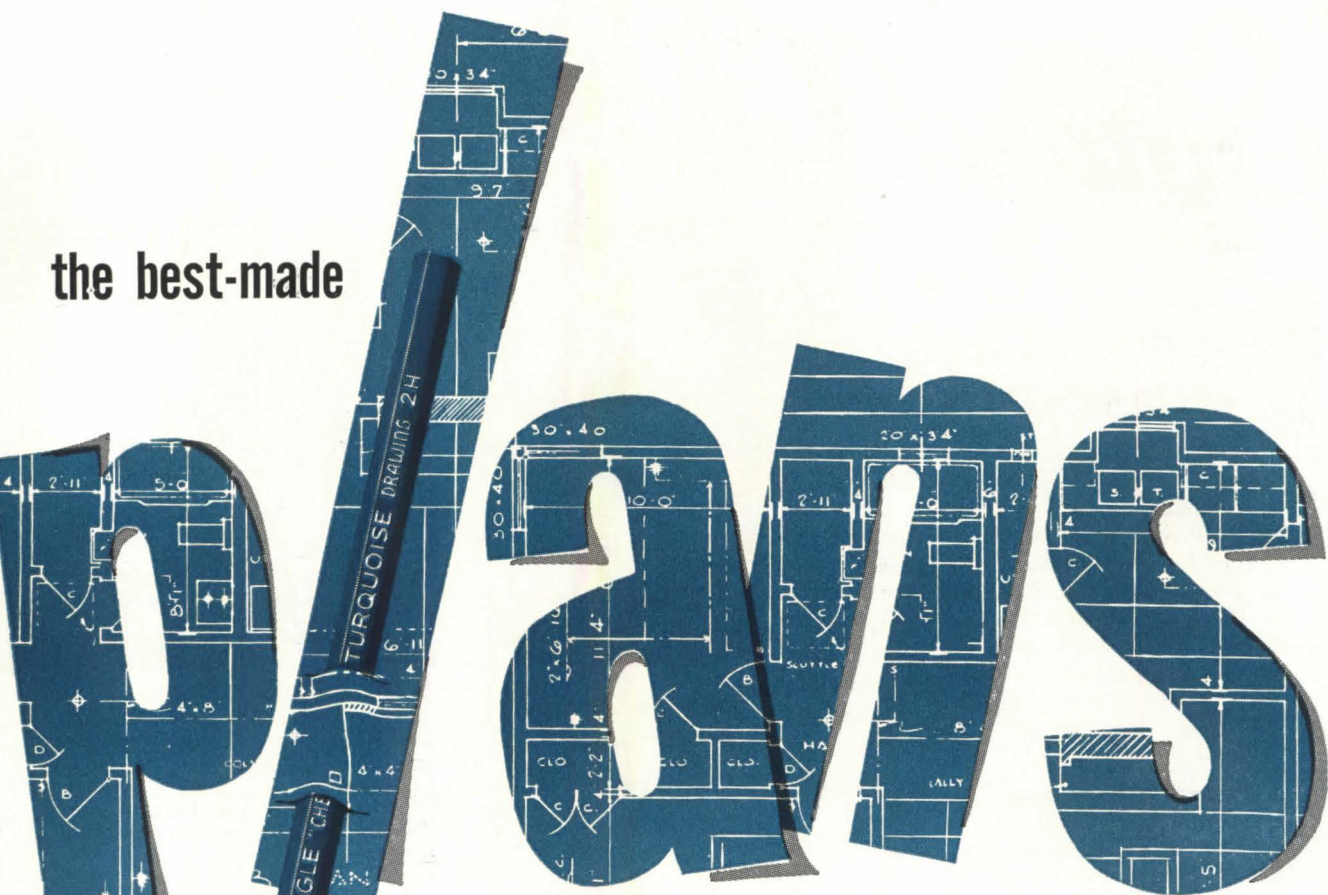
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are made with **Turquoise** containing
100% * "Electronic" Graphite!

Unmatched smoothness! "Electronic" is Eagle's trade name for a blend of purest crystalline graphites reduced to micronic fineness in our patented Attrition Mill. Leads made with it 100% have a frictionless, smooth-gliding quality never approached before.

Non-crumbling points! The microscopic graphite particles of infinitely varied, close-interlocking shapes combine with the clay binder to form the strongest, longest-wearing lead structure ever made.

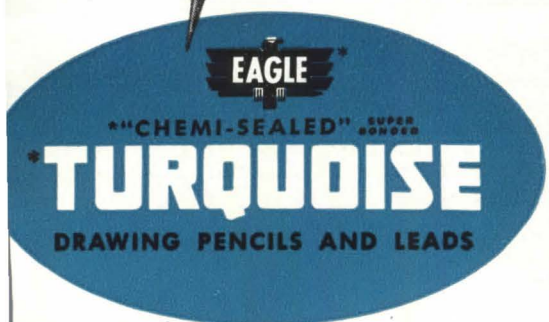
Perfect reproduction! Because millions more of these finer graphite particles are compacted in every inch of its lead, Turquoise deposits denser, blacker, even lines that reproduce to perfection.

Precision grading! 17 individual, exactly controlled formulas of Electronic graphite and clay keep the 17 degrees of Turquoise evenly spaced and as true as a plumb line.

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Sound Choice!

LOCKWOOD HEAVY DUTY

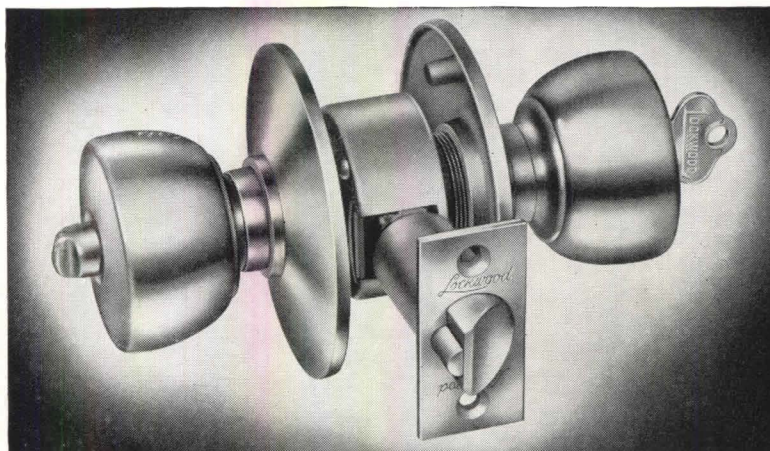
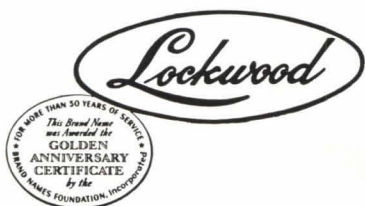
KEY 'N KNOB LOCKS OFFER

Heavy Brass Forgings for the important structural and functional parts. Brass is of course, the time proven material best suited for lock manufacture. Forging it to shape however, is a superior method of fabrication comparatively new to builders' hardware. A denser granular structure is achieved, increasing toughness and reducing wear and breakage in service.

Permanently Aligned Assembly when installed is another bonus feature of the rugged structural members. All functional parts are rigidly held in proper relationship. Binding of parts, with resultant sluggishness or failure in action is eliminated . . . wear is further minimized.

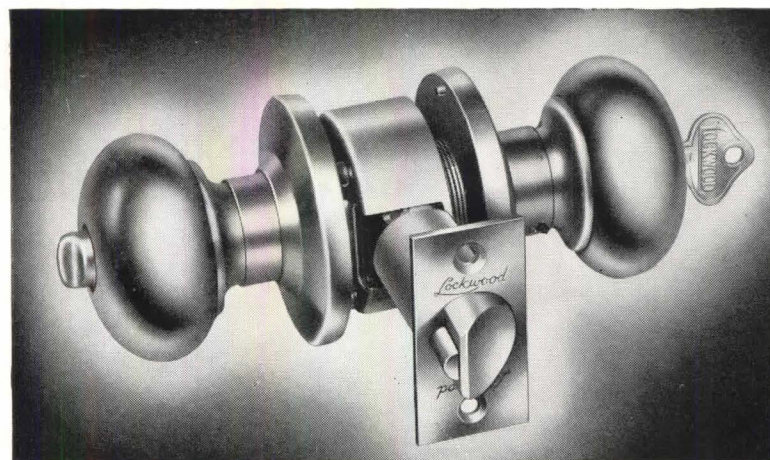
Quick Installation . . . reversing of hand is a simple matter requiring only seconds . . . changing cylinders (on the job, to change keying) is an extremely easy matter.

Specify either **HATTEN** or **HOLBROOKE** Design for your most prideful works and you can be sure you have made a **SOUND CHOICE!**



Hatten Design

Contemporary lock design at its enduring best . . . its urn-shaped knobs are comfortable to grip, yet offer a pleasing diversion from the traditional elliptical profile. The 3½ inch roses give the appearance of extra ruggedness and provide extra protection for the door finish. Made in cast brass, bronze or aluminum . . . a **SOUND CHOICE** for the finest structure.



Holbrooke Design

Simpler perhaps than the Hatten, and with its knob and rose patterned more closely after the traditional, **HOLBROOKE** is designed to give the smooth, enduring performance of the Lockwood Heavy Duty Series at lower cost. It is made of wrought brass, bronze and aluminum. Where the allowance does not permit specification of Hatten . . . **HOLBROOKE** is a **SOUND CHOICE!**

FOR USE ON SCHOOLS, HOSPITALS, HOTELS, COMMERCIAL,
INSTITUTIONAL AND INDUSTRIAL BUILDINGS.



LOCKWOOD HARDWARE MANUFACTURING COMPANY
FITCHBURG, MASSACHUSETTS

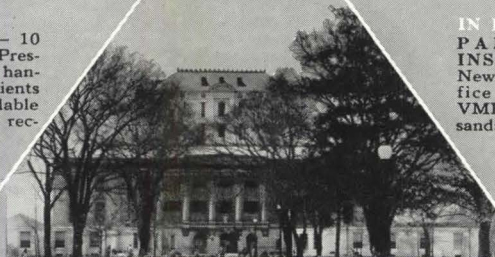
IN OFFICE BUILDINGS
LEVER HOUSE — Ultra modern headquarters of prominent soap manufacturers installed a VMP Conveyor to swiftly direct endless loads of mail and samples to correct destination.

Architects—Skidmore, Owings & Merrill



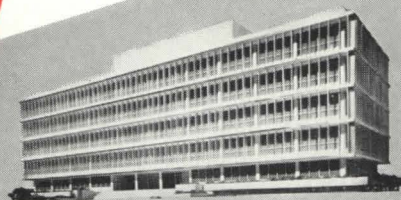
IN HOSPITALS
VANDERBILT CLINIC — 10 story out-patient unit of Presbyterian Hospital, N.Y.C., handling records of 95,000 patients yearly uses fast, dependable VMP Conveyor to transfer records from floor to floor.

Architects — James Gamble Rogers, Inc. (Original) Voorhees, Walker, Foley & Smith (Alterations)



IN LIBRARIES
OHIO STATE UNIVERSITY LIBRARY — like other leading libraries throughout United States, uses VMP Conveyor to speed book delivery service to readers, eliminate costly messenger work.

Architect: Howard Dwight Smith, University Architect, Ohio



IN INSURANCE BUILDINGS
PAN-AMERICAN LIFE INSURANCE BUILDING — New multi-tier New Orleans office building equipped with VMP Conveyor to route thousands of letters and records daily.

Architects—Skidmore, Owings & Merrill

How to speed thousands of pieces of mail and records from one floor to any other —in seconds!

VMP Conveyor routes 4½ tons of letters, records, and other data vertically and horizontally in one hour.

Just a push of a button gives smooth, safe, highly dependable service. You send mail from your mail room to any floor, or to any place on any floor. You send records, files, and other data from one location on any floor, to any location on the same or another floor.

What time, labor, and cost savings are achieved with the installation of the VMP modern vertical and horizontal transmission system!

You get precisely the loading and unloading arrangement that best fits your own needs. For the VMP Conveyor is custom designed, custom installed to your precise requirements.

Absolutely negligible in upkeep costs, the VMP Conveyor's simplified mechanical selective and unloading action eliminates need for skilled servicing.

Do solve your vertical and horizontal material transmission problems now by phoning or writing Virginia Metal Products Corporation for a free survey of your needs — today.

FREE: 2-color brochure with scale drawings describes VMP Conveyor, gives valuable facts about time, cost, and labor savings achieved. Dept. B4.

VIRGINIA METAL PRODUCTS CORPORATION

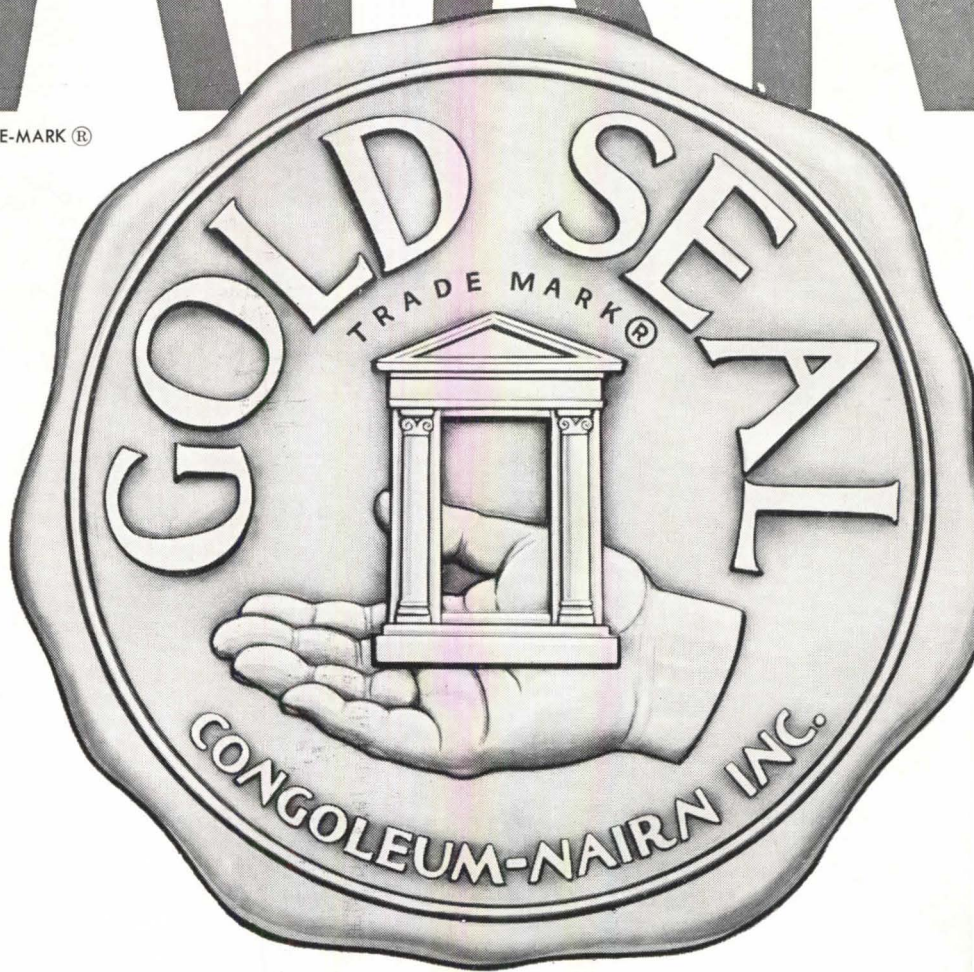
PLANT: ORANGE, VIRGINIA

87 THOMAS STREET, NEW YORK 13, NEW YORK

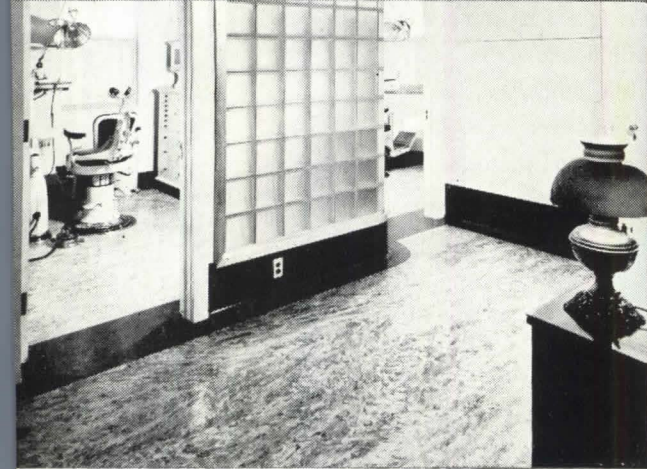
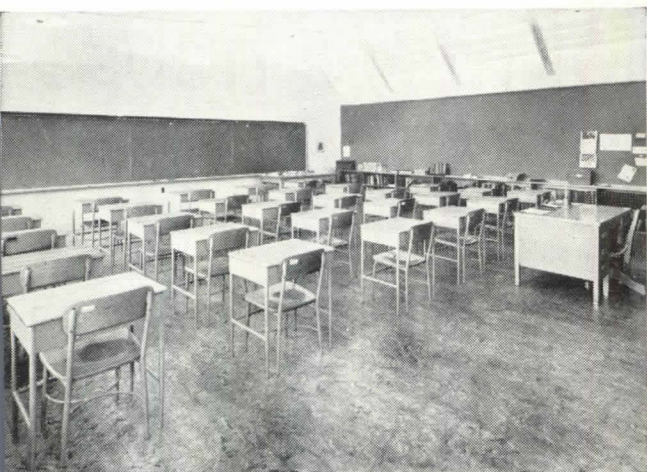


NAIRN

TRADE-MARK ®



This Gold Seal, designed by a famous American sculptor, is an impressive and unique rendering of a time-honored trade-mark. It now identifies all the principal floor and wall coverings of Congoleum-Nairn.



GOLD SEAL NAIRN LINOLEUM

presenting
a distinctive symbol
for a distinguished product

The Gold Seal has long been associated with certain products of Congoleum-Nairn Inc.—one of the oldest manufacturers of smooth-surface floor coverings to consistently employ trade-mark identification for the protection of its customers. In a distinctive form, this Gold Seal now unites all major Congoleum-Nairn products under one widely recognized and respected symbol of quality.

With Gold Seal Nairn Linoleum, as with the rest of the Nairn line, just a name has been added—nothing of their quality or performance has been taken away. These products will continue to be specified wherever the best in floor coverings is desired.

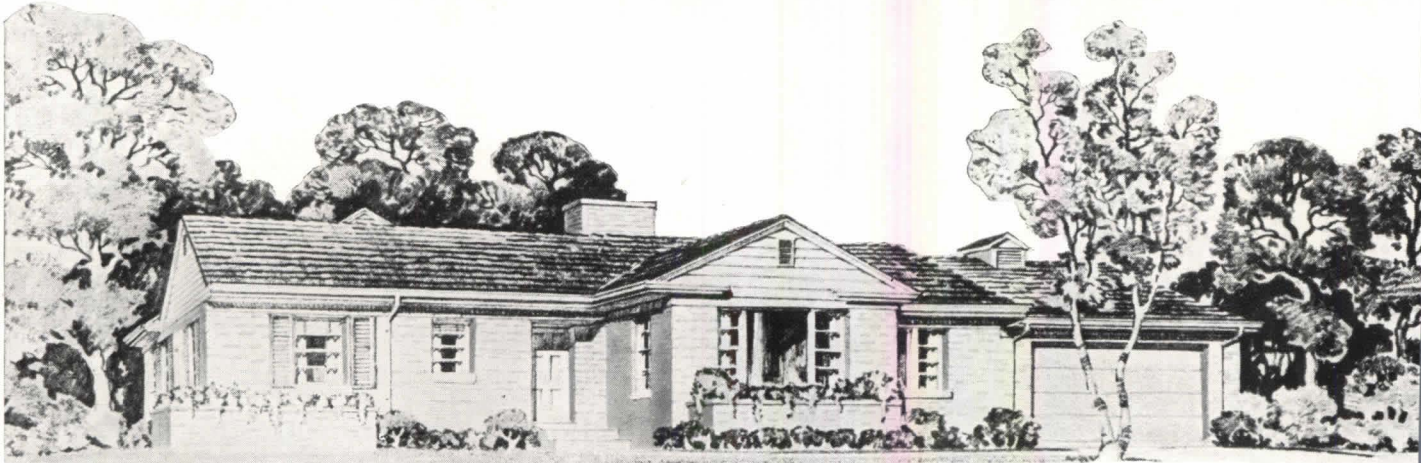
*The Gold Seal is your
money-back guarantee of
satisfaction from the
makers of the finest floor
coverings in the world:*

GOLD SEAL NAIRN LINOLEUM
GOLD SEAL ASPHALT TILE
GOLD SEAL VINYL INLAIDS

"Gold Seal" and "Nairn" are registered trade-marks.
© 1952, Congoleum-Nairn Inc., Kearny, N. J.

You can build a lot more house

RUSCO *Fully Pre-assembled*



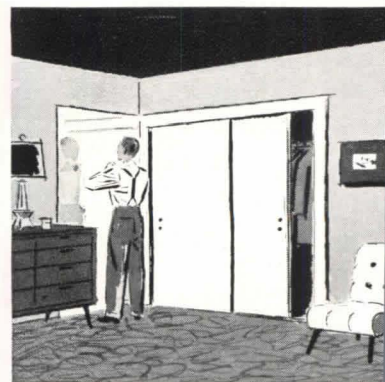
RUSCO Noiseless Sliding Wardrobe Door Unit —simplifies closet placement, saves floor space

These modern, smooth-sliding, hollow-core doors are an ideal solution to space-saving and economical construction.

Compressed grid core construction gives great strength without excess weight.

Warp-free and sound-resistant.

Masonite Duolox surface is excellent for painted finish. F. H. A. approved.



RUSCO

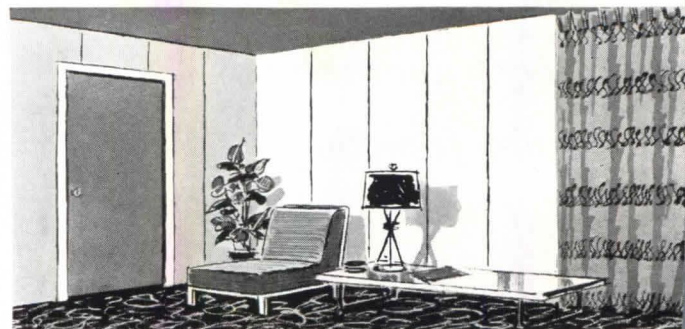
Flush-Fitting Hollow Core Door

Light in weight and warp-free, the Rusco flush-fitting hollow-core door is a sound, low-cost specification for both interior and exterior use. Modern, water-resistant and sound-resistant, it enhances the appearance of the home and room interiors. Masonite Duolox surface takes excellent paint finish. F. H. A. approved.

RUSCO Interior Panel Wall Sections

—the last word in simple, low-cost construction

Inert, sound-resistant and moisture-resistant. Rusco 2" hollow-core Panel Wall Sections provide a smooth, hard surface for paint or other wall finishes. Edges are grooved and fitted with splines for quick installation. F. H. A. approved.



t a lot less cost...with WINDOWS and DOORS

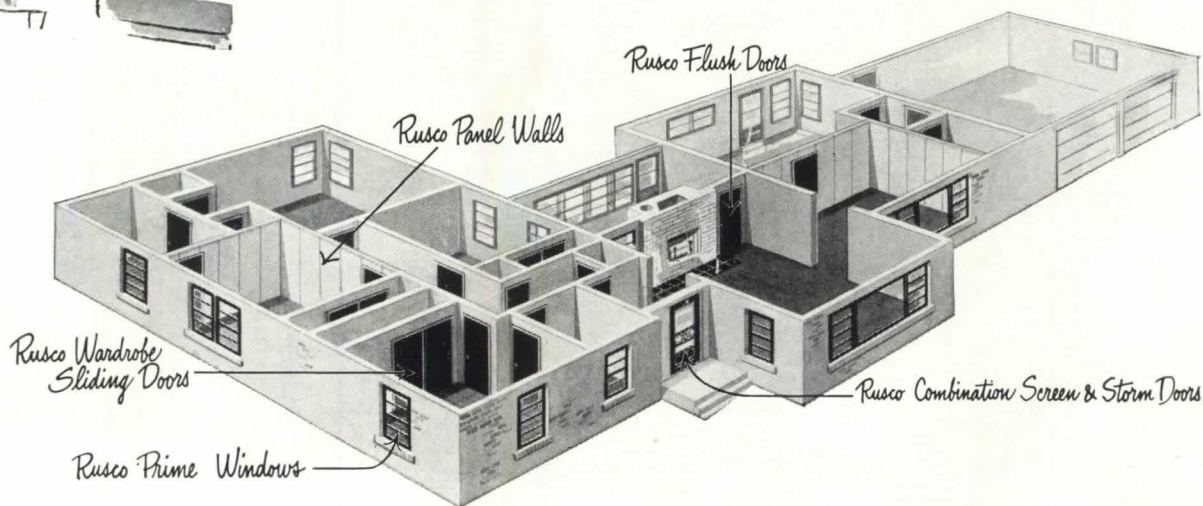


Revolutionary new **RUSCO** Hot-dipped Galvanized Steel Prime Window

GLASS
RUSTPROOF LUMITE SCREEN
FELT WEATHERSTRIPPING
INSULATING SASH*
FITTED HARDWARE
WOOD OR METAL CASING
*Optional

All in one unit!

A completely new concept in windows!
Comes factory-painted, fully assembled—all ready to place in the stud openings. Makes *big* savings in installation time and labor. Builders report complete installation of the Rusco Prime Window in *as little as 5 minutes* on many types of construction.



RUSCO Combination Self-Storing Screen and Storm Door

It's a *screen* door and a *storm* door all in one! Self-storing glass and lower screen panel arrangement makes it unnecessary to *change* anything. Simply raise lower glass for ventilation—just as you'd raise a window. Or, it converts in seconds to all-screen or a beautiful all-glass picture window door! Strong, durable tubular-steel construction. Finished with baked-on outdoor aluminum enamel.



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ILLUSTRATED LITERATURE

THE F. C. RUSSELL CO., Dept. 7PA42, Cleveland 1, Ohio
In Canada: Toronto 13, Ontario

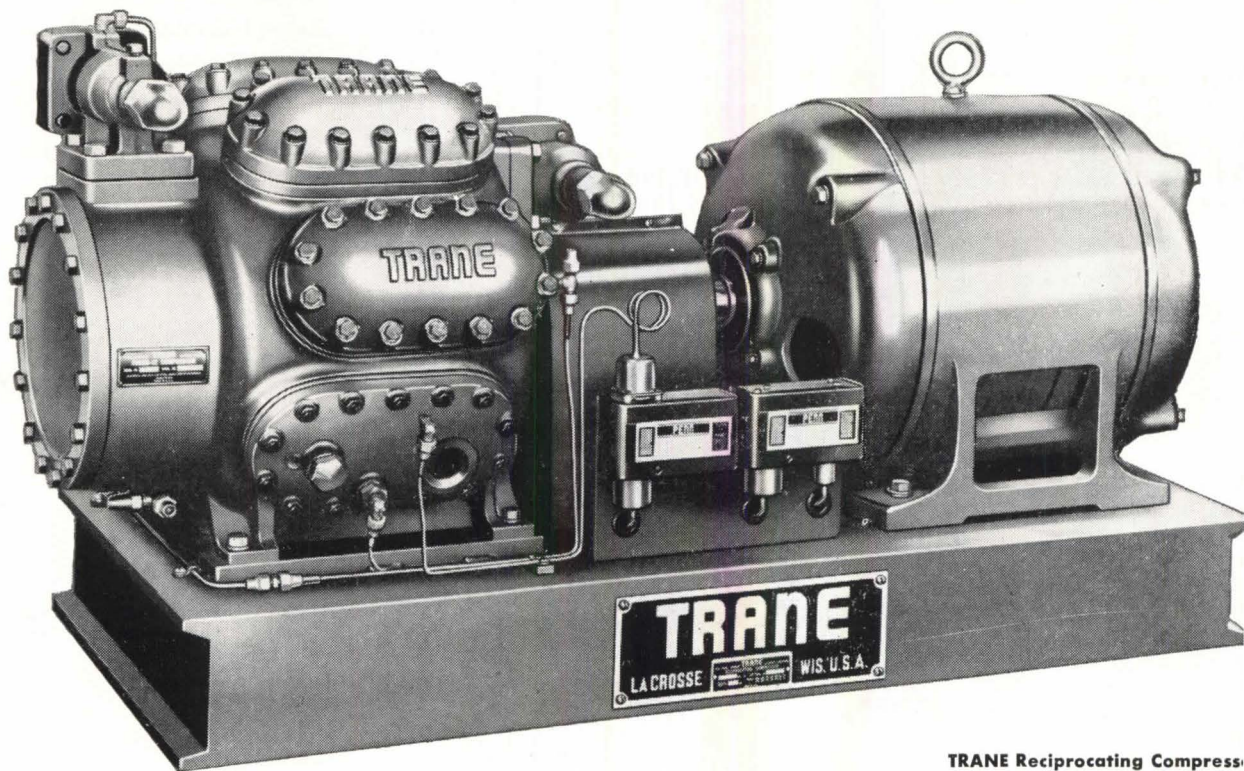
Gentlemen: Please send me specifications and illustrated literature on Rusco Prime Window ☐ Combination Door ☐ Sliding Wardrobe Doors ☐ Flush-Fitting Doors ☐ Interior Wall Panels ☐

Name

Address

City Zone State

More proof **TRANE** great reciprocating



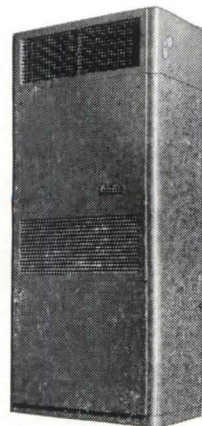
TRANE Reciprocating Compressor

Complete air conditioning from a single, easy-to-install TRANE unit

A MARVEL IN COMPACTNESS!

TRANE SELF-CONTAINED AIR CONDITIONER. Here's a year-round air conditioning unit that takes a minimum of space for the job it performs — a boon for stores, restaurants, offices.

From 3- to 20-ton sizes, with built-in evaporative condenser optional in 15- and 20-ton models. Easy to install. Heating coil optional. For more information see TRANE Bulletin DS-362 and 362-A.

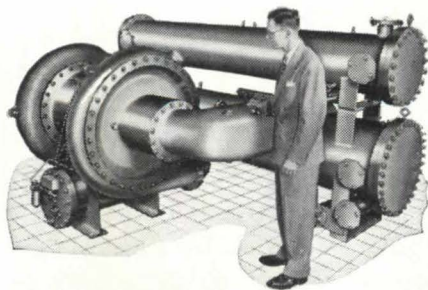


makes a compressor!

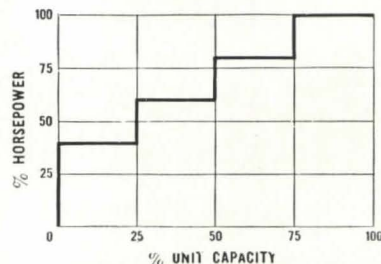
More evidence appears daily that the new TRANE Reciprocating Compressor is living up to the greatest expectations. You want modern design—TRANE Reciprocating Compressor delivers it! You must have efficient performance—TRANE delivers it! You expect long life, quieter operation, simplified installation and maintenance—TRANE has delivered that too, on the line!

No other compressor offers all these features!

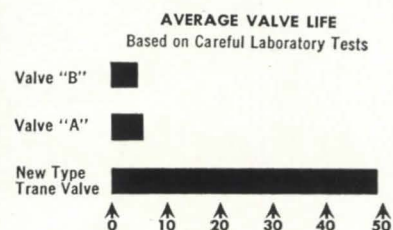
- **UNLOADED STARTING** . . . permits use of normal torque motor.
- **FOAM BREAKER** . . . reduces loss of oil from crankcase when oil foams from start-up.
- **OIL PRESSURE PROTECTION SWITCH** provides a second guard against lubrication failure.
- **QUIETER OPERATION** because of dynamically balanced construction and direct drive.
- **SIMPLIFIED INSTALLATION** with fewer connections to make on job—it's factory assembled!
- **MODERN DESIGN** with two piston sizes, 2, 4 and 6 cylinders, 10- to 50-ton capacity. Available with shell-and-tube condenser above compressor.
- **SMOOTHER OPERATION** because of carefully balanced lightweight aluminum pistons and connecting rods.



TRANE CentraVac. A complete water-chilling system, hermetically sealed. Capacities as low as 45 tons! Power consumption very closely proportionate to load through entire range. Saves power. Saves money. TRANE Bulletin DS-399 provides complete data.



PROOF: More Power Saving When Loads are Reduced! TRANE hydraulic cylinder unloader reduces horsepower when cooling load is reduced. It's completely automatic and internal—suction pressure controlled, oil pressure actuated.



PROOF: More Hours of Operation from Valves! That's because TRANE ring plate valves have a special surface treatment for long life. Tests prove TRANE valves have up to 8 times the life of other valves tested under the same conditions.

For **FULL INFORMATION** about the TRANE Reciprocating Compressor and these other great TRANE refrigeration products, contact the TRANE representative in your area, or write the main office, La Crosse, Wisconsin.

TRANE

THE TRANE COMPANY, LA CROSSE, WIS.
Eastern Mfg. Division, Scranton, Pa.
Trane Company of Canada, Ltd., Toronto
Offices in 80 U. S. and 14 Canadian Cities

MANUFACTURING ENGINEERS OF HEATING, VENTILATING
AND AIR CONDITIONING EQUIPMENT

REDUCE
FIRE HAZARDS
SPECIFY
STRAN-STEEL® FRAMING



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Fire hazards will be minimized in the Robstown, Texas, Elementary School, because of the use of Stran-Steel framing. Wall finish on the interior will be gypsum plaster on rib lath. On the exterior, brick veneer over Steeltex wall lath with $\frac{3}{4}$ " mortar bond. Benjamin K. Wyatt, San Antonio, is the architect.

proceed before exterior completion. The nailability of Stran-Steel framing means additional economy, too, in the application of collateral materials.

If you are planning new industrial or commercial construction, or schools, hospitals and similar structures, it will pay you to investigate Stran-Steel framing. Complete literature available on request, or see Sweet's catalog service, architectural and builders' files.

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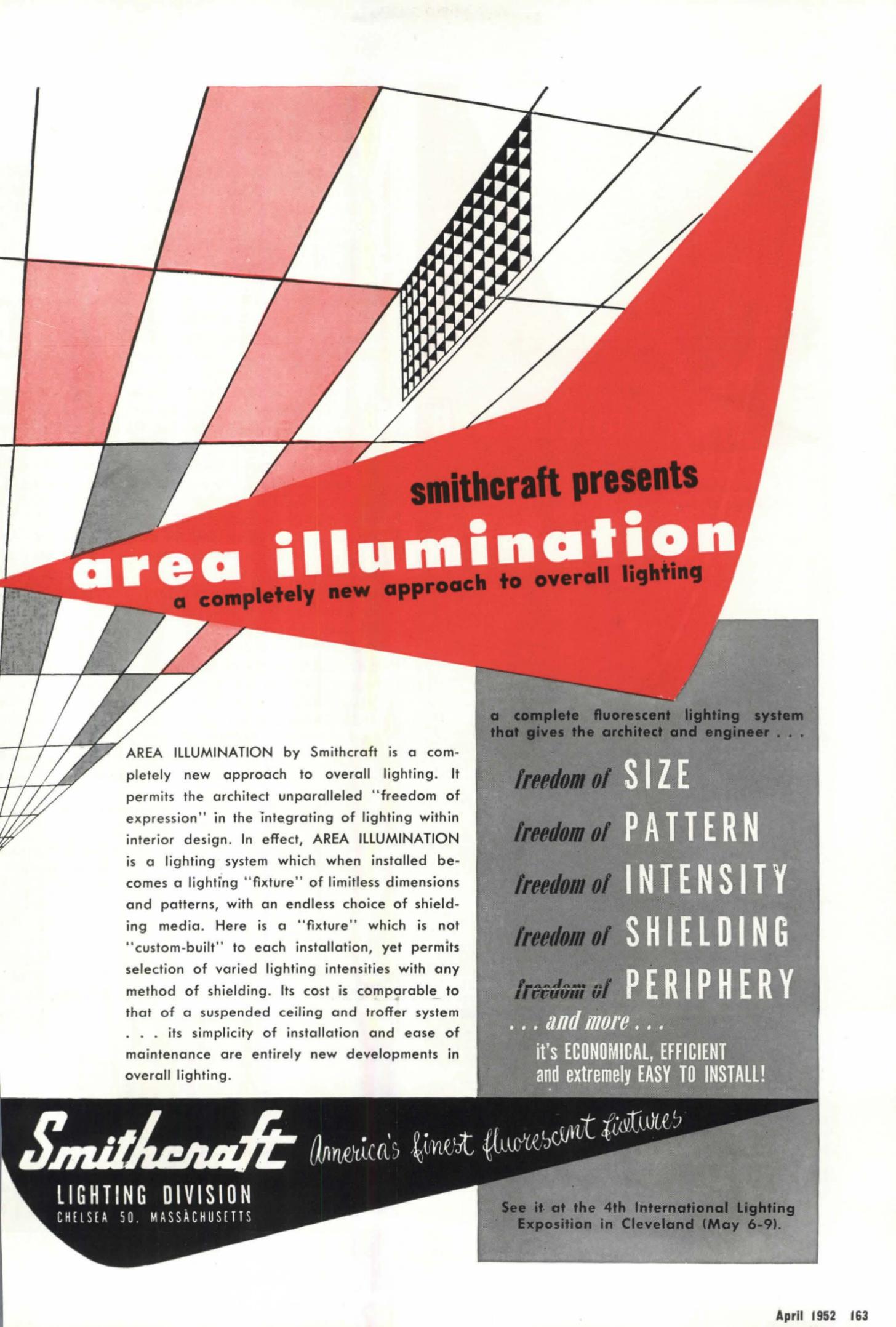
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a complete fluorescent lighting system
that gives the architect and engineer . . .

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freedom of **PATTERN**
freedom of **INTENSITY**
freedom of **SHIELDING**
freedom of **PERIPHERY**
. . . and more . . .

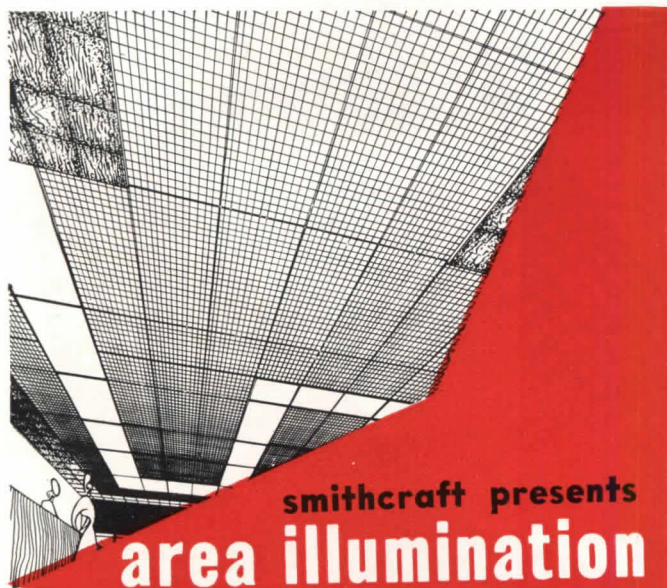
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America's finest fluorescent fixtures

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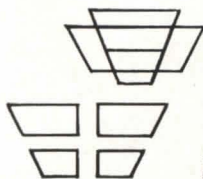
freedom of SIZE

Whatever the length, width or depth your plans call for, AREA ILLUMINATION provides a complete fluorescent lighting system that becomes a single "fixture" when installed. Completely flexible as to dimensions whether an area is 4' x 6', 400' x 600' or even larger, yet it is not "custom-built".



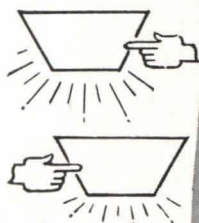
freedom of PATTERN

Here is new and unparalleled opportunity for freedom in designing lighting interiors. Create a whole ceiling of light. Develop patterns of light within the system! Or design a series of bays of light! Smithcraft has provided the architect through AREA ILLUMINATION a new "tool" with which to design an atmosphere of light in any desired size or pattern.



freedom of INTENSITY

You can specify any required intensity of illumination . . . and get that lighting level in the finished installation. Or you can specify different intensities for different sections of a large installation to permit optimum usage of office or store areas. Alternating lighting, rows of lighting, or banks of lighting are possible through a unique wiring system.



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In Defence of Magic

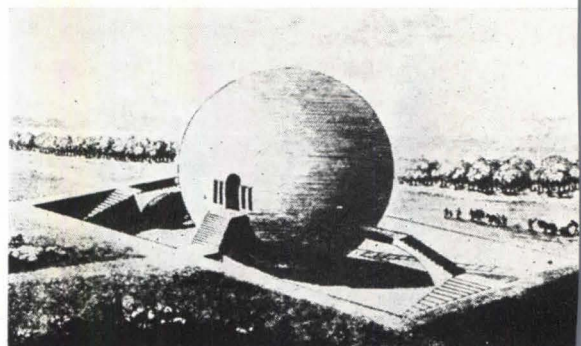
(Continued from page 100)

visual hallelujah chorus of lights justified the existence of a battered hope-filled gambling wheel in history. It is the existence of these works of art that touches us to laughter or to tears. The clown knows it, and delights us at any age. The prophet knows it, and is never given peace on earth. Objects that have a quality of madness have a hypnotic effect. Who has not been lost in the dimension of a snowfall-containing paperweight? Who held his breath *watching* the small harpsichord-remembered tinkling of a music box unrolled from its spiky cylinder?

In Lewis Carroll, the croquet mallets become flamingoes. In his time, that could not leave objects alone, but must brooder, embellish, enlarge, encrust, until function grew bled and lost its outline. A coin with dishonesty as its weakness and exuberance as its strong, the Victorian era still served as a signpost to something we have lost. For us, a mallet (or spade) is all too evidently a mallet (or spade). For we have lost something heady and unexpectedly indiscreet, that I will call *Magic*. We have soaked for long enough in the pale pudding of the taste, and might be invigorated by a draught of the wonderful, terrible Art Nouveau.

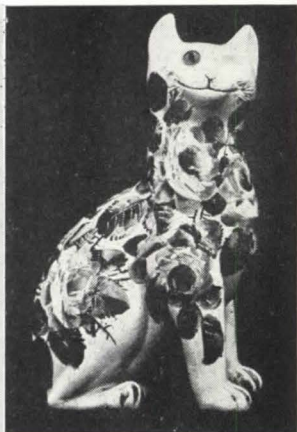
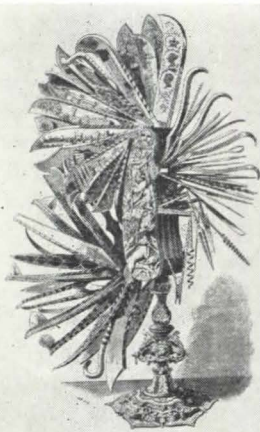
Men have an aching need for the personality's thumbprint, the figurative totem, the enigmatic symbol, and the delicious joke of the frankly fake. The monstrous ice-cream-cone-shaped roadside stand, the HE and SHE lavatories cut into the trunk of an ancient redwood tree, the World's Only Corn Palace (Mitchell, South Dakota, a grain-country version of the Brigadoon Pavilion)—are an ugly yet wonderful American folk art. At their cultural level they function as a three-dimensional Sigmund Freud drawing, a physically realized Tall Tale. From the vulgarity of the cast-brass nutcracker, shaped like a pair of legs, to the stolid decorativeness of an animal-shaped bootscraper. In Colonial America, designers of useful objects have attempted to meet the need for the miraculously animated inanimate. The opulence of the overdone included cigar-store Indians, figures with heads on ships, the Negro-boy woodcarving to hold the reins of carroussels, and P. T. Barnum type-face. The necessity for the unexpected surely dictated all figure- or head-shaped vessels. The sculptured figured handles and knobs, the marvelous pair standing the hour on the bell-tower in Venice, and the huge, graphic white horse cut into the chalk of the Berkshire dome.

Useful objects should not lose the excitement of toys in childhood. Some may be pleasurable for shape alone (the dark, egg of mass-produced marquetry is one of the most evocative objects I own) but *bizarrerie* can make the palpable mysterious and unreal. It need not contradict the beauty of a geometry which has scrapped modern design clean of horror.



spherical house

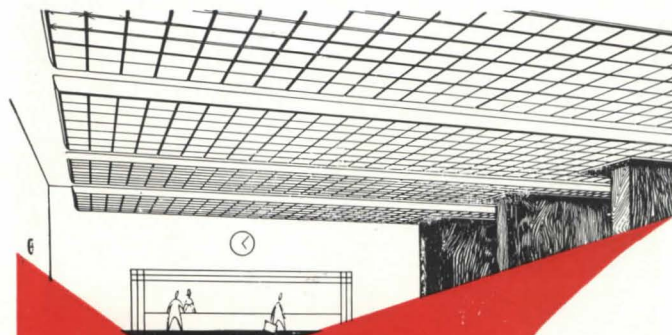
The architects Ledoux and Gaudi were obsessed by shapes for their own sake. They were haunted by the preposterous, and impulsively built the visions of a nightmare. It is interesting to Philip Johnson—who has created the most sensational *tour force* of modern architecture with his brick cube versus glass cube—credits the absolute of Ledoux's spherical 18th Century-named house as the source of his inspiration and authority. Gaudi transformed Barcelona with a frenzied Art Nouveau which has an unconscious relationship to the burgeoning shapes of modern equatorial architecture. His characteristic asymmetrical shapes contributed to the fantastic total. By combining the strength of the Gothic arch with its buttress, it is a monument of engineering genius as well as of wizard alchemy. The late Matthew Gwynne's plans for the capital city of East Punjab also synthesize the rich odor of locality with modern architectural usage. I speak not for the jaded but for the naïve. Everyone admits a taste for intricate (sometimes hideous) virtuosités remembered lovingly. It may be a stuffed bear holding a tray in some dark-brown hall, or a dragon-headed armchair with ivory inlaid details. Any knot of people on a draughty street corner, watching a ramped metal animal totter across the pavement, is operating on the spiritual wave-length that produced clockwork automata and mechanical toys in the 18th Century. Jean Cocteau has not lost the ear for that sound. His living human-arms holding a tray are my favorite lighting fixtures. The Victorians delighted in the cameo-head carved directly into the natural curve of a shell, celebrated with the gadget I covet most (the jeweled penknife which bristled in the Crystal Palace), and the finished beautiful blown-glass-filled kaleidoscopes.



sportsman's knife and cat in roses

My nomination for Useful Object of the Year would be not a record-file which rotated expensively but a kaleidoscope built into a wall (or book-case or storage wall). A light within and without, it would project its transient and multicolored patterns on the plain wall facing it, to dance like Kandinsky and look like a thousand ephemeral stained-glass windows. Or perhaps an orrery would be instructive enough to be considered useful (more useful than the television set), with its clockwork mechanism reproducing the motions of the planets around the sun in a statelier measure than that to which we consciously subscribe. A toy, perhaps, but we have lost that direct sense of wonderment about the workings of nature (itself an old-fashioned toy), reserved for the simplicity of a mechanical rather than

(Continued on page 166)



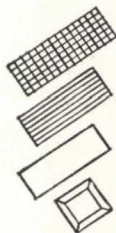
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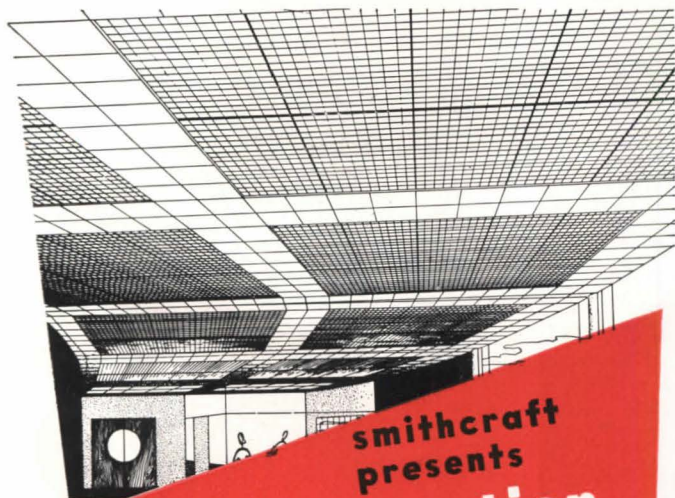
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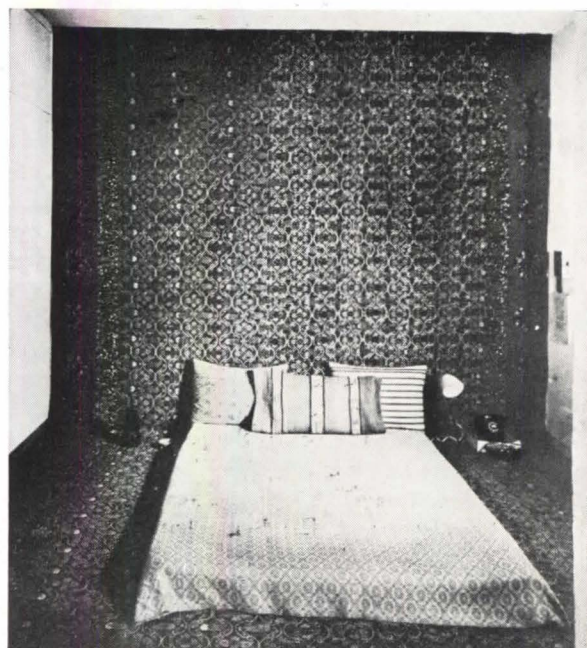
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In Defence of Magic

(Continued from page 165)

an electronic age. Franklin and Jefferson incorporated gadgets in their homes to tell them the temperature or the direction of the wind. We need devices to link us with the planet's pulse again.



dizzying, yet authoritative

Edgar Kaufmann's bedroom with its continuity of patterned rug (magic carpet, indeed) running up the back wall from floor is not the design of a man treating two planes consistently as much as the wish of a child that the floor were the ceiling and one were dizzyingly, yet authoritatively, suspended with the humiliating pull of gravity. (Cocteau played with this sensation, among a thousand and one others, in *Blood of a Poet*; even Lewis Carroll's looking glass turned to air cannot match Cocteau's, which turned to water in the passing-through.)

Shapes, textures, and colors should be *very* instead of *so what*. Why not replace the pale northern Swedish blues and beige with the extravagant color of an Italian primitive painting? The dissonance of pink and orange, of olive green and burnt green, and the dark-bright gold-leaved background could dress a modern room. Peruvian and Polish peasants learned a simple color scheme from their blood's rhythm. The slide-rule exquisiteness of modern design has made "simplicity" a most expensive production. Why not reverse the trend toward a mathematical heaven by reveling instead in sly and merry imitation? Paper wood to "look" like marble. Cover one of the free-formed modern armchairs teetering on paper-clip legs with a cut-up old tapestry of realistic forest. Revive the tongue-in-cheek pompousness of leering baroque stucco. Christmas-tree decorations seem more beautiful than the blown-glass they are because their pearly luster makes them improbable. Iced cakes are potentially delicious if pink (looking inedible). Their magic is doubled by silver balls (of sugar!) which do not resemble food at all. The marbled end papers of a book are more titillating than the honest leather bindings.

(Continued on page

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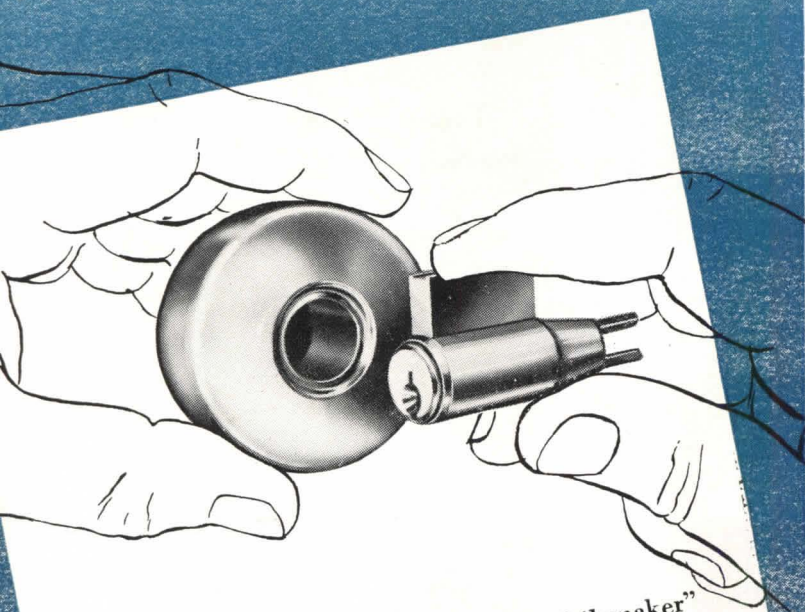
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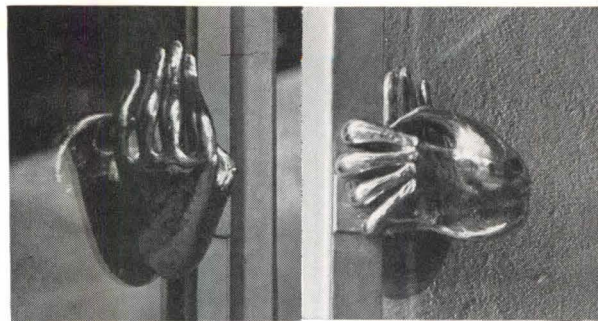
In Defence of Magic

(Continued from page 166)

André Breton wrote of Max Ernst's collages revealing pents in the parlor: "The external object has broken away from its habitual environment. Its component parts (have) liberated themselves from the object in such a way that they (can) set up entirely new relationships with other elements." Scale can establish a new relationship with a familiar set of elements. The oversized pepper-mills now fancied illustrate the excitement possible by changing the size of an object without changing its conventional shape. Only by moving the size to foolish lengths can the fact of scale become festive instead of merely ludicrous. The decorator, Dorothy Draper, cleverly used intrinsically different old engravings in inflated photostats with equally ludicrous (and wilfully comical) frames to make arresting and ingenious (and inexpensive) "pictures" of mural scale in hotel rooms. It is a device borrowed from the magicians of advertising typography. The great fingerprint, the huge eye with its dotted production-plate texture have become poster clichés, but they are the result of witty experiments in scale. The Bauhaus led the field in self-consciously examining the possibilities of scale (in the designing of useful objects). The very small detail becomes as phenomenal as the very strident, since only the *relationship* of shapes and textures and lines is meaningful in design. The movement from rough to smooth, from very fat to very lean which stimulates the eye's mind. A bulging volume ludicrously astride spidery legs makes the modern armchair a satisfying object. Never possible until our tormented century, it is the result of modern molding techniques and materials of high tensile strength and minimal bulk. But its originality is not counted for by materials as much as by the imagination of the collective poet-mind of Art that establishes an esthetic.

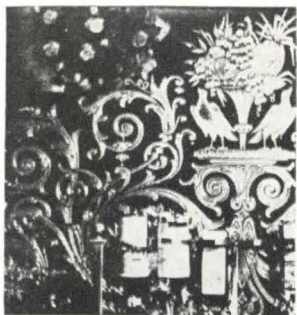
Without arguing a blanket pattern of esthetic development, the design of useful objects automatically affected by art seems to move in cycles, from simplicity to complexity. Without making a moral judgment as to the relative merits of different periods of design, the excitement of an object may be related to its "newness," or the degree to which it differs from immediately preceding forms. Without defending gadgetry or innovation for its own sake, it may be noticed that design which gives pleasure when first viewed is impossibly tiresome, once familiar. The Arp mural in Gropius' new Harvard building bores, although I still remember the excitement of his *Mountain Towers* and *Anchor's Navel* on first look. The endless succession of kid-shaped tables and ash trays and vases ironically have made original shoddy and dull, if not meretricious.

Risking the accusation of light-mindedness, I suggest I be heartedness. The lesson has been learned. The prophet now lives in a (glass-walled) house in suburbia containing an interior



push-and-pull
door handles

ght hard to make available and universal. Now that his
ghbors (or at least the self-conscious interiors in the archi-
s' and decorators' magazines) have the rough-stone-textured
the unpainted redwood wall, the piece of driftwood in
ce of sculpture, the Eames chairs, the Noguchi lamp, he
become an old bore. Now that the room is quite scoured of
nonsense, we might bring a bit of wonderment back into
antiseptic, if beautiful, space. I have tried to note a few
s of this direction being taken.



engraved pub mirror

Modern Italian furniture, vessels, and lighting fixtures, per-
s with a richer tradition to build on, have elegance and
dity and wit. The grillwork details and use of bold, sensuous,
orative shapes in the best Brazilian architecture promise to
ken the creative blood of designers, affected by the intel-
tual coolth of Mies van der Röhé. I feel that Eames' own
house is a turn down this road, with its rich patchwork
de and its Chinese paper toys (within the box-kite of the
se itself), heralding the arrival of the party-day. The great
e against modern design has been that "it turned the parlor
a clinic." The joke within this joke is that it contains some
h. Let us restore to our homes and the objects in them a
icum of magic, a whiff of carnival and fiesta, something
nter, original, spare, strange.

100

cup—Belgian Congo carving of entire figure, from *The Sculpture of Negro*
by Paul Wingert (Columbia University Press).

ick—Devil bootjack, from *American Folk Art* by Jean Lippman (Pantheon
r, Inc.).

chimney—Spanish architect's fantasy form, from *Fantastic Art Dada Sur-*
n by Alfred H. Barr, Jr. (Museum of Modern Art).

n goblet—Peruvian artifact, from *Old Peruvian Art* by Heinrich Doering
ie Art Books).

ig chair—photograph by Ralph Steiner.

wagon—titled "Western Hemisphere," from *American Folk Art* by Jean
an (Pantheon Books, Inc.).

eam cones—drawing by Barbara Jones, from *The Unsophisticated Arts*
Architectural Press).

164

cal house—*Maison des Gardes Agricoles* by Ledoux, from *the Architectural*
v, September 1950.

165

man's knife—English invention displayed at the Crystal Palace in 1851.
s roses—Scottish example, from *Fantastic Art Dada Surrealism* by Alfred
rr, Jr. (Museum of Modern Art).

166

m—New York apartment of Edgar Kaufmann, Jr., from *Interiors*, May 1950.

168

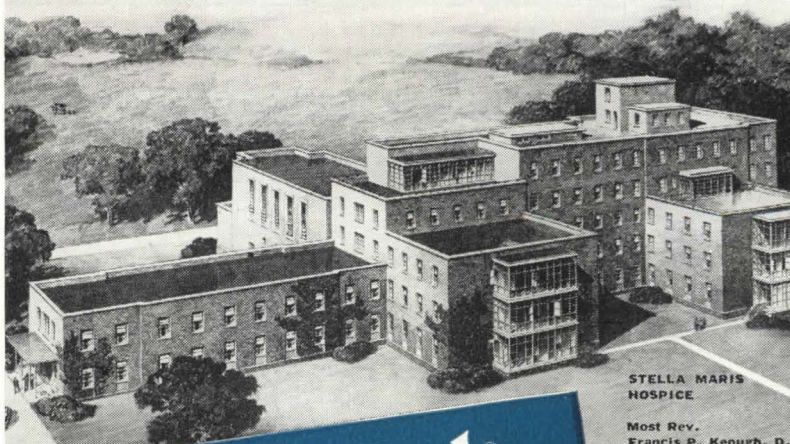
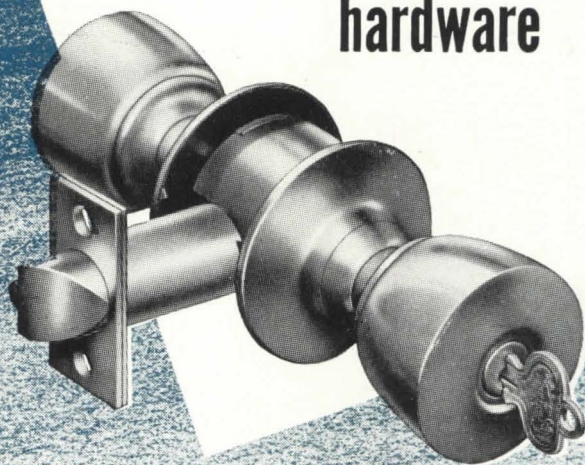
nd-pull door-handles—bronze door-handles by Mitzi Solomon Cunliffe,
ssioned by Festival of Britain (1951) for Regatta Restaurant, South Bank;
by B. & N. Westwood, courtesy of *Building* magazine.

169

ed mirror—pride of an English public house, from *Buildings & Prospects*
hn Piper (The Architectural Press).

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new lock
in builders'
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Philadelphia Housing Quality Survey. General report, 1951. Philadelphia City Planning Commission, Redevelopment Authority of the City of Philadelphia, The Philadelphia Housing Authority. 141 maps and charts

REVIEWS

ter the great fire

His Work and Times. John Lindsey, Philosophical Library, 15 E. 40 St., New York N. Y., 1952. 256 pp., illus. \$6

book, published in England and imported by the Philosophical Library, is a welcome addition to the long list of books about the great English architect. Its author is a novelist, not an architect; the book is a vivid presentation of what seems a kind of abstract affair with Wren's buildings and Wren's personality. It is rambling and allusive; its tangential notes on the backgrounds and histories of persons and buildings are fascinating; and through its diffuse spiraling around the subject it manages to present a strong picture of the times and some of the persons who lived in them. For its enjoyment a background knowledge of English history is desirable; the book has been written, obviously, for the British public. Even the tyro will gain from its surprising insights into the stresses and the dramas of the reigns of Charles I, the Commonwealth, the Restoration, and the "glorious Revolution" of 1688. As a picture of the conditions under which Wren worked, and as a narrative of architectural production, the book is extremely valuable, once it is realized that it is written from a definitely partisan and "alist" point of view. Lindsey is a worshiper of traditional values, and his keen dramatic sense leads him sometimes perilously close to sentimentality.

The writings of non-architects on architecture offer great opportunities and also entail dangers. There is, above all, the possibility of overlooking the emotional effects of primary importance to architects—and there is the opportunity of seeing the designer as a living person. Then, too, there are the dangers of misinterpretation and false judgments that may be produced by ignorance or half-knowledge of planning, construction, and even architectural vocabulary. On these points Lindsey's book is disappointing. His criticism of the buildings he loves so much is superficial. His admiring superlatives gives no sense of the emotional impact of the structures. And even the personality of Wren seems tenuous and unreal; he tends to be the type genius, mathematician, astronomer, and inventor—a designer almost

(Continued on page 172)



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REVIEWS

(Continued from page 171)

automatically. On the other hand, the author seems to have little sense of the extraordinary structural tour de force that the dome of St. Paul's is, or of the strong relationship of Wren's mathematical sense to the geometrical variety of his churches, or of the importance

of his secular work. Historically, as well, he over-simplifies and seems unaware of many readily available sources, especially in connection with the complicated history of Greenwich Hospital and the construction of St. Paul's itself. For he never mentions the publications

of the Wren Society, which would have clarified many things he leaves dark. Along the same line, his footnote definition of pendentive (p. 147) is almost misleading. There are too many misprints. A casual survey reveals grammatical errors for gnomonics, Contances for Coutances, Mendon for Meudon, Guilt for Gwilt.

The book is beautifully illustrated, chiefly with portraits of charming views of the churches from century-old engravings, and despite its shortcomings it is a valuable contribution to an endlessly interesting subject.

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ALCOA, An American Enterprise. Charles Carr. Rinehart & Co., Inc., 232 Madison Avenue, New York, N. Y. Illus., 292 pp \$3.50

Full access to the files of the Aluminum Company of America gave the author exhaustive material for the history of Alcoa's 62 years of industrial progress. Every stage of its development is described here—from its pioneer mill plant days in the late 80's, the early struggles for patent rights, financial backing, and consumer markets, to the postwar period involving its relationship with industry and Government to the point where it has become this country's largest producer of aluminum.

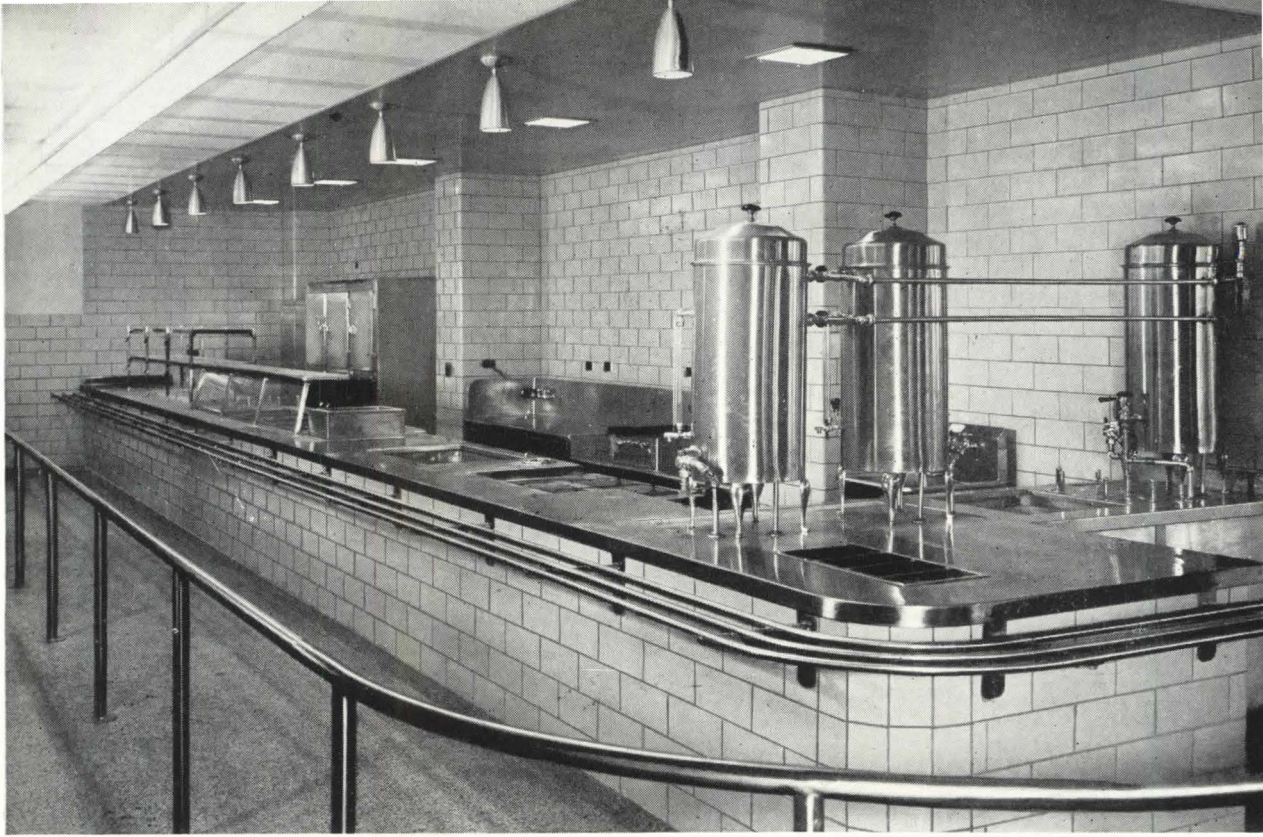
c.i.a.m.—a panorama

A Decade of New Architecture. Edited by Siegfried Giedion. Editions Girsberger, Zurich, 1951. 232 pp., illus., \$8.50. Available through Wittenborn & Co., 38 E. 57 St., New York, N. Y.

It is difficult to classify this volume. It isn't a history of C.I.A.M. (International Congresses of Modern Architecture). It isn't a reference book on outstanding modern architecture of 1937-1947, nor a complete record of work accomplished in that period, nor yet one scholarly opinion and philosophy. Yet, to a degree, it involves all of these things. Perhaps the best way to describe it is "a panorama of progressive work done in a decade," with considerable attendant parochial matter on C.I.A.M. aims, methods of procedure, and discussion.

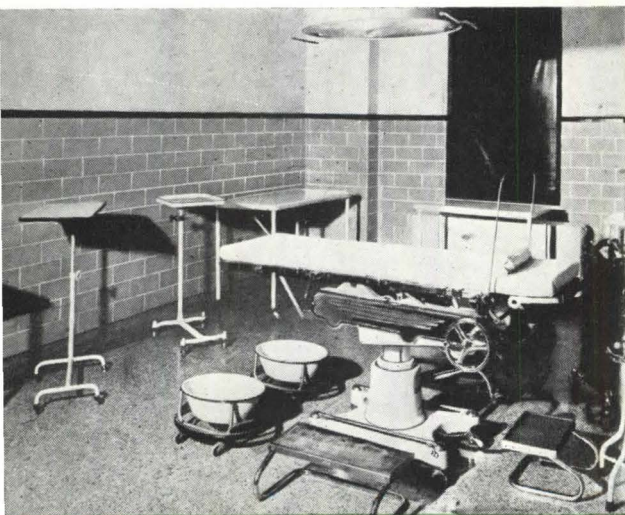
Reason for the choice of the 1937-1947 decade is that it represents the difficult, undominated years when C.I.A.M. members

(Continued on page 172)



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(Continued from page 172)

everyone else) had to work under extremely adverse conditions and, in the main, independently. The period also marks the hiatus between C.I.A.M. Congresses—Paris in 1937 and Bridgwater, England in 1947.

Dr. Giedion, honorary secretary of C.I.A.M.

and author of *Space, Time and Architecture* and *Mechanization Takes Command* has served as editor of this book; a task involving selection of the papers to be reported, the work to be illustrated, and the writing of an introduction and numerous connecting paragraphs

and comments. The result is a miscellany concerned with progressive work (most of it C.I.A.M. members).

Text in the forward portion of the work (in French and German, as well as English) consists of statements, speeches, or program outlines by various C.I.A.M. members for the Sixth Congress (Bridgwater); Seventh Congress (Bergamo, Italy, 1949) and Eighth Congress (Hoddesdon, England, 1951). Here also are reaffirmations and restatement of C.I.A.M. goals—"to work for the creation of a physical environment that will satisfy man's emotional and material needs and stimulate his spiritual growth."

An outline for C.I.A.M. study of community development prepared by K. Lonberg-Holm (U.S.A.) is included, along with introductory comments by Giedion, comment by V. Eesteren (Holland); Thomas (England), and others. Here are proposals by Le Corbusier, a discussion of the ideal relation between architect, painter, and sculptor, and the problem of esthetics; discussion by J. M. Richards (England), Van Eyck (Holland) and, finally, an extended statement by Walter Gropius (U.S.A.) outlining an educational program that would join the academic teaching of the classroom with a continuous practical experience in shop and field.

By far the greater part of the volume is taken up with illustrations (plus, in some cases, plans) of work accomplished in 23 countries during this troublesome decade. Giedion emphasizes that his selection is intentionally cross-sectional rather than an attempt to show the outstanding work of outstanding architects. The purpose is two fold—to demonstrate the varied standards of architectural development that emerged in a "decade of isolation" and to illustrate the universal search for better ways of utilizing space, to serve man's ever-changing needs and aspirations.

The work illustrated is organized by subject or building types—sculpture, equipment, chairs, private houses, hotels, public buildings, schools, hospitals, neighborhood, and metropolitan plans etc. Preceding each major classification is an introductory statement by the editor.

As a cross section, it is an enlightening selection and—oddly enough, since this is but five years after the close of the decade—slightly nostalgic, particularly to anyone who has followed architectural publications for

(Continued on page

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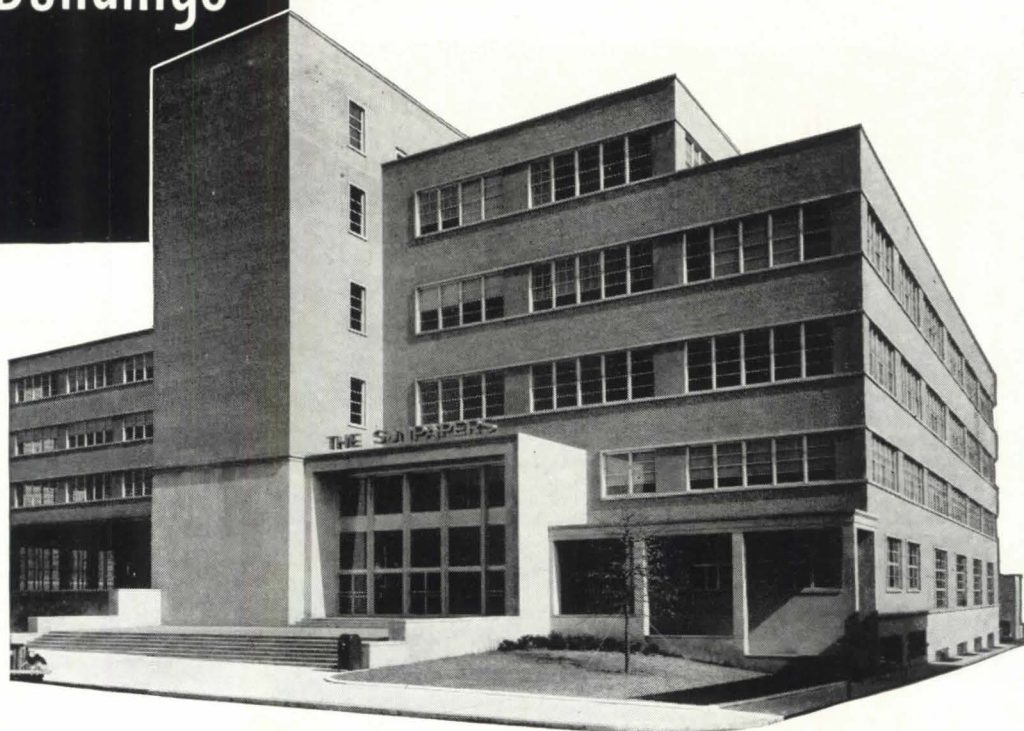
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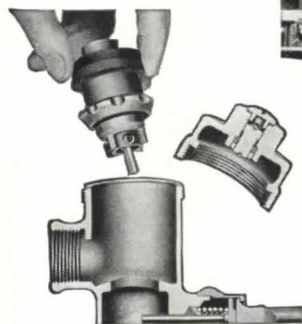
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(Continued from page 174)

foreign countries, as well as here. As an indication of progress—often under the most inclement circumstances and in a bitter period—it surely emphasizes the vitality and growth of the contemporary approach.

To a U. S. reader, it is humbling to discover,

in such classifications as factories, apartment houses, and hospitals, that there is not a single instance from the States, although this country is well represented in the book—especially in the private-house category. The one thing shown on the U. N. headquarters is

the scheme advanced in 1947 by Le Corbusier—close kin, in disposition of major elements at least, to the complex now being built.

It is good to see this panorama within the covers of a book. One casual attraction of the volume—made possible, but undoubtedly never intended, by R. Lohse, the lay-out artist—is that it can be used for an architectural guessing game. Names of architects, the nature of the particular building or project, its location, and the date built are all consistently relegated to the bottom of the page. Thus, looking over the bottom, a play of conjecturing who designed what and when is quite simple.

G. A.

concrete handbook

CRSI Design Handbook. Concrete Reinforcing Steel Institute, 38 S. Dearborn St., Chicago, Ill. 412 pp., illus. \$5

Engineers will find that many problems encountered in the designing of reinforced concrete structures have been greatly simplified for them in the computation tables and charts of this engineering manual. For years it has been possible to select structural-steel members directly from such tables; now, for the first time, predesigned, reinforced-concrete members can be obtained in the same manner with a minimum of drudgery. Given load and span data, the designer can quickly obtain the necessary answers to stress and load information on practically every type of beam, column, panel, slab, etc., for almost every reasonable loading condition. The new handbook was prepared under the direction of the Committee on Engineering Practice of the Concrete Reinforcing Steel Institute. With two exceptions, all designs are based on the 1931 Reinforced Concrete Building Code.

children and the arts

MUSEUM ADVENTURE. The Story of the Getty Museum. By Molly Harrison. University of London Press, Ltd., London. 176 pp., illus. 6d. (\$2.00) BASIC HOME PLANNING. Sponsored by the Rhode Island Chapter, American Institute of Architects. Designed and executed by students of Rhode Island School of Design. Dept. of Teacher Education, Landscape Architecture, and Advertising Design.

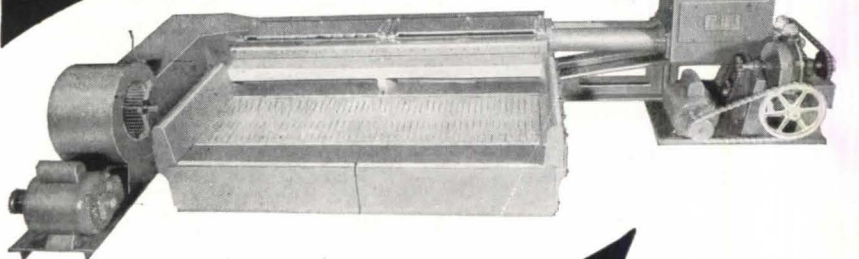
(Continued on page 175)

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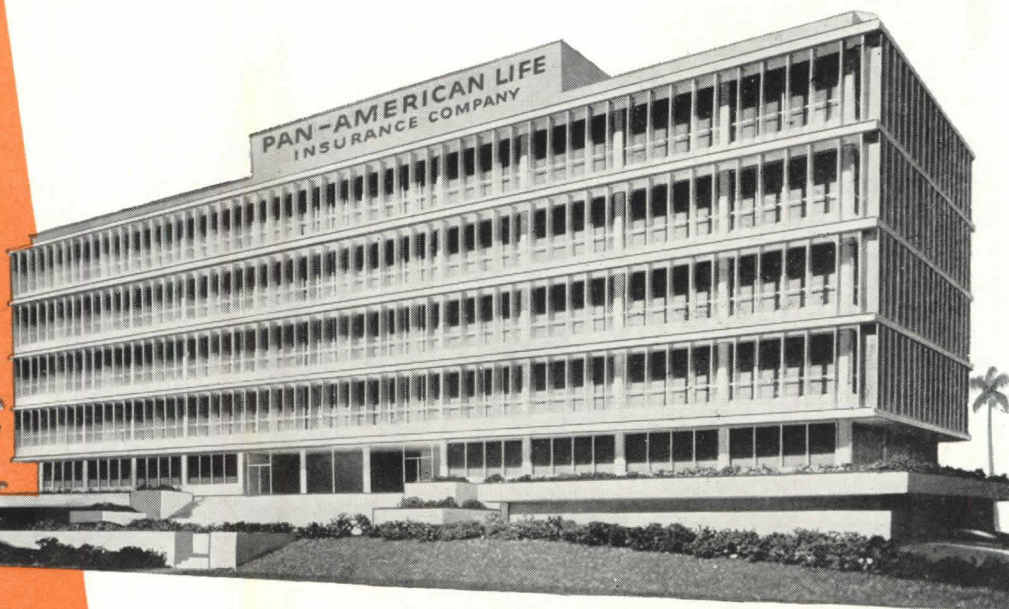


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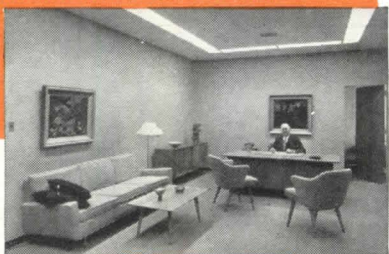
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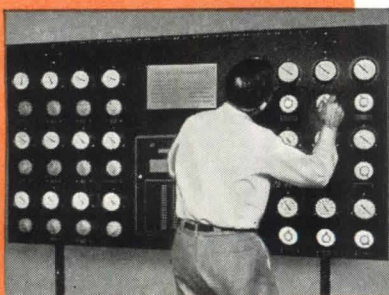
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(a82)



(Continued from page 176)

This delightful book and a series of displays by Rhode Island Chapter, A.I.A., are related in their common purpose of giving school children some comprehension of design and architecture.

In *Museum Adventure*, Molly Harrison, curator of the Geffrye Museum in the slum district

of London's Shoreditch, has created a series of puzzles which have stimulated the children in her depressed area to interest not only in the field of furniture design (in which the museum specializes) but also to a creative realization of the relationship of design to culture; and enriched the children's minds so

that their lives, however limited economically have resources to sweeten their meager outlook.

A small but moving episode is her retelling of the meeting at the 1944 Helbein Exhibition in the Victoria and Albert Museum with a 12-year-old Geffrye Museum habitué. He had with him "his cousin Ernie," aged four. And his comment, after having conveyed this small relative halfway across London was: "I thought it was so lovely, madam that I did want Ernie to see it too. He thinks they're smashing."

To implant such direct appreciation of fine art in the young of an economically handicapped stratum of the population means an inevitable enriching of the people as a whole.

One wishes that American museums would follow suit and bring in the schools, not merely to look, but to think and evaluate the quality of the arts, in relation to the lives of future generations. The techniques of indoctrination are clearly illustrated in this most inspiring book and one can only hope that many museums will have the intelligence to imitate Geffrye and bring to our children such stimulating experiences.

The experiment of the Rhode Island Chapter by means of poster displays, pioneers in educating children of the secondary schools of the problems involved in the planning and building of a home. It takes up realistically the problems of orientation, the placement for privacy, the advantages of varying site. Since there is nothing comparable among the other A.I.A. Chapters in the education of public school children to the problems of Architecture, this is a step in the right direction.

The Rhode Island Chapter is to be congratulated on the fine public relations job in the best sense of the term, it has done in bringing to the people an understanding of architecture. Much credit is due to the Chapter Secretary, Mrs. Peter Geddes, who has developed a community interest and awareness.

(Continued on page 178)

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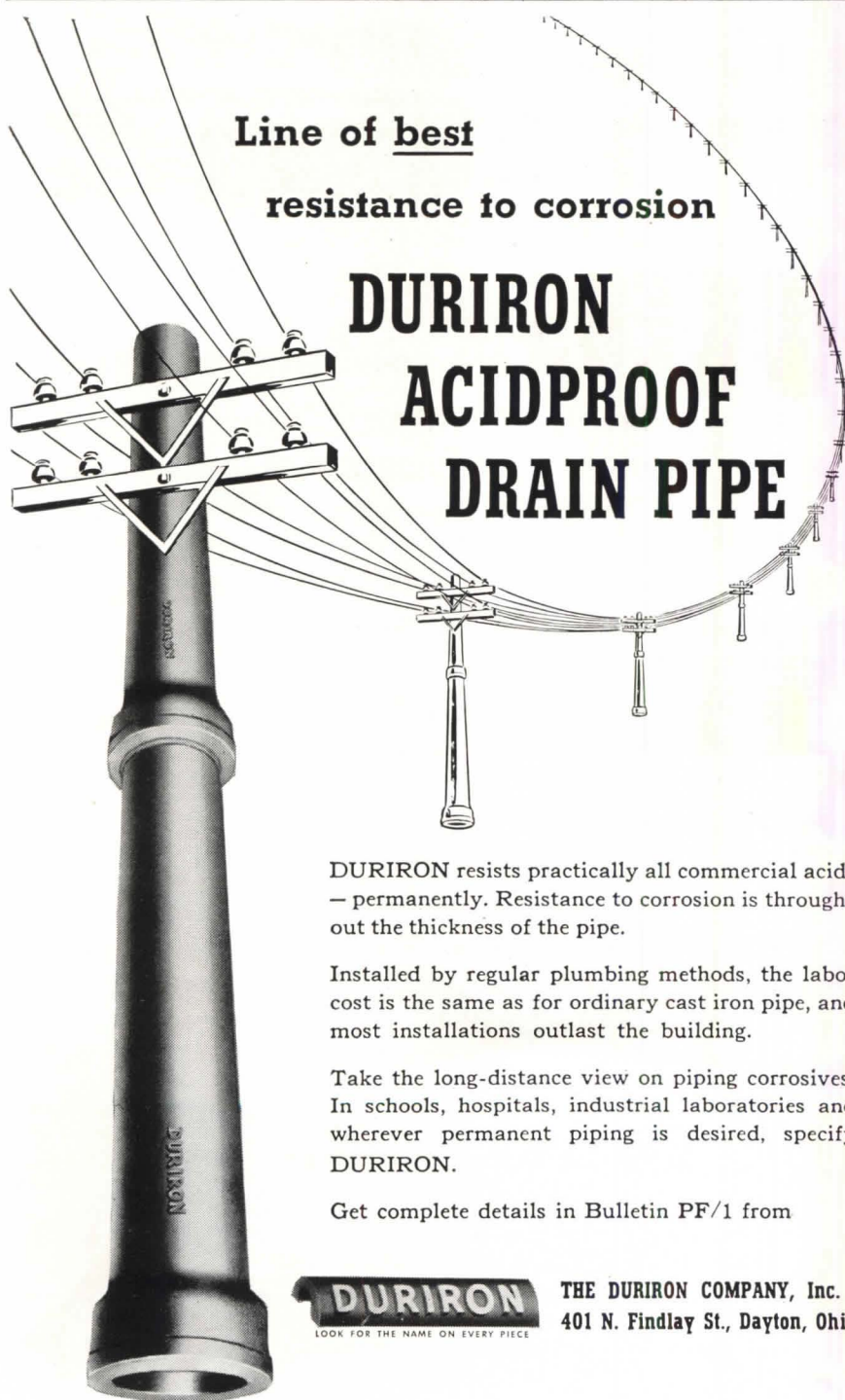
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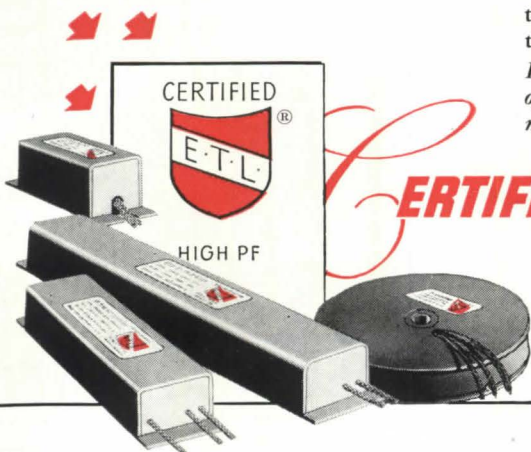
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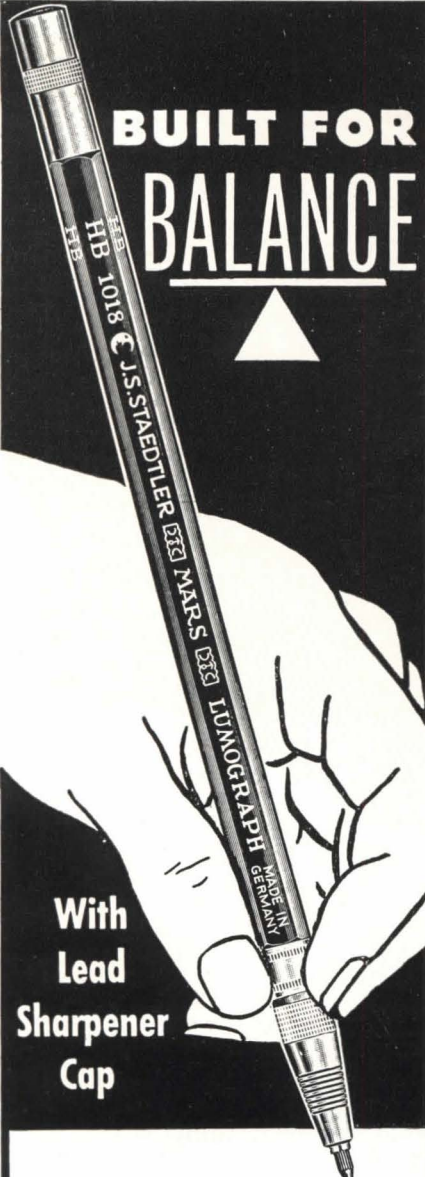


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REVIEWS

(Continued from page 174)

ness of modern architecture by exhibits of the year's outstanding designs, and such co-operation between Rhode Island's top design school and the public school system of the state as is so well illustrated in this poster series.

M.A.M.

water for industry

Water Treatment for Industrial and Other Uses. Eskel Nordell. Reinhold Publishing Corp., 330 W. 42 St., New York 18, N.Y. 526 pp., illus. \$10

Every effort was made by the publishers to present the material in this comprehensive work on industrial water supplies in as simple and clear a manner as possible. And, although chemical reactions enter into this study, a chemical training is not necessary in order to understand the basic principles involved. Four chapters are devoted chiefly to impurities in water supplies and methods of eliminating or reducing them to allowable tolerances. Other chapters discuss water requirements for industrial uses, problems and practices relating to boiler feed waters and cooling waters, and the various processes and equipment used in conditioning water. The appendix contains tables of conversion factors and equivalents and three curves which will be found helpful in making calculations. E. T.

what the architect does

The Architect's Services. Prepared and distributed by the New Jersey Chapter, American Institute of Architects, and the New Jersey Society of Architects, 27 Washington St., Newark 2, N.J., 8 pp.

Most laymen know little about an architect's services, his functions, his ethical restrictions, and his responsibilities to his client. This little brochure presents, in a few words, a brief picture of the architect and his part in a construction project. It should prove a valuable asset to anyone planning to consult an architect.

V. S. K.

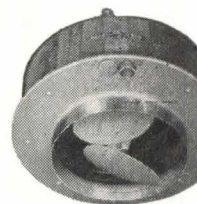
(Continued on page 182)

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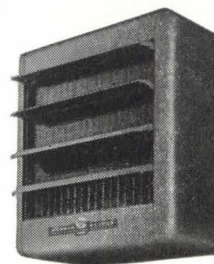
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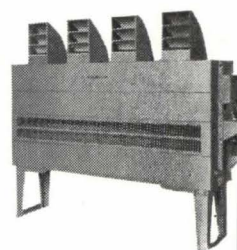
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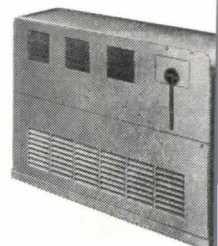
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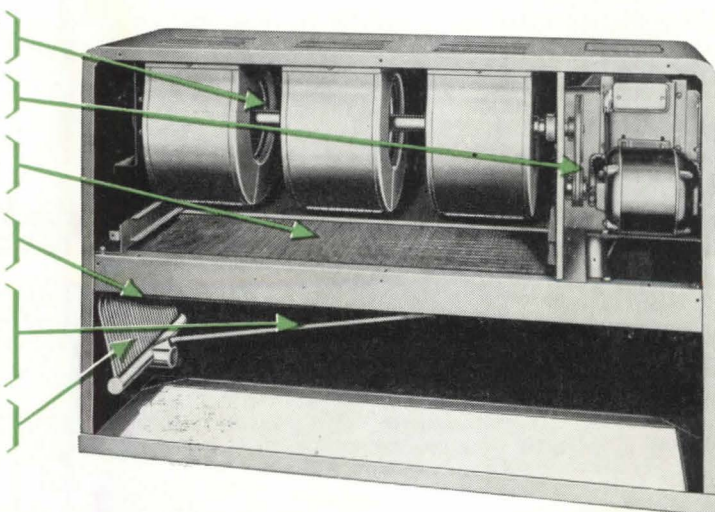
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REVIEWS

(Continued from page 180)

lighting data

I.E.S. Lighting Handbook. Second Edition. Illuminating Engineering Society, 1860 Broadway, New York 23, N.Y., 1952. 987 pp., illus. \$8

Three-fourths of the 1947 edition of the I.E.S.

Lighting Handbook has now been revised to incorporate all the latest developments in lighting techniques and application into this new volume. The simplified presentation of information should make it particularly useful to architects, interior designers, and building engineers, as well as to those specializing in

the illumination field. Technical data is divided into 18 sections and includes such subjects as Physics of Light, Light and Vision Standards, Daylighting, Color, Interior, Exterior, and Sports Lighting, Nomenclature, among others. Tables and calculations are included in a 37-page appendix, and Manufacturers' Reference Data section provides specifications and other pertinent data on lighting equipment furnished by 85 manufacturers—such equipment as lighting fixtures, component parts, glass, paint, plastics, and other materials of interest to lighting users.

NOTICES

conferences

The NATIONAL CITIZENS CONFERENCE PLANNING AND RESOURCES will be held 18-21 at Brown Hotel, Louisville, Ky. The theme of this meeting will be "The Growth of Water Controversies and the Best Solutions for the City, State, and Nation". Current problems of metropolitan growth and dispersal and the perennial need for citizen action also will be discussed at this conference.

The NATIONAL ASSOCIATION OF HOME BUILDERS will hold a conference-seminar April 30 at the Commodore Hotel, New York. This three-hour refresher course will endeavor to explain the latest developments in mortgage finance, construction costs, building materials outlook, new design techniques, research activities, public relations, and promotional activities.

Reinforced plastics, a versatile new structural material that promises to revolutionize many designing concepts, will be the subject of the SOCIETY OF THE PLASTICS INDUSTRY CONFERENCE, to be held April 9-11 in Chicago, Ill. The sessions, also a display of new reinforced-plastic items, will be at the Elmhurst Water Beach Hotel.



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Mansfield, Ohio.

Showroom floor has bright new look . . . "if it weren't for Hillyard restorative care, we would have had to replace sick floor at great expense," says H. S. Jones, Architect, Mansfield, Ohio.

Versatile Hillyard floor treatment products were designed to aid architects in many such problems that confront them daily on varied building assignments . . . to provide short cuts on routine jobs. Accepted by leading architects across the country, you'll find Hillyard care shortens labor-time during construction stages—achieves lasting beauty for your clients.

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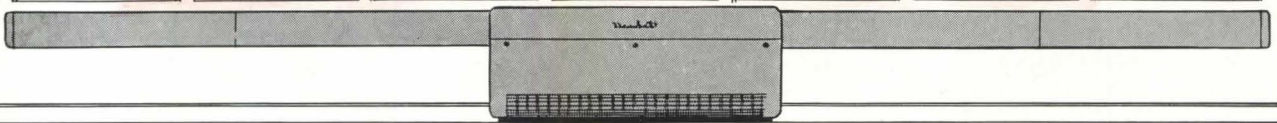
Exact Hillyard specifications on easy to file AIA data sheets will be sent free to architects on request.



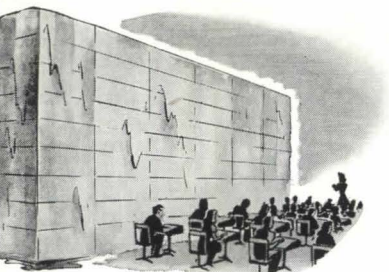
(Continued on page 182)

Positive Protection Against

COLD WINDOW DOWNDRAFT



The free-standing Nesbitt Syncretizer Unit Ventilator with Wind-o-line Radiation extending from both ends of it, at the sill line.



To solve your "WALL-OF-ICE" problem... this NESBITT THERMAL BLANKET:

Architects who design and school officials who approve large window areas in the modern classroom may delight in their choice if *thermal comfort* has been considered.

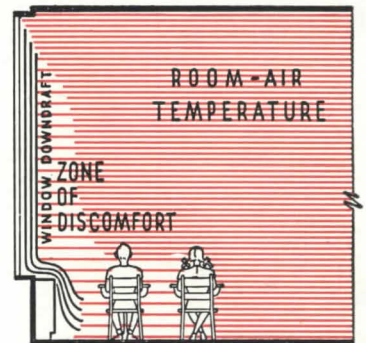
Unit ventilators could be selected by conventional standards if thermal comfort depended alone upon the classroom air temperature. But today we know that low-temperature exposures and cold window downdrafts may remain the robbers of pupil comfort, even in classrooms with close control of room-air temperature. The practical solution to the chilling effect of window downdraft is to release heat upward over the exposure.

For conditions of large glass area and cold outdoor temperature, Nesbitt provides Wind-o-line Radiation for integration with the Syncretizer.

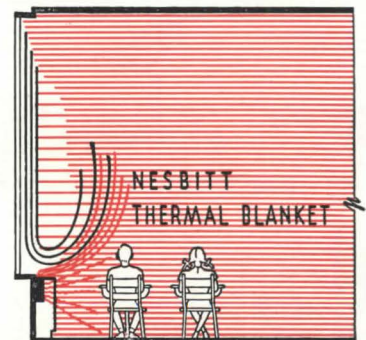
Wind-o-line consists of fin-and-tube radiation in a grilled wall-hung casing to extend from both ends of the ventilating unit for the full window length—and continued, if required, along cold outside walls. (Or it may be had as a component of the storage cabinets forming The Nesbitt Package.)

Wind-o-line solves the problem of heat loss logically with a heat gain where and when needed. Convected currents of warm air temper the window downdraft and divert its flow upward and above the heads of the room occupants.

Inquire further of John J. Nesbitt, Inc., Philadelphia 36, Pa.



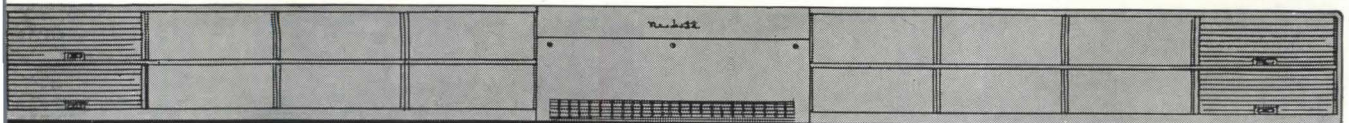
With room-air temperature evenly maintained, downdraft from large cold windows may remain the robber of comfort.



Nesbitt Syncretizer and Wind-o-line temper the downdraft, raise it out of impression range, and improve thermal balance.

NESBITT Syncretizer WITH WIND-O-LINE

Wind-o-line Radiation may be integrated as part of The Nesbitt Package of Syncretizer and storage cabinets.



NOTICES

(Continued from page 182)

competition winners

CHICAGO TRIBUNE recently announced the winners in the BETTER ROOMS COMPETITION. EUGENE W. SADOWSKY of Merced, Calif., took two \$1000 first place awards in the traditional single bedroom and modern living room

classifications of the worldwide furnishing and decorating competition. LEE HALL DUMMER of Scituate, Mass., was a close second. Although she failed to take a first place, she scored well with four awards totaling \$1750. She won second prizes in the modern living-dining

room, traditional double bedroom, and traditional living room divisions, and a third prize for her traditional dining room design.

Represented among the 52 prize-winning entries in the Tribune contest are 12 states and one foreign country. A prize-winning entry from overseas was a kitchen design by ANTHONY R. MOODY, U.S.I.S. Fulbright Division, Rome, Italy.

Public display of full-scale rooms developed by Chicago and suburban retail stores from entries in the Tribune contest will accompany a six-week BETTER ROOMS PAGEANT beginning in mid-April; and an exhibit of the prize-winning designs themselves at the ART INSTITUTE of Chicago is being planned.

symposium

THE MUSEUM OF MODERN ART announces a symposium, CROSSROADS IN ARCHITECTURE, at 8:30 p.m., June 25, in the Museum Auditorium, 11 W. 53 St., New York, N.Y. The price for members \$1.50, for non-members \$2. The moderator will be DOUGLAS HASKELL, editorial chairman of *The Magazine of Building*.

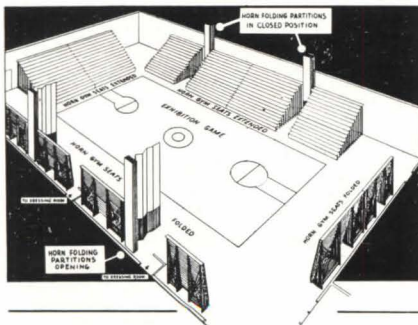
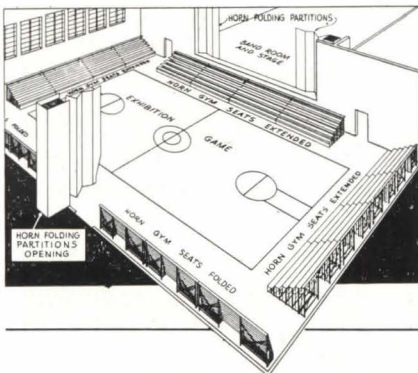
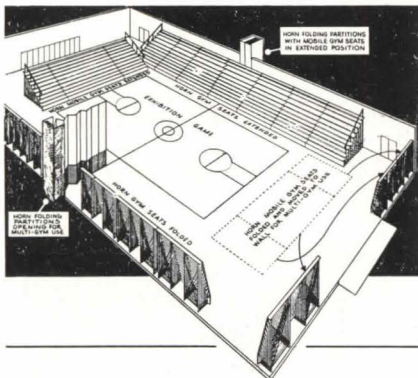
honorary membership

GEORGE H. MIEHLS, president of Albert K. Associated Architects and Engineers, was awarded an honorary membership in the MICHIGAN SOCIETY OF ARCHITECTS, at a banquet which marked the closing of the Society's 38th Annual Convention.

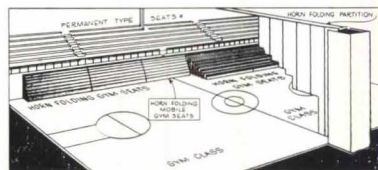
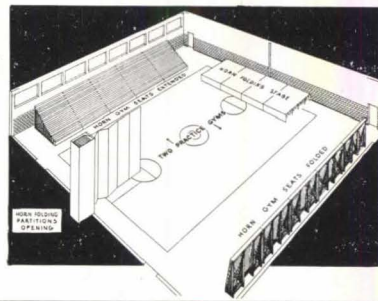
competition

The Committee on International Exchange Persons announces the opening of the 1954 competition for awards under the FULBRIGHT ACT for university lecturing and postdoctoral research in EAST ASIA and the PACIFIC. Included in this competition are awards for the following countries: AUSTRALIA, BRAZIL, INDIA, JAPAN, NEW ZEALAND, PAKISTAN, PHILIPPINE ISLANDS, and THAILAND.

Persons interested in applying for awards under either the 1953-54 competition for



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(Continued on page

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When the Briggs Manufacturing Company first began producing bathtubs and lavatories of porcelain enameled formed steel, it was a revolutionary development—the first major design improvement in years. Tremendous and ever-growing acceptance has established Briggs Beautyware as an outstanding triumph. This truly modern metal—light yet strong and rigid—has made possible important changes in the construction of plumbing ware and many other products. Briggs engineers discovered that *there is no more perfect base* for porcelain enamel. Down through the years, Briggs Beautyware fixtures have proved it in thousands upon thousands of American homes. Briggs formed steel construction means outstanding quality in your homes—and lasting satisfaction for your clients!

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The famous formed steel fixtures, Briggs Beautyware vitreous china lavatories and closets are products of the finest craftsmanship and skill to be found in the plumbing ware. The permanent luster and attractive colors of the sparkling Briggs Beautyware are well known among architects alert to advantages of modern materials and methods.



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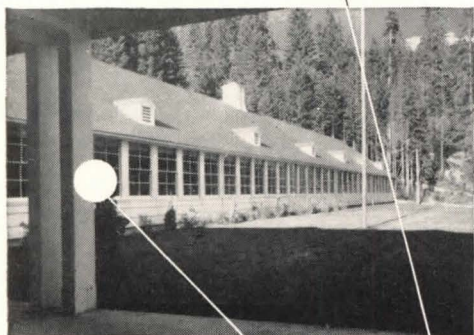
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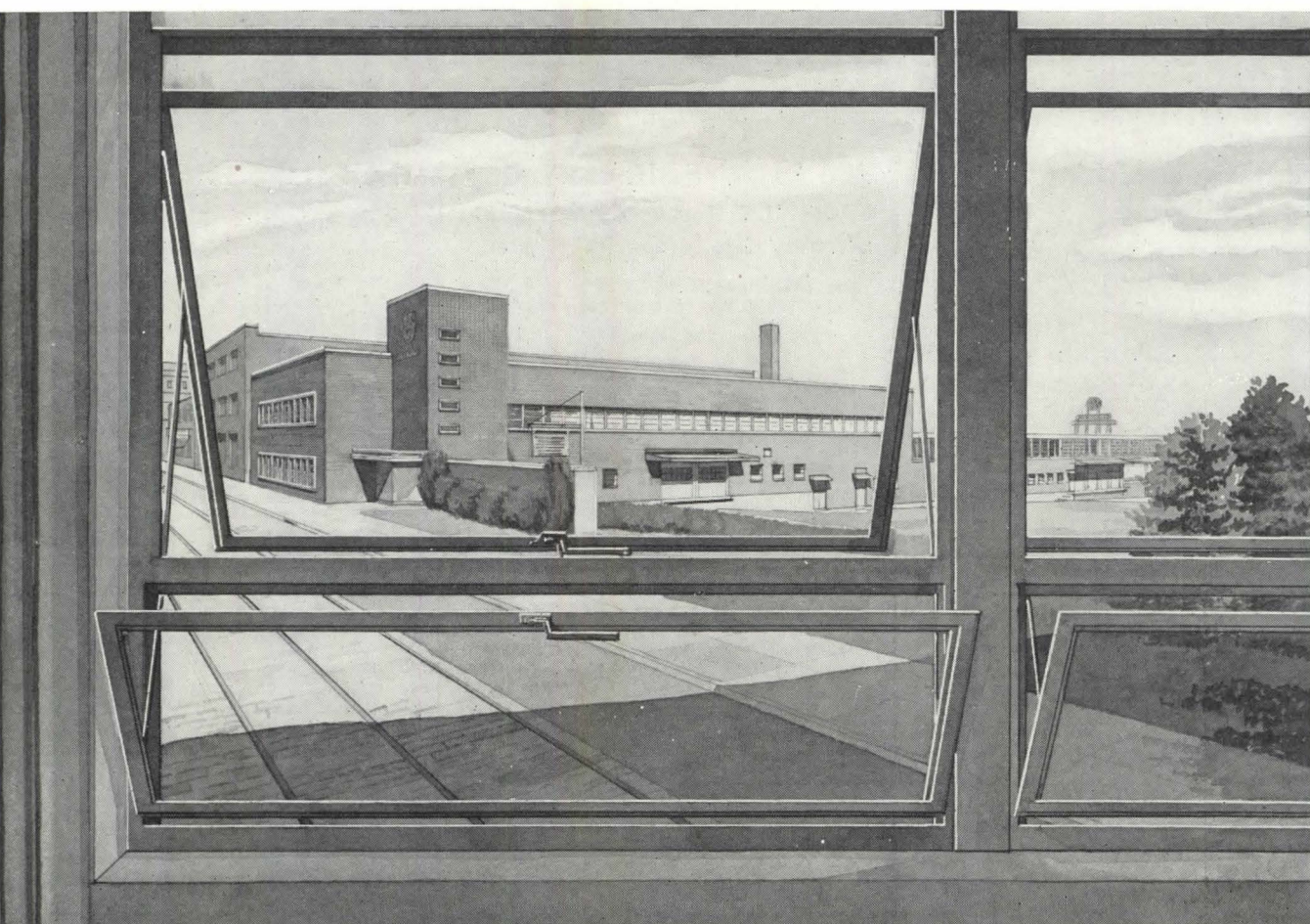
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smooth trim lines that blend with any architectural scheme — windows become an integral design feature of the building.

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Modern Furnishings for the Home

by WILLIAM J. HENNESSEY, Consultant
Designer, Writer, former Architectural Editor, "American Home"

May, 1952, 296 pages,
8 1/2 x 10 1/2, about \$10.00

Illustrated with over 450 photographs, this unique book offers for the first time a selected compilation of modern home furnishings available to the general public. Designed by leading figures in the field, the various pieces of furniture described—chairs, sofas, beds, tables, storage units, desks, fabrics, lamps and lighting fixtures, etc.—are accompanied by manufacturer's catalog numbers, sizes, materials and finishes. The book will prove an invaluable guide in making comparisons between similar pieces of furniture, and will acquaint the reader with many products that may not be available in his locality. A list of manufacturer's addresses is provided for those who wish further information and prices on any specific item.

All architects, interior decorators, industrial designers and laymen planning or living in contemporary houses will surely find this book a valuable addition to their library shelves.

Lettering Art in Modern Use

by RAYMOND BALLINGER, Advertising
Artist, Teacher of Advertising Art, Philadelphia Museum Art School, Philadelphia, Pa.

May 1952, 242 pages,
8 3/4 x 11 3/8, \$12.00

This valuable, profusely-illustrated book shows you how to use lettering effectively both in various art forms and for commercial purposes. Here you'll find a brief history of the various alphabets coupled with modern uses of lettering in numerous fields of human endeavor—architecture; package design; sheet music, book and magazine production; advertising and promotion; its use on glassware, silver, fabrics and many other objects. An unusual feature of the book is the side-by-side display of a similar lettering style in both modern and original use.

All architects, advertising art directors, free-lance artists, teachers—indeed, everyone at all concerned with lettering art—will welcome this practical, brilliantly-executed book.

The American House Today

85 Best U. S. Houses: design, plans, pictures, details, special problems

by KATHERINE M. FORD
and THOMAS H. CREIGHTON

235 pages, 500 photographs, plans and details, 8 1/2 x 10 1/2, \$7.95

Text and more than 500 illustrations cover the entire reason-why of building any house anywhere. For the architect, builder, designer, draftsman, consumer and student—a grandly planned, brilliantly executed, valuable book!

Architectural and Engineering Law

By BERNARD TOMSON

430 pages, \$7.00

Deals with every type of legal problem in its field that has come before the courts. It is designed to answer a long felt need among members of the architectural, engineering and law professions, contractors, builders and suppliers, as well as in architectural, engineering and law schools. No previous work has attempted such a comprehensive study of the entire field of architectural and engineering law incorporating all the applicable decisions.

Building for Investment

by CLINTON H. COWGILL

400 pages, illustrated, 6x9, \$7.00

In this book, building problems are examined from the point of view of anyone with broad interests in building finance. It gives a clear understanding of the building industry and building procedures; it covers investment problems in connection with building, important features of buildings of various types, the relationship of a specific building to its surroundings, and discusses the problems of building management, modernization, and appraisal together with extremely valuable solutions. The book is addressed to architects, realtors, business executives, public officials and private investors who have or may have some responsibilities in connection with the construction, purchase, sale or ownership of buildings. Practicing architects should find it useful not only as a general guide, but for specific help in building finance problems.

The Perspector

by THEODORE A. DePOSTELS, Architect,
Author of "Fundamentals of Perspective"

Complete with instructions, \$10.00

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NOTICES

(Continued from page 184)

EAST ASIA and the PACIFIC, or under one of the interim or delayed 1952-53 programs are urged to write immediately to the Conference Board Committee for copies of the application form, for lists of openings, and for detailed information on the program.

fellowship

The College of Architecture and Design, University of Michigan, announces the GEORGE G. BOOTH TRAVELING FELLOWSHIP in Architecture will be offered again this year. Upon request, applicants will be issued a form to

be completed and returned not later than 15, 1952. This competition is open to graduates of the school who have not reached their 30th birthday on the date mentioned above. Prospective candidates should write once to the Office of the College of Architecture and Design, 207 Architecture Building, Ann Arbor, Mich.



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acoustics course

ARCHITECTURAL ACOUSTICS will be taught in a special short course, June 16-21, at the M. I. T. Acoustics Laboratory, for practicing architects and teachers who have not had the opportunity to become acquainted with the latest developments in that field. Full information may be obtained from PROF. E. H. HUNT, Director of Summer Session, Room 3-100, Massachusetts Institute of Technology, 77 Massachusetts Ave., Cambridge 39, Mass.

The program in Architectural Acoustics includes: Basic Terminology and Concepts, Behaviour of Sound in Rooms, Acoustic Properties of Materials and Structures, Characteristics of Sources of Sound, Acoustic Design Criteria, Site Plan and Building Layout, Shape and Area for Sound Distribution, Noise Reduction Analysis, Reverberation Analysis, Sound- and Vibration-Isolating Construction, and Sound Absorbing Systems. There will be morning, afternoon, and evening sessions; a number of demonstrations; and trips to exemplify good and bad architectural acoustics.

exhibit

The 34th annual convention of the AMERICAN GAS ASSOCIATION will be held at Atlantic City October 27-31. It will be accompanied by the largest exposition of gas appliances and equipment in the history of the industry.

branch office

ISADORE ROSENFELD, Architect and Hoist Consultant of New York City, announces opening of a Pacific Coast office in association with REX WHITAKER ALLEN, Architect, 566 Commercial Street, San Francisco, Calif.



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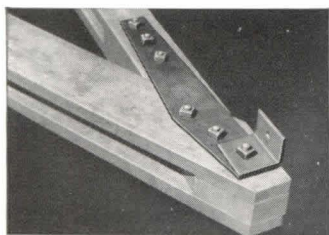
out of school

by Carl Feiss

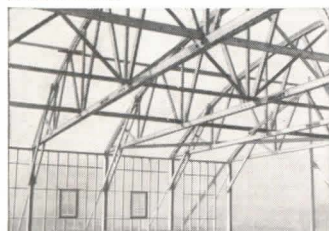


"There are thirty spokes in a wheel
but its utility lies in the hole of the hub.
"The potter forms the clay into jars,
but their usefulness depends on the enclosed space.
"A carpenter builds the walls of a house and cuts out windows and doors,
but the value of the house is measured by the space within.
"Thus it may be said: that existence is for accommodation,
but non-existence is for utility."

—Lao-tse via John Rannells via Bob Mitchell

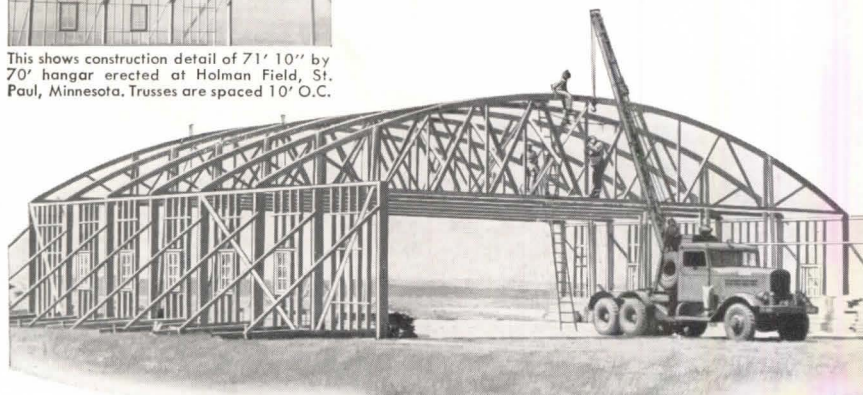


Necessary hardware items for base and crown connections are furnished with trusses. Connections are engineered to handle computed reactions.



This shows construction detail of 71' 10" by 70' hangar erected at Holman Field, St. Paul, Minnesota. Trusses are spaced 10' O.C.

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"WORKS WONDERS WITH WOOD!"

It is about time that this column reintroduce itself to its readers. We (the author) are known for our informality, lack of will power, unstudied use of the President's English, and constant lack of consistency. We also have been known to make men mad, glad, and even sad by our remarks. We have been translated into Japanese, Argentinean, and Australian. We are constantly being unhorsed while tilting at windmills. Happily, through two and a half years we have found the field of architectural and engineering education, in and out of school, a fruitful and rich pasture in which to graze. Our purpose has been, and will be, to allow our thoughts and our thoughts to mingle in a free and untrammelled manner, with the hope that by so doing we may suggest ideas which occasionally may bear worthwhile fruit, or at most cause a question to be raised where compliance has been the rule.

This, if my count is correct, is the 32nd column. We have covered a lot of ground. We have discussed the future and the past, but in particular the present. We have talked at length about the teaching of architectural design, and basic design. We have detailed curriculum problems, debated the teaching of planning, architecture, engineering and light construction, and building. We have attacked the standard methods of teaching architectural history and the American Beaux Arts Institute of Design. We have questioned the value of the prima donna education. We have talked art and construction. We have kept you informed of surveys and studies on education. We have promoted student publications and discussed the hard years of apprenticeship. We have attacked architectural advertising and the lack of true professional rank in the "profession." We invented the "comprehensive architect" for our own particular purpose. In about 10 more years we should be able to cover the entire gamut necessary to the subject full justice, and after that perhaps we can get down to a systematic presentation of our case. In the meantime, bear with us at least for the sake of our publisher.

In OUT OF SCHOOL for May 1950, two months ago, we published a checklist of subjects to be covered in future issues. And by gum, in reading it just now we're pretty proud of the number; although it was the June 1950 commencement speech that got translated into Chinese. Well, to get back to the checklist

(Continued on page 191)



Protection. Autopositive reproductions are used in place of those drawings which would otherwise be exposed to constant wear and tear. These intermediates—with their photographic black lines on a durable, white paper base—produce sharp blueprints whenever needed.

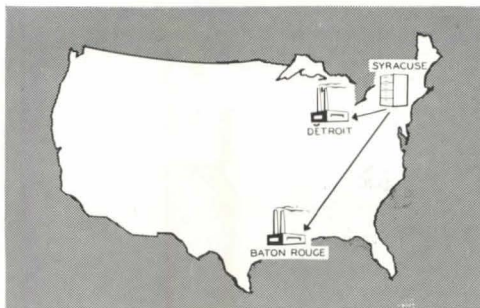


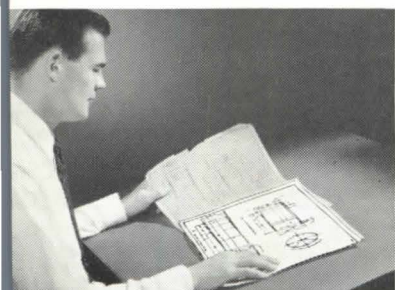
Photo-lasting files. The apparatus and other engineering drawings for Solvay's alkali plants in Syracuse, Detroit, and Baton Rouge—are prepared by the home-office staff in Syracuse, N. Y. Then Autopositive intermediates, which have the lasting qualities of photographs, are made for future reference and print-making requirements.

The Solvay Process Division, Allied Chemical & Dye Corp., reports

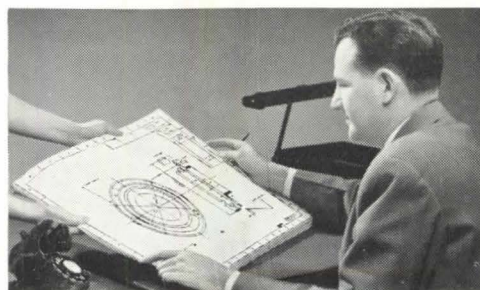
New speed and versatility in drawing reproduction ... with Kodagraph Autopositive Paper

Drawing duplication simplified... print deliveries speeded... new production services provided—these are some of the advantages Solvay Process is realizing with Kodagraph Autopositive Paper.

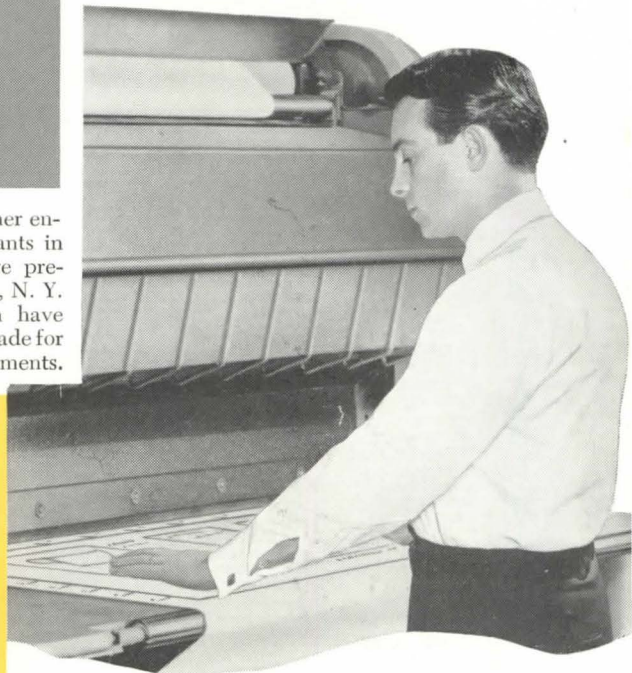
This new photographic intermediate material reproduces all types of drawings and documents *directly*. In addition, Autopositive increases the utility of existing print-making equipment... brings the "plus" features offered by photography alone to many jobs. See how it works at Solvay... *see how it can work for you!*



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out of school

(Continued from page 190)

divided into five parts. You'll find them at the bottom of page 128 between ads for a construction company and a glass company (A 1950 P/A). We haven't time now to copy list for you. Anyway we'll stand by it and breakdown which follows. If you want to know more about us, read the back issues and keep right on. Also, let me call your attention to *Letters to the Schoolmaster*, which frequently appear up front. They're every bit as good as a column (saving our modesty)!

Having reintroduced myself, we had better get on with a good spring-burgeoning column. April's here and the buds are out. It would be the moment to talk sex and architecture but I never been able to work out a really good correlation, other than whether or not a building house is domestic or commercial architecture. Even that is more a zoning problem than appropriate for a dignified educational discussion in a well brought up, non-Shakespearean architectural magazine. Anyway, I see no reason not being cheerful this issue, despite what fellow man does, or we do to him. Let the blossoms and robins and the crisp and bright blooms of the busting bulbs conceal for the moment the crash and baleful booms of bombs.

I recently visited a school of comprehensive architecture, on behalf of the National Association of University Accrediting Boards (now making a survey of the National Association of Architectural Accrediting Boards with the hope of finding the appropriate accrediting board to accredit schools which do not conform to those which have been accredited by previous accrediting boards, which are longer recognized as qualified because of changes in survey methods). The weight of opinion on architectural library shelves used to be on survey basis; whereas accrediting today recognizes lineal feet instead of avoidrupois. It has been my task to identify the "bellwether school"—that school which having achieved supernormal maintains it long enough to be a bellwether (whatever that may signify).

I found the school, after great difficulty. The main problem for the investigator of architectural schools is the fact that for some known reason they are found (with only a few exceptions out of sixty-five) on the top floor of four-story brick buildings with limestone accents. It is very hard for me, being poor and shiny up so many Roman Doric columns are apparently considered too expensive

(Continued on page 191)



Wilkinson-Snowden & McGehee, Inc.
KEESLER AIR FORCE BASE
BILOXI, MISSISSIPPI
July 26, 1951

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Miami, Florida

[illegible]

As a consequence, we have used throughout this entire project, the Aluminum-clad type window seal set in metal frames. The description of the United States Air Force use of the offices and the numerous bases has been most gratifying. The need for such windows is obvious, and the ease with which they are operated is an important factor. The ease with which they are operated is an important factor. The ease with which they are operated is an important factor.

104/2007

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Throughout this entire project,
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GENERAL CONTRACTORS

"We have used throughout this entire project, Ware Aluminum Awning Type window sash... we feel that we can highly recommend this type of window to quality builders and home owners..."

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Many Costly Fires Like This Are PREVENTED by "AKBAR" —

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*(As reported in the Jan. 1947 Quarterly of the National Fire Protection Association.)

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"Akbar" Doors can also be equipped for daily service use, with or without motor operation. But standard (non-labeled) Kinnear Rolling Doors are preferred for service use where extra fire protection is not needed.

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in
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KINNEAR
ROLLING DOORS

out of scho

(Continued from page 192)

Building and Grounds Departments who design university buildings,* but you can get a grip on a volute).

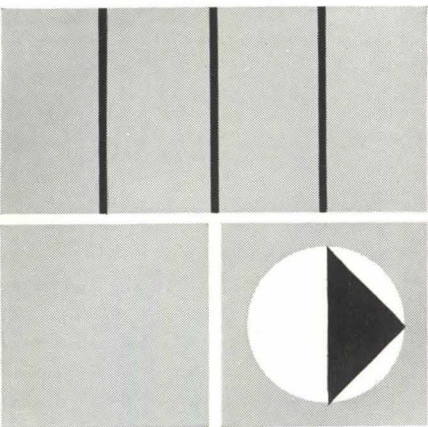
The school of comprehensive architecture discussed this month is that at the University of Theleme. This is, as you know, one of the oldest architectural schools when students and teachers considered the school year an unhappy interruption to European travel. Those were the days, as you may remember, when the language of the drafting room was predominantly French and the design faculty had never been introduced to the professor of construction. There were the days, too, when the professor of history thought in terms of cymas and ogives, forgot to find out who or what a building was for, and the designer wallowed in washes, to be judged as architecture 300 miles away.

The organization of the Theleme Architectural School, being a bellwether, is an interesting compromise with the old and new. The Dean, an academician, has remained in charge of the traditional program, which exists as a separate entity in the school's over-all curriculum. The administration, having undergone reorganization a few years ago, is in the hands of an annually rotating Chairman of the Faculty of Architecture. This enables the Deanship to remain inviolate while providing both democratic procedure at faculty meetings and the necessary political expression on the part of every faculty member. Said the Dean: "It keeps the young up and busy and I can keep up with my reading." The newly elected Chairman of the Faculty: "This means we have provided for the necessary flexibility in individual expression of the dominant keynote of contemporary thought. My chairmanship will be a liberal one—with adherence to progressive lines—and no sliding will be permitted (as was done by my previous chairman)."

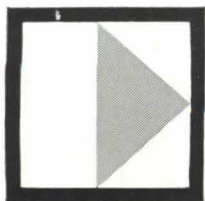
In order that full democratic action be maintained, there is also a well organized student body, under a Council of Student Government. The President of this Council—elected by Senior Class, from which Council members are drawn (being the only source of mature students)—reports directly to the Architectural

(Continued on page 193)

* As a matter of record, I have, after much research, identified two architectural schools that designed their own buildings. Both were later condemned as structurally unsound, and nonconforming to modern architecture.



*as fundamental as
kitchen cabinets...*



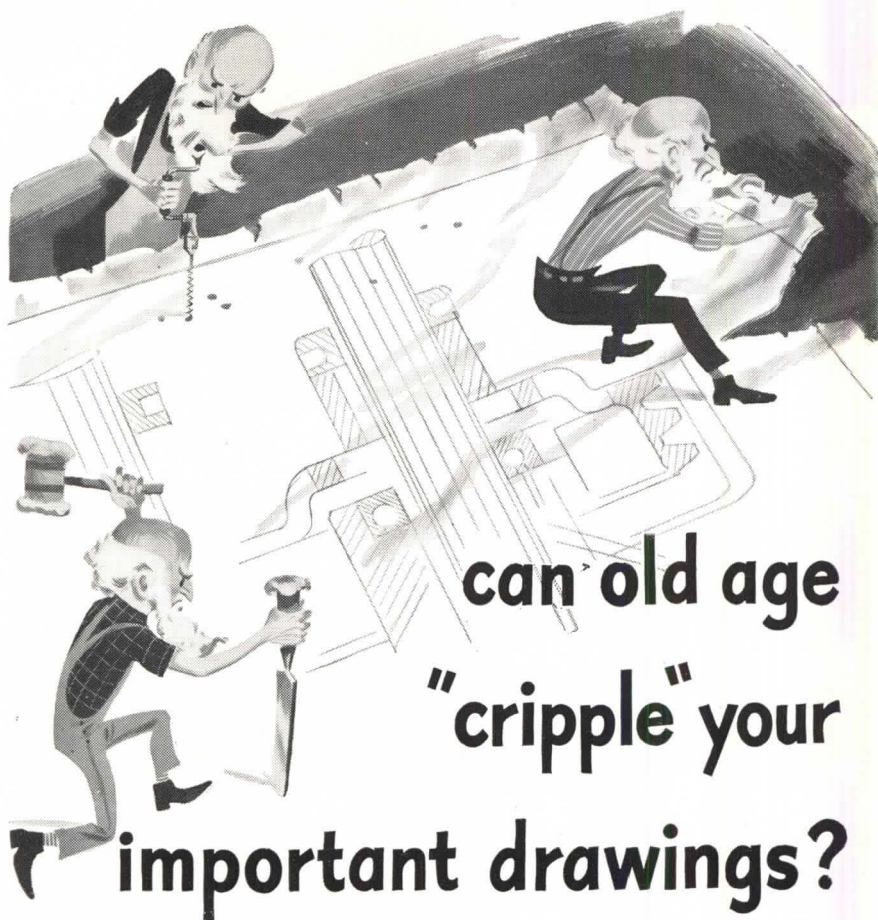
*A good plan
is always better
when it includes
symbols for
telephone outlets.*

To be really complete in every detail, a house needs cabinets in the kitchen — *and telephone raceways in the walls.* For conduit is your only guarantee that telephone wires can be concealed, that the beauty of thoughtfully planned interiors will be fully protected.

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ARKWRIGHT
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AMERICA'S STANDARD FOR OVER 30 YEARS



out of school

(Continued from page 194)

Alumni Association. This latter association, made up of successful old grads, meets regularly after every big football or basketball game, to discuss school problems with the President of the Student Council and his Steering Committee. The Chairman of the Alumni Association reports his findings directly to the Chairman of the Special Committee on the Faculty and Curriculum of the College of Architecture, established by the President of the University and headed by the Dean of the College of Engineering and the Dean of the School of Medicine, jointly. This Special Committee has a subcommittee, consisting of a junior member of the Faculty of Journalism and a member of staff of the Treasurer's Office, to discuss College of Architecture problems with the Special Subcommittee on the College of the Committee on Education of the Local Chapter of the American Institute of Architects. In order to keep this Subcommittee unbiased, its members are always selected from graduates of "Ivy League" colleges.

It was apparent to me, after studying this remarkable organization, that we have here, indeed, the bellwether administrative set-up. What I liked about it is that there is no cloacal circle or ring-around-the-rosy operation. Nobody actually reports anything final to any one place—thereby necessitating a decision by somebody. In the meantime, everybody is happy. The Dean is let alone. The faculty is not nasty about the Dean, the students, or each other. The students can say what they want about the Dean and the faculty to the alumni, who like to feel "in the know" because they don't have to do anything about it. The President feels he is doing his duty by the school by having a competent committee on attendance, and in good public relations with the professional organization. The A.I.A. Chapter feels happy in being able to warn the State Licensing Board, well in advance, of the exact number of students graduating each year.

This happy state of affairs has been going on for some time now. It would not be correct to say that all problems have been solved. In a good school there are always rumblings of dissatisfaction. This, I have been informed, is in fact, one of the evidences of the excellence of an institution. And Theleme is an excellent example! In a discussion of the school's problems with one of the students in the washroom (after looking under all doors), this student

(Continued on page 196)

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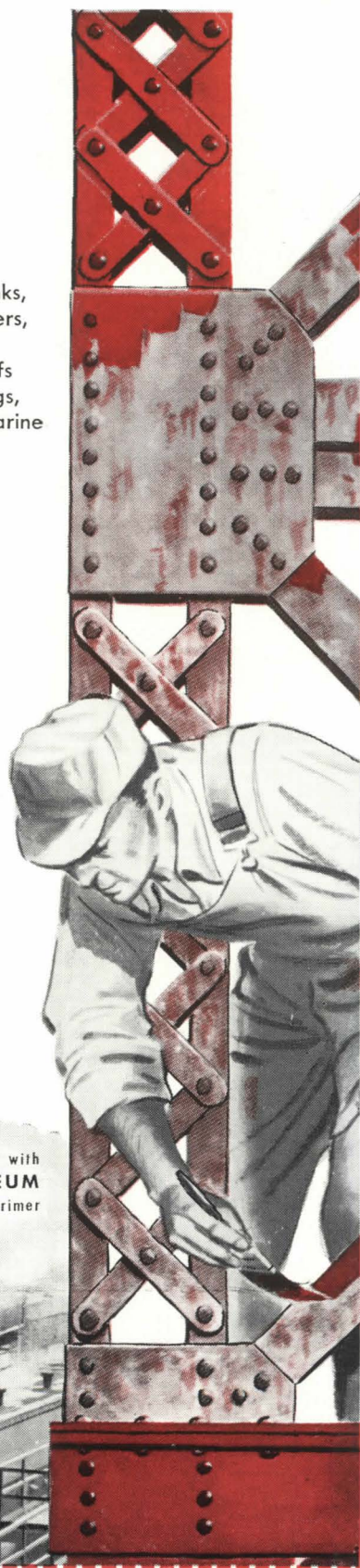
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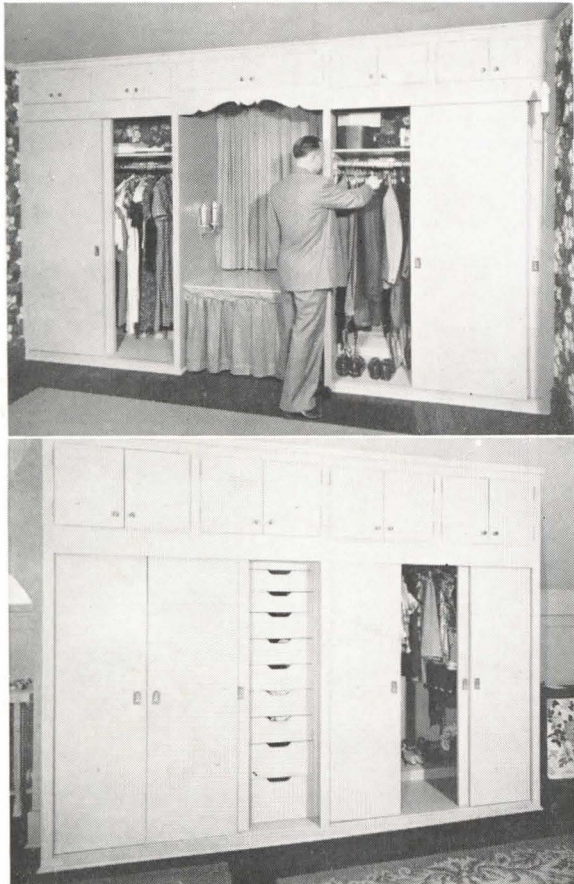
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VANISHING DOOR

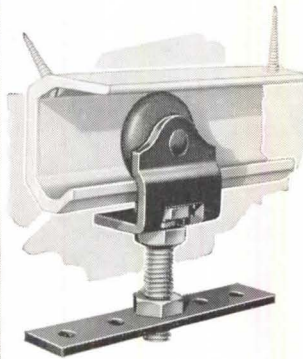
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Save space

Save trouble



SILVER STREAK
R-W No. 1019
Vanishing Door
Hangers and
Aluminum Track

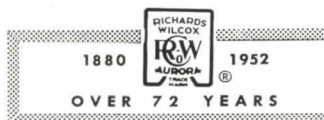
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The trend is to small homes today. And with this trend comes the necessity of utilizing every available inch of space. That's where the Richards-Wilcox Vanishing Door Hardware comes in. Specially designed for thin wall construction, noiseless operation and easy installation, they help make a room livable from wall to wall. R-W Silver Streak Vanishing Door Hangers and Aluminum Track are constructed for flexibility—for use on single or parallel wardrobe doors, or for sliding doors in any room.

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out of school

(Continued from page 196)

Junior, said: "I haven't talked to my des professor in three weeks. He just did a house town, here, that stinks. I certainly see no rea for my pretending to like him, under the cumstances. He ought to be fired! The trou though, is that I can't recommend that u I'm President of the Student Council, next y and I hate to waste a whole year. By the w if you talk to any more Juniors, be sure to them that you had a conference with m Now here was an enterprising young man.

Matters among the faculty are equally couraging. Over a 3.2 beer in the Van Shoppe, (a campus social center) I talked thi over with a young design teacher. "The si tion is frankly lousy," he said, "I'm thinking making a change. I don't know what is wr with the students these days. They copy a thing you hand them! I try to get them terested in one of my ideas and they go copy Frank Lloyd Wright from the (deleted Editor). I tell you, it's publishing things that that make teaching such a pain. And w help do I get from the rest of the facu A bunch of fuddy-dufs! They don't have modern idea in their heads! Always aping backbiting. Now when I was in school . . . wish there were space here to complete interesting conversation.

Finally, I must report the most encourag part of the situation. A secret committee of faculty is proposing to go to the President the University to recommend firing both Dean and the Chairman of the Faculty. S both the Dean and the Chairman have b told of this by their friends on the secret a mittee, and everyone knows about it anyv it is an open and aboveboard situation w puts everyone on his mettle. Also every knows that the President would appoint a c mittee of outside advisors to study the si tion, and therefore that no precipitate ac would be taken, if any. This makes for most cordial and relaxed kind of internal lationships. Why just the last day I was Theleme I saw the Dean and the Chairma the Faculty walking arm-in-arm down the l showing how a little ferment can bind two known antagonists.

I had not intended to spend so much time organization in this article, planning rather discuss accrediting of the School at Thele The library was shut for repairs while I there, and I couldn't get the lineal foot mea

(Continued on page



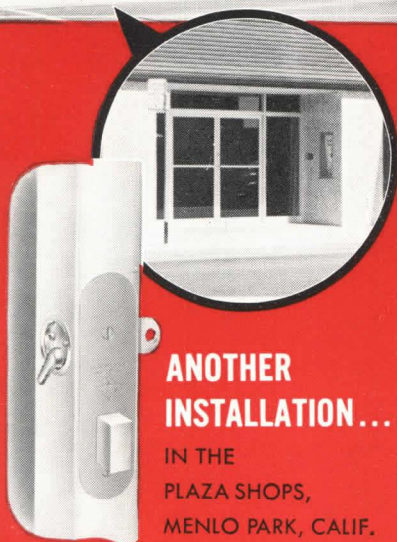
Distinctive textured appearance and subtle variations of Armstrong's Cork Tile make an excellent flooring choice for interiors with modern architectural styling. Its natural color, durability, and unusual resilience are the result of an exclusive manufacturing process that retains the natural characteristics of cork.

Parkside Branch
San Francisco Public Library
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The installation shown above in the Plaza Shops at Menlo Park, California, is typical of the growing popularity of Adams-Rite Deadlocks in modern design. The Deadlocks used are Series 971 which take any standard 1 1/8" diameter cylinder without modification. They have a backset of 7/8" and a depth of 1 1/2". And—as in the Menlo Park installation—they can be used in the narrowest extruded aluminum, rolled steel or wood stiles. The Deadlocks are interchangeable with Adams-Rite Series 1451 Deadlatches where desired.

Congratulations on the Menlo Park Plaza Shops!

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Robert B. Liles, Architects
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Cobbedick-Kibbe Glass Co.,
San Francisco

ADAMS-RITE MANUFACTURING CO.
540 WEST CHEVY CHASE DRIVE, GLENDALE 4, CALIFORNIA, U. S. A.

SPECIALIZED LOCKS AND BUILDERS' HARDWARE

out of school

(Continued from page 198)

ments I had been sent for. The librarian told me that he was worried about being "up to snuff." Boys were constantly clipping magazines for montage material, and if it weren't for the increased advertising padding of the periodicals, a considerable net loss might turn up in my library measurements. (But of this more later.)

I know that each of my readers in perusing this article may question my discretion in barring the internal and private problems of Theleme. May I assure my readers that if they think twice they will recognize that these problems are neither internal nor private, but that they are well known everywhere, widely discussed and widely imitated. There is hardly a College or School of Architecture in the country which is not enjoying similar situations. They are among the customs of our day.

NOTICES

modern churches

Contributions of contemporary French architects and artists to religious structures and decoration will be shown in an exhibition, "Art Sacre," to be held through March 23 at Philadelphia Art Alliance. Work of AUGUSTE PERRET, notably his Notre Dame du Raincy, will be included. Artists represented include BOURDELLE, DENIS, DESVALLIERES, ROUAULT, KAEPELIN, and DOM ROBERT.

gold medal catalog

The GOLD MEDAL COMMITTEE of the Architectural League has this year resumed publication of its Gold Medal Catalog which enjoyed such popularity in the years preceding the war. Edition will be ready at the time of the A.I.A. Convention in New York where copies will be on sale. If you prefer, you may reserve your copy now, contacting The Architectural League of New York, 115 East 40 St., N. Y. 16. Price of the catalog is \$1.00.

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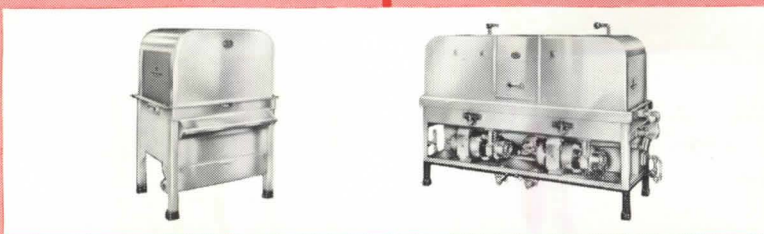
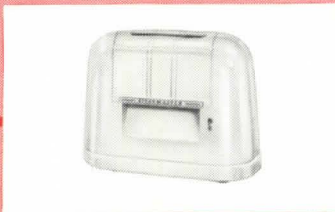
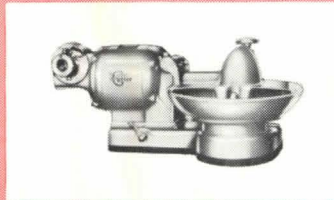
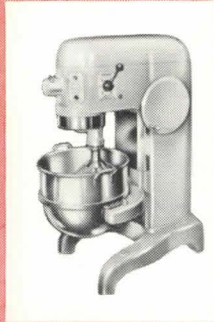
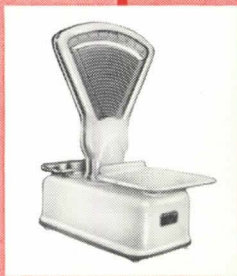
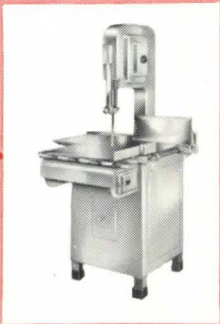
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it's the law

by Bernard Tomson



At regular intervals this column will report, under appropriate headings, cases decided since the publication of my *Architectural and Engineering Law* (Reinhold 1951). This will serve to keep the book current. Particularly interesting cases will, of course, continue to be discussed in a more extensive way than in the capsule form here used.

Supplementing Chapter 1:

Practice Statutes

Statutes regulating the practice of architecture, professional engineering, land surveying, and building construction are in the interest of the public health, safety, and welfare, and are therefore upheld as a valid exercise of the state police power.

The Rules and Regulations adopted by the Virginia State Board for Examination and Certification of Professional Engineers, Architects, and Land Surveyors, in Article "5," defines the practice of architects, as follows:

"For their guidance in administering the Board has ruled that a person practices 'profession of architecture' . . . who holds himself out as able to perform or who does perform any professional service such as consultation, investigation, evaluation, planning, design, including aesthetic and structural design, or responsible supervision of construction, in connection with any private or public buildings, structures or projects, or the equipment or utilities thereof, or the accessories thereto, wherein safeguarding of life, health or property is concerned or involved, when such professional service requires the application of the art or science of construction based upon the principles of mathematics, aesthetics and the physical sciences."

E. H. Williams, Jr., Director of the Department of Professional and Occupational Registration of the Commonwealth of Virginia, states:

"In cases where there has been any question as to whether or not the uncertified practice was encroaching on the practice of Architecture we have been able to get the courts to act as a definition of Architecture the Board's interpretation as embodied in its Rules and Regulations under Article 5 on page 4 thereof."

Supplementing Chapter 2:

Architectural Registration Laws

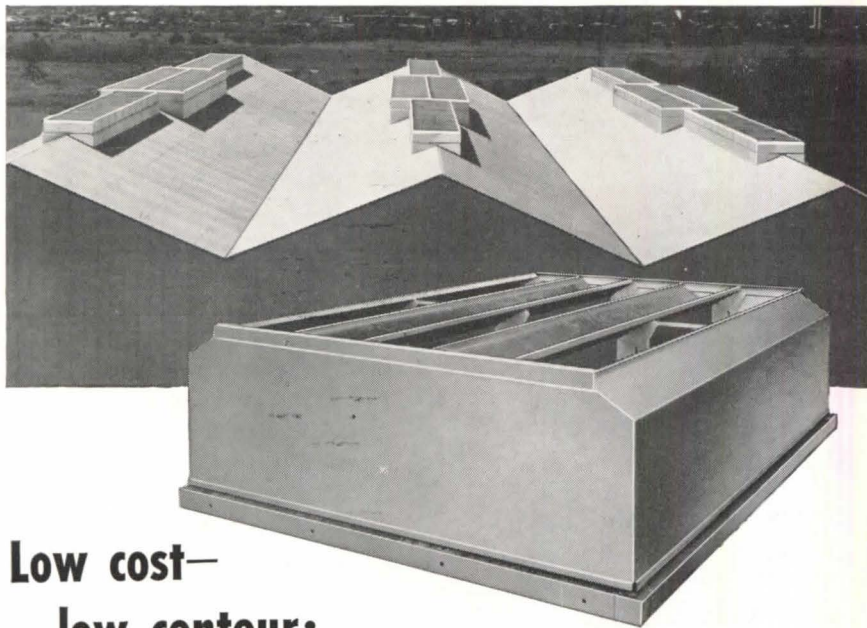
The registration laws pertaining to the architectural profession fall into two categories: those which restrict use of the title "architect" and (b) those which restrict the practice of architecture.

Corporations in almost every state are excluded from the practice of architecture, professional engineering, or land surveying, or permitted to practice provided (a) the principal officers are licensed, or (b) the persons in responsible charge of the work are licensed.

The Virginia statute is more properly classified as a "practice" statute rather than as a "title" statute. It prohibits the practice of architecture by unlicensed persons. Section 54-27 reads as follows:

"Who required to obtain certificate—In order to safeguard life, health, and property, any person practicing or offering to practice as an architect, a professional engineer or land surveyor in this State shall hereafter be required to submit reasonable evidence to the Board that he or she is qualified so to practice, and to be certified as herein provided. It shall be unlawful for any person to practice or to offer to practice the profession of engineering, architecture, or land surveying without a certificate."

(Continued on page 203)



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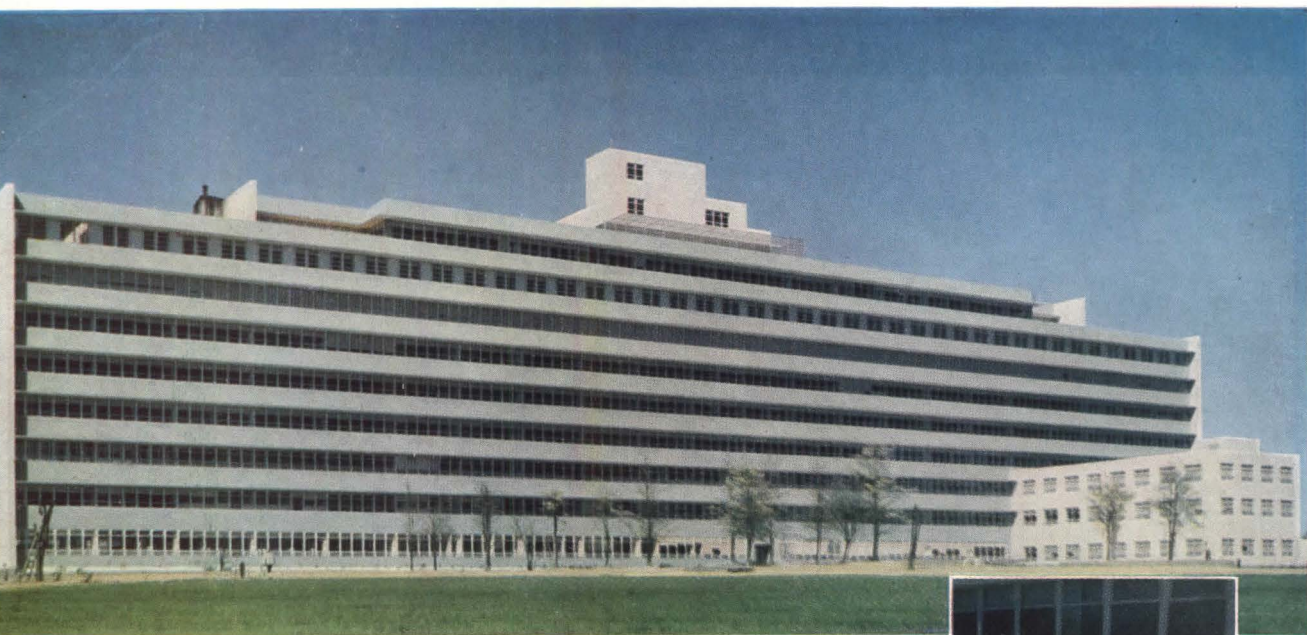
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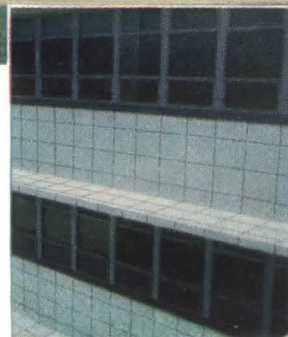
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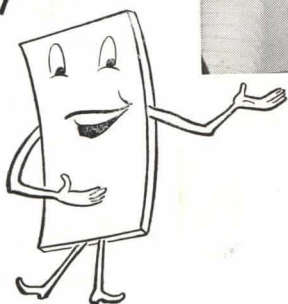
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Face Veneers—Face veneers are thoroughly kiln-dried hardwood of standard thickness — 1/28" — and smoothly belt-sanded. Rotary-cut unselected birch is standard; other sliced or rotary-cut domestic or foreign woods are available.

Core—The core is made of incombustible Kaylo® composition, having a normal density of 20 pounds per cubic foot. The core sections are joined together with tongue-and-groove joints, as approved by the Underwriters' Laboratories. The core is smoothly sanded prior to application of crossbands and face veneers.

Banding—The edge banding is of birch, treated with Class "A" fireproofing agent. The top banding is 1/2" in thickness; the side banding 3/4"; and the bottom banding is 1 1/2" in thickness, made by laminating two 3/4" pieces.

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Steam Capacity Data

Table 11
1/2" H. EDR (One Sq. Ft. EDR Equals 240 BTU Per Hr.)
215° F Steam — 65° F Entering Air

DEPTH	LENGTH	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
4"	24	10	14	18	22	26	32
6"	36	15	21	27	33	39	48

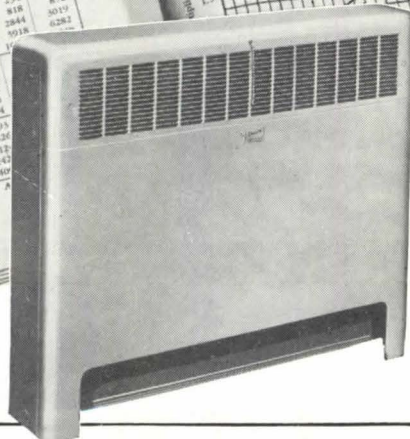
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In accordance with the provisions of Commercial Standard CS140-47, the percentages listed below in Table 12 have been added in the steam and hot water capacities for heating effect.

Table 12

Cabinet Height (Inches)	16	20	24	28	32
Type "F"-"R"-"F"	14	10	8	6	5
Type "S"	4	2.7	2.2	1.8	1.5



Reliability of ratings is a real boon when it comes to specifying any heating equipment.

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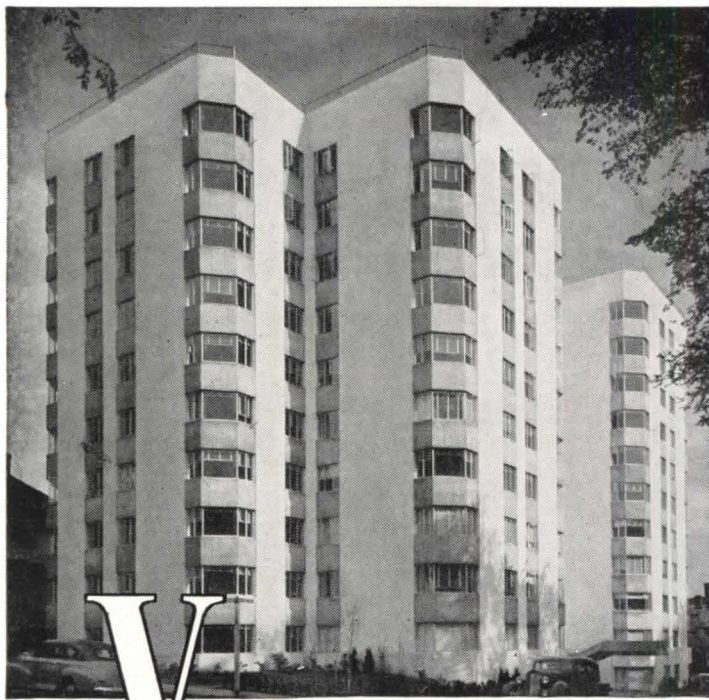
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And from Portland to Palm Beach, builders know that the clean, crisp beauty of stucco properly made with Atlas White Cement will endure through summer sun or winter snow. Both original and upkeep costs are low.

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(Continued from page 2)

ture or land surveying, in this State, or use in connection with his name, or otherwise assume, use or advertise any title or description tending to convey the impression that he is a professional engineer, architect or land surveyor, unless such person has been duly registered or is exempted under the provisions of this chapter. (1920, p. 498; 1924, p. 354; 1928, p. 494; Michie Code 1942, sec. 3145f.)

On February 17, 1951, the State of Wyoming adopted:

"AN ACT to define the practice of architecture; providing for the creation of a Board of Architects, and defining the duties, qualifications, term of office, and powers of said Board; prescribing the qualifications of a licensed architect and providing for the regulation and control of architects, and for the issuance and revocation of licenses to architects; and providing penalties for the violation of this Act."

The Wyoming law is a "Title" statute. It provides in Section 13:

"No person or persons shall be required to qualify or register as an architect in order to make plans and specifications for building or supervise the construction, erection, enlargement or alteration of any building, provided such person or persons do not use the designation of the word 'Architect' or any title derived therefrom."

The definitions in the act are of interest. Section 1 provides:

"The following words as used in this act, unless a different meaning is required by context or is specifically prescribed, shall have the following meaning:

"a. 'Building' shall mean a structure intended for use as shelter for man and his possessions."

"b. 'Architecture' shall mean the practice of architecture as a profession, within the meaning and intent of this Act, consisting of rendering or offering to render service to clients generally, including any one or any combination of the following practices or professional services: advice, consultation, planning, design, including aesthetic and structural design, or responsible supervision of construction, wherein expert knowledge and skill are required in connection with the erection, enlargement or alteration of any building or buildings, or equipment, or utilities thereof, or the accessories thereto, wherein the safeguarding of life, health or property is concerned or involved."

"c. 'Architect' shall mean anyone who practices architecture."

Supplementing Chapter 3:

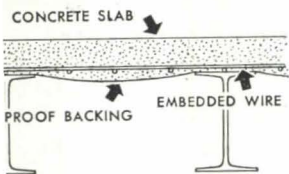
Practicing Without a License

The failure of an architect, engineer, surveyor or general contractor to procure a license

(Continued on page 3)



mammoth decks of this huge new air terminal poured over Steeltex Floor Lath



Note, in the cross section and closeup that the weight of the wet concrete forces the backing away, which permits the galvanized welded wire mesh to assume its proper position in the slab. Steeltex Floor Lath also performs two other functions. It permits work on the floor below while pouring is in progress and retains moisture to assist proper curing.



Greater Pittsburgh Airport, destined to become an inland hub of international air traffic, is greater in size than LaGuardia and National Airports combined. The terminal, aptly described as a city within a city, is so extensive that it is able to contain a hotel, theatre, bank, public garage, nightclub, shops and restaurants in addition to its normal facilities.

It was no mere coincidence that the broad concrete decks necessary to carry this load should be poured over Steeltex Floor Lath. Steeltex offers speed and economy because it may be rapidly installed and work may continue on the floor below while pouring is in progress. It insures high quality and safety because the galvanized welded wire mesh is properly embedded and the slab is properly cured because the tough waterproofed backing retains the water, thus insuring the correct water-cement ratio. For detailed information about Steeltex Floor Lath, the combined form and reinforcing, see our catalog in Sweet's or write for catalog D.S. 133, Dept. PA, Pittsburgh Steel Products Co., Grant Bldg., Pittsburgh 30, Pa.

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(Continued from page

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IT COSTS SO LITTLE: The low per-square-foot initial cost of Lamidall plus the low on-the-job application cost makes it the best wall value for you today ... in institutional, commercial and residential building.

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required by statute may constitute a misdemeanor and also render the contracts he has entered into for the performance of professional services illegal and void.

New Mexico. *Kaiser v. Thomson*, 55 N.M. 232 P. 2d, 142 (1951). A contractor sued for the reasonable value of his services. Prior to entering upon the work the contractor's license had expired. Subsequent to the completion of the work the license was renewed. The owner knew the contractor did not have a license when the work was commenced.

The decision of the Court was that the licensed contractor could not recover. The contract he had entered into was unlawful and unenforceable. The defendant could not be estopped from asserting this defense, where the contract was illegal when made.

•

Supplementing Chapter 4:

Powers of Licensing Boards

Licensing Boards created by statute may grant and revoke licenses as empowered by statute. Courts will generally overrule their determination only in clear cases of abuse of discretion.

Arkansas. *State Licensing Board v. Jones*, 232 S.W. 2d 547 (1951). The Arkansas State Licensing Board for General Contractors refused to issue a license to the plaintiffs out-of-state contractors, because while their application for such license was pending the contractors had submitted a bid for work to be done in the State of Arkansas.

The Court held that the license should have been granted. The record showed that the contractors acted in utmost good faith and did not violate the spirit or the intent of the Statute. The powers of the Board should not be exercised in a capricious, unreasonable, or arbitrary manner.

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Supplementing Chapter 20:

Right to Compensation

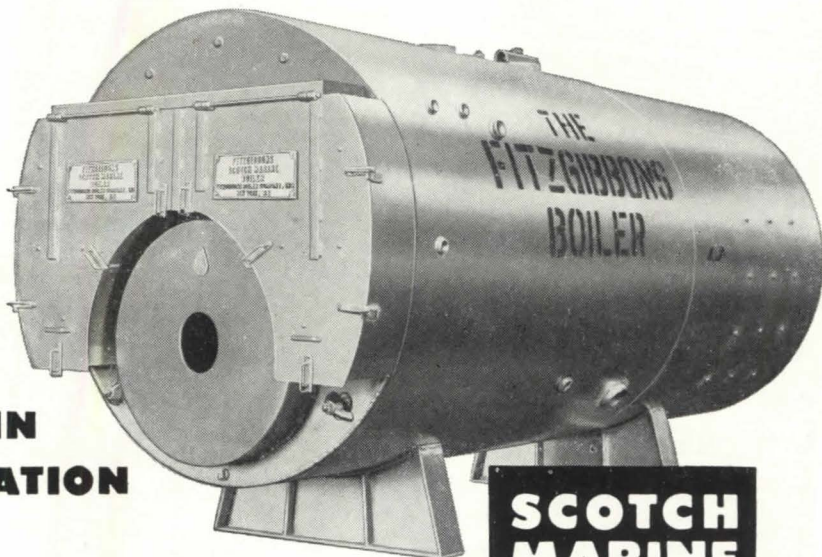
An architect or engineer is entitled to compensation for preparing plans and specifications and supervising construction, where he is employed in such capacity and substantially performs his duties under the contract.

California. *Bodmer v. Turnage*, 233 p. 2 (1951). The plaintiff, architect, brought an action against the owner for the reasonable value of services rendered to the defendant parties had entered into a contract where

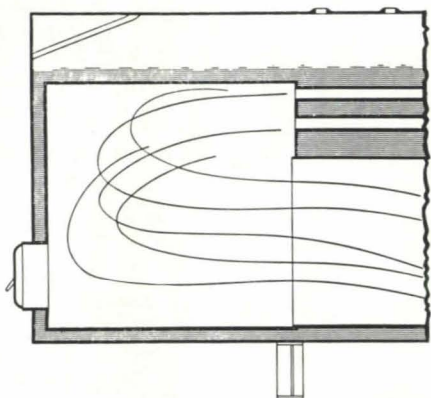
(Continued on page

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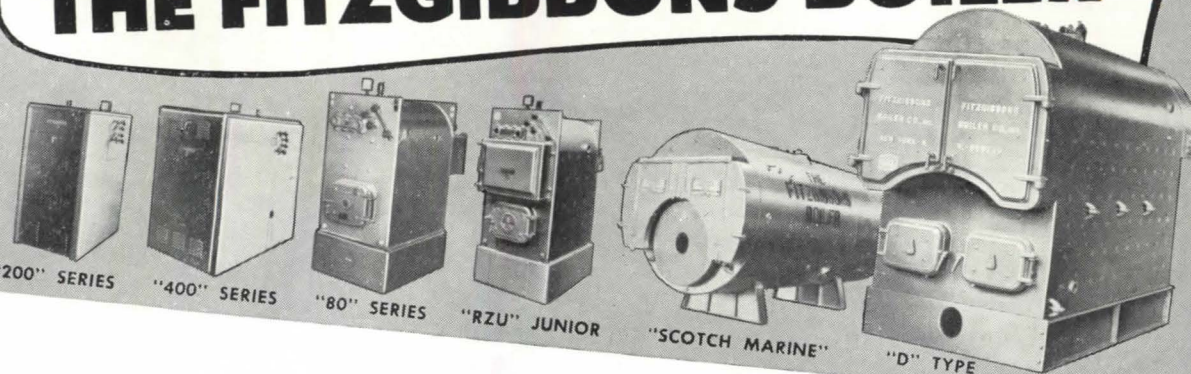
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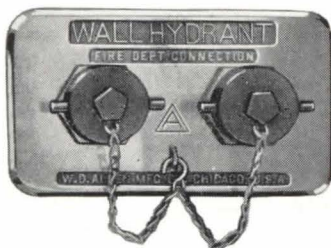
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it's the law

(Continued from page 208)

architect was to prepare preliminary studies, working drawings and render other services. After the preliminary sketches had been approved defendant, for personal reasons, abandoned the project.

The owner's defense was that the contract was too uncertain to be enforced, since the work to be done by the architect was not sufficiently described.

The Court held that the architect was entitled to the reasonable value of his services even if the contract terms would not be controlling because of allegedly being too uncertain.



Supplementing Chapter 21:

Amount of Compensation

The amount of the architect's or engineer's compensation is measured by the terms of his contract with the owner. Where the contract does not make provisions for compensation, the owner is liable for the reasonable value of the services rendered by the architect or engineer.

New Jersey. Rowland v. Hudson County, 7 N.J. 63, 80 A. 2d 433 (1951).

The architect entered into a contract to prepare plans and specifications and supervise the construction of a medical center. At the time the plans and specifications were 90% complete for one building and 10% complete for another, the architect died. According to the contract the architect's compensation was to be 6% of the cost. In an action for the value of services rendered, the plaintiff sought to recover 4% (2% was deducted since the architect could not supervise construction) of the estimated cost of the structures, with a pro-rata allowance for uncompleted work. The defendant objected to the admission of any evidence of the estimated cost.

The Court held that the estate of the deceased architect was entitled to recover the reasonable value of the services rendered, but that the recovery could not be based on the estimated cost of construction.

Oklahoma. Coston v. Adams, 263 Okla. 605, 224 P. 2d 955 (1950).

The plaintiffs, architects, brought an action against an owner to recover for services rendered under an architect-engineer's design service contract. The owner contended that the parties, subsequent to signing the agreement, further agreed that the right of the architects to compensation depended upon the success of

(Continued on page 212)

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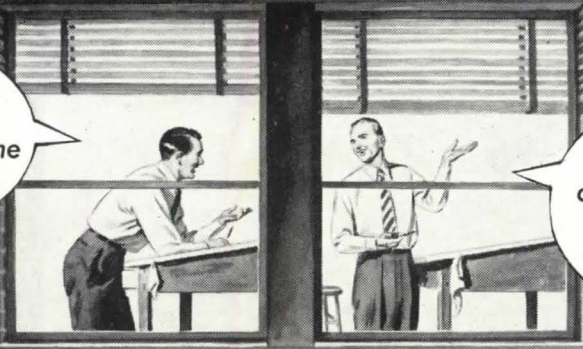
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(Continued from page 210)

the owner in financing the building, the fulfillment of such condition being a condition precedent to the architects' right to recover. The jury decided in favor of the owner on the facts.

On appeal the Court held that the architects could not recover on the ground that the contention of the owner involved a question of fact for the jury to decide.

Supplementing Chapter 24:

Liability for Negligence or Fraud

An architect or engineer is liable to the owner for damages resulting from his negligence in performing architectural or engineering services. D. C. Henry J. Robb, Inc. v. Urdahl, 78 A. 2d 387 (1951).

The plaintiff, owner, engaged the defendants, consulting engineers, to prepare necessary plans and specifications for a specific type of heating system. The engineers prepared the plans and specifications. After the work was done the engineers discovered an error had been made and they then prepared further plans which were accepted by the owner but which resulted in additional cost of \$1403.00, for which the owner sued.

The Court held that the owner could not recover this amount. The engineers contracted to furnish plans for a specific heating unit. Originally they failed to supply proper plans, but when this was corrected, proper plans were supplied. Therefore the completion of the heating unit in accordance with the corrected plans, placed the owner in the same position as if no error had been committed.

NOTICES

changes of address

HOWARD D. FIEDLER, registered architect, announces removal of his office to 211 East Robinson Ave., Orlando, Fla.

WILLIAM KU announces change of address from 5615 Waterman Avenue, St. Louis 12, Mo., to 1405 Bluebird Terrace, Brontwood 17, Mo.

GERALD ANTHONY PAUL, Architect, announces the removal of his office to 199-03 111 Ave., Hollis 12, L. I., N. Y.

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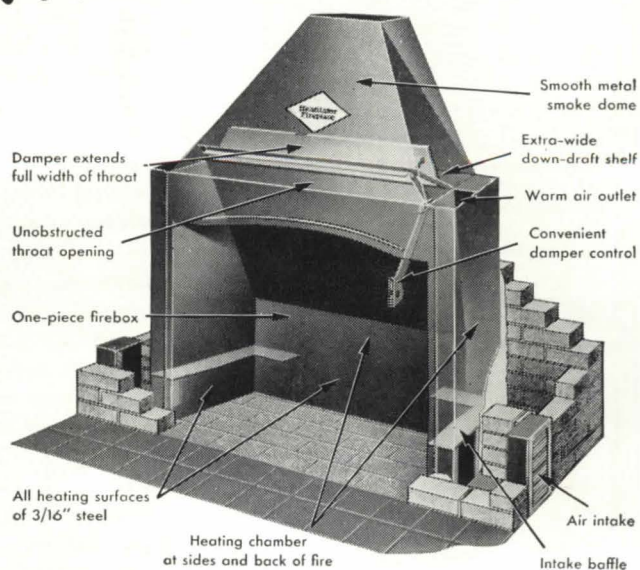
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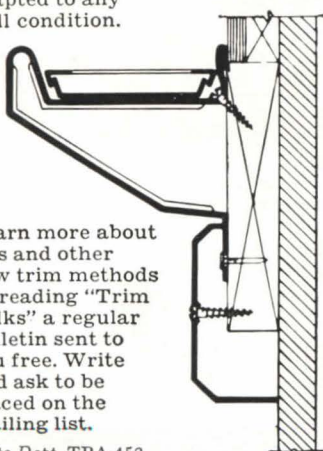
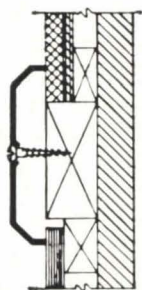
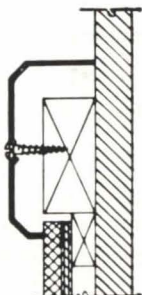
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Report of Floating or Structural Concrete-slab Floors Laid on Grade

That deep foundations under the perimeter of houses may soon be an obsolescent form of construction, is indicated by the results of 18 months' study of concrete floor slabs by the Housing Research Foundation of Southwest Research Institute, San Antonio, Texas. Findings for the study, which was undertaken for the Division of Housing Research of the Housing and Home Finance Agency of the Federal government, revealed that perimeter foundations or grade beams contribute little strength or stiffness to structural floor slabs laid on grade. Instead, the strength increases in proportion with the center depth of the slab. This total reversal of traditional design may point the way to an entirely new concept of the support of basementless houses with concrete-slab floors.

In recent years a new type of foundation for houses has come into use in areas where soil movement is extreme. It consists of a structural "floating" concrete-slab unit, heavily reinforced, and designed to form a mat-type foundation for the house to rest on. Modern houses are usually lighter than their predecessors and a house load concentrated entirely on a perimeter foundation will seldom exceed 1500 lbs. per linear foot. All except the more unstable soils—found in certain areas of the southwest, notably around San Antonio—will carry this load very easily. Where the house load is distributed throughout the total area of the structural slab, the actual load on the soil probably averages no more than 200 lbs. per sq. ft.

To permit accurate and time-saving analysis of the performance of the structural concrete slabs, Southwest Research Institute developed a technique of working with model slabs of various designs built to a scale of one inch to the foot. The models designed and evaluated were 2' x 3', and simulated the strength and performance of full-scale, 24' x 36' floor slabs. First built according to a design accepted by the FHA in San Antonio, the model slabs were found satisfactory for wood-frame construction but not entirely adequate when supporting masonry wall construction, particularly of concrete masonry. They are better, however, than the old perimeter foundations or piers. These so-called FHA slabs consist of perimeter grade beams and intermediate beams, spaced 12 to 16 ft., and are poured monolithic with the slab. Slabs are single-reinforced in both directions and are so constructed that most of the load is transmitted to the ground through the beams, which have top- and -bottom reinforcing and stirrups. Models of the slabs were tested with a proportionate house under three conditions of support that were more extreme than likely in actual practice.

First, they were tested as simple beams with the only support being placed under each edge. Second, the entire slab was supported at a central point with the edges cantilevered from this support. Third, the slab was supported diagonally opposite corners.

Many designs were tested before it was found that a slab of inverted-pyramid design yielded the greatest strength and stiffness at the same estimated cost as the FHA design. The inverted-pyramid slab had a depth of 4" at the center and 4" around the perimeter. One-half inch steel bars were placed 12" center both ways, top and bottom, in the slab.

Since all model slab designs showed the greatest weakness in the position of diagonal corner support, it was found that placing steel diagonally, instead of parallel with slab sides, greatly increased the strength and stiffness at no additional cost. While the inverted pyramid is the strongest design, somewhat difficult to place the steel in bottom section of the slab and the thin depth of the perimeter is very likely to be in opposition as a radical departure from conventional design.

Almost as effective as the inverted pyramid is the perfectly flat slab, using the same amount of steel. A model of the 10" thick flat slab, with no grade beams, deflected about half as much as the FHA design. The inverted pyramid deflected only one-fourth as much as the FHA. In their experiments the Housing Research Foundation kept the load constant in all designs with the view of developing a slab which was stronger than the presently accepted by the FHA in the San Antonio area; certainly, a slab of comparable strength and stiffness as the FHA may be possible with less money.

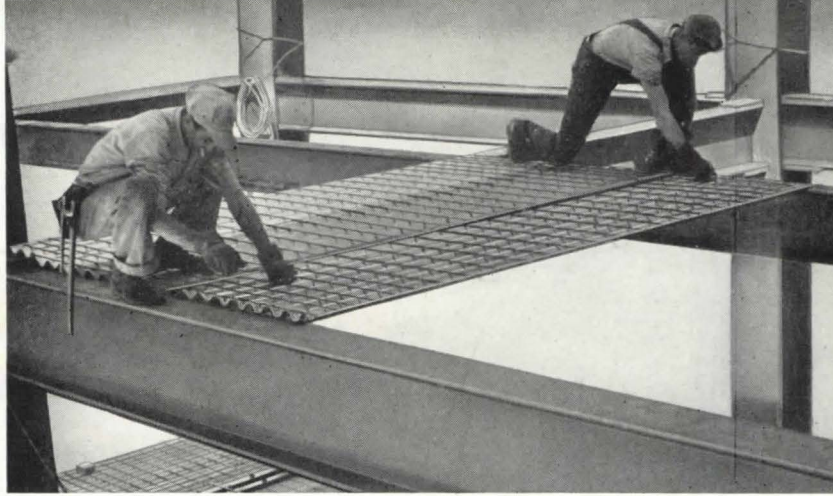
It is believed that a less expensive structural concrete slab floor of this same general design would be satisfactory on more soils in the north after a technique has been devised for insulating the slab edges and slabbing the perimeter against heat loss. Concrete-slab floors used in the north today are generally poured inside the perimeter foundations which both carry the load and insulate the sub-floor area against frost. Perimeter foundations are an expensive method of insulating the sub-floor against heat loss. It is possible that a better method will be developed to follow from further research.

Full-size (24' x 36') house slabs have been constructed on ground thought to have good soil, in order to check the deflection characteristics of two of the model slabs. One of the FHA slab, has a reinforced perimeter

(Continued on page 10)

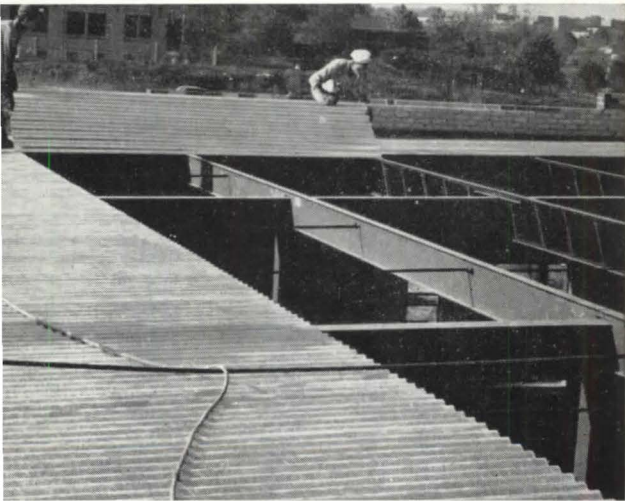
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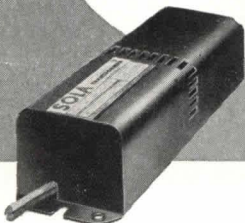
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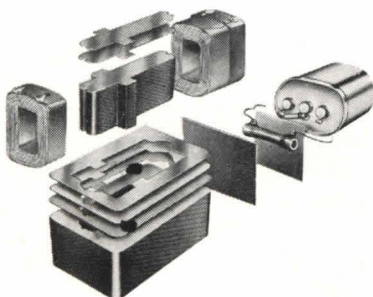
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(Continued from page 214)

intermediate beams, while the other is a 10 5/8"-thick flat slab with diagonal reinforcing at top and bottom. Water is being fed into the soil at two diagonally opposite corners of each of the slabs in an attempt to cause a heaving of the soil beneath their corners. Deflections noted to date are easily measurable but they have not yet reached sufficient magnitude for conclusions to be drawn.

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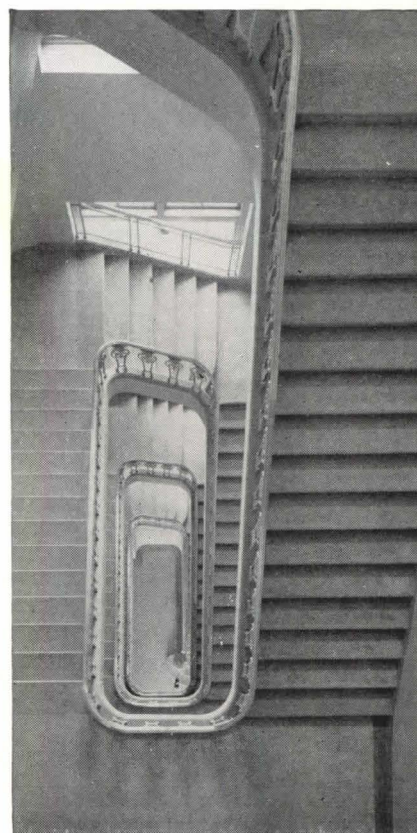
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