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Structural Engineer: TUCKER & EIPEL, New York
General Contractor for Superstructures: CAULDWELL-WINGATE CO., New York
Concrete Construction by: CORBETTA CONSTRUCTION CO., INC., New York
Ready-Mix ‘Incor’ Concrete: COLONIAL SAND & STONE CO., INC., New York

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Above: Small, compact pneumatic valve is easy to install on small convectors and other heaters where space is limited. Available with union angle and straightway bodies and standard packing.
No special collections needed for heating maintenance here—the RADIANT HEATING uses **BYERS WROUGHT IRON PIPE**

In this new church, the designers not only gave careful thought to the comfort of the congregation but also to the elimination of excessive upkeep-costs of the heating system. Following sound, proven practice in safeguarding against premature failure and costly maintenance, they specified genuine wrought iron for the radiant heating system and waste and vent lines.

Byers Wrought Iron pipe was laid on the first and second floors and encased in concrete. The system is automatically zoned; the small illustration shows the circulators and control boxes in the boiler room. The electronic control boxes are on the panel board to the right of the circulators.

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ARCHITECTURAL RECORD

DECEMBER 1950
Each of the pupils in positions A, B and C have equal protection against drafts. Yet every pupil in every part of the room has the benefit of fresh air from scientifically controlled ventilation. Good health, good study habits and prevention of noise are benefits of the wonderful new DRAFT STOP System — an exclusive development of Herman Nelson, leaders in modern classroom ventilation.

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ARCHITECTS GATHER AT FOUR STATEWIDE MEETINGS; REGIONAL COUNCIL FORMED

Gulf States Regional Council Founded at Louisiana Meeting

Formation of a Gulf States Regional Council of the American Institute of Architects was the top news from the fifth annual convention of the Louisiana Architects Association, held November 9-11 in New Orleans.

The new Council, representing A.I.A. chapters and state associations in Arkansas, Tennessee, Mississippi and Alabama, will serve in an advisory capacity to plan regular regional seminars and other activities promoting exchange of information and ideas.

Gulf States Regional Director Howard Eichenbaum is Council chairman, and William Smith of Baton Rouge is secretary-treasurer.

Organizational meetings of the Council were held concurrently with sessions of the Louisiana architects, who managed to enjoy a lot of New Orleans-style sociability between business meetings.

At the annual banquet, Louis Justement of Washington, D.C., the principal.

New York State Architects Hold Convention at Syracuse

Amendment of the state education law to stop licensing of persons who are not architects was recommended in a resolution adopted by the New York State Association of Architects at its three-day annual convention in Syracuse last month.

The resolution recommended appointment of a committee, chosen from the association, to investigate possible violations.

An architectural exhibit and presentation of certificates of award to architects of buildings in four categories highlighted the convention, which also will be memorable for the discussion evoked by the most provocative of its seminars: Traditional Versus Modern Architecture.

Henry V. Murphy of Brooklyn was reelected president of the association. Other officers reelected were: Irving Seelig, Brooklyn, first vice president; G. Morton Wolfe, Buffalo, third vice.

PIETRO BELLUSCHI TAKES M.I.T. ARCHITECTURE POST

Pietro Belluschi of Portland, Ore., is the new dean of the School of Architecture and Planning at Massachusetts Institute of Technology. He succeeds William Wurster, now dean of the School of Architecture of the University of California.

Mr. Belluschi will join the faculty at M.I.T. on January 1, but he will continue his architectural practice in Oregon until all current and pending contracts are terminated. During this time the oldest associates of his firm will form a new partnership to be known as Smith, Richardson, Kotchik and Allen, which will assist Mr. Belluschi in carrying out his old contracts and will assume new ones on its own behalf, with Mr. Belluschi as the firm's consultant.

Mr. Belluschi came to this country from Italy in 1923, with a degree of Doctor of Architectural Engineering from the University of Rome. After advanced studies at Cornell, he joined the staff of the Portland firm established in 1906 by the late A. E. Doyle. The firm took Mr. Belluschi's name in 1943.

The new dean's past activities have also included a stint as visiting professor in the Department of Architecture at Yale University. He is a member of the National Fine Arts Commission.
pal speaker, reviewed 50 years of progress in city planning and architecture and lamented the time-lag in those fields compared with achievements in science and technology. But a developing consciousness of the need for city planning was cited by Mr. Justement as the most encouraging development in architecture in America during the past two decades.

Walter Rolfe, Houston, in his address at an earlier session, had emphasized that "city planning should come from the people and not be superimposed on the people."

Morris Ketchum of New York conducted the seminar on store planning at the final business meeting. More regional store architecture to make design suit individual areas was urged by Mr. Ketchum.

A.I.A. President Ralph Walker addressed the luncheon session on the final day. Convention speakers also included A.I.A. Vice President Glenn Stanton of Portland, Texas Regional Director Thomas D. Broad, and Mr. Eichenbaum.

William E. Bergman of New Orleans is the new association president, succeeding Ralph Bodman of Baton Rouge. Other new officers are William B. Wiener, Shreveport, first vice president; Richard C. Murrell, Baton Rouge, second vice president; August Perez, New Orleans, secretary; and C. Errol Barron, Alexandria, treasurer.

A.I.A. Executive Director Edmund Purves was the convention's keynoter; and speakers also included Ralph R. Kaul, head of housing and community facilities for the National Security Resources Board, whose topic was "Architects in Atomic Warfare"; and A.I.A. Second Vice President Kenneth E. Wischemeyer, who was principal speaker at the annual dinner.

Raymond Phelps of San Antonio was elected president of the Society and Herbert Tatum of Dallas, vice president; Mr. Phelps named Richard Vander Straten of San Antonio as secretary-treasurer.

D. A. Hamilton, head of the department of architecture at Oklahoma A. & M., was judge for the convention exhibition. Awards went to owners of buildings, as a salute to their part in making it possible for the architect to do a good job. The architects received certificates.

Architects cited were: Golemon & Rolfe, Houston—St. Francis Cabrini Hospital, Alexandria, La., and St. Theresa School, Houston; Stone & Pitts, Beaumont—Houston Coca Cola Plant; Staub & Rather, Houston—Fondren Library, Rice Institute (Architectural Record, June 1950), and their own office building; Robert L.
White, Dallas, and Walter Cocke Jr., resident architect—Memorial Grand Lodge Temple, Waco; Gabert, McKie & Kamrath, Houston—Temple Emanuel, Houston; Thompson H. McCleary, Houston—own residence; Grayson Gill, architect, and George Harrell, associate, Dallas—Rio Grande National Life Building, Dallas. (Architectural Record, November 1950).

Illinois Meeting Held

The Architects Association of Illinois met late in October at Springfield for sessions which were reported quite stimulating for the 65 members who attended.

Tracy B. Augur of General Services Administration, Architect Curzon Dobell and Rea Esgar were among the speakers; and Joseph Booton conducted a guided tour of the restoration at New Salem.

Edward Kane, Edwardsville, heads the Association. Other officers are J. R. Fugard, Chicago, vice president; and E. E. Lundeen, Bloomington, secretary.

NEW YORK (Continued from page 9)

president; Maxwell A. Cantor, Brooklyn, treasurer; and John W. Briggs, Rochester, secretary. Leonard Waasdorp, Rochester, succeeded George B. Cummings of Binghamton as second vice president.

A.I.A. President Ralph Walker was among the speakers, who also included Prof. Eric A. Arthur of the University of Toronto Department of Architecture and Brig.-Gen. Washington Platt, head of Syracuse University's administrative engineering department.

Edgar I. Williams of New York, programmed to uphold the Traditional, and Philip Johnson of the Museum of Modern Art, for Modern, managed to find a pretty wide area of agreement in the seminar they shared. Architectural Editor Douglas Haskell of The Magazine of Building was moderator.

Other seminars were conducted by James McElroy of the National Fire Prevention Association (Fire Prevention) and Gilmore D. Clarke, American Association of Landscape Architects president (Landscape Architecture).

Awards in the architectural exhibit were made as follows:

Commercial—Carol Antell Specialty Store, New York City; Seymour R. Joseph of Joseph & Vladeck, architects.


Educational—No award.

Institutional—Tuberculosis Hospital, Rio Piedras, P.R., Isadore Rosenfield, architect; St. Barnabas House, New York, Ketchum Giná & Sharp, architects.

Public works—No award.

Several Mentions were listed in addition to awards.

When the newly-appointed members of the National Fine Arts Commission had their first meeting in Washington, they were entertained at luncheon by the American Institute of Architects. Pictured at right, with the Octagon in the background, are [left to right] Felix W. de Weldon, Joseph Hudnut, George Biddle, David E. Finley, Albert Peets and Pietro Belluschi, MIT's new dean of Architecture and Planning.

First pictures of entire group of buildings designed by Wright at Racine: photo below shows research tower and adjoining buildings just completed and (at right) administration building, opened in 1939. Above: closeup of tower.
WRIGHT'S CORE-SUPPORTED TOWER UNVEILED IN PHOTOGRAPHS

Research and Development Tower Added to Group
Designed for S. C. Johnson & Son, Inc., Racine, Wis.,
by Frank Lloyd Wright, Architect

This already long-famous building in Racine, Wis., was formally opened November 17, and the group of structures designed by Frank Lloyd Wright for S. C. Johnson & Son, Inc., was officially complete.

Its significance in architecture and engineering is already demonstrated in the frequency with which sections of its core-type structure and renderings have appeared in the literature. It is, of course, the first large structure of this type actually to reach construction, and as such it will give sharper point to all of the discussions, once strictly theoretical, of this method of using the principle of continuity. It provides the first practical test of the idea, if not exactly a test of its economic feasibility.

At any rate, the world of building design shares a debt of gratitude to the persuasive old master and his progressive client, which is already well on its way to repayment, if the fame that comes from study and inspection and mere gaping is to be accepted as coin.

The central core is actually a cluster of circular, reinforced concrete shafts. The center, or main shaft, 13 ft in diameter, houses the air supply and exhaust ducts plus all of the utility and building piping services, always a special problem in a laboratory building. In section, a circular elevator shaft cuts into the main shaft on one side, a semi-circular stairway on the other. The concrete walls of this main trunk carry the entire load, 8,000 tons; they vary in thickness from 7 to 10 in.

The central core extends downward 54 ft in the ground, for the necessary anchorage. Considerations of stability against overturning added a tapered circular plate and a thickened section. It is interesting to note, by the way, that while engineering calculations for this type of structure might appear quite simple, in actual practice they are not—there are no handbooks or tables to use. Such is the price of invention.

Exterior walls are constructed of glass tubing laid horizontally and held in place by stainless steel wires binding them to aluminum supports on the inside. Between rows of tubing are strips of synthetic rubber for caulking. Inside the glass tubing is a wall of plate glass.

Pilot plant, also designed by Wright, is two-story structure
ARCHITECTS HONORED FOR "OFFICES OF THE YEAR"

Six architects (photo at left) have been honored with citations for their part in creating the winning offices in the 1950 “Office of the Year” Awards sponsored by the magazine, Office Management and Equipment.

Bronze plaques went to the offices adjudged outstanding in each of two divisions — those employing fewer than 500 persons and those employing more. There were two Honorable Mentions in each category.

Selection of winners of these first annual awards was based on a nationwide poll among A.I.A. members most active in office design and members of the Association of Consulting Management Engineers.

$3,900,000 SHOPPING CENTER UNDER WAY IN NEW JERSEY

Construction is under way in East Paterson, N. J., on the $3,900,000 Elmwood Shopping Center designed for the Grand Union Company by Kelly & Gruzen, architects and engineers.

The center, with parking space for nearly 3000 cars, will include a supermarket and central offices for Grand Union, a drug store, a bank, and several large chain stores on a plot 760 by 163 ft.

The eight-story tower, containing offices and service core, is a modification of the tower used by Grand Union on its stores across the country. It will be faced in cast stone, with continuous bands of windows rising on both sides and continuing all across the top story.

Exteriors are aluminum and glass.

POWERS REGULATOR CO. BUILDS SKOKIE PLANT

Scheduled for completion next summer at the time of the company’s 60th anniversary is a new plant for the Powers Regulator Company on its 13-acre site in Skokie, Ill.

Sessions Engineering Company of Chicago are architects and engineers for the building.

The new plant, which will contain 130,000 sq ft, is 575 ft long. The two-story office, test and research laboratory section, 290 ft wide, will have face brick and stone exteriors. It will be completely air conditioned.
Unventilated walls with ordinary insulations which permit water vapor to seep through, condense and accumulate, can cause damage. Over a million dollars was recently spent in ripping out and replacing crumbling plaster walls in a tremendous brick and steel, nationally known, apartment development in Greater New York.

Vapor, a gas, flows through a wall, including plaster and asphalt, from high vapor density areas to low. Upon reaching a substance colder than its dew-point temperature, it condenses.

"Dew will not form on the walls and ceilings of a well-insulated house. But it may condense in the insulation in the walls or on the siding or sheathing. The insulation and wood then become damp. In time this dampness may cause the wood to rot, and the paint to peel off." U.S. booklet, "Insulation and Weather-proofing," Page 11, Division of Farm Buildings and Rural Housing.

Multiple accordion aluminum is impervious to vapor and is non-condensation forming. Because of its slight mass, the aluminum sheet on the warm side quickly approximates the temperature of the contacting air; and never falls below the dew-point. Heat flow by inner as well as outer convection is blocked by the fiber and aluminum sheets. The air spaces practically eliminate conduction. The additional aluminum sheets reflect back 97% radiation on the warm side and emit only 3% on the cold side.

Because of low (3%) emissivity, the aluminum on the cold side is slightly warmer than the cold contacting air, so condensation on it is not possible. No dew-point is possible anywhere on or within the insulation.

This construction for walls is available commercially as INFRA INSULATION, TYPE 4 and TYPE 4 Jr. They cost under 7¢ a sq. ft., material with labor, in new construction between wood joists.

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Down-Heat C.064, R15.62 equals 5" DRY Rockwool
Up-Heat C.109, R 9.17 equals 3" DRY Rockwool
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DECEMBER 1950
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RAPID defense developments in Washington during the past few weeks have cast new light on the place of architecture and contract construction in the war program. Taken as an immediate adjustment, or a long-range plan, the federal changes unmistakably spell out a significant change from the business-as-usual pattern. From now on, architects and contractors will do their future planning with this changing picture in mind. Probable material shortages — certain in the common metals — seem certain to be much in the news. Aside from metals, indications are that cutbacks in residential building will remove most material difficulties.

The architects are shifting their attention to federal defense programs. The National Production Authority has banned all further commencement of amusement, recreation and entertainment buildings. The NPA order (M-4) carried a direct threat that going construction of other types might be halted at a later date if it did not contribute to the defense effort. On the immediate complaints from the Associated General Contractors and other segments of the industry, the agency a few days later revised its M-4, removing the retroactive reference. Contractors said they were satisfied. But the fact remains that the control agency, with its broad authority flowing from the National Defense Production Act of 1950, has power to curtail construction drastically.

Section 22.12 of the Order lists 44 types of amusement, recreation and entertainment construction specifically prohibited. The regulation, which took effect October 27, also contains the catch-all phrase: “Any other recreational, amusement or entertainment purposes, whether public or private.”

Washington Visits Unnecessary

The new personnel appointments in NPA are important to architects insofar as the agencies’ powers can be applied in the fields of building materials and construction controls generally. And as stated, those powers are broad.

James W. Follin, whose name is familiar to architects and engineers, is on loan from General Services Administration to head NPA’s construction controls division. And John Haynes, another person familiar to the industry, will head the agency’s building materials division. In these respective capacities, Follin and Haynes will serve under H. B. McCoy, assistant administrator of NPA in charge of industry operations.

The Follin section will deal with administration policy concerning the various limitation orders on construction. It already has made a thorough study of M-4 and its application to date. Staffs are being organized. Amendments to present orders are being studied.

Another name familiar to the building industry, that of Frank R. Creedon, former federal housing Expediter, appeared on the NPA appointment list. He was named to organize and direct a Facilities Clearance Staff to handle applications for certificates of necessity in connection with industrial expansion for the defense program. The applications, concerning a shortened amortization period for tax purposes, come over to NPA from the National Security Resources Board which makes the final determination.

While these important developments take place in Washington, architects are being advised it is not necessary for them to come to the nation’s Capital to make inquiry about new commissions. The various bureaus and agencies have attempted to make all pertinent information available through field offices of the Department of Commerce (of which NPA is a part) and the General Services Administration, the procuring agent for the federal government.

A.I.A. Keeps in Touch

A complete inventory of the architectural profession is being established at A.I.A. headquarters here on I.B.M. cards. Returns to earlier questionnaires sent out to all registered architects concerning their experience and present capacity to serve the defense effort are still coming in and being tabulated at the Octagon. Further, A.I.A. has issued (Continued on page 16)
a scratch list of federal agencies that are engaging outside architects for their projects now, or can be expected to do so at some future date.

For some months special emphasis has been placed on the plans for future development of Air Force bases. With approximately 100 master plans to be prepared, the architects are watching developments with keen interest. The construction of airport runways, buildings and appurtenances in this long-range effort may eventually involve expenditures of $25 million to $100 million in each case.

A pattern for selection of architects and engineers from the various professional fields may have been established for this long-range program in methods employed in naming designers for the new Washington, D. C., airfield. Here, Civil Aeronautics Administration considered naming a team of architects and engineers to collaborate on preparing plans for the $14 million project. This new method of approach could set a precedent not only in its peculiar application to single projects, but in the field of mutual interest and cooperation among the professions as well.

Services represented on the Washington airport planning team included architectural, civil, electrical, landscape and mechanical.

The A.I.A. was advised by the Air Force that on the larger program a project architect would be selected by the major area command subject to final approval by Washington headquarters. Because of rapidly changing technical advances, the Institute said it did not

(Continued on page 18)

**Ontario Architects Report**

**Public Relations Research**

The Ontario Association of Architects Committee on Public Relations, headed by Douglas E. Kertland of Toronto, has published an interesting report on the subject of architectural public relations. A summary of the results obtained from investigating current activities in the field reveals that:

"Architectural organizations in Canada, the United States and the United Kingdom seem to be well aware of the need to acquaint the public with what architecture is and what an architect does. Most have public relations programs.

"The common denominator is regard for architecture as a public service, and for architects as suppliers of that service. Invariably, emphasis is laid on the pre-eminent and unique place the profession occupies in the construction industry. In other words, no other artisan or technician can be an adequate substitute for an architect.

"The R.I.B.A. public relations program is the oldest among those of the architectural bodies studied. Those of the A.I.A. and its larger chapters are more recent, and in some aspects far less conservative. For example, it is the custom in the United Kingdom to wait for the press to come to the R.I.B.A. seeking news. The most active A.I.A. chapters, on the other hand, initiate events to secure press space.

"The R.A.I.C. depends for its public relations program on the Standing Committee on Public Information. Considerable work has been done under various chairmen, but it is difficult to measure what has been accomplished. This is always the case with public relations activities. Achievements cannot be

(Continued on page 210)
Among those affiliated with this tremendous project were: Howard S. Cullum, Chairman of the Board; Austin J. Tobin, Executive Director; and John M. Kyle, Chief Engineer and his staff, all of The Port of New York Authority; and Turner Construction Company, Builders.

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THE RECORD REPORTS

necessarily follow that past experience in design of airfields should be the prime reason for such selection. It made the suggestion that associations of engineering specialists under the leadership of an architect might be considered.

The Institute's committee also recommended that architects be selected as acceptable on the basis of qualifications and ability to perform. The preferred architect would then be called in for complete negotiation on one of the following two bases:

1. Provided full scope, cost of construction and performance time can be established, a lump sum contract can be agreed on.

2. Where project is of indeterminate nature as to scope and/or performance time, the compensation should be on the basis of a fixed fee plus reimbursable expenses.

WASHINGTON (Cont. from p. 16)

If this first negotiation is not successfully completed, it was suggested that it be permanently terminated, and the next acceptable architect called in for negotiation.

This is but one of the "defense fields" in which architects are showing special interest as the emphasis changes to defense projects.

Budget Bureau Trims Widely

Another program important to architects that will not be crippled badly by the budget cut is the Community Facilities Service advance planning for non-federal public works. Housing Administrator Raymond M. Foley has announced that the program will be realigned with project applications brought under two new criteria. Now, the CFS staff is weighing applications in the light of (1) whether projects contribute directly to defense; and (2) whether projects meet essential and immediate civilian requirements.

Savings under this new approach are estimated to be $15 million in the fiscal year. Approximately 700 applications for the interest-free loans to help states

(Continued on page 20)

Design Data Needed by Nuclear Science Group

Architects who have designed or completed projects involving facilities for the use of radio-active materials are being asked to inform the A.I.A. Committee on Architecture and Nuclear Science.

The committee, which also seeks a list of architects who have worked on projects of the Atomic Energy Commission, is collaborating with A.E.C. and other technical groups to compile information for architects on design of projects requiring facilities for handling products of nuclear fission.

Information should include a brief description of the project, the special purposes of the buildings and related problems, like housing for experimental animals, etc.

Communications should be addressed to: Committee Chairman Thomas K. Fitzpatrick, Iowa State College, Ames, Iowa, with copy to Department of Education and Research, the Octagon, 1741 New York Ave., N.W., Washington 6, D.C.

WEATHER STRIPS FOR SLIDING DOORS

This residence, for which Emil A. Schmidlein, Orange, N. J., was the Architect, typifies the definite trend toward sliding doors opening on terrace or patio. Doors that need no "swing back" wall space and are 100% weather and termite proof. Doors that open and close smoothly, quietly, easily, because they are fitted with "Accurate" patented metal weather stripping—the recognized material to do this job right. There's no substitute. Write for working drawings—or ask for Illustrated Folder.

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Write for Complete Data
and their political subdivisions plan non-federal public works are on file in CFS field offices and in the headquarters office here. All are being restudied under the new criteria.

Budget Bureau, in making its general reduction in the 1951 appropriations bill, slashed the program $15 million. Congress has provided $47 million for fiscal 1951. But another $10 million has been reserved for release if need warrants. This means it can be used during the fiscal period if emergency situations warrant. Potentially, this leaves $32 million that could be used; $22 million assured for orderly continuation of the planning of these schools, streets, sewers, waterworks, hospitals, municipal buildings and other non-federal projects.

Commissioner Pere F. Seward has directed his field offices to consider applications for projects which measure up to this definition of essential civilian requirement: any public works "the lack of which would seriously impair the health or lives in the community, or deprive the community of the minimum public facilities required to meet the basic American standards of living, transportation or commerce." Upon broad interpretation, this could leave the door open for many projects that at first glance would appear to be barred in the realignment order from Mr. Foley.

(Under a Presidential reorganization plan approved by Congress, CFS was transferred some months ago from the General Services Administration to the Housing and Home Finance Agency.)

In all, 31 departments and agencies felt the economy wind blowing out of the Budget Bureau. The fiscal authorities cut a total of $580,271,335 from the fiscal 1951 appropriations act—at the direction of Congress itself—and placed the amount in reserve status. Congress had required that it trim the over-all amount by not less than $555 million.

Here are examples of how some of the planning and construction programs were affected: Housing and Home Finance Agency was cut $15,750,000 in total; Agriculture's rural electrification loans, $66,427,000; Farm Housing loans, $24.5 million; Army's Corps of Engineers, $50 million; Interior's Reclamation and power marketing agencies, $56,950,000; General Services Administration, $21.5 million.

School Construction Needs

The state-by-state survey of school inventory and school construction needs will go forward but with some limitations. The U. S. Office of Education was left with $3 million for federal contribution to the effort after the Budget Bureau trimmed $2 million from the Congressional appropriation. This $3 million is to be matched equally by the states themselves, resulting in a $6 million program if all the funds are used.

Unlike many other federal aid programs, this one has no cut-off date specified by Congress. Presumably, the Office of Education will determine the period in which funds will be allocated. (Dr. Ray Hammond of this office is expected to handle details of the program.)

Before the work actually gets underway, officials will confer here with experts in the educational and building fields. They want to learn more about

(Continued on page 22)
From coast to coast, AMWELD is becoming the "most asked for" interior steel door and frame unit and sliding closet door unit.
LET COMPARISON DECIDE . . .

When the time comes for flooring specifications, there is only one way to be sure that you can provide your clients with the most economical brand. That's by comparing all brands! Once you've done this you'll choose Hood Rubber Tile, the choice of leading architects, contractors and designers . . . men who have found through years of experience that Hood means a lifetime of wear, a new conception of beauty, a minimum of maintenance and years of quiet and comfort!

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ARCHITECTURAL RECORD
Public Housing Penalized

Rising construction cost has been no respecter of the federal government’s public housing plans. Congressional authorization for construction of 135,000 low-rent public housing units each year for six years came as early as 1949; in the Housing Act of that year. But an unusual lethargy has restrained the program to this date. And now high building costs are slowing progress to a walk.

The Housing and Home Finance Agency, of which the Public Housing Administration is a part, expected the program to move slowly. But officials concede they had hoped for a much more rapid pace than is being reported.

The first official cutback came shortly after the Korean outburst. President Truman ordered that only 30,000 units be constructed during the last half of 1950. (The Chief Executive can lower the output as far as he likes, and raise the total number at his own discretion up to a top limit of 200,000 units per year.) But this check on volume was as nothing compared to the influence of high building prices.

All this gives rise to a disturbed feeling among architects because the trend obviously is toward simplification of plan to bring contemplated developments within the pocketbooks of the local housing authorities — and, not so incidentally, to look toward future justification of outlays before Congress.

PHA is authorized to spend $363 million each year of the program to subsidize rents in the public housing projects to furnish adequate housing for those who can’t afford private dwelling space.

But the greatest problem now arises from what local authority units can and cannot get for their money. Too many of these local groups have failed to be realistic about their plans; and this has PHA in a tizzy because it is forced to reject a large proportion of plans submitted — send them back for redoing.

The public officials in Washington have a point in urging the local bodies to cut out the frills and too-elaborate planning. Some layouts have been received showing carports and other extravagant features the PHA people hardly would dare to approve on a low-rent public housing project. Frequently these plans are returned to the local authorities who are told to cut off the fancies, get other bids, and resubmit to Washington. Surprisingly, many of the

(Continued on page 24)
resubmissions are approved on the second try without much loss to basic plan ideas, the PHA said.

Private architects, however, have been telling Commissioner John Taylor Egan about the danger of too great a sacrifice in the redesigning process. They see important values lost in minimizing space. The agency's new density standards for various types of buildings—an effort to reduce site and site improve-

ment costs—also is open to question. On the advantage side is the move toward setting a more uniform basis of cost estimating.

PHA feels the trend toward overelaborate designs on the part of local authorities and their architects is fully as important in the relatively high rejection ratio here in Washington as the inflated costs. To further assess the trend, the agency studied five main phases of 100 projects submitted for approval. These elements were site plan and type of building, dwelling layout, dwelling space, construction type and finish.

The phases were rated independently, meaning 500 elements were evaluated in all. Of these, 146 were rated expensive or very extravagant and resulted in 52 of the 100 projects surveyed being ruled out on the basis of undue costs.

A month ago, PHA had given final approval to 162 low-rent public housing projects. Final construction of these will involve approximately 50,000 units, one third of which will be placed in New York and New Jersey.

As of October 20 last, President Truman had approved PHA loans to local housing authorities for preliminary planning of 283,676 units. The loans totalled $53,661,000 and reached into 601 localities. These preliminary planning loans permit the local groups to contract for surveys, preparation of plans, and all such work except the final drawings.

Housing of this type is built, owned and operated by the local housing groups, though Washington keeps close tabs on each project because of its considerable financial interest in the subsidized rents. The loans being approved by the President now are to cover construction contemplated during the next two years. PHA enters into preliminary loan contracts with the local authorities as soon as possible after the approval from the White House so advance preparations can get underway.

For Churches ... Economical Cooling and Heating With Pre-Engineered usAIRco Units

Facing a problem typical to many, Architect Chromaster, who designed Fort Worth's Berry Street Church of Christ, had to isolate in one compact, reasonably-priced unit, both winter heating and summer cooling. He selected usAIRco Refrigerated Kooler-aire.

The installation in the Berry Street Church of Christ was supervised by Engineer L. E. Kanto, and Contractor Bell Sheet Metal Works of Fort Worth, Texas.

Here are the features that put usAIRco Refrigerated Kooler-aire on so many specification sheets ... in the designs for Churches, Shops, Offices, Restaurants, Theatres and Community Centers.

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4. Operating costs are reduced by the evaporative condenser which re-uses 95 of every 100 gallons of water.

5. Refrigerated Kooler-aire is available in sizes from 3 tons to 40 tons.

Operating budgets are big factors in lowering break-even levels ... thousands of usAIRco Refrigerated Kooler-aire units are providing year around air conditioning for churches and commercial installations at lower costs.

Let us give you more information about Refrigerated Kooler-aire, the packaged air conditioning unit. Write or write directly to United States Air Conditioning Corporation, 3323 Como Avenue S. E., Minneapolis 14, Minn.

No Group Deferment of Architects Sought: A.I.A.

• Organized architects are not seeking wholesale deferment of their member eligibles from military service. Here is the policy as outlined by the National Defense Committee of the American Institute of Architects: "There should be no thought of group deferment, as other professional groups have sought group deferment. Always there will be individuals in exceptional situations whose military service the national interest may indicate should be deferred. But architects as a group, and architectural students as a group, cannot hope to place their professional interests above those of national service."

(News continued on page 194)
TODAY'S BUSINESS INTERIOR must reflect solidity and permanence, refinement and good taste—and at the same time be easily adapted to changes in space requirements. Mills Movable Metal Walls are designed to meet this need.

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United States average 1926–1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assoc., Inc.

THE RECORD REPORTS

NEW YORK

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The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926-29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.,

\[
\text{index for city A} = 110 \\
\text{index for city B} = 95
\]

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

\[
\frac{110 - 95}{95} = 0.158
\]

Conversely: costs in B are approximately 14 per cent lower than in A.

\[
\frac{110 - 95}{110} = 0.136
\]

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926-29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear regularly on this page.
The answer to the nation's need for fast industrial construction!

**STRAN STEEL QUONESETS**

For FACTORIES • WAREHOUSES • MACHINE SHOPS • STORAGE BUILDINGS

**TODAY'S** urgent construction jobs can be completed faster with Quonset buildings.

Quonsets give you more than speed. You get maximum economy of material, all-steel fire safety, adaptability, construction ease, and the durability of N-A-X alloy steel.

Today’s Quonset is the product of widespread experience gained in use by the Armed Forces in World War II, plus experience acquired by industry, agriculture and commerce in peacetime. Under any circumstances, Quonsets are the best bet in buildings.

Quonset dealers are located all over America. For information, see the one nearest you. Or, write us or phone VInewood 3-8000 in Detroit.

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**Typical of Quonset’s easy adaptation to industrial needs, the National Steel Products Company’s new Houston warehouse, completed this July, covers over five acres.**

**Large industrial structures…**

**…and smaller ones, too!**

The Arco Company, producer of industrial paint, needed maximum fire safety for its lacquer manufacturing division at Cleveland. It chose Quonset buildings, centering production in the Quonset 40x80 in foreground. Nitrocellulose and other combustibles are stored in nearby smaller Quonsets.

**An example of Quonset speed**

◊ 88,000 SQUARE FEET OF STORAGE SPACE COMPLETELY BUILT IN ONLY 45 DAYS—This grain storage depot at Beresford, S.D., was part of last fall’s Department of Agriculture program. More than 2,500 Quonsets were erected at 803 different midwestern locations, providing storage space for over 80 million bushels.
CITY PLANNING

The Urban Pattern. City Planning and Design. By Arthur B. Gallion, Dean of Architecture at the University of Southern California; in collaboration with Simon Eisner. D. Van Nostrand Co., Inc. (250 Fourth Ave., New York, N. Y.), 1950. 7½ by 10¼ in. xi + 446 pp., illus. $12.00.

This volume might well have been titled An Introduction to City Planning. Although the author's approach provides a realistic survey for architects, city planning officials and other professionals, it most certainly presents an excellent overall picture of urban development for the student and the serious general reader. The factors that have confronted and conditioned the evolution of the city are set forth from its earliest beginnings in civilized societies, and the discussion of these influences is supplemented to an extraordinary degree by profuse and well-chosen plans and photographs. An outstanding feature of the illustrations is the use of extended analytical captions which greatly facilitate subsequent detailed study of a particular point without interrupting the broader discussions of the running text.

The authors point out that few cities in which great cultures have thrived began with a plan. Their growth has been dynamic and sensitive to changes in the interests of the citizens. As Dean Gallion, in his preface, says, "... it is apparent that the social order of the times has invariably fixed its impression upon the shape — the form and arrangement — of the cities. The cities we build today are the great designs produced by our democratic society; the urban environment — the living and working environment of the whole urban population — is linked with the welfare of democratic institutions. Nearly every enterprise in which people engage, whether it is domestic or production and trade, is affected by and, in turn, shapes the design of cities. Real estate and finance, the social sciences and economics, the law, public administration and political science, architecture and building, engineering and the arts, all are woven into the physical pattern of the city."

A principle tenet of the book is that cities are growing "... less and less desirable as places in which to live and work. "..." The factors contributing to this state of affairs are analysed in detail, particularly as they influence the major problem of congestion, and some measures are proposed for the control of density and obsolescence within the framework of existing facilities. Although the complete practicability of the proposed measures is certainly open to debate, they nevertheless indicate a path well worth further exploration.

The book espouses no defeatist point of view. The authors are not advocating breakdown of the city nor a return to village size. It is granted that people need cities. The current flight to the suburbs indicates that "People are retreating from congestion, but they want and are retaining, the advantages of an urban environment. Despite the desirable characteristics of refuge in rural surroundings, the urban framework forms the basic employment pattern of our industrial society. The role of cities is more vital today than ever before. They provide the range and diversification of employment essential to a free existence of the people. Our task is not destruction of the city, it is to build a better one."

ILLUSTRATION TECHNIQUES


Translated into an architectural idiom, this manual comprises a handy guide for the preparation of simple presentation drawings and renderings intended for reproduction. The text, as written, deals specifically with industrial and mechanical illustrating, but the basic principles can be applied equally well to architectural work.

Material for the book was drawn chiefly from a series of production illustration courses which were taught by the authors under the auspices of the University of Texas War Training Program. The first section, dubbed the "kinder-garten department," gives graphic short cuts for the various methods of projection — orthographic, isometric, oblique and perspective. Shades and shadows and freehand drawing are treated briefly.

The second half is concentrated on methods of making illustrations which reproduce well and economically, in printed form. The authors also give the fundamentals of the various reproduction processes, and comments on their uses. The concluding chapters deal with drawing for aircraft illustration, advertising, and industrial design. The entire text is clearly and concisely written, and is amplified with a wealth of illustrations.

SHOPS


Jose Fernandez, A.I.A., has compiled a guide to the specialty shop which will be useful to the architect as a summing-up in the field. In the foreword to the book Dean Leopold Arnaud says that it offers a resume of what has been done in the store field to date as well as indicates what is going to be done in the future. He further states that it should be of great help both to the prospective store builder and architect.

The book points out the advantages of having an architect doing a job, and establishes a certain basis for rapport between architect and builder.

A combination of ideal conditions (funds, location, talented store architect) seldom occurs, admits Mr. Fernandez, and the best thing to do is to make the best use of less than ideal conditions. He has presented stores that accomplish just this, showing ex...
Mahon Insulated Metal Walls are now available in three distinct exterior patterns—Ribbed, Fluted and Flush plates. The Ribbed and Fluted walls are field constructed from plates which can be furnished in any length up to 55 ft., providing high expanses of wall surface without horizontal joints. The Flush Wall is constructed of prefabricated insulated wall panels which can be furnished in Galvanized Steel only, in any length up to 30 ft. Prefabricated Fluted Wall Panels with exterior plates of Aluminum, Stainless or Galvanized Steel can also be furnished in any length up to 30 ft. This type of wall construction offers the ultimate in thermal properties, fire safety, appearance, and economy in both material and labor costs. See Sweet's File for complete information and typical installations, or write for Catalog B-51B.
REQUIRED READING

(Continued from page 28)

amples of many contemporary stores, certain features of which make each worthwhile.

Usual topics in a book such as this are dealt with: the architect’s problems, the store front, sign, awnings, interiors layout, staircases, lighting, color, display, salon and little types of shops, concealed functions and all the rest. The treatment presentation is direct; the author wastes no words, his text purposefully being minimized in order to permit maximum space for pictures, plans and details. The specialty shops vary from the modest to the ultra-swanky, yet nearly every time the emphasis has been placed on the functions of each: what it is selling, and how best this has been accomplished. Among the last 50 pages are miscellaneous drawings including scale details taken from examples previously cited in the text.

LETTERS AND ART

Lettering. The History and Technique of Lettering as Design. By Alexander Nesbitt. Prentice-Hall, Inc. (70 Fifth Ave., New York, N. Y.), 1950. 7% by 10% in., xvi + 300 pp., illus. $6.00.

In an artistic field so familiar that often its nuances evade the even sensitive eye, Alexander Nesbitt’s general reader is initiated to a concept of lettering that transcends “skill.” Sometimes we tend to think “neat lettering,” noticing a few lines at the bottom of a drawing, but it is not often that we consider a lettering job as part of an artistic presentation as a whole, whether it is from an architect’s plan or a book’s page. The author has considered lettering from the first as an intrinsic part of graphic design and not merely a necessity of second-rate artistic value.

In Part I (The History of Letters) Mr. Nesbitt adds up the contributions to letters by prehistoric, Greek, Roman, Gothic, Humanistic times to the present, showing carry-over of influences and developments.

The second part of the book (A Practical Course in Lettering) is concerned with instruction alone. The techniques and methods given in the text are illustrated by full page plates which carefully designate such details as strokes, holding the pen or brush or pencil, etc. “Lettering with the Broad Pen,” “Built Up Letters,” “Exercises in Script,” “Problems of Integration” and “Poster Design” are the chapters of Part II.

(Continued on page 32)
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Interesting applications

AMONG THE ELEMENTS that help to make this building of the Pacific Telephone and Telegraph Company, Oakland, California, a landmark is the extensive use of Pittsburgh Glass. These products include Pittsburgh Polished Plate Glass, Herculite Doors and 1/4" Herculite Glass on the second floor stairwell. Architects: H. A. Thomsen—A. L. Wilson, San Francisco, Calif.

ARCHITECTS FIND Pittsburgh Products ideal for meeting the demands imposed by open-vision store fronts. These large expanses of transparent surfaces permit seeing the interior from the sidewalk, thus serving as a display and advertising medium. In this automobile showroom at Ardmore, Pennsylvania, Pittsburgh Products were utilized to help create a distinctive and appealing design. Among these materials are Pittsburgh Polished Plate Glass windows, Herculite Doors, and Pittco Premier Store Front Metal. Architect: J. Bedford Wooley, Philadelphia, Pa.
of GLASS in current construction

NO OTHER material can add so much beauty and utility to a bathroom as Carrara Glass. Architects agree on that. For Carrara lends itself to many interesting and pleasing treatments. It is available in ten colors, a wide range of thicknesses and numerous possible surface decorations. It lasts indefinitely, is easily kept clean.

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City State

DECEMBER 1950
You may think this cartoon's ridiculous. But it's a fact that you can save one floor out of ten by specifying the Carrier Conduit Weathermaster System for air conditioning new buildings. Using small conduits instead of bulky ducts, this system saves up to 85% of the rentable space taken up by other systems. In terms of extra income, that's mighty important to an owner.

Invented by and exclusive with Carrier, the Conduit Weathermaster System is suited to hospitals, hotels, office buildings and apartments. It can be installed in existing multi-room buildings without extensive alterations or interruptions to normal service. A year-round system, it allows individual regulation of temperature in each room at the twist of a dial. It also provides every other air conditioning benefit—the proper control of humidity, ventilation, draft-free circulation and the cleaning and filtering of air.

Pioneer in air conditioning, Carrier has contributed every major advance in the field. Its experience is world-wide and on every type of structure. This know-how is at your disposal through our representatives, who will be glad to co-operate with you on any undertaking. Carrier Corporation, Syracuse, New York.
MENGEL means QUALITY in Hollow-Core FLUSH DOORS

1 Balanced seven-ply construction to provide controlled reaction in changing weather conditions.
2 Hardwood construction throughout—stronger, more durable, free from grain-raising, more easily and economically finished.
3 Exclusive Insulok grid core material has inherent resiliency, cannot cause warping, nor transfer grid pattern to faces.
4 Greater strength. Adequate core stock surface area provides maximum gluing surface and resistance to warpage.
5 Precision key-locked dove-tail joinings of stiles and rails add strength and stability.
6 Ready to finish. Door faces are smoothly belt-sanded. Stiles are machine-planed at factory—prefit to standard book sizes.
7 Fully guaranteed. Each door must meet rigid quality control standards and constant inspection throughout manufacture.
8 Mengel Flush Doors are economical—no mouldings to paint—no corners to collect dirt. Smooth hardwood surfaces are less absorbent and less costly to finish—easier to clean and longer-lived.

Write for complete specifications. Use the coupon.

Also see—MENGEL STABILIZED SOLID-CORE DOORS the finest products of their type on the market.
Guard against lighting failure in the buildings you design

All buildings where crowds gather indoors at night require protection from the dangers of lighting failure. Storms, floods, fires, collisions and accidents beyond the control of ever-vigilant light and power companies can interrupt normal current supply and be a serious menace to life and property.

But the lights need not fail in the buildings you design. Exide Emergency Lighting provides safe, sure, modern protection. When other sources fail, it takes over any part or all of the lighting load, instantly and automatically. Units and systems can be supplied to meet any requirement from a few lights to many ... from a single building to a large group.

THE ELECTRIC STORAGE BATTERY COMPANY
Philadelphia 32
Exide Batteries of Canada, Limited, Toronto

Exide
EMERGENCY LIGHTING


1888 ... DEPENDABLE BATTERIES FOR 62 YEARS ... 1950
Save Valuable Floor Space with...

Have the convenience and safety of permanent built-in seats... yet provide the maximum floor area for other purposes when spectator seats are not required. Medart telescopic gym seats occupy just 32 inches of floor space when in "nested" position! No special wall reinforcement necessary because load is distributed on the floor rather than wall.

NOTE THE MEDART "SAFETY FACTOR"
The understructure is made entirely of steel with uprights of double channel construction to give "I" beam vertical strength and balancing support. Spacer angles and cross channels are of steel. Selected lumber used throughout for seatboards, footboards and risers—full length—full width... one piece.

Medart Telescopic Gym Seats Available In WALL ATTACHED... MOVABLE...HIGH ROW (UP TO 20 ROWS HIGH) AND RECESSED TYPES

Write for descriptive literature... send your plans for suggestions.

SWEET'S FILE (ARCHITECTURAL) NO. 23g—3a and 23c—8a

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Leadership for over 75 years in School Equipment
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STEEL WINDOWS...KNOWN FOR THEIR STRENGTH

FOR MONUMENTAL BUILDINGS, FOR COMMERCIAL BUILDINGS
Go dramatic...safely...with Mesker STEEL "window walls"!

You can do a better design job, create more effective window treatments, and get safer wall structure with Mesker STEEL Windows...the strongest windows made! Next time you're scratching around on your drawing board...searching for an idea that's both striking and practical...try a Mesker "wall of windows". Stronger Mesker windows let you design larger window areas. Your buildings have more inside light, and up to 100 per cent ventilation...perfectly, completely controlled fresh air at a touch of the hand. A noteworthy example is the Iowa sanatorium addition shown here, featuring long runs of Mesker "window walls". Here's a square foot of windows for every 1.76 square feet of floor space! Remember, too, the initial cost of Mesker windows is remarkably low compared to any other type of window or wall construction. Upkeep is practically nil.

When you're ready to design a dramatic structure that has plenty of architectural feeling plus greater safety, get in touch with your Mesker sales engineer...the man who sells the strongest windows made.

Available now and FREE to architects!

It's here—new 1950 Catalog of Mesker "Heavy Duty" Windows! An organized reference book that covers every aspect of steel window designing, engineering and specifying. Order your copy today by mailing the coupon below!

MESKER BROTHERS
4338 GERALDINE, ST. LOUIS 15, MO.

Gentlemen: I want to know more about the added advantages of Mesker Heavy Duty Steel Windows. Please send me (free) your 1950 Catalog.

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Address __________________________________________

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*Based on the comparative section modulus of similar hot rolled steel members 1½" deep versus steel members 1½" deep.
RIGHT FROM THE START...TELEPHONE OUTLETS

It's both practical and profitable to plan for telephones while a house is still in the blueprint stage. Practical because it protects the beauty of walls and woodwork by keeping telephone wires concealed. Profitable because it impresses prospects and makes houses more salable.

Telephone outlets can be made an integral part of any house—with little effort and at little cost. A few lengths of pipe or tubing leading to outlet boxes are usually sufficient for the average house. Placed inside the walls during construction, they carry the wires unseen to the outlets, thus protecting the beauty of walls and woodwork.

Your Bell Telephone Company will be glad to help you in planning efficient, economical conduit layouts for houses and buildings. Just call your local Business Office for free telephone planning service.
A new and interesting architectural trend is the use of copper-covered concrete slabs as sunshades over balconies and windows. This practice is detailed in the accompanying drawings. These details, on convenient 8\%\times 11\" sheets, are yours for the asking. Similar data, or any desired special information, on ANACONDA Sheet Copper, such as chimney or Through-Wall Flashing, gutters and various types of copper roofs, will gladly be furnished on request. Just send a note outlining your problem to The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass, Ltd., New Toronto, Ontario.
Design for QUIET and BEAUTY

Fire safety and unusually high acoustical efficiency... soft, uniform light diffusion from the rich, attractive finish... all designed to add smart, decorative beauty to the modern office... all yours in one package with a Fiberglas* Textured Acoustical Tile Ceiling.

For complete specification information on Fiberglas Acoustical Tile—the lowest cost mineral-type incombustible acoustical material available—call your Fiberglas acoustical contractor, listed in the yellow pages of the phone book. Or, write to Owens-Corning Fiberglas Corporation, Dept. 68L, Toledo 1, Ohio.

*FIBERGLAS is the trade-mark (Reg. U.S. Pat. Off.) of Owens-Corning Fiberglas Corporation for a variety of products made of or with glass fibers.
how to get superior carpet installation by specifying smart edge TACKLESS METHOD

HOW smart edge WORKS
"Smart edge" gripper holds the carpet firmly and invisibly from underneath. As a result, ugly tack marks, bulges, and dust-catching indentations are eliminated. The carpet is also easier to take up for cleaning. No special provisions are required for either wood or concrete floors.

To specify, merely state, "Carpet to be installed with Smartedge carpet gripper, or equivalent."

RECOGNIZED AND AVAILABLE NATIONALLY
Handled by over 4,000 carpet retailers and by 68 leading carpet distributors.
Recommended by the mills themselves for wall-to-wall carpet installations.

GET THIS • Smooth, beautiful effect at carpet edge. No ugly tack marks, scallops, dirt-catching indentations, or ripples.

SPECIFY smart edge TACKLESS INSTALLATION

AVOID THIS • Ugly puckers or tack marks are eliminated when carpet is installed the modern "Smartedge" tackless way.

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AT FLUSH DOORWAYS • Get unblemished appearance at this most noticeable area. You see only beautiful carpet, no tack marks with "Smartedge."

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ELIMINATE TACK MARKS • Tack marks never improved the appearance of lovely wall-to-wall carpet. Even the best turn-and-tack job shows tack marks.

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AT DOOR JAMB • For smooth flowing carpet at door jambs, carpeted stairways, and wherever wall-to-wall carpet is installed, the floor covering looks its loveliest when you

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Please send detailed, illustrated literature on "Smartedge" tackless installation. Also send "Smartedge" A.I.A. file.

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DECEMBER 1950
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These windows, which were unpainted during seven years’ exposure to salt spray and sea air, are still in excellent condition. Specify HOPE’S steel windows RUSTPROOFED BY HOT-DIP GALVANIZING and save more than its cost in decreased maintenance expense.

HOPE’S WINDOWS, INC., Jamestown, N. Y.

THE FINEST BUILDINGS THROUGHOUT THE WORLD ARE FITTED WITH HOPE’S WINDOWS
6 reasons

Why NATIONAL ELECTRIC SHERARDUCT CONDUIT is better!

1. Made of "Spellerized" steel for easy bending and clean-cut threads.
2. Scale-free—inside and out.
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6. Acid-resisting Shera-Solution baked into the pores for added protection.

National Electric Products Corporation
1327 CHAMBER OF COMMERCE BUILDING, PITTSBURGH 19, PA.
The patients in this hospital are benefiting from the very latest ideas in structural and operating efficiency.” (From Hospital Management feature story about Xavier Hospital, Dubuque, Iowa.) Vital to this operating efficiency:

1. Edwards Nurses' Call System insures immediate attention by registering above door, at nurses' stations and utility rooms.

2. Edwards Doctors' In and Out Register immediately tells operator or receptionist who is in the hospital. Also, a flick of a switch at the operator's register causes an automatic flashing of the doctor's name as he checks in, thus informing him that there is a message waiting.


Yes, all signaling and call equipment complete to the most minute detail. It's no wonder that the personnel accomplish their multiple tasks with such ease and high efficiency. In these days of unprecedented demands on nurses and doctors, Edwards equipment is basic to the smooth, time-saving operation of Xavier—or any modernly equipped hospital.

Write for illustrated bulletin on Edwards Hospital Signaling Systems.

Hospital Signaling Systems

interiors that fit

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AND LAST A LONG, LONG TIME

When you put on new Florsheims, you step into shoes that really fit and last a long, long time. And when you install Hauserman Movable Steel Interiors you step into surroundings that fit your building requirements for a long, long time.

That's why The Florsheim Shoe Company installed these modern, functional Interiors in its new factory and office building in Chicago. Hauserman Interiors are flexible. When administration or manufacturing methods require new floor layouts, the walls can be quickly and easily moved. What's more, these solid, rigid Hauserman Movable Walls and Doors have a baked on finish that will last a lifetime. And because they're made of steel they won't chip, crack or warp.

One of our representatives would like to discuss all the advantages that Hauserman Movable Steel Interiors have for you. There's no obligation of course. A nationwide field force is ready to install, or move and re-erect Hauserman installations.

Write The E. F. Hauserman Company, 6780 Grant Ave., Cleveland 5, Ohio and tell us when he can call. Or if you prefer, we'll send our fully illustrated catalog.

Partitions • Wainscot Railings • Acoustical Ceilings Complete Accessories

Organized for Service Nationally Since 1913
The Revere-Simplex Reglet System is an economical and efficient method of flashing spandrel beams and column faces with enduring copper. This system offers the following advantages:

- Affords greater moisture protection for the building.
- Eliminates the necessity of flashing the entire face of each spandrel beam. In that way, it not only avoids interference with wall ties, stone anchors, angle bolts, etc., but also insures substantial economies through a large saving in flashing material.
- Diverts all seepage to the exterior wall face, and prevents rusting of the steel work.
- Is based upon the use of the Revere-Simplex Reglet, which is a simple, practical, easily installed receiving device for securing metal flashings in concrete. This patented reglet provides a permanent watertight connection between concrete and copper flashing, for all concrete surfaces.

The Revere-Simplex Reglet not only overcomes installation difficulties experienced with ordinary "open slot" metal reglets, but provides a substantial saving in cost as well. This is due to its many exclusive features, all of which cut down installation time and insure a superior flashing installation.

Write today for your copy of the new 6-page folder which describes the Revere-Simplex Reglet System for flashing spandrel beams. You can line up new jobs—make new profits—through the use of this new Revere product that enables you to bid competitively against mopped-on waterproofing!

Revere products now available through your Revere Distributor include: Sheet and Roll Copper for roofing, gutters, flashing, etc.; Lead-Coated Copper; Revere-Keyystone Thru-Wall Flashing; Revere-Simplex Reglet and Reglet Insert Flashing; Revere-Keystone Vertical Ribbed Siding. A Revere Technical Advisor will always be glad to consult with you without obligation.

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Copper Makes Common Sense
Modern beauty in durable hardwood

Over either concrete slab or wood subfloors, a Bruce Block Floor is unsurpassed for beauty, durability, long-time economy... and smart, modern design.

This distinctive floor will last the life of a home or building. Thus it's far more economical than floors or floor coverings that must be replaced periodically. It's a quiet, resilient, warm, comfortable floor... easy to keep clean and beautiful at all times. Installation is simple: laid in mastic directly over concrete, or nailed over wood subfloor or old floor. Where prefinished Bruce Blocks are used, there's no sanding or finishing on the job.

See our new catalog in Sweet's Architectural or Builders' Files. Or write us for literature and information on specific jobs.

HARDWOOD FLOORS

Product of E. L. Bruce Co., Memphis, Tenn., World's largest maker of hardwood floors
Better for structural work
Cohesive, workable Duraplastic concrete mixes have proved their advantages for all types of construction work. Duraplastic air-entraining portland cement requires less mixing water for a given slump. Its increased plasticity aids proper placement and results in improved surface appearance.

Makes more durable concrete
Bleeding and segregation are minimized in Duraplastic air-entrained concrete. This fortifies the finished concrete against the effects of freezing-thawing weather. (Below, Promontory Apts. Architect: Pace Associates. Contractor: Peter Hamlin Construction Company—all of Chicago, Ill. Duraplastic cement used exclusively.)

Makes more durable concrete
Bleeding and segregation are minimized in Duraplastic air-entrained concrete. This fortifies the finished concrete against the effects of freezing-thawing weather. (Below, Promontory Apts. Architect: Pace Associates. Contractor: Peter Hamlin Construction Company—all of Chicago, Ill. Duraplastic cement used exclusively.)

OFFICES: Albany, Birmingham, Boston, Chicago, Dayton, Kansas City, Minneapolis, New York, Philadelphia, Pittsburgh, St. Louis, Waco.

Yet Duraplastic* Costs No More
It sells at the same price as regular cement and requires no unusual changes in procedure. Complies with ASTM and Federal Specifications. For descriptive booklet, write 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.
Heat the house with RICHMOND...
CAST IRON...WET BASE...GAS FIRED BOILERS!

- **WET BASE**...prevents heat from radiating to floor; permits installation at radiator level.
- **REMOTE PILOT IGNITER**...added safety and convenience feature...standard equipment with diaphragm gas valve controls for manufactured gas. Meets Eastern Utility requirements.
- **EASY CLEANOUT**...top flue cleanout that saves disconnecting of piping and controls.
- **WHITE JACKET**...baked white enamel casing of sturdy construction. Beautifully streamlined with smooth, rounded corners.

**FIELD-PROVED**...to give trouble-free performance with minimum service...Richmond Boilers are extra efficient due to their “wet base” design...economical for maintenance and installation.

Consider together Richmond’s improved design, construction and appearance and you know there are no better boilers to specify or install. AGA approved.

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19 East 47th Street, New York 17, N. Y.
Please send me additional information and literature on the new Richmond Boilers. No obligation, of course.

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462-Family Apartment Project in Upper New York City—Commanding a sweeping view of the Hudson River, this new apartment project, now nearing completion in the tree-studded Riverdale section of New York City, has facilities for 462 families, in apartment units of from 2 to 4½ rooms. Known as Netherland Gardens, it consists of eleven 6-story brick buildings, each elevator-equipped, plus a 351-car garage. The steel-work is of Bethlehem Structural Shapes. Approximately 75 pct of the project’s total plottage is to be landscaped. Builders: Albert Exelbert and Alfred Kaskel, New York. Architects: Seelig and Finkelstein, Brooklyn. Steel Fabricator and Erector: Sherry and Gordon, Inc., New York.
The toilet room environment that stays new is the toilet room in which the most suitable type of toilet compartment available has been installed. Toilet compartments usually dominate a toilet room, influence the toilet room environment and emphasize the utility of fixtures and appointments. The bare functional type of toilet room is inadequate according to today's standards.

Sanymetal offers several different types of toilet compartments for creating the most suitable toilet room environment for every type of building. Sanymetal also offers and recommends Two Full Purpose Metal Base Materials which combine colorful attractiveness with long years of service life and effect important, day after day, savings in cleaning and maintenance cost. These Two Full Purpose Metal Base Materials—Sanymetal "Tenac" (galvanized, Bonderedized steel), a highly corrosion-resistant material; and Sanymetal "Porcena" (porcelain on steel), the ageless and fadeless, rust proof material—represent years of engineering research and skillful adaptation by Sanymetal engineers of corrosion-resistant steels to the fabrication of new and different types of toilet compartments.

Over 150,000 Sanymetal installations have been made in all types of buildings. Ask the Sanymetal representative in your vicinity for information about planning suitable toilet room environments that will always stay new. Refer to Sanymetal Catalog 22B in Sweet's Architectural File for 1950.
WHY Q-FLOORS CUT COST during CONSTRUCTION

Count up the value of these factors:

- Materials saved in foundation and frame because of Q-Floor's lightweight construction;
- Forms, shoring, planking reduced to a minimum on a Q-Floor job;
- Subcontractors are favored by continuous work because of dry construction and the elimination of strict time schedule; they enjoy unlimited storage space on each floor near where material will be used;
- Construction time and financing cost saved because Q-Floor fast, dry installation cuts 15 to 20% off building time;
- Electrical layout changes during construction greatly reduced in cost because of the 100% availability of Q-Floor raceways;
- Extra revenue realized on investment by the earlier completion date.

All these savings, and some of them are intangibles, should be subtracted from the cost of Q-Floors, before you can quote the true price. Q-Floor's contribution to the savings in time and other materials gets greater as the building progresses.

Even without consideration of their savings, Q-Floors cost less than the carpet to cover them. Any floor, even the more expensive type, is only a small fraction of the total cost, yet many owners forget that the floors are what the building is for. They ought to keep in mind that Q-Floors, besides saving money, also protect the building forever from electrical obsolescence... an electrician can install an outlet on any six-inch area in a matter of minutes. This is a feature which appeals strongly to tenants, too. It spares them the enormous bill for electrical alterations!

With competition opening up for modern rental space, can your clients afford to build without Q-Floors?

H. H. ROBERTSON CO.

2404 Farmers Bank Building
Pittsburgh 72, Pennsylvania
Offices in 50 Principal Cities
World-Wide Building Service
Future-minded planning will keep operating budgets low in the

NEW FLORSHEIM "DREAM HOME"

Another in the long list of America's finest new buildings equipped with JENKINS VALVES

Architects
SHAW, METZ, & DOLIO, CHICAGO, ILL.
General Contractors
CAMPBELL-LOWRIE-LAUTERMILCH, INC.
Plumbing & Heating Contractors
M. J. CORBOY CO., CHICAGO, ILL.

Among the 1022 Jenkins Valves installed in The Florsheim Shoe Company's combined factory-and-office building are these gate valves in the steam distribution lines of the heating system. Other Jenkins bronze, iron, and steel valves control water, air-conditioning, and such vital lines.

With its unbroken horizontal tiers of grey brick curtain walls which "seem to float in thin air", acres of glass their only visible means of support, the new home of The Florsheim Shoe Company in Chicago might be called an industrial "dream home".

It is certainly one of America's most notable examples of future-minded planning. Like the production machines used in cutting, lasting, stitching, and finishing Florsheim Shoes, the equipment installed for building operation is the most efficient modern engineering has devised. Here, Jenkins Valves "fit perfectly".

In fact, because of their dependability, safety and lasting economy, Jenkins Valves have been the choice, consistently, of leading architects, engineers and contractors for the towering skyscrapers, huge industrial plants, and super airports that are making today's building news.

Jenkins builds extra endurance into valves — proved by low upkeep cost records in every type of service. Yet, despite this extra value, you pay no more for Jenkins Valves. For new installations, for all replacements, let the Jenkins Diamond be your guide to lasting valve economy.

Jenkins Bros., 100 Park Ave., New York 17; Jenkins Bros., Ltd., Montreal

JENKINS VALVES

Sold through leading Distributors everywhere.
four good things

1. Attractive and practical as well is this Nairn installation in the Aetna Insurance Company,

...the 4-square features of

Clients quickly see your wisdom in specifying Nairn Linoleum—it talks clients' own language so convincingly!

Long Life—Nairn installations of 30 years ago are still going strong—under heaviest service!

Enduring Beauty—a wide range of colors and patterns gives unlimited scope for decorative schemes—and they'll stay fresh and attractive!

Easy Maintenance—its smooth, crevice-free, sanitary surface keeps clean with minimum labor. Nairn Linoleum never requires costly refinishing.

True Resilience—so foot-easy and quiet, no other material assures such dollar value in long, trouble-free service. Moderate in first cost, satisfied users specify it again and again for use under every type of traffic.


NAIRN LINOLEUM

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to stand on...

Hartford, Conn. Extremely durable, Nairn gives trouble-free service for years and years.

Nairn Linoleum!

1. Long Life
2. Enduring Beauty
3. Easy Maintenance
4. True Resilience

For FLOORS and WALLS

2. This lobby and reception room of Radio Station WTIC, Travelers Insurance Company, Hartford, Conn., is sensibly floored with Nairn Linoleum for quiet, foot-easy walking.

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

4. A typical Nairn installation in the Lincoln School, Lincoln, Mass., provides long, quiet, trouble-free service... proper light reflectance... easy maintenance with its crevice-free surface.
A total of 480,000 feet of General Electric Fiberduct underfloor raceways was installed in these five ultra-modern, New York office buildings. In each, G-E Fiberduct provides building management with the electrical flexibility needed to cope with today's constant changes in building layout. With G-E Fiberduct, unforeseen demands on over-all raceway capacity and the varied requirements of new electrical equipment are easily and quickly met.

General Electric Fiberduct raceways make it a simple matter to install additional outlets at all times. It is only necessary to make a small opening in the floor over the raceway, to pull the wires through, and to install the outlet. New distribution is provided by merely pulling additional wires through the raceway. There's no interruption of building facilities ... no annoyance to building tenants!

Complete specifications and installation data are available from your General Electric Construction Materials distributor. For a free copy of the G-E Fiberduct Data Manual, write to Section C4-125, Construction Materials Department, General Electric Company, Bridgeport 2, Conn.
**ONLY Blo-Fan **

**HAS THIS BLADE**

The superior electric exhaust ventilator which provides spot ventilation at the point of air pollution...

...in the KITCHEN, BATH, GAME ROOM and LAUNDRY

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**In ventilation**

"THE BLADE'S THE THING"

(with apologies to Will Shakespeare)

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**Blo-Fan REALLY MOVES AIR**

The Blo-Fan blade is designed so that the fan element literally scoops up the air, keeping the blower element supercharged at all times. This patented design combines the volume of a breeze fan and the power of a blower to expel more air quickly, quietly and with greater efficiency.

**Blo-Fan IS EASY TO REGULATE**

This NINE-speed switch is an exclusive feature on Blo-Fan Model 210... At low to medium speeds, Blo-Fan will easily handle the normal volume of steam and fumes, but in emergencies (like burning the toast) a higher speed will clear the room immediately.

**Blo-Fan IS EASY TO CLEAN**

No TOOLS ARE EVER REQUIRED. Both grille and motor assembly are removed easily in less than a minute for cleaning and washing. Just unscrew the center cap.

**Blo-Fan PAYS FOR ITSELF**

Savings on soap, detergents and cleaning compounds will pay for Blo-Fan in a short time—not to mention the savings on redecorating costs, elimination of back-breaking work, housemaid's knee and calloused hands!

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**PRYNE & CO., INC., BOX R-12, POMONA, CALIFORNIA**


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**Guaranteed Trouble-Free!**

The entire unit fits flush with the finished ceiling or wall.

The motor is rubber mounted to insure quiet operation.

Only the attractive, chrome-finished grille is visible.

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**Blo-Fan**

AMERICA'S MOST IMITATED HOME VENTILATOR
aluminum assures you the most advantages

Insist on Quality-Approved ALUMINUM

double hung
casement
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100 Park Avenue Building
New York City, N. Y.
Architects: Kahn and Jacobs

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

Cincinnati Chemical Company
Cincinnati, Ohio
Designers: The Austin Company
It's easy to pick the best material for windows—aluminum. Today almost everyone knows about the many advantages this wonder metal puts in a window.

But how to pick the best kind of aluminum windows? With dozens of makes to choose from, how to be sure that the quality of the windows you choose will measure up to your specifications?

That's easy, too.

You simply specify "Quality-Approved" aluminum windows.

That way you'll always be sure of getting the "most window"—the one that gives you all the advantages of aluminum windows at their finest.

You'll know the windows have been thoroughly tested and approved by an independent laboratory—for quality of materials, strength of sections, minimum air infiltration, and sound construction. Only those manufacturers whose windows pass these tests may use this "Quality-Approved" Seal.

That's why it's good business, for you and your clients, to choose only "Quality-Approved" aluminum windows—double-hung, casement or projected—for any type of building.

See complete specifications for "Quality-Approved" aluminum windows in Sweet's (Section 17a/Ahu), or for other information consult any Association member, or write directly to the address below, Dept. Desk AR-12.

Aluminum Window Manufacturers Association
74 Trinity Place, New York 6, N. Y.

One of the recent important additions to Pittsburgh's industrial plants is the Continental Can Company's large new structure near the County Airport. Its extensive flat roof is built of Barrett® coal-tar pitch and coal-tar saturated felt. Barrett Roofs are the longest-lasting, best-value roofs that can be had. They usually out-last their 20-year bond by many years, and carry Fire Underwriters' Class "A" Rating, too.

SEE BARRETT'S CATALOG IN "SWEET'S"

1 Barrett roofs are applied by Barrett Approved Roofers according to rigid Barrett requirements and specifications, developed through years of successful roofing experience.

2 They are built up of alternate layers of finest grade coal-tar pitch and felt. Pitch, the life-blood of the roof, is impervious to water and unexcelled as a waterproofing agent.

3 Top-quality felt of Barrett's own manufacture holds the pitch in place and permits the use of greater quantities of this waterproofing than would otherwise be possible.

4 Final steps are a triple-thick coating of pitch—poured, not mopped—plus an armored surface of gravel or slag. Result is a roof that takes Fire Underwriters' Class "A" Rating.
"Why, Mr. Ellis . . . don't you know that EVERYTHING HINGES ON HAGER!"

HAGER 1193 FBT
BRASS BUTTON TIP BUTT, STEEL BUSHED
Solid Brass Rust-Resisting Beauty
Hardened Steel-Bushed Knuckle Strength

C. Hager & Sons Hinge Mfg. Co. • St. Louis, Mo.
Founded 1849—Every Hager Hinge Swings on 100 Years of Experience

BRASS BEAUTY and STEEL STRENGTH!

Hager combines the glistening elegance of luxurious solid brass with the timeless strength of steel (at the critical point of knuckle joint wear) to reinforce permanent beauty with long life performance!

Door weight swings on case-hardened, cadmium plated steel bushings, extending the full length of each knuckle. These hardened steel bushings—steel-against-steel—actually support door weight . . . leave brass knuckles free from erosive joint wear and friction. Beveled leaves insure close-fitting joints. Trim, square outer edges are firmly milled sharp and clean. Steel Pin with Brass Tip.

Specify Hager Solid Brass Steel-Bushed Butts for average frequency residence doors calling for finest service and enduring beauty.

© 1950
"Plywood Offered Best Solution to Form Problems,"

Says Seattle Architect Paul Thiry

Concrete surfaces for this Seattle, Washington, church had to be smoothly curved to carry out the simple dignity of the design. Architect Paul Thiry specified Douglas fir plywood forms.

"The panel material," he says, "offered a simple and most economical solution to the twin problems of smooth concrete and curved structure. Plywood is easy to use. It produces smoother surfaces with a minimum of finishing and is readily bent to the desired radius."

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Smooth, Curved Surfaces Easily Achieved with Plywood

Douglas fir plywood forms were easily bent to produce the smooth curve of the outer walls. Canopy over the main entrance and the bell tower were also formed against 5/8" plywood. Concrete bands above and below the clerestory windows were formed with 3/4" plywood, backed by bandsawed 2"x12" wales and 2"x4" studs.

The half-circle shape of the structure affords a fan-shaped seating arrangement which brings the entire congregation close to the altar. Reinforced concrete construction eliminates the need for supporting columns which block vision.

Large, Light, Strong
Real Wood Panels

For additional data on Douglas fir plywood for concrete form work, see Sweet's File, Architectural, or write (USA only) Douglas Fir Plywood Association, Tacoma 2, Washington. Of particular interest are two booklets: "Concrete Forms of Douglas Fir Plywood" and "Handling PlyForm."

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No. 1624A1 — for 3 1/4" box, Base 4 5/8".
No. 1627A1 — for 3 1/4" box, Base 4 1/2".
No. 1629A1 — for 3 1/4" or 4" box, Base 4 1/2".

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PIONEERS IN FLEXIBLE ELECTRICAL DISTRIBUTION SYSTEMS
AIR CONDITIONING THE CHAIN DEPARTMENT STORE

by Robert A. Schauer, M. E., Construction Department, J. C. Penney Company, Inc.

ROBERT A. SCHAUER, associated with the Construction Department of the J. C. Penney Co., Inc., is a registered professional engineer and a member of The American Society of Heating and Ventilating Engineers. He has been engaged in the field of air conditioning engineering for the past 15 years and has specialized in department-store air conditioning throughout the United States.

The windowless structure that houses today’s department store makes air conditioning as much a part of the building as the heating and lighting systems. High lighting and occupancy loads require air conditioning both during summer months and in spring and fall seasons, as well, in the northern states, and the year around in southern states.

DESIGN DATA

It has been common practice to design air conditioning for department stores to maintain inside conditions of 80°F.D.B. and 50% R.H. In areas where the design outdoor wet bulb is below 70°F., however, 40 to 45% R.H. proves more comfortable. Where systems are designed to maintain 80°F.D.B. they are frequently operated at 75°F.D.B. and, unless the system has excessive capacity, when outdoor temperatures approach the design condition, the inside temperature will gradually rise above 75°F., maintaining the 80°F.D.B. and 50% R.H. condition under maximum load.

HEAT GAIN

The heat gain of a department or variety store is fairly constant. Lights, people and outdoor air account for 80 to 90% of it because of the adequate roof insulation and absence of windows.

The average modern store will have a lighting load of between 4 or 5 watts per sq. ft. of floor area; an occupancy load of 1 person for each 40 sq. ft.; and 1 person for each 50 sq. ft. of second-floor areas and 60 sq. ft. above the second floor. Minimum air quantities for ventilation have been established at 10 C.F.M. of outdoor air per person or one air change per hour, whichever is the greater quantity.

Engineering records show that, due to the difference in amount of heat in ventilation air, average department stores require approximately 1 ton capacity for each 275 sq. ft. gross floor area in the 76 to 80°F.W.B. location and the same capacity for each 300 sq. ft. in the 72 to 76°F.W.B. areas, and for each 325 sq. ft. in 68 to 72°F.W.B. zones.

ZONING

Each floor of the store should be considered a separate zone with individual cooling and heating systems, although it is often desirable and economical to install two or more zones where floor areas are unusually large. Balcony areas should always be a separate zone. Zoning provides constant temperatures and also reduces operating expenses by preventing excess cooling or heating caused by diversion of occupancy loads in the separate zones.

AIR QUANTITIES

Since total air circulated is determined by the internal sensible heat gain, required air quantities vary considerably with the ceiling heights and location of various floors. Variance will be from approximately 4 to 4½ air changes per hour for basements to 7 to 8 air changes for top floors having high roof loads. It is recommended that not less than 5 air changes per hour be provided for any area, although at least one state requires a minimum of 6 air changes per hour.

EQUIPMENT SELECTION

Equipment selection is an important part in the design of any air conditioning system, and the requirements of a chain department store do not vary greatly from those of systems in other occupancies.
Coil velocities should be between 500 and 600 FPM and the evaporator temperatures selected at 46 to 48° F. for most efficient compressor operation. Fan outlet velocities should not exceed 1600 FPM for backward inclined fans; 1800 FPM for forward curved fans. Motors should not operate at overloaded conditions, and for maximum life, fan drives should be sized 125 to 150% of fan-brake horsepower.

Reciprocating compressors generally limited to systems under 200-ton capacity should be equipped with capacity reduction devices to operate efficiently at reduced loads. This is usually by cylinder unloading and can be externally controlled by suction pressure, temperature or dew-point control. Centrifugal compressors for systems over 200 tons should have wound rotor motors and automatic suction dampers so that operators can manually vary speed of compressor, the damper is normally used in systems up to those of greater capacity. Water-saving equipment is economically important. Cooling towers of induced draft design will prove more satisfactory than atmospheric towers. They are smaller; have less objectionable appearance. Where local codes permit, towers of Redwood cased, basin, and fill type are recommended as they require no painting and minimum maintenance.

CONTROL

For reasons of economy, automatic temperature controls should govern both refrigeration and the introduction of outdoor air; the latter being a particularly important feature for cooling during intermediate seasons. In modern windowless structures with high lighting and occupancy loads, cooling is often necessary even when outside temperatures fall as low as 30° F. For this reason, and because average air conditioning systems maintain inside conditions when introducing 60° F. air, cooling can be accomplished during intermediate seasons by the use of outdoor air alone.

In central plant systems of the blow-through type, control of outdoor air can be accomplished by modulating the main outdoor air dampers and return air dampers in response to a thermostat in the fan discharge. This thermostat is usually set to maintain a constant fan discharge temperature of 60° F. When desired, it can be re-set by an outdoor thermostat to vary the fan discharge temperature with changes in outdoor temperatures.

Where a single zone is employed or individual units for each zone are installed, outdoor air and return air dampers can be placed directly under control of the zone thermostat in sequence with refrigeration controls.

With either-type system an auxiliary thermostat in the outdoor stream can be installed to return outdoor air dampers to their minimum position when outdoor temperature exceeds 65° F.W.B. or 75° F.D.B.

In large systems it will be necessary to install exhaust systems and automatic exhaust dampers to operate in sequence with the outdoor air dampers to relieve the pressure within the building when introducing large quantities of outdoor air.

DUCT DESIGN

Duct design should provide noiseless, draftless, and an even distribution of air throughout the entire air conditioned areas. If ceiling diffusers are used, it is recommended that full consideration be given to the general ceiling pattern of lights, columns, and outlets as these items will contribute greatly to the appearance of the store.

Grilles can be installed with duct work so that ducts will have the appearance of beams, and become inconspicuous with modern lighting treatments. It is recommended that grilles of the double-deflection type be installed with a volume-control damper behind each grille. With average ceiling heights grilles should be placed on centers of 10 to 15 feet. Return air is not a major problem if an adequate air distributing system is installed.

LOOKING AHEAD

It is believed that future research will place new types and models of air conditioning equipment in the hands of the engineer for incorporation into the design of these systems. The present trend toward high-speed reciprocating compressors is a result of research. Such compressors are more efficient, lighter in weight, smaller in physical dimension. In designing air conditioning either for the modern chain department store, or for any other type of application, the engineer should continually investigate the results of research. Equipment used and designs prepared today may be obsolete within the next 10 to 15 years . . . so it is to every engineer's own interests to keep looking ahead constantly.

In planning an air conditioning system for the modern chain department or variety store, or for any large or small structure serving the public, the factor of safety should obviously receive early consideration.

Today there are many dependable units of equipment available in which “Freon” safe refrigerants are utilized, and the engineer will experience little difficulty in selecting machines that fully meet the specific requirements of each individual job. The use of “Freon” refrigerants in the production of conditioned air, and for refrigeration purposes, provides ample assurance of safe, efficient and economical operation of the equipment.

“Freon” refrigerants are safe . . . nontoxic, nonflammable, nonexplosive, free of moisture and as pure as exacting scientific methods of manufacture can make them. That is why it is always the best policy to recommend equipment designed to use “Freon” safe refrigerants. E. I. du Pont de Nemours & Co. (Inc.), “Kinetic” Chemicals Division, Wilmington 98, Del.

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DECEMBER 1950
Owners Vie for Tenants
With Latest in Building

MINNEAPOLIS, MINN.—Multiple housing rental operators are commencing to discover that special inducements are becoming increasingly necessary in attracting desirable tenants into their folds. Evidence of the keener competition which prevails in many areas today, is indicated by the offers from management, of such attractions as automatic dishwashers, automatic garbage disposal units, individual apartment heat control, community playgrounds, television outlets, etc. As a result, prospective tenants are selecting their new abodes wisely, shopping with purposeful determination until they find the apartment that offers them the most for their money in the way of comfort and convenience.

Of all the features available to the modern apartment building, today, PHC (Personalized Heating Control) probably offers the owner the greatest value for his money. Because Honeywell’s Personalized Heating Control permits each tenant family to govern its own temperature requirements, individually, there’s no need to fire the heating plant to capacity just to satisfy a few occupants. One apartment is never too cold, another too hot. As a result substantial fuel savings are assured . . . an important item to the person who pays the bills.

Two groups probably would fight against a free press guar-

DEPENDABLE CONTROLS
COST LESS THAN SERVICE
CITY PLANNING AND CIVIL DEFENSE

For the first time since the Middle Ages, weapons of war are again a paramount influence in the planning and building of cities. The walls of Carcassonne and Paris were counter-measures for archery, pikemen and catapults, and they imposed definite influences on the pattern of life within the cities. Today urban dispersal appears to be the only fully effective means of minimizing the effects of atomic bombing, but if we are alert to the implications, we can identify this means of defense with measures for making our cities better places in which to work and live. The growing congestion and concentration in urban areas is no more desirable in peace time than in war.

The cold war (which is no longer so very cold) presents two broad possibilities. It may develop into a major conflict within a relatively short period, or it may continue in substantially its present form for many years to come. This uncertainty calls for a two-pronged civil defense program. In every community, the first effort should be aimed at establishing an organization immediately to function in event of disaster. This would embrace measures for control of panic, designation of shelter areas, evacuation, clearing of roads, rescue, fire-fighting, and decontamination of areas which have become contaminated with radioactivity. The second calls for implementing urban dispersal as a defense and war-preventive measure, since reducing the concentration of industrial facilities and population makes atomic bombardment strategically less profitable, and renders the target less tempting.

Actual accomplishment of urban dispersal is feasible, as is clearly demonstrated by the construction program under way for the New Towns in Great Britain described in this issue of Architectural Record. This factual evidence together with the continuing threat of atomic bombardment presents an opportunity for promoting appreciation of the dispersal concept at all levels of municipal, state and federal planning. Architects and members of all the design professions are in a position to advance acceptance of dispersal planning by serving on civil defense commissions, housing authorities and similar related bodies.

Every slum clearance project, housing development, industrial plant, traffic artery or other public improvement should be planned with a view to the military as well as the civil aspects of dispersal. This will not be difficult, since the basic criteria controlling each approach point so nearly in the same direction.
Above, design for apartments in Area 2, Mark Hall North, Harlow New Town (Fry, Drew & Partner, Architects); below, construction progress in this area.

Photolight, Ltd.
The need to change undesirable conditions in overcrowded cities has challenged our ingenuity for years. Leaving aside half measures, only two major ideas for preventing further damage from uncontrolled growth are so far discernible: the Green Belt idea, which limits the city sprawl geographically; and the idea of directing decentralization to new, organically balanced satellites. Green Belts were proposed as far away and long ago as Vienna at the turn of the century. It took all the experience of housing, garden cities, and the reorganization made possible by the bombing of London to lead to an effective method of decentralization — the British New Towns idea. To translate this idea into fact, to make it plausible to the public and to parliamentary parties, required detailed study, substantial publicity (for which conditions were opportune) and considerable work at the legislative and political levels as well as in land planning and architectural circles.

The London County Council published in 1943 Forsyth and Abercrombie’s County of London Plan. In 1944 this was followed by the Greater London Plan. To summarize this unique report, it proposed organizing the territory within a radius of approximately 50 miles in four concentric rings:

1. The Inner Ring. With an admissible population of 75 to 100 persons per acre, this area requires decentralization of 415,000 persons.

2. The Suburban Ring. Within an approximate radius of 12 miles, the overcrowding of this area could be adjusted within the ring itself. It could be considered static in regard to total population, though not in regard to the regrouping inside it needed to maintain a desired maximum density of 50 persons per acre.

3. The Green Belt Ring. Here many communities, old and new, exist; but neither any expansion of existing communities nor any new centers should be permitted.

(Continued on page 104)
Above, entire Greater London region (County of London solid black) showing existing communities and New Towns. Below, progress plans showing manner in which, in about 20 years, Harlow New Town is to be completed.

Left, plan of Mark Hall North, first residential portion of Harlow New Town to be completed, in which buildings designed by three independent architectural firms are now being erected.
Master plan, Harlow New Town. Diagonally lined areas are for industry, where the Corporation is now building 11 factories, and four industrialists are developing sites. Area 2 is Mark Hall.

In master plan, left, residential areas 1 through 13, separated by green belts and major roads, are clustered around schools and commercial facilities. Air view immediately above shows site of Town Center; plan above that, proposed Civic Center, commercial structures, sports and cultural facilities, parks, etc. for this site. Below, left, "Terlings," existing mansion housing the Development Corporation, to be preserved; right, typical thatched cottage, Old Harlow.
BRITAIN'S NEW TOWNS

4. The Outer Country Ring. The Greater London Plan recommends this ring, with an outer radius averaging 50 miles, as the chief reception area for overcrowded central London. For this Outer Country Ring, predominantly rural, the New Towns are proposed.

Organized Decentralization

People cannot be ordered to leave their places of residence, but they can be induced to move by offering them better surroundings together with prospects for work close by. Realization of this led to the idea of combining new residential communities and new industrial developments. Dormitory suburbs, a half measure, cause commuting traffic whose ensuing problems defeat the actual aim of decentralization. Daily travel to and from work has reached the limit of transport capacity and has taxed to the limit those who do it.

People will be reluctant to move if moving means complete segregation from relatives and friends. Therefore the New Towns are at a minimum distance from London; as close as the Green Belt permits. When the New Towns are completed and their 60,000 to 80,000 populations are fully provided for, educational, cultural and entertainment places will exist in each New Town itself. But in the first years of development, the possibility of reaching facilities of the parent city without a long journey will strongly affect the decision of city residents to move.

The pressing need for adequate accommodations for the overflow from central London speeded the New Towns Act, which the then Minister of Town & Country Planning, Lewis Silkin (now Lord Silkin), successfully carried to Parliament in 1946, politically backed by an all-party vote. Eight New Towns are now in process of creation in the Outer Country Ring of London, most of them beyond the planning stage.

ORGANIZATION

In order to build a New Town, the Minister of Town & Country Planning appoints, after consultation with existing local authorities in the designated area and its environs, a Development Corporation with a Chairman and a Deputy Chairman. The Corporation, reconstituted every two or three years, consists of a few members selected by the Minister on the basis of special qualifications. They are paid — part-time — and the Corporation's Board functions in a manner similar to any authoritative committee, but delegates much authority to a General Manager (see organization chart).

Distribution of Powers

The New Towns Act sets forth the aims and powers of a Development Corporation as follows: "The objects of a Development Corporation established for purposes of a new town shall be to secure the laying out and development of the new town in accordance with the provisions of this Act and for that purpose every such Corporation shall have the power to acquire, hold, manage and dispose of land and other property, to carry out building and other operations, to provide water, electricity, gas, sewerage and other services, to carry on any business or undertaking in or for the purposes of the new town; and generally to do anything necessary or expedient for the purposes of the new town or for purposes incidental thereto: provided that, subject to the provisions of this Act with respect to the making of
advances to Development Corporations, a Development Corporation shall not have power to borrow money."

A Corporation cannot incur capital expenditure without the approval of the Minister and, through him, the Treasury. The extent to which this provision is employed to exercise detailed control rests in large measure with the Minister. For certain routine items of capital expenditure, he may give general authorization in his approval of the Corporation's annual budget; for others he may wish to exercise detailed control. Once formulated, the Corporation's proposals need the consent of the Town Planning Authority. Local authorities concerned have the right to consult with the Minister before he approves, with or without modification, the Corporation's proposals.

The opportunity of producing tangible results of such magnitude has inspired all those concerned with the building of the New Towns, from draftsmen to general manager of the Development Corporation and civil servants in the Ministry, to hard, persevering work. In the planning of Harlow, a wide area of land is available which has been carefully studied. The land is pleasant, undulating and provides attractive recreation areas and good farming quality. Among the assets are two public parks.

Plan. It lies on high ground, above the River Stort in rural Essex, on the main railroad and highway between London and Cambridge. Abercrombie based his choice on a number of promising features, of which one is the short distance to the overcrowded East End industrial areas of London. The land is pleasantly undulating and, in part, of very good farming quality, with two parks at Parndon Hall and Mark Hall as attractive recreational features. Not far away is Epping Forest, one of the most beautiful woodlands in the Green Belt zone.

The Master Plan

The master plan of Harlow was developed by Frederick Gibberd as Chief Architect-Planner, in close cooperation with the Development Corporation and its General Manager, W. Eric Adams. Sir Ernest Gowers, first Chairman of Harlow Development Corporation, regarded the master plan as not being "a plan of the town" but the "plan of the framework to which it is proposed the town should conform" leaving room for additional ideas and a wide variety of treatment. The Corporation submitted the plan to the Ministry of Town & Country Planning in July, 1948; it was approved by Lord Silkin in March, 1949 — the first New Town plan to obtain approval.

Mr. Gibberd describes his primary aims as having been "to organize the town in distinct areas for work, home and play; to connect these areas by a road pattern in which traffic can flow easily; and to surround the whole area by a well-defined agricultural belt." He was concerned to capture the characteristics of an historically grown town, those qualities of urbanity which, in his opinion, arise from the architecture of the buildings.

1 As in America, there are in England those who continue to deprecate planning even as it approaches realization; and advocates of expedient housing solutions who do not appear to comprehend that new housing will exist in the New Towns. — Editor

HARLOW NEW TOWN: AN EXAMPLE

The location of Harlow New Town is one of those suggested by Sir Patrick Abercrombie in the Greater London
SALEM LUTHERAN CHURCH, SPOKANE, WASH.

E. J. Peterson, Architect

Originally built in 1899, Salem Church was destroyed by fire in 1949 at the time that a new social hall (labeled "existing" on the accompanying plot plan) was being constructed. The social hall and existing Sunday School classrooms escaped damage. The new building had to be designed not only to meet the congregation's requirements; it also had to harmonize with the remaining structures and, if possible, provide improved facilities on the limited (120 by 150 ft) site. Below, at left, is shown the accepted design, of which everything but the chime tower ("future" on plot plan) has been completed. In the new scheme, a larger nave was provided; Sunday School rooms were added in the Church basement; the entrance was relocated closer to the center of all activities.
Salem Church is the oldest Lutheran congregation in Spokane. Many of its members are of Swedish extraction; perhaps in their racial origin lies the reason why the members, voting down traditional Gothic architecture, voiced a preference for contemporary design. The formalistic freedom thus granted greatly simplified the architect’s work; for instance, the entire scheme was improved by building the new chancel at the South end of the nave (it had been at the North) and relocating the entrance. To emphasize the now secluded narthex and to provide shelter, a covered entrance walk is provided. Stained glass windows were salvaged from the old building.
Key to problem was reversing the nave. Chancel, formerly at North end (top of plan) was placed at South, close to sidewalk. From new northex church is directly accessible up steps; down ramp is entrance to Social Hall and Sunday School rooms (see photo, right), under altar painting salvaged from old church.
In Design Salem Church is quite appropriate for a Lutheran congregation. It makes no pretenses; it is friendly despite its unconventional plan and interior color scheme, in which lavender walls and ceiling are complemented by bleached oak pews and green carpeting. Its architectural significance cannot be overlooked. Many a congregation or Board of Deacons has voted for one of the traditional styles of architecture, heedless of what such an emotional decision may do to the functioning of the building in relation to ritual, to the congregation’s particular requirements, to such temporal matters as the practical relationships between the parts of the church compound; and with little reasoned thought about architectural expression of religious faith.

By 1948, Salem Lutheran Church had outgrown its modest beginnings. Its congregation had grown to 600, which necessitated two crowded services per Sunday. Its Sunday School was overcrowded; the basement Social Room couldn’t begin to handle crowds at increasingly popular Smorgasbord dinners, where as many as 1500 had to be served in one evening. So it was decided to build a new Social Room and, after that, to remodel the Church basement to provide more Sunday School rooms. The nave was then to be extended to the North.

But during the Social Hall’s construction the Church proper burned, and the edifice presented here, a much better building than the makeshift extension would have provided, was then designed and built. The Church now functions well both for Sunday services and at other times for large social gatherings. There is ample Sunday School space; the larger nave can be extended still further by opening sliding panels in its North wall, thus converting adjacent Sunday School rooms into a balcony for overflow seating; and all elements can be reached easily from the centrally located entrance.
Construction is quite conventional: concrete foundations, 12-in. brick bearing walls, steel roof trusses supporting wood-framed construction and embossed aluminum surfacing. South wall of nave has Indiana limestone facing; elsewhere, exterior is dark red brick with dark blue trim. Inside, nave has oak floor on wood framing; basement, asphalt tile on concrete, narthex, stone.

Behind two bronze grills in chancel (above) are organ pipe chambers. Woodwork throughout nave is bleached oak, with ceiling and side walls painted light lavender, chancel walls dark lavender, green carpeting on floor. Upper right photo shows choir stalls with, behind them, leaded glass windows from the old church; lectern and black marble baptismal font are new. Altar (right), also from old church, is likewise black marble. Far right, new pulpit.
Devotional heart of the Home is the chapel with its adjacent candle room (above). Chapel seats 100. Continuous casements are glazed with obscure glass and provide for installation of stained glass panels on inside at later date.
IN DESIGNING this building the architects had one chief thought in mind: provision of complete institutional facilities in pleasant, informal surroundings with the least possible institutional atmosphere.

All the basic institutional facilities — sleeping, eating, recreational, medical and religious — have been provided, but the atmosphere is definitely that of a residence club. The building accommodates 76 regular residents in double rooms, attractively furnished and each with its own toilet. The dining room is airy and spacious, furnished with tables for four; two separate kitchens provide for religious diet requirements. Lounge and recreational areas are generous: in addition to the main lounge on the ground floor there is a lounge on each of the other floors, plus balconies, roof deck, occupational therapy shops, and library. An infirmary wing accommodates eight patients in four double rooms, plus laboratories, examination rooms and physical therapy rooms. A chapel and adjoining candle room provide for the religious needs of the Home.

The building is one unit of the proposed Medical Center on the grounds of Menorah Hospital. It has been planned for expansion both horizontally and vertically — with horizontal extensions of both northeast and northwest wings, and addition of two floors.
Exterior is brick, backed by masonry blocks on a reinforced concrete frame. Main entrance (above) leads directly to information desk at front of open general office. Main lounge (right) can be extended for special functions by opening up of main and staff dining rooms. Lobby (opposite page) has walnut plywood walls, linoleum floors, acoustic tile ceilings.
Dining room (right) is light and airy, attractively furnished. Folding wood partition separates staff dining area from rest of room. Tiled lavatory for ritualistic washing of hands before meals (above) is conveniently placed between main lounge and dining room.
Each of the two upper floors has its own lounge. That on third floor (below) has direct access to deck.

Bedrooms (opposite page) are double, have walls covered with washable fabric. Furnishings include built-in wardrobe, movable dressers, writing desks and lounge chairs. Infirmary wing (below) is well-equipped for examination and treatment.
PHYSICIANS' OFFICES

Prepared under the general direction of JOHN W. CRONIN,
M.D., F.A.C.S. Chief, Division of Hospital Facilities United
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PHYSICIANS' OFFICES have been rather a blind spot in the literature of building
planning. The Public Health Service has had continual requests for up-to-date
information on arrangement, layout and equipment of offices for various medical
specialties, as have architectural publications. Accordingly Marshall Shaffer as­
signed to his staff of architects in the U. S. Public Health Service the task of studying
doctors' offices and preparing this series of check-list plans. The following plans and
text were prepared by Peter Pfisterer of that staff.

Exact requirements were ascertained through consultations with practicing physi­
cians, their assistants and nurses. These were tried out in sketch form in further
contacts and correspondence, and finally are here released in finished form. Advice
and criticism of preliminary schemes were obtained from The American Medical
Association, The Medical Society of the District of Columbia, the staff of Public
Health Service dispensaries and health units, and the manufacturers and distributors
of surgical and medical equipment.

It is obviously impossible to propose dogmatic standards which will be universally
applicable. The purpose of these plans is merely to demonstrate graphically the
fundamental needs for space and equipment, possible traffic solutions, and suggested
relation of rooms and areas. The assembled information is therefore to be regarded
primarily as guide material or reference check-list, and will have to be adapted in
each instance to individual conditions, personal taste, work habits and type of
practice.

The material illustrates specific requirements of 13 different specialties of medical
practice. In order to provide a uniform basis for comparison, it was necessary to
bring all suggested suites to a common denominator. Therefore these assumptions
are made:

1. The suites are intended as one-man offices, that is, each layout is designed for
use by only one practicing physician with the help of a nurse and a secretary (or a
combination of both), and other professional assistants as the case may be.

2. Each suite is assumed to be complete in itself and should contain all necessary
features for the particular specialty involved. The only facilities shared by all occu­
pants consist of building entrance and lobby, stairs and elevators, corridors, and
centrally located public toilets.

3. The aim is to provide accommodations which are neither luxurious nor abso­
lute minimum, but rather incorporate all essentials comfortably with an eye on
maximum efficiency and economy in floor area.

4. For the purpose of integrating all suites into a professional office building,
a standard bay width of 22 ft has been assumed. The layouts have therefore the
shape of rectangles with constant width and varying lengths, defined by two end
partitions 22 ft long (left and right), a corridor wall (bottom) and an exterior window
wall (top). This system makes it possible to arrange the various offices in rows along
one or both sides of a common corridor.

An equipment legend for all plans will be found on the inside of the flap of this
page. When opened out the legend will appear conveniently beside plans on all
succeeding pages.

Previously published in pamphlet form by the American Surgical Trade Association
The schematic layout illustrated here has been tailored roughly to what might be termed the basic needs of the average physician who concentrates primarily on internal medicine. However, by incorporating but slight modifications and certain substitutions of equipment, the design of this suite may well be adaptable to the requirements of the general practitioner or of physicians specializing in different medical branches such as glandular, circulatory, nutritional diseases, etc. Due to the fact that office therapy is ordinarily limited to comparatively simple procedures, the main emphasis is placed on facilities for diagnostic examinations. The extent and completeness of these vary, but few physicians in this group can do without a fluoroscope, B.M.R., and E.K.G. equipment and at least a small routine laboratory. Because fluoroscopic examinations have to be performed in complete darkness, it is best to provide a separate inside room, eliminating the inconvenience of light-proofing and darkening the examining room each time the fluoroscope is used. It should, however, be immediately adjacent to and communicating with the examining room, so that it is accessible to partially clothed patients.

Inasmuch as the basal metabolism tests are usually performed by the nurse in the early part of the morning, it would be wise to design the B.M.R. room also for other functions during regular office hours. For example, it may be used for electrocardiograms, diathermy, injections, etc., and for a variety of relatively simple examinations whenever the main examining room is occupied. Also the laboratory may frequently become a multi-purpose room. In the absence of a utility room or space, it could incorporate some utility equipment, and besides the customary laboratory facilities (sink, Bunsen burner, microscope, etc.), it may contain provisions for developing E.K.G.'s; a refrigerator for vaccines, and the like. In case a toilet room within the suite is considered necessary, the storage closet to the left of the staff entrance can easily be converted for that purpose.
OBSTETRICS AND GYNECOLOGY

Although these two specialties are often practiced separately, they have been grouped together for the purpose of this study because the physical requirements appear to be almost identical for both. Perhaps the least controversial aspect on the list of design elements for this suite is the almost unanimous demand for a comfortable dressing room, a toilet and a multi-purpose recovery room. There seems to be little doubt that at least one dressing room off the examining room (with or without direct access from corridor), containing dressing table, mirror, chair and robe hooks, represents a good investment. The toilet room within the office limits is in this case a necessity from a medical point of view. Similarly as in other suites, the recovery room is not only needed for recuperation but also for injections, anesthesia tests, B.M.R.'s, etc. It may be of interest to mention that the planner can spare the patient some embarrassment by such small details as a convenient provision for the unobtrusive depositing of urine specimens on a shelf or cabinet between secretary's office and laboratory-utility room. These two spaces, together with the scale and charting desk recess, form the nucleus of the work area, where the secretary or nurse identifies the patient on her way to the "inner sanctum," receives her specimen, prepares her records and records her weight. As illustrated by the plan, the design and location of this work area allows the secretary to maintain contact with entrance and waiting room, without loss of privacy on either side, even when occupied with a patient as described above.
GENERAL NOTES ON PLANNING

From the point of view of physical organization, the entity of a complete office suite can be divided into four main elements. These divisions consist of (1) Waiting Area, (2) Patients' Consultation — Examining — Treatment Areas, (3) Staff Work Area, and (4) Circulation. All are interrelated and should form a well-integrated unit without infringing on each other's specific functions.

WAITING AREA

The primary requirement for the waiting room is a comfortable and relaxing atmosphere, undisturbed by circulation of patients and nurses, yet in close proximity to the main entrance and secretary's headquarters. Good supervision and control from this point is essential for giving directions to arriving and departing patients as well as for calling them to consultation and examining areas. If space permits, an outside location of the waiting room is of course preferred, as it presents better opportunities for achieving an informal, pleasant and inviting space arrangement. Concerning size and seating capacity, no hard and fast rules can be established, since extent of practice and appointment systems vary considerably with each individual physician. Needless to say, in addition to the familiar easy chairs and magazine tables, some provision should be made in or near each waiting room for hanging coats, hats, umbrellas, including a wall mirror near the entrance.

CONSULTATION — EXAMINING — TREATMENT AREAS

This section should form a well related series of rooms, each affording complete privacy, but readily accessible by physician and assistants passing from one to another. In some cases, communicating doors between adjoining rooms are indicated to facilitate circulation. This arrangement has, however, the disadvantage of disturbing privacy to some extent and of reducing wall and floor space usable for equipment. In all plans these communicating doors are therefore optional and can be either added or eliminated.

Consultation Room

With the possible exception of the dermatologist and the ophthalmologist, who usually combine the functions of consultation and examination in one room, every physician needs a separate private office. Although this room does not have to be very large in most cases, it should be attractively decorated and furnished, for psychological reasons, and it must afford complete privacy for conversations and interviews with patients and other callers. Standard furniture includes an office desk for personal belongings, a bookcase for professional reference books, and at least two or three comfortable chairs, since patients frequently appear with other family members or relatives. Generally, the preferred location for the consultation office is near the waiting room and in close proximity to the secretary's office, for the convenience of staff and patients who often complete their visit in this area alone.

Examining and Treatment Rooms

The number, size and layout of rooms under this heading and their equipment is determined by the volume of patients, by the type of service rendered and by the specialty of the physician. As a general rule, a minimum of two rooms, preferably designed for interchangeable use, is recommended. Although it is possible to practice in a suite containing only one examination-treatment room, the additional expense in rent and equipment for a second room will be more than compensated for by the increased income resulting from caring for a greater number of patients due to a substantial saving in time. While the physician is examining a patient in one room, another patient can undress and be prepared for examination or treatment by the nurse in the second room. In some instances treatments may be administered by an assistant at the same time the physician is occupied with a patient in another room.

Recovery Rooms

These rooms, where indicated, are designed to serve several purposes to justify their inclusion — for recuperation after local anesthesia or painful examination, for isolation, for specimen collecting, for injections, BMR's, diathermy and other minor but time consuming procedures often handled by a nurse; as an auxiliary examining room when other rooms are occupied. Many physicians feel that every office suite should be provided with one such multi-purpose room containing a couch or bed.

Dressing Facilities

Present controversy regarding dressing facilities (dressing rooms, cubicles, curtains, screens, etc.) seems to preclude an ideal standard solution. The majority of the interviewed physicians (except obstetricians and gynecologists) were of the opinion that patients could dress and undress in the examining room proper with only a chair, a folding screen and some clothes hooks provided. This method admittedly ties up the examining room longer than necessary for the examination. On the other hand, a dressing room or cubicle is no help in this respect either unless it has, also, a direct door to the corridor and is used alternately only by every second patient. However, such a dressing room with two doors presents rather obvious privacy and door locking problems. Moreover, some patients are hesitant to use any type of enclosed dressing space because they prefer not
It seems that the pediatricians are divided into two main schools of thought as far as the method of examining babies is concerned. The proponents of the “cubicle school” advocate small open stalls containing only an examining counter with scale and a supply cabinet, whereas the extremists of the opposition insist on full-fledged examining rooms which, in addition, embody all the functions of the consultation room. Both sides have valid arguments in support of their theories, and no comparative merit evaluation is intended here. On the contrary, an attempt has been made to compromise between the two factions by combining certain features of both. Since babies usually constitute the bulk of the patient load, the cubicle idea has been adopted in a modified form. Two relatively small identical examining rooms are provided, which are large enough to accommodate, besides the specified items, a washbasin and a chair for the mother during the examination of her child. For older children a completely equipped examining and treatment room with small writing desk is shown to illustrate the principle of this combination. A separate consultation office, permitting a quiet interview with parents undisturbed by crying babies, is located as far away as possible from the noisy waiting room. The arrangement of this waiting area is equally the subject of different opinions. While it seems advantageous to divide it into sections for various age groups with some entertainment facilities suitable to each, many pediatricians feel that caution should be exercised not to turn the waiting space into a rumpus room. Although it is common office practice not to admit children with known disturbances of a contagious nature, not too infrequently infectious cases are nevertheless discovered in the waiting room. Such patients are then immediately segregated in a small isolation room where the diagnosis is confirmed and from where they can be dispatched home through a separate exit. Some pediatricians, however, employ different techniques and may prefer to use this space for fluoroscopy instead. It remains to be mentioned that age and physiology of the patients call for a toilet room within the suite easily and quickly accessible from waiting as well as examining rooms.

ARCHITECTURAL RECORD
to leave their clothes and belongings out of sight. These considerations should be kept in mind in examining the few layouts where dressing rooms are indicated.

WORK AREAS

The staff work area includes such spaces as secretary’s office, laboratory, utility room, charting desk, etc. Contrary to the facilities used by the patients, these elements are not grouped together in a continuous unit, but are strategically distributed within the suite to best serve the function for which they are designed.

Receptionist-Secretary Office

The office of the receptionist-secretary must be close to entrance and waiting room for control of arriving and departing patients, for making new appointments and discussing financial matters, and for directing waiting patients to consultation, examination, or treatment rooms. Yet this office should also be located conveniently to the doctor’s work area for easy access to records and for supervision of traffic within the suite. Another reason for the desirability of this relation is the fact that, due to limitations in personnel, the nurse is frequently required to double as secretary and vice versa. The question of whether or not the secretary’s office should be an enclosed room or simply an open bay off the waiting room or a compromise between the two arrangements is again a somewhat controversial issue. To illustrate these possibilities, several different schemes are shown on the plans. For average conditions, however, it seems that the problem is probably best solved by a partially enclosed space having a glass partition with a sliding or open window on the waiting room side and connecting without any separation (no door) to corridor of work area. In this way the main objection against an open bay, namely lack of privacy for both waiting patients and secretary, is overcome without sacrificing visibility and ease of control.

Utility Room — Laboratory

Some possibilities of handling the utility room and laboratory problem are likewise illustrated by several different examples. For many specialties laboratory and utility room functions can be combined, others require separate accommodations, while still others get along with nothing but an instrument sterilizer, storage cabinet and wash basin in the examining room itself. A fairly practical solution, saving floor space and nurses’ steps consists in the concentration of utility and laboratory equipment (counters, storage cabinets, sink, refrigerator, sterilizer, microscope, etc.) in a centrally located nurse’s workroom, equally accessible from all examining and treatment rooms. It may be said in this connection that sterilizers in the examining rooms are sometimes considered objectionable because of the steam within the room.

Scale and Charting Desk Recess

Another feature of the work area, applicable in certain offices, is the scale and charting desk recess. Appropriately located in a niche off the corridor, these items allow the nurse to record the weight of a patient without tying up a room, and to lay out all records of those patients expected during the day for the physicians’ review and notations. The desk is high enough for writing in a standing position and contains separate racks and compartments for records to be consulted, to be processed or to be filed.

CIRCULATION

An important consideration in the design of a well organized office is the efficiency of the area allotted for circulation. During busy office hours it should permit an easy flow of traffic, avoiding confusion between incoming and outgoing patients, and affording undisturbed access and egress to and from work areas by both patients and staff. A separate entrance, allowing the physician to enter or leave the suite without passing through a waiting room, seems most desirable if not almost essential. This second entrance may also be used occasionally by patients wishing to avoid the waiting area, and for all commercial transactions such as deliveries of supplies, drugs, specimens, etc. The resulting corridor area, necessary to meet the described objectives, might by some be considered costly, unproductive floor space. But it seems hardly recommendable to sacrifice efficiency, convenience, comfort and privacy for a relatively small saving in office rent.

STORAGE

The individual needs and preferences for built-in storage facilities vary all the way from none at all to entire storage rooms. Here again we find the necessity of striking an economic balance between the rental expense of so-called unproductive floor space and convenience in operation for each particular instance. Obviously, no standard formula can be recommended, and the storage areas indicated on the plans (by dotted shading) represent, therefore, merely a possible average which can be amplified or reduced depending upon the analysis of each individual physician’s requirements. The same consideration applies to the usage and interior arrangement of the different storage closets. No attempt has been made to indicate shelves, clothes poles, type of doors, etc., nor to designate the multitude of items to be stored, such as coats, uniforms, office supplies, instruments, medical equipment, etc.

TOILETS

Although many physicians may consider it desirable to include at least one toilet room within the limits of
GENERAL NOTES ON PLANNING

Every suite, toilet facilities have been shown only in those offices in which they are mandatory for the medical procedures of the respective specialty. It is, of course, assumed that public washrooms are available.

EQUIPMENT

While it is recognized that the final selection of each piece of equipment again depends upon the practice and training of the individual practitioner, it appears to be possible to crystallize certain basic requirements more or less corresponding to the average need. Wherever practicable, standard, movable furniture and equipment has been assumed, except in a few cases where a built-in desk, settee or counter seemed to offer substantial advantages or better utilization of floor space. Only major items which can easily be identified on the drawings have been included, and all small pieces, such as hand instruments, microscopes, typewriters, etc., were purposely omitted in order not to confuse the readability of the plans. For identification purposes each plan symbol is provided with a number referring to the equipment legend on the first page, which, when folded out will be conveniently available for reference to each layout. Generally speaking, the suites have been designed around the chosen equipment. In other words, the combination of furniture and equipment, logically selected and conveniently located to carry out the predetermined functions of a particular room or area, dictates the size, shape and arrangement of each such space. Those confronted with a planning problem may well remember not to reverse the process.

An efficient practice of otorhinolaryngology can generally be carried out in a space somewhat smaller than the average occupied by some of the other specialties. The reasons for this economy may be found in the fact that treatment chairs are used in place of tables, all patients' rooms are combination examining and treatment rooms, no dressing rooms nor X-ray and other space-consuming facilities are required. The examining and treatment rooms can be quite limited in area, but it should be stressed that the relative position of furniture and equipment is of utmost importance. Mandatory special equipment includes such items as cuspidors connected to water supply and drain next to each treatment chair, suction and compressed air in each room (either piped from central location or built into individual treatment cabinets), electro cauterity apparatus, etc. One room should be soundproof and isolated from street noises for audiometry, and at least one of the rooms should have only artificial light for transillumination. In this suite, too, the recovery room, which contains a couch and a lavatory, can be used to advantage for certain tests and procedures only performable on patients in a reclining position. As in several other suites, all utility and laboratory functions are combined into one compact unit which serves as a general workroom for the nurse. It includes refrigerator, work counter, supply cupboards, sink and pressure sterilizer, all centrally available from the treatment rooms and eliminating the need for duplication.
THE problem of striking a happy medium between the efficient, speedy handling of patients and achieving an atmosphere of unhurried individual attention is sometimes rather difficult to solve. Aside from the idealistic decisions, the final solution always depends on the answer to the economic question of how much space divided into how many rooms can be allocated for this and that purpose.

Conforming with the principal activities in the surgeon's office, the three workrooms of this plan have been labeled ostensibly "Examination," "Operating" and "Treatment-Recovery." Such a clean-cut separation, however, exists in name only, and can rarely be adhered to in reality. As a result of the varying case load and the considerable overlapping of these functions, the rooms must be designed for interchangeable use. For example, pre-operative examinations may be carried out in the minor operating room, stitches and casts may be removed in the examining room, dressings applied in the treatment room, etc. A logical deduction along these lines is the centralization of as much utility equipment and as many supplies as possible in a general nurses' work space independently accessible from all rooms. This would substantially increase flexibility and eliminate duplication. This utility area, often incorporating also certain laboratory facilities, does not have to be an enclosed room. On the contrary, an open bay, which does not entail the constant manipulation of an additional door, offers many advantages with respect to circulation and supervision. An inconspicuous location and at least partial shielding from patients' view, as suggested on this plan, are nevertheless desirable features.
Perhaps more than any other suite, the layout of the orthopedist’s office depends a great deal on the type of practice and working system of each individual physician. It is therefore extremely difficult to standardize on assumed, so-called “basic requirements.” An infinite variety of possible activities will have to be considered in each instance, all influencing the planning to a considerable extent. If, for example, the orthopedist prepares arch supports and braces in his own office, he needs a special workshop for this purpose; if he is concerned with physical therapy and is assisted by one or more physical therapists, anything from a small room with a whirlpool bath up to a completely equipped gymnasium or exercise room may have to be included; if he prefers to do his own X-ray work, he will naturally require a separate X-ray room including film storage and darkroom. The plan shown here can obviously illustrate only one out of a multitude of different solutions. In addition to an examining room and a general treatment room, primarily intended for orthopedic work, a condensed physical therapy unit has been included for the sake of demonstration. It is divided into two curtained booths (one for hydrotherapy, and one for electrotherapy) with access through an open exercise area, incorporating some of the equipment normally encountered in this department. It should, however, be remembered that the comparative lack of privacy of this arrangement causes many physicians to prefer instead several separate rooms, even though decidedly more floor area is consumed thereby. If equipped as shown on the plan, the utility room serves as a general workroom for cleaning, preparing and storing supplies, instruments, plaster cart, etc., but, as mentioned before, its use is optional and adaptable to different activities. If space permits, a separate entrance and waiting alcove for non-ambulant and crippled patients on crutches will often save uncomfortable situations.
THE practice of the radiologist, in common with the one of the pathologist, differs from the other medical specialties in several respects. First of all, it assumes primarily the form of a consulting service for diagnosis and interpretation, and is therefore entirely dependent on the referral of patients from other physicians. In the second place, many practicing radiologists have part-time connections with X-ray departments of hospitals, clinics and other institutions where they have additional facilities and equipment at their disposal. Although the center of activities is unquestionably the fully equipped diagnostic X-ray suite for radiographic and fluoroscopic work, complete with film storage, darkroom, toilet and dressing rooms, a small therapy room for X-ray and sometimes radium treatments may occasionally be desired by the radiologist. The location and thickness of lead lining in walls, floors and ceilings, and the extent of other X-ray protection devices for diagnostic and therapy room, depends of course on the type and capacity of the equipment used. In any case, the controls of both rooms should be placed behind safe barriers with lead glass observation windows, permitting a full view of the patient during exposure to radiation. The diagnostic room should not be too restricted in size so as to allow referring physicians and even relatives to be present while the examination of a patient is in progress. The use of barium enemas in connection with certain X-ray examinations makes the inclusion of toilet facilities, immediately accessible from diagnostic room, a mandatory item on the list of requirements. The consultation room, which in this case serves also for viewing and interpreting of X-ray plates, should contain, in addition to the usual office furniture, film illuminators, a stereoscopic viewer and film filing cabinets accommodating at least one year's accumulation of exposed plates. Older films and records may be filed in separate storage areas, which frequently need to be somewhat more liberal in the radiologist’s suite for this and other storage problems.

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Several features, peculiar to the requirements of the dermatologist, distinguish this suite from some of the other offices. In the first place, as much good daylight as possible is an absolute "must" for the examination room. Since the initial interview and the patient's history is intimately related to the corresponding manifestations of the complaint, many dermatologists prefer the combination of consultation and examination in one room over the usual separation into two. Such a dual purpose room must consequently be large enough to accommodate the functions and equipment ordinarily attributed to consultation room and examination room.

Another indispensable facility of this suite is a protected X-ray therapy room with exterior control station behind a lead glass observation window allowing full view of entire table. In some offices as many as 80 per cent of the patients receive X-ray treatment, in which case it may be necessary to equip more than one room with X-ray machines. Other treatment facilities, such as light ray and heat wave equipment, electrocautery and desiccation apparatus, etc., are concentrated in a general treatment room. A special chair, which can easily be converted into a horizontal table, is adaptable for treatment of patients in a sitting as well as in a reclining position. The indicated dressing alcoves, shielded by folding screens, illustrate an economical compromise between fully enclosed dressing rooms and entirely open accommodations, consisting of nothing but a chair and a hookstrip in one corner of examining or treatment room. (See also p. 121.)
In dealing with the design for an office intended for diagnosis and treatment of mental disorders, it should always be kept in mind that the psychiatrist’s job can be facilitated or complicated by the patient’s emotional reaction to the effect of the physical environment. This is especially important in the waiting room and in the consultation room where an inviting, relaxing atmosphere, created by skillful treatment of space, texture, color and light, may vitally contribute to produce the desired release of tension which forms the necessary preliminary step in any successful psychiatric approach. In contrast to all other offices, the main emphasis in this suite is placed on the consultation room, in which the patients remain during most of their visits. Particularly important, according to some psychiatrists, is the relative position of the office furniture. The psychiatrist needs to maintain an intimate conversational contact with the patient (without interference by obstructing objects on desk). Since the nature of the psychiatrist’s work requires more time per patient than that of any other specialist, the number of daily office visits usually averages only about seven or eight, which means in turn that there is no need for a large waiting room. The general examination room, which should be accessible from waiting area as well as from consultation room, serves for the customary routine physical check-up and for neurologic testing of reflexes. From a construction point of view it should be mentioned that acoustic privacy is essential, a factor which may call for soundproof doors and sound insulation in the partitions.

The Consultation-Examination-Treatment section, which, according to the generally accepted formula for this area, should consist of at least three rooms, is located in its entirety along the preferred exterior wall of the suite. A relatively compact solution is nevertheless possible by arranging an inside waiting room, staff work area and recovery room along the opposite wall adjoining the public corridor. Again, the secretary’s office, which in this case also serves as private entrance for physician and personnel, dominates the scene from the point of view of circulation. It permits easy supervision over waiting room, both entrances, interior corridor, and it is conveniently located for calls from and access to consultation room, examination rooms and nurses’ workroom. A few special features to be considered in the design of this suite merit at least some brief remarks. Since many urologists are accustomed to perform radiographic examinations in their offices, a cystoscopic X-ray table with control unit and movable screen has been indicated. However, the volume of X-ray work is usually not large enough to justify the expense of a separate dark room installation. The familiar laboratory-utility room combination can in most cases be made capable of absorbing the functions of the dark room by slightly increasing its size and by adding a film loading counter and developing tank in one corner of this room. It should be noted that no fixed X-ray protection has been indicated on the plan, because the extent and exact location of lead lining, if required, depends on such variable factors as the capacity of the tube, frequency of exposure, occupancy of adjoining rooms, etc. As in other suites where X-ray equipment is used, the installation should conform to the recommendations by the National Bureau of Standards.
The layout of the pathologist's office depends first and foremost on the volume of work he handles, on the arrangement he may have in one capacity or another with one or more hospital laboratories, on the number of technicians he employs and on the type of referral connections he has with other physicians. The center of activities in his suite is the clinical laboratory for performing and interpreting an immense variety of diagnostic tests and analyses. For ease of supervision and control, one single large room is said to have unquestionable advantages over several smaller ones, unless the work load exceeds certain practical limits. In either case it is desirable to separate the activities into work areas for bacteriology, serology, chemistry, hematology, histology, etc. Besides the laboratory proper, the pathologist needs an office which usually includes a separate counter for microscopic work, a general examination room and at least one so-called treatment room. This room, containing a bed or couch, is not used for treatment in the common sense of the word. It is primarily intended for special procedures such as B.M.R.'s, E.K.G.'s, spinal punctures, and for collecting of blood specimens, smears, gastric fluids, etc. As in the majority of the other office suites, these last mentioned patient rooms should be designed and equipped for interchangeable use. Supplementing the specimen-taking facilities, a toilet room adjoining the urinalysis section of the laboratory is a great convenience.
Proctology, sometimes classified as a sub-specialty of surgery, could probably be practiced in a suite designed for a general surgeon with only minor adaptations. The list of planning requirements does not contain any particularly outstanding items, and this layout was primarily included for the sake of completeness. The principal special features, deviating from the general surgical program, may be summed up as follows: Instead of typical examining tables, often placed with head or side against a wall, all examination and treatment rooms should be equipped with free-standing proctoscopic tilt tables. It will also be necessary to provide suction outlets in these rooms. Here, as in several other offices, the inclusion of at least one toilet within the suite is considered unavoidable. Sometimes preference is expressed for locating it in a treatment or even in a recovery room so that it can also be used in connection with high colonic irrigations and other procedures. A compact nurses' work space, which is in effect a combination utility room and laboratory with storage closets, similar to the one proposed for the surgeon, will most likely answer the proctologist's needs as well.

The ophthalmologist, like the ear-nose-throat specialist, being concerned primarily with examinations performed on the head and usually with the patient in a sitting position, substitutes the less space-consuming barber type chair for the customary examining table used by other specialists. This advantage is, however, offset by his request for a 20 ft distance between patient's chair and vision chart.

Although mirrors and special charts designed for shorter distances are frequently used to conserve space, ophthalmologists agree that these substitutes are at best only compromises which should be avoided wherever possible. Here again office consultation and examination are ordinarily combined in one single space by reserving one corner of the examining room for desk, chairs and bookcase. In the examination room and orthoptics room, special attention should be given to the correct location of each piece of equipment, particularly the proper relationship between patient's chair, doctor's stool and trial lens case as shown. If orthoptic work is included in the ophthalmologist's practice and he employs a full-time technician, the inclusion of a separate room for that purpose is almost indispensable. It provides independent work space for corrective training of cross-eyed children, for the exacting and time-consuming perimetric testing of field of vision, and for a variety of other procedures which can conveniently be handled by a nurse or an assistant. Although the 20 ft length is not essential in this room, it will be a definite advantage to design it for this distance so that it can also be used as a second examining room. The treatment room, where horizontal positioning of the patient is sometimes necessary, may contain beside the special chair with adjustable back and head rest, a couch which will also serve for certain treatments as well as for recovery. The waiting room should be large enough to accommodate patients during their initial visit which requires two separate examinations and lasts about two hours. The greater part of these two hours is spent in the waiting room where dilating eye drops are administered.
The Medical Building at Hartford is an unusually fine example of the principle that staff doctors' offices should be grouped near the hospital. It also offers a splendid case history of planning procedure to make that grouping most effective.

On the first point, the building brings together a hundred or so of the staff doctors in a building directly connected to the hospital. A year's operation has demonstrated that it saves time for doctors and patients, improves the scheduling of many hospital functions,
from ward visits to operations, and gives the assurance of quick attention to patients in the hospital. It might also be mentioned that it is a wonderfully stable investment for its owners.

The planning of the building became a well organized effort, so that the rather complicated needs of the physicians could be studied and accommodated. The tenants being well known in advance, a doctors' committee was organized and given power to decide close questions with architects and owners in the group interest. And finally a sort of assembly line procedure was adopted to settle final details with individual tenants or tenant groups. All doctors who had tentatively signed up submitted questionnaire forms giving enough information to enable the architect to arrive at an area total and an approximation of mechanical services required. Also, the owner could work out rental figures in advance, at which point individual doctors made definite commitments. There were fixed agreements as to standard and special equipment. With such matters agreed upon,
each doctor or group made appointments with the architects, and final layouts and details were settled upon. It therefore was possible to meet individual needs without getting hopelessly bogged down in negotiations.

The building is attached to the new Hartford Hospital, with direct communication on the lower floors. In spite of this close connection, the architects did not feel it necessary to duplicate the architectural expression of the hospital. There is a family resemblance, from the same basic exterior materials and some similarity in fenestration. But in general the Medical Building follows its own plan requirements and window arrangements. Windows are of the casement type with projected steel sash. All have permanent inside screens and venetian blinds.

The building is of firesafe construction, with steel frame, white glazed brick facing and cinder block back-up. Floors are of cinder concrete, concrete filled.

Ceilings throughout are suspended, using demountable metal acoustic tile. Besides providing good sound treatment, this system allows wiring and plumbing lines to be run in the ceiling space, then dropped as required in the partitions. All partitions within suites are hollow metal flush-type panels, delivered to the building in specified colors. Ceilings and floors were finished in advance of partitions, for ease in alterations.

Above: a few plans of one-man doctors' offices at Hartford Medical Building. Each suite was custom-designed for the individual tenant and so constructed in original plans. Some doctors took this type of space, some joined together to share waiting room and facilities. Third floor plan shows a few of the larger suites for groups of specialists.
Here are a few more or less typical waiting rooms, and, above, the drug store. All interior spaces have metal pan acoustic ceilings, suspended below a space left for plumbing and electrical lines, demountable metal partitions, prefinished to individual order.
Office layouts in medical buildings have a habit of becoming complicated. These views give some idea of varying requirements as to use and equipment. There were standard agreements as to amount of plumbing and other equipment to be furnished by the owner, the rest to be installed by the building, billed to tenant.
This little building was built by a physician-surgeon for his own use, with a second suite for a dentist. There were also three other offices, intended for rental to non-professional tenants. But the building was so nice, the location so good, that there was heavy demand for them from other doctors who work occasionally in the vicinity. So the three small offices are now shared by six Chicago specialists, each of whom spends pre-arranged hours in consultations here. A laboratory, not originally planned, is now occupied by a full-time technician serving all the doctors. There are facilities for emergency operating, but not for hospitalization.
The building becomes elevated toward the rear, providing daylight for a small apartment and medical laboratory in the basement. The laboratory was an afterthought, made necessary by the crowding in of specialists not originally contemplated as tenants.

Building has a frame of steel beams and columns, with wood studs and joists. Exterior surfaces are brick and vertical T & G wood. Floors are of plywood with linoleum surfacing. Interior walls are of painted plaster over wood studs. Fluorescent lighting in ceiling troffers.
Not all doctors want to be close to the business district or even to the hospital. This little building is, then, a reversal of the centralization idea that was paramount in foregoing examples. Indeed it seems to represent an excellent idea for commercial development of outlying property. The site in this instance was once an apricot orchard, now in process of subdivision. Its frontage on three boulevards made commercial buildings seem logical, and a medical building was a good beginning.

The building is designed for the separate practices of a physician and a dentist. It was planned so that complete separation could be maintained, with separate entrances and waiting rooms. Nevertheless, the architects considered it wise to keep reception areas close together, so that should occasion arise the two suites could be joined together for operation with a single receptionist.

The long porchlike affair with its elevated planting beds is not as whimsical as it might appear. This is the western exposure, and the hot afternoon sun here is something to contend with. The roof extension protects the west side of the building completely, and the flower beds add further cooling effect.
Medical Building, North Hollywood, Calif.
Edna Vetter, Owner
Office of Randall Duell, Architect

Exterior is common brick, interior walls are frame and stucco. Floors are asphalt tile over concrete slab. There is a separate forced air unit for each suite that can be used for cooling in summer. As additional protection from heat the roof was extended on west side to keep off the hot afternoon sun.

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MEDICAL OFFICES
WITH PARKING

Shaw Medical Building, San Francisco
Francis Ellsworth Lloyd, Architect

Built to the requirements of three pediatricians, this building was put in a residential location. This was, of course, to make it easy for mothers and small children to visit the doctors, but it has the happy effect of lessening the number of supernumeraries who accompanied the mothers, for now a visit to the doctor is much less an occasion than when the offices were downtown. The building was set back for convenience in parking.

Making the small fry seem at home was given much attention by the architect. Colors and general feel were made as homelike as possible, and the small outside court provides a play area for waiting tots.

The plan gives exceptionally good separation to waiting, business and consultation areas. The one consultation room at the front is for an allergist, whose appointments are brief.
MEDICAL BUILDING IN THREE UNITS

600 South San Vicente Boulevard, Los Angeles
Rolf Sklarek, Architect

The doctor-owners' request for three separate units here produced a unique plan solution for a building on a narrow lot. The conventional scheme in these parts calls for two front units and a third distinctly rear one reached by a long exterior walk. But in the scheme developed (plan above) the rear unit has been found to be the preferred location. Its patients use the same entrance, it gains convenience to the parking space, and patio gives it extra pleasantness.

The patio, incidentally, aids in the acoustical isolation of the three units, beside contributing its graciousness to the building. This scheme had the further merit of utilizing parking space to best advantage, since no space need be left for turn-arounds.

Julius Shulman Photo
Since the building has a solid slab floor, planning for flexibility in plumbing lines was something of a problem. Many possible layout schemes were considered, to be sure that original plumbing installations would accommodate the most combinations of space.

A tight budget prevented the contemplated use of metal demountable partitions. Each unit is constructed with full-span roof rafters, so that no partitions need be load bearing. End walls were built as rigid frames, with some steel, for earthquake resistance.

The building uses a unique system of radiant floor heating and radiant cooling with the same piping, in combination with a "heat-pump" central unit. Results of this courageous choice have been quite good. However, the system is much too involved for description here; it will be reported in detail in a later issue.

An enclosed patio not only adds a pleasant note to two of the three reception rooms, but also serves to maintain acoustical separation of the suites. A corridor serves the same purpose of isolation, so that each suite is in effect a different building. In this scheme the rear unit has proved the most desirable.
MOVING STAIRWAYS IN OFFICE BUILDINGS

By G. B. Gusrae

Voorhees, Walker, Foley & Smith, Architects

During the past two years, there has been a noticeable increase in the use of moving stairways for vertical transportation in office buildings. They were installed in the Chrysler Corporation Building, Highland Park, Mich., in 1948 to serve from the ground to fifth floor. Large groups of employees are transported from the ground to the eighth floor in the John Hancock Building by 4-ft moving stairways. Remaining floors of this 26-story building are served by 21 elevators. All floors of the five-story Tennessee Coal and Iron Co. building, Fairfield, Ala., will be reached by 14 moving stairways.

Office buildings have a high density population, normally requiring large elevator plants involving considerable capital outlay. This is especially true in single purpose office buildings where all employees arrive and leave practically simultaneously.

The substitution of moving stairways for some or all of the required elevators in office buildings to reduce costs has met with success. The objective of this article is to compare the economics and services of both and furnish tentative guide lines for determining how many moving stairways should be used in a projected office building with any number of stories.

General Rules
(1) Moving stairs should be considered for buildings with 600 or more people distributed above the main floor.
(2) Moving stairways should be limited to an overall rise of 6 floors for satisfactory service. The rise certainly should not exceed 8 floors, unless special conditions such as heavy inter-floor traffic justify it.
(3) In a vertical transportation system employing moving stairways, at least one service elevator must be provided for carrying disabled persons and freight.
(4) Moving stairways are preferable to an economically equivalent or costlier elevator installation.
(5) Even in cases of economic disadvantage, the elimination of machine room and elevator pits, lesser steel loads, the immediate availability, large carrying capacity or requirement of rapid clearing or filling of a building may be determining factors.

Moving Stairway Chosen
At present the moving stairway sizes have been standardized at 2 ft, 3 ft, 4 ft and 32 in. widths. The latter is known as the "budget" size. These stairways are theoretically capable of carrying 4000, 6000, 8000 and 5000 persons per hr, respectively.

The 32 in. size has been chosen for this study because it is best suited for an average office building from the economic point of view. Some of the features of this stairway are:

Approximate width of step 24 in.
Space between balustrades 32 in.
Speed 90 to 125 ft per min (along incline)
Capacity 5000 to 6500 persons per hr
Cost $22,000 to $25,000 per unit

A speed of 125 fpm and the unit cost of $25,000 have been assumed in all discussions.

Advantages of Moving Stairways
Availability. The moving stairway is available to passengers for immediate use at all times thus eliminating the waiting period and floor stops inherent in any elevator installation.
Carrying Capacity. The size "32," 125 fpm moving stairway has a rated capacity of 540 persons in a 5 min interval. This is equivalent to about fourteen 2500 lb or about eleven 3500 lb elevators.*

Space Occupied. The area required for two, side by side, moving stairway units** is 8½ ft wide and about 50 ft long.

* Based on 2 round trips in 5 min.
** A moving stairway unit is the mechanism, one step wide, for one story.

All floors of the Chrysler Corp. administration building are reached by moving stairways. Albert Kahn Associates, Architects

Moving stairways in John Hancock Building run from ground floor to the eighth; elevators serve rest. Cram and Ferguson, Architects
long. This length includes 8 ft access at each end of every unit. The total area is 425 sq ft.

The area required for three average size elevators including an 8-ft wide access corridor is about 17 ft wide and 30 ft long or 510 sq ft.

Since various codes permit the use of moving stairways as means of egress, the cost of at least one stationary stair and the value of additional floor space made available can be applied against the cost of the moving stairway.

**Elevator Attendants.** The substitution of moving stairways for elevators dispenses with the services of elevator attendants. The yearly cost of an elevator attendant in the New York City area has been estimated at $5000. This includes a yearly salary of $3500, the cost of relief, starter, uniform and insurance.

**Machine Room and Pit.** The substitution of moving stairways for elevators eliminates the need for an elevator machine room on top of the building and elevator pits under the lowest landing. Under some circumstances this saving may be considerable.

**Power.** A moving stairway unit requires 2 to 3 kw of electric power per hr as compared with 5 to 10 kw per hr for each elevator.

**Supporting Steel.** The weight and live load of two average moving stairway units per floor is about 60,000 lb as compared with the 60,000 lb for each elevator. The steel supporting the load of an elevator must extend in uniform size through the entire height of the building whereas the steel supporting the loads of the moving stairway units can be decreased in size from floor to floor as the successive number of stairway units decreases.

**Shutdown.** The shutdown of an elevator deprives the building of one unit of vertical transportation for all floors. The shutdown of one moving stairway affects only one floor in one direction. The adjacent stairway unit can be made to reverse its direction of travel so as to take the place of the shutdown unit should this be necessary.

**Disadvantages of Moving Stairs**

**Speed.** The obvious disadvantage of the moving stairway is the relatively slow speed of vertical transportation. Although the moving stairway has a very large passenger carrying capacity as compared with elevators, its vertical speed at its best is only 60 fpm. Considering the additional 5 to 8 sec required for walking between stairway units, the vertical speed of a 125 fpm stairway is equal to an elevator speed of 35 fpm.

The fact that the same passenger may have to wait as long as 2 min for elevator service in no way alters his reaction to the apparently long travel time on the moving stairway. A certain amount of education in this sphere would contribute a good deal to a more positive attitude of the public to the moving stairway as a means of transportation to higher floors.

**Personal Feeling.** To some passengers a moving stairway represents transportation where the passengers have to do a good deal of work as contrasted with the attendant operated elevators where the passengers are being transported at their leisure. Obviously, more alertness is required of the moving stairway passenger than of the relatively relaxed person in an attendant operated elevator.

**Disabled Persons and Freight.** The moving stairway is unsuitable for those partially or totally disabled, for the infirm, for some aged persons and for those who suffer from certain phobias.

Freight loads, such as desks, chairs, tables, filing cabinets, safes, refuse, etc., common in office buildings, cannot be transported on a moving stairway.

To provide vertical transportation for disabled persons and freight at least one elevator must be provided with a moving stairway installation.

**Daily Cost of Moving Stairways and Elevators**

The daily cost values, as indicated in Table I, show that an average moving stair unit costs about $9.15 per day, self-service elevators $8.50 to $24.90 per day, and attendant operated elevators $25.20 to $41.60 per day. These values will be used for determining the economic feasibility of replacing elevator installations with moving stairways.

**When Should Moving Stairways Be Considered?**

Table II was prepared to help determine when moving stairways should be used. The values in the table indicate the number of elevators which are economically equivalent to a respective moving stairway installation. For instance, in a 4-story building, 6 moving stairway units and one freight elevator will cost $63.40 per day. Five $30,000 self-service elevators will cost, as explained in the subsequent paragraph, $65.50 per day. The two cost values are practically equivalent. Therefore, in a 4-story building, whenever five or more $30,000 self-service, or two or more attendant operated elevators are contemplated, the use of a moving stairway is a more economical proposition.

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**TABLE I—DAILY COST OF MOVING STAIRWAY AND ELEVATOR**

<table>
<thead>
<tr>
<th>Moving Stair Unit (one story)</th>
<th>ELEVATOR (various stories)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Invested</td>
<td>22,000 25,000 30,000 40,000 50,000 60,000 70,000 80,000</td>
</tr>
<tr>
<td>Capital Recovery</td>
<td>1450.00 1740.00 2320.00 2900.00 3480.00 4050.00 4620.00</td>
</tr>
<tr>
<td>Liability Insurance</td>
<td>200.00 50.00 50.00 50.00 50.00 50.00 50.00</td>
</tr>
<tr>
<td>Electric Power</td>
<td>270.00 550.00 550.00 700.00 700.00 800.00 800.00</td>
</tr>
<tr>
<td>Maintenance</td>
<td>500.00 300.00 300.00 300.00 300.00 300.00</td>
</tr>
<tr>
<td>Space Cost</td>
<td>320.00 320.00 320.00 320.00 320.00</td>
</tr>
<tr>
<td>Total Cost per year</td>
<td>2740.00 2320.00 2320.00 2900.00 3480.00 4050.00</td>
</tr>
<tr>
<td>Daily Cost</td>
<td>2.50 2.20 2.20 2.80 3.30 3.30 3.30</td>
</tr>
<tr>
<td>Daily Cost with</td>
<td>25.20 25.20 25.20 25.20 25.20 25.20 25.20</td>
</tr>
<tr>
<td></td>
<td>elevator attendant</td>
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A capital recovery factor of 0.05783 was based on 30 year life of equipment, 300 days per year and 4% per day return. (This is the money that has to be put aside to replace the installation at the end of 30 years.)

The liability insurance premiums are estimated. The cost of power is estimated at 3 cents per kW, 10 hrs each day. Cost of occupied space is based on $2.90 per sq ft per yr. Cost of an elevator attendant is estimated at $16.70 per 10 hr day, including the cost of relief, starter, uniform and insurance.

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installation with one freight elevator would be preferable.

Since a moving stairway installation occupies 15 per cent less space than three average elevators, a space value correction factor was included in the elevator figures of Table II.

For instance, the moving stairway installation in a 4-story building costs $63.40 per day. Five $30,000 self-service elevators cost $57.50 per day. The substitution of moving stairways for the five elevators would occupy the space for only three cars.

The space released would be 2 by 150 ft per floor or a total of 1200 sq ft for the four floors. At the value of $2.00 per sq ft per year, this space is worth $2400.00 per year or $8.00 per day. Adding the space value to the elevator cost we obtain a figure of $57.50 plus $8.00 or $65.50, showing that an installation of five $30,000 self-service elevators is economically equivalent to a moving stairway installation.

It is interesting to note that, in some instances, an elevator installation may represent the same daily cost as the respective moving stairway installation, and yet the initial capital is not the same. For instance, for a 8-story building, six $70,000 elevators have the same daily cost as a moving stairway installation although the former will cost $420,000 to install and the latter only $375,000.

Another point worthy of note is the unusually small number of elevators operated by attendants, that can be made economically equivalent to a moving stairway installation. In a 4-story building whenever two or more $30,000 attendant operated elevators are contemplated a moving stairway installation should be considered preferable.

The preference of a moving stairway over an economically equivalent elevator installation is due to considerably larger carrying capacity of the former.

**Examples**

The following examples illustrate the application of Table II in determining whether elevators or moving stairways should be used.

**Example 1**

Height — 4 stories
Population — 280 per floor or 840 above main floor
Elevators required — 5 of the $30,000 class

According to the data in Table II, five $30,000 elevators are economically equivalent to a moving stairway installation. The moving stairway would be preferable. If attendant operated elevators are contemplated, the moving stairway installation will be considerably less expensive.

**Example 2**

Height — 6 stories
Population — 190 per floor, or 950 above main floor
Elevators required — 6 of the $40,000 class

Referring to data in Table II we find that the moving stairway installation is preferable regardless whether the elevators are of the self-service or of the attendant operated type. The moving stairway will be considerably less expensive than attendant operated elevators.

**Example 3**

Height — 14 stories
Population — 2800 above main floor
Elevators required — 12 of the $70,000 class

We note from data in Table II that for a 7-story building, 3 attendant operated $70,000 elevators are economically equivalent to a moving stairway installation. By substituting moving stairways for 6 attendant operated elevators to provide service to the 7th floor, and by running 6 attendant operated elevators express to the 7th floor and local 7th to 14th floor, considerably better service will be obtained at lesser expense.

**Example 4**

Height — 12 stories
Population — 1000 above main floor
Elevators required — 6 of the $60,000 class, attendant operated for fair service

By substituting moving stairways for 3 attendant operated $60,000 elevators serving main to 6th floor, and running 3 elevators express to 6th floor and local 6th to 12th floor, considerably better service will be obtained at same cost.

Table II gives a break point at which a certain elevator installation exceeds the cost of a moving stairway. In other words, having determined an indicated elevator installation, for a certain building, the designer may check, in this table, whether it is more or less expensive than a moving stairway plus one freight elevator. Basis is daily costs as determined from Table I.

### TABLE II

<table>
<thead>
<tr>
<th>Number of moving stair units</th>
<th>4 FLOORS</th>
<th>5 FLOORS</th>
<th>6 FLOORS</th>
<th>7 FLOORS</th>
<th>8 FLOORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Service with attend.</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>Number of freight elevators</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Installation Cost (main floor)</td>
<td>170,000</td>
<td>220,000</td>
<td>275,000</td>
<td>325,000</td>
<td>375,000</td>
</tr>
<tr>
<td>Daily Cost (from Table I)</td>
<td>63.40</td>
<td>81.70</td>
<td>101.20</td>
<td>119.30</td>
<td>137.80</td>
</tr>
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<td>Economically Equivalent No.</td>
<td>$20,000</td>
<td>$25,000</td>
<td>$30,000</td>
<td>$40,000</td>
<td>$50,000</td>
</tr>
<tr>
<td>No.</td>
<td>$20,000</td>
<td>$25,000</td>
<td>$30,000</td>
<td>$40,000</td>
<td>$50,000</td>
</tr>
<tr>
<td>basis on No.</td>
<td>$60,000</td>
<td>$70,000</td>
<td>$80,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Bold numbers indicate most logical elevator installations*
To free floor space of this shopping center in Portland, Ore., the engineer designed the roof to hang from five huge concrete frames.

**STORE ROOF HANGS FROM CONCRETE FRAMES**

*Design by Leslie E. Poole, Engineer*

*Contractor: A. M. Hocken*

Fred Meyer Burlingame is a complete shopping center under one roof: it combines a supermarket, drug store, coffee shop, apparel shop and appliance store. To enclose all these facilities takes a big roof. And if this roof were supported by conventional wood trusses and posts, the flexibility of merchandise display and location of traffic areas would have been limited.

The designer neatly solved this problem by suspending the roof and ceiling from lightweight concrete frames. Trussed wood joists to which the roofing and ceiling are attached, hang from tie beams of the frames.

In describing the concrete frames, Mr. Poole says that the savings in steel...
The vertical haunches of the concrete frames project down through the roof as shown in the inset. This simplifies the flashing and improves the appearance over an "A" frame.

brought about by the light weight paid for the additional cost of the concrete above that of regular aggregate concrete. He reports that the simplified roof construction compensated for the additional cost of the concrete frames, so the overall cost was no more than with a conventional wood truss roof.

All concrete above the floor line is lightweight, using an expanded shale aggregate.

The roof support in areas not spanned by the five large frames consists of (1) concrete beams and trussed wood joists extending from the frames to the rear wall and (2) steel trusses and wood trusses extending from the frames to remaining exterior walls.
Below and right: drawings show location and amount of reinforcing in what is virtually a tied, 3-hinged frame. Flexibility of thin sections is assumed to provide hinging action. Concrete is lightweight, using expanded shale.

REINFORCING DIAGRAM

Above, left: flashing detail of hangar rod; roofing is built-up asbestos. Above right: typical wood truss; this one spans between concrete frames.

CROSS SECTION THROUGH ARCH

DECEMBER 1950
THIS ENGINEER TRAVELS IN COMFORT

By Fred N. Severud

The author, well-known structural engineer, frequently takes the body for an analogy in explaining principles of structural design. Now, Mr. Severud tells how, in what he calls “sedentary cogitations,” he has rested while traveling by applying these selfsame principles.

Sketches by Walker O. Cain

Do it ever occur to you what a great part of your life you spend sitting? Sometimes with very little to do. Why not use some of that time to think about how your body acts as a structure? The most amazing, thrilling, versatile structure on the whole earth.

We had a combined gardener and handy man working for us until a few years ago. He was married but stayed in his own room at our house most of the time and didn’t go home very often. When I asked him why, he answered, “Oh, I don’t know how to set around any more at home.” So let us study the art of “setting around,” particularly as it helps us broaden our understanding of structural principles.

Sometimes when I need to relax, I take an unnecessary taxi ride, lean way back and put my arm under the small of my back. You can see how uncomfortable this position would be without the arm. The torso would then have to carry its load as a beam from the shoulder to the buttocks. The torso would depend upon the back muscles in tension to carry the load, partly as catenaries and partly as “reinforcing rods” of a beam. It would soon get tired and would send telegrams to the brain that they had been unfairly treated and wanted relief. The arm alters this situation radically. An intermediary support has been added. The catenary action of the muscles has been almost entirely eliminated and the torso now acts as a continuous beam on very short spans. Try it sometime and you’ll see what I mean. You can “set around” in that position for hours without getting tired.

Another approach involving different principles may best be illustrated by a little story. A few years ago I was visiting Iceland in connection with a projected government broadcasting station there. I timed my visit so that I would be able to hear my brother, Harald Saeverud, conduct some of his compositions on his fiftieth anniversary in Bergen, Norway.

Something went wrong with the reservations so I had to sit up all night on the train from Oslo to Bergen after having just spent a night on the plane from Iceland. I knew I would be called upon to give a few speeches in my half-forgotten native tongue so I had a scarf and a strap so I made a loop of the scarf to the baggage rack by the mechanical means outside of the body! With this thought in mind, the solution became rather obvious. Above me was a shock, when the load of the head was given passengers first a shock, then a chuckle.

A similar solution, not quite so dramatic, resulted from a trip from Toronto to Winnipeg. Here again, necessity was the mother of invention. Due to bad
weather, the few hours' sleep that I had
planned on catching at Toronto were
gone, and I had to go on directly to
Winnipeg after having been up all night.
My lecture there was at 3 p.m., and the
plane was due to arrive at two o'clock.
On an airplane, the undignified solution
that would be tolerated with amuse­
ment in a Norwegian coach would be
very much out of place. So how then
could I get rid of the weight of the head
in a more dignified way? If not in ten­
tion, then why not in compression?

"The only compression member
available was the removable arm"

The only compression member availa­
ble was the removable arm separating
the two seats. The adjacent seat was
fortunately empty. I took the separat­
ing arm out, and, after a few trial-and-error
experiments, slanted the arm so that a
pillow placed on it would be level with
the window sill and rest partly on the
sill and partly on the separating arm.
This carried the load of the head very
nicely and mechanically to the floor of
the plane. The torso had to be slanted as
shown in the sketch, and this posed a
secondary problem. This position would
lift the left buttock off the seat and put
too much concentration on the other.
This was easily remedied by bunching
up a blanket simulating a slanting chair
bottom. A thick book or a briefcase
would have done just as well. (Hint to
commuters resting elbows on window
sills.) In this position I had no trouble
catching up on my sleep, and the lecture
was at least better than it might have
been.

I believe, however, that the most com­
fortable position that I have slept in on
an airplane was on my first crossing of
the Atlantic. There I had the advantage
that not only was the adjacent seat
vacant, but also the two seats ahead of
me. Obviously, a horizontal position
giving uniform support for the whole
length of the body is by far the most
restful. With my long legs this is not
easy to obtain unless some additional
supporting area is provided. With the

extra seats and the blankets available,
this became a challenge. Obviously the
blankets could be made to carry load if
I only had some place to hang them
from. The solution was simple enough,
as shown in the sketch.

While we are on this subject, I'd like,
as a matter of completeness, to wind up
with an exploration of the possibilities
of developing furniture which leans for­
ward instead of backwards! It seems to
me that it has been taken for granted
that only by leaning backwards can a
restful posture be obtained in a practical
manner. Maybe so, but I should like to
challenge it just to see what it leads to.

A practical illustration of the forward
resting principle may be helpful in such a
discussion. I've made myself a rather
crude rest for the head and shoulder
with this thought in mind. I made it to
use in traveling, but I have been too
busy to refine it beyond its first crude
stage. I have, however, clearly in mind
how it can be rearranged to provide a
very light, portable, compact unit with
deflatable rubber pillows that could
easily be taken along in travels for any
distance. Let me first describe the con­
traption that I have made.

It consists of three pieces of wood
nailed together as shown in the sketch,
with a leg for ground support. By plac­
ing four pillows, two on the front
projections to rest the head on and one
under each shoulder on the rear pro­
jections, and bringing the load from
the center table down to the ground
through a single leg, a very restful pos­
ture is obtained. You have to experience
it to find out just how restful and sooth­
ing it is. The leg should be so arranged
on the center table that the weight of
the head will tip the shoulder supports
upward so that a slight stretching of the
vertebrae will result.

Looking at the sketch will show you
how much of the body load is carried
directly to the ground, freeing the verte­
brae of most of the load and putting
some of them under tension, which is a
refreshing change from the relentless
pressure they are normally under. Rest­
ing on this "front-chair" is one of the
most relaxing experiences you have ever
had. I feel certain that some of the
principles employed in this front-chair
may be very useful under certain cir­
cumstances.

It may be that chairs can be made to
sit in, either as back-chairs or front­
chairs. Be that as it may, I think that
it's high time that railroad and airplane
companies study this whole situation
from a fresh viewpoint so that "setting
around" on a long trip can be a pleasure
rather than the slow torture it now is.

The last sketch shows a more dignified
and maybe a more practical travel aid.
Again shoulders and head are mechan­
ically supported, bypassing the verte­
brae.

To conclude, then, giving a thought
to your body as a structure is worth
while in many ways. Try it.
When completed this year, the Cleveland Parkway Gardens will contain a total of 1219 three- and four-room suites, each equipped with its own centrally fired, automatic warm air system. Both installation and operating economy, as well as tenant-controlled comfort, were deciding factors.

Since each heating plant will be controlled by its own thermostat and served by its own gas line, piped through a meter assigned to the tenant, the tenant can use the heat just as he wants it. Management will make necessary repairs and take care of normal maintenance.

The 40,000 Btu input furnace for each apartment occupies only 16 by 23 in. of floor space, so it is easily housed in a small closet along with the water heater. Ducts suspended from the ceiling joists distribute heat to registers located on the high side of the walls. Space between the concrete floor of the apartment above and the ceiling of the apartment below is used as a return air plenum for the upper apartment.

Combustion air for the furnace and water heater is brought from the outside of the building through a 5 in. duct. A grille cap protects the inlet.

Due to special emphasis on a simplified heating layout, it was possible to design the distribution system for shop fabrication and for time-saving installation.

Skeletonized layout shows air distribution. Furnace (by dashed outline) delivers warm air to rooms through plenum and ducts. Above: floor plans of the types of suites in Parkway Gardens apartments, Parma, Ohio, each of which has its own warm air furnace. Left: furnace occupies area only 16 by 23 in. and is housed in closet along with the hot water heater.

In basement suites, return air is brought back to furnace through return grilles under windows which lead into vitreous clay pipe.
Plastic pipes are being adapted for the use of piping and tubing to carry liquids and gases — plastic piping of various attributes, sizes and colors. Industry had made great use of many types, both flexible and rigid, for their chemical resistance, light weight and ease of installation. They have been used in other fields for beer supply lines, gasoline lines, and to supply sea water to swimming pools.

Other recent applications have included domestic water supply lines for rural areas, pipes for gas, and for lawn sprinkler systems. The plastic chosen for each of these uses was picked because of particular characteristics (superior resistance to salt water, to certain soil conditions, etc.) which surpass those of more conventional materials. Continued development and increased production may eventually lead to more general use in the building and housing field as a replacement for critical metals. Some of the pipes currently on the market include:

* **ACE Saran** pipe, tubing and fittings are said to have exceptional resistance to acids and other corrosive chemicals. They are especially recommended for the food and chemical processing industries. Actual uses have included artesian well equipment, cold water drains on domestic refrigerators, gas fuel and vent lines, and domestic plumbing lines. The plastic is available in black only, and in moulded or extruded form. It has high impact strength. It may be threaded or heat welded at joints. Piping is made in 1/2- to 4-in. sizes, and in 10-ft lengths. A complete variety of fittings is available in sizes 1/2- to 2-in. Flexible tubing and flare-type fittings are stocked in 1/2- to 3/4-in. sizes and in 25-ft min lengths. Valves are made in 1/2- to 1 1/2-in. sizes. American Hard Rubber Co., 11 Mercer St., New York 13, N. Y.

* **Mills-Plastic** pipe, tubing and fittings are also made of Saran. They have similar qualities and are made in the same range of sizes as ACE Saran. This plastic is durable, and has good insulating qualities. It is cut with ordinary saws. It weighs about one-fourth as much as metal pipe. Elmer E. Mills Corp., 2930 N. Ashland Ave., Chicago 13, Ill.

* **Dow Saran-Lined Steel Pipe, fittings and valves are said to have overcome supporting and temperature problems by using Saran as a lining material. The temperature limitations are generally confined within the range of minus 40 F and plus 194 F. The pipes can be used with all acids, alkalis and salt solutions, with the exception of a few of the less well-known organic solvents. Sizes available are 1- to 6-in. inclusive, with a 10-ft max length. The pipe may be cut and threaded on standard equipment. Distributors for the Dow Chemical Co.: Saran Lined Pipe Co., 701 Stephenson Bldg., Detroit 2, Mich.

* **Glasweld** is a laminated tubing in which glass fibers in form of cloth, mat or tape are bonded with resins. It is made in two types: convolutely wrapped for structural tubing or piping; and

(Continued on page 166)
Concrete Forms

Masonite Concrete Form Preswood. Folder gives a simplified short specification for the use of form board to produce smooth surfaced concrete. Features of the method are discussed. Details and photographs show construction of flat slabs, walls, beams and columns. Types, sizes and physical characteristics of the available form boards are noted. A deflection chart is also included. 4 pp., illus. Masonite Corp., 111 Washington St., Chicago, Ill.*

Waterproofing Brickwork

Omicron Mortarproofing For Tight Brick Walls. Booklet discusses the use of a special mortar admixture to obtain waterproof brick walls. Features of the "O. M." admixture are described. A number of comparative tests on mortar without and with the admixture are covered with tables and photographs. Common causes of cracks in mortar joints are noted. Many photographs of buildings constructed with "O. M." mortar are also included. 16 pp., illus. The Master Builders Co., 7016 Euclid Ave., Cleveland 3, Ohio.*

Stainless Steel in Hospitals

Allegheny Metal in Hospitals. Booklet lists uses of stainless steel in the modern hospital in general, as well as in four specific departments (Service, Nursing, Surgical Departments, and Diagnostic and Treatment facilities). There is a four-page check list of stainless steel hospital applications. Summarized are the technology of the metal, its available forms and its fabrication. 34 pp., illus. Advertising Department, Allegheny Ludlum Steel Corp., 2020 Oliver Bldg., Pittsburgh 22, Pa.*

Electrical Wire Connectors

Solderless Connectors for Electrical Wiring. Bulletin No. 750. A pressure tool and fittings for solderless splicing and terminating electrical wires is described. Installation instructions and ordering information are included. 4 pp., illus. Buchanan Electrical Products Corp., 1290 Central Ave., Hillside, N. J.

School Lighting

Guide To Lighting Educational Institutions. Booklet contains 34 lighting plans for school rooms, including areas for administration, teaching, research, sports, assembly and services. Photographs of the actual installations and sketches of the Holophane equipment used are given with each plan. Data are given on the watts per sq ft of floor area and the illumination levels as measured. There is also a brief and general section on principles of lighting. 52 pp., illus. Holophane Co., Inc., 342 Madison Ave., New York 17, N. Y.

Carpeting Fasteners

The Secret of Wall-To-Wall Carpet Beauty. Folder describes the Smooth-edge tackless carpet installation. The carpet grippers are illustrated by sketches and photographs. Notes are given for use with concrete and wood floors. Pictures of typical installations are also included. 4 pp., illus. The Roberts Co., 1536 N. Indiana St., Los Angeles 63, Calif.*

Aluminum Windows

Fleellite Installation Suggestions. Folder describes an aluminum window which combines frame, sash, storm sash and screen in a single unit. Construction and operation of the window are discussed, and illustrated with many details. Installation details are included for constructions of brick veneer, concrete block, frame and solid masonry. A table of types and sizes of standard windows, and notes on rough openings required are also included. 6 pp., illus. Fleet Of America, Inc., 415 Dun Building, Buffalo, N. Y.

(Continued on page 180)
No Wonder Each Year More and More Specifications Call for NEO-RAY Louvred Ceilings

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Plus

New simplified spot lamp tables for computing light intensities in show windows and all highlighted areas.

See our catalogue in Sweet's Architectural File for 1950, sec. 31a 16
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were accorded the honor of serving this impressively
beautiful edifice. The Fitzgibbons “D” Type steel boil­
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fired by automatic coal stokers fed from an
overhead hopper in a particularly good arrangement.

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boiler heat” — The Fitzgibbon Boiler.

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Heating Engineer and Installing Contractor;
The Sweeney & Wise Company, Cleveland, Ohio.

Fitzgibbons Boiler Company, Inc.

101 PARK AVENUE, NEW YORK 17, N. Y.

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Address: ........................................

City: ............................................. Zone: ....................................

State: ........................................
MODULAR COORDINATION: 4

Prepared with the cooperation of Structural Clay Products Institute

The preparation of working drawings, as well as preliminary drawings, is greatly simplified by the Modular Coordination system. Building layouts and elevations are drawn only to nominal dimensions. Actual dimensions needed on the job are given by assembly details. These are keyed to the layouts by reference to the 4-in. modular grid. With consistent grid placement, recurring details need be drawn only once. The same holds true for similar details, such as a series of windows, which vary in size by multiples of 4 in. The method also saves time in permitting change of specifications, and substitution of alternate materials for a detail, without redrawing the general layout sheets.

Opening details involve the coordination of many products — masonry facing and backup, windows, doors, trim, etc. Standard dimensions of masonry units manufactured for modular coordination are made in 4-in. multiples including half of a standardized joint thickness. This provides an interchangeability of parts to be selected. Non-modular-sized items require a specially worked out detail referencing them to the grid. Installation details are standardized by adopting a fixed difference between the size of the window and the nominal opening. The details should include sections through jamb, head and sill, as in the typical installation on Sheet 5. Each of these should show the edge of the nominal opening and the location adopted for the edge of the sash. This is generally taken as a minimum 2-in. surround to allow for window frames, heads and caulking spaces; a nominal space of 4 in. is left for sills. These details should also show the difference between the actual structural wall opening and the nominal opening.

Grid placement of jambs for openings should be similar on layouts, allowing a single detail to apply with 5½-by 12-in. structural tile units, four extra-sized units can be used to provide 4-in. flexibility for the height of openings. These are shown above for square heads, recessed heads (1½ and 2½ in.), and for sills.
For more than a quarter century G-J Door Devices have been enjoying the unqualified recommendations of leading architects in specifications for schools, commercial and public buildings, and hospitals throughout the country. Not only because of the fine quality and unvarying dependability of the products themselves, but also because the G-J line includes devices for all types of doors and their various controlling problems.

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Chicago 40, Illinois
MODULAR COORDINATION: 5

Prepared with the cooperation of Structural Clay Products Institute

to both sides. This need not hold true vertically, since the head and sill details are different. With flush jambs, when the exterior wall surface is on a grid line, jambs are normally on grid lines, and coincide with the grid opening, as in Detail A on Sheet 1 (November TSS). With jambs between grid lines, as in Detail B on the same sheet, the reference grid opening is 4 in. wider than the nominal masonry opening. With jambs recessed 2 in., the converse of the above is true. Because of this difference, the grid opening is often identified by a half arrow symbol.

Flexibility in masonry wall and opening lengths and heights may be obtained by supplementary “closure” units at the openings or in the masonry field. (See details on Sheets 2 and 3, November TSS, and on Sheet 4 in this issue.) The masonry pattern can often be kept consistent by making wall lengths a multiple of \( \frac{3}{4} \) the nominal masonry unit dimension when laid in \( \frac{3}{4} \) bond, or \( \frac{3}{4} \) for \( \frac{3}{4} \) bond.

Floors vary in depth to meet structural requirements. Some portion, however, must be in a fixed relation to the grid. The A62 Guide recommends that the surface of finished floors be placed \( \frac{3}{8} \) in. below the grid line (see details at right), to coincide with masonry joints, and to maintain a constant relation between the floor and the masonry openings for exterior doors. For wood frame construction, it is suggested that wood sub floors be placed on the grid line. Necessary adjustments in the many items of interior finish and equipment can be made at the junction with the ceiling.

<table>
<thead>
<tr>
<th>CONCRETE MASONRY UNITS</th>
<th>Nominal Sizes, Inches</th>
<th>Full Size</th>
<th>Supplementary Sizes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>Length</td>
<td>Height</td>
<td>Lengths</td>
</tr>
<tr>
<td>2(\frac{1}{2})</td>
<td>8</td>
<td>2(\frac{1}{2})</td>
<td>6, 4</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>3</td>
<td>6, 4</td>
</tr>
<tr>
<td>4</td>
<td>12</td>
<td>4</td>
<td>10, 8, 6, 4</td>
</tr>
<tr>
<td>5(\frac{1}{2})</td>
<td>12</td>
<td>5(\frac{1}{2})</td>
<td>10, 8, 6, 4</td>
</tr>
<tr>
<td>6</td>
<td>12</td>
<td>6</td>
<td>10, 8, 6, 4</td>
</tr>
<tr>
<td>8</td>
<td>12</td>
<td>8</td>
<td>10, 8, 6, 4</td>
</tr>
<tr>
<td>8(\frac{1}{2})</td>
<td>16</td>
<td>8</td>
<td>12, 8, 4</td>
</tr>
<tr>
<td>10</td>
<td>16</td>
<td>12, 8, 4</td>
<td></td>
</tr>
</tbody>
</table>

For nominal sizes of brick and tile units, see sheets 2 and 3.
A LOT of prospective clients in your community read this four-color ad in the October 28th *Saturday Evening Post*. They got an encouraging and reasonable answer to the question: "When should a fellow buy a house?"

They learned about the value, the comfort and the safety that you can design into a new house, with the help of the Gold Bond line of related building materials.

The Gold Bond series of *POST* ads is planned to help overcome the effect of restrictions... and help convince "on-the-fence" home buyers that they should build now if they're ever going to!
BIBLIOGRAPHY OF STANDARD CODES AND SPECIFICATIONS: 5

Prepared by William Henry Decy, A.I.A.

As a supplement to the previously published bibliography sheets, the first two columns on this page list additional professional and trade organizations which issue manuals and other data useful to architects. The last column is an addendum to the list of specifications and codes frequently cited; bold type numbers refer to address lists; other numbers are code designations for each particular standard or specification.

ORGANIZATIONS

A
44. Air Conditioning and Refrigeration Masonry Assn., 717 Southern Blvd., Washington, D. C., Executive Vice President.
45. American Society of Civil Engineers, 33 W. 39 St., New York, N. Y., Secretary.
48. Appalachian Hardwood Manufacturers, Inc., 414 Walnut St., Cincinnati, O., Secretary.
49. Associated General Contractors of America, Munsey Bldg., Washington, D. C., Managing Director.

B
50. California Redwood Assn., 405 Montgomery St., San Francisco, Calif., Executive Vice President.
51. Convector Manufacturers Assn., 40 W. 40 St., New York, N. Y., Secretary.
53. Hardwood Plywood Institute, 600 S. Michigan Ave., Chicago, Ill., Secretary.

C
54. Mahogany Assn., Inc., 75 E. Wacker Dr., Chicago, Ill., Secretary.
55. Maple Flooring Manufacturer’s Assn., 332 S. Michigan Ave., Chicago, Ill., Secretary.
56. Metal Window Institute, 1427 Eye St., Washington, D. C., Technical Director.

D
58. National Association of Fan Manufacturer’s, 5-208 General Motors Bldg., Detroit, Mich., Secretary.
60. National Retail Lumber Dealers Assn., 515 Union Trust Bldg., Washington, D. C., Secretary.
62. Northern Hemlock and Hardwood Manufacturers Assn., Oshkosh, Wis., Secretary.
63. Northern Pine Manufacturers Assn., 4529 Oakland Ave., Minneapolis, Minn., Secretary.
64. Open Steel Flooring Institute, 903 American Bank Bldg., Pittsburgh, Pa., Secretary.
65. Plate Glass Manufacturers of America, 1211 First National Bank Bldg., Pittsburgh, Pa., Secretary.
66. Plywood Manufacturer’s Institute, 205 W. Wacker Dr., Chicago, Ill., Secretary.
68. Red Cedar Shingle Bureau, 5508 White Bldg., Seattle, Wash., Manager.
70. Southern Hardwood Producers, Inc., 305 Sterick Bldg., Memphis, Tenn., Secretary.
71. Southern Pine Assn., Canal Ave., New Orleans, La., Secretary.
73. Steel Joint Institute, 201 N. Wells St., Chicago, Ill., Secretary.
74. Steel Kitchen Cabinet Institute, 74 Trinity Pl., New York, N. Y., Executive Secretary.
75. Tile Contractors Assn. of America, Investment Bldg., Washington, D. C., Executive Secretary.
76. The Veneer Association, 600 S. Michigan Ave., Chicago, Ill., Secretary.
77. West Coast Lumbermen’s Assn., 1410 S. W. Morrison St., Portland, Ore., Secretary.
78. Western Pine Assn., 510 Yeon Bldg., Portland, Ore., Secretary.

STANDARDS

Amer. Inst. of Steel Const. (9)
Code of Standard Practice for Steel Bldgs. and Bridges (Rev. Dec. 1, ’46)
Spec. for the Design, Fabrication, and Erection of Structural Steel for Bldgs. (Rev. of June 1949)
Housing and Home Finance Agency (43)
Performance of Masonry Chimneys for Houses. (Technical Paper No. 13)
Module Coordination — What is it? How does it work? Will it help reduce housing costs?
U. S. Department of Commerce
Commercial Standards (27)
Blinds, venetian, wood (61-37 CS)
Calking, lead (94-41 CS)
Cement roofing, asbestos (26-30 CS)
Conectors, steam and hot-water, method of testing and rating (140-47CS)
Doors (entrance) factory fitted, Douglas fir (91-41 CS)
Doors, pine (ponderosa) (120-48 CS)
Furnaces, forced air, solid-fuel-burning (109-44 CS)
Furnaces, gas, floor, gravity-circulating type (99-42 CS)
Furnaces, oil burning, floor (equipped with vaporizing pot-type burners) (113-44 CS)
Hardwood wall paneling (74-39 CS)
Hardwood plywood (35-49 CS)
Insulating Board, structural fibre (42-49 CS)
Insulation, wood fibre blanket (160-49 CS)
Mineral wood products, all types testing and reporting (131-46 CS)
Pipe, bituminized-fibre; drain and sewer (116-44 CS)
Plumbing Fixtures, enameled cast iron (77-48 CS)
Plumbing Fixtures, formed metal enameled sanitary ware (144-47 CS)
Shingles, wood (31-38 CS)
Tiles, wall, polystyrene plastic, and adhesives for application (168-50 CS)
Veneers; walnut (64-37 CS)

National Bureau of Standards
Simplified Practice Recommendations (27)
Aggregates, coarse (crushed stone, gravel and slag) (163-48 SPR)
Asbestos paper and asbestos millboard (19-37 SPR)
Conductors, copper (for building purposes) (180-41 SPR)
Doors, kalamein frames and trim (83-28 SPR)
Partitions (metal) for toilets and showers (101-40 SPR)

DECEMBER 1950
The formal opening of Our Lady of Lourdes Hospital on July 1, 1950, signalized the completion of a $4 million project which is the last word in hospital construction and equipment.

Steam was selected for the heating of this great institution—steam harnessed and brought under control with a Webster Moderator System of Steam Heating. An Outdoor Thermostat adjusts the supply of steam with every change in temperature. Prevents wasteful overheating. Maintains comfort conditions during mild weather or on the severest winter day.

Our Lady of Lourdes Hospital, Camden, N. J. At left: corner of a typical semi-private room.
New Hospital

Webster System Radiators, taking no useable room space, were engineered into sanitary enclosures integrated with the window construction. Metal front provides easy access if necessary. Each convector has a built-in radiator trap and valve, permitting 100% heat shut-off—no dampers are needed.

Operation of the institution is under the direction of the Sisters of the Third Order Regular of St. Francis. Included in the Hospital is the Bishop's suite and a chapel seating 250.

An important factor in the success of Webster Heating installations is the friendly service and close cooperation of the authorized Webster Factory Representative. Call him or write us for his name.

Address Dept. AR-12
WARREN WEBSTER & CO., Camden S, N. J.
Representatives in Principal Cities
In Canada, Darling Brothers, Limited, Montreal.

ARCHITECT:
Paul C. Reilly, New York.

BUILDER:
George A. Fuller Company, New York.

CONSULTING ENGINEER:
Sears & Kopf, New York.

HEATING CONTRACTOR:

Chief Engineer A. D. Bradley uses master key for heat shut-off at individual radiators. Shown at bottom of page is one of 14 solariums.
window sills
and stools by

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419-4TH AVENUE • NEW YORK 18, N. Y.

Architectural Engineering

PRODUCTS
(Continued from page 155)

spirally wrapped for piping. The products are claimed to have the strength of steel, to be rust- and corrosionproof, and to have good electrical insulating qualities. It has high impact resistance, and may be used in temperature ranges from minus 60 F to plus 275 F. It has been used as piping in oil and chemical processing industries, and as tubing for building, electrical and allied fields. It is also suited to outdoor and marine uses. It is made in sizes from 1/2- to 6-in. when convoluted wrapped, and to 12-in. when spirally wrapped. The maximum length is 30 ft. Fittings are made from 1-inch to 6-inch ID. It can be supplied in a wide range of colors. Joints are made by threading, plastic flanges, or tapered joint sections. United States Plywood Corp., 55 W. 44th St., New York 18, N.Y.

• Carlon Plastic Pipe is another type, which is claimed to be durable, light in weight, and guaranteed against rot, rust and electrolytic corrosion. It can be used for drinking water and drainage systems, ventilating and cooling lines, wiring conduit. It is made in a flexible type, with diameters to 6-in., lengths to 400-ft, and in rigid type in 20-ft lengths and diameters to 8-in. Carter Products Corp., 10403 Meech Ave., Cleveland 5, Ohio.

Overhead Unit Heater

The Norman Three-Sixty Overhead Forced Convection Heater combines heat distribution in a 360 degree radius with forced exhaust. This is claimed to equal——

Round convector heats in all directions
(Continued on page 168)
"Low Impedance BUS DUCT for the Long Run"

"We've found Westinghouse low impedance bus duct to be ideal for long transmission runs in a plant," say Mr. R.W. Holicky, Chief Engineer, and Mr. W.F. Nock, Field Supervisor, of the Doan Electric Company in Cleveland. "It's easy to handle and no trouble at all to hook up."

Let bus duct answer your secondary power distribution problems—whether you're building or expanding. Low impedance bus duct provides required voltage right out to the end of your system... keeps lights, motors, and other equipment functioning at top efficiency. In addition, it packs greater carrying capacity into a smaller space than either conduit or wire. And bus duct means reduced maintenance.

Completely pre-fabricated sections can be installed up out of the way of plant traffic—quickly and easily. What's more, the sections can be disassembled immediately and rushed to new locations with no wiring mess to unravel.

Ask your Westinghouse representative for the facts on dollar and space-saving bus duct. Descriptive bulletin B-4271 contains further information. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania.

Westinghouse BUS DUCT

DECEMBER 1950
Where should glazing compound be specified?

... as you probably know there is often a fine decision as to whether to specify putty or glazing compound. In all D-P Putties you will find only the finest ingredients used and these will be faultlessly compounded, but there are always limitations even in the application of the best putties. Some of the most common reasons for selection of D-P glazing compound rather than D-P Putty are outlined briefly below:

ANSWER: In brief, Glazing Compounds should be specified where severe vibration conditions are encountered or where longer lasting service is required or where low maintenance cost is desired as detailed below:

First: D-P Glazing Compounds are elastic. They set, but remain permanently elastic so as to expand and contract with bonding surfaces in temperature extremes. They also have better working qualities in all temperatures above 35°F.

Second: Because D-P Glazing Compounds remain elastic they stand severe conditions such as heavy moisture and extreme vibration. For example: you would specify a D-P Compound for application in buildings or factories where heavy machinery vibrates the building or where the buildings are near heavily-travelled railroad tracks. Laundries, bakeries and canneries are also buildings requiring a glazing compound.

Third: Where low maintenance is required D-P Glazing Compounds should also be specified. These glazing materials reduce replacement cost by facilitating the cleaning of sash after lights are broken. D-P Glazing Compounds also last longer than most putties since they are permanently plastic and stick tight for years. Always specify D-P Glazing Compounds for the finest, longest lasting job under the above mentioned conditions and for easy application and lowest maintenance on any job anywhere.

CHECK THE ABOVE VITAL GLAZING DETAILS WHEN YOU SPECIFY AND ALWAYS PLAY SAFE

DEMAND D-P BRANDS
- NO. 1012 ALUMINUM GRAY GLAZING COMPOUND
- D-P INDUSTRIAL TYPES OF GLAZING COMPOUNDS FOR STEEL OR WOOD SASH
- COMPLETE LINE OF PUTTIES FOR WOOD AND METAL SASH...SPECIAL USE
- CAULKING COMPOUND
- WHITE WONDER GENERAL PURPOSE TILE CEMENT

The DICKS-PONTIUS Co.
Makers of Quality Putty Products Since 1867
DAYTON, OHIO • Alexandria, Va. • Atlanta, Ga.

Two-section door frame is installed in finished walls, adjusts to wall thickness

(Continued on page 170)
When Speed is the Need...

Use CECO Open-Web Steel Joists

One day you pass a new building in the making—ground is broken—foundations are in. Then, in just a short, short time, where once there was a vacant lot, there stands a gleaming hospital, spick-and-span new. Chances are it was constructed with Open-Web Steel Joists, for that's the fastest way ever to build. There's no temporary formwork necessary... nothing to take down later on. Open-Web Steel Joists are self-centering... are placed on the wall structure and right away rib lath can be laid and concrete poured to form the floor. And while all this is going on, other building trades can be on the job doing their special work such as installing steel windows, plumbing and heating. So, when speed gets the call, specify CECO OPEN-WEB STEEL JOISTS. They are fabricated to exact size, come to the job tagged, ready to install... provide low cost fire resistive structures. Ceco assures you fast service from five plants: Birmingham, Chicago, Houston, New York and Wheeling, W. Va.

CECO STEEL PRODUCTS CORPORATION

General Offices: 5601 West 26th Street, Chicago 50, Illinois

Offices, warehouses and fabricating plants in principal cities
and to hold the frame in line with the door during installation. The method is claimed to save from 3 to 5 hours of installation time per door.

The doors are 6 ft 8 in. high and 1 3/4 in. thick. Widths run from 18 to 32 in. in 2 in. intervals. Widths of 34 and 36 in. are available on special order. The units may be obtained in a variety of woods, door and trim styles, and with a choice of hardware for different uses. Wm. R. Lutze Co., 18 Bergen St., Brooklyn, N. Y.

Swedish-American Furniture

An excellent new line of chests and tables is the result of collaboration by American designers and Swedish craftsmen. The 40 pieces which make up the line were designed by Edmond J. Spence for The Walpole Co., Inc. The furniture is manufactured in Sweden by 16 factories, each of which specializes in a particular type of furniture construction. The prices are comparable to American-made furniture of like quality.

The pieces are made of Swedish birch, in pale or medium blond finishes. Several have inlay strips of birch in contrasting grain, or of sycamore wood. Hardware has been eliminated on some of the units; others are fitted with specially designed Swedish-made pulls. Items in the line include dressers, cabinets, desks, dining tables, and many types of coffee, lamp and occasional tables. The Walpole Co., Inc., 324 W. 43rd St., New York, N. Y.

Decorated Tiles

An exhibit of ceramic tile fireplace facings and wall coverings by Warner Prins, held at the Architectural League of New York, featured one-of-a-kind tiles in contemporary designs and textured effects. The designs were executed in a painted underglaze, with a wide variety of color combinations and techniques. Motifs included abstract shapes, floral patterns, pictorial scenes, figures, and caricatures.

Repeat tiles, which were more subdued in color and emphasized all-over textured effects, also were shown. All

(Continued on page 172)
For steel and concrete buildings...

American Welded Wire Fabric

American Welded Wire Fabric reinforcement has been used extensively in building construction. Wrapped around structural steel members, it fortifies the concrete against cracks caused by stresses and strains due to deflection of the structural members, normal temperature changes, and extraordinary temperature variations accompanying fire.

This fabric reinforcement possesses adequate tensile strength. It is easily shaped to structural steel. It comes in rolls and sheets, aids speedy construction. Structural steel beams, when wrapped with Welded Wire Fabric and enclosed in concrete fireproofing, are usually designed as composite beams.

Its adaptability, efficiency and economy have made American Welded Wire Fabric the most widely used reinforcement for concrete. You will find it in floors, walls, roofs and ceilings of all sorts of structures, in highways, sidewalks and driveways, in tunnels, bridges and approaches.

U·S·S American Welded Wire Fabric is available in every locality from jobbers' and dealers' stocks — supplemented by prompt mill shipment to identified projects.

When you are planning any kind of concrete construction, our technical staff will be glad to supply complete data on specific designs and standard styles of fabric. Write to our nearest sales office today, you incur no obligation.

AMERICAN STEEL & WIRE COMPANY
GENERAL OFFICES: CLEVELAND, OHIO
COLUMBIA STEEL COMPANY, SAN FRANCISCO
PACIFIC COAST DISTRIBUTORS
TENNESSEE COAL, IRON & RAILROAD COMPANY
BIRMINGHAM, SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK
the tiles are washable and impervious to smoke and other stains. Suggested uses for the tiles include table tops, inserts and murals. The one-of-a-kind and repeat tiles come in a wide range of prices. Any original design desired can be obtained on special commission. Walter Prins, 36 E. 22nd St., New York 10, N. Y.

FERALUN SAFETY TREADS

"INSTALLED IN 1923... STILL GIVING SATISFACTORY SERVICE TODAY"

They planned well for safety and for durability—those who were responsible for these Feralun* safety treads—installed when this RCA Victor building was erected in 1923. A quarter century of resistance to wear under the many thousands of feet that have gone up and down them since Calvin Coolidge first entered the White House! A quarter century of underfoot safety, too, on Feralun’s non-slip surface! And, as the photograph shows, these same treads can still be counted on for many more years of maintenance-free service—and safety.

Examples like this show why architects, engineers and builders insist on “Feralun” treads, nosings and plates. Made of cast iron with wear-resistant abrasive particles embedded in walking surfaces, “Feralun” provides a sure-footed “grip” that keeps feet from slipping—and wears and wears. The coupon below will bring you full information on “Feralun.” Send it today.

*Also available in Bronze—(Bronzalun), Aluminum—(Alumalun), and Nickel Bronze—(Nicalun).®

AMERICAN ABRASIVE METALS CO.

IRVINGTON 11, N. J.

Escalators

A new packaged 48-in. wide escalator, called the Free-Flow, has been introduced by the Otis Elevator Co. to supplement its previous line of packaged and special made units. The unit will accommodate two adults riding side by side on the same step, and will transport 8000 persons per hour. The new escalator brings out the economies of the previous, narrower, 32R unit: placement of the driving machine in the truss of the escalator eliminates the machine room formerly required with large-capacity units. This gives considerable saving in costs by permitting the driving mechanism to be mass produced and factory assembled, and by reducing building costs and alterations.

Design and engineering features are also similar to the 32-in. wide model, including an aluminum track system, rubber rollers for noise reduction and pinch-proof handrails. Variable rises are available, up to a 23 ft maximum. Otis Elevator Co., 670 Fifth Ave., New York 19, N. Y.

TV Master Antenna System

The Jerrold Mul-TV System is said to make it possible to operate 400 television sets, or more, from a single antenna. Picture and sound quality are said to be excellent. There is no interference between sets. The master system is designed for use in apartment houses and hotels.

The system has separate directional antennas, one for each station. All are usually mounted on the same mast. They are cut to correct length for each channel and connected by separate lead-ins to a master control amplifier unit. This unit includes 6-tube plug-in channel amplifier strips for each channel and provides a booster for the signal. There are separate gain controls for

(Continued on page 174)
YOU'LL FIND THE MACOMBER TAG ON THE MAJORITY OF JOBS TODAY

NAILING top lath to Macomber V Bar Joists is faster than any other method.

Slab centering solidly anchored prevents deep pockets of wasted concrete between joists.

Design information for spans, 4 to 40 feet in Joist Catalog.

TO SAVE YOU MONEY

MACOMBER • INCORPORATED
CANTON, OHIO

IN CANADA, SARNIA BRIDGE CO., LIMITED, SARNIA, ONT.
IN MEXICO D. F.—MACOMBER DE MEXICO S. A. CEDRO 500

V BAR JOISTS • LONGSPANS • BOWSTRING TRUSSES • STEEL DECK
BOTH SIDES of the

Sealuxe Browne

"Folding-Flue" Windows

clean from the INSIDE!

Other SEALUXE-BROWNE values...

- 100% controllable, draft-free ventilation. When slightly bowed, a vertical V-flue lets fresh air in and foul air out without drafts.

- Force fit against resilient wool felt shuts out dirt, dust, wind, water and traffic noises. Laboratory tested.

- Stream-lined to let in more light; set off any architectural treatment.

- Fold at finger-tip pressure. Stay put under normal wind pressure.

- No metal-to-masonry contact. Resist tarnish, rust and corrosion.

OTHER SEALUXE PRODUCTS

WINDOWS—Picture, Store Front, Commercial and Monumental Com­

nents; Thermo (insulated) • Solar Controls—Fins, Canopies, Shaders, Louvers • BUILDING ACCESSORIES—Pillars, Spires, Facades, Trims • ENTRANCE ACCESSORIES—Building Directory, etc. • DOOR ACCESSORIES • CRIB CONTROL EQUIPMENT. For more information you are invited to clip and mail coupon below or see our catalog in Sweet's Architectural File.

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Architectural Engineering

PRODUCTS

(Continued from page 172)

each station to balance signal strengths. An output network mixes the amplified signals and feeds them through antenna distribution outlets to any desired number of receivers. The system will accommodate TV sets of any make or model. Jerrold Electronics Corp., 121 N. Broad St., Philadelphia 7, Pa.

Prefabricated Plastic Skylights

A lightweight, prefabricated skylight, called Wascolite, utilizes a Plexiglas dome attached to a simple copper frame to eliminate cross members and wire reinforcements. The unit is neat and simple in exterior appearance; from the interior, nothing is visible but the opening. The skylights are said to be strong, shatterproof and watertight. The plastic is claimed to have approximately double the insulating qualities of glass the same thickness. Three types of plastic are available: one admits ultra violet rays, one absorbs them, the other is white translucent for light diffusion.

The frame is said to be easy to install. Louvers or ventilators may be fitted in the side. Units are available in ten sizes, ranging from 20 by 20 in. to 100 by 100 in. Wasco Flashing Co., 268 Elm St., Cambridge, Mass.

Diffuser and Light Combination

The Agiair Diffuser-lite Fixtures combine air diffusing vanes and a light fixture in a single unit. The ceiling fixtures (Continued on page 176)
Anemostat Air Diffusers offer unlimited design possibilities. They can be used in regular, acoustical and egg crate ceilings ... combined with all types of lighting fixtures ... in commercial, industrial and home applications. Anemostat Air Diffusers provide uniform diffusion throughout the entire conditioned area. They eliminate harmful drafts, stale air pockets and equalize temperature and humidity. New Selection Manual contains complete application and specification data. Write for your copy.

"No air conditioning system is better than its air distribution"

ANEMOSTAT®
DRAFTLESS Aspirating AIR DIFFUSERS
ANEMOSTAT CORPORATION OF AMERICA, 10 EAST 39th STREET, NEW YORK 16, N. Y.
REPRESENTATIVES IN PRINCIPAL CITIES
You'll have fewer headaches if you specify MICHAELS Products and then make sure your Contractors buy them direct from Michaels

It's to your advantage not only to specify Michaels building products, but to see that contractors buy direct from Michaels. You deal with a reliable concern, in business since 1870, and well known for its ability to produce high-quality products, to faithfully execute your most exacting specifications, and to meet delivery commitments. Michaels building products of stainless steel, aluminum, bronze and other metals have earned an enviable reputation among architects and builders. And in most instances, it costs no more to use Michaels. So why not buy direct?

Be sure—use Michaels high-quality products—products you can count on for dependable service and long life — products which far outweigh any advantage you may gain by using questionable materials that look good when new, but do not give lasting service.

A partial list of Michaels products is shown. We shall be glad to work with you on any building project.

MICHAELS PRODUCTS

Bank Screens and Partitions  Lamp Standards  Kick and Push Plates
Welded Bronze Doors  Marquises  Push Bars
Elevator Doors  Tables and Signs  Cast Thresholds
Store Fronts  Name Plates  Extruded Thresholds
Lettering  Astragalos (adjustable)  MI-CO Parking Meters
Stair Railings  Grilles and Wickets  Museum Trophy Cases
Check Desks (standing and wall)  Wrought and Cast Radiator Grilles

The MICHAELS ART BRONZE CO., Inc., 234 Scott St., Covington, Ky.

Architectural Engineering

PRODUCTS

(Continued from page 174)

d are available in either square or rectangular shapes, and incorporate incandescent or fluorescent lighting with flush, semi-flush or louvered lenses. Frames are hinged for relamping and maintenance. The units are constructed of light gage steel and finished in baked aluminum lacquer or prime coat for painting. Recessed boxes are steel, lined with asbestos heat insulation and equipped with reflectors. The units are available in a variety of sizes. Air Devices Inc., 17 E. 42nd St., New York 17, N. Y.

Lavatory

The Crane Criterion lavatory features a flat surface, and a rolled front edge for installation in tiled counters. The unit is of vitreous china, and measures 30 by 22 in. The basin is 16½ by 12¼ in. All exposed trim and metal parts are finished in brushed chrome. Handles are of clear lucite. The unit may also be obtained with legs of chromium-plated tubes with lucite bases. The overflow is concealed in the front of the basin to leave the back smooth. The lavatories are available in white or any of eight colors. Crane Co., 836 S. Michigan Ave., Chicago 5, Ill.

(Continued on page 178)
Accuracy is of utmost importance in the rebuilding of automobile engines, so when we contemplated erection of our new building, we determined to do every-thing possible to contribute to this end. We knew from past experience that good-lighting, without glare, was necessary. We also knew that the comfort of our employees, especially during the hot summer months, would contribute to effi-ciency.

After a careful study of a number of types of glass installations and discussions with other plant managers, we selected Blue Ridge Frosted Hammered Aklo Glass for the entire South wall of our new building.

Having recently completed a year in our new building, we are highly satisfied with this installation. Our entire working area is well lighted and eye-strain is practically eliminated due to the glare-reducing properties of the Frosted Aklo Glass. Working space adjacent to the window area is utilized fully without eye discomfort even on the brightest days. Further, we have been able to keep our workmen more comfortable through reduction of heat from the direct sun during the hot months due to the heat-absorbing properties of Aklo.

As a result of our experience, we are pleased to recommend the use of Blue Ridge Frosted Hammered Aklo Glass for installation where good lighting, comfort and efficiency are of paramount importance.

Very truly yours,

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President

FILTERED DAYLIGHT pays off

Why not look into this... Our book on reduction of sunlight and heat is FREE.
They can sit closer...

in comfort

with WOOD WINDOW UNITS!

No cold flows into this room from the muntins and mullions of these double-hung windows. No heat seethes out from them in summer. For these windows are made of wood—the natural insulating material that does so much to help control indoor climate.

Double-hung wood window units today are available with a scientific preservative treatment to give greater resistance against stain, decay, insect attack or humidity. They won't rust or corrode—are efficiently weatherstripped. And remember, they are available as pre-assembled units with modern sash balances—and in a wide variety of styles.

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See your local lumber dealer for wood window units
SQUARE D CIRCUIT BREAKERS
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Circuit breakers eliminate fuses. They provide repeat protection. There is nothing to burn out... nothing to replace. Anyone can quickly restore service after the fault is eliminated. They offer the most in convenience, safety, compactness, and appearance. Equally important, more circuits can be added easily when required. Yet circuit breakers cost little more than fusible equipment.

Square D Circuit Breakers are THERMAL-(Coilless) MAGNETIC. Thermal element deflects in proportion to temperature of wire insulation resulting from both surrounding air and losses within the conductor. Magnetic element responds instantly to heavy overloads or shorts. BOTH ARE NEEDED FOR COMPLETE PROTECTION!

THERE IS A SQUARE D CIRCUIT BREAKER TO MEET EVERY REQUIREMENT... EXACTLY

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Metal Windows

Sealaaze Engineering Products for Metal-Glass and Solarized Buildings (Catalog No. 25). Describes a line of windows and sun-control shades and fins for all-metal-and-glass buildings. Among the items covered are: folding flue windows, thermo-vista windows, ventilating picture windows, solar shades, weather controls, cellular spandrels and fascias. Features, photographs, specifications and details are given for each item. 24 pp., illus. Universal Corp., 6710 Denton Drive, Dallas 9, Texas.

Lightweight Masonry Units

Waylite, The Modern Lightweight Masonry Unit. Booklet describes features and physical characteristics of lightweight-aggregate building blocks. The various sizes and shapes available in standard units are illustrated, along with a number of construction details. Data are given on units for ceilings, floors, back-up walls and partitions. Typical interior and exterior finishes are also pictured. 16 pp., illus. The Waylite Co., P.O. Box 30, Bethlehem, Pa.

Welding

Recommended Practices for Resistance Welding. Manual includes welding schedules for spot and seam welding mild and medium carbon steels, low-alloy steels, stainless steels, nickel, Monel, Inconel and magnesium alloys. Recommended practices are given for projection welding low-carbon and stainless steels. Flash welding data are provided for low and medium forging strength steels. A section is included on methods of testing resistance and seam welds, and for the control of resistance weld quality. Many tables and details are given. 60 pp., illus. Price $1.00. The American Welding Society, 33 W. 39th St., New York 18, N. Y.

Vertical Conveyor

Standard RecordLift (Bulletin No. 130). Describes an automatic vertical lift conveyor designed to distribute mail, records, files and general office supplies in institutions and large office buildings. Illustrations are included of typical installations, along with pictures of other types of conveyors made by the same manufacturer. 4 pp., illus. Standard Conveyor Co., Dept. AR, North St. Paul 9, Minn.

Plastics

A Simplified Guide to Bakelite and Vinylite Plastics and Resins. Booklet classifies fourteen types of plastics, including the various forms of Bakelite phenolic, styrene, polyethylene and Vinylite plastics and resins. General characteristics and properties are described for each form. Typical applications and uses of each material are noted and illustrated. 24 pp., illus. Bakelite Div., Union Carbide and Carbon Corp., 300 Madison Ave., New York 17, N. Y.*

Wallboard

Masonite Hardboards. Pamphlet presents various types of wallboard. Physical properties, specifications (exterior and interior), applications, cutting and bending, adhesives and nailing, and methods of finishing are included. 23 pp., illus. Masonite Corp., 111 West Washington St., Chicago 2, Ill.*

(Continued on page 182)
Here's Why Wakefield Grenadiers were chosen for the offices of this wide-awake company

Because ruggedly-built Grenadiers provide abundant light that diffuses pleasantly from white enameled louvers and plastic side panels, achieving excellent illumination levels and low brightness contrasts.

Because Wakefield fixtures are easy to install—can be hung by one man. Sections hook securely to a pre-installed strap, then channel covers, lamps, louvers and side panels go up in turn. In addition to making installations easier, this assembly method is a permanent aid to maintenance.

Wakefield Grenadiers are available for use with two or four 40W bipin or Slimline lamps. See our insert in Sweet's Architectural File.

THE F. W. WAKEFIELD BRASS COMPANY • VERMILION, OHIO

Wakefield
Over-ALL Lighting

GRENADIER
STAR
COMMODOR
WAKEFIELD CEILING

65 footcandles in accounting office from Grenadier lls 6' on centers.

70 footcandles for general office from Grenadier lls 6' on center.

55 footcandles for executive office from Grenadiers in two rows.

75 footcandles for mimeo room from Grenadiers with 5'6" spacing.
Home Heating

How To Plan Home Heating. Booklet presents a line of heating systems. Features of warm air heating are discussed in a section directed principally to homeowners. A check list gives methods of achieving more economical and efficient operation of furnaces. A simplified method of estimating heat loss is included, along with tables and diagrams. 19 pp., illus. The Meyer Furnace Co., Peoria 2, Ill.

Library Lighting

Recommended Practice of Library Lighting. Booklet, prepared by a technical committee of the Illuminating Engineering Society, discusses various phases of library lighting. Among the items analyzed are: the seeing tasks involved, the environment, use of daylighting and lighting fixtures, and the eyesight conditions of visitors. Recommendations are given for lighting reading rooms and book storage areas, along with general data on types of lighting systems and a comparison of filament and fluorescent light sources. Notes are included on brightness ratios and texture and color of finishes. 16 pp., illus. Price 50 cents. Publications Office, Illuminating Engineering Society, 51 Madison Ave., New York 10, N. Y.

Kitchen Equipment

The World’s Newest Kitchen Ideas. Booklet features the Youngstown line of kitchen fixtures and equipment. Sinks, waste disposers, dishwashers and steel storage units are the principal items covered. Each unit is illustrated and described. Notes on kitchen planning and “practical household hints” are included. 24 pp., illus. Mullins Manufacturing Corp., Warren, Ohio.

Interiors

Colorama. Clara Dudley Color-Idea Book. Booklet presents color photographs of many new rug and carpeting samples currently on the market. Also, an interior decorating service is prescribed, and five examples of before-and-after rooms are shown in full color. 24 pp., illus. Price 25 cents. Alexander Smith & Sons Carpet Co., 295 Fifth Ave., New York 16, N. Y.

Literature Requested

The following individuals and firms request manufacturers’ literature:

Maurey Lee Allen, Architect, Zuelke Bldg., Appleton, Wis.

John Bucinski, Draftsman, 1618 Harman, Baltimore 30, Md.


Leo A. Daly Company, 1726 Ambassador Bldg., St. Louis 1, Mo.

E. C. Dimling, Operations and Store Planning Representative, Associate Merchandising Corp., 1440 Broadway, New York 18, N. Y.

Thomas J. Donoghue, Architectural Designer, 1846 Ash St., Detroit 8, Mich.


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You actually cut costs because you don’t waste plaster and you reduce eventual maintenance. For detailed reasons for writing Steeltex into your specifications, see our catalog in Sweet’s or write for catalog D. S. 130, Dept. AR, Pittsburgh Steel Products Co., Grant Building, Pittsburgh 30, Penna.

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A Subsidiary of Pittsburgh Steel Company
Pittsburgh 30, Pa.
BRITAIN BUILDS HER NEW TOWNS

(Continued from page 105)

and the relationship of the buildings to one another. He is aware of the possibilities of variety and of the contrasts between volumes of outdoor spaces as they are defined by building masses. Believing that urban areas are more attractive when limited in size, he has divided the town into compact units, separated by areas of landscape, parkways and playing fields. The site is rich in tradition — there are a number of old churches, chapels, houses and cottages — and the master plan seeks to preserve landscape features and all existing buildings of worth, integrating them with the new. In extent, Harlow New Town will eventually be about 3½ miles from north to south, 4½ from east to west across its widest parts; it covers 6320 acres.

Indoor areas provided in the master plan cover 335 acres, of which one part, in the northeast corner, is for immediate development; the other, in the northwest, is to be developed later. An industrialist moving to the New Town can either lease land and build his own factory, or rent a standard factory — or factory sections — to be built by the Development Corporation in units of 2000 sq ft. The eastern industrial area has, with railway and canal, the facilities essential for large industries, whereas the western industrial area will be allocated for smaller factories because of its existing landscape and its proximity to the future town center.

Residential areas consist of thirteen individual units, separated by open spaces which are left free for schools, recreation grounds or farm land in accordance with their natural topography and landscape. The units are grouped around four major centers. In one of these, large-scale town activities will be focused; this will be the Town Center, with the principal shopping and business area, administrative, cultural and entertainment buildings, hotels, wholesale and warehouse buildings. Each of the other three major centers will be composed chiefly of buildings necessary to make the neighborhoods clustered around them self-contained. These four major groups will house each about a quarter of the total population of the town (anticipated to be 60,000, although in the opinion of the General Manager, Mr. Adams, this figure might be increased to 80,000 without causing additional expense except for housing).

Progress Plan

The Corporation intends to develop unit by unit from east to west, and estimates that it will take five years to reach the Town Center, fifteen to twenty to build the whole town. Division into four interdependent centers facilitates this progress plan. Construction of houses and apartments was started last spring in the unit called Mark Hall North, which lies closest to the existing village of Old Harlow and the eastern industrial zone. This unit is subdivided into three sections, each designed by a different architect: one by Frederick Gibberd, the author of the master plan; one by Maxwell Fry, Drew and Partner; one by a Design Unit of the Development Corporation.

With the construction of dwellings and their principal services is synchronized the building of schools, which

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Where space limitations or service needs require an electric dumb waiter installed under a counter ... in a back bar ... or in a cabinet — in drug stores, groceries, markets, restaurants, cafeterias, soda fountains — the Sedgwick Under-Counter Roto-Waiter provides the ideal solution. The unique roto-drive principle eliminates the possibility of overtravel and allows every inch of available height to be used safely. The outfit is self-contained, requiring fastening — but no support at the upper floor level. Its compact machine, occupying but a minimum of space in the basement, is placed at the side of the equipment, where it is easily accessible for inspection and lubrication — and where it will not be subject to the service disorders so often caused by accumulated dirt, spillage or drainage.

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ARCHITECTURAL RECORD
A report from the Headmaster of a leading Midwestern prep school stated that the Multi-Clean Method applied to their gym floor resulted in greater gloss and durability, better safety and sharply reduced labor and maintenance costs.

Applied to gym floors, the Multi-Clean Method resists rubber burns, makes a tough, gleaming surface. Since it provides fast, slip-free footing, it helps prevent accidents. Maintenance costs are negligible, because only periodic sweeping or vacuuming is needed between annual applications of Multi-Clean Gym Finish. A light buffing removes heavy rubber marks.

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DECEMBER 1950
BRITAIN BUILDS HER NEW TOWNS

(Continued from page 186)

rests with the Education Authority; of health centers, which are the responsibility of Harlow Development Corporation; and a hospital, which falls under the authority of the Ministry of Health. Private architects will be commissioned by the respective authorities to design these buildings. The progress plan further includes provision of social and recreational facilities, the step-by-step building of the neighborhood center with its shopping and service facilities. To provide for entertainment in the early stage of development, part of a standard factory unit, planned in the close-by industrial area, will temporarily be fitted and rented as a cinema.

Meanwhile detailed planning of the second unit, Mark Hall South, has been started. It comprises four distinct developments assigned to different architects: one to a second Design Unit of the Development Corporation; the others to the following private firms: Cadbury Brown, Richard Sheppard, F. R. S. Yorke.

Distribution of Planning Work

Distribution of work among various offices offers younger architects chances to establish reputations. Private architects are given commissions either on merits of past work or on approval of applications to the Corporation. The Corporation holds full responsibility for choice of architects; the Minister is not consulted on this question.

To the offices of the Corporation in Harlow, and to the surveyors, architects, and engineers, is added another professional figure peculiar to building practices in England: the quantity surveyor, who has independent status as a controller and advisor on all facets of building expenditure. In England, hardly any architect would be prepared to proceed beyond preliminaries without the services of a quantity surveyor. These are remunerated on a percentage fee basis, and include preparation of bills of quantities on which bids and final building contracts are based — a procedure which leaves no possibility for difference of opinion or interpretation. To this post the Harlow Development Corporation appointed Oswald E. Parratt, who has a staff of eighty. The execution of all work — buildings, services and roads — is entrusted to contracting firms after competitive bidding.

Acquisition of Land

Closely synchronized with development progress is acquisition of land. Just over 1350 acres of the Mark Hall area have already been purchased. As a general rule, the farmer is given sufficient time to rotate his crops and get full value out of his land before it is taken over.

Harlow New Town is here used as example because it is the one farthest along in actual construction. Visitors to next year’s British exhibition, The Festival of Britain, will be invited to inspect Harlow New Town as a show window of the Ministry of Town & Country Planning’s achievements. From the top floor of the ten-story apartment block in Mark Hall North, scheduled for completion early next spring, visitors will have a view of the entire Harlow area.

OTHER NEW TOWNS

Other New Towns in the London region follow a more or less similar pat-
For both public and residential buildings, the new Kaylo Firedoor offers these important advantages:

**FIRE PROTECTION**—Built around an incombustible Kaylo core, using fire retardant treated wood edge bands, the Kaylo Firedoor carries an Underwriters' fire rating for Class B and C openings.

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Ask your local RAMSET Specialist for a 15-minute demonstration of RAMSET FASTENING SYSTEM. See how it can help get building projects finished faster, at less cost. RAMSET FASTENERS, INC., 12117 Berea Road, Cleveland 11, Ohio.

BRITAIN BUILDS
(Continued from page 188)

tern. In some, for instance Welwyn Garden City and Hatfield New Towns, are incorporated large existing developments. Not interfering with Ebenezer Howard’s original garden city concept, the two planners, Louis de Soissons and Lionel Brett, add to this twin city new elements of urban quality.

From Crawley New Town, on the London-Brighton electric railway, the center of London is easily reached, a fact which has led to a different progress schedule. In contrast to Harlow, the Crawley Development Corporation gives first priority to industrial buildings, expecting that workers transferring to the New Town could, for a time, remain in London homes and travel to their new place of work, moving to Crawley as new houses became available there.

Plans of New Towns outside the London region strongly reflect their respective situations and, basically, are modeled on their industrial structures: Aycliffe in the north of England, for residences next to an existing large war plant now turned over to peacetime purposes; Peterlee, to provide living accommodations for miners at present existing in poor villages of rundown houses; Cwmbran, where a number of factories have been built under the Government’s policy to revive South Wales; Corby in Northamptonshire, where expansion of iron and steel works will more than double the size of the existing town. Not all the New Towns are new. Some are unforeseen or accelerated expansions of existing communities.

WOULD THE IDEA WORK IN THE UNITED STATES?

Once we agree upon the desirability of organized decentralization, and upon the New Towns idea as a satisfactory method, the principles underlying the idea can be applied to metropolitan areas everywhere. In England, the New Towns idea has developed logically, in sequence, with legislative acts—essentially non-party, or more properly, all-party measures—gradually planting the roots for its development.

The scale of the idea suggests governmental participation and support at the start. As soon as the revenue-producing phase is reached, there is no reason why private enterprise should not enter and either purchase or build on its own account. In London the most important
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The new Otis free-flow Escalator extends the spaciousness of free-flow sales aisles to vertical transportation. Shoppers ride side-by-side as casually as they walk along a sales aisle. Without waiting, crowding, effort. It's a more luxurious way of attracting more street-level shoppers to upper floors and basements—at a surprisingly low price.*

IN DEPARTMENT STORES. The new Otis free-flow Escalator is really an inclined sales aisle. Shoppers look around comfortably as they ride... locate sales items faster... see bargains they might otherwise have missed... make more impulse purchases—because merchandise that can be seen can be sold!

IN TRANSPORTATION TERMINALS. The new Otis free-flow Escalator is a good-will builder. It moves masses of people quickly from one level to another without crowding. Travelers are grateful. It eliminates delays and the physical effort of walking and carrying baggage upstairs.

IN COMMERCIAL BUILDINGS. The new Otis free-flow Escalator is an income builder. It gives 2nd floor locations street-level accessibility. Either from the lobby or direct from the sidewalk. It opens up large-area 2nd floor rentals to banks and heavy-traffic retail stores.

Details? The new Otis free-flow Escalator has a 48" riding width and a traffic capacity of 8,000 riders an hour. In addition, it has all the proven design features of Otis' amazingly successful 32" wide escalator which it complements—as any of our 263 offices will gladly explain! Otis will also be glad to make traffic studies and assist in developing complete vertical transportation systems—without obligation. Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.

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For beauty... for safety... for absolutely leakproof service at the most vital points in shower construction... specify the Weisway Vitreceptor. The textured sea shell pattern in a neutral tone on lustrous white harmonizes with any color scheme. Foot-Grip, No-Slip floor is safe, wet or dry, non-absorbent, easy to keep clean and sanitary.

Formed in one piece, of 14-gauge enameling iron, with vitreous porcelain finish inside and out, Vitreceptor has no dirt-gathering joints, nothing to crumble away. No metal underpans or wall flashing are required, no messy mastic or other "waterproofing." Vitreceptor stays leakproof — assures client satisfaction through the years, protects your reputation. For better stall showers with any practical wall material specify Vitreceptor. Write for new catalog folder with dimensional and installation details.

Protection at Vital Points

Adjoining finish wall materials are enclosed within a continuous rim which is an integral part of the Vitreceptor body. This feature provides a positive wall flashing and assures a leakproof meeting joint, whether the wall material is tile, as in the illustration at the left, glass, marble, etc.

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BRITAIN BUILDS

(Continued from page 190)

building investments are on ground leased for ninety-nine years or longer; the lease proposition of the New Towns Act is familiar to the British investor. To inject freehold propositions into the New Towns idea might alter its local interpretation but would probably not lessen its effectiveness. To protect against uncoordinated design, a carefully considered definition of permissible building volume and height would be required. The impressive architectural aspects of Paris, for instance, could not have been achieved and protected without such restrictions.

When we look at our metropolitan centers we may or may not like changes inside them; our tastes differ; but we almost unanimously agree that a drive through the outskirts, comparing the picture we see today with that of only ten years back, is painful. If once there was beauty there, nothing is left of it. Subdivisions, with monotonous apartment buildings or detached houses spilt like peas over the site, replace former farm land and landscape features in locations which should have been protected if for no other reason than to secure for the encircled city breathing space and recreational possibilities. Would it not have been wiser to prevent the tentacles of ribbon development along main roads, to have preserved a surrounding strip of green, to have organized decentralization into new, balanced communities?

For the United States, or any other country struggling against uncontrolled urban growth, the British New Towns open a new vista. It can be modified to meet almost any circumstances or customs without losing vitality. What possibilities are latent in the idea!

The author, Michael Rosenauer, F.R.I.B.A., A.I.A., known internationally as an architect, planner and housing expert, was born in Austria and has practiced in Vienna, Paris, London, and the United States. He is Visiting Professor at the School of Fine Arts, University of Pennsylvania.
Use of impressive, large escutcheons is made possible by the Schlage "long backset"—a new and notable design factor for dramatic treatment of entrance doors. Extreme flexibility of placement is indicated by centering of the Schlage lock on the panel door illustrated.

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Do you have the new Schlage brochure illustrating "long backset" locks and designs? You may have your copy by requesting booklet No. AR-630.
ON THE CALENDAR


Dec. 1–2: Great Lakes Regional Seminar, the American Institute of Architects — Oliver Hotel, South Bend, Ind.

Dec. 6 and 13: Last two of ten conferences, Forum for Modern Living, sponsored by the Architectural League of New York. Dec. 6 — Lighting and Color in the Home; Dec. 13 — Widening Horizons. Conferences are scheduled from 8:30 to 10:00 p.m. — The Architectural League, 115 E. 40th St., New York City.


OFFICE NOTES

Offices Opened

- Thomas J. Donoghue has opened an office for the general practice of architectural design at 1846 Ash St., Detroit 8, Mich.

- Myron M. Kehne announces the opening of an office for the practice of architecture at 2639 University Ave., St. Paul, Minn.

- Harry C. Kline, Jr., industrial designer, has opened new shops and offices at 49 Virginia Place, Buffalo, for the making of industrial scale models for architectural, engineering and industrial firms.

- Eleanor Pepper, Architect, announces the opening of her office as consultant on interior design and finishes at 150 E. 35th St., New York City.

New Firms, Firm Changes

- Edward J. Hurley and Raymond P. Hughes announce the partnership of Hurley & Hughes, Architects, with offices at 12 E. 48th St., New York City.

- Announcement has been made of the formation of the partnership of Graham Latta and Carl Denney, Architects, at 940 Alma St., Glendale 2, Calif.
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When You Design with Longspans

You'll find that fewer interior columns are required when you use Bethlehem Longspan Steel Joists to support the roofs of warehouses, factories, garages and similar structures.

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Bethlehem Longspan Joists come completely fabricated and clearly marked, ready for use. They are made in two types—underslung construction with top-bearing ends, and bottom-bearing construction with square ends. They have cambers of approximately 1/2 in. for 30-ft spans, 3/4 in. for 40-ft spans, 1 in. for 50-ft spans, and 1 1/2 in. for 60-ft spans.

For additional details about Bethlehem Longspan Joists, get in touch with the nearest Bethlehem sales office. Or write to us at Bethlehem, Pa.
THE RECORD REPORTS

(Continued from page 194)

- George Nemeny and A. W. Geller, Architects, have announced the dissolution of their partnership. They will continue to practice independently — Mr. Nemeny at 100 W. 42nd St., New York City, and Mr. Geller at 130 E. 56th St., New York City.

- Howard W. Tuttle, A.I.A., H. James Holroyd, A.I.A., and Richard N. Matheny, A.I.A., announce the formation of a partnership for the general practice of architecture. The new firm, which will be known as Tuttle, Holroyd and Matheny, will have offices at 320 W. Broad St., Columbus 4, Ohio.

New Addresses

The following new addresses have been announced:


Newton L. Lockwood, Architect, 112 W. Main St., Plainville, Conn.

Theodore L. Soottroy, A.I.A., 118-14 Queens Blvd., Forest Hills, L. I., N. Y.

Beverly A. Travis & Assoc., Electrical Engineers, and C. W. May, Mechanical Engineer, 407 Medical Arts Bldg., Seattle 1, Wash.

ELECTIONS

APPOINTMENTS

- Officers of the Northern California Chapter of the American Institute of Architects for 1950-51 are: Ralph Pollock, president; F. Joseph McCarthy, vice president; William B. McCormick, secretary; George A. Downs, treasurer; Charles F. Masten, director (three-year term), and (continuing as directors) John Lion Reid and William H. Rowe.

- Charles J. Nocar, director of research and development at the E. H. Hauserman Co. of Cleveland, has been elected president of the Acoustical Materials Association for 1950-51.

- Dave Chapman, 41-year-old Chicago industrial designer, has been elected president of the Society of Industrial Designers for the coming year. He succeeds Egmont Arens of New York. Other newly-elected officers of the Society are: Viktor Schreckengost, Cleveland, vice president; Robert Hose, New York, secretary; and A. Baker Barnhart, New York, treasurer.

- Officers and new directors elected by the American Institute of Steel Construction at its annual convention are: president — R. D. Wood, Mississippi Valley Structural Steel Co., Chicago; first vice president — J. E. Jackson, Pittsburgh-Des Moines Steel Co., Pittsburgh; second vice president — J. Philip Murphy, Judson-Pacific-Murphy Corp., Emeryville, Calif.; executive vice president — L. Abbott Post, New York City; treasurer — James M. Straub, Fort Pitt Bridge Works, Pittsburgh; secretary — M. Harvey Smedley, New York City; directors — R. N. Allen, Star Iron & Steel Co., Tacoma, Wash.; L. J. Knapp, Whitehead & Kales Co.,

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ARCHITECTURAL RECORD
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Which type of installation will best fit the buildings I design?

For complete information on Wistinghouse Low-Voltage Switchgear, send for Booklet B-2296-D. Address: Wistinghouse Electric Corporation, P.O. Box 868, Pittsburgh 30, Pa. J-60733

Wistinghouse Low-Voltage Switchgear

Westinghouse

DECEMBER 1950

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- Harry W. Pierce has been elected president of the American Welding Society for the coming year. Mr. Pierce is assistant to the president, New York president of the American Shipbuilding Corp., Camden, N. J. Other officers elected are: first vice president — Charles H. Jennings, engineering manager, Welding Department, Westinghouse Electric Corp.; second vice president — Fred L. Plummer, director of engineering, Hammond Iron Works, Warren, Pa.
- Lester T. Avery, president of the American Society of Heating and Ventilating Engineers, is chairman of the Advisory Committee of the 10th International Heating and Ventilating Exhibition, to be held at the Commercial Museum in Philadelphia January 22-26. Others named to serve on the committee are these Society members: Charles S. Leopold, member of the Council; John W. McElgin, president, Philadelphia Chapter; Edward L. Crosby, president, Baltimore Chapter; H. J. Kirkendall, president, Pittsburgh Chapter; Carl F. Kayan, president, New York Chapter; H. P. Gant and Merrill F. Blankin, past presidents. A. J. Nesbitt, general chairman of the ASHVE annual meeting, also is a member of this group.

- Leigh W. Haefle has been appointed assistant chief engineer of the general engineering department of Air Reduction Co., Inc.
- Lyman H. Allen Jr., formerly assistant chief design engineer in charge of chemical process design with the American Viscose Corp. in Philadelphia, has been named chief engineer of Foster D. Snell, Inc., New York firm of chemical and engineering consultants.

**AT THE COLLEGES**

**Microfilm Project Would Save Architectural Data on Chicago**

A joint project of the Art Institute of Chicago and the University of Illinois seeks to preserve the architectural heritage of Chicago on microfilm.

John G. Replinger, a 1949 graduate of the School of Architecture of the University of Illinois, has been appointed through the university as executive associate in charge of the microfilming project.

The plan is to microfilm working drawings and other pertinent material which can reveal the essential details of Chicago architecture. These bulky and rapidly disappearing documents can easily be preserved in microfilm form and made available to scholars at the Burnham Library of Architecture at the Art Institute and the Ricker Library of Architecture at the University at Urbana.

Architects, estates, contractors, corporations, realtors or others who may possess plans and other records of significance have been asked to contact Mr. Replinger at the Burnham Library, Art Institute of Chicago.

(Continued from page 200)
The drafting room in the guesthouse-office designed by Harris Armstrong, AIA, of Kirkwood, Missouri, for his own firm.

How This Architect Designed ... for His Own Business

Here an architect has designed a perfect use of Thermo-pane* insulating glass. The north side of his drafting room is a seven-foot window wall. By seating his staff close to the windows, he provides them the benefit of top light. Yet the men remain comfortable and free from winter chilliness. Thermo-pane with ½" hermetic air space, provides approximately twice the thermal insulation of single glass.

Harris Armstrong writes, "Thermo-pane in the other areas is not so important (for personnel comfort) but was used for economic reasons. Since I use electric heat and cooling, the additional cost will probably pay for itself in a very few years in reduced power bills.

"Since the Thermo-pane installations I have made between 1940 and the time I built my office have been all that is claimed for the material, I used it on my own personal work with confidence that it would do a good job, and it has."

Need any information on Thermo-pane? Or on kinds of sash in which it can be used? Our nearest branch office will gladly supply it, or write us direct if you prefer.

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56125 Nicholas Building, Toledo 3, Ohio
Warren A. Peterson Wins $150 Sargent-Yale Prize

Warren A. Peterson of Jamestown, N.Y., a student in the Yale Department of Architecture, has been named first prize winner of the Sargent-Yale prize for his design of an exposition booth.

Mr. Peterson received a prize of $150 for his work. Other prize winners were: Francis Kwai Hong Mah, of Honolulu, Hawaii, who received second prize of $100; and Arnold Mogensen of Denver who received third prize of $50.

The prize was open only to students registered in the Yale Department of Architecture.

Fabric Exhibit Is Held At Dartmouth College

An exhibit of decorative textiles, organized by Mrs. John W. Le Sound, associate of Dorothy Jackson — Interiors, of Boston, was held in the Carpenter Gallery, Dartmouth College, during November.

The exhibition coincided with Modern House Day, a showing of seven modern houses by Architects E. H. and M. K. Hunter. Leading designers, artists, architects and industrial designers were represented.

Included were fabrics from Hambo House of Design, Dan Cooper, Ben Rose, Knoll Associates, Arundel Clarke, Bonnier's, Schiffer Prints, Brunswig et Fils, F. Schumacher, J. Morley Fletcher and Laverne Originals.

Award Set Up at Cornell by Skidmore, Owings & Merrill

Skidmore, Owings & Merrill, architects and engineers of Chicago and New York, have established a $1000 scholarship for fifth-year students in the College of Architecture at Cornell University.

Robert F. Gutje of Brooklyn is the first recipient of the award, which will be made annually.

The new scholarship is awarded primarily on the basis of academic performance and professional promise.

Nathaniel A. Owings of the firm is a graduate of Cornell's College of Architecture, class of 1927.

Scholarships, Fellowships

The Department of Landscape Architecture of Harvard University's Graduate School of Design has announced a scholarship equal to the full tuition fee of $600 for the academic year 1951-52. Inquiries must be received before Jan. 1, 1951.

The scholarship, open to those eligible for admission as regular students in September 1951, will be awarded on the basis of scholastic standing and evidence of interest in the field of landscape architecture.

Detailed information is available from: The Chairman, Department of Landscape Architecture, Robinson Hall, Harvard University, Cambridge 38, Mass.

Faculty Appointments

• The College of Architecture and Design at the University of Michigan announces the following appointments to its staff: William Muschenheim, A.I.A., formerly of New York City, M. Arch.,
SEE IT . . . SELECT IT . . .
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Take the hard work out of specifying tile. It's quick, simple and sure with The Color Book of Tile. Selection of tile is easy this way. You see exact color reproductions of complete tile installations—kitchen, bath, powder and game rooms. You compare colors, patterns, strips, inserts and accessories. A variety of choices are readily considered. Clients can easily picture the installations you are planning. Complete, 42-word specifications are already written for each installation . . . ready for you to copy. You are sure of quality installations that duplicate your choice, when you specify tile this quick, easy way.

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GAS VENT PIPE

- Listed by Underwriters' Laboratories without qualification as a Type B Gas Vent.
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Designed solely for venting gas appliances, QC Metalbestos provides complete protection against gas fumes and fire hazards while assuring a quick, strong draft for proper venting. It fulfills all requirements of the National Board of Fire Underwriters and Underwriters' Laboratories, Inc.

Available through contractors and dealers throughout the nation.

Write for METALBESTOS Catalog No. 6
To Department L
Added Beauty
Improved Brightness Control

As one of the best examples of modern office building design, it is only fitting that the Bank of Nova Scotia Building in Toronto should be equipped with the latest thing in lightingware—new Corning Twin-lite Lens Panels. A product of Corning research, this important new medium for fluorescent lighting adds beauty and improved brightness control to any installation. The lenses in these water-white crystal lenses are scientifically designed to give a substantial reduction in side and luminaire brightness.

Corning Light-Weight Lens Panels are lower in cost than previous products of this type. For example, two 24" frame mounted Uni-lite or Twin-lite panels will mean a saving in glass cost of nearly 12% over four of the old shorter length panels. Reduction in weight means easier mounting and installation, while the added feature of variable lengths widens the field of application.

Corning Light-Weight Lens Panels are available 11" wide and up to 48" in length in both Twin-lite and Uni-lite patterns. Longer lengths and special widths can be supplied on order. Take advantage of the possibilities offered by this truly new lightingware. Write for information today.

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CORNING ALBA-LITE for diffusion of fluorescent light . . . CORNING FOTA-LITE for high level illumination . . . CORNING brand LENS PANELS and PYREX brand LENS LITES for prismatic light control

CORNING GLASS WORKS
Dept. AR-12, Corning, N. Y.
Please send complete information on Corning Twin-lite and Uni-lite Lens Panels.

Name

Title

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City __________________________ Zone __________ State __________________________
THE RECORD REPORTS

Peter Behrens School, Vienna — professor of architecture; A. Benjamin Handler, B.A. Queens University, Canada, M. Sc. London School of Economics — associate professor of planning.

* Mr. and Mrs. Paul Wieghardt have been appointed instructors in life drawing in Illinois Institute of Technology's Architecture Department.

EXHIBITIONS

Boston Architects Plan to View "Rotch in Retrospect"

"The Rotch in Retrospect," an exhibition featuring selected work of all holders of the Rotch Traveling Fellowship since its institution in 1883, will begin a month's run in Boston on December 12.

The exhibition has been planned in memory of Mrs. Horatio A. Lamb, daughter of Mr. and Mrs. Benjamin S. Rotch, in whose memory the scholarship was established. Mrs. Lamb died earlier this year.

To open the exhibition, the Boston Society of Architects will hold a dinner meeting on December 12. Each former holder of the scholarship (or his successors) is being asked to submit photographs, drawings and/or models of the projects which he (or his successors) considers to be his best work.

The exhibition will be held in the gallery of the John Hancock Building and the dinner, to which all former Rotch scholarship holders will be invited, will be held in the Dorothy Quincy suite of the same building.

The last returning Rotch scholar, Victor Lundy, brought home a group of European and South African water colors, which will be included in the memorial exhibition.

Gold Medal Exhibit Opens at Architectural League Jan. 15

Architectural works will have their exhibit in the Architectural League's monthly series beginning January 15 at the League, 115 E. 40th St., New York City. The exhibit will close February 9.

The monthly exhibits, limited to work executed since 1941, provide a source for selection of the exhibits for the League's National Gold Medal Exhibition of all the arts.

Exhibitors on whom awards are conferred for the monthly exhibit will be invited to prepare a comprehensive exhibit of their work for the Gold Medal Exhibit next June. Exhibitors must be citizens of the United States, but membership in the Architectural League of New York is not necessary. Preliminary submissions in the architectural exhibit were due November 10.

Finn Juhl Chosen as Designer For '51 Good Design Display

Finn Juhl, Danish designer, has been selected to design the installation for the 1951 version of the "Good Design" exhibition of home furnishings sponsored by the Museum of Modern Art in New York and The Merchandise Mart in Chicago. The exhibit opens Jan. 15.

Touch a Button... to Open the Door

The magic of radio brings you this modern convenience! With BARBER-COLMAN RADIO CONTROL, you can open or close your garage doors by simply touching a button in your car. The car can be moving, or standing still, anywhere (and in any position) within approximately 75 feet of the garage. The equipment operates on FCC-assigned frequencies, hence can use maximum power in the transmitter and a minimum of tubes in the receiver. Barber-Colman, a pioneer in the radio control field, is a reliable source of practical equipment, with over 20 years experience in this specialized field. Ask your Barcol representative for a working demonstration of the amazing Radio Control.

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GARAGE DOORS ELECTRIC OPERATORS RADIO CONTROL

(Continued from page 200)
The secret is a clever hinge arrangement—plus a muntin, a glass panel and a metal panel. This same beautiful Fenestra® Hollow Metal door can be used: Swing-in or swing-out... left or right hand—each with panels of metal or glass... with or without a muntin.

It costs a lot less because Fenestra craftsmen can give you the variety you need and still concentrate production facilities on a few basic high-quality types. Naturally, when production waste in time and money is eliminated, quality goes up and cost comes down.

This door is tough—it can be kicked and slammed and still look good. After years of use, a coat of paint will make it like new again.

This door is easy to handle—it swings open and shut smoothly, quietly. That operating balance never changes. Each door is packed with sound-smothering insulation.

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COMPETITIONS

Tile Council Sponsoring Two Student Competitions

Two architectural design competitions open to students throughout the United States have been announced by the Tile Council of America, in cooperation with the Beaux Arts Institute of Design. Six awards, totaling $325, are offered.

One competition requires a design for a group of garden apartments, and the other requires a sketch plan for a public swimming pool. In both contests, special attention is to be given to use of real clay tile.

The competitions close December 23. They will be judged the second week in January. Details are obtainable from the Beaux Arts Institute of Design, 115 E. 40th St., New York 16, N. Y.

NESA Holds Contest for Design of Electric Sign

Ten cash prizes totaling $1000 will be awarded to winners of the fifth annual Electric Sign Design Competition, sponsored by the National Electric Sign Association.

Prizes will be given for the best electric sign designed for a specific industrial plant, which was selected to provide equal opportunity for all contestants. A photograph, location map and dimensions of this medium-size, modern factory building are shown in the contest rules, which may be obtained from the NESA, 224 S. Michigan Ave., Chicago 4, Ill.

The contest closes December 31. Awards will be made as follows: first, $500; second, $200; third, $100; fourth, $50; six honorable mentions, $25 each. Winners will be announced at the NESA annual convention in February.

AWARDS

Lincoln Foundation Makes Awards for Bridge Design

Awards of $10,750 in its 1950 Welded Bridges of the Future Program have been announced by the James F. Lincoln Arc Welding Foundation.

Thirteen engineers and bridge designers participated in the program—design of an all-welded 250-ft highway bridge—and entries were received from 16 different countries.

James H. Jennison, 39, of Pasadena, Calif., head of Development Engineering Division, U. S. Naval Ordnance Test Station, received the first award of $500. Second award of $250 went to Ernst Amstutz of Zurich, Switzerland. The Third Award, $1250, was given to Prof. Thomas C. Kavanagh, 38, professor of Civil Engineering, Pennsylvania State College, State College, Pa., who in the 1949 Bridge competition took first award.

Ten honorable mention awards of $200 each went to: M. S. Zakrzewski and J. R. Daymond, Durban, South Africa; Arsham Amirikian, Chevy Chase, Md.; John E. Kayser, Roseland, N. J.; J. W. Briscoe and E. R. Bretschler, Urbana, Ill.; Kazimierz Lecewicz and (Continued on page 208)
SEND TODAY FOR YOUR FREE COPY OF THE RULES OF THE
Chicago Tribune’s Fifth Annual
BETTER ROOMS COMPETITION

$25,000.00 IN 145 CASH PRIZES
ranging from $100.00 to $1,000.00 each
for the best ideas for furnishing and
decorating seven types of rooms

All entries must be received by 5 p.m. of February 19, 1951

In order to bring to readers in 1951 stimulating ideas for furnishing and decorating various
types of home interiors, the Chicago Tribune is conducting its Fifth Annual Better Rooms Competition,
offering $25,000.00 in 145 cash awards for the best ideas submitted.

Just as the Chicago Tribune’s competitions in each of the past four years brought out a
wealth of fresh and interesting ideas in this field of high popular interest, so the 1951 competition
has been designed to set new standards of excellence in home interior fashions.

Here is your opportunity to plan one or more typical rooms just the way you would like them to be
—and to win cash and nation-wide recognition for your efforts.

After the prize winners have been chosen, the Tribune, just as it has in previous years, intends to reproduce
the winning ideas, or adaptations of them, in full color in the Chicago Sunday Tribune.

Everyone is eligible to compete, except employees of the Chicago Tribune and
subsidiaries, members of their families, and
of the Jury of Awards, which, as in
the past, will be composed of authorities
of recognized high standing in the field
of home furnishing and interior decoration.

For complete information to help you
prepare your entry, send today for
your free copy of the rules which will
be sent to you postpaid. The closing time
is February 19, 1951. So don’t delay.

FILL IN THE COUPON—CLIP AND MAIL TODAY!

Better Rooms Competition
Chicago Tribune, 435 N. Michigan Ave.
Chicago 11, Illinois AR

Without cost or obligation to me, please send to me by postpaid mail
at the address below a free copy of the rules of the $25,000.00
Chicago Tribune Fifth Annual Better Rooms Competition.

My Name: ..........................................................
Street and No.: ..................................................
City (and Zone No., if you know it) ............... State ........
(Please PRINT in pencil—ink may blot)

Designs for the program were judged by a jury of leading bridge designers, fabricators, public officials and professors of structural engineering.

**Ward Harrison Honored By London I.E.S. Award**

Dr. Ward Harrison, a past president of the Illuminating Engineering Society, has become the first American ever honored by honorary membership in the I.E.S. London, British counterpart of the Society in this country and Canada.

Only six honorary members are permitted under the bylaws of the British society, which cited Dr. Harrison's "numerous and valuable contributions to the advancement of the art and science of lighting" in presenting his certificate of membership.

For nearly two decades as director of engineering of the Lamp Department of the General Electric Company, Dr. Harrison was in charge of the largest illuminating engineering organization in the world.

**Howard S. Avery Awarded 1950 Lincoln Gold Medal**

The American Welding Society has selected Howard S. Avery, research metallurgist, American Brake Shoe Co., as winner of the 1950 Lincoln Gold Medal.

This honor is awarded annually by the Society to the author of the paper judged the greatest original contribution to the advancement and use of welding.

**DR. ROBERT E. DOHERTY; CARNEGIE EX-PRESIDENT**

Dr. Robert E. Doherty, president-emeritus of Carnegie Institute of Technology at Pittsburgh, died October 19 at Scotia, N. Y. He was 65 years old.

Dr. Doherty, who retired July 1 as head of Carnegie Tech, was a graduate of the University of Illinois and Union College, Schenectady. He was with the General Electric Company from 1909, when he graduated from Illinois, until 1931, first as test and designing engineer and later as principal assistant to the late Charles P. Steinmetz.

At Yale University from 1931 to 1936, Dr. Doherty was first professor of Electrical Engineering and then dean of the School of Engineering, leaving that post to become president of Carnegie.

Dr. Doherty had received many honors for his work in engineering and was the author of several books. He held honorary LL.D. degrees from Tufts College and the University of Pittsburgh, and an honorary M.A. from Yale.

Another award he received was the Lamme Medal of the American Institute of Electrical Engineers, bestowed for his extension of the theory of alternating current machinery and his skill in introducing the theory into practice.

He was credited with having played a leading part in developing the high tension electrical system.
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SAVED ANNUALLY

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THE RECORD REPORTS

CANADA
(Continued from page 16)

marked off year by year, but only in terms of many years. On the provincial level, programs of the Associations in British Columbia, Manitoba, Ontario and Saskatchewan deserve mention.

"Regardless of how much money is available, stress is always laid on the necessity of each individual architect doing a good public relations job in his daily contacts. Most chapters and associations do not hesitate to speak out on matters of public interest. They urge their members to participate in community affairs, accept positions of responsibility in projects designed to benefit their fellow citizens.

"Partial or full use of press or radio facilities are characteristic of the majority of programs. Better press relations and methods of securing more complete coverage of architecture and architectural events are sought, with radio efforts usually confined to free broadcasts of the public service type. Preparation of exhibitions, establishment of speakers' bureaus, and publication of pamphlets for controlled or common distribution are other common activities."

Nine Months' 1950 Building Nearly at Total for 1949

Construction contracts awarded in September helped swell the total for the first nine months of 1950 to over $1 billion, or little less than the amount recorded for the entire year of 1949.

Figures from MacLean Building Reports Ltd. show that residential, commercial and institutional contracts continued to increase. But the biggest rise, both dollar- and percentage-wise, was in engineering projects. They soared $9.1 million this September over last, an increase of 96 per cent.

Defense Plans Underscored By Government Appointment

Determination of the federal government to swing a scythe on non-defense construction is seen in the appointment of R. G. Johnson as special consultant to Canadian Commercial Corporation. This Crown company is charged with responsibility for all spending in connection with the national safety.

(Continued on page 212)
Titan

The world's finest door lock by the originators of the Key-in-knob Unit Lock

P. & F. CORBIN DIVISION
THE AMERICAN HARDWARE CORPORATION
New Britain, Connecticut

GOOD BUILDINGS DESERVE GOOD HARDWARE
THE RECORD REPORTS

CANADA
(Continued from page 210)

Mr. Johnson, who is well known as general manager of the Canadian Construction Association, will assist in the development of a gigantic defense building program. Its urgency and magnitude are emphasized by estimates that retrenchment on non-defense construction may run as high as $500 million. The full amount will not be known till the government closes its books for the 1950-1951 fiscal year on March 31.

A call for cooperation was made by Mr. Johnson soon after Trade Minister Howe announced his appointment. "It is going to take a real effort," he said, "to meet the defense needs as well as carry the heavy load of civilian construction requirements."

High Urban Growth Costs Are Forecast in Next Five Years

Larger Canadian municipalities will spend about $560 million to expand basic services during the next five years, according to David B. Mansur, president of the Central Mortgage and Housing Corporation.

Average natural growth in communities of 5000 population or over is estimated to be slightly better than three per cent annually or about 16 per cent by the end of 1955. Services will have to be provided on the basis of one acre per 100 of present population. Cost of servicing is put at $80 per capita of present population, or about $8000 per acre.

(Continued on page 214)
This CERTILE ceiling refuses to gossip.

It keeps everything it hears to itself—all the chatter and clatter, the pangs and bangs of a machine-ridden office are absorbed quickly and quietly by its famed Fiberglas* ears.

While CERTILE's absolute refusal to pass on office gossip is its most popular characteristic, it has many other qualities that make it far more than just another acoustical tile.

Examine this checklist of CERTILE characteristics. It invites comparison.

<table>
<thead>
<tr>
<th>CHECKLIST</th>
<th>CERTILE</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Converts sound into mechanical energy</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Converts sound into thermal energy</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Incombustible</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Washable</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Repaintable</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Applied by cementing</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>by screw attachment</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>by suspension system</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>High insulation</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>75% light reflection</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Painted bevels</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Moisture resistant</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Warproof and shrinkproof</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

CERTILE is available in perforated and plain surface, in ¾" and 1" thicknesses, in 12" x 12" and 12" x 24" slabs.

Where low-cost, fire-safe acoustical installation is wanted, CERTACOUSTIC tile is ideal. It, too, contains Fiberglas base. It has most of the fine qualities of CERTILE.

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THE RECORD REPORTS

CANADA
(Continued from page 212)

Since seven million people now live in communities of 5000 population or over, the overall cost of expansion during the next five years reaches the $560 million total.

Architects' Incomes in 1948 High Among Canadian Groups

The Department of National Revenue reports that in 1948 architects and engineers constituted the third highest income group in Canada. Only doctors and lawyers earned more money.

Here's a detailed breakdown:

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
<th>Average Income</th>
<th>Average Tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lawyers</td>
<td>4060</td>
<td>$8309</td>
<td>$1963</td>
</tr>
<tr>
<td>Doctors</td>
<td>6990</td>
<td>$274</td>
<td>$1786</td>
</tr>
<tr>
<td>Architects &amp; Engineers</td>
<td>1200</td>
<td>$7455</td>
<td>$1554</td>
</tr>
</tbody>
</table>

Trailing architects and engineers were dentists, osteopaths and chiropractors, business partners, investors, sole business proprietors and salesmen. As in previous years, nurses were at the foot of the list. There were 3250 of them in 1948 with an average income of $1381. They paid an average tax of $79.

Engineering Enrollments Show Decline for 1950-51

Enrollments in Canadian universities for 1950-51 show a downward trend, according to a recent announcement by Hon. Milton F. Gregg, Minister of Labor. This is to be expected, he explains, because for the past few years classes have been swollen far beyond normal capacity by thousands of war veterans.

One of the faculties hit is engineering (which includes architecture). The annual number of engineering graduates has risen from about 400 in 1921 to approximately 3600 in 1950. It is estimated that this figure will decline to about 1100 in 1955, then gradually increase to about 1200 in 1960.

Minister Gregg points out that in dealing with figures for engineers, the variation in the employment market between branches of engineering may be overlooked. As examples he cited mining engineering as a branch which would be likely to have a shortage of graduates in the next few years, while electrical engineering (Continued on page 216)

FOR FINISHING FIR PLYWOOD
For stained "natural" effects—Firzite tames the garish wild grain; assures even absorption of stain, hence a subdued rich appearance.

For painted or enameled jobs—Firzite minimizes face checking and grain raising.

For blond, pickled, or tinted tones—White Firzite produces a beautiful real "woody" effect.

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To bring out and preserve the natural grain and beauty of any wood, plywood or solid wood, hardwood or soft, use Satinlac. To avoid that heavy, "built up" finish, use Satinlac. Newer than shellac or varnish; water-white; and will not turn yellow.

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Dept. 80, 55 W. 44th St., New York 18, N. Y.

(Continued on page 216)
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DECEMBER, 1950
Low cost home cooling is here! The Hunter Package Fan is a compact, powerful ventilating fan that is easily installed in any attic to pull in fresh, cool breezes and push out stale, humid air. Thousands are now in use throughout the nation.

Installation of the Hunter Package Fan is simple and inexpensive. Fan, motor and suction box are all in one unit that requires only a ceiling opening in hallway and 18" clearance in attic. Fan rests on attic floor; shutter fastens to ceiling opening. No "extras" to buy or build.

HUNTER PACKAGE ATTIC FANS are available in four models, ranging from 4750 CFM to 9500 CFM, to fit any home size and climate. Quiet, powerful and dependable. Manufactured by Hunter, exclusive fan makers since 1886.

THE RECORD REPORTS

CANADA (Continued from page 214)

neering, which had been the most popular choice of veteran students, appeared likely to show a slight surplus for the time being.

Steel Remains Short

It is practically impossible to buy sheet steel in any gauge, according to the Purchasing Agents' Association of Toronto.

As a result, manufacturers find it exceedingly difficult to maintain production. No relief is in sight at present, and it is regarded as unlikely that the situation will be much improved even by the second half of next year.

U. S. Hesitation on Lumber Makes U. K. Order Welcome

Another big United Kingdom lumber order, the second within a month, has been placed in British Columbia. It's for 90 million board ft, valued at roughly $10 million.

Operators are jubilant, since pileups have been beginning to show in some grades and prices have dropped as much as $15 per 1000 ft on both sides of the Canadian-U. S. border. Chief reason for decline has been the "scared" feeling.

(Continued on page 218)
something really new!

Color-Matched Mouldings

for Marlite

NEW COLOR HARMONY for Marlite walls and ceilings in every type of residential and commercial interior is now possible with this brand-new line of Marsh Color-Matched Aluminum Mouldings! Featuring the same durable plastic finish as genuine Marlite panels, they need only an occasional wiping with a damp cloth to keep them spotless. The permanent finish seals out dirt, grease, moisture...seals in all the striking beauty!

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THE RECORD REPORTS

CANADA

(Continued from page 216)

of west coast builders over tightening credit controls and labor and supply lines.

"Americans don’t blow hot and cold," says one important exporter, "they go torrid and freezing!"

Construction Is High On Invested Capital Return

Detailed information on operations of Canadian industry in 1948 have been made available by the Department of National Revenue. The figures are based on income tax returns for that year.

The construction industry showed the highest return on invested capital. It also showed the biggest increase in return from the 1947 level.

In addition, the industry displayed the biggest margin of profit — before taxes — in 1948, and the biggest increase in margin over 1947.

These remarkable achievements reflect the postwar expansion and modernization programs carried on in all phases of construction activity.

House Building Code for Small Cities Published

A "Code for Dwelling Construction," designed for small municipalities, has been published by the Division of Building Research, National Research Council. It will form part of the revised National Building Code.

All subcommittees for further studies on the National Building Code have been appointed by the Associate Committee dealing with it and their work is expected to be in full swing early in 1951.

Planning Act Violation Brings Fine to Vendor

Maximum penalty for contravention of the Ontario Planning Act was imposed for the first time when Magistrate Earl Hand of Islington levied a fine of $500 on the vendor of six parcels of land who failed to secure prior approval of the local planning board.

The sale came to light when purchasers found they were refused building permits because their lots did not front on a registered road.

A New Guide for Hospital Architects

PSYCHIATRIC SECTIONS IN GENERAL HOSPITALS

By PAUL HAUN, M.D.

Chief, Hospital Construction Unit, Psychiatry Division Veterans Administration

Today, no hospital is complete without a psychiatric unit. The problem, however, is a complicated one because in the design and construction of such a unit every aspect of the environment must be strictly controlled.

Fortunately, all the architect needs know is completely outlined in "Psychiatric Sections in General Hospitals." Here are specific, reason-why, instructions covering everything from shafts and stacks to hydrotherapy suites.

"Psychiatric Sections in General Hospitals" is by all odds the most provocative work on specialized architecture since the publication of "Hospital Planning." It is a non-technical book for technical men; one that gives, for the first time, clear and reasoned specifications on a branch of architecture that has leaped from obscurity to prominence in a few short years.

Mail Coupon Today

Because of the specialized nature of this material, "Psychiatric Sections in General Hospitals," just off the press, is not readily available at most book stores. So use the coupon below to send for your copy today. Price $4.00, including postage.

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Johns-Manville scientists have perfected a process for introducing inorganic pigments throughout the asbestos panels used in J-M Movable Walls.

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By eliminating the cost of periodic painting and decorative treatment, the new Transitone Movable Walls will help you to meet your wall-and-partition requirements economically.

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On the following pages, we have described and illustrated a number of books tailored to the interests of architects, engineers, contractors, technicians — just about everybody in the building field!

Some, such as "Time Saver Standards," are essentially technical; others are more general in treatment and content. There are how-to-do-it books, cultural books and books plainly meant for nothing more than sheer relaxation.

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**Planning Stores That Pay**

by Dr. LOUIS PARNES, A.I.A.

In "Planning Stores That Pay," Dr. Parnes demonstrates the amazing degree to which architecture — as expressed in counter lengths, traffic flow, etc. — speeds and increases retail sales, not only for department stores but for specialty and chain stores. Point by point he conducts a tour of the store to illustrate the right and wrong aspects of profit-making design. He shows how to compute such diverse factors as, say, the ideal width of show windows and the optimum number of chairs in a shoe department.

With more than 500 illustrations, he explores every detail of the store and its arrangements — entrances, arcades, show windows, transportation systems, furniture and fixtures, receiving and shipping facilities, floor and department layouts, display arrangement and lighting, and all the hundreds of items that go to make up a modern merchandising machine. Everything is calculated from the viewpoint of efficiency, and the contribution of each part of the store to the process of selling goods profitably is the criterion of its recommended design.

Diagrams, charts and scale drawings, from hundreds of leading stores and from the works of America's greatest store architects, prove each point graphically.

**A Basic Textbook on Store Architecture**

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**Prize Homes**

This portfolio contains the ninety-two houses, including the twenty-four prize winners and sixty-eight other excellent designs, submitted in the Chicago Tribune's $24,000 Prize Home Competition. Here the architects, unfettered by clients, and thrilled by $24,000 in prizes, drop the reins and let their trained imaginations go all out. Here you fully realize what a wonderful work of art the modern home is coming to be — in terms of utility, livability, and unobtrusive beauty.

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Marcel Breuer: Architect and Designer
by PETER BLAKE

This fascinating life story of the great contemporary architect, Marcel Breuer, is that rare publishing achievement—a biography which captures wholly the essence and spirit of its subject.

It is a book that will strike a responsive chord in the heart of every architect and designer; it is a book that will instruct, charm and inspire you, and one which you will be proud to display on your library shelf.

Peter Blake, author of the book and Curator of Architecture and Design for the Museum of Modern Art, has drawn heavily on actual reproductions of Breuer’s work to explain in terms more graphic than words the architect’s growth and development. To many, this visual treatment alone will be worth many times the modest price of the book. 196 illustrations, 128 pages, 8½ x 10¾, stiff cloth binding. $4.00

The Last Lath
by ALAN DUNN

An album of 152 cartoons on Real Estate and Building. Here is a perfect gift to give to: clients, professional friends, business associates.

For many years readers of Architectural Record have laughed at the sly and intimate cartoons of Alan Dunn, nationally famous “New Yorker” cartoonist.

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Such cartoons, in book form, have been found the most effective, inexpensive gift of our time. They come as a big surprise. They are enjoyed by the whole family. They are shown to friends and neighbors. And the giver is long remembered for his wise and witty choice.

“The Last Lath” is a handsome album: 152 cartoons on 96 pages, 8 x 10, on 70-lb. paper, with a black-and-yellow picture jacket. Take advantage of this exceptional opportunity to delight your friends. Make a list of them now and order them at these money-saving quantity prices: $2.50 for 1 to 5 copies; $2.25 for 6 to 100 copies; $2.00 for 101 or more copies.

Schools for the Very Young
by HEINRICH H. WAECHTER A. I. A. and ELISABETH WAECHTER

Though many volumes have been written about school design, “Schools for the Very Young,” a brand new book just coming off the press, is—so far as we know—the first in which an architect and a child educator have collaborated to provide an up-to-date treatise on the requirements of the particular type of school demanded for the proper training of the very young child.

Beginning with a brief yet adequate historical and philosophical background, in which the development of the theory and practice of child education is discussed, the book goes on to describe the pre-school in action, noting the events of the school day and the corresponding environmental needs of the children and their teachers. A number of examples of existing pre-schools are presented with critical comments. Much detailed information is given concerning the general and particular space appointments and arrangements called for by the activities peculiar to such institutions. Since one of the authors is especially concerned with city planning, the relation of the pre-school to its neighborhood and community is thoughtfully analyzed, and the many different types of pre-schools that have developed to meet special conditions are enumerated and explained.

The outdoor space and its proper equipment are thoroughly covered from the standpoint of a capable architect who has given much thought to the problem and who is thus aware of the many points of detail that go to make up a successful pre-school establishment. Technological problems of construction, lighting, ventilation, mechanical equipment, etc., are scrutinized in the light of the most recent practice. A wealth of illustrations add both interest and information, and a selective bibliography will aid further study.

Mr. and Mrs. Heinrich H. Waechter’s combined talents and interests make them ideal co-authors for such a book as this. In 1941 the American Institute of Architects awarded Mr. Waechter an Edward Langley Scholarship for advanced work in research on the topic of Pre-Schools and the resultant year of combined study with Mrs. Waechter led to this thoughtful book.

You can be among the first to have a copy of this new book by placing your order now. 208 pages, 7½ x 10, stiff binding. Price $6.50.

Landscape for Living
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ARCHITECTURAL RECORD
Unretouched photograph of the Quincy School, Dedham, Mass. Electrical Contractor: Robert L. Tibbetts, Dedham. Area: 804.3 square feet. Fixture Mounting Height: 10'-0". Fixture spacing: 10'-0". Fixtures: 9- No. 6628 pendant mounted, with 2-11296 Standard Warm White Slimline lamps each. Watts per fixture: 177. Watts per square foot: 1.98.

Room Finish: Cream yellow upper walls; olive green paint on chalkboards, using yellow chalk; dark varnished woodwork; scrubbed pine floors @ approx. 20% reflection factor. Readings at desk level: (20" - 21" from floor), Average, 51.7 Footcandles initially. Vertical Readings on chalkboards: 28 Footcandles average.

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RARE SALES OPPORTUNITY...
for manufacturers of building materials, equipment, appliances, and home furnishings!

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THE F. W. DODGE CORPORATION'S
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119 WEST 40TH STREET • NEW YORK 18 • NEW YORK

ARCHITECTURAL RECORD
Church Roofs by Overly

CHURCH ARCHITECTS
CHOOSE OVERLY!
For new churches and old, modern Overly-Goodwin Batten Type Metal Roofing gets the call.

Reproduced above, in miniature, are four full-page advertisements that have appeared in leading Architectural Magazines during 1950.

Ad #1—which appeared in March, 1950 Architectural Record, describes the roothing of Grace Methodist Church, Wilmington, Delaware, with Overly-Goodwin Roofing in Alok-finish Aluminum.

Ad #2—which appeared in May, 1950 Architectural Record, illustrates the application of Overly-Goodwin Roofing in copper on the Park Synagogue, Cleveland Heights, Ohio.


Ad #4—July, 1950 appeared in Architectural Record, and describes how the First United Brethren Church in Greensburg, Pennsylvania, was given a new lease on life. 105 tons of tile roofing, which had broken down the roof trusses, were removed and replaced by Overly-Goodwin Roofing in Aluminum.

GET YOUR COPY OF OVERLY'S 1951 CATALOG
This eight-page catalog, shown below, is just off the press. It contains details, specifications, and additional illustrations of the application of Overly-Goodwin Batten type Roofing to churches, and many other types of public buildings. The specifications and details of Overly Metal Coping and Overly Alumisills are also fully described.

Send Today for this catalog preprint, which is now available. It will also appear in 1951 Sweet's File.

OVERLY MANUFACTURING COMPANY
Dept. AR
GREENSBURG, PA.
(Phone Greensburg 154)
Sales Representatives in All Principal Cities

PRODUCTS OF OVERLY
ROOFING, COPING AND WINDOW SILL DIVISION
OVERLY MANUFACTURING COMPANY

A DEPENDABLE SPECIFICATION SINCE 1888

DECEMBER 1950 233
READY!

A NEW DUAL DUCT AIR CONDITIONING SYSTEM

FOR

MULTISTORIED BUILDINGS

EMBODIES THE ADVANTAGES OF ALL CURRENT PRACTICE WITH HIGH PERFORMANCE AND LOW TOTAL OWNING AND OPERATING COST. EXISTING STRUCTURES ARE SERVED AS WELL AS NEW BUILDINGS.

MAJOR FEATURES

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NO CONCEALED WATER PIPES • NO CONCEALED DRAINS TO CLOG, NATURALLY NO POSSIBILITY OF CORROSION • NO WATER OR STEAM COILS IN DISTRIBUTING UNITS TO CATCH DUST, THEREFORE NO AIR CLEANING DEVICES REQUIRED IN THE UNITS.

SIMPLE

NO POSSIBILITY OF CONDENSATION AT THE DISTRIBUTING UNITS • NO FANS AND CONSEQUENTLY NO ELECTRIC CONNECTIONS ARE REQUIRED AT THE DISTRIBUTING UNITS • ALL THE CONDITIONING AND CLEANSING OF THE AIR IS ACCOMPLISHED AT CENTRALLY LOCATED STATIONS WHERE IDEAL MAINTENANCE CAN BE HAD.

FLEXIBLE

EACH AND EVERY CUBICLE CONDITIONED HAS ITS INDIVIDUAL TEMPERATURE CONTROL, PERMITTING THE HEATING OF ONE CUBICLE WHILE COOLING THE NEXT ONE.

REASONABLE COST

PARTITION ALTERATIONS AS MAY BE NECESSARY FOR TENANT CONVENIENCE REQUIRE NO CHANGE OF THE AIR CONDITIONING DISTRIBUTION • ALL THIS WITH SMOOTH PERFORMANCE AT THE LOWEST TOTAL OWNING AND OPERATING COST.

THE BUENSOD-STACEY DUAL DUCT SYSTEM HAS BEEN THOROUGHLY OWNER-TESTED ON MANY PROJECTS • NAMES ON REQUEST

SYSTEM PROTECTED BY PATENT APPLICATIONS

BUENSOD-STACEY

INCORPORATED

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Glen Oaks Village is a 175-acre park community in the Borough of Queens, New York City, containing 3800 rental-apartments. As in other large housing projects, Kohler fixtures and fittings were preferred for bathrooms and kitchens.

Fixtures of enameled iron include Cosmopolitan 5-foot bench baths, Hampton 19x17" shelf lavatories, Alloway 42x20" sink and laundry tray combinations, Camberley 60x25" double drainboard, single compartment ledge sinks, and Emery 24x20" laundry trays on adjustable standards. Trylon close-coupled closets are of vitreous china, with Bramhall Regent seats.

All Kohler fixtures have lustrous, glass-hard, easy-to-clean surfaces. The chromium-plated brass fittings, made expressly for Kohler fixtures, assure long-lasting service, economical maintenance. Send for further information.

The Century 'Dramalite' is freely adjustable in any direction up to 115 degrees from the vertical and 360 degrees horizontally by means of simple, foolproof, concealed swivel joints. Accommodates standard reflector lamps. Precision made eggcrate louvre (available as extra) gives positive cut-off at 45 degrees. Internal clips hold colored glass filters.

CENTURY LIGHTING, INC., 521 WEST 43RD STREET, NEW YORK 18 • 628 NORTH ROBERTSON BOULEVARD, LOS ANGELES 46

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Perfect Air Control

This dual-unit Hendrick Bulator installation, in the home of the president of a prominent corporation, combines complete control of air throw and spread, with a pleasing decorative effect. Although the deflecting vane grilles of the Bulator are directly behind the ornamental grilles, only the latter are visible. Write for full details.

Kent-Moore MONOXIVENT

EXHAUST ELIMINATING FIXTURES

You'd be surprised at what an improvement there is in mechanic efficiency and morale when you take the toxic carbon monoxide away from the air they breathe. And when it comes to eliminating exhaust fumes, you'll be equally surprised at how conveniently, how efficiently it's done with Kent-Moore's J 2980 MONOXIVENT Set. It's designed for use with underfloor exhaust eliminating systems... features a special tailpipe adapter, asbestos packed stainless steel tube, and a virtually airtight floor outlet assembly. Smart idea there too. You see, the adapter and tubing slip down into the underfloor duct for safe keeping when not in use. Fully protected, can't get lost or "borrowed". And it gets rid of unsightly hoses hanging from overhead. Important, too, from a cost point-of-view, is the simplified installation. Readily installed in an upturned "T" section of the main underfloor duct. No individ. "T"s or branch ducts required. Keeps cost to a minimum for any underfloor system.

So if you're looking for effective means of eliminating exhaust fumes at low installation cost, write today for complete information on the Kent-Moore J 2980 MONOXIVENT.
You can build *any style fireplace* around the Heatilator Fireplace unit!

**HERE'S never been any argument about a Heatilator® Fireplace being more efficient than a conventional fireplace. The Heatilator unit simplifies and standardizes construction, assures correct operation—and actually circulates heat to every corner of the room. But how does it affect fireplace design?**

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**PROVED FOR 24 YEARS.** Heatilator has been the leader in heat-circulating fireplaces for over 24 years. For better client satisfaction, be sure to specify Heatilator Fireplace. The name Heatilator is on both the dome and damper handle! Write today for complete specifications and illustrations. Heatilator, Inc., 6112 E. Brighton Ave., Syracuse 5, N. Y.

HEATILATOR America's Leading FIREPLACE

DECEMBER 1950
EFFECTIVE

Sound Conditioning

at Lowest Cost!

ZONOLITE® ACOUSTICAL PLASTIC also provides greatest fire protection!

The most economical sound-conditioning for old or new construction is provided by ZONOLITE® Acoustical Plastic. It trowels on like plaster over any clean, firm surface—even curved or irregular, thus eliminating trimming, cutting and fitting. The attractive color and texture of Zonolite Acoustical Plastic usually requires no further decorating. Like all ZONOLITE products Acoustical Plastic is absolutely fireproof itself and thus provides maximum fire protection for underlying materials. Its sound coefficient is .65.

For complete information concerning ZONOLITE Acoustical Plastic send coupon below, today!

ZONOLITE® COMPANY
135 S. LaSalle Street,
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ARCHITECTURAL RECORD
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For floors or walls, in the foyer, living room, bath or kitchen — in fact, everywhere in the home — Marble contributes a modern note to good design.

FREE BOOKLET: “Marble for the home” will be sent on request. Write:
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Available in a wide range of industrial and automatic sizes up to 650 boiler HP, Enterprise V-belt Oil and Combination Gas-Oil Burners provide highest heating comfort and long-term economy for every type and size building. For the best in modern burners, specify Enterprise—the choice of heating experts. Full information on request.

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- No adjustments
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Spot Sash Cord is inexpensive to install ... easy to maintain.

Specify Spot Sash Cord ... identified by the colored spots, our trade mark (Reg. U. S. Pat. Off.)

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104 BLACKSTONE AVENUE **JAMESTOWN, N.Y.**
For this modern apartment building—New York Life Insurance Co.'s Manhattan House—reinforced concrete was chosen for frames and floors, which resulted in appreciably lower framing costs. Note the upper floors. This type of construction permits an important saving in vertical space.

Reinforced concrete construction offers many other advantages. Its monolithic structure is inherently firesafe, as well as highly resistant to wind, shock, and quakes. For your next building, consider reinforced concrete.
GLUED LAMINATED ARCHES

Serene Beauty...Reverent Dignity
Strength for the Ages

Along with these qualities, inherent in the artistry of Timber Structures glued laminated arches, comes rapid, fund-saving construction. For while fulfilling the design motif, they also serve as structural members that form the sides and roof of the building.

Through the "moulding" process of glued lamination, any desired form may be obtained while retaining the beauty of wood. Composed entirely of kiln dried Douglas fir, the glued laminated members are stronger than sawn timbers, and will not shrink, check, twist or warp. Decorative treatments are unlimited.

For your information, a new booklet, "Engineered Timbers" has just been issued. Copies may be obtained through the Timber Structures office nearest you, or by writing directly to us.

TIMBER STRUCTURES, INC.
P. O. Box 3782-A, Portland 8, Oregon

For Stepped-Up Endurance: Terrazzo

- Steps go up—upkeep costs stay down—when TERRAZZO is underfoot. Constant friction of heavy traffic serves only to mellow the marble-hardness. Available for floors, stairs, wainscots and walls, TERRAZZO is sanitary, easy-to-clean, and concrete-durable.

Specify TERRAZZO—virtually any color—or design-combination—and do your client a permanent service!
Dignified Beauty is Inexpensive

**WHEN RILCO ARCHES ARE SPECIFIED**

By combining the natural beauty and versatility of wood with reliable engineering, Rilco produces arches that are architecturally and esthetically satisfying. These efficient arches are glue-laminated from clear grade, kiln dried West Coast Douglas Fir and bonded with the finest glues obtainable.

Because they arrive on the job site ready for rapid erection, construction is remarkably simple and economical. Hardware for engineered connections furnished with arches provides a perfect joint at the ridge, and solid anchorage at the base of the arch.

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Rilco arches are dependably designed and manufactured for each individual job. Our experienced engineering staff is at your service! See our 12-page catalog in Sweet’s or write us for more information.

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**RILCO LAMINATED PRODUCTS, INC.**

1670 FIRST NATIONAL BANK BUILDING, ST. PAUL, MINNESOTA

DECEMBER 1930
Co-operation is a very mild word, when applied to the super-human struggle of those honored by this imposing memorial. Yet, the spirit of their co-operation must be remembered always.

Inspired by this realization, the Architects, Engineers, Contractors, and Vermont Marble Company, worked together "without a hitch," to make the Veterans Memorial in Detroit, Michigan, worthy of the heroes it honors.

The entire building-exterior and plaza-enclosure are of Vermont Danby Marble. The marble eagle is 24 feet wide, 28 feet high, and projects, in part, 4 feet outward from the face of the building. The weight of the assembled pieces which form this marble eagle, approximately 46 tons, made it imperative to use special structural brackets tied to the reinforced building frame.

You'll find the solution to your ventilating problems in BURT'S complete line. It includes a size and type for almost every ventilating need — gravity, fan, revolving head and continuous ridge units. If special designs are required, BURT has the know-how and facilities to produce them for you. BURT'S experience from more than half a century is available — without obligation — at your request.

LOOK TO BURT FOR THE SOLUTION TO ALL YOUR VENTILATING PROBLEMS

You'll find the solution to your ventilating problems in BURT'S complete line. It includes a size and type for almost every ventilating need — gravity, fan, revolving head and continuous ridge units. If special designs are required, BURT has the know-how and facilities to produce them for you. BURT'S experience from more than half a century is available — without obligation — at your request.


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There are two beautiful sides to this door story

Architects Ferrenz & Taylor take advantage of the great versatility of Weldwood Stay-Strate Doors

Here’s one place where it pays to be two-faced.

The Weldwood® Stay-Strate Doors (with Kaylo® Core) in the Board Room of the Fitkin Memorial Hospital, in Asbury Park, New Jersey, are a beautiful example of how you can blend these versatile doors with almost any decorative scheme.

One side has the sheer, flush face that goes with the decorative motif of the entrance hall. The other, using walnut molding, has a paneled effect that blends perfectly with the traditional setting of the interior.

And...on top of decorative versatility...this modern door has many other advantages to offer.

The Weldwood Stay-Strate Door won’t warp—in fact, a strong guarantee to this effect appears on every door. Here’s a door that stays straight—that won’t shrink or swell—not only when it’s installed, but throughout its entire life!

Because it’s constructed with the same incombustible mineral core material used in the famous Weldwood Fire Door...you get unusually effective fire protection. Use it in unclassified openings as the perfect complement to the Weldwood Fire Door.

In addition, the Weldwood Kaylo Core Door can be specified where you need:

- Maximum Dimensional Stability...
- Light Weight...
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- Waterproof Bond...
- Suitable for both interior and exterior use...

Specify lights and/or louvers to your needs, and we’ll cut them before shipment. Face veneers can be had in a wide variety of domestic and imported hardwoods.

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 5/8” and 1 3/4” with a variety of both foreign and domestic face veneers.


WELDWOOD Flush Doors

Manufactured and distributed by

UNITED STATES PLYWOOD CORPORATION

55 West 44th Street, New York 18, N. Y.

Branches in Principal Cities · Distributing Units in Chief Trading Areas · Dealers Everywhere

DECEMBER 1950 245
Fresh from the hands of Wurlitzer craftsmen, this new Wurlitzer Series 25 represents a notable advance in electronic organs.

Fast but velvet-like action speaks and falls silent in split-second timing with the organist's fingers. No lag. No annoying "explosive" effect.

A finger-touch on pre-set pistons brings out dominant solo voices of new richness and beauty—each voice with its own perfect accompaniment. And the full majestic beauty of the organ ensemble is truly a triumph in electronics.

Designed by William Zaiser, the beautiful console is traditional in appearance and embodies arrangements and playing dimensions that rigidly conform to recommendations of the American Guild of Organists. And with all these advantages, the Series 25 is reasonably priced.
When the terminal building for the Seattle-Tacoma International Airport was being planned, three fundamental goals were set. The structure had to: (1) be attractive and functional, (2) have low first cost and (3) have low maintenance cost.

These goals were realized by using architectural concrete walls and reinforced concrete frame and floors. Beauty was achieved by the simple lines and arrangement of masses of the building and the use of decorative features such as fluting, grillwork and cantilevered canopies. To assure best results special attention was given to formwork.

Besides combining beauty and low annual cost, architectural concrete meets every other essential structural requirement. It has great strength and durability and is firesafe. It also can be molded economically into ornamentation for any style or period. All these factors result in structures which please clients and investors alike.

Architectural concrete is adaptable to structures of any size or purpose—apartments, schools, hospitals, stores, factories and office buildings. Architects find architectural concrete a versatile material for creating beautiful, functional, economical edifices.

For more information about architectural concrete write for free, illustrated literature. Distributed only in United States and Canada.

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DEPT. 12-8, 33 WEST GRAND AVENUE, CHICAGO 10, ILLINOIS
A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work

DECEMBER 1950
Modern uses of hot water heating — for panels, convectors, and baseboards, as well as direct radiation — require up-to-date control systems for maintaining uniform temperature and maximum efficiency. Barber-Colman Company has the necessary controls to handle the various applications properly — and also has put together data sheets and descriptive literature to show how these systems work, and what system and equipment to use in any given set of circumstances. This valuable engineering data is available to you free for the asking. Write for yours today — it will surely be a help to you in planning your future hot water heating installations.

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Positions Open

STATE OF ILLINOIS: Supervising Architect's office, has openings for two architectural draftsmen, two mechanical engineers, one specification writer, one Junior civil engineer (all permanent), in the Springfield office. See or write E. Todd Wheeler, Rm 500, Armory-Office Bldg., 124 E. Adams St., Springfield, Ill.

ARCHITECTURAL DRAFSTMEN: able to develop working drawings without guidance. Experience necessary. Principally schools and hospitals. Location Kansas City. Pleasant working conditions. Salary dependent on ability to produce. Submit all qualifications including training, experience, sample of drafting, and starting salary required. Box 519, Architectural Record, 119 W. 40th St., New York 18.


The West Dodd System of Lightning Protection is inconspicuous. Leaves nothing to mar the architectural beauty of any building. When installed by factory trained experts it provides almost 100% protection from lightning. West Dodd Systems are manufactured in accordance with Underwriters' Laboratories and American Institute of Electrical Engineers standards.

FREE estimating and engineering service to architects on request. Write for complete information.
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WITH a lot of doorways, list price is only the start. And there are several days' installation labor on the job that must be added. Not so with Pittsburgh Doorways. For they do away with time and labor-consuming details of fitting and calculation in the field. That's because they are factory-assembled to precision standards and come to the site ready for installation—in one "package." The only thing left to do is to bolt the frame into the building opening and hang the sturdy Herculite Doors. That's really cutting costs on the job!

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MACHINE-MADE MITERS are one of the many quality features that distinguish Pittsburgh Doorways. Note the massive, classical lines and substantial silhouette in this sectional view.
Architects invited to use American Seating Company Consultation Service

For more than 60 years, American Seating Company has been designing and manufacturing church furniture of beauty and distinction. You are invited to use the knowledge gained through those years of successful experience, freely available to you in our Consultation Service.

Our Church Furniture Designers know the current trends in church-interior design. You will find them to be a dependable source of authoritative technical data. Their work is to be seen in many of America’s most distinguished churches. You are cordially invited to use this Consultation Service without cost or obligation. We are eager to help you in every way possible. Write today.

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NEW HIGH GLAZING QUALITY!

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Requires No Painting

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- Specify Tremglaze yet pay no more for completed window installations than with a putty job. Save on the paint contract; specify—"Paint first—then Tremglaze". Put paint on the window where it belongs—Tremglaze requires no paint. Save on cost of cleaning glass also.

Consult your local Tremco Representative or write to:
THE TREMCO MANUFACTURING CO.
CLEVELAND 4 • TORONTO

NEW, ENLARGED EDITION OF TIME-SAVER STANDARDS


A grand total of 319 different Time-Saver Standards...888 pages...more than 1,000 illustrations, charts and diagrams.

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Although this new, up-to-date edition of Time-Saver Standards will be almost one third larger, the regular price will be only $12.50.

But if you place your order now—before December 31, 1950—you can take advantage of the pre-publication price of $10.00, a 20% saving on the regular price.

BOOK DEPARTMENT, Architectural Record
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ARCHITECTURAL RECORD
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*Low Velocity Air Diffusion Ceiling Panels*

Through perforated ceiling areas, Multi-Vent provides perfect overall air distribution entirely by pressure displacement—completely free from BLOW or high velocity injection. BLOW is the direct source of all draft hazards and is responsible for the most serious installation, balancing, maintenance and adjustment problems.

**NEW THE MODULAR ONE-FOOT MULTI-VENT PANELS...**

Available in 2, 3, 4, 5, and 6-foot lengths, supplementing the line of two-foot and three-foot wide panels.

**MULTI-VENT PANEL WITH PERFORATED DISTRIBUTION PLATE LOWERED**

(Standard metal acoustical pans may be substituted for the distribution plate)

For comparatively small air volume requirements in new modular construction.

For long narrow peripheral zoning.

For economical installation in standard suspended ceilings.

For beautiful ceiling design with parallel strips of one-foot flush troffer lighting.

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**THESE EXCLUSIVE MULTI-VENT ADVANTAGES RESULT FROM THE ABSENCE OF BLOW:**

- Complete absence of draft velocities.
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- Complete absence of the sound of rushing air.
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See our Exhibit at

**BOOTH 15**

10th INTERNATIONAL HEATING & VENTILATING EXPOSITION

Philadelphia JANUARY 22-25
As a result of demands by architects, builders and homeowners for a method of heating basementless slab houses in a manner that would combine the warm floors possible with radiant heat plus the many advantages of forced warm air with its winter air conditioning and summer air circulation, MOR-SUN has developed the CF Series for gas and oil firing.

Based on the nationally famous MOR-SUN Utility Series, and backed by the largest manufacturer of pressed steel furnaces in the world, the CF Series gas furnaces have been tested and approved by AGA, and both gas and oil units are listed for zero inches clearance, thus allowing closet installations.

For complete information and the name of your nearest MOR-SUN factory representative, write, wire or phone equipped with...

SUSS INVISIBLE HINGES
"the hinge that hides itself"

THE ULTRA-MODERN HOME OF THE NORTH AMERICAN LIFE AND CASUALTY COMPANY-Minneapolis 4, Minnesota

ARCHITECTS: LANG & RAGLAND - Minneapolis Architects, by using SOSS INVISIBLE HINGES, succeeded in creating modernistic interior effects in this building that are so very necessary to really modern architecture. There's a weight-reducing hinge, SOSS hinge, operating on hardened steel links and roller bear.
A PROBLEM IN

Beauty and Balance

...solved by kno·draft adjustable air diffusers

The air-conditioning problem in this company cafeteria was to select air diffusers that would "go" with its rich design and, at the same time, balance the great heat differential between the serving and the dining area.

Kno-Draft Adjustable Air Diffusers solved both problems.

Notice how well Kno-Draft's clean, concise lines harmonize with paneling and chandeliers. Take a satisfied user's word for it that the pattern of air flow provides equalized temperature and thorough distribution—without draft—throughout the entire area.

With Kno-Draft Adjustable Air Diffusers, both air volume and direction are completely and easily controlled after installation. A screw driver is the only tool needed. Kno-Draft Air Diffusers are as much "at home" in modern as in traditional surroundings... and there are types and sizes to meet every requirement.

KNO-DRAFT DATA BOOK: Complete specifications, engineering and installation data on Kno-Draft Adjustable Air Diffusers. To get your copy, simply fill in and mail the coupon. No obligation, of course.

W. B. CONNOR ENGINEERING CORP.
Danbury, Connecticut

Air Diffusion • Air Purification • Air Recovery

In Canada: Douglas Engineering Co., Ltd.,
190 Murray Street, Montreal 3, P. Q.

W. B. CONNOR ENGINEERING CORP.
Dept. E-120, Danbury, Connecticut

Please send me, without obligation, my copy of the Kno-Draft Air Diffuser Data Book.

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Street...............................
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DECEMBER 1950
Home Kitchen or Cafeteria

PARKWOOD Decorative

TOPS ANYTHING...

In an ultra-modern home kitchen or a huge employee’s dining room - architects and designers choose Parkwood Decorative for work surfaces and table tops... for "tops" in beauty and utility.

For range of color, for sparkling, exclusive modern designs, for enduring beauty protected by non-glares, long-wearing quality surface, specify PARKWOOD Decorative

for Beauty that is not "skin-deep": a wide range of colors and designs (including precious wood veneers in Parkwood Genuwood).

for Duty under all circumstances: the tough, laminated plastic surface of Parkwood will wear indefinitely, is virtually impervious to alcohol, cigarette burns, common alkalis and acids.

Write for our new Kodachrome Brochure or see our insert in Sweets File No. 14a. Par.

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Architectural Record

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