Pressive Architecture

Office building

Interior design data

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Approximately 10,000,000 Cubic Yards Of Pozzolith Concrete Were Placed In 1951.
Progress Preview: Junior High School

Aluminum Windows—Selection and Detailing by L. M. Dunn

Office Building: New Orleans, Louisiana
Skidmore, Owings & Merrill
and Claude E. Hooton, Architects

Power-Distribution Systems for Commercial Buildings
by H. H. Watson

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Hotels and Motels

Hotel Interior: Moorhead, Minnesota
Thorshov & Cerny, Inc., Architects

Resort Hotel: St. George's, Grenada, B.W.I.
Anthony C. Lewis, Architect

Motor Court: Green Lake, Wisconsin
Auler, Irion & Wertsch, Inc., Architects and Engineers

Vacation Motel: Wellfleet, Massachusetts
Saltonstall & Morton, Architects

Resort Motel: Ocean Lake, Oregon
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Related Design Fields: Mural Painting

House: San Rafael, California
By Henry Hill

Products

Manufacturers' Literature

Resort Hotel Rooms by Charles H. Warner, Jr.

Caribe Hilton: San Juan, Puerto Rico
Toro, Ferrer & Torregrosa, Architects

Holiday House: Escondido Beach, California
Richard J. Neutra, Architect

El Panama, Panama City, Republic of Panama
Edward D. Stone & Associates, Architects

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Reviews

Out of School by Carl Feiss

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Jobs and Men

Advertisers' Directory

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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 gy-
(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

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

The stage of the adjacent auditorium large enough to seat 150 persons, thu usable for music practice. In general, workshops, arts and science rooms grot in the north wing near the gymnas wing, are remote from the classrooms library. Storage space has been vided for each department of the sc
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

determining the proper gage for an aluminum window, one must consider its function, and size, as well as whether it can be fabricated of solid or tubular sections. In general, lighter gages from .062" are specified for windows to be installed in residences or low-rise, etc. A sill member should never be lighter than the accompanying window; therefore, maintenance men have to stand in order to clean the glazing. Sill should never be less than .062" and sills of higher specification the sill should be .078", .094", or more. aluminum windows should be able to accommodate a variety of loads and be made in the quantity that can be expected of colors exposed to weather. 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 select from these finishes that are in proportion to the duties they are to perform. A smaller window of less strength may 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 gunmetal 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 weather. 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-
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 feeder-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 be:

1. Control air infiltration.
2. Withstand external atmospheric conditions.
3. Hold up mechanically under usage.
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, and plastic weatherstripping are often used to accomplish these objectives. In the case of projected, casement, awning windows, where the hardware normally 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 exceed 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 viable; however, if a window today plays the Quality Approved Seal of 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 atmospheres prevail. 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 is, at the same time, an alloy which can be extruded at high speed for economic advantages. This alloy has a natural silver pearleance, provides an excellent base for any protective or decorative coating and has a high inherent resistance to corrosive weathering.

Aluminum-alloy windows have been for the past 20 years in all types of atmospheres, including a wide variety of industrial and seacoast atmospheres (Figures 5, 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 Kerling
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
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: galvanic attack excited by nonaluminum metals; (2) drainage of salts from aluminum metals over aluminum window (3) poultice attack which aluminum and other metals suffer when held for extended periods in intimate contact with asbestos 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 use of dissimilar metal and the design of protective measures. Where practicable, the dissimilar alloy can be made from other corrosion-resistant aluminum.

Otherwise, the most compatible non-lead metal possessing the physical characteristics needed should be selected. Materials that will in general perform well in the use of aluminum are: nonmagnetic stainles steel, heavily galvanized steel, and zinc. Components of copper or nickel alloys used under specific conditions. In the presence of galvanic attack, the technical service, galvanic attack is often not of primary concern.
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 dripage 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 absorptive 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 nonmetallic 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 ensure that adequate caulking is provided. Every effort should be made to eliminate any crevice that might allow water to collect around the frame.

**Installation Factors**

Aluminum window manufacturers will ally show in their own literature the best method of anchoring his windows to structural supports. To insure proper anchorage, the following fundamental check points should be kept in mind:

- Anchorage must hold the window securely to withstand normal use of woodwork.

- Anchors should be manufactured to obviate any staining on the window surfaces.

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

- An aluminum window manufacturer's tachable fins in residential construction 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 relieves individual windows can be handled as one unit, made possible at the site provides a simpler solution.

- Maximum use of one type and size of window throughout a building.

- Uniform design of windows.

- Only minor adjustments, at most, on a standard design recommended by a manufacturer.

- 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. 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 requirements. 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
First Floor and Plot Plan
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 the floor to which they are directed.

The architects refer to the canopies aluminum-fin sunshades (detail, page that protect the window walls of the building as "a logical contemporary acknowledgment of the demands of a climate that had already inspired the lancelike galleries that are an historic mark of New Orleans." A consciousment of the design concept is a sub color treatment that has richness, warm in tone; against this base to seen the glint of aluminum, the sparkling glass areas, the deep sheen of the tile used on the wall of the ground floor, the rear wing, and the red terrazzo 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.
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 portion 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 return 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-sile 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.
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


equipment

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. 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 technique 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 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’x110’ “taxpayer” or a 400’x200’ 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 ordinances derived from the National Electrical Code either permit or require the use of rigid conduit in commercial buildings. There are only a few infrequent encountered applications in such buildings where rigid steel conduit is acceptable. The standard finish for rigid conduit is a corrosion-resistant metallic zinc applied by hot-dip galvanizing, sherardizing, or electro-galvanizing is permissible, however, for dry installations to use enameled conductors.

Because rigid steel conduit is universally acceptable, fittings and fittings are available for any conceivable installation condition. Long usage, a reduction in great volume have about a high degree of standardization. The interchangeability of materials used and widely stocked by manufacturers is so complete that problems of special material are nonexistent. This high degree of standardization and the broad field of application provide further advantage problems of repair, rearrangement are encountered. Further, the use of rigid conduit as an accessor
The 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 those to 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) is larger than 2" diameter or with outer finish of enamel is not recognized by the Underwriters' Laboratories. General, except as restricted by local code, EMT can be used in place of steel conduit for both exposed and concealed wiring in commercial buildings. In connection, it is important to note that the National Electrical Code which does not permit the use of rigid conduit when it is exposed to mechanical injury during installation. This restriction is important and is the controlling factor in many types of construction.

Conversely, the location and number of electrical outlets required by occupants of nautical 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 junction 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 underfloor 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 commercial 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 has 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 500 amperes. This system is fitted with fittings every 12 inches along the run, such as prefabricated, plug-in fusible switches, plug-in circuit breakers, in ratings from 30 to 600 amperes, are made in every installation. These elements are used in the bus system as protap-offs to feed motors, panelboards, or other equipment. Although widely used for these purposes in the industrial field, this type is also available for air-conditioning feed production lines, many of these purposes in the industrial field, 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 available a plug-in busway system with ratings from 50 amperes, in 2, 3, and 4-pole construction. This system has a conti
The housing into which may be plugged of various types to feed fixtures, small motors, or appliances. Trolleys are also available for in this system to feed various ports. This arrangement has been quite extensively in department to provide flexibility for lighting, and in offices and industrial as an economical branch circuit system. The 3- and 4-pole construction provide flexibility for obtaining balanced circuit loading and switching various fixture groups, such as is 1 for lighting or emergency systems, article on wiring materials would complete without reference to fabricated cable assemblies, such as 1 cable, nonmetallic sheathed cable, h-voltage interlocked armor cable. Materials consist of the insulated materials and the associated mechanical assembled in the factory ready to be 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 principally 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 voltage was hindered by lack of appropriate sources for operation at increased potentials, by considerations of safety, and the fact that, generally, the power in commercial areas has not been available at the higher voltage levels.

The introduction of fluorescent lighting 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 higher than the 120 volts ordinarily used for lighting. During World War II, a large amount of aircraft manufacturing was done by fluorescent fixtures equipped with ballasts rated at 265 volts, and they could be connected directly to 480Y/277, 3-phase, 4-wire distribution systems which supplied power for many of the systems were controlled by magnetic controllers from industrial type button stations.

Modern commercial buildings are particularly, office buildings with large electrical requirements for fire-pumps, air conditioning, and systems, have heretofore been unable to take advantage of the economies of higher voltage for fluorescent light.
for this is that no practical means of control was available to handle office circuits at higher voltages. The maximum rating of conventional fluorescent lamp ballasts the current must be reduced by 50 percent. Restrictions are contained in the National Electrical Code; they reproduce engineering practice. The inclusion of the remote-control wiring with its approved use of solenoid relays for handling load current volts, now makes it possible to use 77-volt lighting in office buildings the relay provides the required itching means for individual office

remote-control system used for 77-volt lighting is identical with that already in considerable use in all of the work areas. The relay which actual switching is operated from a circuit to wall switch at 24 volts. Below a momentary impulse of power to open or close the relay, a contact power transformer serves the switching on circuits in an area as an entire floor. The relays are electrically mounted at the fixture or in the 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 lamp holders, 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 lamp holder—are features which contribute to safety. The 480-volt circuits have for many years been common to power application 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.
In Defence of Magic by Mitzi Solomon

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

"All things counter, original, spare, strange...

Walt Whitman.

Gerard Manley Hopkins.

Confessing a nostalgia for the fantastic, I write as one for whom Maeterlinck's

Tchaikovsky 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 a promise of equivalent luster; the transients of a park,

played out in microcosm on their narrow benches: the dark official monument (every monument) the terrible

necessity of the world of men. (I particularly remember the Salvation

Army worker's uniforms, much more piercingly mauve-vermilion-trimmed than any slate-and-scarlet uniform

I have ever seen; a palpable sense of the heightening of familiar reality in key with the bald

play.) The early Saroyan also held this power of magic.

(Continued on pa...
hotels and motels

No one argues that motels will ever make hotels obsolete. Hotels show no sign of being displaced 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 features—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 hotel’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 accommodations 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-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 addled 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 improvements in some of them have become as luxurious and rates as high as those in the 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), accommodations are not even open to the passing motorist; rental units must be reserved 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, being written by Geoffrey Baker & Bruno Funaro. The other, by Charles Warner, Harold Leeds & Henry Shotwell, is tentatively entitled Hotels and Hotel Remodeling.
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 “life without flash.” They wished to prove “big hotel look” but not so sophisticated that it would discourage local patronage.

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 de­
ed the lobby (above), the coffee (above, right), and the bar. Color
to an important role throughout. Main
tones with colors selected for
stationery and other accessories—
white, and scarlet. In the lobby,
colors are used against a back­
ground of rich walnut paneling; the flat
floor is gray; the dropped ceiling, red.
The coffee shop, the draperies are
yellow and white opposite the windowed wall shown,
is a wall of pine siding painted a
rich red. Photos: Everett Kroeger
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.
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 Caribbean beyond.

Chief design problem was to take advantage of the prevailing northeast to southeast 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 ventilated 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 across page) are open promenades. Eyebrows above guest-room windows (detail, far left, across page) simplify window cleaning. The dining room (above) overlooks the lobby-lounge area, off which an open terrace (right) commands an eye-filling view of town, sea, and distant hills.

Photos: Tom Leonard
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.

Forward the north, there is a grade drop of about from one corner of the well-wooded site to the other. The motor court, prom­inently placed on the upper contours, is used the year around.

Set out in a sweeping C plan, with an east wing (above garages) at the east corner of the group, the units own 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 log­producing 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

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 houses be spaced sufficiently to provide complete privacy. Fixed glazing and ventilation were selected, to minimize 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 as making the houses are of frame, with waterproof wood on the exterior and insulating fiberboard as interior surface. The houses have gas refrigerators, stoves, and heaters. Prefabricated heat-distribution cores are part of the fireplace construction to increase heating efficiency.

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

Photos: Carroll C. Calkins
related design fields

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. He 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 jury as “eminently suggestive of Oklahoma, alive and zestful, atmospheric rather than descriptive.” Robert Carson, of the firm, Carson & Lundin, New York, architects of the building, pronounces the mural congenial with the architect and color of the bank interior.

Photos: Hopkins Photography
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 requirements and went into such things as: 'kitchen should have easy access both from dining room and to outside living area. The kitchen-dining idea we like from the family standpoint; however we also want separate 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 plan shows, the solution is a 175-foot-long house with all major rooms facing the south and service rooms and circulation located along the north wall.
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 (across page), 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
First Floor and Plot Plan
The house itself serves as a screen for privacy from the north approach road. The main hallway, 30 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, circul 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.
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 ensured 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 lum had been kiln dried to an average mois- age content of 12 percent to insure a thorough dimensionally stable section.

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

Largest wood arches ever used

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, sil- vered grille gives minimum projection into room. Adjustable side panels fit into any standard window. Hunter Fan Co., 300 S. Front St., Memphis 2, Tenn.


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 chimney are cold; de- vice 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., 800 10 St., N. E., Canton 5, Ohio.

Doors and windows

Light-Stoping 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 joist various size face-sheet sections to awnings and door canopies can be fitted to large double windows, porches, windows, or doors, or custom-made to your specifications. All aluminum and baked-on white enamel. Chi Mfg. Co., 3620 W. 11 St., Houston, Tex.

Industrial Pivot Steel Windows: 1 minute to go and come; pivot windows incorporating built-in, be- tiful, pivots which are hinged to vent Made in all standard sizes, with either bar, spring-latch, or cam-latch-type oper- ations. Mfg. Corp., Rossnoy, N. Y.

Auto-Check: concealed-type, automatic operator, completely silent, pneumatically operated and hydraulically controlled, nished complete with spindle-arm and head fittings. Remote controls of variety can be used for operating door openings, mats placed on both sides of push or pull button, etc. Unit, 15" x 9", is sealed against dirt and mois- ture. Unit, 15" x 9", is sealed against dirt and moist. Unit, 15" x 9", is sealed against dirt and mois- ture. Unit, 15" x 9", is sealed against dirt and moist. Unit, 15" x 9", is sealed against dirt and moist. Unit, 15" x 9", is sealed against dirt and moist. Unit, 15" x 9", is sealed against dirt and moist. Unit, 15" x 9", is sealed against dirt and moist.

Electrical equipment, lighting

Focalite: versatile, all-angle spotlight use in window displays, shadow 1 showcases, and other highlighting ap- plications. Made of aluminum with satin l is instantly adjustable and will always tain focused position. Designed to a modulate PAR 38 spot, flood, or color reflector lamp; equipped with 64 ft. and plug. Amplex Corp., Dept. FP Water St., Brooklyn 1, N. Y.

2FRP-90 Luminaire: industrial fluoro-
supporting structure for waterproofing

Glassfab is an inert material composed of Fiberglas yarn. It is not subject to weathering and other types of deterioration; it provides roofing and other waterproofing installations with a nondeteriorating support. As Glassfab holds waterproofing materials in uniform suspension, it will eliminate cracking, alligating, and the phenomena of backing up that result in the eventual breakdown of installations with a nondeteriorating support. Its flat-fiber structure and permit unusual flexibility of fabric, making tight application to uneven shapes possible. Application on corners and other uneven surfaces is noticeably simplified. As a supporting structure to bitumens or other waterproofing materials, Glassfab acts in a manner similar to reinforcing rods in concrete. Although it weighs only a fraction of formerly used materials, Glassfab 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. Glassfab 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

A sliding-door hardware line developed by Pulley & Hardware Company, is radically directed at the low and modest housing fields. Known as Rocket-sliding-Door Hardware, this product is suitable for single (photo A) and multiple (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 operation 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.

surface materials

Decorated Gypsum Wallboard: new, ¾"-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. Fabro Products, Inc., 145 Brannan St., San Francisco 19, Calif.

Superexcel: 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.
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 (B64-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.


1-165. Hunter Fans, 1952 (3306)

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


construction


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. Sisal Kraft Co., 205 W. Wacker Dr., Chicago 6, III.

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, illustration 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), 6-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.


4-167. Doors, AIA 19-e-1 5103), 30-p. booklet offering variety of flush wood doors anditions panels. Advantages, specific sizes and weights, typical openings, ut data, finishing instructions. U. wood Corp., 55 W. 44 St., New York 18

4-168. Windulaume, 16-L, 8-p. bulletin serbing aluminum double-hung wi adaptable to any design style or type of construction. Advantages, standard sizes, fications, details, typical installation grams. Windulaume Corp., 323 56 St., New York, N.J.

electricity equipment, lighting

5-105. Hospital & Commercial Equipment (HSE-1), 32-p. bulletin co complete line of signal equipment, incl visual annunciators, code relays, fire stations, grounding intercouplers, sot s, corridor lights, nurse’s call s, p ing systems, etc. General inform wiring diagram for nurses’ call s, photos, index. Cannon Electric Co., Humboldt St., Los Angeles 31, Calif.

5-106. Higher -Voltage Lig ans (GEA-5670), 12-p. bulletin vantages of new 480V/277-volt ele distri system, incorporating volt lighting circuits; use of higher age permits wiring to carry much g load so that number of circuits are substantially reduced, with saving of copp equip cost. Performance, typical application, photos, layout dia General Electric Co., Schenectady, N.


Phenolene 300 (600), 4-p. brochure onsmearing phenolic resin coating for ting structural and mechanical equipment against corrosion; may also be used to seal floors. Applications, corrodents, prices. Carbobine Co., 7603 Fort Lauderdale, St. Louis 5, Mo.

Satin Luminal, AIA 25-B-21 (115), brochure containing specifications on used interior paints. Complete information on preparation of plaster and other surfaces; preparing procedures using mildew, efflorescence, and bleed-aims; section on mixing and applications. National Chemical & Mfg. Co., 3167 S. St., Chicago 9, Ill.

ulation (thermal, acoustic)


itation, water supply, drainage


5. Duraline Scale Selector, 6-p. Full-scale illustrations and detailed instructions of architect's, engineer's, and draftsmen's aluminum scales. Ages. Universal Drafting Machine 7960 Lorain, Cleveland, Ohio.


19-228. VMP Conveyors, AIA 35-H-2, 35-B-2, 35-L-4, 4-p. folder. General data on simply designed, vertical transmission system, 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 arrangements. Virginia Metal Products Corp., Orange, Va.


19-230. Shingle Style Book (P-289), 24-p. booklet displaying wide variety of asphalt shingles for residences. Types, specifications, 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.


19-232. G.P.X. (P-28), 4-p. folder on plastic-faced Douglas fir plywood that is impervious to moisture, weathering, grease, alcohol, etc., and is highly abrasion-resistant; material has almost unlimited applications—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.


19-234. 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 application photos. H. B. Wiggins' Sons Co., Bloomfield, N.J.


To obtain literature, coupon must be used by 6/1/52
(We request students to send their inquiries directly to the manufacturers.)

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

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<thead>
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<th>Name</th>
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<th>Mailing Address</th>
<th>City</th>
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April 1952 125
UNSURPASSED ADAPTABILITY
TO DESIGN REQUIREMENTS
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Carrara
Glass

In Carrara structural glass the elements of decoration are inherent. Whether the design stresses modern simplicity or emphasizes unusual decorative appeal, America's architects have found it a most flexible medium—for interior walls, as well as for exterior application, as illustrated. Here, forest green Carrara Glass was utilized for the facia and pilasters to give this restaurant unusual appeal, permanence and low maintenance cost.

Carrara Glass is precision-manufactured, mechanically ground and polished to a flawless, flat, reflective surface. It permits true, even joints. There is no lippage, no warpage. It is impervious to weather, moisture, chemicals, grease, pencil marks. It will not check, craze, fade or stain; does not absorb odors. And its ten beautiful colors permit a wide variety of combinations. Consult Sweet's Catalog for detailed information on Carrara Glass, or write to Pittsburgh Plate Glass Company, 2100-2 Grant Building, Pittsburgh 19, Pa.

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

PITTSBURGH PLATE GLASS COMPANY
The photo above is a partial view of the Koroseal Tile Supreme installation in the counter and kitchen areas of the J. C. Penney Co. cafeteria in New York.

Counter-attack...with a floor that can’t be beat!

Koroseal* Tile Supreme

Sloane Koroseal Tile Supreme eliminates floor disintegration because it is totally unaffected by grease, oil, fat, acid, alkalis and other substances.

Shown by every test to be the longest wearing resilient floor tile ever made, its vinyl plastic composition insures indefinite service in any area where food is processed, cooked, or served.

Koroseal Tile Supreme is more sanitary, too. Its nonporous surface can’t hold dirt...stays beautiful with quick, easy soap-and-water mopping and occasional waxing. And that means added economy.

The through-and-through colors remain beautiful under the severest food and foot traffic...won’t fade or stain.

Regardless of location—from engine room to luxury show room—Sloane Koroseal Tile Supreme represents the ultimate in resilient floor covering—unmatched in beauty, comfort and service.

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April 1952 121
A Dozen Reasons Why More Eating Places are Surfaced with FORMICA than any other Material!

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at Home with People at Work in Industry
We seem to have come a long way in developing new design patterns for hotel guest rooms of all ities. 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 as, maintenance-conscious furniture, and so on. Specifically, in the resort hotel guest rooms on the following es, there is in evidence a very special aura of intimacy and comfort. Resorting guests must be made to feel 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 gn. The fact is that the transition from the lushness of the land (whether tropical or otherwise) to the room xious and impersonal. Generous use of space and all possible design ingenuity must be employed to make rooms personal and comfortable.

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

Although not shown on these pages, the transition elements—elevator lobbies and corridor—must, 1 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 quest in transit must be considered); (2) for double-loaded corridors—room entrances recessed and lowered, lized 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. tral ventilation for tropical guest rooms must be discussed. Obviously, if site size permits extensive ding perimeter and if a year-round prevailing wind is present, happily synchronized with the most pleasant t, the single-loaded corridor producing natural room ventilation is certainly the most desirable solution. ush climes, there are wonderful sounds, smells, and usually a totally fresh atmosphere. Room air condicng and the containment of it deny guests the privilege of a new environment. Again, obviously and con-ely, there is a need for air conditioning for tropical rooms where the physical situation for a resort hotel is advantageous for the ideal solution with natural ventilation. In the tropics, this debate on ventilation es 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—of ness and lightness and, at the same time, lushness. But here is the interesting problem which has not as been clearly answered. When air conditioning is used, there is no problem if the client wants stuffed, illed creature-comfort furniture. In naturally ventilated rooms, however, cool furniture with delicate al qualities is mandatory. The debate on this point among hotel operators, architects, and guests goes on minished.

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

resort hotel rooms

<table>
<thead>
<tr>
<th>location</th>
<th>Caribe Hilton, San Juan, Puerto</th>
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<tr>
<td>architects</td>
<td>Toro, Ferrer &amp; Torregrosa, Puerto</td>
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<tr>
<td>collaborating architects</td>
<td>Warner-Leeds, New York</td>
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<tr>
<td>interior designers</td>
<td>Warner-Leeds, New York</td>
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random-oak flooring

fabric-textile grille cloth

radio-telephone cabinet

data


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

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


Chair, Radio-Telephone Cabinet, Tables, Desk-Dressing Table: W-L designs/mahogany with "Formica" tops and sides/Carrom Industries, 1523 N. Sedgwick St., Chicago, III.


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/

Carlton-Feder Corp., 224 W. Greenfield Ave., Milwaukee 4, Wis.

Air Conditioning: "Weathermaster"/Carrier Corp., 315 Madison Ave., New York, N.Y.

Luggage Stand: 76 B/chrome finish/black webbing/list: $8.95/Lake City Products, 612 N. Michigan Ave., Chicago 11, III.

Terrace Chair: A18/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-making: Biltmore Stu West 53 St., New York, N. Y.

Floor Lamp: satin chrome/Flos, 154 West Erie, Chicago.

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

Pottery Lamp: terra cotta/Hal Lasky, Puerto Rico.

Lamp Shades: Fiberglass/Polystyrene United, 1385 1 Ave., Bronx, N.Y./maple Carre, 333 Fourth Ave., 10, N.Y.
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 housekeeping 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)
Continued

Continued from page 131)

for exterior enchantment, the vertical bands of curtain colors make a pla
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 de
Location: Holiday House, Escondido Beach, California

Architect: Richard J. Neutra, Los Angeles

Data:
- Mexican design/pine frame woven palm/retail: $30.00
- Distributor: Fred Leighton Inc., 19 E. 42nd St., New York, N.Y.
- Nets: designed by Neutra/built by
- Net hardware: C. L. Frost & Sons, Battle Creek, Mich.
- Fixtures—Terrace: "Pry-lite"/seated "snap-on" front/Pryne & Inc., Pomona, Calif.

First 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, rated from its neighbor by plywood spur walls. In this enlarged unit, furnishes are generally owner-selected but the neat cabinets are specially designed. A view to the sea view are the perfect orientation, the glass walls, and the separate reserve of this living room.

Room Photo: Julius Shulman
data

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

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

Sofa-bed inner spring mattress and base/36" wide/black-enamel metal frame with pivot mechanism/movable back and arms/available with permanent or removable cover/net: $70.00/Knoll.


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

Walls and Ceiling: painted pas
er.


Terrace Table: #1002-K/Stone design/solid oak/steam bent legs/15/8" high x 23" wide x 66" long/list: $90.00/manufacturer, distributors: same as above.


Terrace Table: #1002-K/Stone design/solid oak/steam bent legs/15/8" high x 23" wide x 66" long/list: $90.00/manufacturer, distributors: same as above.
is typical of the 300 guest rooms at El Panama. It is cooled naturally by tropical jalousies, as only jalousies separate it from the wide exterior on one side, and a private race on the other. Because of the screen that separates the dressing area, jalousies be open to the corridor without loss of privacy in the guest room. The separate essing area is a wise use of space in a hotel. Luxurious because of its convenience and nort, it also leaves the living area free of clutter.

Again, as in the other resort hotels shown, the living room arrangement is favored. sofa-beds make comfortable seating and also swing open easily to sleeping width. Each of the three examples shown in this section, all casegoods were architect-igned. The desks, chests, and cabinets not only work for the specific instances, also are handsome solutions for hotel needs in general. Some of these would be additions to a manufacturer’s standard line. Room Photos: Ezra Stoller
UNBELIEVABLE DURABILITY
on our hospital walls...

That's the comment frequently heard about Kalistron wall-covering installations. When walls, doors, columns or furniture are covered with Kalistron, they literally defy the wear and tear of "heavy duty" service. Years after installation, the Kalistron is still in excellent condition... unmarred, unscratched, with practically no sign of wear.

Kalistron is different because its color is fused to underside of clear sheet of wear-resistant Vinylite. Since nothing can touch this under surface, Kalistron's beauty stays fresh and new-looking.

Kalistron cannot chip, crack or peel; minimizes maintenance costs. Cleans easily with a damp cloth. In 28 standard colors; special colors matched.

SEND COUPON BELOW for sample of Kalistron and nail-file. Test Kalistron yourself... prove its unbelievable durability.

Kalistron

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

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-Morgenthaus Co., 225 Fifth Ave., New York, N.Y.

"Marbellia" 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.

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 — overall 25" / list: $9.50 / cylinder C-2: 10½" dia. x 29" long — overall 34" / list: $12.00 / globe A-2: 10" dia. x 12" overall / list: $6.50 / available with or without brackets / list for brackets: $2.25 for C-1 and A-2; $3.00 for C-2 / Kneedler-Fauchere, 1122 Sutter St., San Francisco 9, Calif.
New Tempered Glass Door
SPARKS UP INTERIORS

It's a single slab of lustrous patterned glass. It's translucent—provides privacy, but lets light pass through.
It's tempered for toughness, making it 3 to 5 times stronger than untempered glass of the same thickness.
It's the Blue Ridge Securit® Interior Glass Door—a new idea that you can work neatly into plans for offices, stores, hotels, hospitals, homes—many types of buildings.
The Securit Door swings freely on special ball-bearing Stanley Hinges. It comes complete with attractive Sargent Hardware. And you can get already drilled to take Sargent Door Closers or concealed LCN Closers.
It's easy and quick to hang—no cutting, mortising, drilling or painting. And it's priced so reasonably that you can afford to add its beauty to almost any type of building.
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Please send me your folder on Securit Interior Glass Doors

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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.

d 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 lid colors to match “Baroda Stripe”/ approx. retail: per yd./ Golding Decorative Fabrics, 470 Fourth Ave., York, N. Y.
You have always recommended paneled walls for appearance. Today with scarce, high-cost maintenance labor, you can also recommend them on the basis of economics. The higher original cost of installing plywood is often offset in ten years or less by savings in painting, paper hanging and maintenance.

And for the life of the building, paneled walls will continue to pay dividends in savings, and in beauty that ripens with age.

Remember — the quality of plywood can vary as much as the quality of any other manufactured product. The veneers, the care in matching, proper seasoning, moisture control, glue, gluing methods, sanding, thickness of faces and storage — all influence the quality of plywood.

Roddis craftsmen control the step-by-step manufacture from veneer selection to the finished product — no shortcuts — no compromise. You can be sure when you specify Roddiscraft.
ELEVATION 1/4" SCALE

Plan

3 SHELF CABINET

DRAWERS UNDER

ELEVATOR SHAFT

SECTION 1" SCALE

LINOLEUM ON 5/8" PLYWOOD

2 x 4" BRACKET

1/4" PLYWOOD

DRAWERS

2 x 4" STUDY

PLA.TERT.

SELECTED DETAIL

JULUS SHULMAN

NORTH SAN DIEGO COUNTY HOSPITAL, Escondido, Calif.

C. Dixon, Lee B. Kline, Associate Architects

April 1952 141
Translucent Glass Jalousies* Divide An Office Without Disjointing Its Organization

Something is happening in modern office design! Venetian window partitions or jalousies employing translucent glass by Mississippi are fast replacing solid separations that cut off light, ventilation and communication from adjoining areas. These interior jalousies help integrate the entire organization and permit more accurate control of temperatures for heating and air conditioning.

The new adjustable dividers give each office better control of illumination and air movement. Opened or closed, the translucent glass floods interiors with softened “borrowed light” that creates a friendly feeling of spaciousness and comfort.

Opened windows permit the executive an unrestricted view of his entire force. Yet, he can have complete privacy when desired with an easy turn of the crank. And the closed vanes reduce office clatter to a minimum.

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MISSISSIPPI Glass COMPANY

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residence: sliding-glass ceiling

SELECTED DETAIL

section A 1"SCALE

 Ceiling Plan 1/8"SCALE

RESIDENCE, Pacific Palisades, Calif.

Rt Kliegman & Frank E. Martin, Associate Architects

April 1952 143
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Here's the door of Three dimensions, emphasizing length, an outstanding design from any angle, from either side. This is the Morgan Tri-Panel Door... perfectly proportioned for creating an ever changing picture of clean sharp hi-lights and soft contrasting shadows. Here's the door... architecturally alive, structurally sound. The heavy hip-raised panels are correctly proportioned to the over-all design, and every detail shows the craftsman's touch. Available now in standard sizes to grace the openings of today's and tomorrow's homes. Write for details on: Morgan TRI-PANEL "The Door of Dimension"
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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.

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

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

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

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.

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.

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Plan at Window Jamb

SELECTED DETAIL

INTERMEDIATE METAL WALL ANCHORS

CONTINUOUS 6" x 4" x 3/8" BENT ST. STEEL

LIMESTONE

CONTINUOUS 4½" RAD.

PLASTER

WELDED

GLASS

14 GA. ST. STEEL,

9/16" STEEL CLIP-

JOINT SLEEVE

4"-3" MAJOR NRY

OPENING

CONTINUOUS 1" x 3"
ST. STEEL ANGLE

1/4" BRICK WALL

BENT 4" J.T.

STEEL

ST. STEEL SUP-

JOINT SLEEVE

ST. STEEL ANGLE

CONTINUOUS WELD

ABRASIVE METAL SILL

VENT HOLES

TOP OF ROUGH FLOOR-FLAB

ST. STEEL FLASHING

CAULKING

METAL INSERT

I BEAM

MASONRY OPENING

1/4" SCALE

LIMESTONE

CAULKING

ST. STEEL SUP-

JOINT SLEEVE

14 GA. ST.

STEEL

PLASTER

ST. STEEL SUP-

JOINT SLEEVE

ST. STEEL ANGLE

TOP SASH FIXED

ST. STEEL CLIP-

JOINT SLEEVE

GLASS

ST. STEEL ANGLE

INSULATION

SHIMS

VENT HOLES

1/4" SCALE

S P A N D R E L

ST. STEEL ANGLE

ST. STEEL ANGLE

INSULATION

SHIMS

VENT HOLES

1/4" SCALE

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for any kind of building—one kind

APARTMENTS
AND RESIDENCES

SCHOOLS

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

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

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INDUSTRIAL BUILDINGS

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Cawell-Collier Building, New York, N.Y.
Architects: Leonard Schultz & Associates

tools and hospitals... for apartments and residences... commercial and industrial buildings—the one sure way of l clients “the best” in windows is to specify “Quality-
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sify the one kind of aluminum windows that gives ese advantages—the kind that bears the “Quality-
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DOUBLE-HUNG
PROJECTED
AWNING

Aluminum Window manufacturers Association
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April 1952 159
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- **UNLOADED STARTING** ... permits use of normal torque motor.
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Based on Careful Laboratory Tests

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<thead>
<tr>
<th>Valve Type</th>
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<tbody>
<tr>
<td>Valve &quot;B&quot;</td>
<td>0</td>
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<tr>
<td>Valve &quot;A&quot;</td>
<td>10</td>
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<tr>
<td>Trane Valve</td>
<td>20</td>
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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 3/4” mortar bond. Benjamin K. Wyant, San Antonio, is the architect.
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freedom of periphery
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it's ECONOMICAL, EFFICIENT and extremely EASY TO INSTALL!

See it at the 4th International Lighting Exposition in Cleveland (May 6-9).
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 the quality of madness have a hypnotic effect. Who has not lost in the dimension of a snowfall-containing paperweight, held his breath watching the small harpsichord-remembering tinkle of a music box unrolled from its spiky cylinder?

In Lewis Carroll, the croquet mallets become flamingoes, like his time, that could not leave objects alone, but must brood, embellish, enlarge, encrust, until function grew hazy and lost its outline. A coin with dishonesty as its weak and exuberance as its strong, the Victorian era still serves 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 $M$.

We have soaked for long enough in the pale pudding of taste, and might be invigorated by a draught of the wonderful Art Nouveau.

Men have an aching need for the personality's thumbprint, the figurative totem, the enigmatic symbol, and the deluge joke of the frankly fake. The monstrous ice-cream-cone-shapes of 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 Brigg's Pavilion)—are an ugly yet wonderful American folk art that their cultural level they function as a three-dimensional Berg 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 boot scraper, 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, figureheads on ships, the Negro-boy woodcarving to hold the reins of carousels, and P. T. Barnum type-face. The necessity for unexpected surely dictated all figure- or head-shaped vessels, sculptured figured handles and knobs, the marvelous pair singling the hour on the bell-tower in Venice, and the huge graphic white horse cut into the chalk of the Berkshire Downs.

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 bizarre can make the palpable mysterious and unreal. It need not contradict the beauty of a good which has scraped modern design clean of horror.
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 that Philip Johnson—who has created the most sensational tour de force of modern architecture with his brick cube versus glass cube—credits the absolute of Ledoux's spherical 18th Century-turreted house as the source of his inspiration and authority. He transformed Barcelona with a frenzied Art Nouveau which其 unconscious relationship to the burgeoning shapes of his equatorial architecture. His characteristic asymmetrical forms 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 Bicki's plans for the capital city of East Punjab also synthesized the rich odor of locality with modern architectural usage.

Any knot of people on a draughty street corner, watching anamorphic metal animal totter across the pavement, is operating the spiritual wave-length that produced clockwork automatons of mechanical toys in the 18th Century. Jean Cocteau has not the ear for that sound. His living human-arms holding a stuffed bear holding a tray in some brown hall, or a dragon-headed armchair with ivory inlay, are my favorite lighting fixtures. The Victorians depicted in the cameo-head carved directly into the natural shell of a shell, celebrated with the gadget I covet most (the lidded penknife which bristled in the Crystal Palace), and rushed beautiful blown-glass-filled kaleidoscopes.

(August 1952 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 pull again.

Edgar Kaufmann’s bedroom with its continuity of pattern, 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. (Coequeau 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 Coequeau’s, which turned to water in the passing-through.)

Shapes, textures, and colors should be very instead of what. Why not replace the pale northern Swedish blues beige with the extravagant color of an Italian primitive painting. The dissonance of pink and orange, of olive green and beige, and the dark-bright gold-leaved background could do 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? Paint 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 pomposities of baroque stucco. Christmas-tree decorations seem more beautiful than the blown-glass they are because their perspex 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. Marbleized end papers of a book are more titillating than honest leather bindings.

[Continued on page]
QUALITY INDUSTRIAL LIGHTING

which introduces into the factory a unique and original design that incorporates all known techniques of good lighting;

which gives better quality illumination than any industrial fixture yet developed;

which provides continuous lines of light with no dark areas between ends of the lamps.

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A.L.S. comes in 4'-4'-8' Slimline. Rackets are available to give additional lengthwise shielding. Send for further details on Smithcraft's new A.L.S. Unit.

See it at the 4th International Lighting Exposition in Cleveland (May 6-9).
Andre 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 exciting possibility of 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 clunky. The decorator, Dorothy Draper, cleverly used intrinsically different old engravings in inflated photostats with equally large (and wilfully comical) frames to make arresting and ingeniously “pictures” of mural scale in hotel rooms. 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 with 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 became as phenomenal as the very strident, since only the relation of shapes and textures and lines is meaningful in design. The movement from rough to smooth, from very fat to very thin, 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 aesthetic.

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 Tug Anchors 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 heartenedness. The lesson has been learned. The prophet now a (glass-walled) house in suburbia containing an interior.
ight hard to make available and universal. Now that his
gbors (or at least the self-conscious interiors in the archi-
ts' and decorators' magazines) have the rough-stone-textured
l, the unpainted redwood wall, the piece of driftwood in
ce of sculpture, the Eames chairs, the Noguchi lamp,
become an old bore. Now that the room is quite scoured of
onsense, we might bring a bit of wonderment back into
at antiseptic, if beautiful, space. I have tried to note a few
as 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
ity and wit. The grillwork details and use of bold, sensuous,
ate shapes in the best Brazilian architecture promise to
ken the creative blood of designers, affected by the intel-
coolth of Mies van der Rohe. 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
 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
ner, original, spare, strange.

100

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

12—David bootjack, from American Folk Art by Jean Lippman (Pantheon
, Inc.).

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

14—gable—Peruvian artifact, from Old Peruvian Art by Heinrich Doering
in Art Books).

15—chair—photograph by Ralph Steiner.

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

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

164

18—cl house—Maison des Gordes Agricoles by Ledoux, from the Architectural
, September 1950.

165

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

166


168

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

169

23—mirror—pride of an English public house, from Buildings & Prospects
Piper (The Architectural Press).
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BOOKS RECEIVED


Water Treatment for Industrial and Other Ecol Nordell. Reinhold Publishing Corp., 33C 42 St., New York 18, N.Y., 1951. 526 pp., illus.

In the City Was a Garden. Henry Kraus. Re sance Press, 546 Fifth Ave., New York 17, N.Y., 255 pp. $3


The 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 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 of persons and buildings are fascinating; and through its diffuse spiraling the subject it manages to present a long picture of the times and some of the great persons who lived in them. For its enjoyment a background knowledge of English history is desirable; the book has been, obviously, for the British public. Even the tyro will gain from its surprising insights into the stresses and the dramas of eras of Charles I, the Commonwealth, Restoration, and the "glorious Revolution" 1688. As a picture of the conditions under which Wren worked, and as a narrative of architectural production, the book is exquisitely 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 to sentimentality.

The writings of non-architects on architecture offer great opportunities and also entail dangers. There is, above all, the possibility of giving the emotional effects of primary importance to architects—and there is the opacity of seeing the designer as a living person.

Then, too, there are the dangers of interpretation and false judgments that can be produced by ignorance or hollowness 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 partial. His admiring superlatives gives no sense of the emotional impact of the figures. And even the personality of Wren is tenuous and unreal; he tends to be the type genius, mathematician, astronomer, and inventor—a designer almost

(Continued on page 172)
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 pendente (p. 147) is almost misleading. There are too many misprints. A casual survey reveals gnomics for gnemonics, Contances for Coutances, Mendon for Mouzon, 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.

TALBOT HAMLYN


Full access to the files of the Aluminum Company of America gave the author exhaust 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 180'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.

**A Decade of New Architecture.** Edited by Sigfried 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 Congress of Modern Architecture). It isn't a reference book on outstanding modern architecture of 1937-47, nor a complete record of work accomplished in that period, nor yet one schol opinion and philosophy. Yet, to a degree involves all of these things. Perhaps the 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 1937-1 decade is that it represents the difficult dominated years when C.I.A.M. members

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(Continued on page)
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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 (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 (Bridgewater); 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 spirit's growth."

An outline for C.I.A.M. study of common 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 of 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, extended statement by Walter Gropius (U.S.) 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 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 intentional 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 metropolitian plans etc. Preceding each major classification is an introductory statement by editor.

As a cross section, it is an enlighten-ment selection and—oddly enough, since this but five years after the close of the decade—slightly nostalgic, particularly to anyone who has followed architectural publications familiar with the work of the 37th C.I.A.M. Congress. Text in the forward portion of the work (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 (Bridgewater); 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 spirit's growth."
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REVIEWS

(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 Corbusi—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 this volume—made possible, but undoubtedly never intended, by R. Lohse, the lay-out artist—is that it can be used for an architect's guessing game. Names of architects, the name of the particular building or project, its location, and the date built are all relegated to the bottom of the page. Thus, covering over the bottom, a play of conjecturing who designed what and when 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 1947 Reinforced Concrete Building Code. E.

children and the arts

MUSEUM ADVENTURE. The Story of the Grysler Museum. By Molly Harrison. University 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 177)
In this unique louvered structure comfortable temperature and humidity conditions are assured regardless of the weather outdoors.

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SEE YOUR PHONE BOOK
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 habitue. He had with him “his cousin Ernie,” age 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 hand-capped 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 the problems involved in the planning and building of a home. It takes up realistically the problems of orientation, the place for privacy, the advantages of varying sites. Since there is nothing comparable among 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 it has developed 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...
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There's more to satisfactory fluorescent lighting than lamps and a reflector. There's always a ballast in the fixture... and the way it performs determines whether you'll get full lamp life, rated light output and satisfactory performance.

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REVIEWS

(Continued from page 174)

ness of modern architecture by exhibits of the year's outstanding designs, and such cooperation 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 imputities 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

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)
In the church shown above, 30 Herman Nelson De Luxe Unit Heaters maintain comfortable temperatures for all services. These versatile units are equally effective for heating stores, offices, markets, display rooms and similar buildings where compact, attractive, quiet-operating heating units are needed.

There are eight models of these unit heaters available for floor, wall, ceiling or recessed installation. All models have an improved "combination type" heating element suitable for either steam or hot water operation. The De Luxe Unit Heater cabinet contains modern styling obtained through superior designing. The absence of projecting parts and its rounded ends contribute to its graceful appearance. The unit is finished in satin-smooth, tan, baked enamel so that it enhances the setting in any application.

Herman Nelson Unit Heaters are ahead of the field because constant engineering development and research plus functional design have earned this position—the result of 45 years of experience in the production of heating and ventilation equipment.
REVIEWS

(Continued from page 180)

lighting data

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 Visibility Standards, Daylighting, Color, Interior, 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.

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NOTICES

conferences
The NATIONAL CITIZENS CONFERENCE PLANNING AND RESOURCES will be held April 18-21 at Brown Hotel, Louisville, Ky. The theme of this meeting will be "The Great Water Controversies and the Best Solutions for the City, State, and Nation". Current problems of metropolitan growth and dispersal and 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, N.Y. This three-hour refresher course will endeavor to explain the latest developments in mortgage finance, construction costs, building materials outlook, new design techniques, search activities, public relations, and professional activities.

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

(Continued on page 184)
The free-standing Nesbitt Syncretizer Unit Ventilator with Wind-o-line Radiation extending from both ends of it, at the sill line.

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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.


NESBITT Syncretizer WITH WIND-O-LINE

Wind-o-line Radiation may be integrated as part of The Nesbitt Package of Syncretizer and storage cabinets.
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 DOUG HASKELL, editorial chairman of The Magazine of Building.

honorary membership

GEORGE H. MIEHLS, president of Albert Kahn 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 BRIGHT ACT for university lecturing and postdoctoral research in EAST ASIA and the PACIFIC. Included in this competition are awards for the following countries: AUSTRALIA, EGYPT, INDIA, JAPAN, NEW ZEALAND, PHILIPPINE ISLANDS, and THAILAND.

Persons interested in applying for awards under either the 1953-54 competition for...
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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, 8½x10½, 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 manufacturers' addresses is provided for those who wish further information and prices on any specific item.

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

Lettering Art in Modern Use

May 1952, 242 pages, 8 x 11 1/4, $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.

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The American House Today
by KATHERINE M. FORD and THOMAS H. CREIGHTON

235 pages, 500 photographs, plans and details, 8½x10½, $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

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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"

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Not a book, but a valuable new device for accurate and rapid construction of perspectives, The Perspector will prove a valuable time saver to both beginners and seasoned specialists in such fields as painting, sculpture, architecture, industrial drafting, engineering, and advertising design. This device employs the Ray Method, sum­plest of known perspective methods, for producing angular and parallel perspective drawings of exteriors, interiors and bird's-eye views. The device consists of a sheet of transparent plastic imprinted with a graph scaled one square to a tenth of an inch and under which may be placed the plan and front views of the object to be delineated. A special radiant ruler, adjusted to any point on the plan of the object, then indicates the delineation of the picture plane automatically and precisely. Any variety of perspective views may be constructed quickly from the same plan and front views.

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April 1952 187
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.

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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ARCHITECTURAL ACOUSTICS will be taught as a special short course, June 16-21, at M.I.T. Acoustics Laboratory, for practicing architects and teachers who have not had opportunity to become acquainted with developments in that field. Full information may be obtained from PROF. E. H. HUNTINGTON, Director of Summer Session, Room 33, Massachusetts Institute of Technology, Cambridge 39, Mass.

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

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 ROSENFIELD, Architect and Housing 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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"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

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It is about time that this column reinstate itself to its readers. We (the author) are known for our informality, lack of will power, unusage of the President's English, and consisence 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, Argentinian, and Australian. We constantly being unhorsed while tilting at windmills. Happily, through two and a half years have found the field of architectural and lighting education, in and out of school, a trial and rich pasture in which to graze. Our purpose has been, and will be, to allow thoughts and our thoughts to mingle in creative and untrammeled manner, with the hope that so doing we may suggest ideas which actually may be worth-while 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 teaching of architectural design, and basic sign. We have detailed curriculum problems, debated the teaching of planning, architectural engineering and light construction, and building. We have attacked the standard methods of teaching architectural history and the Beaux Arts Institute of Design. We have questioned the value of the prima donna education. We have talked art and craftsmanship. We have kept you informed of surveys and studies on education. We have presented a half dozen publications and discussed the hard year's apprenticeship. We have attacked architectural advertising and the lack of true professionalism 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 period we can get down to a systematic presentation of our case. In the meantime, bear with us for the sake of our publisher.

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

(Continued on following page)
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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" attributes offered by photography alone to many jobs. See how it works for Solvay... see how it can work for you!

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

(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 being discussed this month is that at the University of Thelem. This is, as you know, one of the oldest schools. It was founded in that heyday of 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. Those were the days, too, when the professor of his thought in terms of cymas and ogives, forget to find out who or what a building was for; the designer wallowed in washes, to be judged as architecture 300 miles away.

The organization of the Thelem Architecture School, being a bellwether, is an interim 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 overall curriculum. Administration, having undergone reorganization a few years ago, is in the hands of an annointing Chairman of the Faculty of Architecture. This enables the Deanship to remain inviolate while providing both democratic procedure and the necessary political pressure on the part of every faculty member. Said the Dean: “It keeps the young up! 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. The chairmanship will be a liberal one—with a adherence to progressive lines—and no sliding will be permitted (as was done by previous chairman).”

In order that full democratic action be sustained, there is also a well organized student body, under a Council of Student Governing 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 Administration.

*(As a matter of record, I have, after much research, identified two architectural schools that designed own buildings. Both were later condemned as structurally unsound, and nonconforming to architecture.)
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Arkwright's extra quality shows right from the start. You can re-ink clean, razor-sharp lines on Arkwright Tracing Cloth over the heaviest erasures without feathering or "blobbing". And you can get clean, clear blueprints — if you need to — for years and years to come.

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In these Adams-Rite Deadlocks, designers and contractors have found a 3-fold advantage:

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2. The locks are made entirely of rugged stamped steel and extruded brass. No delicate hand-fitted parts.
3. Conform to all current N.P.A. material regulations and are available from stock.

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 vary by standard 1 5/8" diameter cylinder without modification. They have a bucket of 5/8" and a depth of 11/4". 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.

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 Rainey, will be included. Artists represented include BOURDELLE, DENIS, DESVALLIERES, ROUAULT, KAEPPHELIN, 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.

m ents 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.

200 Progressive Architecture
Clean Plate to Clean Plate
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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.

Swartwout Airmover combines these important advantages in large scale ventilation

You can make wide use of Airmover's many advantages for a large variety of buildings. In this exclusive Swartwout Ventilator design you get (1) great exhaust capacity without power cost; (2) low, spreading contour that eases roof load, enhances the building's appearance, and avoids stays and guy-wires; and (3) provides lowest cost ventilation per square foot of roof opening.

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Low cost—
low contour;
Swartwout Airmover combines these important advantages in large scale ventilation

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 utility 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 and 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 unlicensed practitioners were encroaching on the practice of Architect we have been able to get the courts to adopt 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 barred 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 charge of the work are licensed.

The Virginia statute is more properly classed 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, 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 is or she is qualified so to practice, to be certified as herein provided. It shall be unlawful for any person to practice or to offer to practice the profession of engineering, or..."
The majestic new Veterans Administration Hospital in Seattle, Washington exemplifies the functional beauty of Ceramic Veneer. The entire elevation shown is faced with this adhesion type machine perfected terra-cotta, including the projecting canopies at each story as shown in the small inset photograph.

Versatile Ceramic Veneer was also applied throughout the entire entrance lobby. The variety of colors — modern character — light weight and low maintenance cost makes Ceramic Veneer the best choice for a permanent, economical building facing.
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The Weldwood Stay-Strate Door is available in the same wide range of beautiful hardwood faces as the Weldwood Fire Door...and offers the same advantages except that the edge banding is not fireproofed.

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United States Plywood Corporation carries the most complete line of flush doors on the market including the famous Weldwood Fire Doors, Weldwood Stay-Strate Doors, Weldwood Honeycomb Doors, Mengel Hollow-core Doors, Mengel and Algoma Lumber Core Doors, 1 1/4" and 1 3/4" with a variety of both foreign and domestic face veneers.

WELDWOOD FIRE DOOR SPECIFICATIONS

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" fire-proofing agent. The top banding is 1/4" in thickness; the side banding 3/8"; and the bottom banding is 1 1/4" in thickness, made by laminating two 3/8" pieces.

Crossbands—Crossbands are thoroughly kiln-dried hardwood, 1/16" thick, extending the full width of the door.

Adhesives—The core and edge banding are bonded together with a waterproof resin glue. The entire core is sized on two sides to insure perfect glue bond between core and crossband. The core, crossband and face veneer are bonded with waterproof Tego film phenolic glue by the hot plate process.

Sizes—The thickness of all fire doors is 1 1/4". Available in range of standard sizes up to and including 4' by 7'.

Vision Panel—If required, a vision panel frame for a 10" x 10" light (only size available) shall be provided carton-packed and complete with screws. A baked finish of light brown metal paint is provided on all surfaces. Glazing with 1/4" wire glass shall be done by others.

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If you think all convectors are alike, you'll find Catalogs No. 4049 and 4150 revealing. They give full details, including illustrated features of Young Convectors, approved ratings, dimension data, etc. Be sure to have a copy in your catalog file. It will be sent you without obligation.
Versatile stucco
offers modern tone and texture contrast

Stucco makes possible a smart modern appearance at low cost in this Portland, Oregon, apartment building. Snowy white stucco areas made with Atlas White Cement are decoratively accented by contrasting window sections made with standard grey cement.

A full range of stucco’s color and texture possibilities can be achieved with Atlas White Cements. They are true white and make pure, uniformly white stucco, or enhance the delicate values of pigments in colored stucco.

Atlas White Cements are available in three types: Regular, Waterproofed and Duraplastic* air-entraining. Atlas White Duraplastic Cement gives increased plasticity for easier application—yet costs no more.

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.

For further information see SWEET’S Catalog, sections 4E/7a and 13C/5 or write to Atlas White Bureau, Universal Atlas Cement Company, (United States Steel Corporation Subsidiary), 100 Park Avenue, New York 17, N.Y.

*"Duraplastic" is the registered trade mark of the air-entraining Portland cement manufactured by Universal Atlas Cement Company.
mammoth decks of this huge new air terminal
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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 2)

required by statute may constitute a mis- meanor and also render the contracts he has tered into for the performance of professional services illegal and void.

New Mexico. Kaiser v. Thomson, 55 N.M. 2 232 P. 2d, 142 (1951). A contractor sued the reasonable value of his services. Prior entering upon the work the contractor's license had expired. Subsequent to the completion 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 contrac he had entered into was unlawful unenforceable. The defendant could not estopped from asserting this defense, where contract was illegal when made.

Supplementing Chapter 4:

**Powers of Licensing Boards**

Licensing Boards created by statute may g and revoke licenses as empowered by sta Courts will generally overrule their deter option only in clear cases of abuse of discre Arkansas. State Licensing Board v. Jones, S.W. 2d 547 (1951). The Arkansas State Lic ing Board for General Contractors refuse issue a license to the plaintiffs out-of-state tractors, because while their application such license was pending the contractors mitted a bid for work to be done in the : of Arkansas.

The Court held that the license should granted. The record showed that the con tors acted in utmost good faith and did violate the spirit or the intent of the Stc The powers of the Board should not be cised in a capricious, unreasonable, or arbi manner.

Supplementing Chapter 20:

**Right to Compensation**

An architect or engineer is entitled to car sation for preparing plans and specifica and supervising construction, where he i played in such capacity and substantiall forms his duties under the contract.

California. Bodmer v. Turnage, 233 p. 2 (1951). The plaintiff, architect, brought c tion against the owner for the reasonable of services rendered to the defendant parties had entered into a contract where
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The entire rear wall of the combustion chamber is water-jacketed. No brick work to burn out or radiate heat into the boiler room. Rear access door in water wall facilitates cleaning.

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All heating surfaces, including the rear furnace wall, are water jacketed in this popular Fitzgibbons steel boiler. As a result, there is greater heat transfer, flue gas temperatures are lower, full consumption is reduced and the usual rear dry wall refractory lining is eliminated. The low water line and corresponding low head-room further simplify installation where conditions require this type of boiler. Catalog PA4 gives complete details. Write for it today.

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(Continued from page 208)

The 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.


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.


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...
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Due to the complexities of modern flooring materials available today, selection is increasingly a job for trained flooring experts... men like the Kentile Flooring Contractor whose years of study and experience qualifies him to choose the right floor for every installation... the one floor that has most to offer in appearance, durability, and economy in the use to which it will be put.

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April 1952
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See Sweet's Architectural File—Section 31A-12

A recent Kayline installation is in The Department of Justice Building, Washington, D. C.

it's the law

(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 v. Robb, Inc., 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, Brentwood 17, Mo.

GERALD ANTHONY PAUL, Architect, announces the removal of his office to 199-03 111 Ave., Hollis 12, L. I., N. Y.
You save on-the-job supervision time when you specify a Heatilator® Fireplace! You know in advance that it will work properly and that your clients will be more than satisfied. That's because this unit comes complete with firebox, throat, downdraft shelf, damper and smoke dome...fully assembled and ready to install. Construction is standardized and the scientific design protects you against rule-of-thumb building methods...assures smokeless, trouble-free operation.

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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 only the support being placed under each corner. Second, the entire slab was supported at the center 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 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 thir 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 and the inverted pyramid deflected only one-quarter as much as the FHA. In their experiments the Housing Research Foundation kept the constant in all designs with the view of digging 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 sible with less money.

It is believed that a less expensive tural concrete slab floor of this same ge design would be satisfactory on more soils in the north after a technique has devised for insulating the slab edges and slabbing the perimeter against heat loss. crete-slab floors used in the north today generally poured inside the perimeter foundations in the sub-floor area against frost. Peri foundations are an expensive method of suating the sub-floor against heat loss it is possible that a better method will follow from further research.

Full-size (24' x 36') house slabs have been constructed on ground thought to have soil, in order to check the deflection char of two of the model slabs. One of the FHA slab, has a reinforced perimet (Continued on pag...
CO FAR
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Because it's manufactured from a low-carbon steel to begin with, Granco "tough-temper" does not require critical alloying to gain its high tensile strength. Instead, controlled cold-rolling, with strain hardening as the result, gives high and unusual physical properties. The structure of the steel itself actually changes . . . the crystalline elements re-align . . . to produce a steel with a minimum yield point above 80,000 psi; and an ultimate of over 100,000 psi. This is tough steel!

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We'll be glad to tell you more about any Granco product you are interested in, just write Department 11-4, you will get a speedy answer. For helping you is the most important part of our job. It's our way of saying "thanks" for specifying Granco.

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minimum lamination hum:
Coils slip over center leg which is then forced into the die cut outside stack. Riveting, varnish impregnation and curing further solidify core and coil into one solid assembly. Virtually eliminates lamination vibration.

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(Continued from page 214)

intermediate beams, while the other is a 10 1/2"-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.

Four collateral advantages of the uniform flat slab have been noted:
1. The site preparation for the under-slab fill and the placement of the fill become a simple machine operation.
2. Capillary moisture is much easier to prevent because the membrane can be mapped more carefully as a flat sheet than when formed in trenches for beams.
3. The reinforcing is uniform in size, method of placement, repetitious in its pattern, and is designed and placed to resist bending in either direction.
4. The 10 1/2" slab provides an excellent depth for the inclusion of heating and cooling ducts. The many hours saved on the simplicity of the flat slab might either provide a dollar savings with the same strength attainment, or they can be re-invested in creating an added factor of safety.

PLASTIMENT™-CONCRETE SATISFIES ALL FOUR BECAUSE

* PLASTIMENT is the chemically Retarding Densifier especially developed for concrete work which requires your guarantee. Retards set, densifies mix to provide controlled properties far superior to reference concrete. Designed for use with all types of aggregates and all methods of mixing and placing. PLASTIMENT-Concrete's ease of handling and superior results find ready on-the-job acceptance in every phase of construction. For full details, write or call.

APPROVED: PLASTIMENT and other Sika Products have been tested and approved on Federal, State and Municipal projects, and are approved under Building Codes of principal cities.

The One Sure Way to Make Stairs Non-slip—Use ALUNDUM Stair Tile!

For stairs that are always safe from the slipping hazard—even when wet—specify Alundum Non-slip Stair Tile.

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NORTON COMPANY
Worcester 6, Massachusetts

Making better products to make other products better

NON-SLIP FLOORS