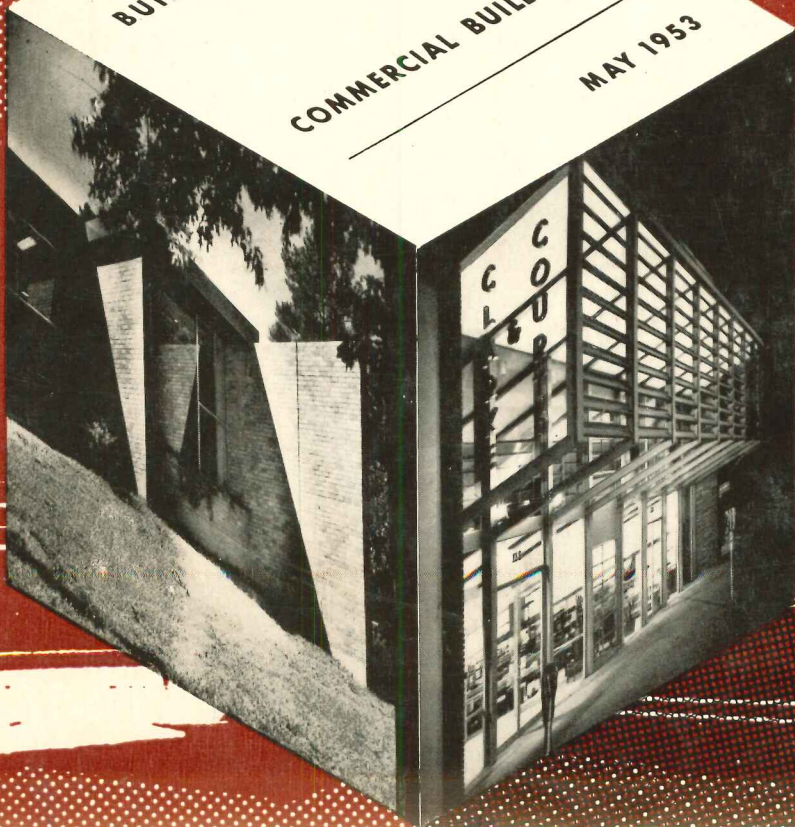


# ARCHITECTURAL RECORD

BUILDING TYPES STUDY  
NUMBER 198

COMMERCIAL BUILDINGS  
MAY 1953



Wm. H. Carr, Architect  
 Laing-Garrett Co.,  
 Formica Fabricator, Tucson, Ariz.



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# ARCHITECTURAL RECORD



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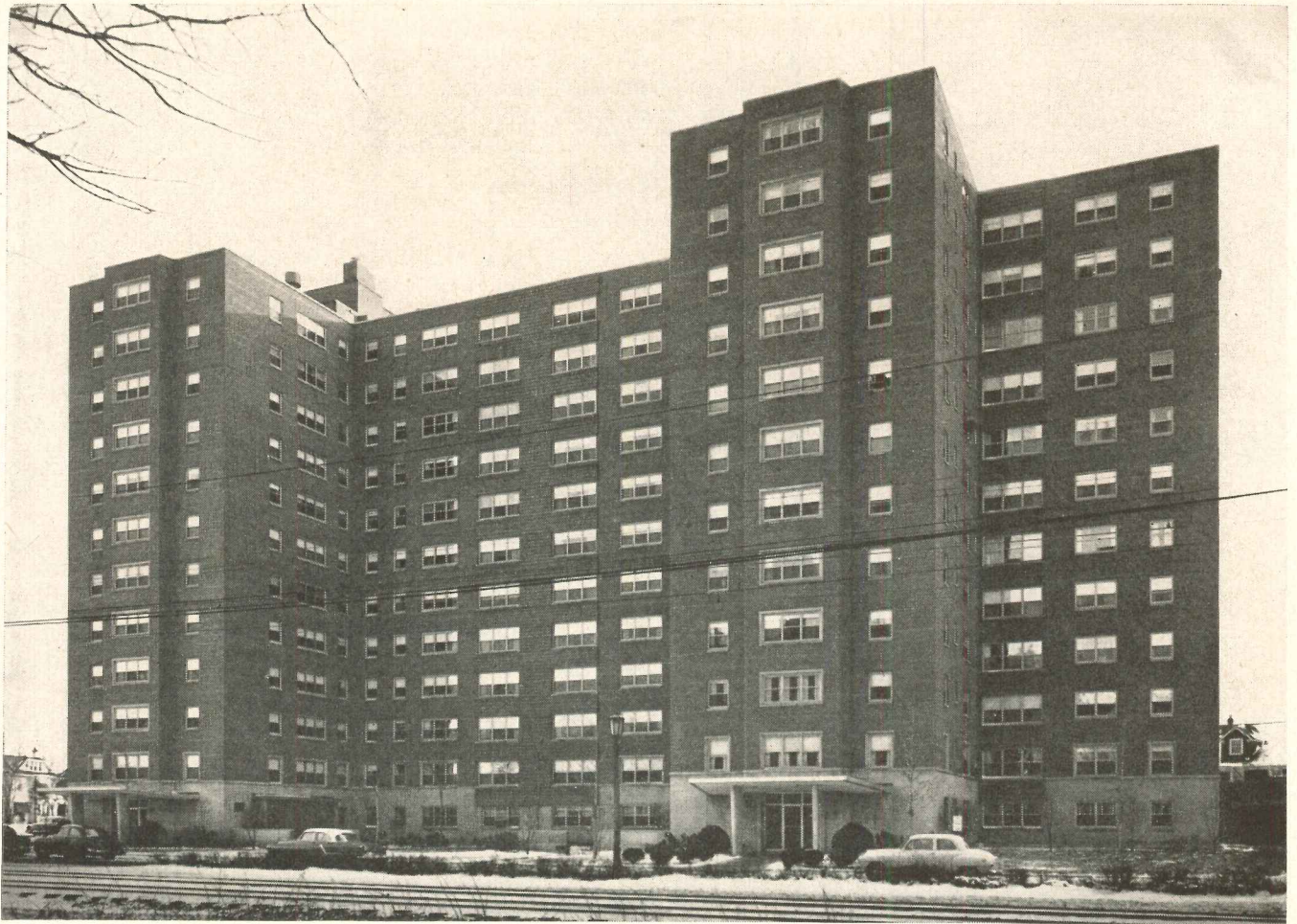
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Cover: Background — architect's drawing for Erickson's Filling Stations, Minneapolis, Minn. Thorshov and Cerny, architects. Photos — left, Fellman Clinic, Shreveport, La. Samuel G. and William B. Wiener, architects; photo by Clarence John Laughlin. Right, Clarke & Courts Building, Harlingen, Tex. Cocke, Bowman and York, architects; photo by Ulric Meisel

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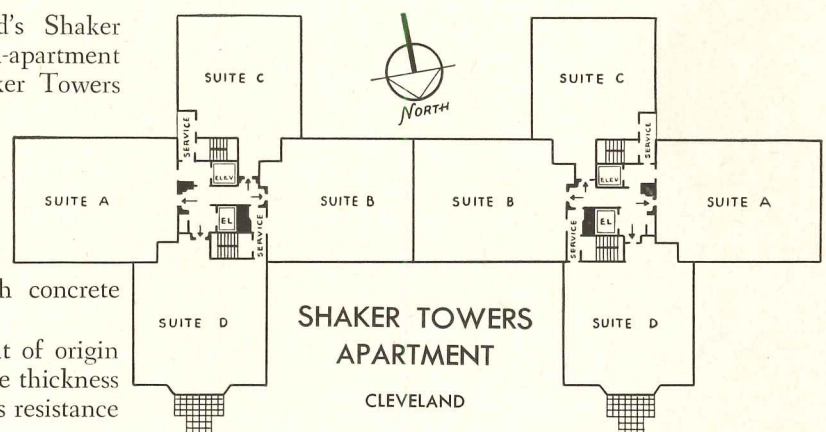
## NEW APARTMENT HOUSE IN CLEVELAND'S SHAKER HEIGHTS SECTION

Located immediately adjacent to Cleveland's Shaker Square, an exclusive shopping and residential-apartment section of the city, is the new 12-story Shaker Towers Apartment. This brick and steel-frame structure contains 92 outside suites, each with five, six or seven rooms.

The architects of the Shaker Towers Apartment provided fire-safety through the use of floor structures built of Bethlehem Open-Web Steel Joists in combination with concrete floor slab and plaster ceiling.

This construction confines a fire to its point of origin for from one to four hours, depending upon the thickness of slab and type of plaster used. It also provides resistance to vibration and sound-transmission.

The Bethlehem Joists reached the site completely pre-fabricated, ready for immediate, easy placing without false-work or special equipment. Future maintenance of the building will be simplified because the steel joists won't sag or shrink to cause gaps between baseboard and floor.



*Architect*, Joseph Ceruti, A.I.A.  
*General Contractor*, Roediger Construction Co.  
*Structural Engineer*, Barber and Magee  
*Steel Fabricator and Erector*, Builders Structural Steel Corp.

... all of Cleveland

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### BETHLEHEM OPEN-WEB STEEL JOISTS



# THE RECORD REPORTS

## P E R S P E C T I V E S

*William Adams Delano, 1953 A.I.A. Gold Medalist at 79,  
Answers a Record Question: What Were the High Spots?*



IT IS IMPOSSIBLE, as one reviews one's architectural career, to pick out the buildings that gave the greatest pleasure to design: so many elements enter the picture — the character of the client, the site, and the associates who aided so ably and generously in the work — but here are a few (for which I was personally responsible) that stand out in my mind with particular satisfaction.

FIRST AND FOREMOST, our office at 126 East 38th Street, because it has been for nearly 40 years a continuing delight to work there. In 1916, I was able to persuade Mr. J. P. Morgan, president of The Murray Hill Association, which guarded the domestic sanctity of Murray Hill, to let us turn a dilapidated stable — being used as a milk depot — into an architect's office. We agreed to put a new façade on the building and display no sign. The interior we adapted to our practice.

The Walters Art Gallery in Baltimore — my first big job — because Mr. Walters gave me this great opportunity when I was fresh from the Ecole des Beaux-Arts.

India House on Hanover Square, the Knickerbocker, Brook, and Union Clubs — all in New York City — because I had to deal with committees who often had divergent ideas, requiring patience and diplomacy; but they were great fun, and I made many friends among the members.

FOR MANY OF THESE FRIENDS, who strangely enough remained warm friends through the years, I designed country and city houses; some were big, others small. Among the larger town houses were those for Willard

Straight, William Woodward, Harold Pratt, George Baker, Jr., and a group of four houses for Mr. Fulton Cutting, for his sons and daughters; also, the city house in New York and the country house and gardens at Mt. Kisco for Robert Brewster, an old and devoted friend of college days. The Pratt house, now the home of The Council on Foreign Relations, was particularly gratifying because it came "out of the blue" when, after the First World War, I came back to New York and found our "cupboard bare."

ON LONG ISLAND, where I built my own house in 1909 — thanks to Bronson Winthrop, for whom I was planning a house and garden — I designed many others: a studio in the Wheatley Hills, for Mrs. Harry Payne Whitney, a wonderful patron of the arts, who gave me a free hand and carte blanche; a large house and garden for James A. Burden at Syosset; also near Syosset, on the shore of a pond, a small house for Chalmers Wood — which has been much admired; another large one for Mrs. Benjamin Moore, with the same waterside advantage, at East Norwich; and one for Edwin Fish, which had a brookside setting — rare on Long Island. On the North Shore, large houses and gardens for Harrison Williams, Mrs. Paul Pryibil, Ferdinand Eberstadt, Bertram Work and, last but not least, an enormous chateau on a high hill overlooking Cold Spring Harbor, for Otto Kahn — a tremendous folly!

In Virginia, I had the good fortune to "do over" Mirador — in the foothills of the Blue Ridge Mountains — the home of the celebrated Langhorne family, which a niece, Mrs.

Ronald Tree, had acquired. Later, I designed houses near Charlottesville for General ("Pa") Watson and the Stanley Woodwards; and still another for Paul Mellon at Upperville. I love Virginia, and the owners of these houses were all delightful clients. I must not forget a very large house at Montgomery, outside of Cincinnati, for the Jack Emerys (she, a daughter of the Dana Gibsons); they were great friends and most appreciative clients.

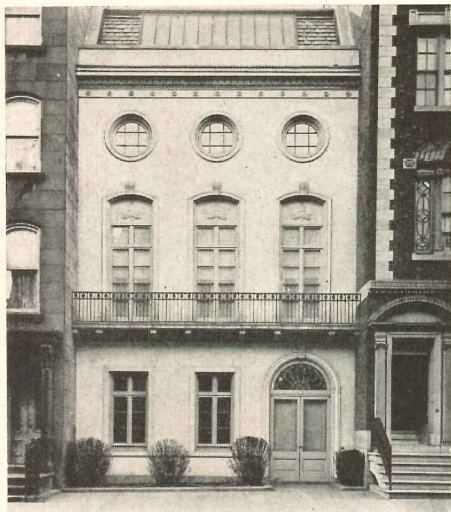
AMONG PUBLIC BUILDINGS, I would mention the Divinity School and Sterling Chemistry Laboratory at Yale — my Alma Mater — because I did not have to design them in Gothic — they were far removed from the super-Gothic of the main campus; at Lawrenceville, my preparatory school, I designed eight buildings for two able and friendly Head Masters — Mather Abbott and Allan Heely; the Third Church of Christ, Scientist, in New York City, because I dealt with an understanding and cooperative committee; in Washington, the Japanese Embassy on Massachusetts Avenue (difficult clients, I found them); also in Washington, the United States Post Office Department building and the Circular Plaza (this latter, unhappily, not completed) on 12th Street between Pennsylvania and Constitution Avenues, because this commission brought me in contact with the most charming gentleman, Andrew W. Mellon, who later asked me to design the United States Chancellery on the Place de la Concorde in Paris. While the Chancellery was building, an old friend and retired architect, Jack Gade, recommended me to Wm.

*(Continued on page 360)*

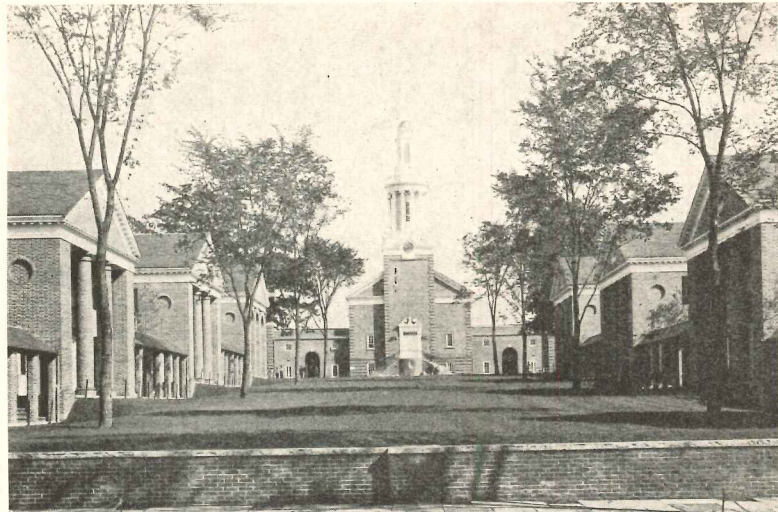


**DESIGNED BY THE 1953 A.I.A. GOLD MEDALIST**

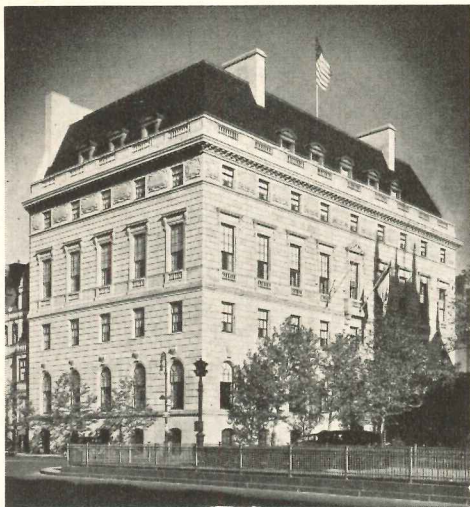
*Examples of the Work of William Adams Delano, F.A.I.A.,  
Soon to Receive the Institute's Highest Honor*



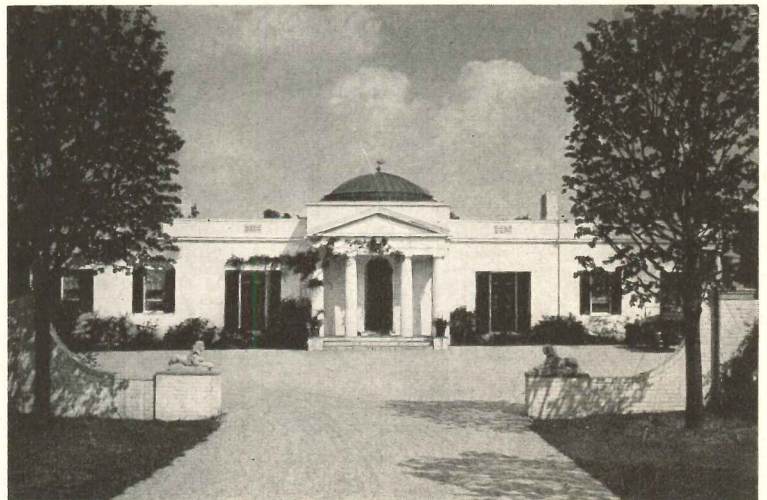
1916—and still housing the offices of Delano & Aldrich, Mr. Delano's firm since 1903: 126 E. 38th St., New York City



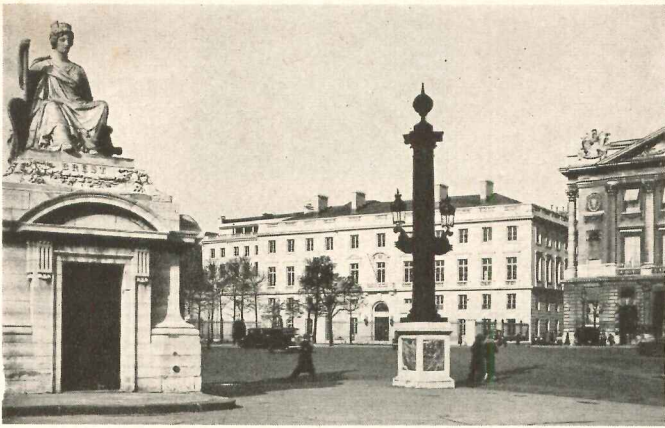
1931—The Divinity School, Yale University, New Haven, Conn. Another of Mr. Delano's favorite buildings, not shown here, was also done for Yale, which is his alma mater—the Sterling Laboratory



1932—The Union Club, at the northeast corner of Park Avenue and 69th Street, New York City, one of many clubs Mr. Delano designed



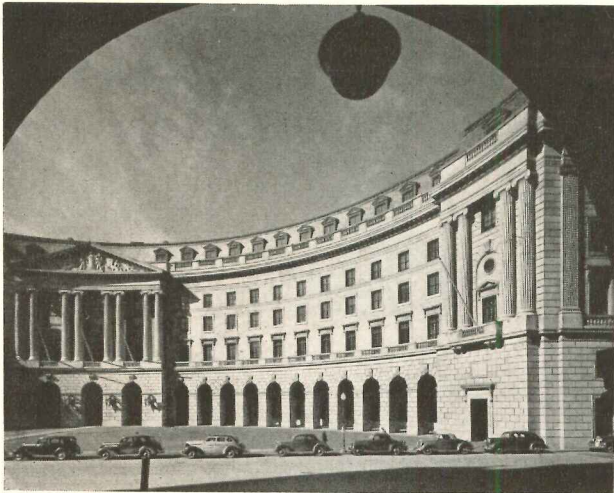
1928—The Chalmers Wood house, Syosset, L. I. Mr. Delano designed many residences for country estates here and abroad



1931—United States Government Chancellery on the Place de la Concorde in Paris



1929—William Hallam Tuck house, on the Battlefield of Waterloo, near Brussels in Belgium

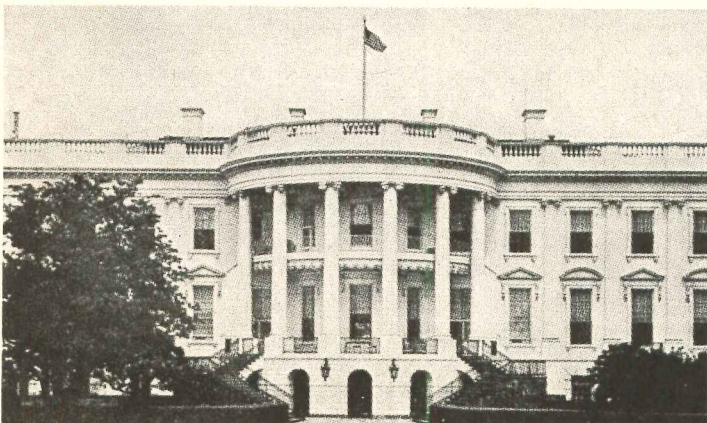


1930—United States Post Office Department Building, Washington, D. C.



1937-1943—LaGuardia Field, Queens, N. Y.

**FROM THE ARCHITECT TO THE PRESIDENT — MAY 1948**



A second story Balcony!  
 It seemed a simple plan  
 To give a quiet breathing space  
 To a much harried man.  
 Yet no sooner was it mooted  
 Than a fierce attack began:  
 The die-hards of the nation  
 Pronounced a solemn ban —  
 What! touch that sacred edifice?  
 (Quite often touched before)  
 'Twas sacrilege to those who loved  
 The sunshine of T. R.  
 But now the storm's subsided —  
 The tea pot scarcely stirs;  
 And the shade of Thomas Jefferson  
 In shadow gently purrs. — Wm. Adams Delano



**THREE A.I.A. POSTS CONTESTED**

ELECTIONS appear likely to play a bigger role in the 85th convention of the American Institute of Architects June 15-19 at Seattle than in any convention since the Houston epic in 1949.

The convention faces a contest over the presidency for the first time since that year, with First Vice President Kenneth Wischmeyer of St. Louis and Secretary Clair Ditchy of Detroit both candidates to succeed President Glenn Stanton of Portland, Ore., who is completing his second term.

Two other contests: George Allison of Los Angeles and Gulf States Regional Director Howard Eichenbaum of Little Rock for second vice president and Marcellus Wright Jr. of Richmond and M. Edwin Green of Harrisburg, Pa., for Middle Atlantic regional director.

Candidates for other offices and directorships, so far uncontested, are: first vice president — Norman J. Schlossman, Chicago, the present second vice president; treasurer — Maurice Sullivan, Houston, the incumbent; secretary — George Bain Cummings, Binghamton, N. Y.; Northwest Regional Director — Waldo Christenson, Seattle; Gulf States Regional Director — Clyde Pearson, Montgomery, Ala.; Great Lakes Regional Director — Raymond Kastendieck, Gary, Ind.

**30 New Fellows Named**

The Institute last month released the names of 30 members who will be advanced to Fellowship in the traditional ceremony at the annual banquet and announced more program details.



A.I.A.'s new honorary members: Gurdon M. Butler (left) of Tucson, dean emeritus of the University of Arizona's College of Engineering, and Frank Creedon, Director of Installations, Department of Defense

**Convention News Editions**

Two special editions of the *Chicago Construction News*, F. W. Dodge Corporation newspaper, will be published in connection with the A.I.A. convention.

The first, planned as a guide to the convention, will be distributed on the opening day, June 15, to all attending the convention. The second, a complete report on proceedings, will be published June 23 and mailed to every member of the A.I.A.

A *Construction News* staff headed by Ernest Mickel of the Dodge Washington News Bureau will provide on-the-spot coverage.

Pietro Belluschi, dean of the School of Architecture and Planning at Massachusetts Institute of Technology, will be the convention's closing speaker.

Richard Bennett of Chicago will be the moderator for the seminar on Liturgical Arts, with Maurice Lavanoux of the Liturgical Arts Society, Rev. Marvin Halverson, executive secretary of the Department of Worship and the Arts of the National Council of Churches and Eric Mendelsohn of San Francisco as the speakers.

The seminar on Oriental Influence on American Art and Architecture will have as speakers Prof. Winfield Scott Wellington of the University of California and Harwell Hamilton Harris, director of the Department of Architecture at the University of Texas, among others.

**The prospective Fellows are:**

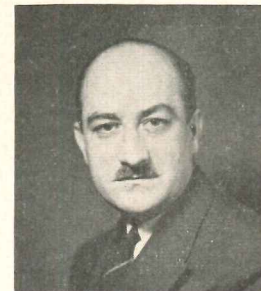
Thomas Henry Atherton, Wilkes-Barre, Pa.—Public Service; Turpin Chambers Bannister, Urbana, Ill.—Education and Literature; Richard Marsh Bennett, Chicago, Ill.—Design and Education; Leon Chatelain, Jr., Washington, D. C.—Public Service; Theodore Irving Coe, Washington, D. C.—Service to The Institute and Public Service; Robert Charles Dean, Boston, Mass.—Design and Public Service.

John Reed Fugard, Chicago, Ill.—Design and Public Service; William Charles Furer, Honolulu, T. H.—Service to The Institute; E. James Gambaro, New York, N. Y.—Service to The Institute; Henry L. Gogerty, Los Angeles, Calif.—Science of Construction; Milton Latour Grigg, Charlottesville, Va.—Design; Arthur P. Herrman, Medina, Wash.—Education.

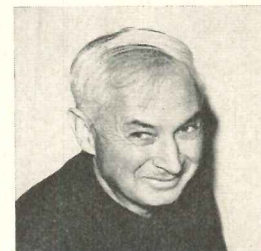
Eric Trevor Huddleston, Durham, N. H.—Public Service; Robert Allan Jacobs, New York, N. Y.—Design; Louis I. Kahn, Philadelphia, Pa.—Education; Morris Ketchum, Jr., New York, N. Y.—Design; Adrian Nelson Langius, Lansing, Mich.—Service to The Institute and Public Service; Curtis Meredith



1953 Gold Medal: William Adams Delano, F.A.I.A., of New York



Craftsmanship Award: Emil Frei of St. Louis, stained glass artisan



Fine Arts Medal: Donal Hord of San Diego, sculptor



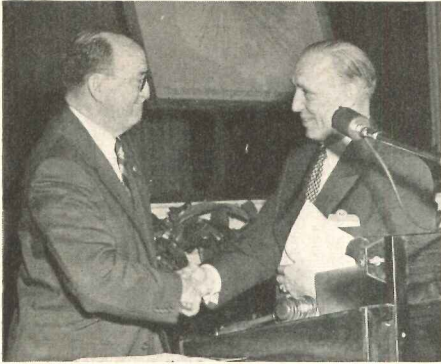
Edward C. Kemper Award: Gerrit J. de Gelleke, F.A.I.A., Milwaukee

Lovelace, Bethlehem, Pa.—Design.

Albert Mayer, New York, N. Y.—Design and Education; Clarence William Palmer, Detroit, Mich.—Public Service; Lawrence B. Perkins, Chicago, Ill.—Design and Education; Geoffrey Platt, New York, N. Y.—Design; Otto John Teegen, New York, N. Y.—Design and Education; Wilbur Henry Tusler, Minneapolis, Minn.—Service to The Institute and Public Service; Charles Wellington Walker, Bridgeport, Conn.—Design and Service to The Institute.

Bertram Anton Weber, Chicago, Ill.—Design; Kenneth Curtis Welch, Grand Rapids, Mich.—Service to The Institute and Public Service; Walter F. Wilson, Lincoln, Neb.—Public Service; Kenneth Smith Wing, Long Beach, Calif.—Design; and Marcellus Eugene Wright, Richmond, Va.—Service to The Institute and Public Service.





Top: A.G.C.'s new president, C. P. Street (right) of Charlotte, N. C., accepts a National Safety Council safety honor award from H. B. Alexander, Harrisburg, Pa. Above: Army's new Chief of Engineers, Maj.-Gen. Samuel D. Sturgis Jr., one of convention's major speakers. Left: Arthur S. Horner, Denver, retiring president of A.G.C., with Undersecretary of Commerce Walter Williams, another speaker

**Architects Join Schoolmen For Record A.A.S.A. Meeting**

ARCHITECTS from many parts of the country were in Atlantic City for the 79th annual convention of the American Association of School Administrators — biggest A.A.S.A. convention ever — and meetings of allied organizations, including the School Buildings Committee of the American Institute of Architects.

Of special interest to architects was the final afternoon's session on School House Construction, which had William Caudill, A.I.A., of Caudill, Rowlett, Scott and Associates, Bryan, Tex., and Henry Wright, A.I.A., of Kistner, Wright and Wright, Los Angeles, as architect members of a six-man panel.

The joint A.A.S.A.-A.I.A. jury which screened the exhibits included William O. Bailey, A.A.S.A., director of school construction for Maine; Charles Colbert, A.I.A., architect for the New Orleans Board of Education; Prof. Russell T. Gregg, A.A.S.A., head of the School of Education of the University of Wisconsin; Ray Hamon, A.A.S.A., chief of the School Housing Section, U. S. Office of Education; Alonzo Harriman, A.I.A., of Auburn, Me.; and Frank Lopez, A.I.A., senior associate editor of ARCHITECTURAL RECORD.

**CONCERN ON BID PROCEDURES VOICED AT A.G.C.'S CONVENTION IN MIAMI**

By Ernest Mickel

THE GENERAL CONTRACTORS concerned with building construction have taken another stand against the creation of bid depositories. They are aware of architects' "implied" approval of the system and are on guard to arrest the trend wherever it might develop.

This was brought out at the annual convention of the Associated General Contractors of America, Inc., held in Miami in March. The situation was highlighted in a report made by Welton A. Snow, A.G.C.'s national staff member heading up activities of the organization's building contractors' division.

Mr. Snow said that at present there appeared to be no widespread interest in the establishment of bid depositories for the handling of subcontractors' bids to general contractors. However, he added, with the implied endorsement of this system inherent in the American Institute of Architects' approval of a contract documents committee pamphlet on the subject, "we may have to meet in the future supporting activities in some areas by A.I.A. members."

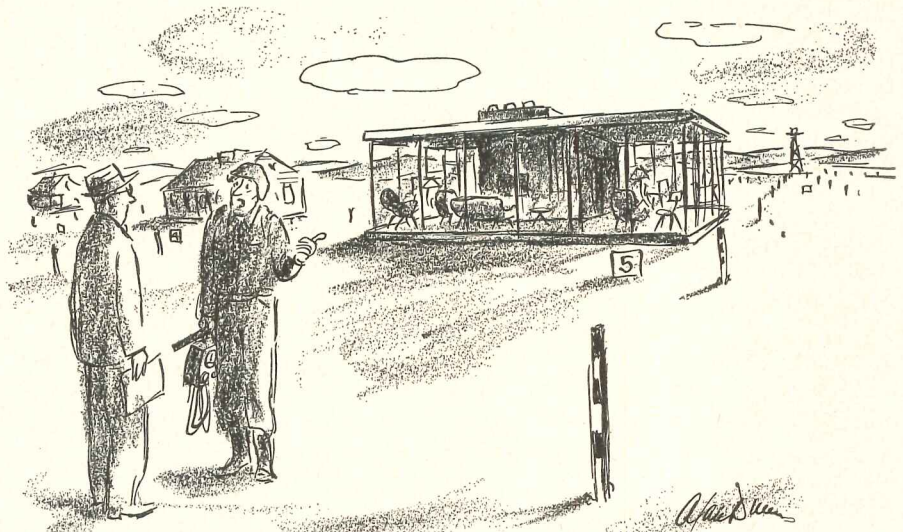
**Local Advice Sought**

All A.G.C. chapters and members were urged to keep the national office

advised on local developments dealing with any such activity.

The Snow report also reviewed the division's request that the A.I.A. reemphasize the use of and compliance with provisions of the publication, "A Suggested Guide to Bidding Procedure." The reference was made especially to the issuance of addenda and established bid opening dates and hours. A.I.A. has promised the general contractors it will call the

(Continued on page 344)



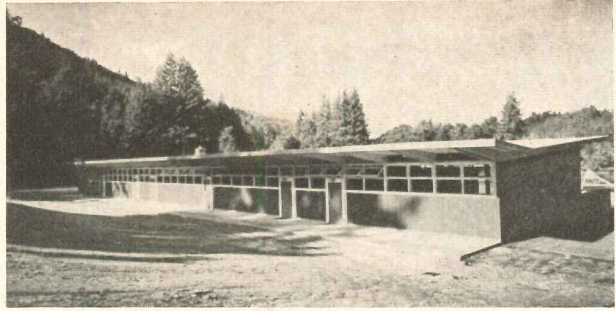
—Drawn for the RECORD by Alan Dunn

"You sure you want this atom-bomb tested?"

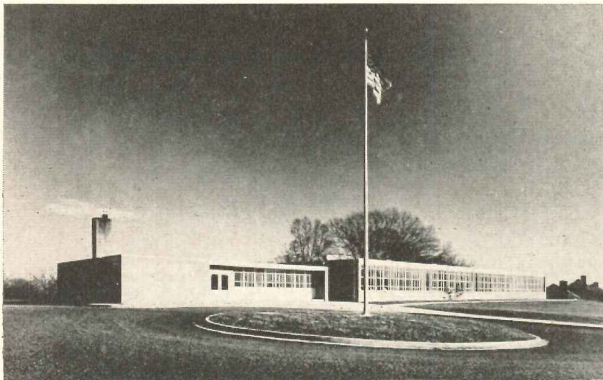
## THE RECORD REPORTS

### SCHOOL JURY PREFERS LOW BUILDINGS

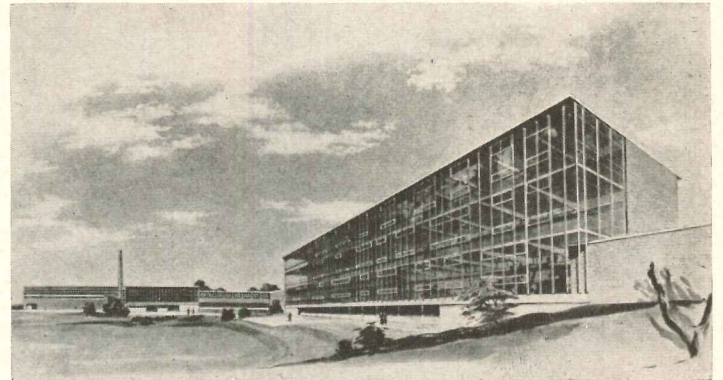
*Shown Here Are Six of Over 300 Entries  
Chosen by A.A.S.A.-A.I.A. Group  
For Noncompetitive Exhibit  
In Atlantic City*



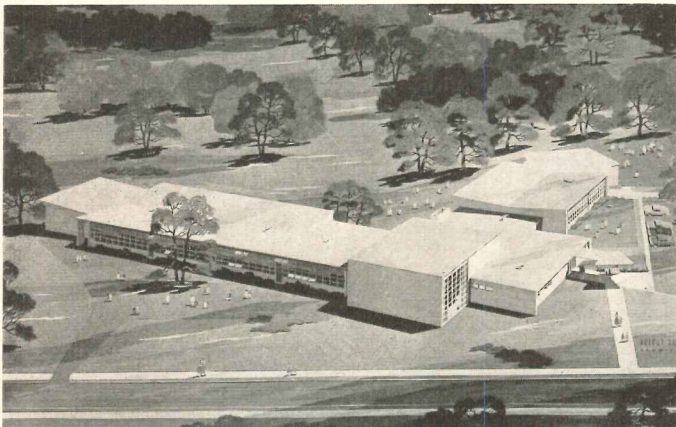
One-story schools predominated in the exhibit. Above: Boulder Creek, Calif., Elementary School addition (to be shown in the June issue); John Lyon Reid, Architect. The jury felt this was a fine example of craftsmanship



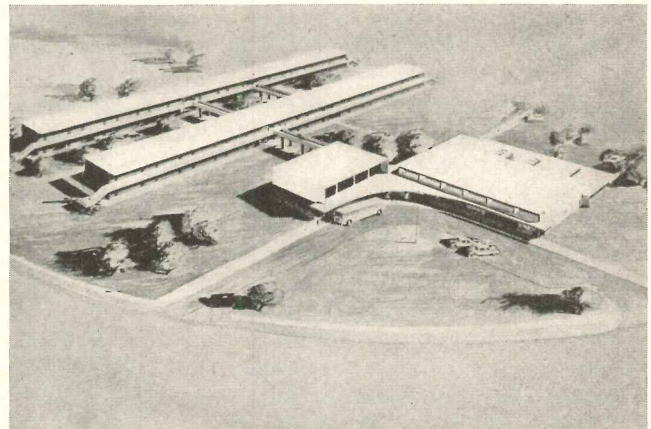
Hillandale Elementary School, Montgomery County, Md., another one-story entry; to be published soon in ARCHITECTURAL RECORD. Architects: McLeod & Ferrara



Senior High School and Community College, Keokuk, Iowa; one of the few multi-story buildings in the exhibit; topography demanded tall building. Architects: Perkins & Will

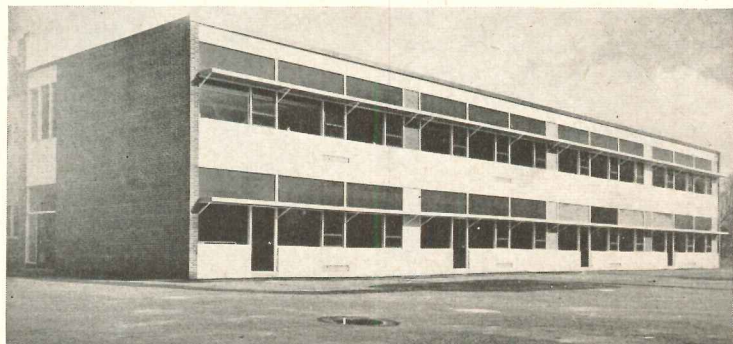


Lyncrest School, Fair Lawn, Bergen County, N. J., scheduled for completion in August. Arthur Rigolo, Architect

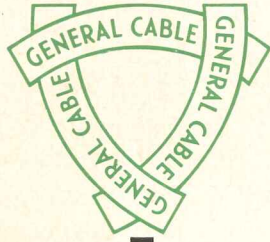


From Hawaii: Pearl Harbor Elementary School. Architects, Law & Wilson, Honolulu

Lima Elementary School addition, Delaware County, Pa., planned to allow still further expansion later. Red brick is only architectural link with original (1925) building. Clifford E. Gorner is the architect



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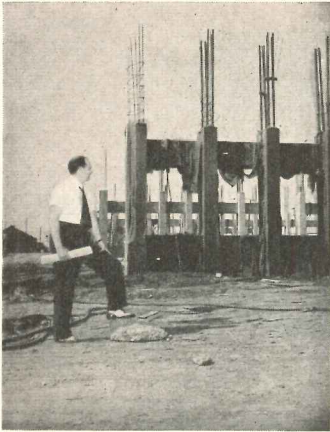
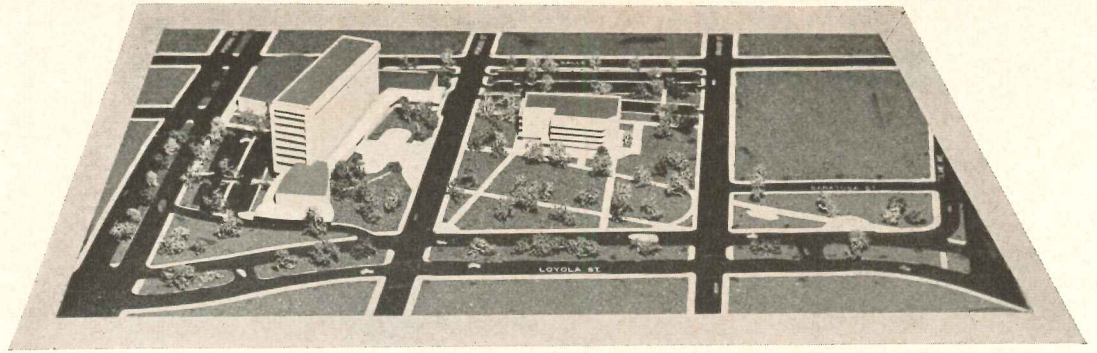
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Mayor Morrison, above, acted as tour director, described new projects including New Orleans civic center (top). Below: Louis C. Bisso, U. S. Grant 3d, and Architect M. Wayne Stoffle, chairman, New Orleans Citizens' Planning Committee



## CITY PLANNERS, ARCHITECTS, AT NEW ORLEANS

THE BENEFICIAL RESULTS of teamwork between architects, city planning officials, and citizens' planning groups were well indicated at the New Orleans conference of the American Planning and Civic Association, held in March.

The site of the meeting was ideal, since New Orleans, under the energetic direction of its mayor, deLesseps S. Morrison, has been undergoing a remarkable transformation as a result of intelligent city planning and effective civic action.

Gervais F. Favrot, chairman of the City Planning and Zoning Commission, described the working of the New Orleans system as being sparked by:

1. A forward-looking political head — the mayor.
2. An effective planning advisory committee made up of city department heads.
3. A citizens' city planning committee including 16 major civic groups appointed by the mayor. Chairman of this committee is a local architect, M. Wayne Stoffle of Ricciuti, Stoffle & Associates.

In five days of conferences and inspection trips, a far-ranging series of

subjects was covered under the direction of A.P.C.A.'s chairman, Horace M. Albright of New York, and president, U. S. Grant, 3d, of Washington, D. C.

How city planning sets the stage for effective architectural development was indicated by these subjects, which included panels and talks on comprehensive city planning, protection of parks and parkways, zoning, shopping centers, metropolitan and city-county planning, state aids to local planning, university planning service to communities, slum clearance and community development, the role of planning commissioners, the role of the citizen in planning.

An interesting contribution to the meeting was made by a group of deans and professors of architectural schools presided over by Buford L. Pickens, director of the School of Architecture at Tulane. No reputable university today, Dean Pickens pointed out, can afford to be disinterested in some phase of the comprehensive planning of cities and nearby regions. He and members of the panel described the important role universities are assuming in basic research and in training for city planning.



University planning panel: (left to right) Walter Creese, University of Louisville; Don H. Morgan, Illinois; Buford L. Pickens, Tulane; W. S. Bonner, Arkansas; Robert Stuart, Georgia Tech; William T. Arnett, University of Florida



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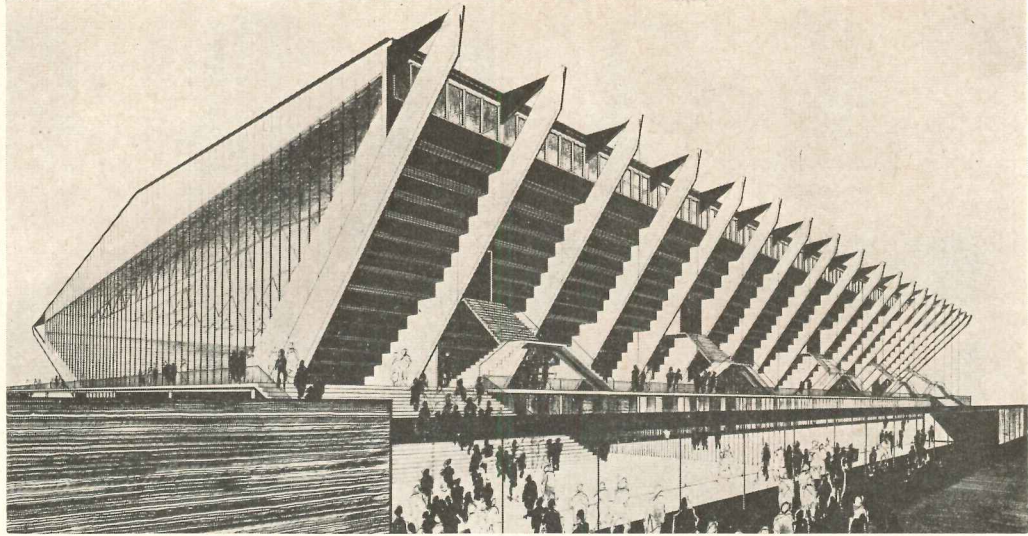
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## THE RECORD REPORTS

Unusual design of pool building was achieved by tying the large diagonal beams together with roof trusses, thus eliminating vertical supports beneath sloped seating areas (see section below). Reversed thrusts of roof and seats permitted opening the sides by eliminating heavy columns. Instead, light tension cables, 2 in. sq, were used. These pull upwards and stabilize against wind loads. Beams and trusses were specially designed to withstand unusual forces encountered



## AUSTRALIAN ARCHITECTS COMPETE FOR OLYMPIC KUDOS

AUSTRALIA'S first nationwide architectural competitions in several years were held recently, furnishing the country's architects a chance to try their hands at the design of large-scale facilities for spectator sports. Occasion for the competition was the 1956 Olympic games which the Australians have hoped to hold in Melbourne.

Two competitions conducted by the Royal Australian Institute of Architects for the Australian Olympic Council of the International Olympic Federation sought designs for a stadium to house the games and for an Olympic pool.

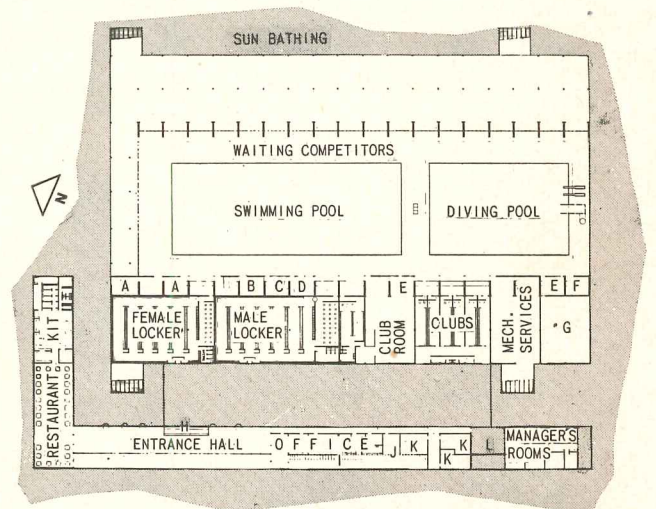
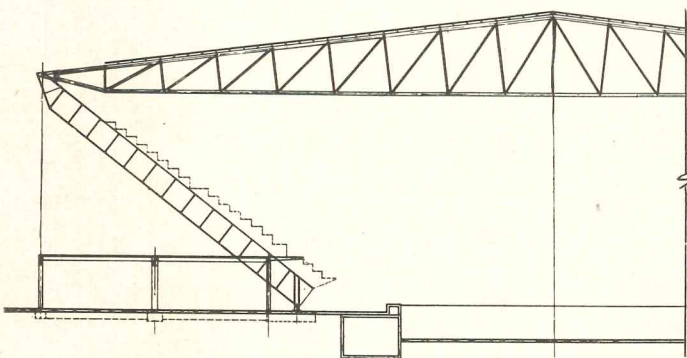
Prize-winning designs are shown on this page.

The pool design was the work of a team of young Melbourne architects and engineers, including John and Phyllis Murphy, Peter McIntyre and two members of the firm of J. L. and E. M. Daly — Kevin Borland, an architect and Bill Irwin, an engineer. Although it received the jury's unanimous endorsement, the design has been the cause of some controversy, including objections from residents of the neighborhood where it is scheduled to be erected. "This sort of building, accepted in most civilized

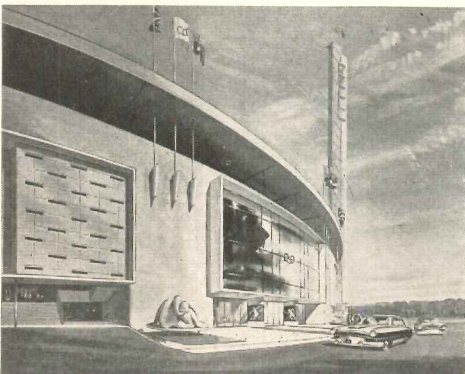
countries, is still a fairly frightening innovation here," commented Robin Boyd, Australian architect and one of the judges of the competition.

Describing the prize winner, Mr. Boyd predicted that it would "carry the modern architectural revolution in Australia out of the field of small buildings commissioned by progressive individuals into the realm of big business and construction."

The stadium design selected in the other competition is the work of Frank Heath, Melbourne architect and town planner, who won over 115 others.



A, First Aid; B, Pool Store; C, Instruction; D, Official; E, Press; F, Cleaner; G, Unallotted Space; H, Tickets; I, Bicycle Room; J, Sore; K, Masseur; L, Garden



Above, left and right: section and plan of the pool building. Left: sketch of winning design in stadium competition. Designed for construction with both prestressed and steel-reinforced concrete, it accommodates 125,000 people

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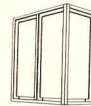
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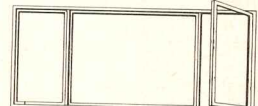
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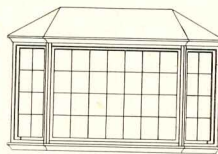
## SUGGESTED APPLICATIONS



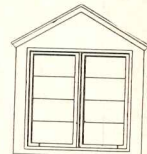
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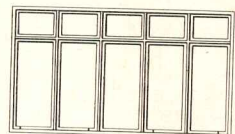


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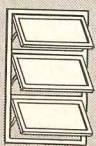
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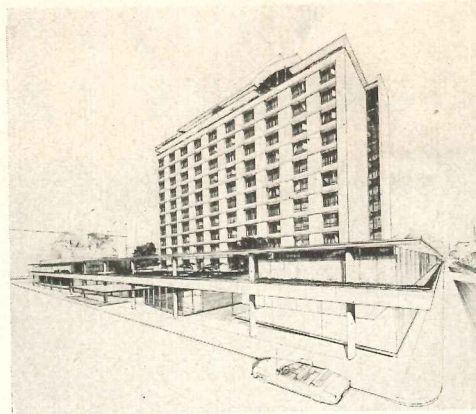
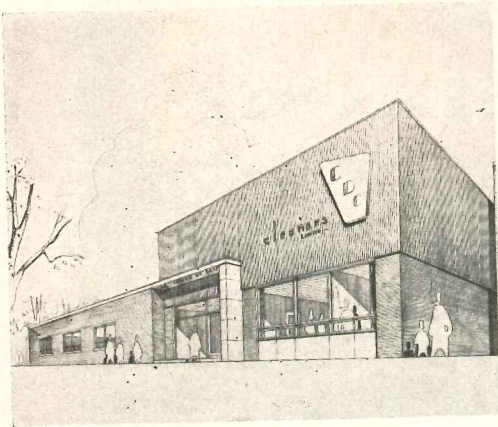
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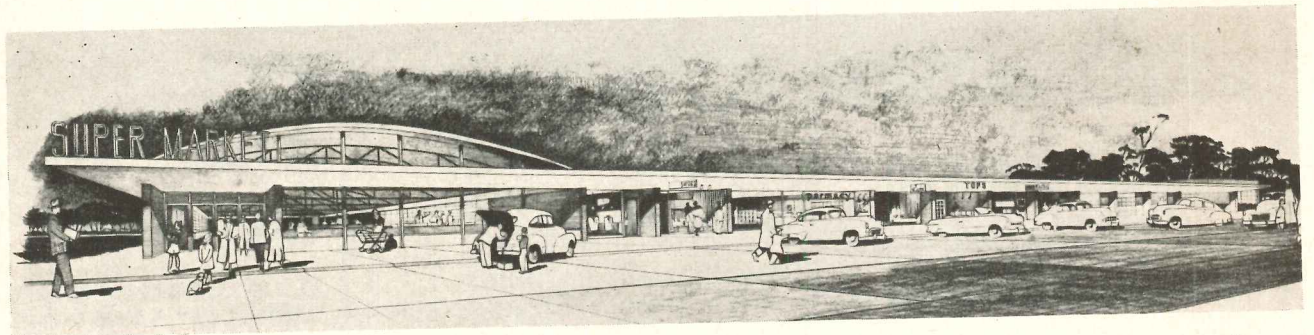
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Far left: Plant for Canadian Dyers & Cleaners, Toronto, as it will look after alterations and addition planned by Architect Murray Sklar. Left: the *Torontian*, Toronto's first big new hotel in 15 years, will have drive-in entrance; shopping center, promenade and roof restaurant will also be features of 200-room project. Cost is estimated at \$2,500,000; architects are Page & Steele



Above: projected shopping center for Berry Road, Etobicoke Township, Ont. Architects: Venchiarutti & Venchiarutti, Toronto

### Government Sees 1953 As Record Year in Building

OFFICIALS of the Department of Trade and Commerce have predicted that Canadians will spend the record sum of \$7,446,000,000 this year on new construction, machinery and equipment and on repair and maintenance of existing plant and structures.

A special report to the House of Commons by the Department also forecast a greater concentration of construction activity in urban areas than in the past two years, with increased emphasis on office, store and house building expected for 1953.

Building materials are expected to be in adequate supply, except perhaps for temporary shortages at the peak of the construction period, for the first time since World War II.

Major sources of new strength in 1953 were expected in areas retarded in favor of the defense program during the past two years.

"Housing outlays," the report notes,

"are expected to account for 18 per cent of the total program compared to less than 17 per cent in 1952. Capital spending in trade, financial and commercial service for such new facilities as retail and wholesale outlets, office buildings and hotels, is expected to be well above the 1952 figure."

There is also a backlog of church, university and hospital construction which can now go ahead.

The Department's predicted 1953 total is five per cent over the 1952 estimate, previous record prediction. It includes a total of \$4,400,000,000 total expenditures for construction, repair and maintenance of new buildings of all types, including housing, a figure which is seven per cent over the 1952 estimate.

### Architecture Beyond Science, Alberta Architects Are Told

THE ARCHITECT has a greater than purely scientific service to perform, said the guest speaker at the annual banquet of the Alberta Association of Architects.

Peter M. Thornton, past president of the Architectural Institute of British Columbia, speaking on the changing role of the architect in today's world, said architects must seek by interpretation of building to satisfy the emotional needs of man as well.

George W. Lord of Edmonton, who was reelected as the Association's president for his second term, reported at the recent annual meeting in Banff that the organization is now the fourth largest of its kind in Canada, with a membership of 99.

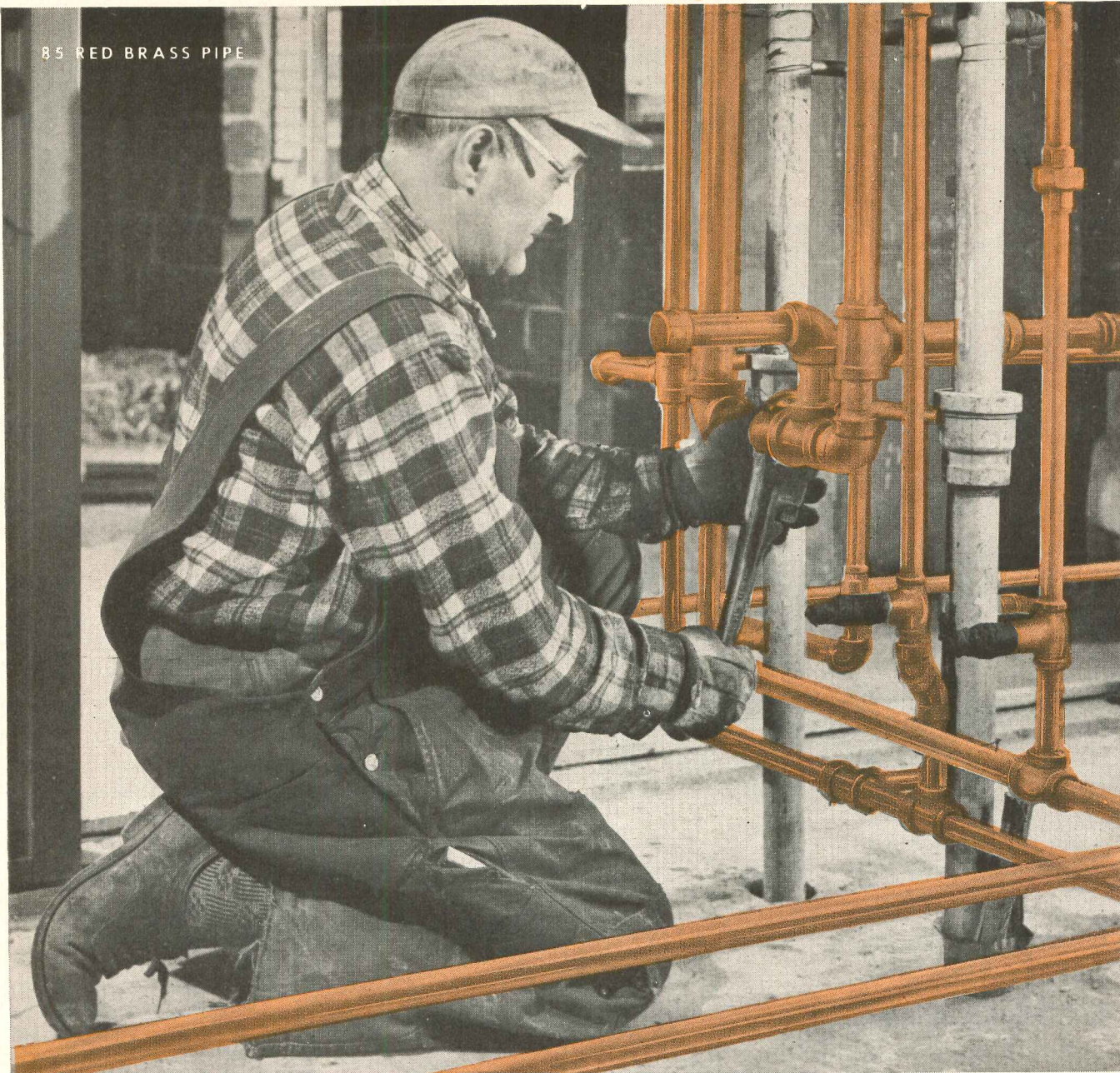
Other officers elected to the executive of the association are: V. F. R. Berton of Calgary, vice president; T. Gordon Aberdeen of Edmonton, second vice president; Kelvin C. Stanley, Edmonton, secretary; and Howard L. Bouey, Edmonton, treasurer.

Miss Mary Imire, G. R. Ascher and C. S. Burgess, all of Edmonton, and W. G. Hames of Calgary were all elected to the Association's executive council.

Two architects who have been active  
(Continued on page 30)

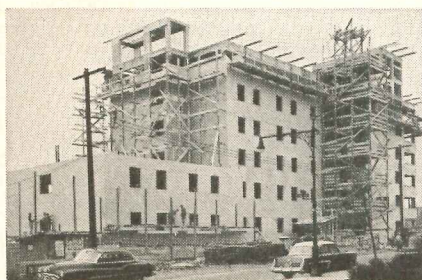


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## 20,000 FEET OF QUALITY



NEW HOSPITAL, located in Forest Hills, Long Island, New York, is scheduled for completion in September, 1953. Pomerance & Breines, Architects.

The new hospital of the Forest Hills Foundation (shown under construction at left) is being built to last. To keep maintenance expenses low and fulfill life expectancy of the building, plumbing contractor William Grossberg, Inc., chose ANACONDA 85 Red Brass Pipe to fill the architect's specifications for hot and cold water supply lines.

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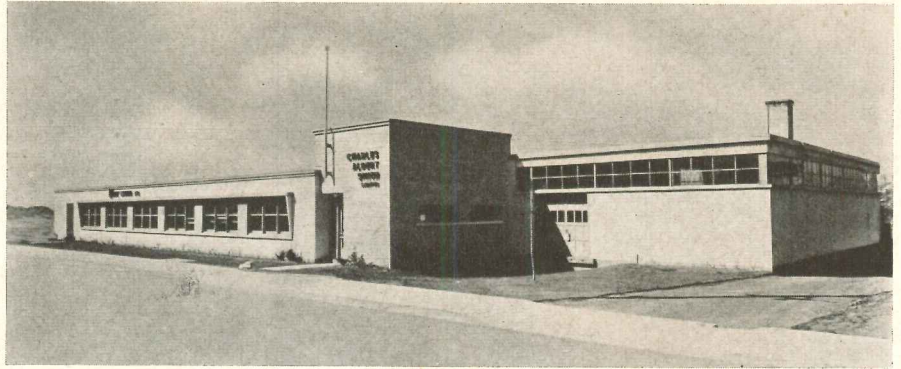
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## THE RECORD REPORTS

### CANADA

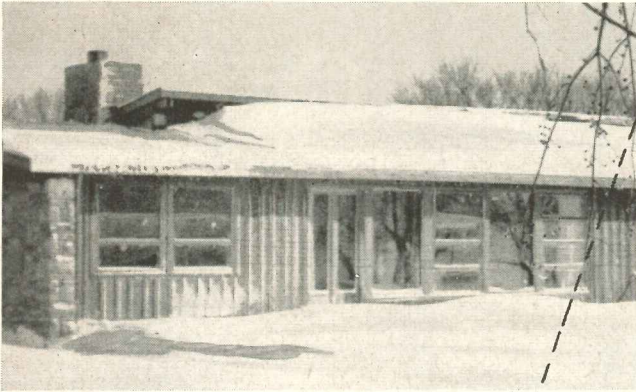
(Continued from page 30)

his own guess is that defense building is now at its period of peak activity. Since 1951, the year of its establishment, DCL has administered nearly \$450 million worth of construction, involving over 1200 contracts.



Erwin Bamberger was architect for this small factory building for Charles Albert Smith Ltd. of Montreal

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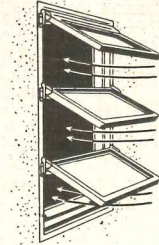


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In the same talk, Mr. Johnson also discussed some of the more interesting engineering features of DCL projects. "Our 160-ft span concrete arch hangar," he said, "has a poured-in-place, thin-shelled area, supported on concrete ribs. A prestressing system is used to take the thrust of the arch at ground level. The arch is poured on traveling plywood forms. The same hangar is also being standardized in steel with I-beam arches of unusual and economic design."

Describing another type of structure, previously unknown in Canada and called a "cantilever hangar," Mr. Johnson said that it featured a central concrete structure which constitutes the workshop section and from which is projected on either side a 120-ft steel cantilever.

"This design," he reported, "provides the maximum in flexibility, because building designers have an almost hopeless task trying to keep ahead of aircraft designs." Structures of this type are under construction at Greenwood, N. S.; Uplands, Ont.; Winnipeg, Man.; Namao and Cold Lake, Alta.; and Comox, B. C.

Another structure described by Mr. Johnson as the first of its kind in Canada is a 120-ft-span precast concrete arch hangar which he said has been tested at Comox, B. C., and found satisfactory. He also noted that an R.C.A.F. supply depot now being erected at Namao, Alta., would be the largest building in Canada featuring precast concrete roof slabs and beams, and that DCL currently has Canada's largest prestressed concrete building under construction at Cobourg, Ont.

(Continued on page 36)

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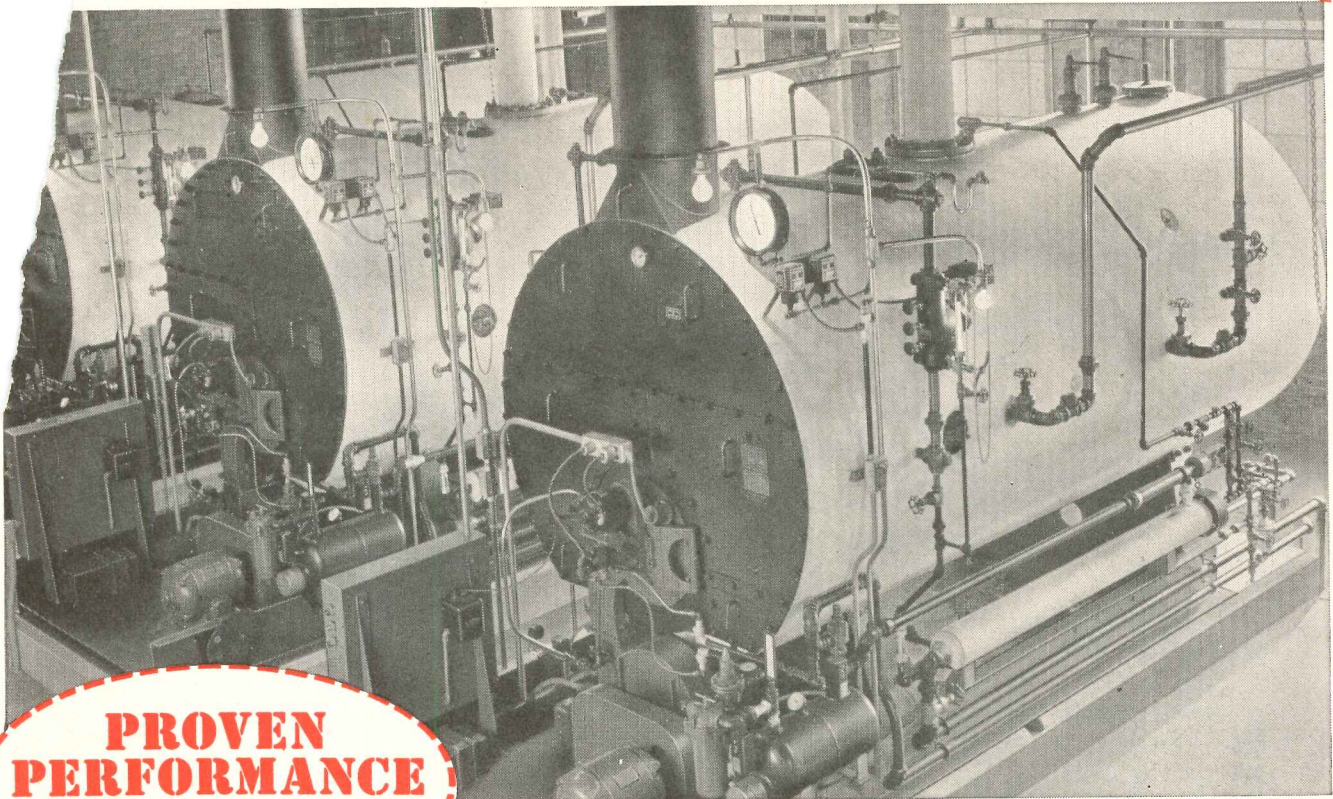
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OWNER

After installation and starting service was completed, a check was made on boiler output. Tests indicated efficiency exceeded the guaranteed 80%. After eight months' operation without tube cleaning, stack temperature showed no noticeable gain, indicating high efficiency had been maintained. Planned and installed by Frank I. Rounds Co., Newton Highland, Mass.

INSTALLING 3 Cleaver-Brooks self-contained boilers at Hoosac Textile Mills, New Bedford Division, was a major step in ending boiler worries. Hoosac can count on yearly savings of \$25,000, and they're set up for future expansion as well.

Before deciding what type of boilers to install for replacing old, hand-fired boilers, Hoosac carefully considered these factors:

1. Efficiency of steam generation — the cost for supplying 12,000 lbs. of steam required each hour at peak capacity for heating and processing.
2. Saving labor costs — through safe, automatic operation.
3. Cleanliness — important to textile manufacture.

A study of past performance and prominence of similar units in the industry — showed that Cleaver-Brooks self-contained boilers would fill the bill.

Guaranteed 80% thermal efficiency was one of many influencing

factors in selecting the 3 Cleaver-Brooks 150 hp. boilers. Even with loads as low as 30% of rating, these boilers operate with a flat 80% efficiency. (Hoosac operates their plant over widely fluctuating loads, particularly in summer.)

That they attained their objectives is borne out by these results — results which showed the boilers paid for themselves in 2 years' time.

1. \$15,000 savings in fuel — fuel cost studies showed 275,000 gals. of oil at 5½¢ per gal. provide steam for a year's operation. Same steam formerly required 2,000 long tons of coal at \$15.00 per ton.
2. \$10,000 savings in labor costs — fully automatic operation minimized boiler maintenance. Personnel were then available for productive plant work.
3. Cleanliness — modern boiler room proved more efficient than previous cluttered arrangement. Hand firing, removal and disposal of fly-ash was eliminated.

In addition to these substantial savings, the installation provided for economical future plant expansion. At present, boiler operation is rotated so all three periodically receive the same service and maintenance.

Cleaver-Brooks boilers are showing similar savings in many other businesses. Investigate — write for Catalog AD-100 and complete information on standard size oil, gas, combination oil/gas fired Cleaver-Brooks boilers, 15 to 500 hp., 15 to 250 psi.

**CLEAVER-BROOKS COMPANY**  
Dept. F, 335 E. Keefe Ave.,  
Milwaukee 12, Wis., U.S.A.

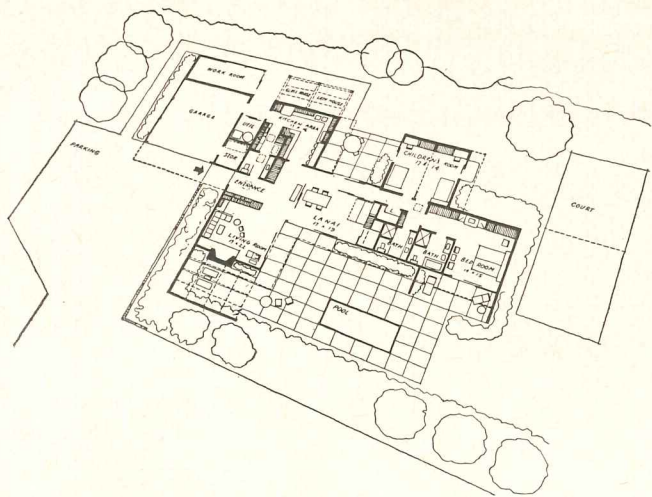
## Cleaver-Brooks

ORIGINATORS OF  
THE SELF-CONTAINED BOILER



Steam Boilers • Oil and Bitumin Tank  
Car Heaters • Distillation Equipment  
Oil and Gas Fired Conversion Burners

## ACOUSTICAL MATERIALS AT WORK



### **MODEL HOME, Los Angeles, California**

**Architect:**

**Thornton M. Abell**

**General Contractor:**

**K. E. Griffin Construction Co.**

**Acoustical Contractor:**

**R. W. Downer Company**

New concepts in home design often call for the use of new building materials.

In this model home, for example, sound conditioning contributed importantly to the effectiveness of the open plan. Noise which might otherwise roam unchecked through the wide doorways and reflect off the floor-to-ceiling glass surfaces is absorbed by the ceiling of Armstrong's Skip-Random Cushiontone. The absence of carpeting or other sound-absorbing materials made the use of this ceiling even more important.

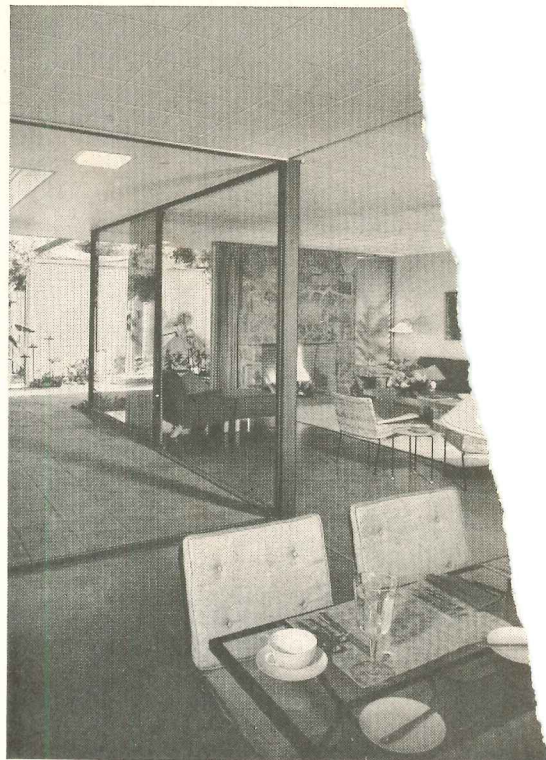
A new acoustical tile—Armstrong's Skip-Random Cushiontone—was the architect's choice for the job.

Like the well-known regular Cushiontone, Skip-Random is an economical, perforated wood fiber material. The major difference is in the perforations. Skip-Random Cushiontone has various sized holes, drilled within a random pattern. This design with its narrow bevels gives a ceiling an unusually attractive, "continuous" appearance . . . subdues the tile effect.

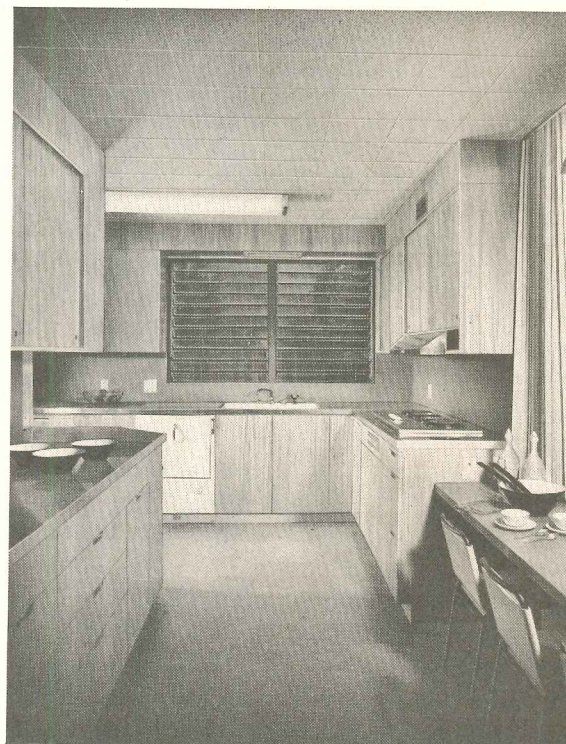
And like regular Cushiontone, the Skip-Random tile is quickly installed, easy to maintain. Its white painted surface is both washable and repaintable, has high light reflectivity.

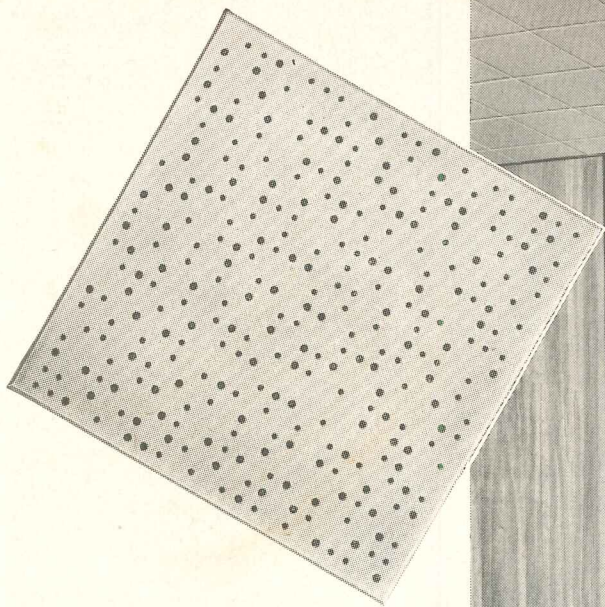
Armstrong's complete line of acoustical materials offers a wide range of special features. Your Armstrong Acoustical Contractor will be glad to give you expert assistance without obligation. For his name and address and for the free booklet, "How to Select an Acoustical Material," write Armstrong Cork Company, 4205 Rock Street, Lancaster, Pennsylvania.

Throughout this house, sound-absorbing materials are used to muffle any noise that might bounce off glass partitions.



Acoustical treatment in the kitchen helps to contain the noise of kitchen activities and the clatter of utensils.



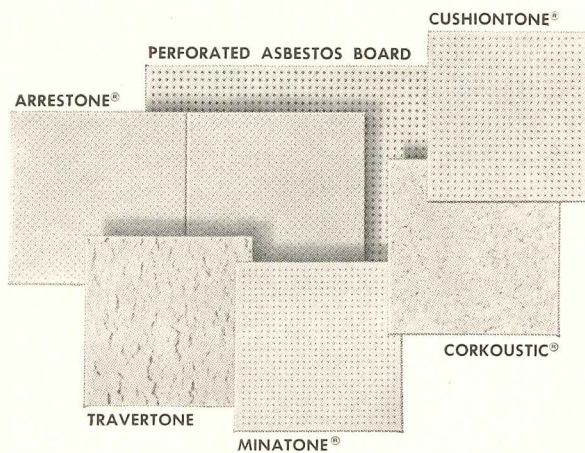


▲  
The new Skip-Random Cushiontone contains 302 cleanly drilled holes arranged in an irregular pattern. Pictures show how this design provides an unobtrusive ceiling and blends effectively with modern furnishings.

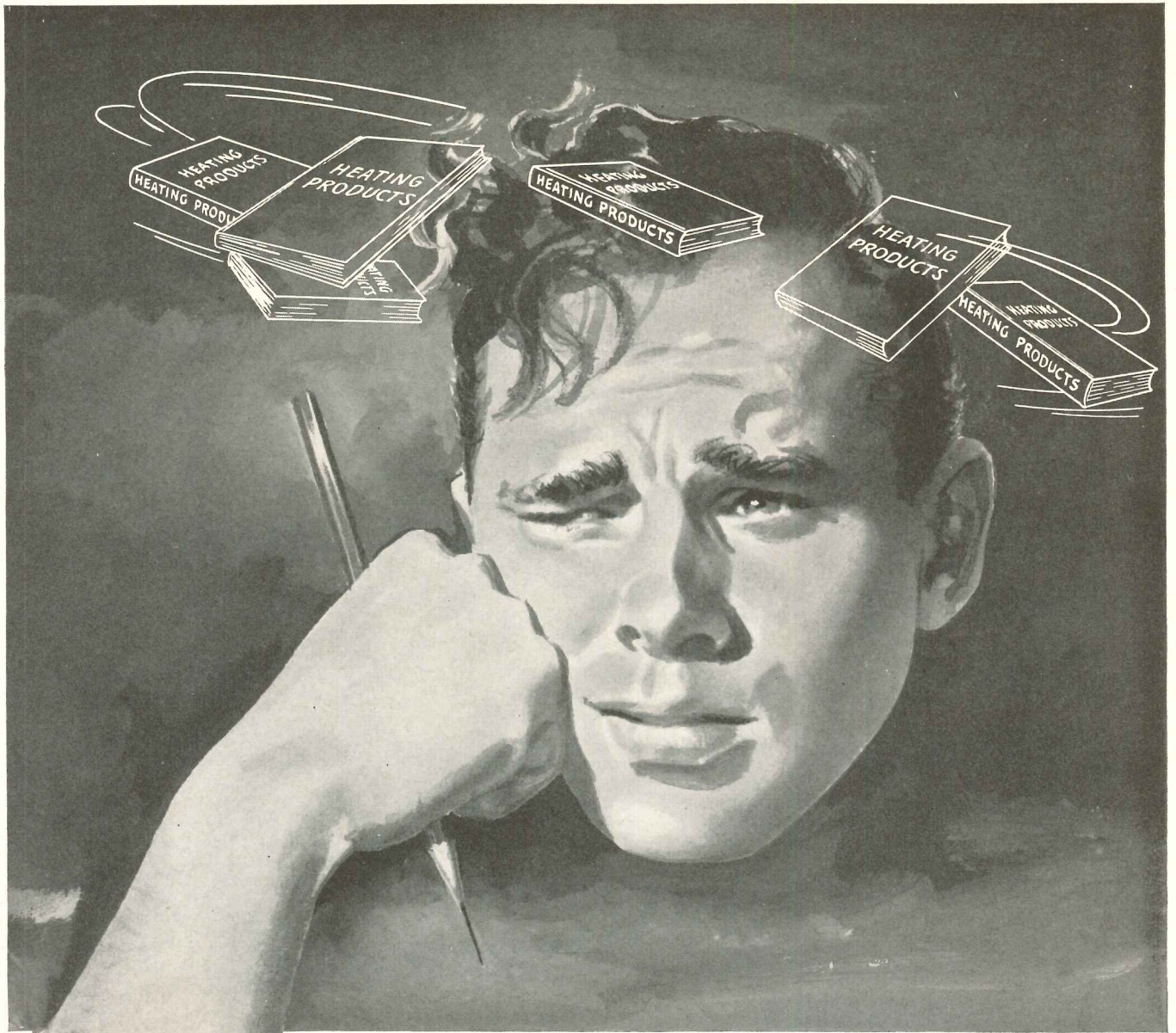
▶  
Acoustical ceilings add immeasurably to the pleasure afforded by open planning.



◀ Halls, along with every room in this house, were treated with Skip-Random Cushiontone. Construction was simplified by the elimination of plastering.



## ARMSTRONG'S ACOUSTICAL MATERIALS



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tains everything you need—from the simplest radiator valve to completely automatic, precision temperature control systems.

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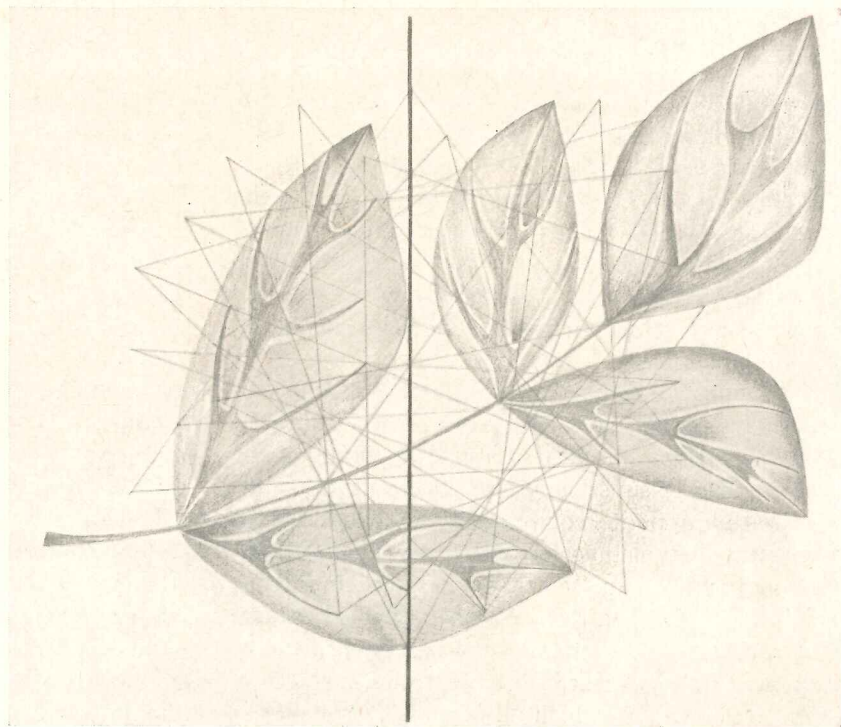
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## THE THREE LAMPS OF MODERN ARCHITECTURE

JOSEPH V. HUDNUT\*

### II. THE LAMP OF NATURE

THE CONCEPT OF PROGRESS was tintured with a naturalistic flavor almost from the date of its appearance in Renaissance thought. A belief in a continual process of human betterment could scarcely fail to invite new interpretations of nature and to encourage gradually a philosophy of naturalism in which man is conceived as an element in nature and borne forward on the great stream of nature's progress. The advances of science and technologies, the new horizons of the industrial revolutions, and the empirical view of human life in such writers as Adam Smith and Montesquieu gave an added impetus to this new faith. A tendency to look in nature for interpretations of all phenomena in human life was well developed before the advent of evolution.

Art was among the phenomena thus subject to inter-

pretation. Art was explained as a natural activity. It arises from certain peculiarities in the human constitution. The first of these peculiarities is a tendency of the human mind to attribute to nature certain values which are not in nature but which man hopes to find there. These values are consequences of his own needs. We have, for example, a need for order; we discover an order in nature. We have need of purpose; and we find purpose in sunrise and the germination of seed. We have need of divine guidance; and that, too, informs and exalts the mountains and the sea. These satisfactions are not knowledge. To suppose that they touch reality is to believe in magic. They display merely a strange phenomenon of the human mind as it is shaped by the unaccountable accidents which array the path which we must follow.

Sometimes it happens that we fail to find in the non-human world all of those values of which we have need.

\* Second of three lectures at the College of Architecture and Design, University of Michigan. Copyright 1952, University of Michigan Press

Then we may supplement this pleasing ministry of nature with objects or patterns of our own invention. Such objects or patterns are called works of art: more specifically, since art may be said to include every form of ingenuity and contrivance, works of fine art; and, since we are prompted by biological and economic necessity to make objects or patterns — for protection against cold, for hunting, for shelter, for war — these, too, may assume in our imagination qualities congenial to our emotional needs.

Thus, the artistic impulse and the works of fine art which are its consequences became at home in nature, being the creations of natural man responding to a natural impulse. A sunset and a symphony evoke and satisfy the same appetite, compounded of mental, social, and physical circumstances; and if, by chance, the Parthenon provokes an “esthetic emotion” more intense and lasting than a rose or a tree, that is because a great artist, in the first instance, has intensified in his experience and clarified in his art that value, or organization of values, which all of us have sought — without always finding — in nature. The superiority of the artist over nature lies not in a difference of material and method but in a greater solicitude for human satisfactions — a solicitude not always conspicuous in the non-human world.

Existing in nature it follows that art must be subject to nature's laws. Our understandings of these laws will give us, progressively, understandings of the laws of art; and if there should be principles which are universal in nature, these will be universal in art also.

Such a principle, it appears, is that of *organic order*. Everything that survives in nature and therefore everything that survives in art (a process of nature) is so organized in form and substance that every part, although specialized in function, operates in harmony with every other part to maintain the life of the whole. Such harmonies exist most obviously wherever there is *structure*, a word which implies an arrangement of parts, or organs, characteristic of natural things. And where such organic harmony exists there exists also, in natural objects, a harmony of outward form which invites our sympathy. A peculiarity in our organism — for we, too, are organic — projects a specific value on such works of nature and may operate also to project such a value upon works of art. We may call that value *beauty*. The leopard, being organic, is beautiful; so also is a tree, a star, a wasp, and Aphrodite rising from the sea; and so, by the same law, an organic building is beautiful.

This concept, organic order in nature, and its corollary in art, might exist independently of the concept of evolution; but it was evolution which gave both of these the scientific foundation without which they could not have gained their wide currency in architectural thought. Evolution, and especially that phase of evolutionary theory which emphasized change through adaptations or organisms to their environments, could scarcely have failed to suggest an analogy between living things and buildings. Buildings, like living things, have structure and organs which, taken together, comprise an organic

order, and this order, differing in each species of building, changes and develops under the influence of environment, of organic usage, and of a continuous process of organic invention.

A circumstance fateful to architecture is the prominence of biology in the formative stages of evolutionary theory. The transformation of nebulae into constellations and suns, of the melted earth into land and sea, of primitive law into the legal institutions of states: these are without that clearly defined and objective relation of structure to outward form which suggests a parallel between a Venus and a cathedral. We are not witnesses of evolutions in astronomy, in geology, or in human law and are persuaded of such evolutions only after investigation and reflection. The “esthetic emotion” they evoke is antecedent to this discovery, so that a causal relation between that emotion and evolutionary phenomena is neither immediate nor obvious. Animals, on the other hand, betray their structures — or essential parts of their structures — at a glance; a similarity of organism among them is established at their first movement and is confirmed by each advancement of our biological knowledge. It was that advancement which incited so many pregnant thoughts on the origin of architectural species.

When Buffon, for example, declared that the pig and the ass were practically the same animal, the essentials of each being a structural principle inherited from a common ancestor, he explained the origins of architectural styles. When Darwin suggested that the fauna of the Galapagos Islands had developed through minute genetic variations, he gave historians of art the secret, not only of Greek temple and Gothic cathedral, but of the apartment house and the housing project. When Lamarck suggested that the giraffe repeatedly stretched his neck in order to reach the highest branches of trees and that this elongation could be inherited, he provided a grateful mankind with the principle of the skyscraper. And all of these concepts and all of these principles are summed up in the phrase: *organic order*.

In architecture — or at any rate in the practice of architecture — the doctrine had need of a more specific formulation. Vitruvius had compared the human body to a building, a comparison which haunted the minds of the Renaissance architects, but it was not until the eighteenth century that a formula, practicable in design, emerged from the pages of philosophers. In the third quarter of that century, Carlo Lodoli, teaching in Venice and “setting forth his idea with an enthusiasm which bordered on frenzy,” declared fitness and utility to be the only bases of expression in architecture. The architect, he tells us, must “show only that which has a definite function and which derives from the strictest necessity.”

The idea was echoed throughout the nineteenth century. “The beauty of a building,” wrote Schopenhauer, “lies in the obvious adaptation of every part . . . directly to the stability of the whole, to which the position, dimensions and form of every part must have so necessary a relation that . . . if any one part were

taken away, the whole would fall to pieces."

"Architecture," said Schinkel, "is the setting forth of Nature in its constructive activity."

At this point I shall introduce certain principles which appear to me to be important in the criticism of architecture and which I propose to use as standards by which to appraise the principle of organic order. And by principles I mean, not eternal and everlasting truths, but laws which seem to me to be valid in my experience. I ask: "Are these not valid also in your experience?"

Expression is the supreme law of art, and the *origin of expression is a feeling or idea which exists a priori — that is, without calculation or argument — in the mind of an artist.*

The desire of the artist to embody in color, tones, words, or constructed forms some thought or emotion which possesses him is the beginning of all art. But this desire is not the consequence of logical reasoning, or an exercise of technical virtuosity, or even of craftsmanship. It is not prompted by a desire to "create beauty" or to demonstrate the theory that form follows function. It does not arise from literary or scientific meanings and tendencies, however these may interpenetrate the color, tones, words, and constructed forms which are to receive the imprint of desire. Whatever other attributes a work of art may have, its expressive quality is always disinterested, irrational, and unpremeditated.

This is as true of architecture as of any other art. The architect discovers in his heart the solemnity and solace, in infinitely subtle gradations, that surround men as they meet in political assembly or in social intercourse. Whether they gather to worship and praise God, to advise and consult one another on matters of legislation, to formulate and administer justice, the architect knows the devotion and community of intention that lifts them out of the narrow channels of their separate lives and informs their collective thought with dignity and consequence. If they meet to see great spectacles, to commemorate a hero or an event, to work together or to play together, the architect knows the inner beauty of their congregation; and when the family gathers at its hearth, he knows also the adventure, loyalty, and tenderness that gathers there also. And whether these experiences are occasioned by insights of the human spirit or intuitions of hidden realities, or merely by peculiarities, regrettable or otherwise, in an architect's constitution they appear in the mind uninvited by argument or incantation. The source of all expression is idea or feeling.

This brings me to a second principle of criticism which I believe to be fundamental. Expression is the supreme law of art; it arises from idea and feeling which exist *a priori* in the mind of the artist; and *the process by which this feeling becomes objectified in things external to the mind is also followed without recourse to inference, reasoning, or formulae.* Those ideas and feelings from which the artistic impulse springs are, in their origins, not only independent of syllogisms, of scientific experiment and formulae, of use or ethical intention, but are equally

independent in those processes by which they inform objects, words, musical tones, colors, and the fabrics of buildings.

The artist needs no theory of design to know what colors, shapes, tones, or verbal images will best translate his heart. The dicta of esthetes may confuse him, fashion and taste may harass him, and the difficulties of his technique may defeat him, but none of these can teach him anything. An artist grows through the experience of his art and the disciplines of his sensibilities, not through logic, knowledge, or craft. When he has mastered his medium — paint, marble, or written word — he does not need to reason or remember. Nothing then stands between him and the direct expression of that which he wishes to express.

The nature of this process — this direct embodiment of feeling in things external to the mind in which they arise — is most clearly exemplified in music. Music, "unloaded with the weight of representation," is that perfect type of art toward which all other arts aspire. Here tones, rhythms, and abstract patterns receive directly and specifically the precise quality and measure of love, hope, exultation, triumph, gaiety, or fear that filled the heart of the composer, without the necessity of symbolic aid from words, without imitations of bird songs and thunderstorms, without any references whatever to philosophic principle or external fact. Music, of course, has its techniques and formalizations, but these are, with few exceptions, the avenues of feeling. They do not precede feeling, or lead up to it, but follow it as a loyal servant follows his master.

The range of expression in any art — the number and the character of the things to be expressed — is limited by the number and character of such avenues and, of course, by the specific attributes of different media. One cannot say in architecture many things which can be said in music. The expressions possible to music are defined by the peculiar capacities of tones and temporal rhythms, and the patterns of architecture are in like manner conditioned by whatever plastic shapes and spatial harmonies can be constructed by available methods. We have to imagine in the terms of our medium, to have a talent for it, to know the degree to which it is malleable to our idea. Nevertheless, the process of architectural creation does not differ essentially from the process of creation in music. There is a greater resistance in our medium, a greater admixture of irrelevancies, but in the end some movement of the mind must be impressed upon things external to the mind, whether the art is architecture or music.

Some confusion in this matter has been caused by the time element in the creative process of architecture. Although all works of art, including songs and poems, are constructed deliberately and over a period of time, a quality of premeditation and conscious control seems to be especially characteristic of the process of building. Except in schools of architecture, buildings seldom develop in fine frenzies but by slow study and calculation, by the use of intricate instruments, and by rational and patient methods to which the word *inspiration* seems

preposterous. Because each step constitutes a new situation to be faced and resolved by the intelligence, we are apt to conceive architecture as a pure product of the intelligence.

We are confused also by the fact that buildings are often built without art — I mean without the art of expression — and this encourages the notion that building and art are independent processes. But a preoccupation with fact and logical process does not prohibit a coexistent search for expression. Every architect knows that irrational preferences — for color, line, proportion, spacing — are often so intimate a part of reasoned decisions as to exist in our minds almost as elements in a single process. That is a habit of mind in all artists, but the intricacies and urgencies of the science of building make this habit seem especially characteristic of architecture. The investigations of museum experts have revealed a hundred hesitations and reworkings under the finished canvases of Velasquez and Rembrandt; Keats revised continually — and not always for its improvement — his “The Eve of Saint Agnes;” and the corrections of Beethoven made the manuscript of the *Ninth Symphony* almost undecipherable. These piecemeal methods in creation exhibit the intrusions of logic and tradition and the stubbornness of artistic techniques as clearly as do the successive studies which Bramante made for the church of Saint Peter. The difference is not in kind but in degree.

I do not imply that the idea or feeling to be expressed may not be the consequence of experiences associated with the development of buildings in their practical aspects. On the contrary such experiences often awaken the feeling to be expressed; but that, I think, is irrelevant to the act of creation. The important fact is that the architect, being an artist, has something to express and that he expresses it not by logical or scientific method but by shapes and arrangements which, however integrated to utilitarian and technological shapes and arrangements, are yet determined, so far as that is possible, by his need of expression.

Whatever is expressed, then, exists first as feeling in the mind of an artist and is then objectified in the external world by processes independent of rationalizations or of factual knowledge. These I take it are fundamental to the understanding of art. I shall now propose a third principle, more relevant perhaps to an understanding of architecture. *The expressive character of works of architecture is rooted in their mere abstract form and pattern and may be independent of all other characteristics.*

If we are receptive to an expression in architecture that expression will be known and known certainly, without leave or warrant of other knowledge. The cube will express sturdiness whatever its material or utility; the sphere, equality; the spire, aspiration; the repetition of columns, movement; the horizontal line, peace. These are embodiments of age-old feelings which architects have endlessly elaborated, refined, and consecrated by long application and renaissance. The definitions I have given only hint at the variety and subtlety of meanings which such shapes, and a thousand other shapes, may

in infinite relationships capture — and which can be captured in nothing but themselves.

I do not mean that there are in buildings no intellectual satisfactions which are independent of formal values, or that buildings may not be saturated with the delights of romance. I mean that these are not the modes which are the essential and characteristic modes of architecture. They are not the peculiar and prescriptive media of our art.

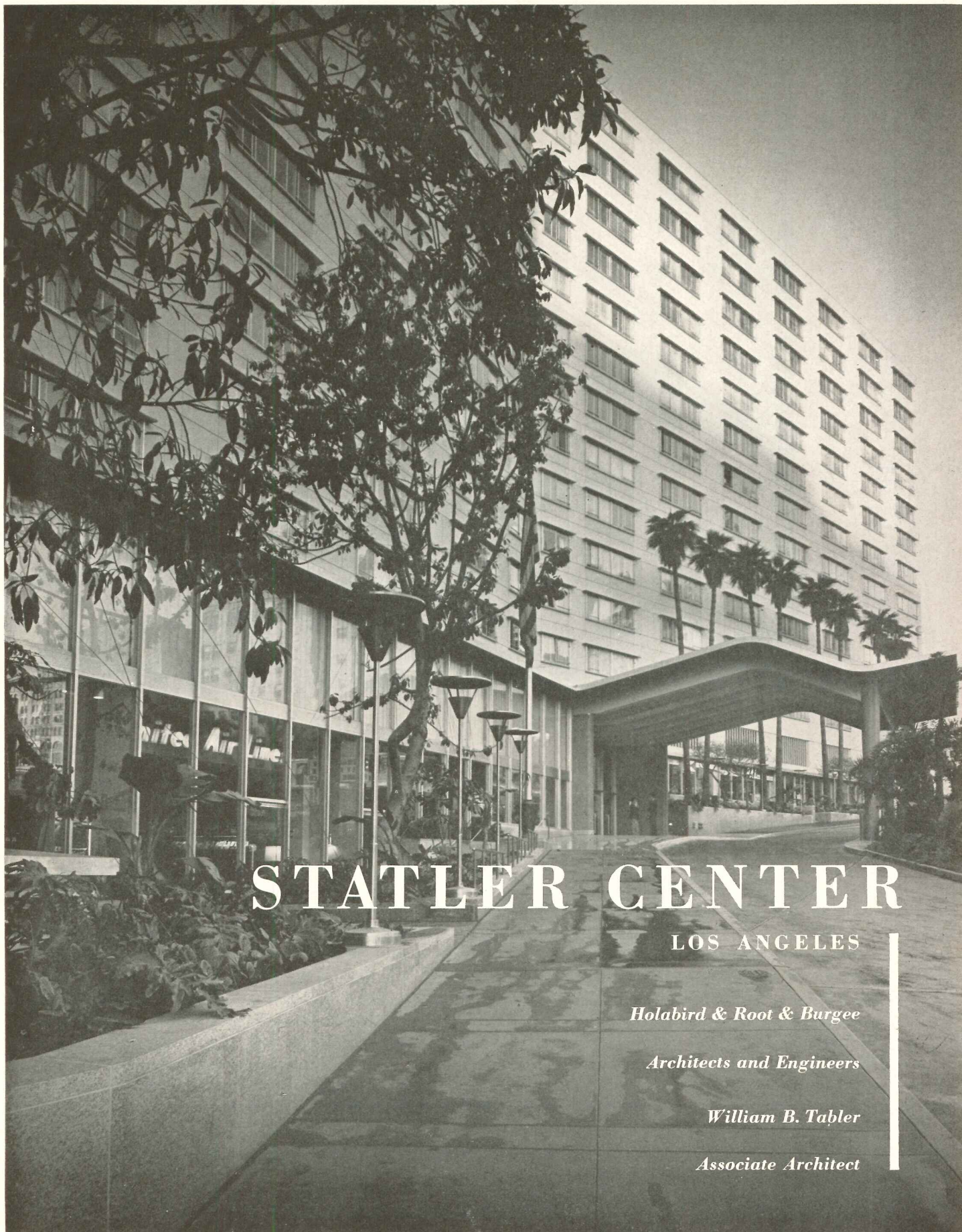
Buildings are often most eloquent to those persons who are aware only of their shapes: who know little or nothing about material and construction. Our knowledge of history and utility, our analysis of structure, serve often to blur and confuse the uncomplicated art of architecture. When we allow them to do so, buildings speak to us directly and immediately.

Not many among those who visit Washington, for example, know that the dome of the Capitol is made of cast iron. They have not even considered the material nor are they interested in the pressures of each part against other parts and against the ground. Whether or not the columns which encircle the dome carry the load which apparently is placed upon them or whether they are merely ornaments attached to the surface is a matter of little moment. That which they see is the hemisphere and the cylinder: the form of the great canopy, the encirclement of its surfaces, and its majestic pedestal. The architect who intended to express the grandeur and permanence of the state has attained his end. His effect was not embarrassed by considerations of use or by structural law because, for our average sightseer, these have no actual being.

The obelisk at the other end of the Mall may exist — and for most people does exist — as pure form. We know that it is not made of butter but that circumstance is scarcely present in our consciousness; and if we were to be told that the crushing load on the lower stones is twenty times that of stones near the top, or that the resistance to a north wind is only one-tenth the resistance to a wind from the northeast, this information would still inhabit our minds in an area remote from the noble abstraction before us. And among the millions who feel the serene pathos of the Lincoln Memorial, how many know what weight is placed upon the columns or on the foundations; that the light which gives life to the statue comes from electric spotlights hidden in the ceiling; or, turning scholar, that the plan does violence to the Greek tradition?

No one could guess from its external appearances the function or spatial pattern of *Notre Dame de Paris*. The choir in which the liturgies are intoned — *c'est pour lui qu'il est fait* — is articulated as an appendage of the transept. The aisles which surround the great nave are lost in mists of pinnacle and flying arch. It is the shapes and their arrangements, the planes, the lines and the shadows, not the structure and the revelations of internal ordinance, which sing the praises of God; it is the majestic procession of the abutments, indifferent in shape and position to the strains and tensions they

(Continued on page 286)



# STATLER CENTER

LOS ANGELES

*Holabird & Root & Burgee*

*Architects and Engineers*

*William B. Tabler*

*Associate Architect*

Julius Shulman



ON AUGUST 6, 1952, the first few floors of guest rooms in the Los Angeles Statler were opened. Some weeks before, tenants had begun moving into the Center's office building wing. On October 27 the entire Center was formally dedicated. Constructing and equipping this hotel project—the largest built in the United States in more than 20 years—took a little over two years; construction started July 5, 1950. Preceding even this date were an exhaustive analysis of the needs and potentialities of Los Angeles as a city in which Hotels Statler Company would be prepared to invest some \$25,000,000; selection of the 3-acre site, twice as large as that of the 1943 Washington Statler; and determination of a program which took into account the Statler budget, rising construction costs, building and zoning regulations, site and traffic conditions, desirable allocations of cubic contents and square footage to the various purposes, and above all the number, type, size and arrangements of the guest rooms which remain relatively the most profitable part of any hotel.

Following the programming, design proceeded through

a number of preliminary stages. At one point it was found that, considering trends in operating and maintenance costs, a building designed solely as a hotel might not produce adequate profit at room rates in keeping with Statler policy. Since the Company had had experience with rental office space at its Boston hotel, the decision to include an office building on the large Los Angeles site was comparatively easy to make.

The program aimed at 1300 guest rooms; as built, the Center contains 1275, 70 per cent of them studio twin bed rooms refined from the Washington Statler precedent. These occupy 52 per cent of the cubic contents of the Center's hotel portion; function and public rooms, hotel offices, services, mechanical plant, etc., occupy the other 48 per cent. Net area per hotel floor devoted to guest rooms is 53 per cent of the gross, compared with 47 per cent in the Washington Statler. It was early decided that Los Angeles needed public and service areas comparable to those provided in Washington; the new Center has more square footage but only five per cent more cubic content. Likewise,



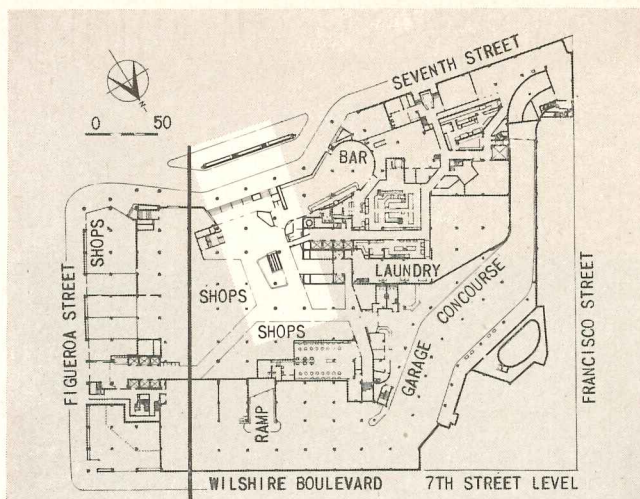
Julius Shulman

70,000 sq ft of shops were provided; the subterranean garage has space for 465 cars, with a supplementary check-in desk and elevators so travel-weary motorists can go directly from their automobiles to guest rooms without traversing public areas. The office building wing contains 150,000 sq ft of rentable area. Total content of the structure is 12,206,000 cu ft. For the entire Center, the contract cost was within estimates made three years earlier although construction prices had meanwhile increased 12 per cent.

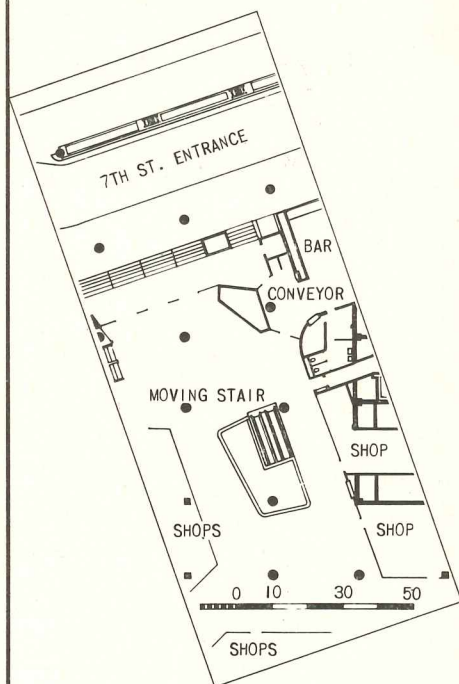
Photo at top left shows the office building portion on busy Figueroa Street, convenient to other commercial areas of the city, and placed on the Center's site to shield the hotel portion from the noise of traffic and commerce. At top right is the Wilshire Boulevard side which provides a suitable "address" but, due to traffic conditions, is less convenient for most arriving guests than the opposite (Seventh St.) side. At right, high point of the sharply sloping sight, corner of Wilshire and a new street, Francisco, provided by the city on land partly donated by Statler.



## STATLER CENTER: PUBLIC AREAS



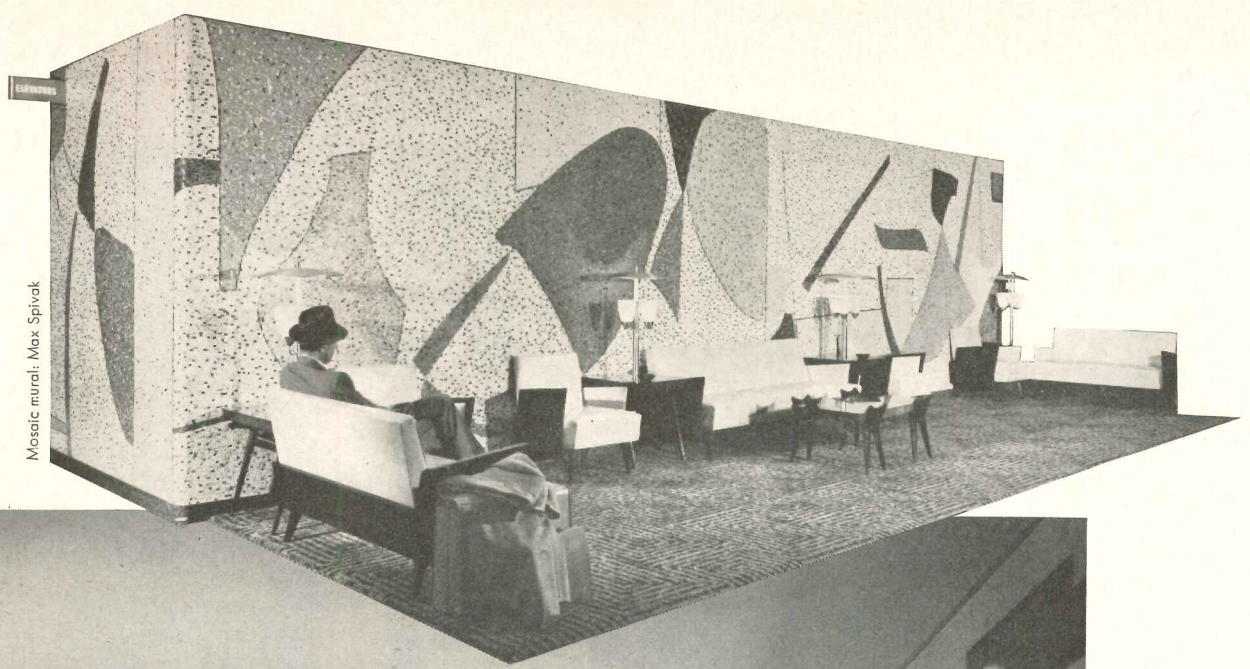
ARCHITECTURAL INTERIORS  
 Design | Details | Materials | Equipment



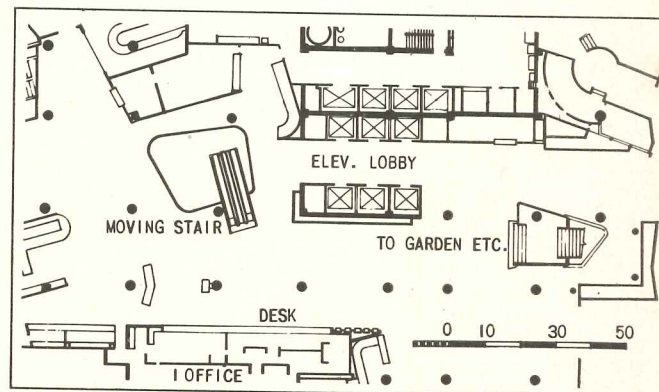
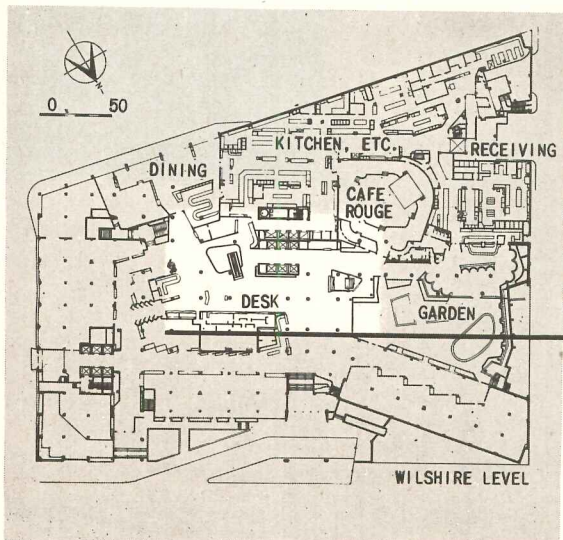
The sloping site permitted placing much of the extensive shop area at the various street levels and facilitated arrangement of public space on the three main floors (see ARCHITECTURAL RECORD, March 1951). Interior design is here no superficial matter of finishes and furniture. It is all-important and three-dimensional. For entering guests, circulation is direct. Tenants from the office building find convenient passages to dining rooms apart from the guest lobby. Conventioneers, drawn by the gay garden, cocktail lounge, supper club and promenades, find themselves mounting a prominent stair to ballrooms above. Behind the successfully brilliant mosaic mural (top photo) is the elevator lobby, located so that it cannot become a passageway.



Mosaic mural: Max Spivak

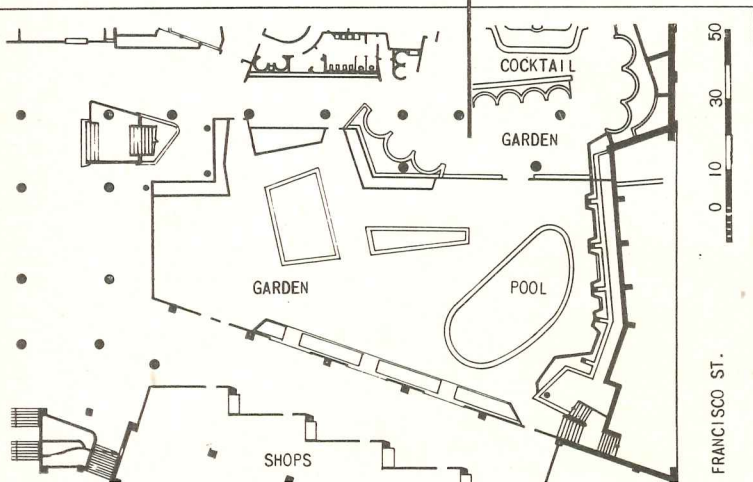
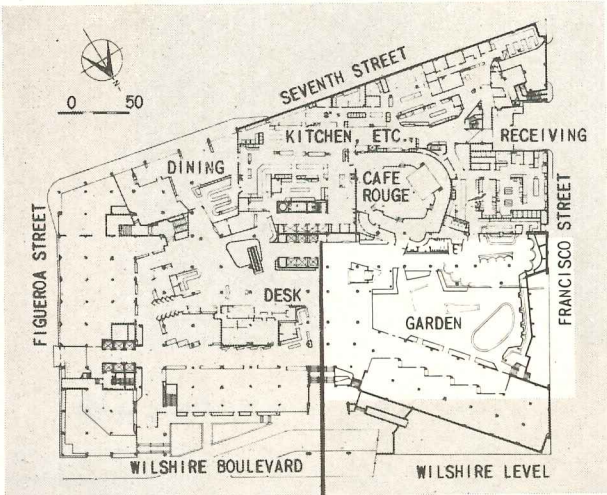


Julius Shulman



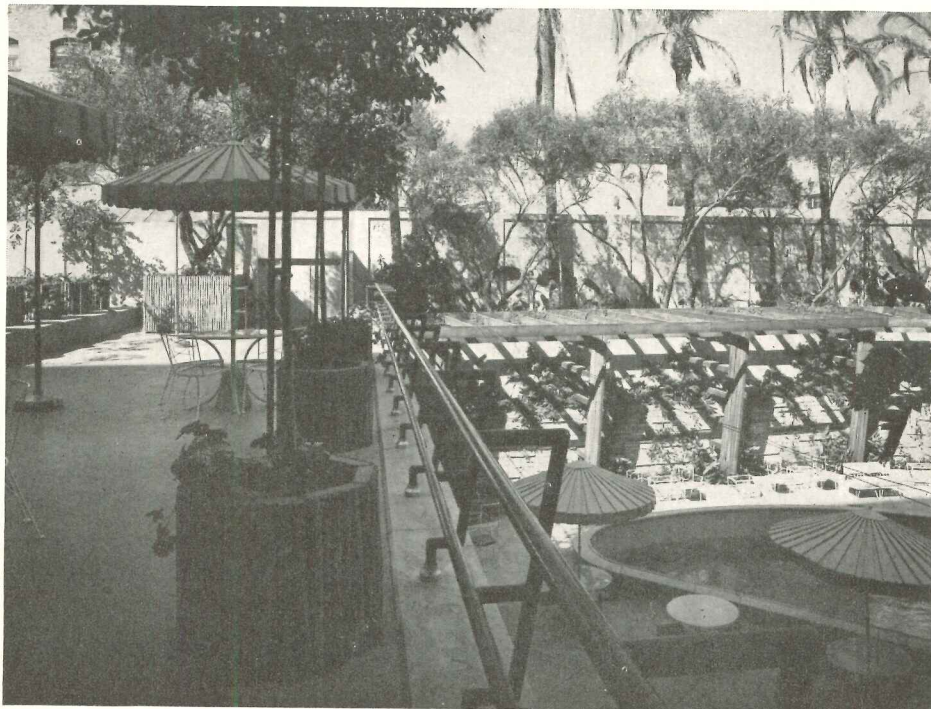
Most guests reach Wilshire level (left) by moving stair (above); on arrival they face desk with business section to one side, garden and public rooms on other

STATLER CENTER: PUBLIC AREAS





Clustered around the garden in the court which separates the north and south hotel wings are several public areas. To the east the garden is protected by the planted retaining wall that supports Francisco Street and by the street itself, from the possible encroachment of future buildings. Photos: far left, view from stair to ballrooms;

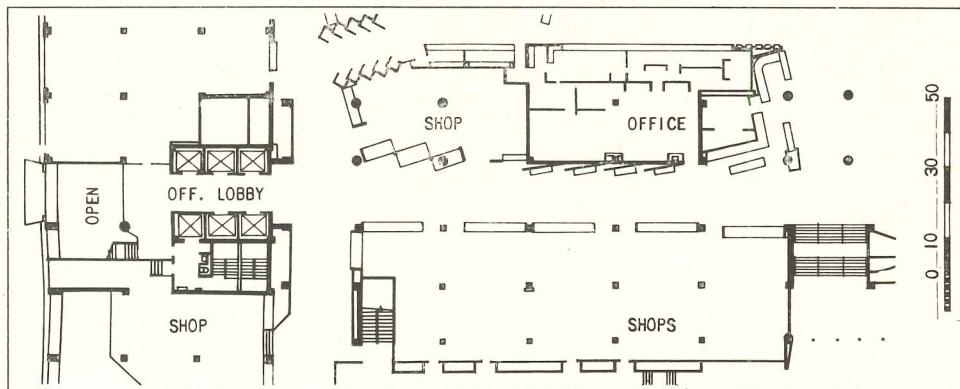


Julius Shulman

left, across garden pool toward two-story promenade and shops; above, on the promenade; right, garden stair. Below, left, Veranda Cafe and cocktail lounge; and right, from roof terrace above Veranda Cafe. Brightly lighted at night, the garden might some day be a setting for a spectacular show or aquacade.



STATLER CENTER



ARCHITECTURAL INTERIORS

Design | Details | Materials | Equipment



At top of page are, left, Cafe Rouge (popular priced dining room), divided into intimate sections by wood screens, plant boxes, color treatment and changes in level; center, Golden State Room, and right, Pacific Ballroom, two of the four ballrooms and eleven private dining rooms, all on one floor, and all served from one

kitchen. Function facilities of the Statler Center are booked solid for many months. Pacific Ballroom in conjunction with adjoining Sierra Room can accommodate 1200 at a banquet when soundproof partition between them is raised. A small bar on this floor has proved extremely profitable.

Many shops in the Statler Center were designed by independent architects for individual tenants. Left below, cases project into the hotel lobby to provide profitable merchandising space. Right, sliding panels open another shop to corridor leading to the office building; airline ticket offices in background

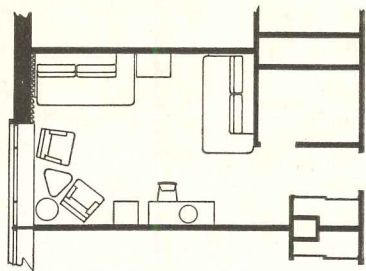
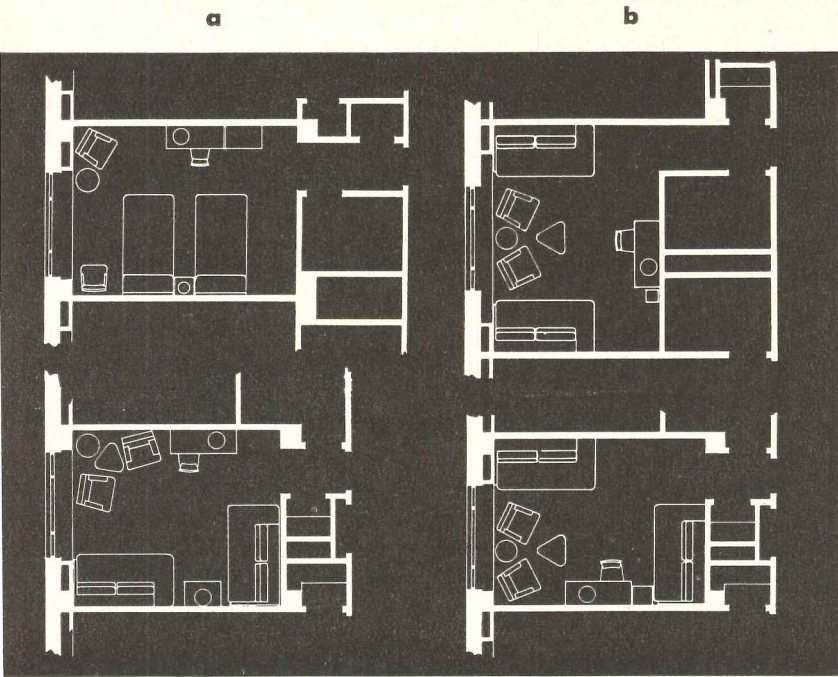


## PUBLIC ROOMS, SHOPS, OFFICES



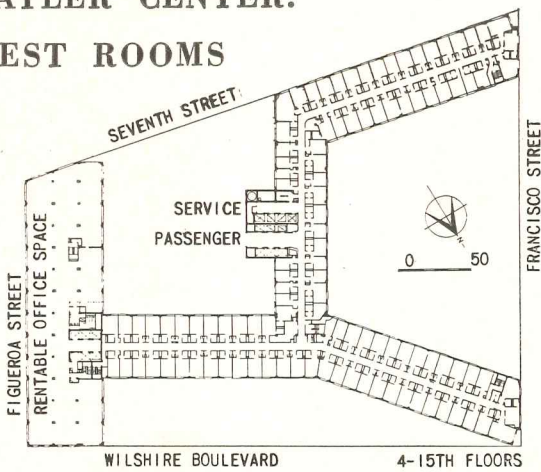
Julius Shulman

Above, tenth-floor office building elevator lobby forms reception area for the Foote, Cone and Belding advertising agency. Left, looking down corridor from office building toward hotel lobby; airline offices at right of picture



c d

**STATLER CENTER:  
GUEST ROOMS**



Evolution of the studio type of guest room used for 70 per cent of the rooms in the Los Angeles Statler. While this had been used in the Company's Cleveland and Detroit hotels in the late 1930's, its first extensive use was in the Washington Statler in 1943. The conventional guest room (a) 11 to 12 ft wide, had furniture so placed that rooms were full of beds, floor space broken into ineffective small areas. Spreading beds apart unified these areas. The room was turned 90 degrees (b); it became logical to make beds convertible to couches for daytime living, meetings, etc., and the public response was so great that very few of the so-called conventional rooms were used in Los Angeles. Variations c and d were used in Washington. Los Angeles rooms are slightly larger, have specially designed sofa-beds, more economical bath and closet arrangement in several variants of plan e. Since a solid wall is needed to prevent down-draft on one bed, interior design influenced fenestration and exterior appearance. Note also special bathroom vanity-lavatory and seat placement, photo left, below

Julius Shulman

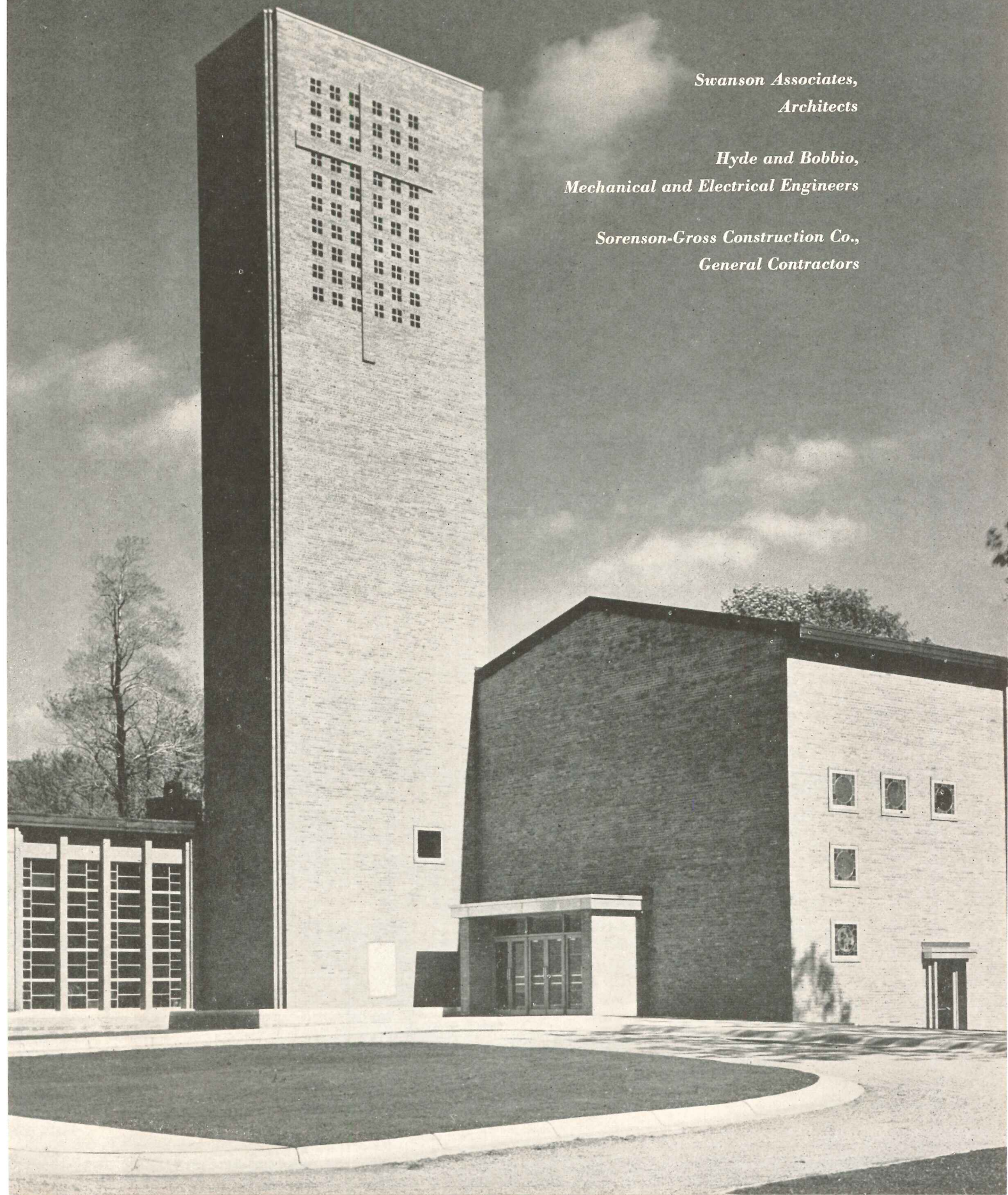


# FIRST BAPTIST CHURCH, FLINT, MICHIGAN

*Swanson Associates,  
Architects*

*Hyde and Bobbio,  
Mechanical and Electrical Engineers*

*Sorenson-Gross Construction Co.,  
General Contractors*

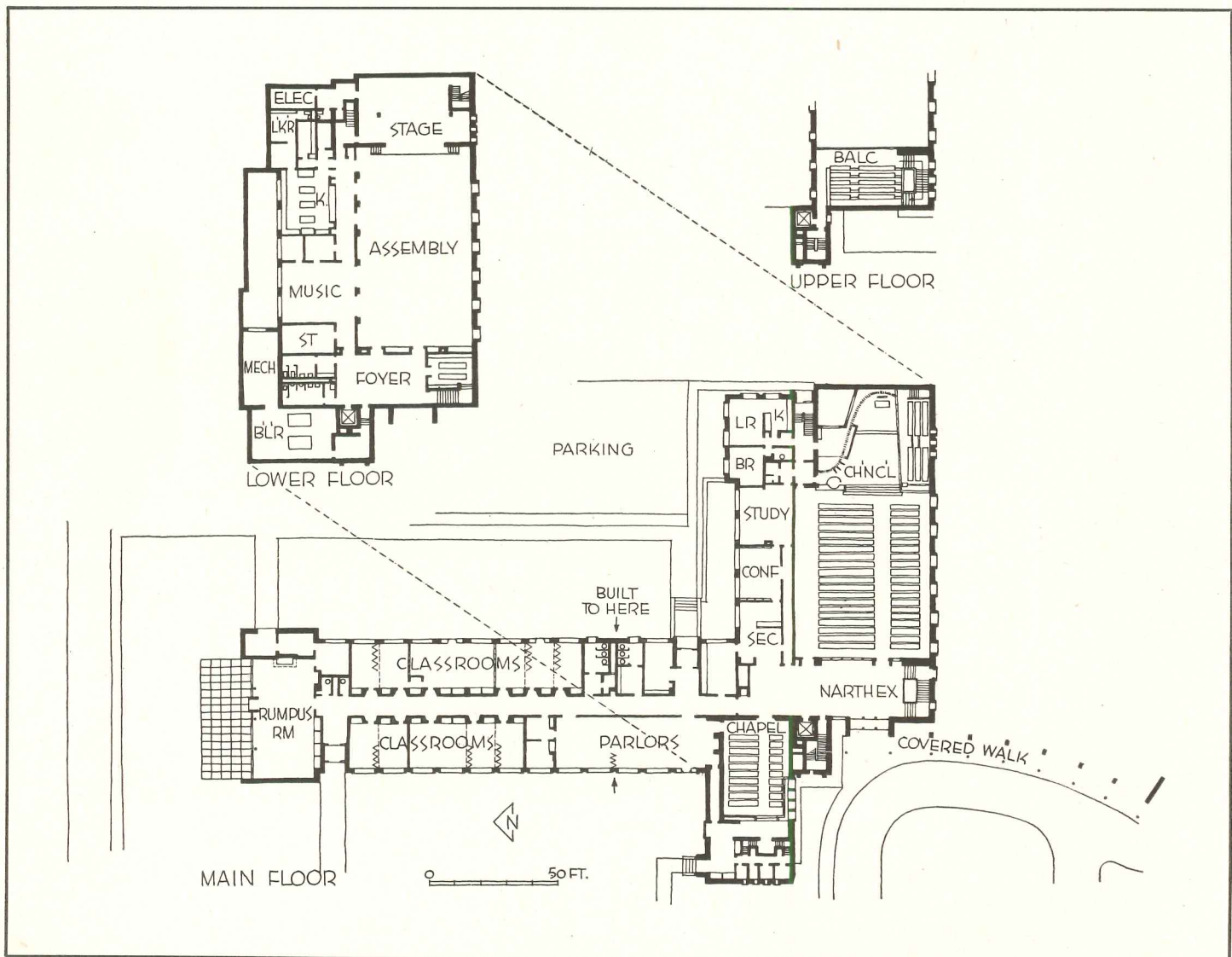


**T**HE BROADENING SCOPE of many church programs to serve the needs of various community groups as well as the more traditional church functions demands a fine balance of a sincere devotional atmosphere and a vital efficiency in plan and design. The sensitive handling of this building, the First Baptist Church in Flint, Mich., has brought it many laurels, including a satisfied congregation and a first prize awarded by the 1951 annual joint meeting of the Church Architects Guild and the North American Conference on Church Architecture.

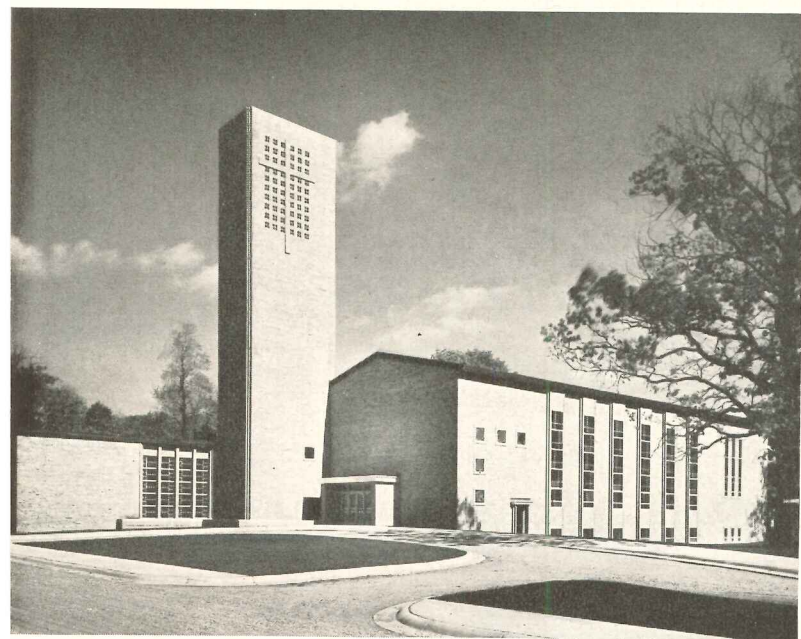
The building is located on a 7½-acre site adjoining the new campus of Flint Junior College. Large sections of the tract are devoted to parking areas, woodlands and playgrounds. An asymmetrical plan was evolved to give a smooth working relationship of areas in the structure: the narthex is directly accessible from both the front drive and the parking area, and in turn opens

on all principal rooms; the 125-seat chapel has a separate entrance from the drive; placement of the choir permits a variety of processions; the basement assembly room is convertible to a number of uses, seats 475, has dining accommodations for 375. The main church seats 440 in fixed pews in the nave, augmented on special occasions by 120 chairs in aisle spaces and 200 seats in the balcony and narthex. The present building will eventually be expanded by a wing to the north (shown in plan below) to provide additional church school rooms and a youth recreational center.

The structure has concrete foundations, steel frame, brick exterior, aluminum sash and a built-up roof. Interior partitions are plastered cinder block, or glass and wood. Floors are asphalt tile; ceilings are acoustical plaster or tile. Air conditioning units are provided — compressors and cooling coils will be added. Empty conduit is provided for future intercom and P.A. system.





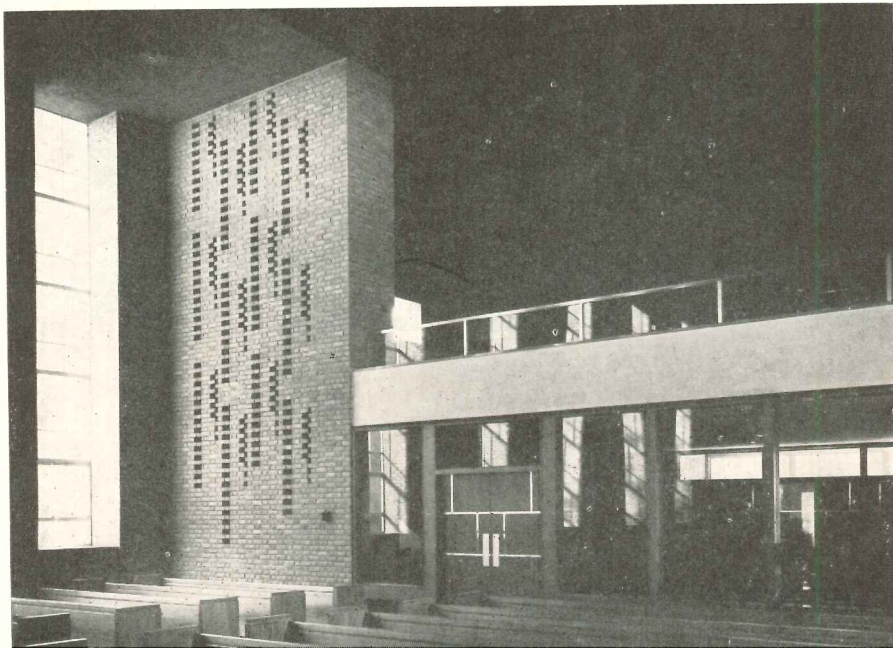


The exterior of the church is dominated by a tall carillon tower. A large parking area at the rear has a direct entrance to the narthex (below)



Richard Shirk

FIRST BAPTIST CHURCH, FLINT, MICH.



A dramatic organ screen of white oak and fireproofed burlap contrasts with the quiet, elegant simplicity of the nave. The south wall is exposed brick with a pierced wing to shield balcony stair (bottom left). Floors are asphalt tile. Lighting (below) is controlled from organ pit. The pulpit (left) is a round stone in the floor, with an aluminum lectern and backed by a clear plastic screen. A redwood slab will replace communion table. Chapel (center left) has baptistry behind curtains at rear

Richard Shirk



## FLORIDA HOUSE MAKES MOST



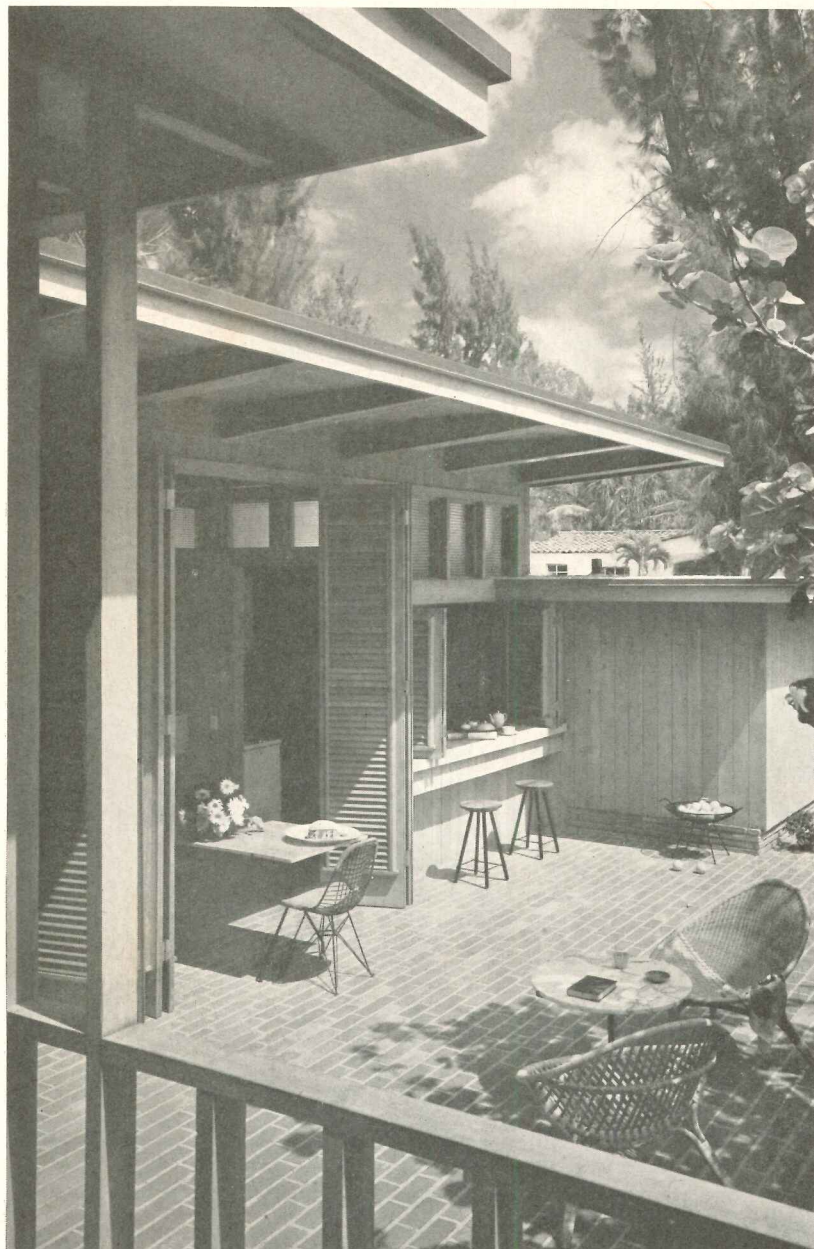
**A** WARM AND SUNNY CLIMATE is obvious in every line of this wide-open Florida house. A minimum of space is enclosed — and even that minimum literally flows into the outdoor living areas.

As the plot plan opposite shows, the house consists of two wings, connected only on the exterior. The wings are angled at 90 deg to shelter a large central garden and to provide a smaller private garden at the rear. Both gardens as well as a spacious play area behind the

bedroom wing are completely secluded: a high louvered fence shields the eastern end of the central garden; hedges and closely planted trees rim the southern and western edges of the site.

The house has no halls and no "front door." The main entrance is through an electrically operated gate at the southeastern end of the central garden; a brick-paved walk connects the gate with the living room terrace. There is no garage, nor even a carport: the car

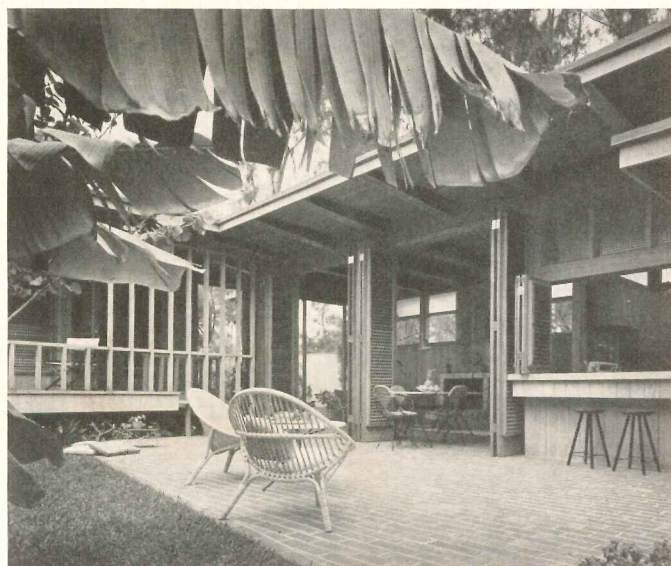
# OF SUN AND OCEAN BREEZE



Ezra Stoller

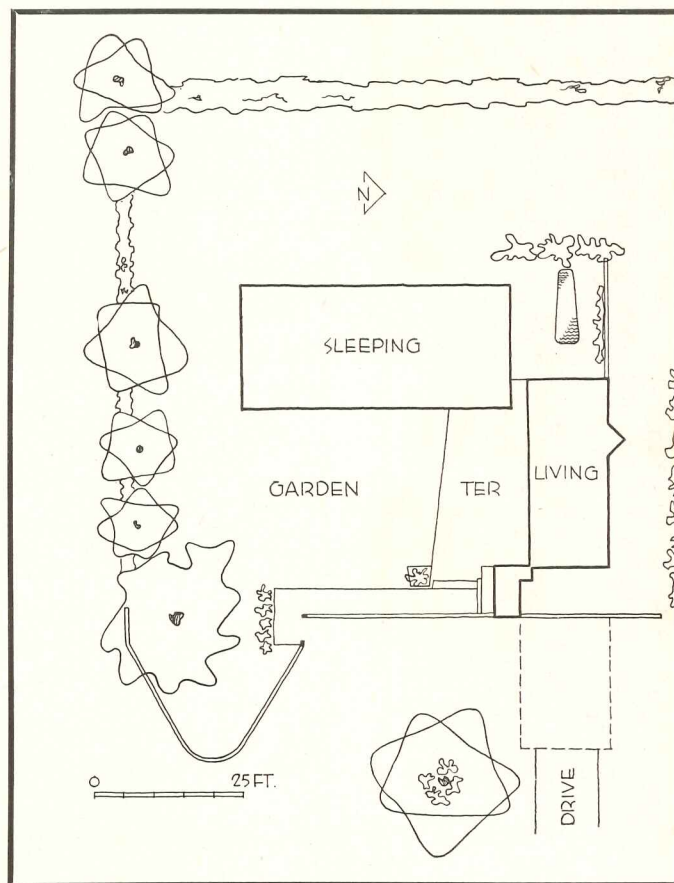
shelter (dotted lines on plan) at the end of the driveway is a yellow canvas awning laced to a frame of galvanized iron pipes.

Every room in the house except the laundry has direct access to the central garden — the two bedrooms via a gallery five steps up from the living room terrace. The difference in level increases the privacy of the bedroom wing and also adds visual interest to the enclosed garden area.

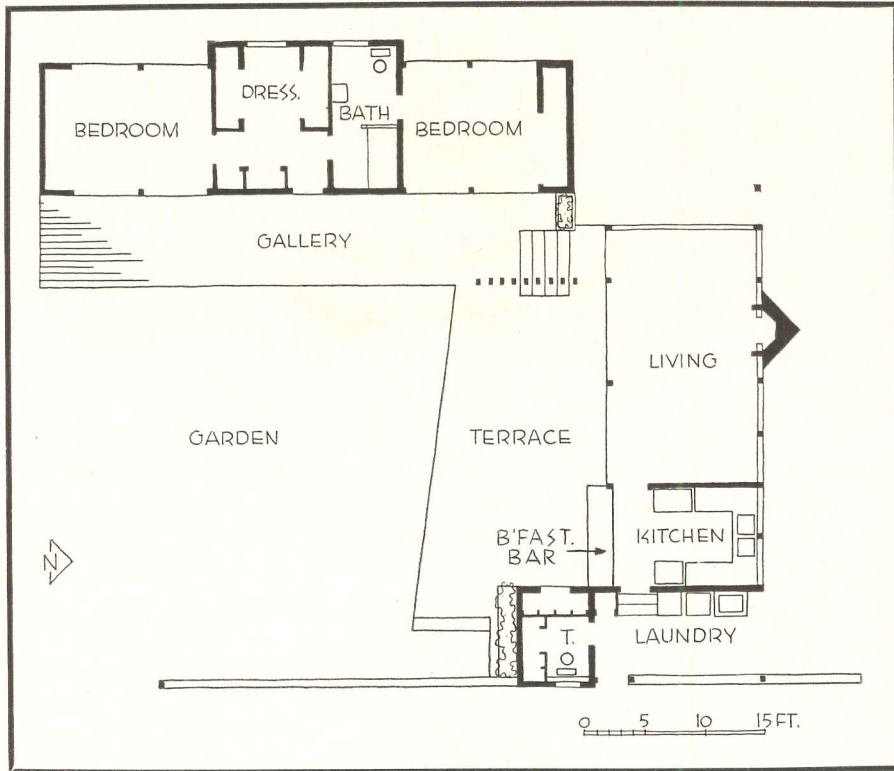


*Residence for  
Mr. and Mrs. Edward Riley  
Miami, Florida  
Alfred Parker, Architect*

Living room terrace (left and above) is red brick; gallery of bedroom wing has red cypress floor. Exterior walls are vertical cypress siding. Breakfast bar is at one end of kitchen (plan next page)



FLORIDA HOUSE





Opposite page: despite proximity of neighboring houses, garden is remarkably private thanks to high fence and strategic planting; louvered fence has base of red brick pavers. Left: living room chimney is de-emphasized by strip windows above and glass wall at one side. Below, left: kitchen, like other rooms in house, is minimum in size. Below: view from laundry steps through length of living room wing to private garden at rear

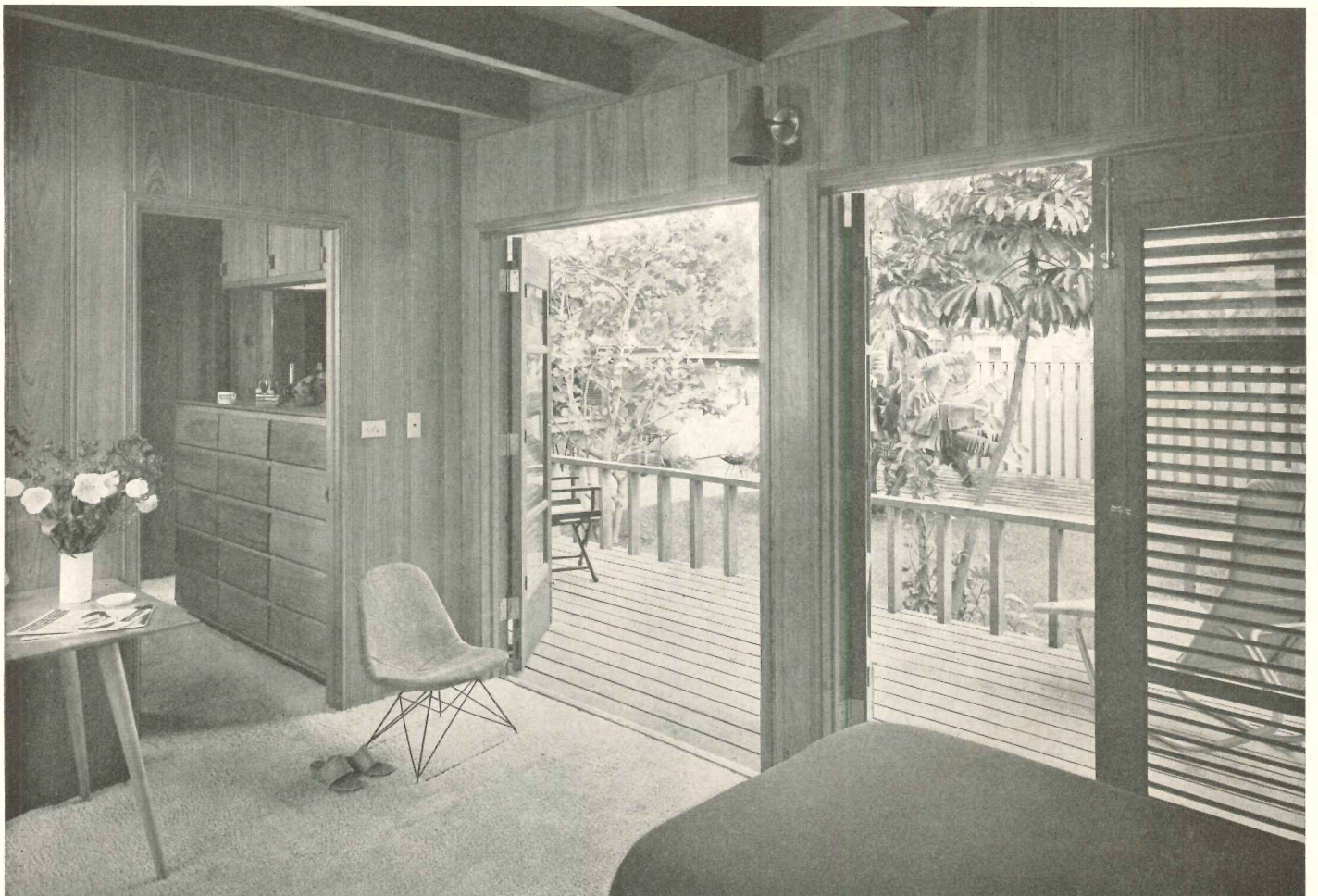
Ezra Stoller





Above: space between wings at rear of house was planned for private garden with a small pool, not yet installed. Amount of wood used on interior of house — particularly in bedroom wing — is pleasant surprise considering Miami location. Bedrooms are connected by dressing room as well as gallery

Ezra Stoller







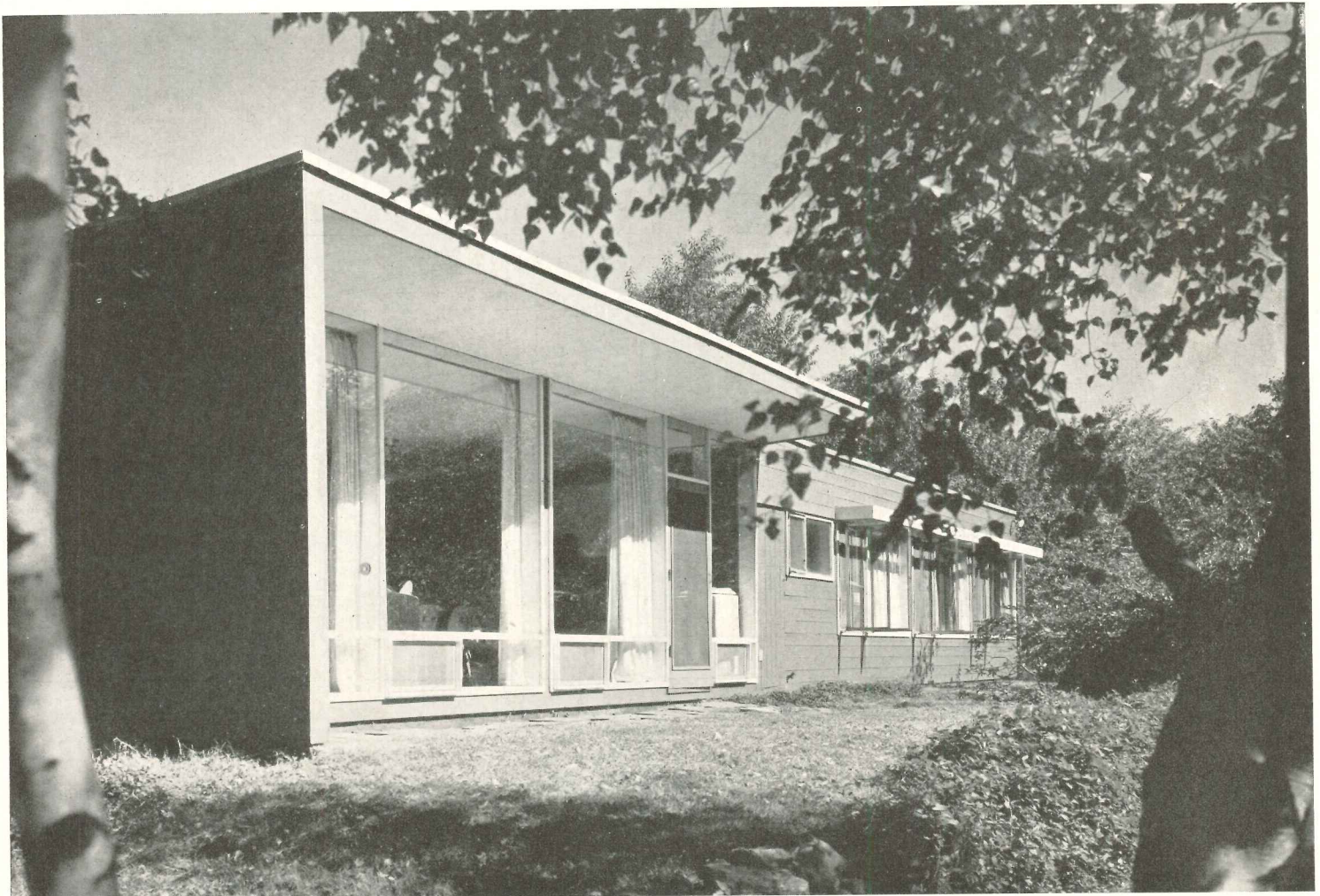
## WHERE ECONOMY GUIDED DESIGN

*Weaver Residence, Thornwood, N. Y.*

*Warren Wilson Weaver, Architect*

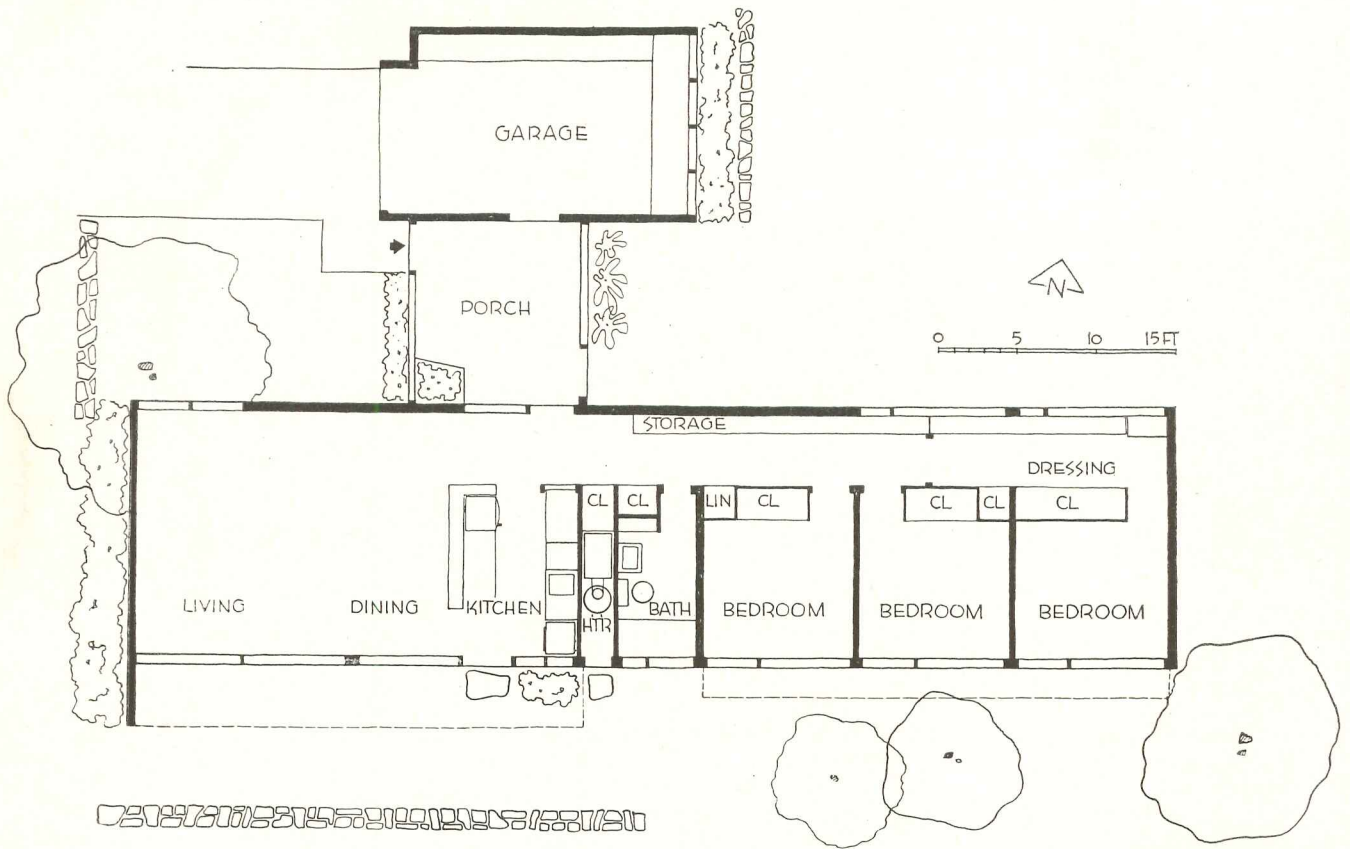
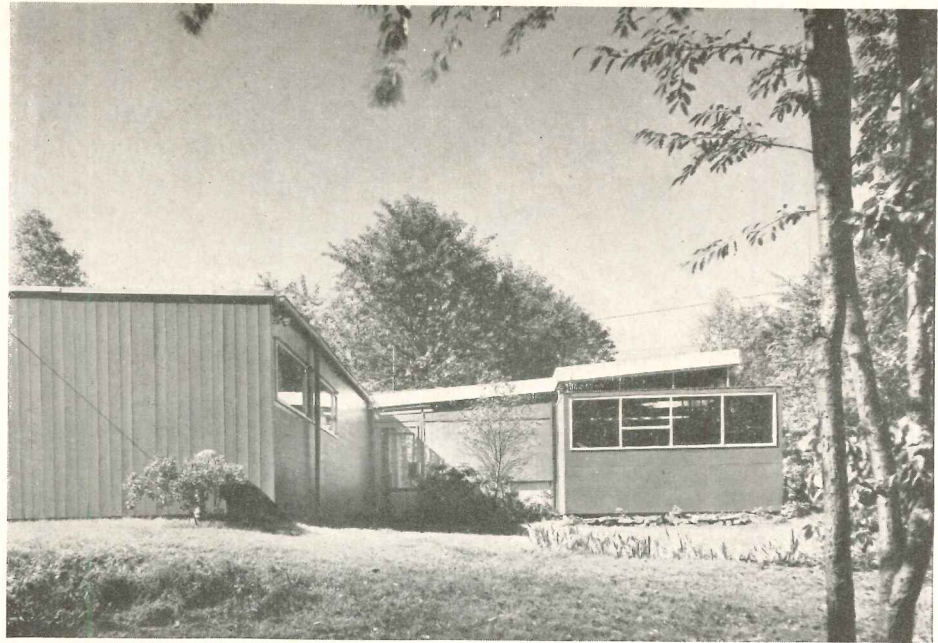
THE SITE OF THIS HOUSE, in a sparsely populated area of Westchester County, invited a plan that would incorporate the surrounding countryside with the interior: economy dictated a simple design. Result: a small, flat-roofed rectangle that seems much more spacious than it actually is, due to the large glass areas that seem to bring the outside in. A central utility core, flanked on either side by kitchen and bath, is the main economy factor. An oil burner, also part of a packaged utility core, furnishes hot air heat. Additional warmth results from natural solar heat penetrating the abundant glass areas. The foundation is concrete and concrete block. Floors are linoleum and carpet over  $\frac{1}{4}$ -in. plywood.

Lighting is from the ceiling in the living area; wall mounted light troughs illuminate the bedroom wing. Many built-in units, designed and built by the architect-owner, provide adequate storage facilities for the occupants and permit flexible furniture arrangements. Interior walls are cedar siding with redwood stain, fir plywood and mahogany plywood. Cedar siding on the exterior has been painted brick red — a harmonious contrast to the green environment. The house is connected to the garage by a screened porch, which, convenient to the kitchen, serves as a pleasant dining area in the summer. The well lighted garage contains a workshop area at window end and built-in shelves line the outer wall.



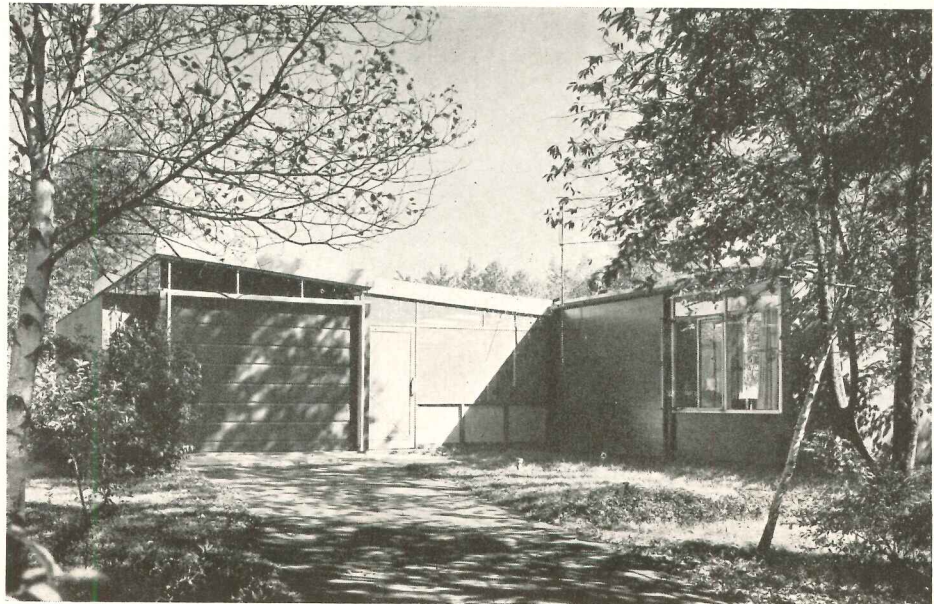
*The house is so oriented as to permit the winter sun to penetrate the large glass areas. Eyebrow overhang provides wind and glare protection*

Unbroken wall is master bedroom and dressing room. Clerestories and strip window in garage afford unusual light for workshop area



Entrance to house is through connecting porch. Extension of garage at extreme left was designed for built-in storage shelves

Joseph W. Molitor

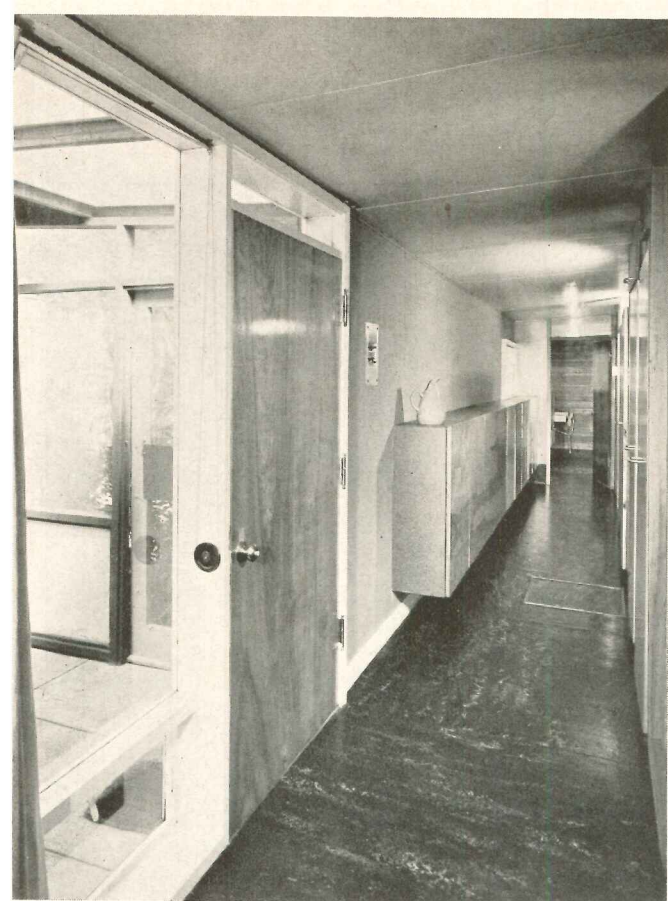




Redwood-stained cedar siding on end wall of living room is enriched only by a painting of Weaver child. Window wall admits excellent light

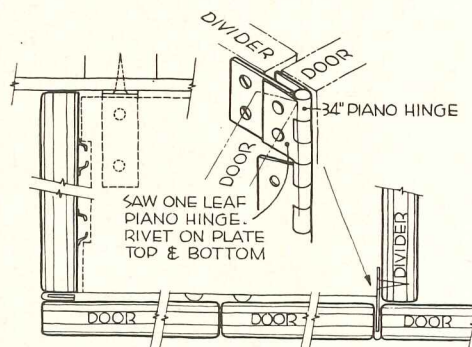


Dining end of living room with kitchen in background has storage room-divider designed by the architect. Door is main entry from porch. Turquoise carpeting complements tangerine wall

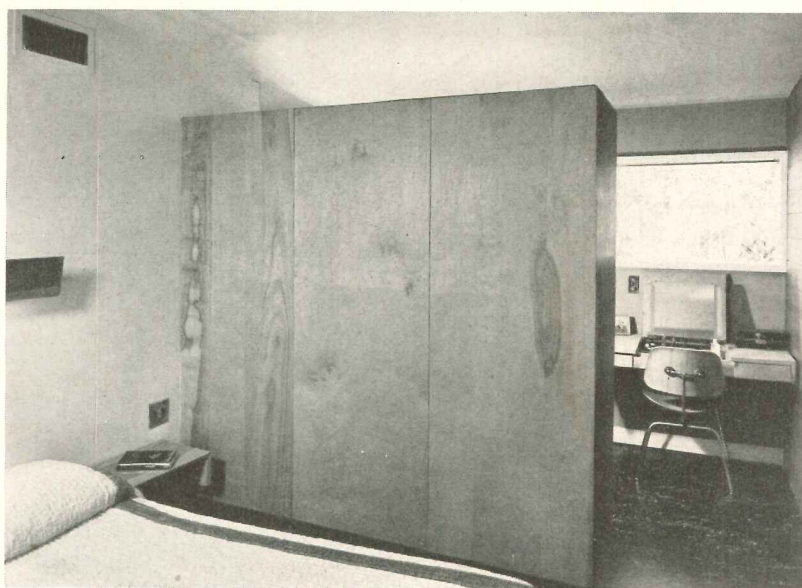


Bedroom wing corridor has plywood cabinets along outer wall. An attractive and useful key-note is added by primary colors on unit openings

Brush drawings by Soriano provide the principal decor in daughter's bedroom. Walls are blue and yellow. Storage unit extends under window

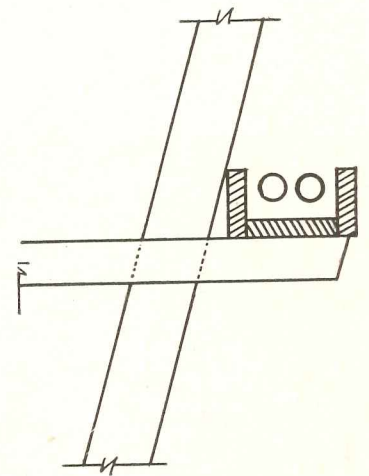
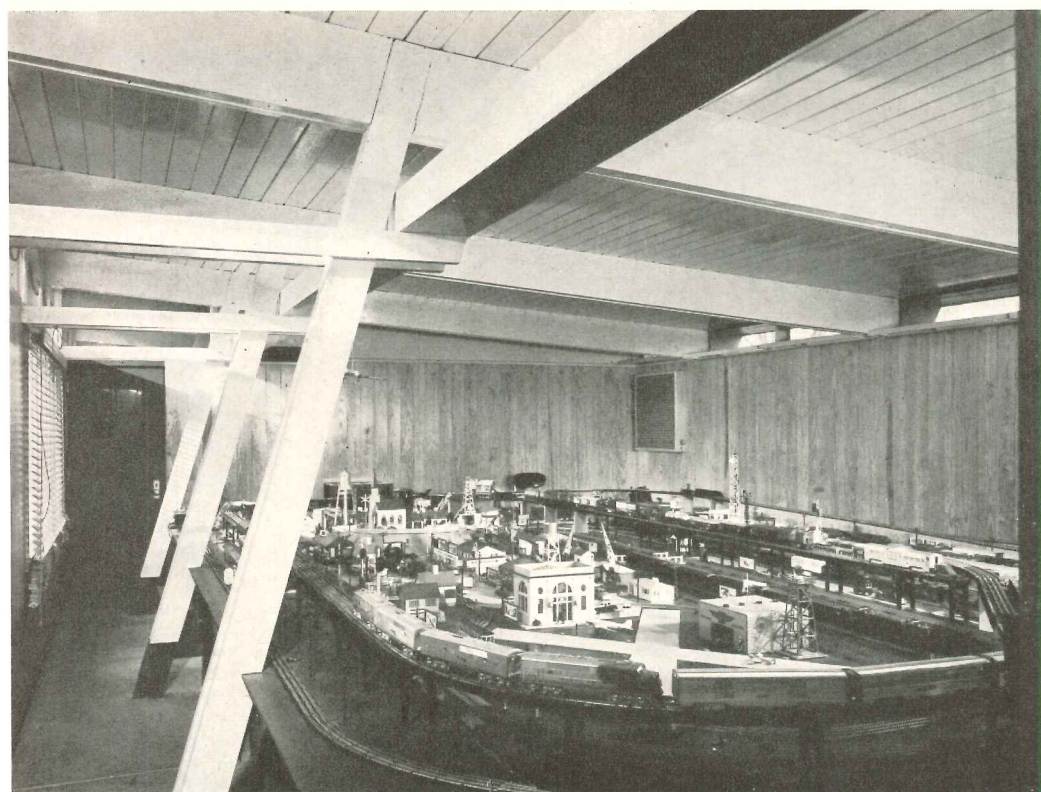
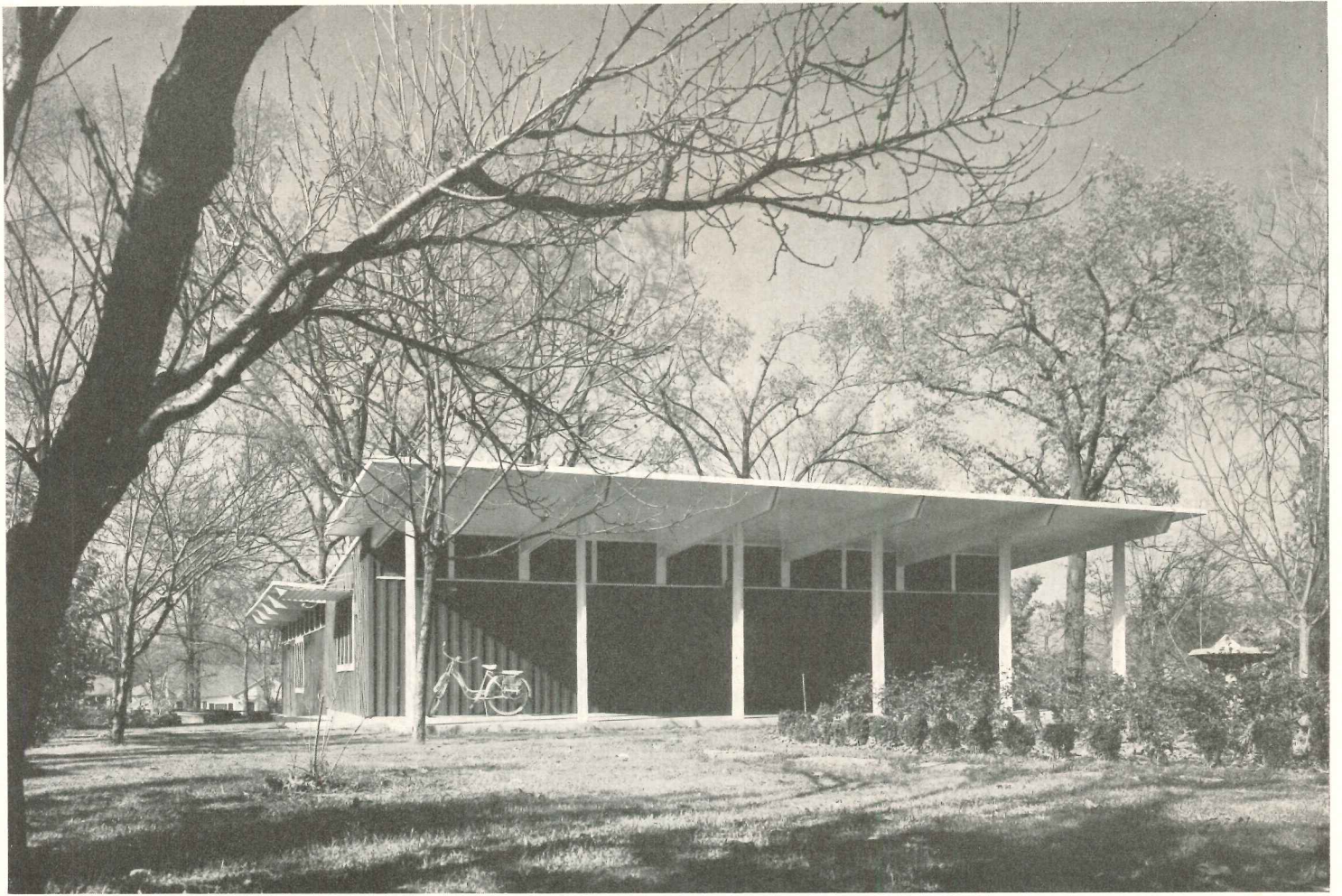


Detail illustrates piano hinge used on architect-designed closet. Finished unit, below, separates master bedroom from dressing room



Joseph W. Molitor



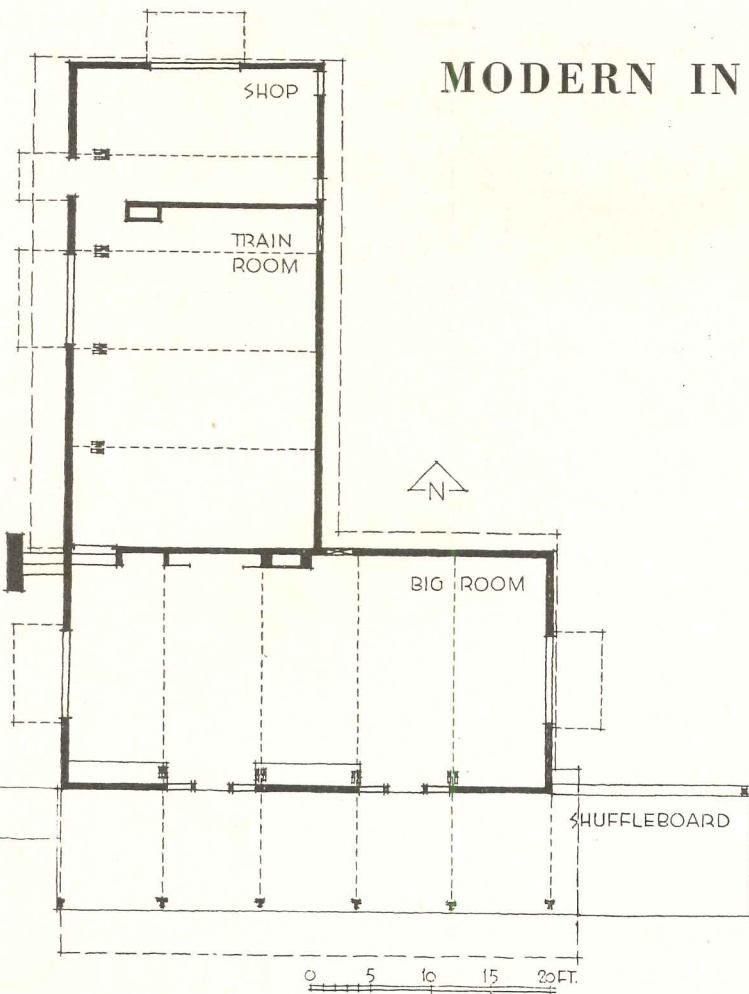


## MODERN IN PRE-CIVIL WAR SETTING

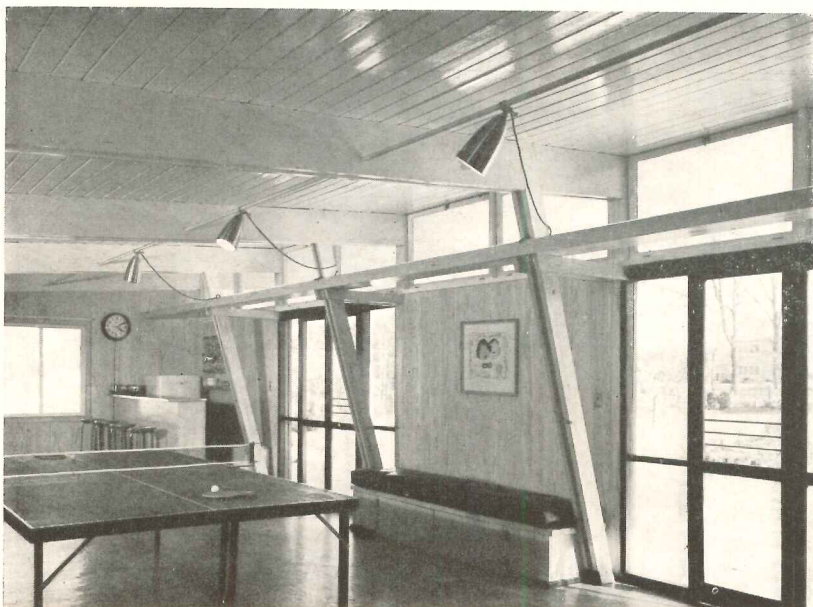
*Biggs, Weir and Chandler, Architects*

*Detached Playhouse in Jackson, Miss.*

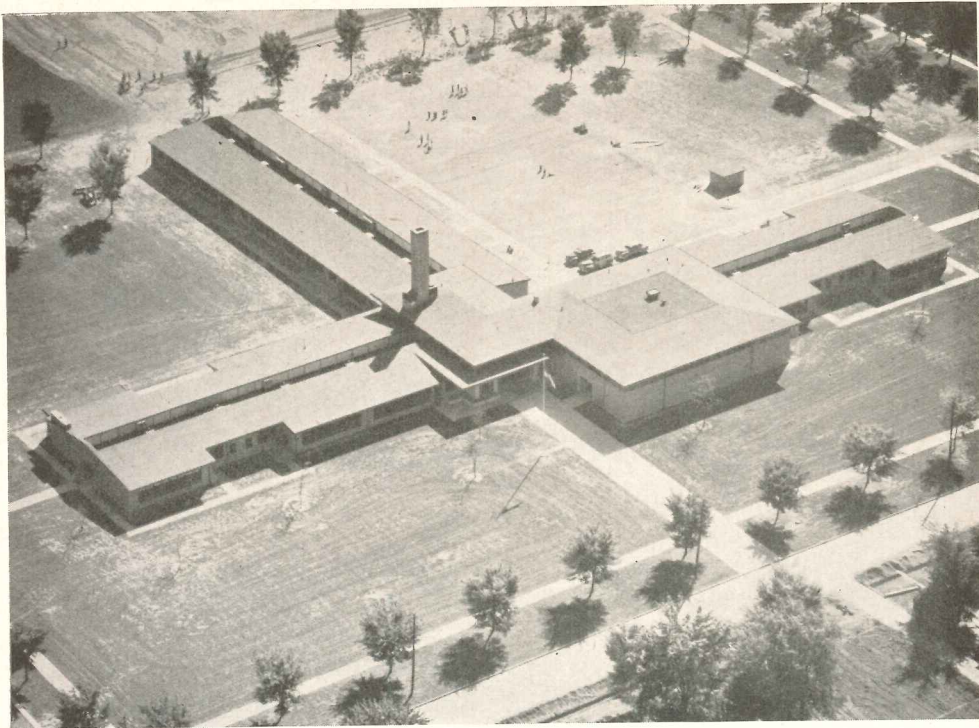
BUILT AS AN ADJUNCT to a southern ante-bellum house, this contemporary playhouse has the distinction of being located in a unique setting. The successful harmony of the old and the new has been achieved mainly through color — the exterior of the latter being brown vertical siding with white trim. Resting on a concrete slab, which extends outside on the front to accommodate a shuffleboard court, the playhouse is connected to the garage and the main house by walks. A large overhang on the front and corrugated cement asbestos awnings on the west side of the building give protection from sun and glare. The roof is built-up on 2 by 6 tongue and groove decking over truss construction. The interior of the playhouse (shown below and on the opposite page) has high ceilings with suspended light troughs running parallel to the outer south and west walls. The big room is well lighted on three sides and contains a small bar in one corner and a ping pong table in the center of the room, spot-lighted from above. The train room is almost entirely occupied by model electric trains, which are permanently set up on a large built-in table — this room being the main attraction of the playhouse and one of the basic reasons for its conception.



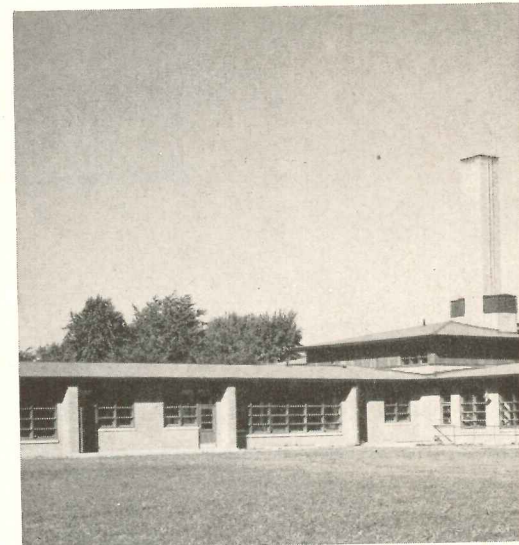
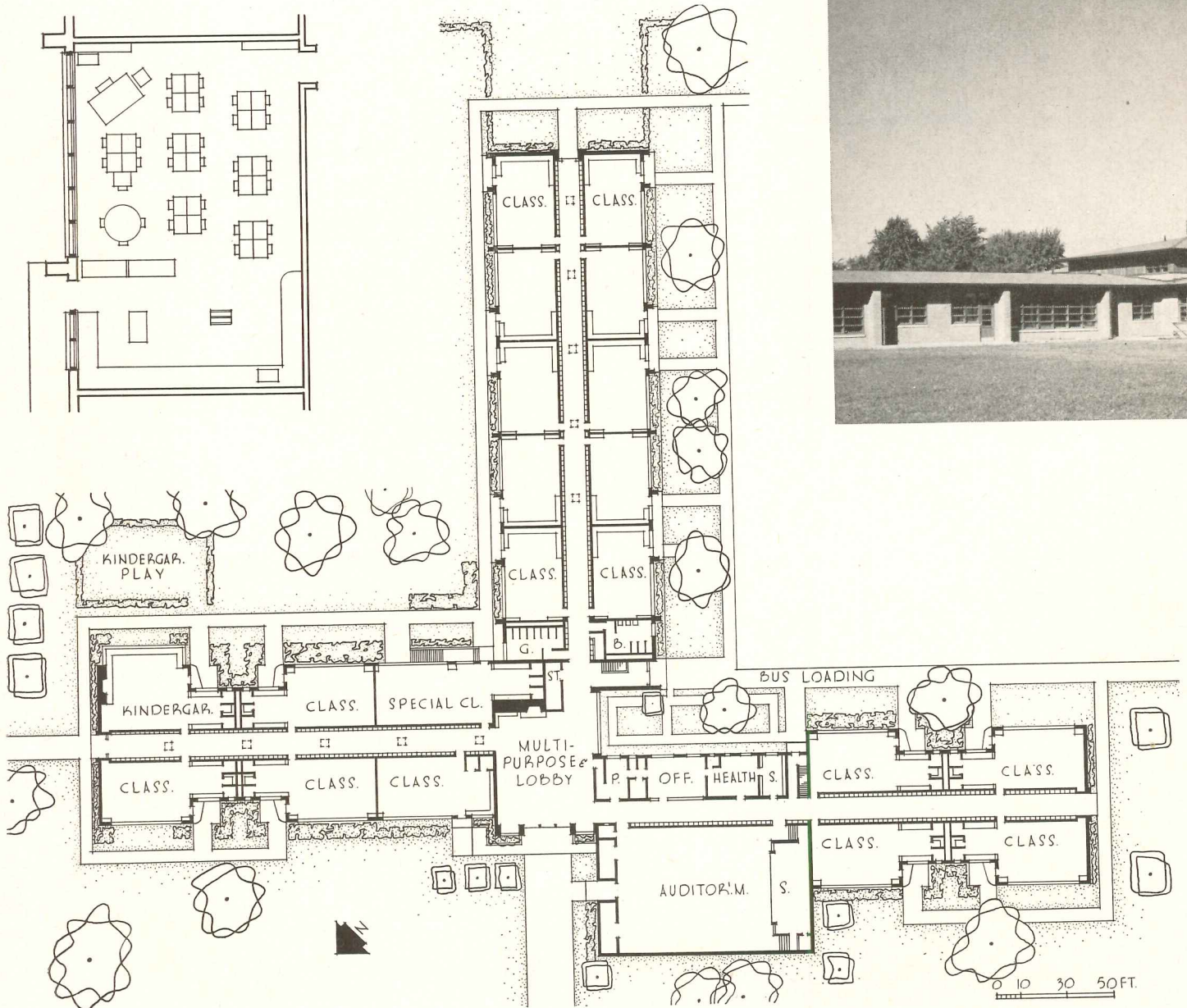
Joseph W. Molitor



*Big room at left is used for table tennis and other games. Storage benches on two wall sections provide hidden space for recreation equipment. Doors lead to shuffleboard court, just outside. Train room and detail of light trough is indicated on opposite page*



# NEW ELEMENTARY





*Perrysburg Elementary School*

*Perrysburg, Ohio*

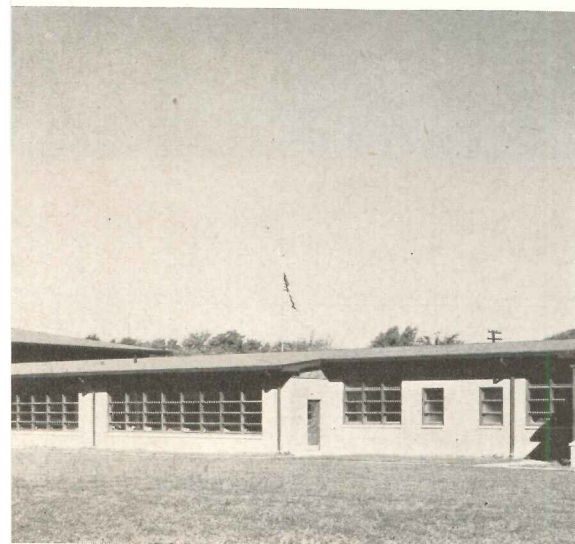
*Britsch & Munger, Architects*

# SCHOOL FOR SUBURB OF TOLEDO

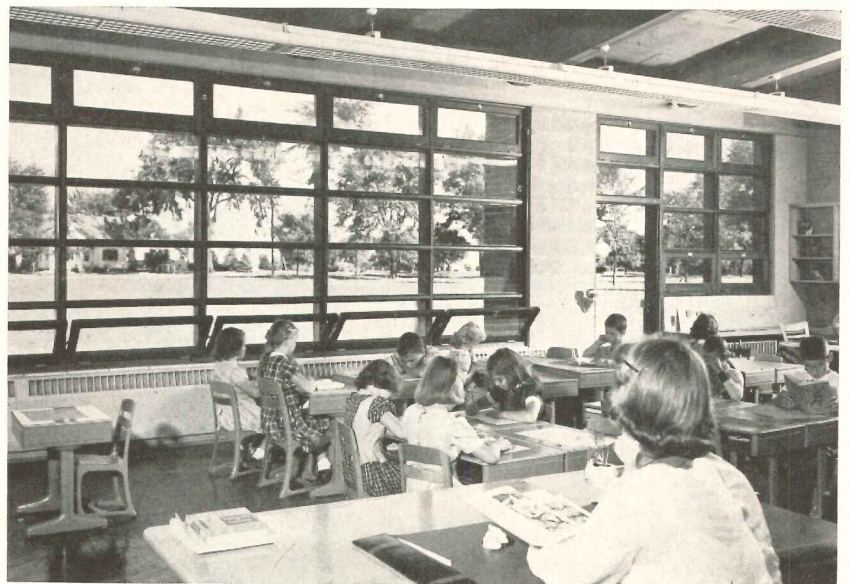
**T**HIS ELEMENTARY SCHOOL in a suburb of Toledo was designed in 1944, some six years before construction was begun. Although increased enrollment and other considerations necessitated a revision of the original plans, the feature which first called attention to the design — the double-loaded corridor with depressed roof and clerestories (ARCHITECTURAL RECORD, March 1948, p. 124) — was retained. The major change made was in the intermediate classroom wing, originally planned with only eight rooms, each, like the primary rooms, with a work alcove and toilet facilities; the alcoves were eliminated to make room for two additional

classrooms, but the advantages of the alcoves were not sacrificed: work counters and cabinets at one end of each room serve equally well. Lavatories for the entire intermediate wing were placed at the lobby end of the corridor, convenient not only to the classrooms but also to the auditorium and lounge-lobby, both of which are used by the community after school hours.

The building is one story in height, with an exterior of a soft salmon-colored brick; the front entrance is Indiana limestone. Every classroom has direct access to its own outdoor play area and is protected from the sun by a 3-ft roof overhang.

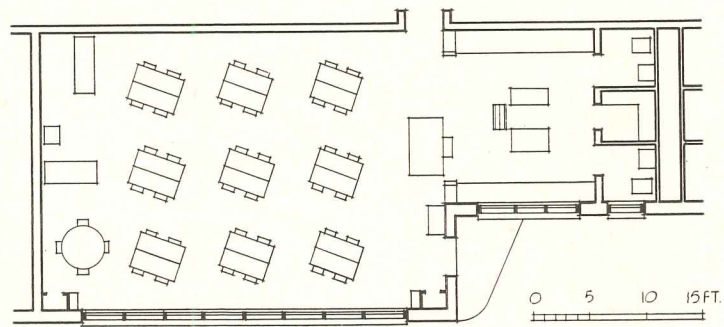
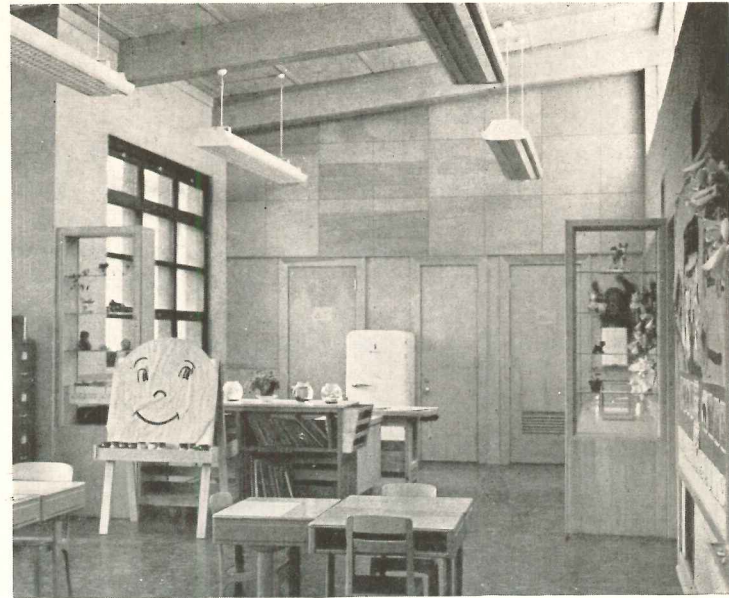
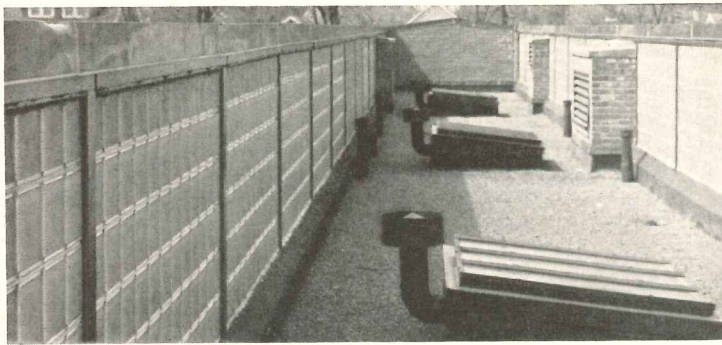
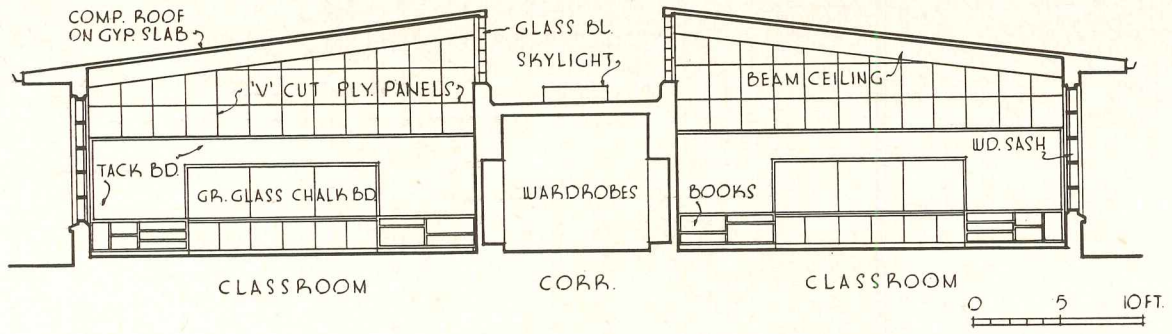


Harold C. Munger

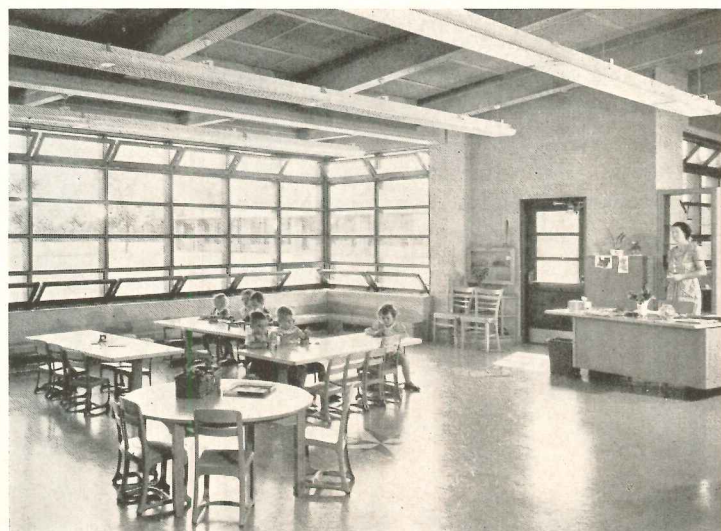


School occupies 14-acre site adjoining 21-acre village-owned plot which is being developed as a community recreational area. School's bus loading platforms are at one end of large parking area (air view, opposite page). Kindergarten (right) is at one end of primary wing, has own secluded outdoor play area. Intermediate classrooms (right, above, and plan opposite) are 24 by 37 ft, have work counters on end walls



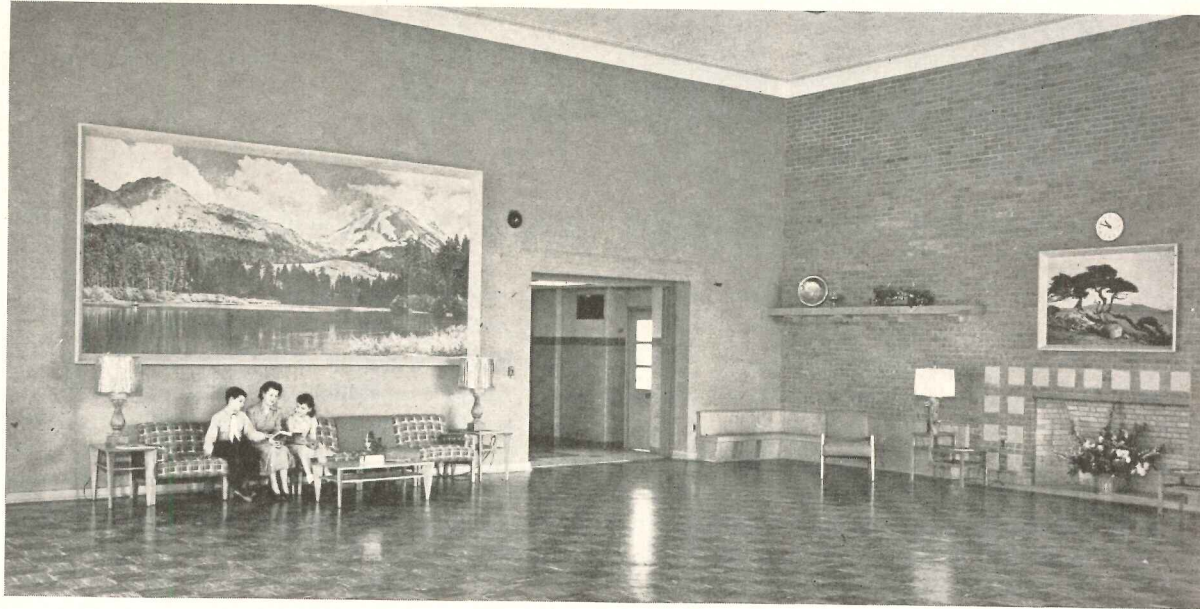


Classroom corridors in all three wings are double loaded, lined with lockers; roof is depressed to permit glass block clerestories giving bilateral lighting to all classrooms. Despite unusually heavy snow last year, roof troughs and skylights caused no trouble.



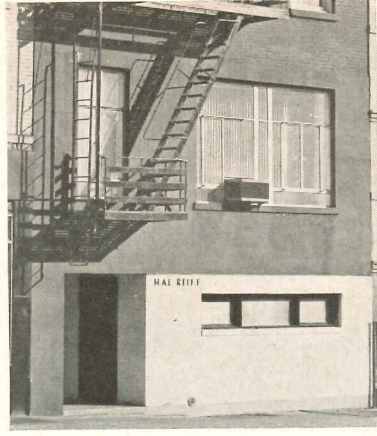
All primary classrooms (photos and plan, opposite page; large photo below) have work alcoves and toilet facilities. Classroom walls throughout building are cinder block, painted in pastel shades; trim is poplar; floors are asphalt tile, lighting is fluorescent

Lobby (below) doubles as lounge and multi-purpose room; from it stairs lead down to basement cafeteria, visual education room, lockers and showers, and up to teachers' restrooms and conference room on mezzanine. This part of building is planned for community use



Harold C. Munger





*Hal Reiff Studio, New York*

*George S. Lewis and  
Robert H. Rosenberg, Architects  
and Allan Gould*

*Samuel Eddelman and  
Phineas Zolot, contractors*

## STUDIO WORKSHOP FOR A FASHION PHOTOGRAPHER

**T**HIS ALTERATION and addition had to meet many requirements, of which two in the studio were fundamental. The resulting sequence of spaces is both functional and pleasing: from the street one enters a reception room of medium size, continues through a narrowish passage which doubles as exhibition space to come finally into the bright largeness of the studio. Logically enough, the lack of daylight at the plan's center of gravity becomes a positive virtue when the developing and printing rooms are located there, as they are.

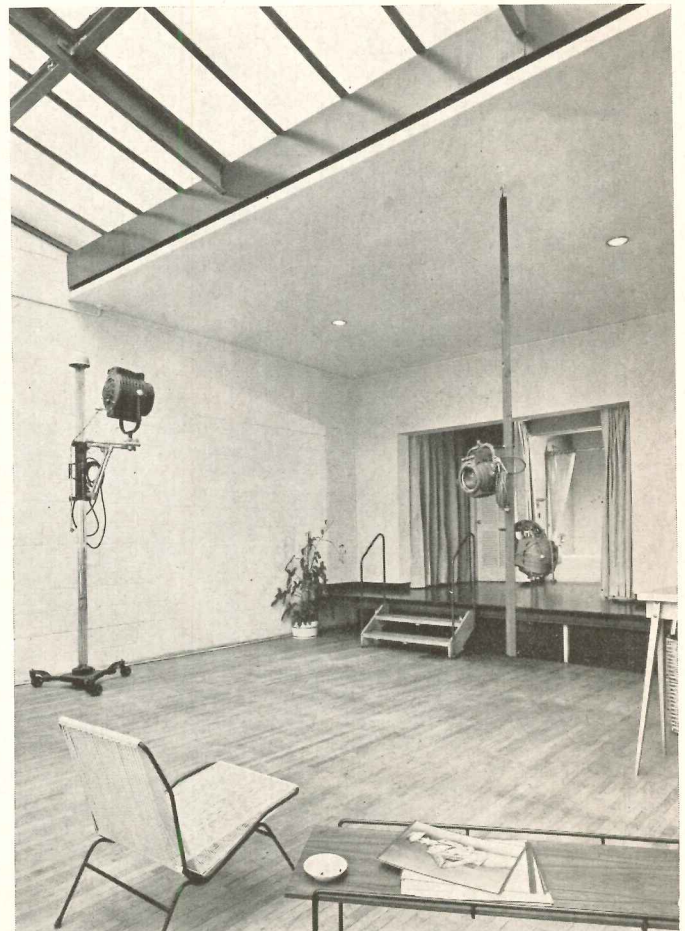
For the air-cooled studio, the aforementioned two fundamentals were a 12-ft clear height and natural light

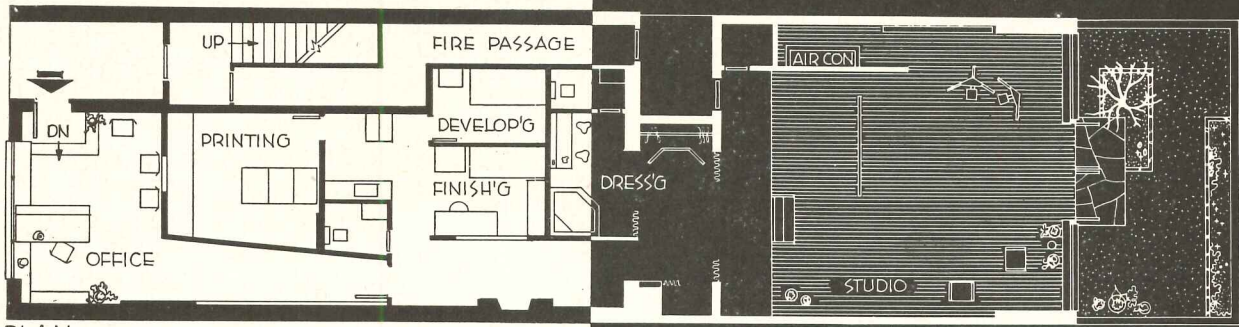
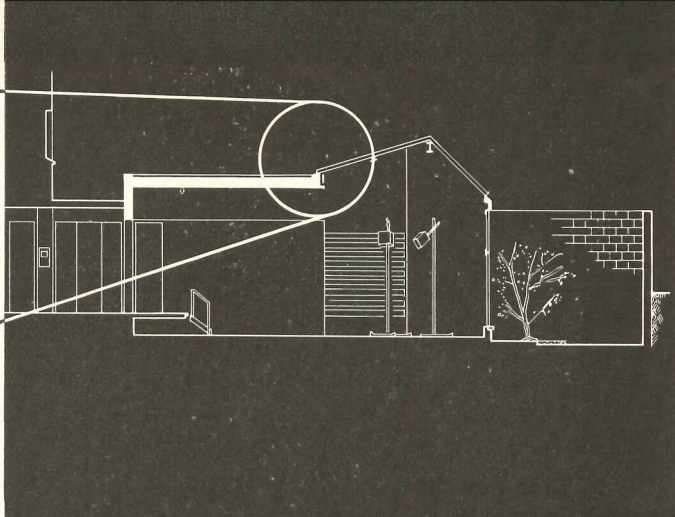
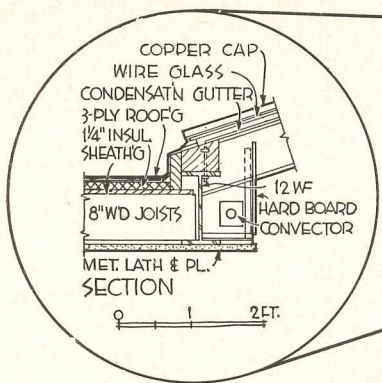
of a quality proper for picture taking. A building code height restriction led to the dropped floor in order to achieve the necessary ceiling. Top light through the diffusing skylight combined with reflected light from the white garden wall and white interior walls yields an intensity nearly equal to the outdoors, yet possesses the soft, luminous, non-directional quality desired.

Versatility of use was gained by several devices: the garden with corners and walls with and without planting; the raised platform for camera angles up or down; fireplace, bathtub and dressing table all within easy camera range; hooks in walls and ceilings for props.



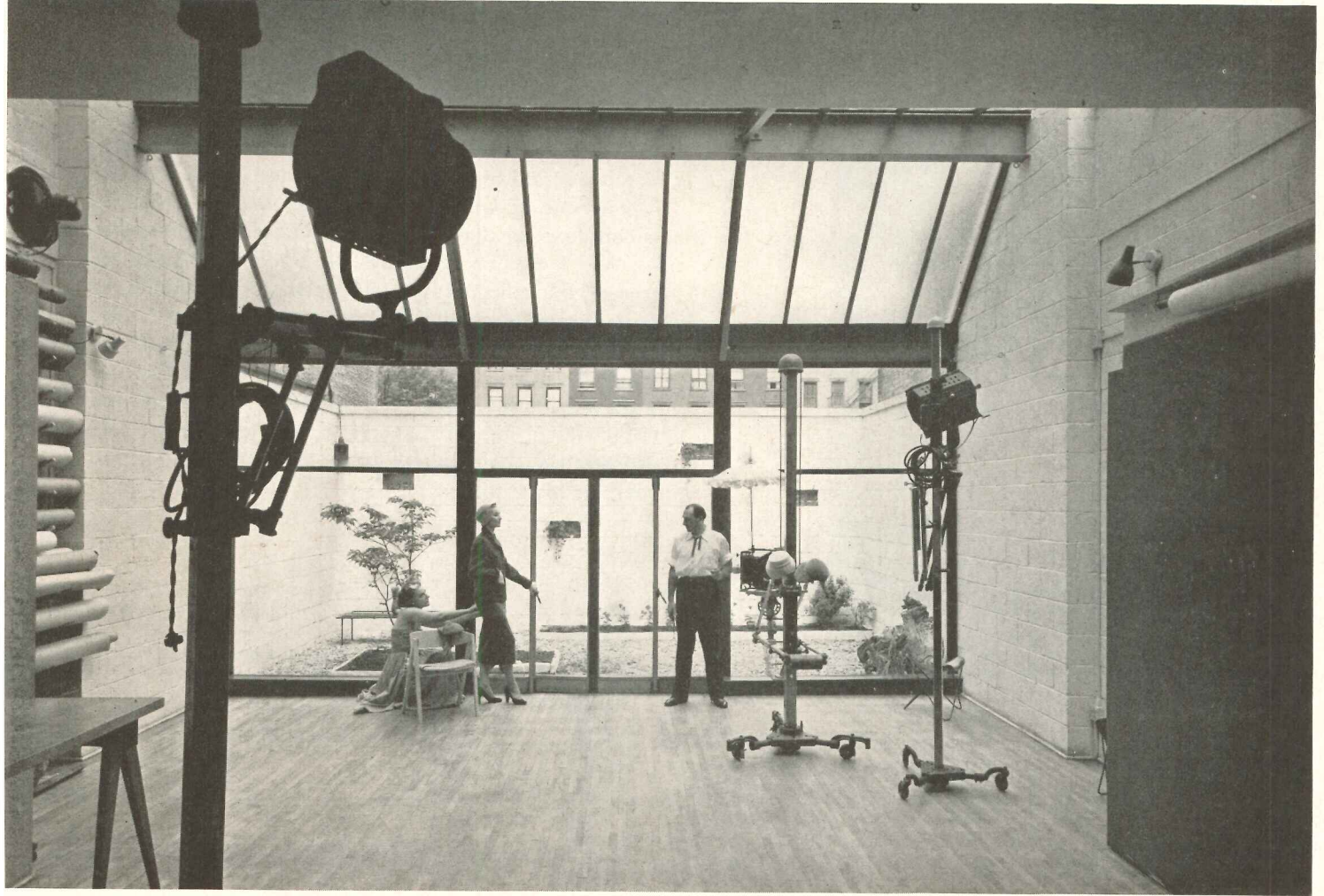
Large desk in reception room, above, has a raised portion which serves for filing, storing photographs, and as a counter facing the entrance. This desk and wall cabinet, as well as the coffee table and the popular string and metal chair, right, were designed by Allan Gould. Note the stairs, right, which can be rolled to any position along the platform or removed altogether. Photo at far right shows Reiff at work: he sometimes uses the large rolls of colored paper for backgrounds





Above: white-line plan and section show new studio addition and garden. Remainder is remodeled. Skylight over studio has convector, detail top left, to prevent drafts

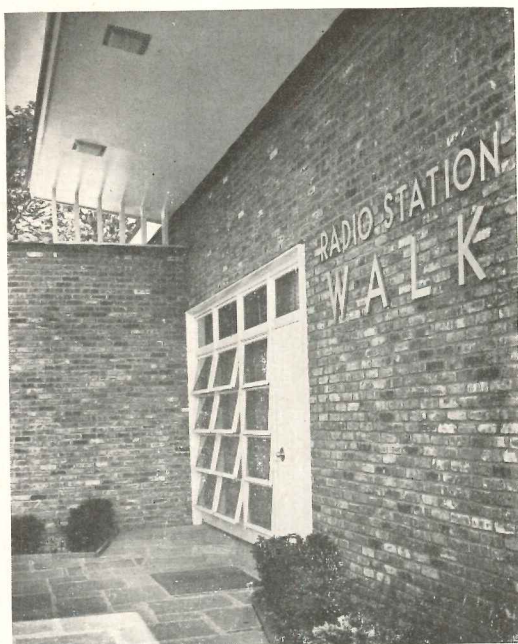
Alexandre Georges





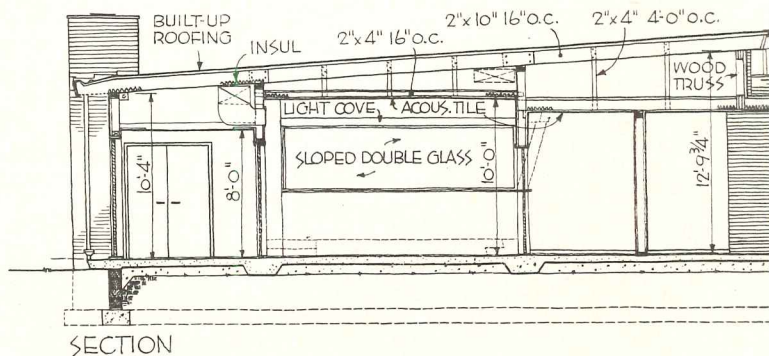
## A SMALL RADIO STATION ON LONG ISLAND

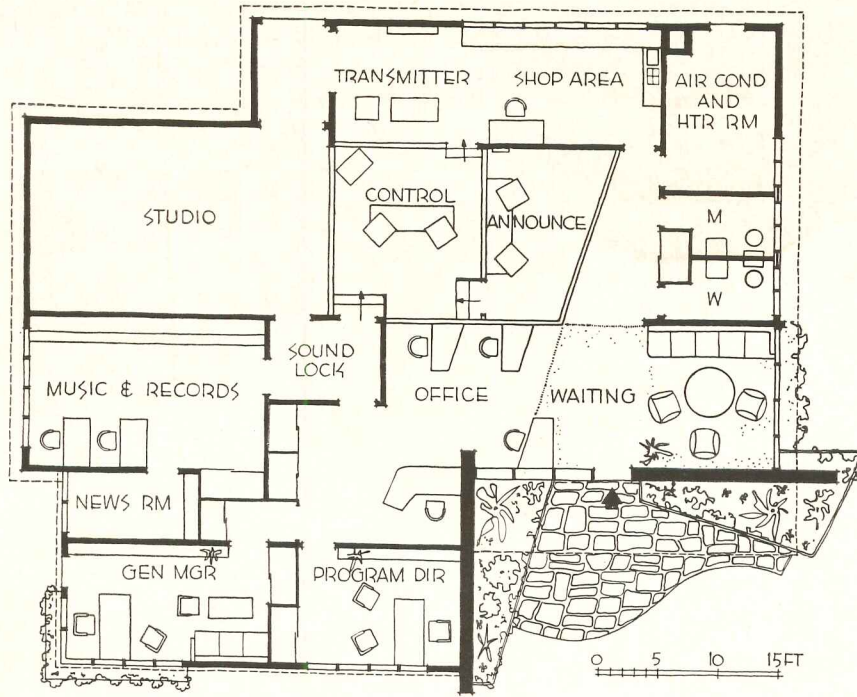
Station W A L K



Above: entrance has an easygoing residential character, appropriate both to the station's size and to its location

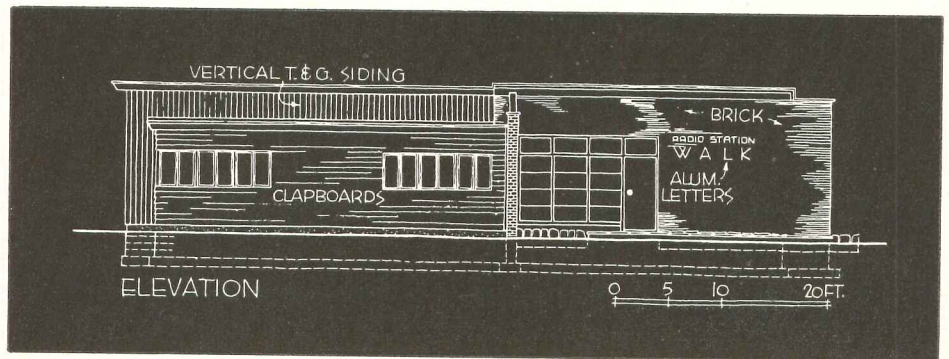
The relaxed, casual quality of this building for a small radio station is in keeping with the nature of the community served by its facilities. Suffolk County is at the eastern end of Long Island, too far for easy suburban commuting, so that despite its comparative proximity to New York City, it enjoys the somewhat less hectic pace of life reflected here. The plan of the building is fairly uncomplicated for a structure of its type, and accommodation of offices, studio and equipment was handled simply. Construction is wood frame. Exterior walls are finished with vertical and horizontal natural cedar siding and brick. Interior walls are plaster and acoustic tile. Foundations have concrete footings with concrete block walls.





Plan combines simple separation of areas with easy communication between them. Note the sound lock leading into the large studio

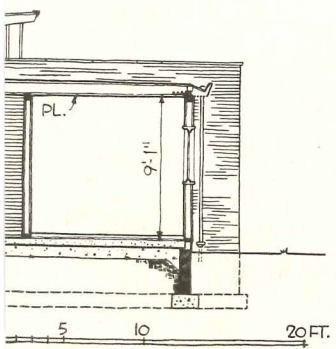
**Suffolk Broadcasting Co.**  
**Patchogue, L. I., New York**  
**Hart, Jerman and Associates,**  
**Architects**



Right: view from reception room into office area and announcer's booth. Light cove above sloping glass wall of booth provides indirect illumination. Below: section through building, showing ceiling construction



Gottschlo-Schleisner



## COMMERCIAL BUILDINGS

THE BIG NEWS in commercial building is that government controls have been swept away by the Eisenhower administration's broom. In retrospect, architects will long remember January 13, 1951 as the gloomy day when the National Production Authority "freeze" on business structures began. During the ensuing two years, both commercial construction and building materials were under varying sorts of restrictions ranging from severe to mild. Despite gradual and continuing relaxation during 1952, the really significant relinquishment of control came with the "open-ending" of the Controlled Materials Plan on February 16, 1953, together with the announcement that CMP will cease to exist on June 30th of this year.

What does this development mean to architects? It means that now, for the first time in two years, you can plan and your clients can build any type of commercial building of any size, using any materials\* available on the open market. Supplies of steel, copper and aluminum are reported normal or nearly so, with no foreseeable serious shortages in the offing. Despite the dire predictions attending the removal of price ceilings, material costs have so far remained fairly level.

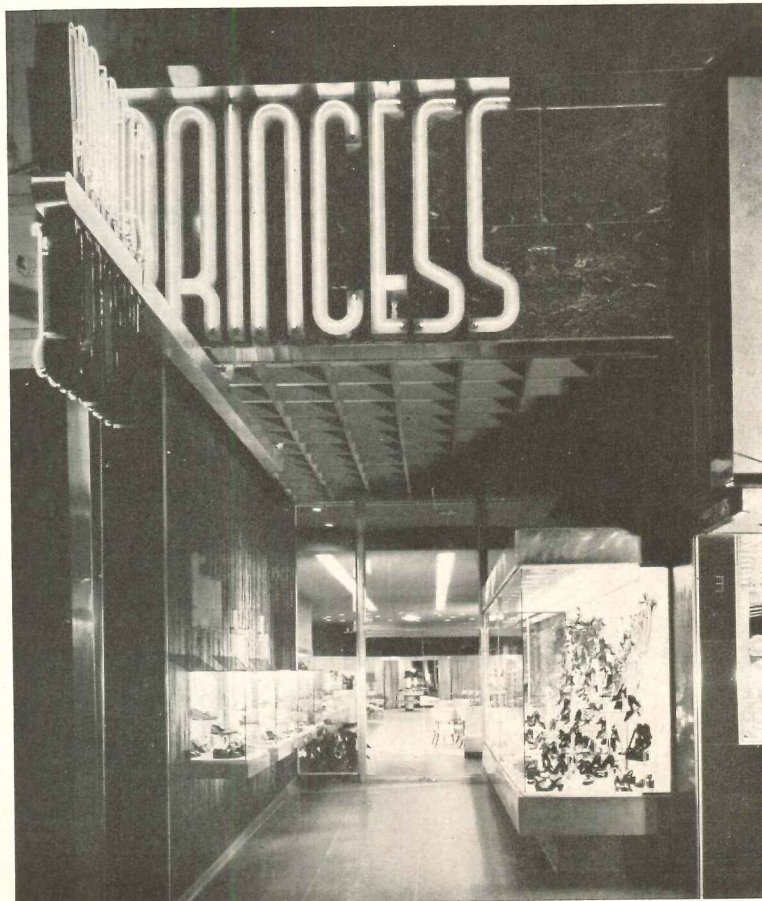
The long pent-up demand now set free resembles a flood tide in its magnitude. In both money value and floor area the recent expansion in commercial † building volume is little short of fabulous. From Dodge Reports gathered in 37 eastern states and in terms of *actual contracts awarded and under construction* (not estimates) we find that during January and February of this year dollar volume (in millions) is a whopping 187,442 as against 117,876 for the corresponding two months of a year ago: an increase of 59 per cent! The floor area provided by these dollars is 15,098,000 sq ft for the first two months of 1953 versus 8,629,000 for the same period of 1952: a sharp jump of 75 per cent! There is no evidence of any softening of demand in the near future — on the contrary, all signs point to a continuing expansion.

Such a situation brings upon the profession the sort of opportunity that architects and engineers dream about, and should offer espe-

cially great potentialities for both younger practitioners and smaller firms, since the changing population pattern has given rise to widespread suburban development, with its typically smaller and lower structure for business and professional use. There will be many such, and architects should find that any study or promotion they are able to undertake in this field should yield tangible dividends. Most architects will probably agree that commissions of this kind, even when carefully studied, usually permit the pocketing of a greater proportion of the fee than do residential jobs, with their relatively greater expenditure of time.

The challenge that this opportunity throws down is to design increasingly better commercial architecture, because good design pays off. It pays off for the architect in terms of profes-

Joseph W. Molitor



\* Except for nickel-bearing stainless steel, which will remain under DMS regulation.

† Included in this category are stores, office buildings, banks, restaurants, commercial warehouses, garages, and filling stations.



## A RARE OPPORTUNITY AND ITS CHALLENGE

sional prestige, personal satisfaction and further commissions; it pays off for the owner in higher rentals, better resale value, easier maintenance and greater flexibility of use; it pays off socially by doing its share to make the community more attractive, a better place in which to live and work.

Many useful ideas are contained in this 25-page study: there is a total of twelve projects included in the portfolio which follows. The work shown ranges from small to medium in size, the largest example being the new Bullock's suburban branch in Westwood Village, Calif. There are four stores, four small office buildings, and four small professional buildings. These examples have been carefully selected from the great volume of good work that is going forward all over the nation.

During the past ten years, ARCHITECTURAL RECORD has reflected activity in the category of commercial buildings, both large and small, and has during that time presented these eighteen Building Types Studies:

May 1942.....Smaller Building Construction	October 1947.....Office Buildings
April 1943.....Commercial Centers	April 1948.....Stores
February 1944.....Service Stations	January 1949.....Office Buildings
October 1944.....Laundries	October 1949.....Shops and Small Stores
November 1944.....Department Stores	January 1950.....Small Business Buildings
February 1945..Shopping Terminals & Stores	September 1951.....Small Office Buildings
March 1945.....Banks	June 1952.....Office Buildings
February 1946.....Stores	July 1952.....Store Design
February 1947.....Stores	January 1953.....Architects' Own Offices

In addition, ARCHITECTURAL RECORD'S book department published Dr. Louis Parnes' volume entitled *Planning Stores That Pay* in 1948.

## THE PRINCESS SLIPPER SHOP *Jackson, Miss.*

*Robert K. Overstreet, Designer for N. W. Overstreet Associates, Architects & Engineers*

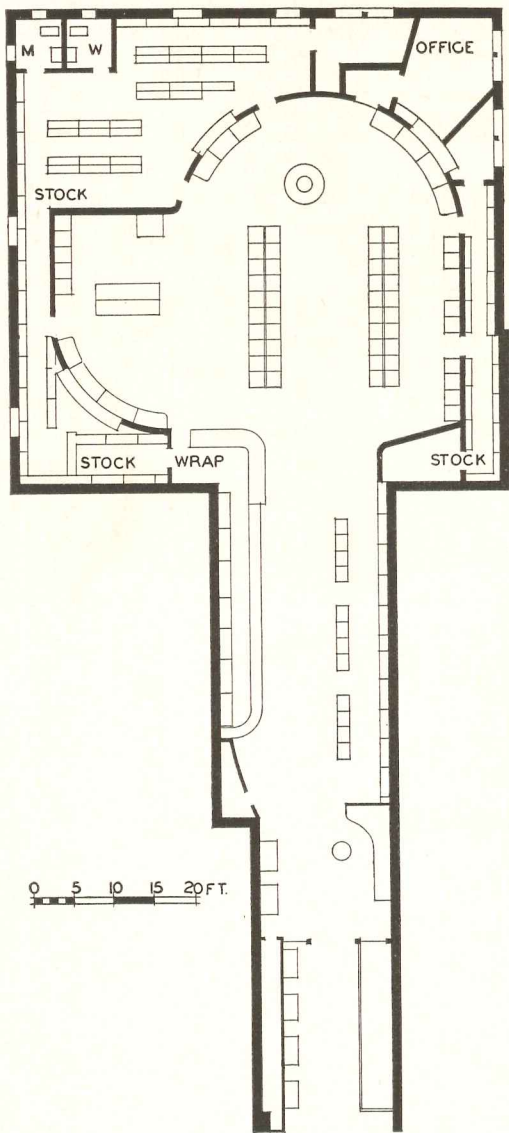


## THE PRINCESS SLIPPER SHOP

**T**HE PROBLEM was to add a new, larger sales salon to an existing narrow store which was also to receive a new front calculated to lure customers inside. The result is a varied and pleasant succession of spaces ending in the salon shown on page 163. See also plan at left.

The entrance features a jet black sandblasted wood plank wall which serves as background for the small, waist-high display cases (below) which are complemented in turn by the mass display in the large window opposite.

Three types of lighting add variety to the scheme, the curving pattern of downlights in the salon being particularly effective.



Joseph W. Molitor



# PROTOTYPE FOR A CHAIN OF SERVICE STATIONS

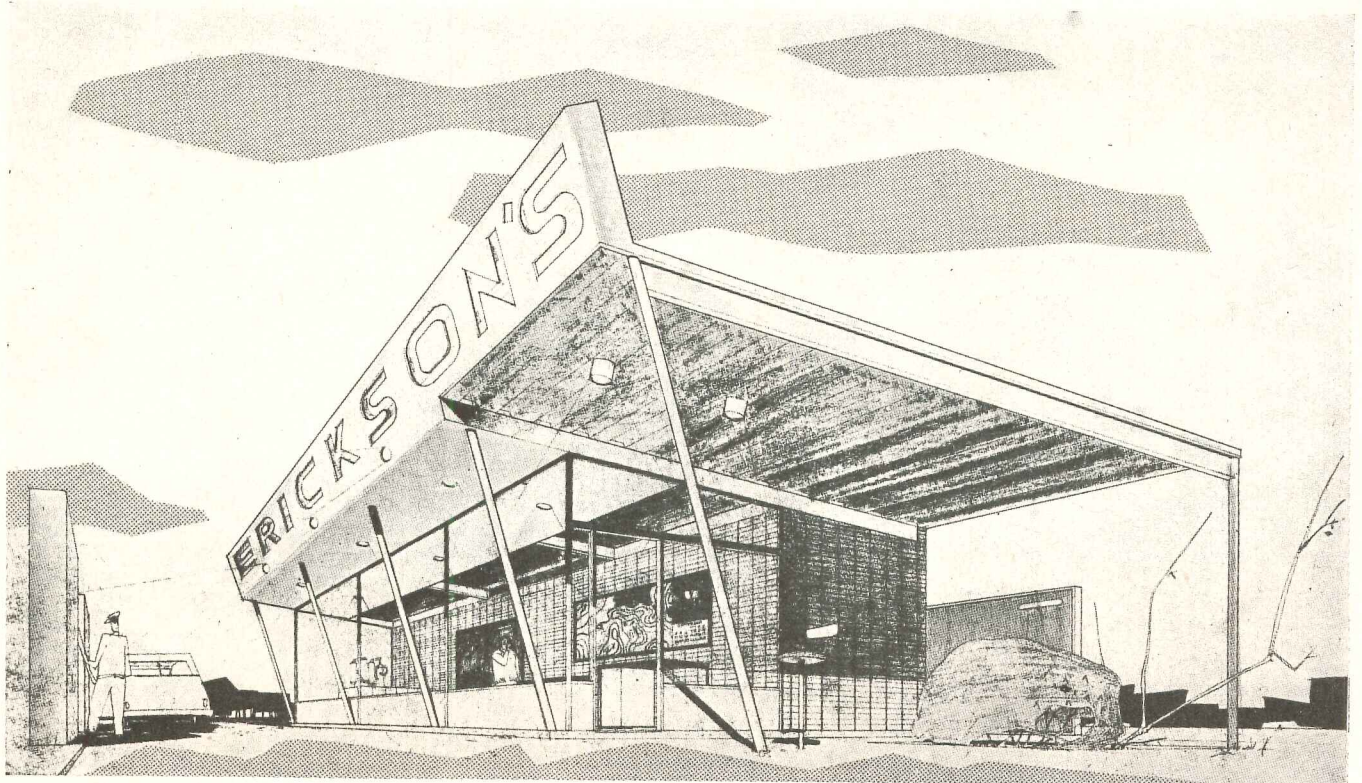
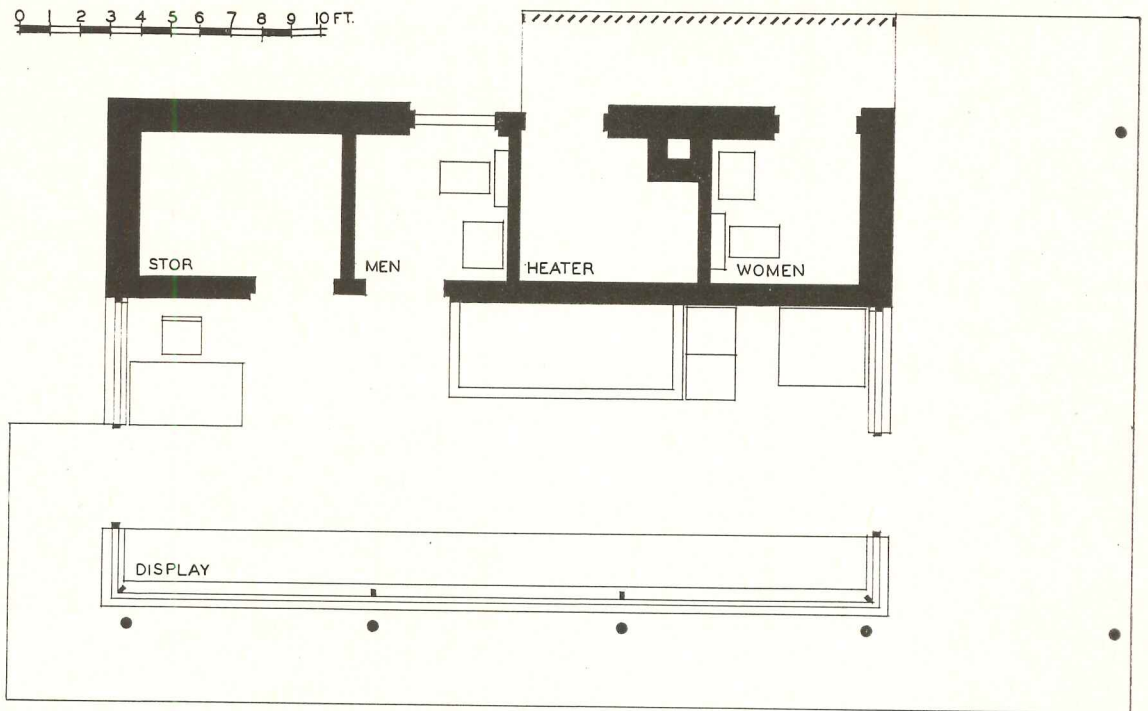
*Thorshov & Cerny, Architects*  
*Ted Sudano, Architect in charge*

OVER 20 gas stations scattered through Wisconsin and Minnesota have been built for the Erickson Company following this design, and more are coming. The scheme has been widely copied — proof of its success.

In order to compete with the big corporations, this small independent conceived the idea of making his stations sprightly, different and attractive, especially at

night — for nighttime service is another way to compete. Vivid red and yellow and white are used in combination with glass and smooth red brick.

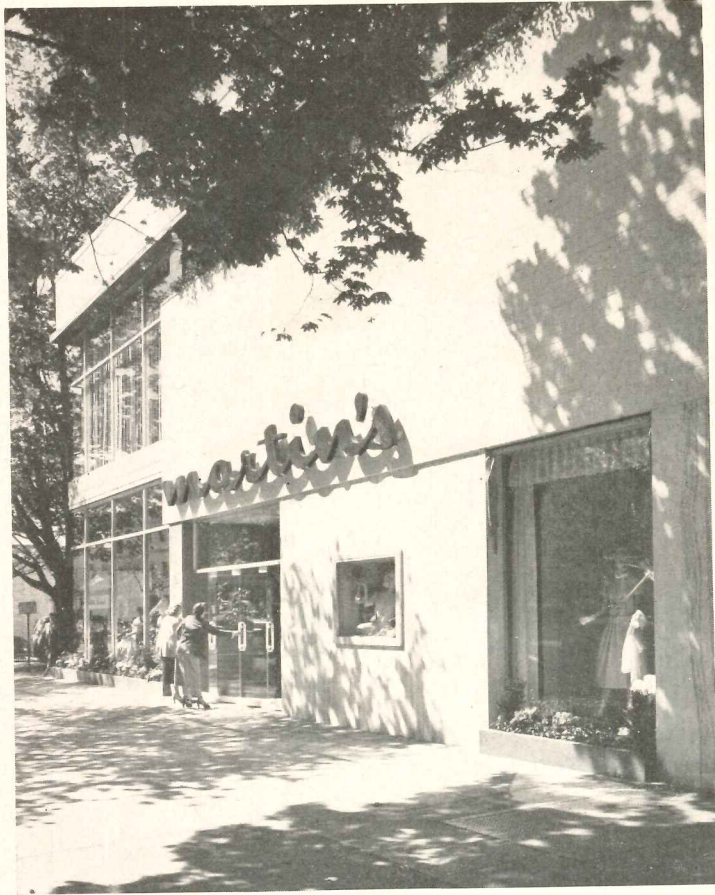
The all glass front is important for it enables the attendants to see anyone approaching and swing into action, since really super service (also to meet competition) is a vital aspect of the operation.



## GARDEN CITY BRANCH

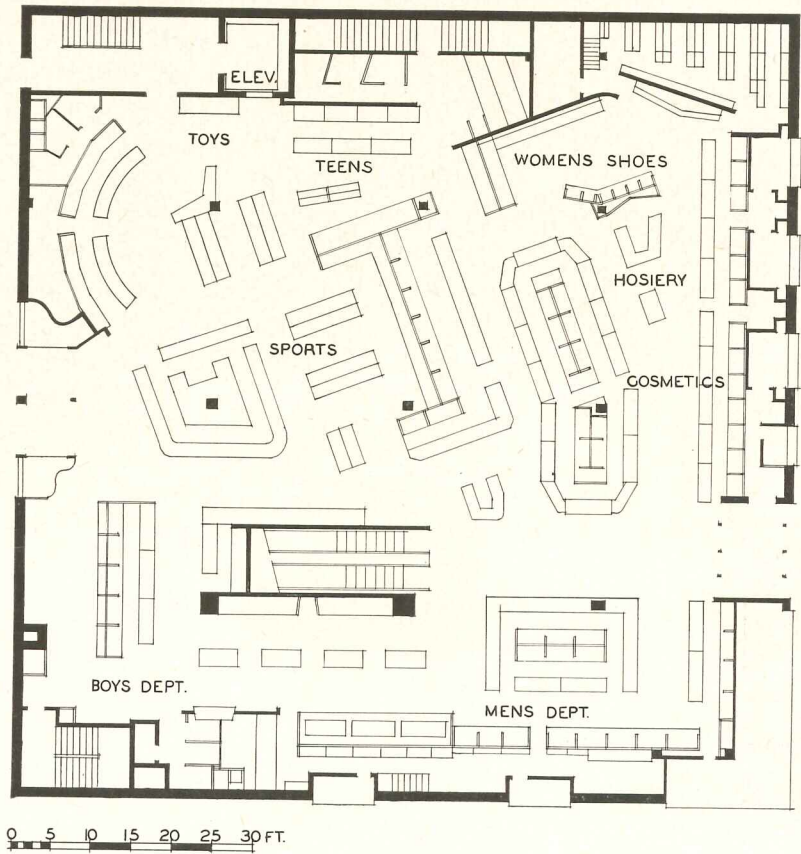
*Frank Majer, Architect*

THIS STORE, finished in the spring of 1952, is the first suburban branch for Martin's of Brooklyn, a department store. In planning, the architect carefully located and articulated the various departments in relation to pedestrian traffic flow, so that men seeking their department will not have to pass through a women's department, and vice versa. In general, young people's and sportswear, as well as impulse items such as gloves, jewelry, etc. are located at street level, while the higher priced dresses and gift shop are located on the second floor. The architect designed all interiors, including merchandising fixtures and lighting.



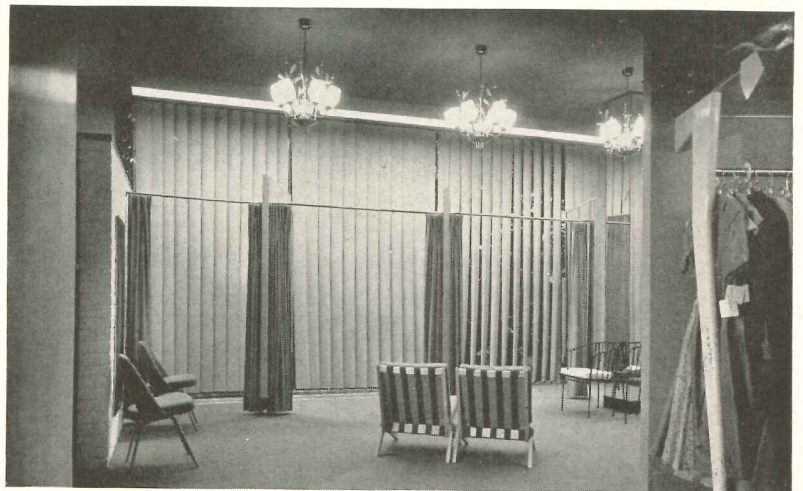
# FOR MARTIN'S

*Morris Lapidus,  
Associate Architect and  
Interior Designer  
McKim, Mead and White,  
Supervising Architects*



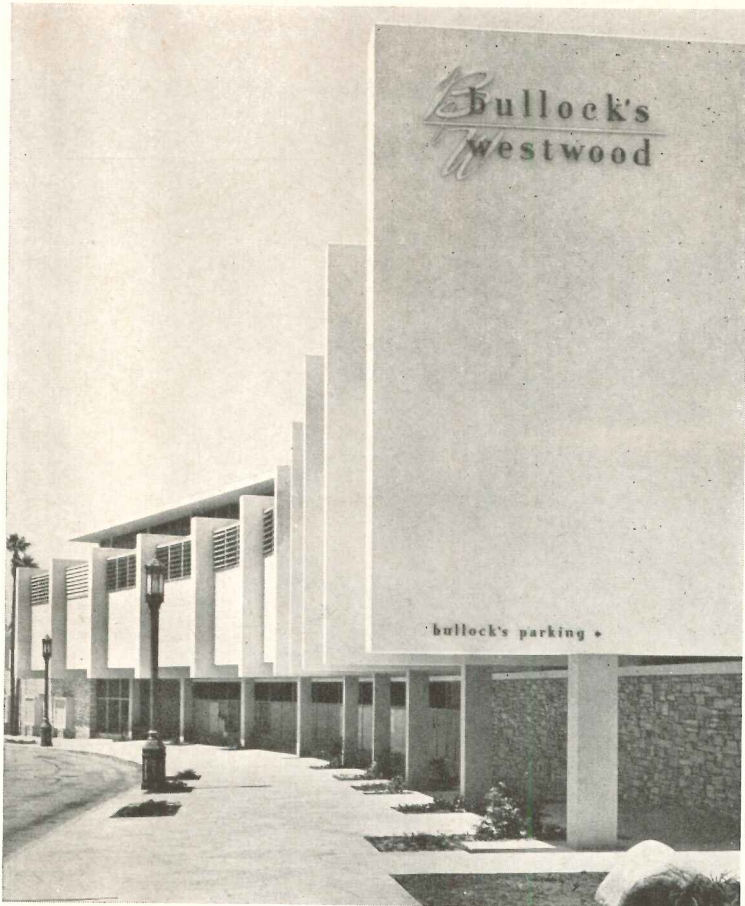
RETAIL STORES

Gottscho-Schleisner





# BULLOCK'S WESTWOOD—A NEW SUBURBAN STORE



*Welton Becket & Associates, Architects & Engineers*  
*Murray Erick Associates, Structural Engineers*  
*Hillburg, Byler & Hengstler, Mechanical Engineers*  
*Robert Herrick Carter, Landscape Architect*

LOCATED IN WESTWOOD VILLAGE, in suburban Los Angeles, this department store with restaurant on its top floor is especially interesting for its 3-level arrangement of parking and access. By closely correlating garaging and retailing, the architect has achieved a scheme that permits the customer to park his car only a few yards from and at the same level as the section he is visiting. Total parking space will handle 1000 cars.

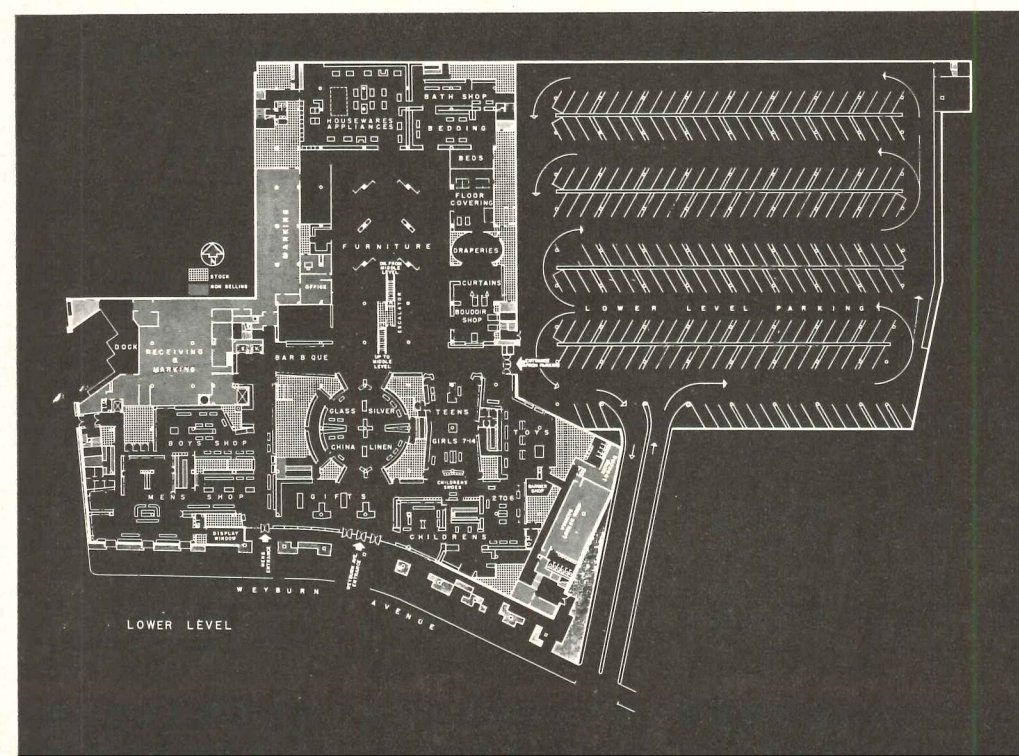
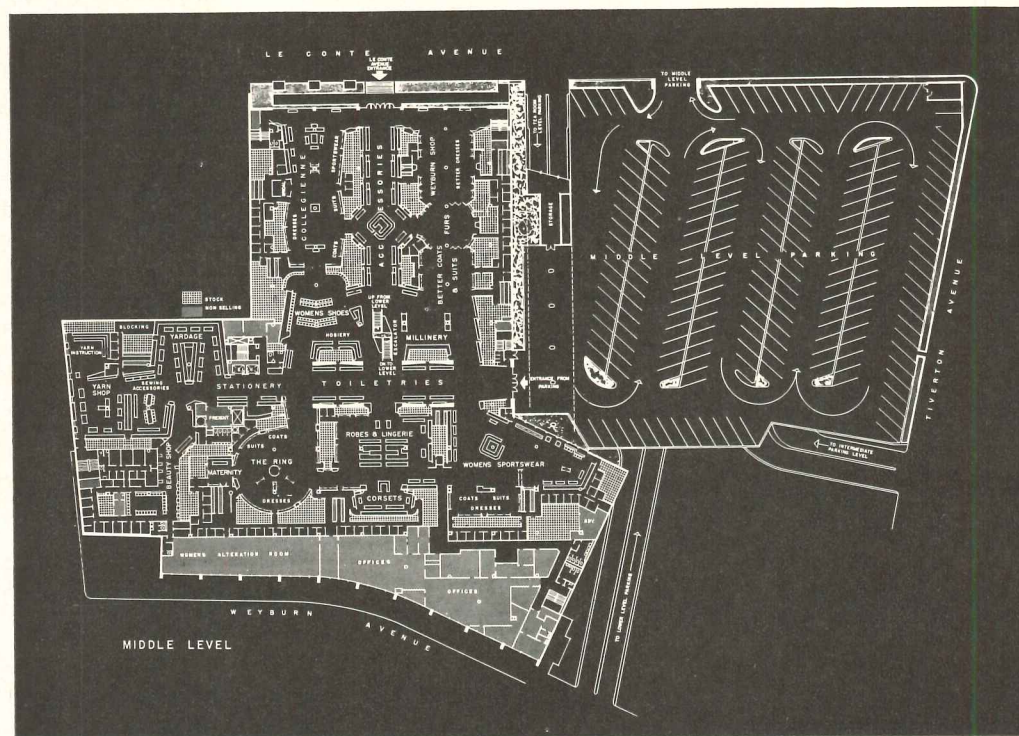
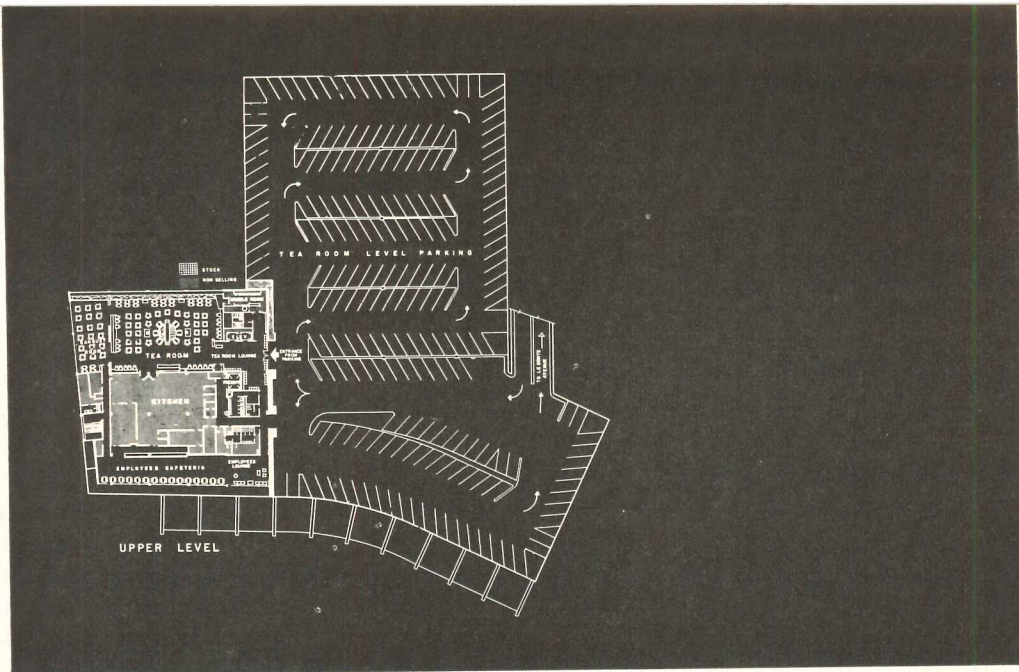
The design capitalizes on the natural slope of the 4-acre site by providing two principal merchandising levels, each with its pedestrian entrance directly from the street, as well as making possible parking at each level. Six entrances enable the shopper to reach his destination in the shortest possible time, whether he arrives on foot or by car.

Working closely with Raymond Dexter, Bullock's planning director, the architect completely designed the interior, including dress labels and wrapping paper.

RETAIL STORES



Douglas M. Simmonds



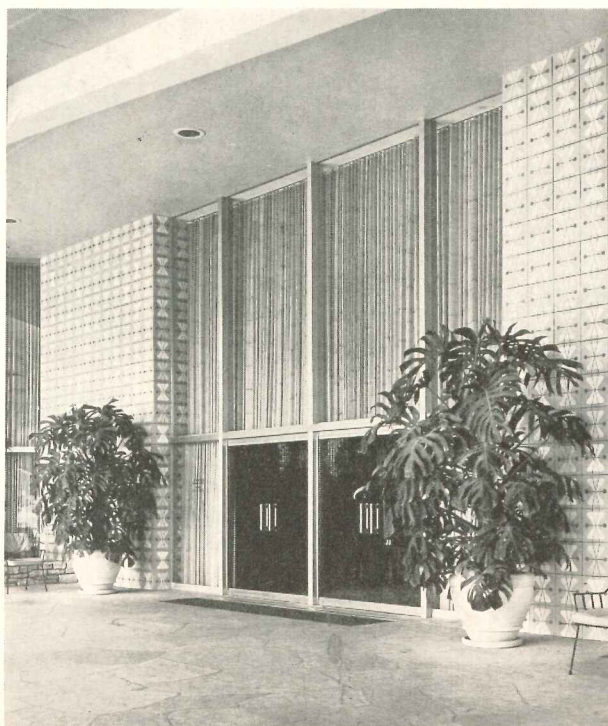


BULLOCK'S WESTWOOD



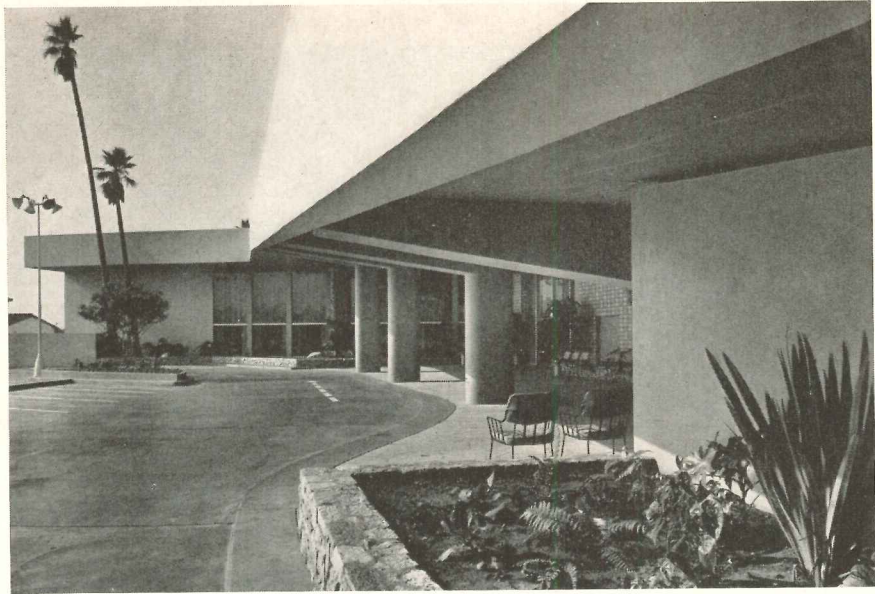
Douglas M. Simmonds

The three plans at left show how the three levels are articulated for both pedestrians and cars. Photo at left, above, shows top floor, which houses the restaurant. Middle level ramp entrance from the street is shown above, right. In the photo of the entrance detail at right, note the oversized faience tile which was designed by the architect for this job and used on several of the building's elevations

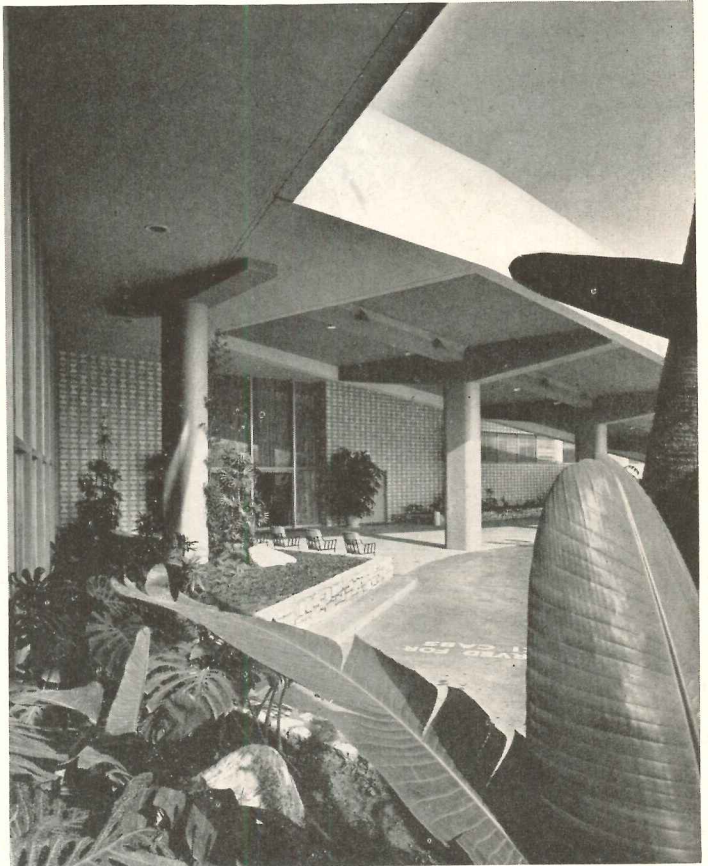


RETAIL STORES

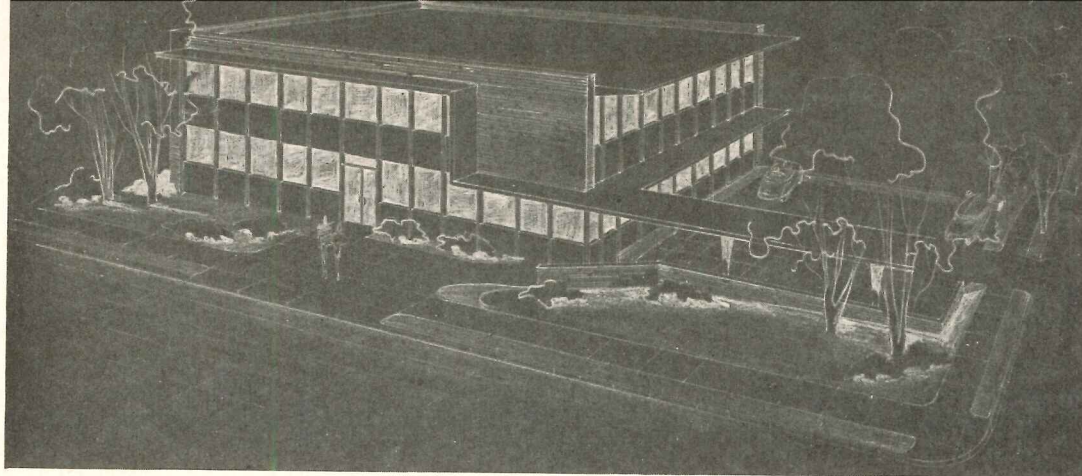
**BULLOCK'S WESTWOOD**



Douglas M. Simmonds



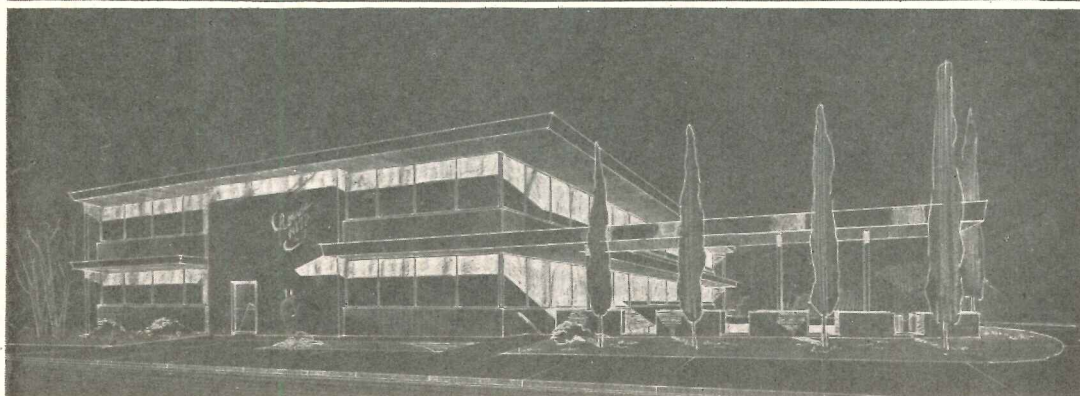
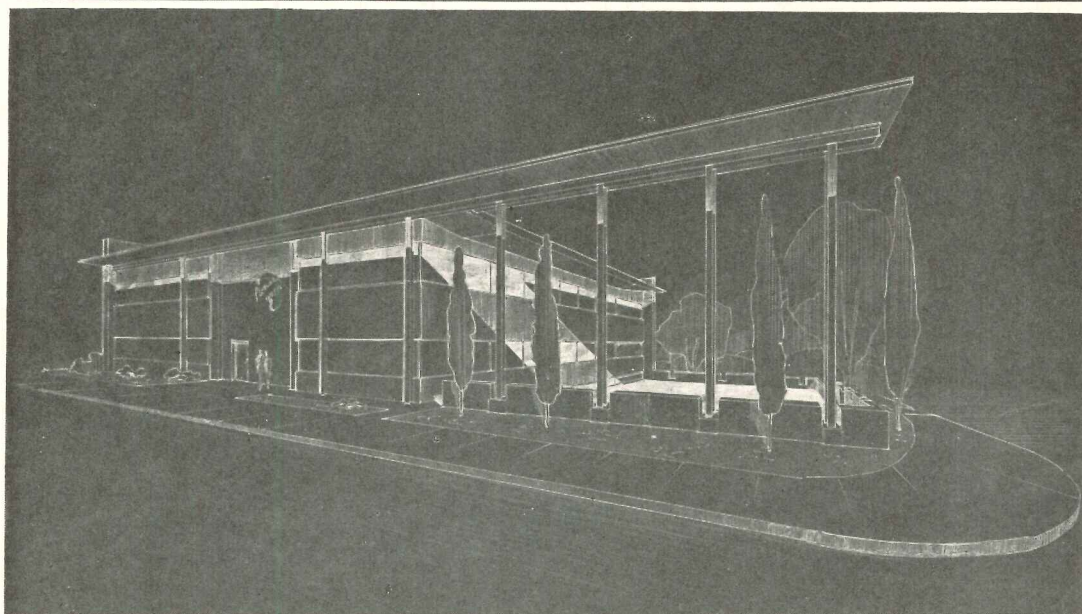
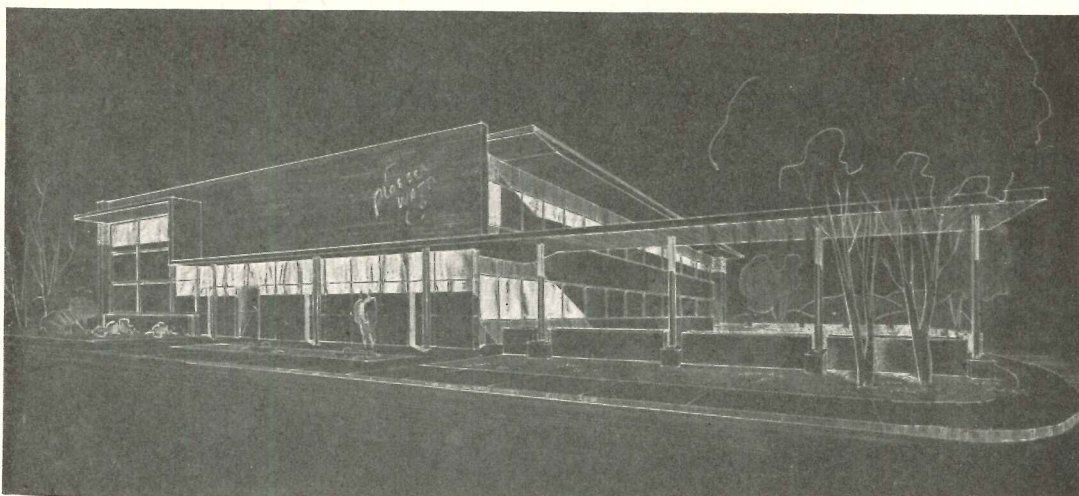
*Several materials are used for the exterior walls: concrete painted pale green, Arizona mint stone, fieldstone, and architect designed large size faience tile. The extensive use of tropical planting emphasizes the California character of the store's appearance*



## AN INSURANCE BUILDING IN MISSOURI

*The Ploeser-Watts Co., Clayton, Mo.*

*Hari Van Hoefen, Architect*



*The architect's preliminary design sketches*

# THE PLOESER-WATTS BUILDING

*Hari Van Hoefen, Architect*

THE OWNERS of this office building, the Marine Underwriters Corporation, were located for years in downtown St. Louis, moved to suburban Clayton five years ago, last year decided to build their own quarters there. To help with the overhead they built additional rental space which is now occupied by four tenants who likewise moved from downtown St. Louis.

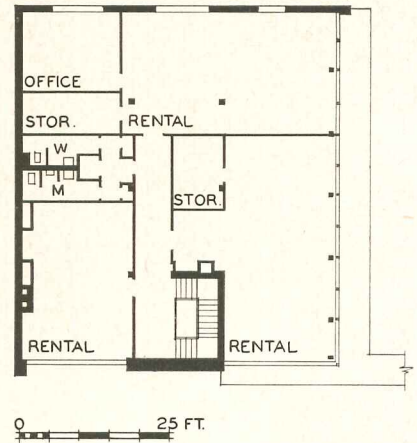
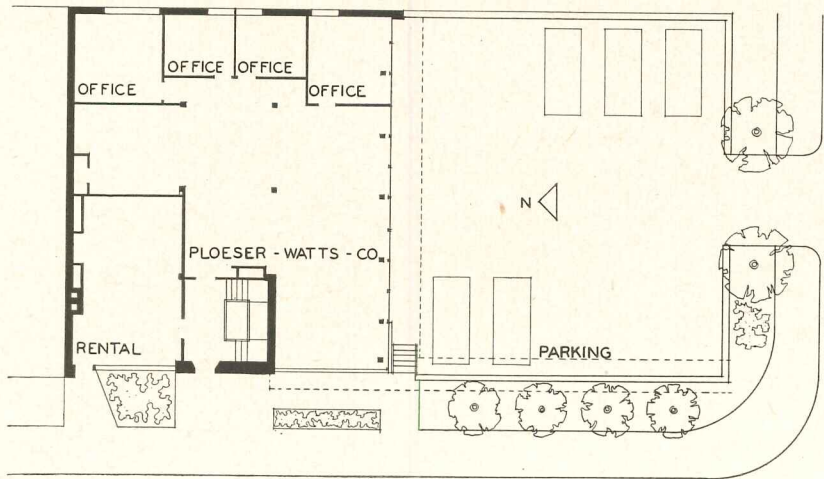
So that the building could open southward with large glass areas the structure was located at the northern end of the plot. Such a scheme seemed natural for the other reason that it then became possible to depress

slightly the southern portion of the plot so that it would conform to the level of the side street and thus provide level automobile entrance and parking. The canopy ties parking and building together — gives the latter a sense of protection from the main street above it — houses flush floodlights for the parked cars.

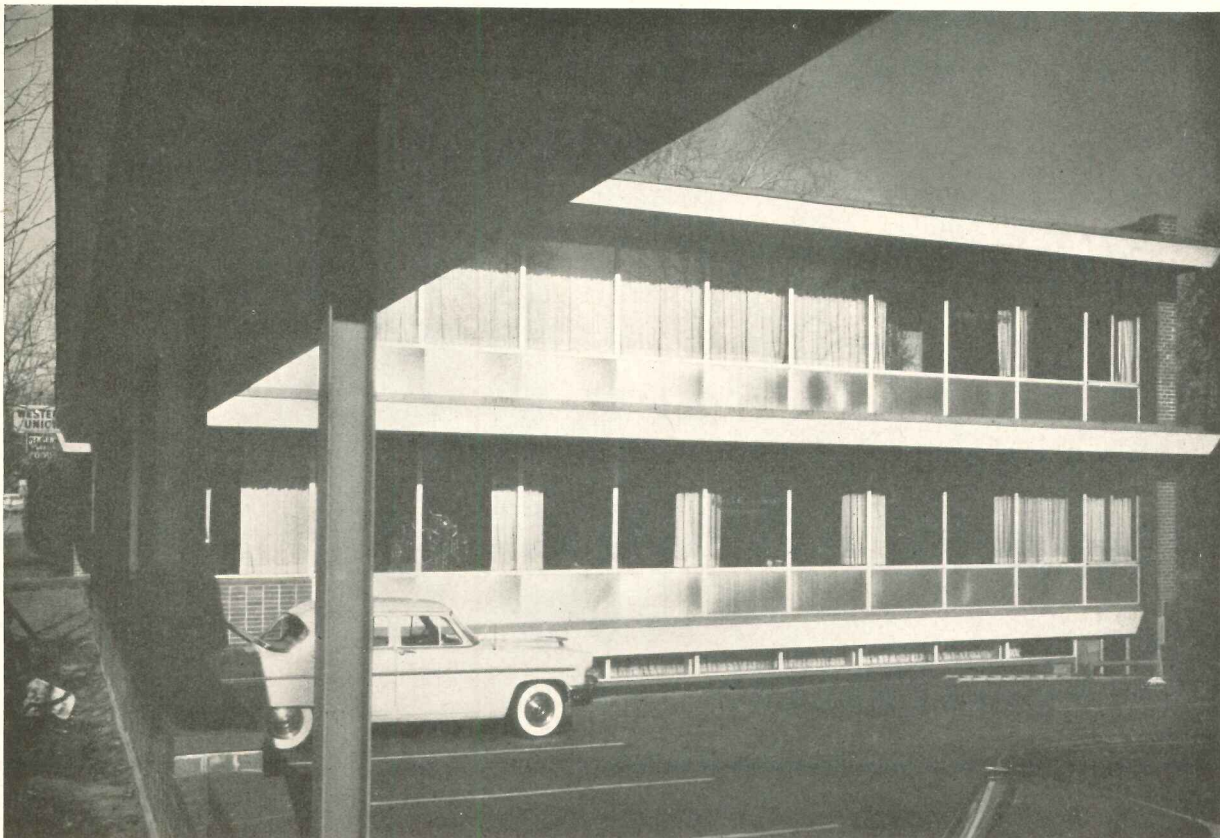
The structure is steel frame fireproofed with vermiculite plaster on metal lath; floors and roofs are precast slabs with asphalt tile floor finish and acoustical tile ceiling finish; all interior partitions are 2-in. solid plaster; sidewalks are green cement.

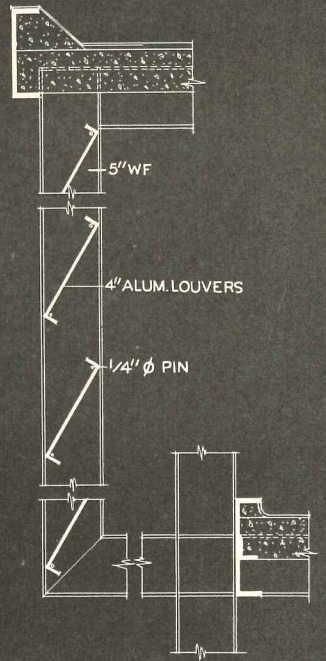
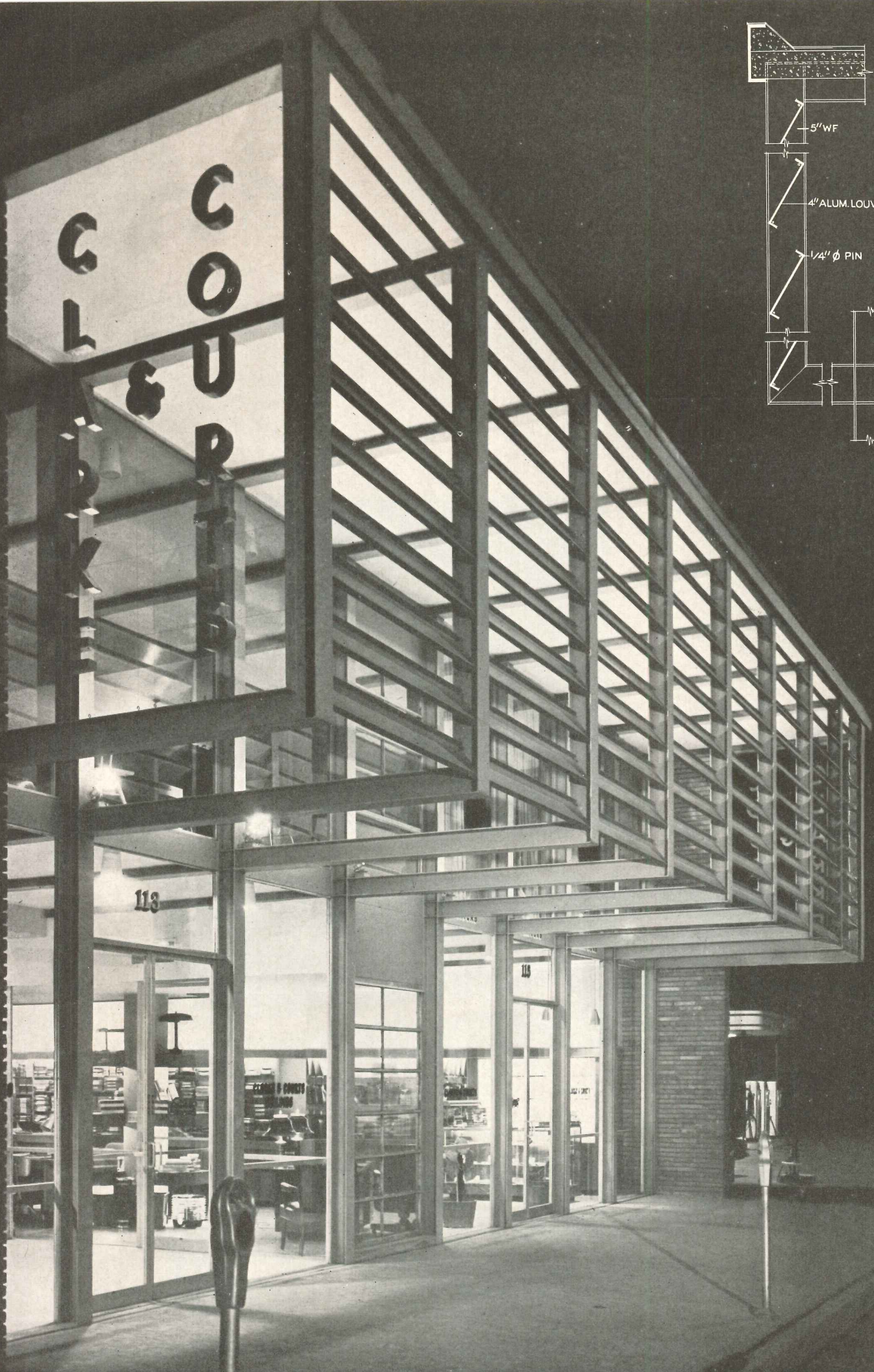


Piaget Studio



The frames for the exterior sealed double-glass units are extruded aluminum double hung window sections, shop fabricated. Spacing the glass frames, ducts, and lighting fixtures on a 5-ft module throughout the building creates a pleasing sense of order







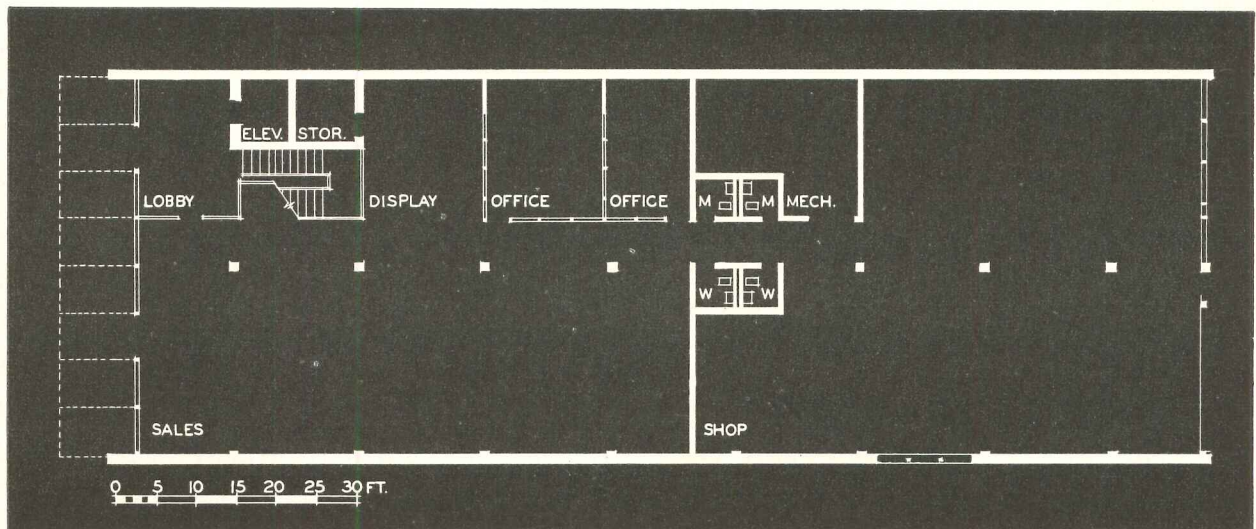
Ulric Meisel—Dallas

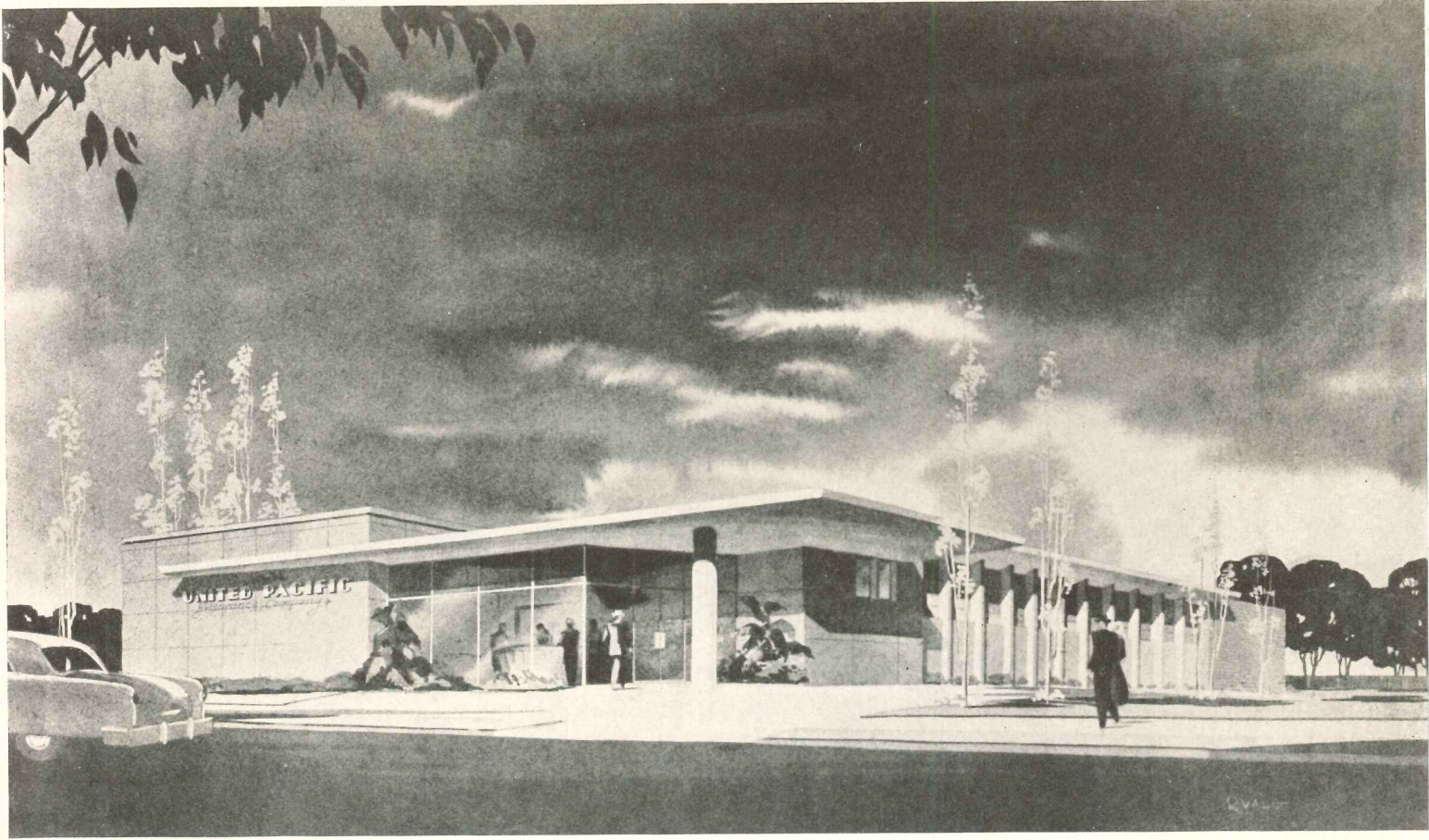
## CLARKE & COURTS BUILDING, HARLINGEN, TEXAS

*Cocke, Bowman & York, Architects*

**I**N TEXAS, the blazing southern sun must (as the architects put it) be "broken down" — and this building's most intriguing feature stems from that need. It consists of aluminum louvers in a cantilevered framework which serves also as construction for indirect sidewalk lighting. The 6-ft. spacing of the verticals is repeated in

the façade proper, resulting in an interesting interplay of glass versus void versus louver in three dimensions. Both visitors to and tenants of the offices above pass through a glass enclosed lobby and stair, thus view the owner's tempting display of office equipment each time they enter and leave.





## UNITED PACIFIC INSURANCE CO., LOS ANGELES

*Paul R. Williams, Architect*

*Samuel Kaye, Mechanical Engineer*

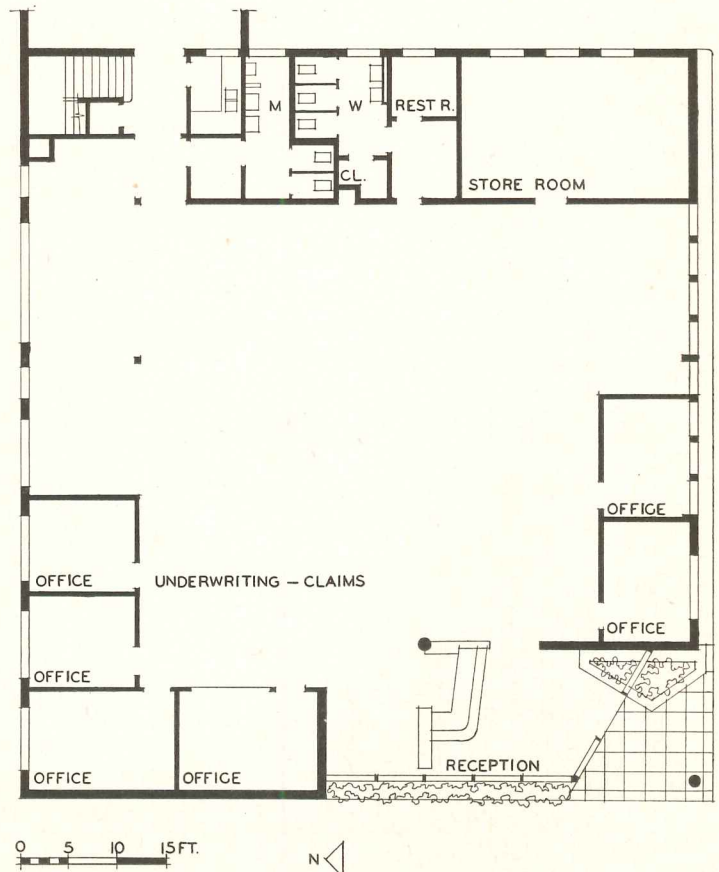
*Morris K. Goldsmith, Structural Engineer*

*George O. Chapman, General Contractor*

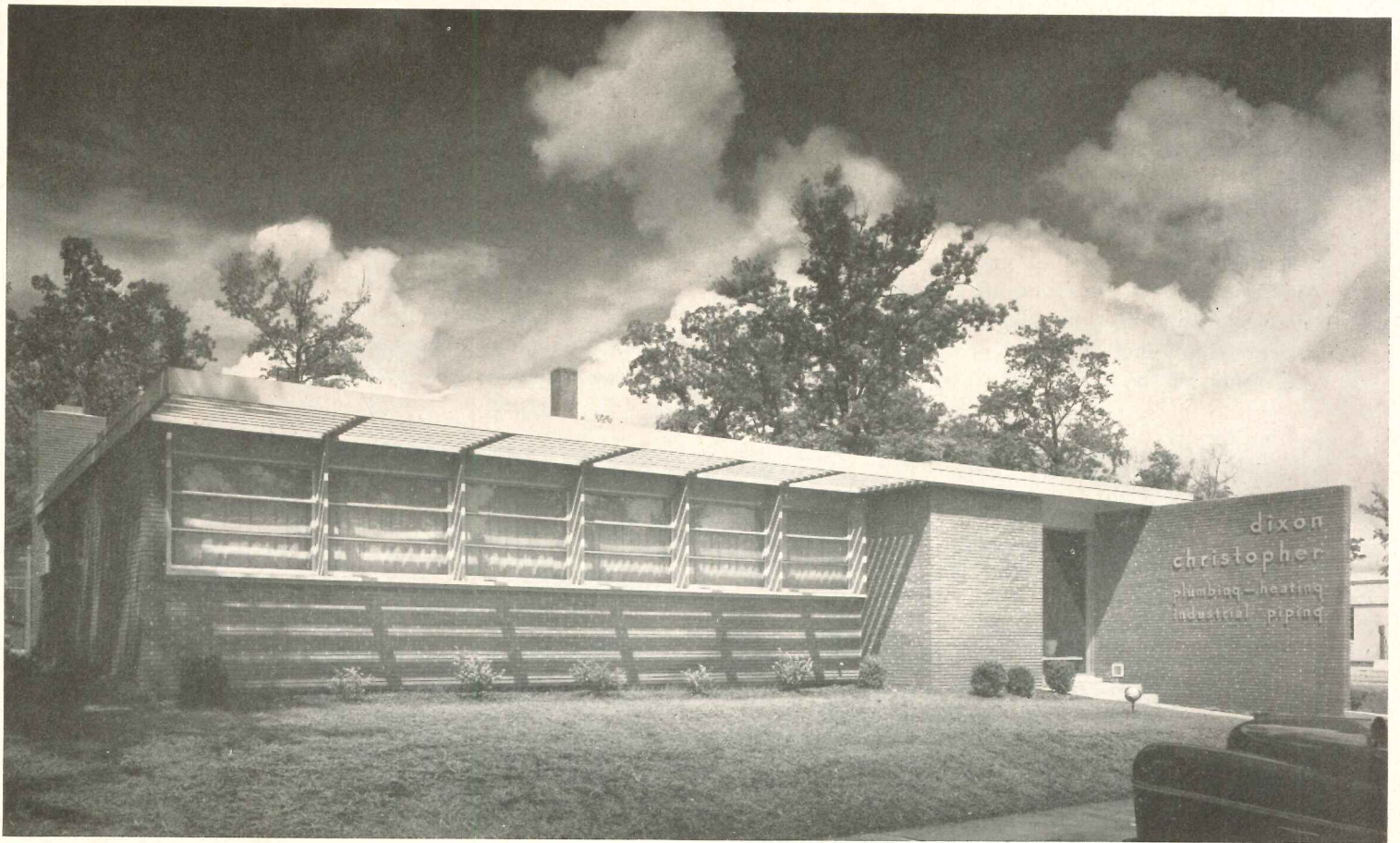
**T**HIS ONE-STORY and mezzanine office building provides certain private offices for regular use by executives and others for intermittent use by salesmen. The large general office space opens pleasantly into the reception lobby, a low railing serving as separation for the two. The mezzanine at the rear contains an employee's lounge and lunch room; opens through sliding doors to a sun deck.

Exterior design feature is the horizontal canopy slab at the entrance, which continues on into the all glass lobby to form its ceiling. The exterior walls are brick painted a soft gray green.

All interiors were designed by the architect; private offices are panelled in oak veneer; the general office walls are brick painted tan; plaster plaques on the rear wall were executed by Sylvestri Studios.







## OFFICE FOR A PLUMBING & HEATING CONTRACTOR

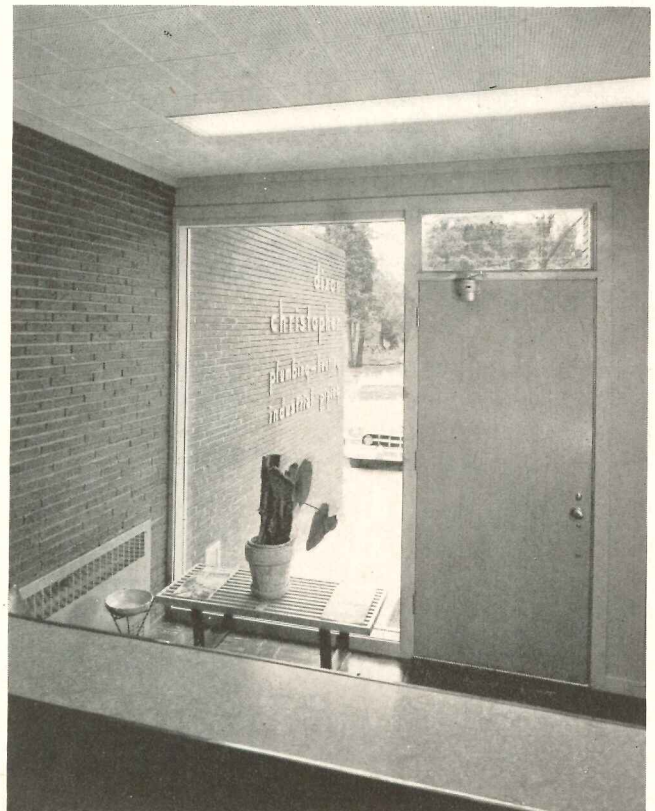
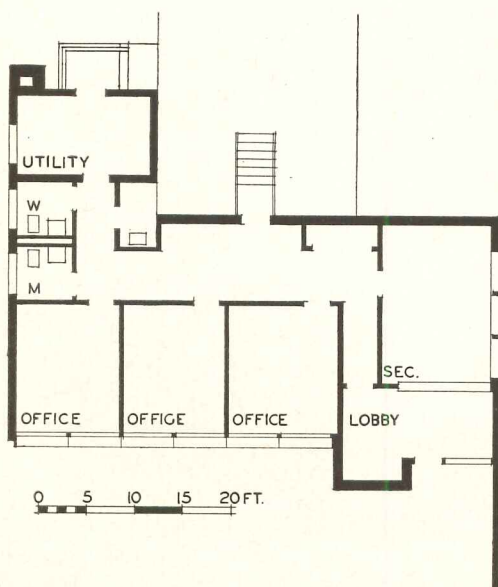
*Dixon-Christopher Office, Greensboro, N. C.*

*Edward Loewenstein, Architect*

**B**UILT FOR A FIRM which engages in engineering and contracting, this attractive office building is located in a rapidly growing commercial area formerly an army base. The old warehouse at the rear has recently been replaced by storage and work sheds.

The wood frame and brick structure contains interior partitions of striated plywood or pine planks on studs; asphalt tile floors; acoustical tile ceilings.

The sunshade at the southwest office windows has proved effective in reducing the air conditioning load.



Joseph W. Molitor

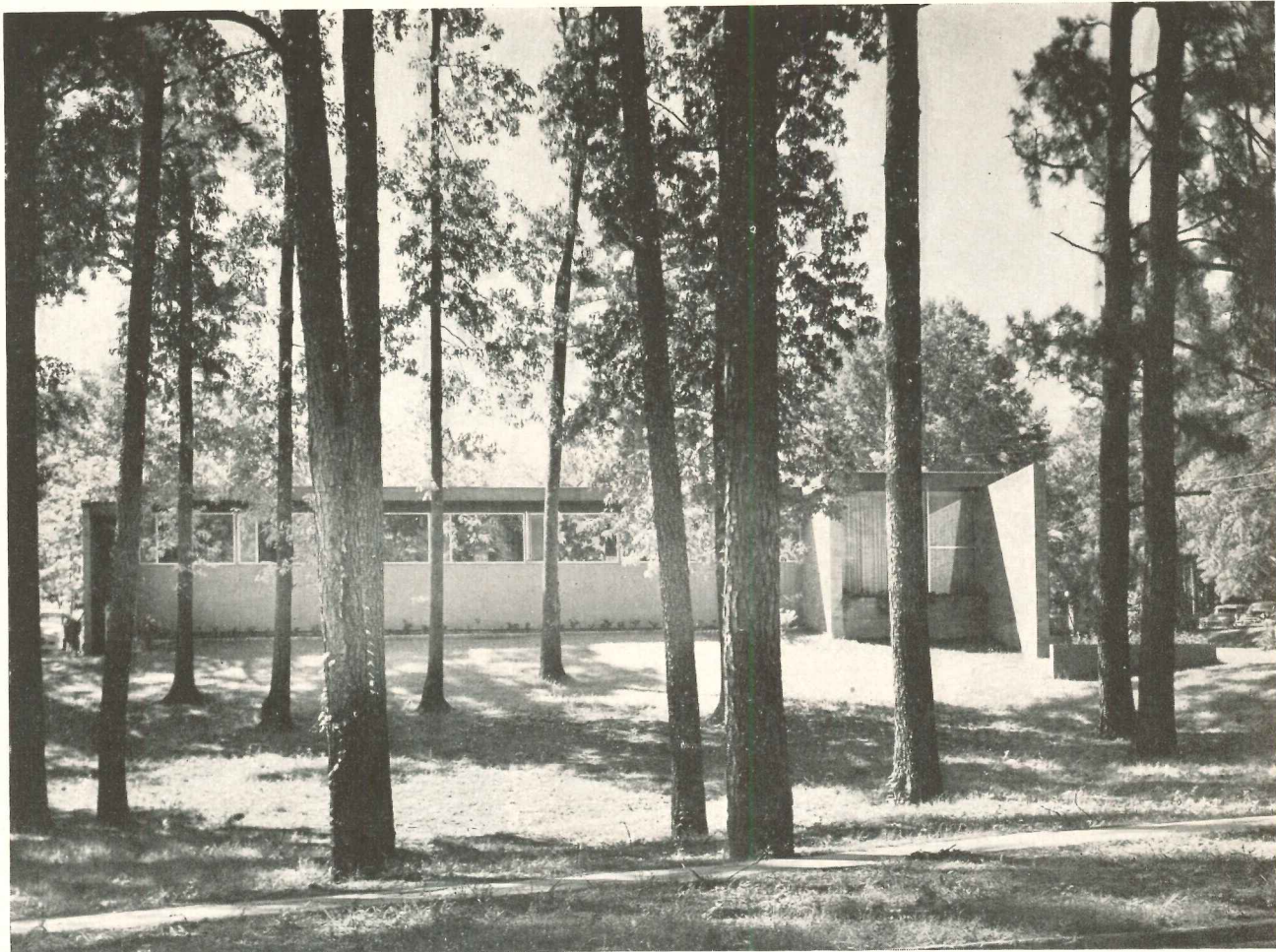
# OPTOMETRIC AND DENTAL CLINIC IN SHREVEPORT

*Samuel G. & William B. Wiener, Architects*  
*W. A. McMichael Construction Co., Builders*

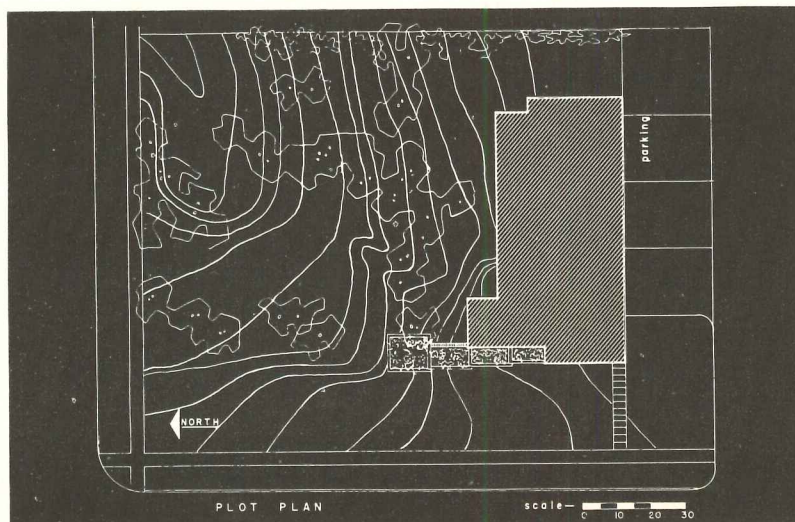
**T**HIS ATTRACTIVE CLINIC was designed to meet the needs of the owner-optometrist and to provide in addition a dental suite and lab for rental. The sloping corner lot influenced the plan of the structure, which is oriented north and south with dental suite, lab and waiting room on the north (light) side, and with optical

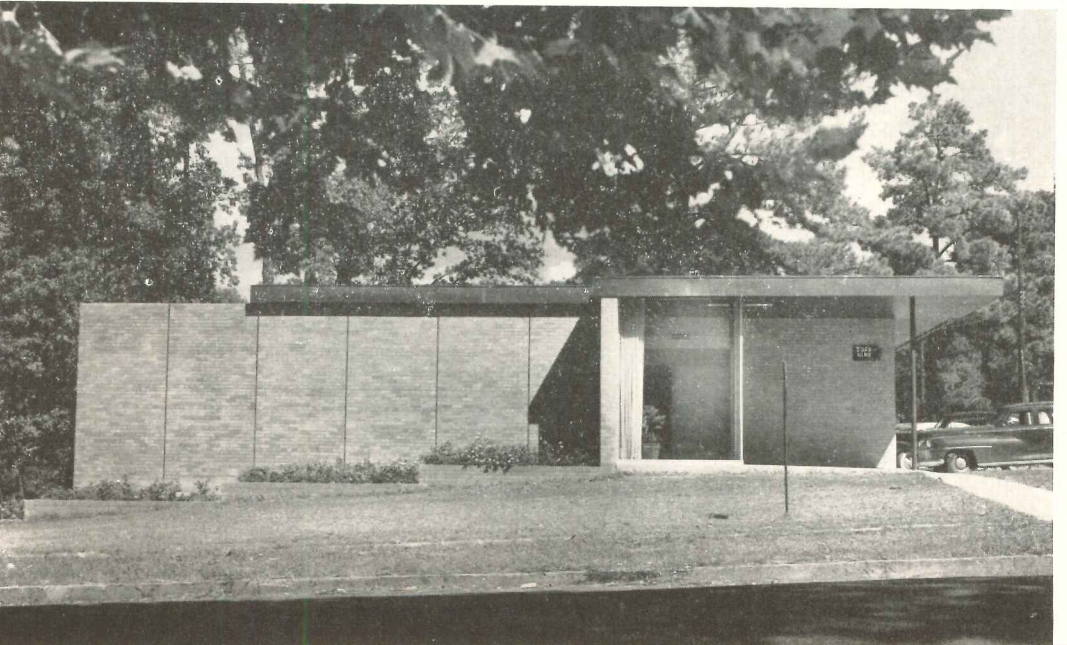
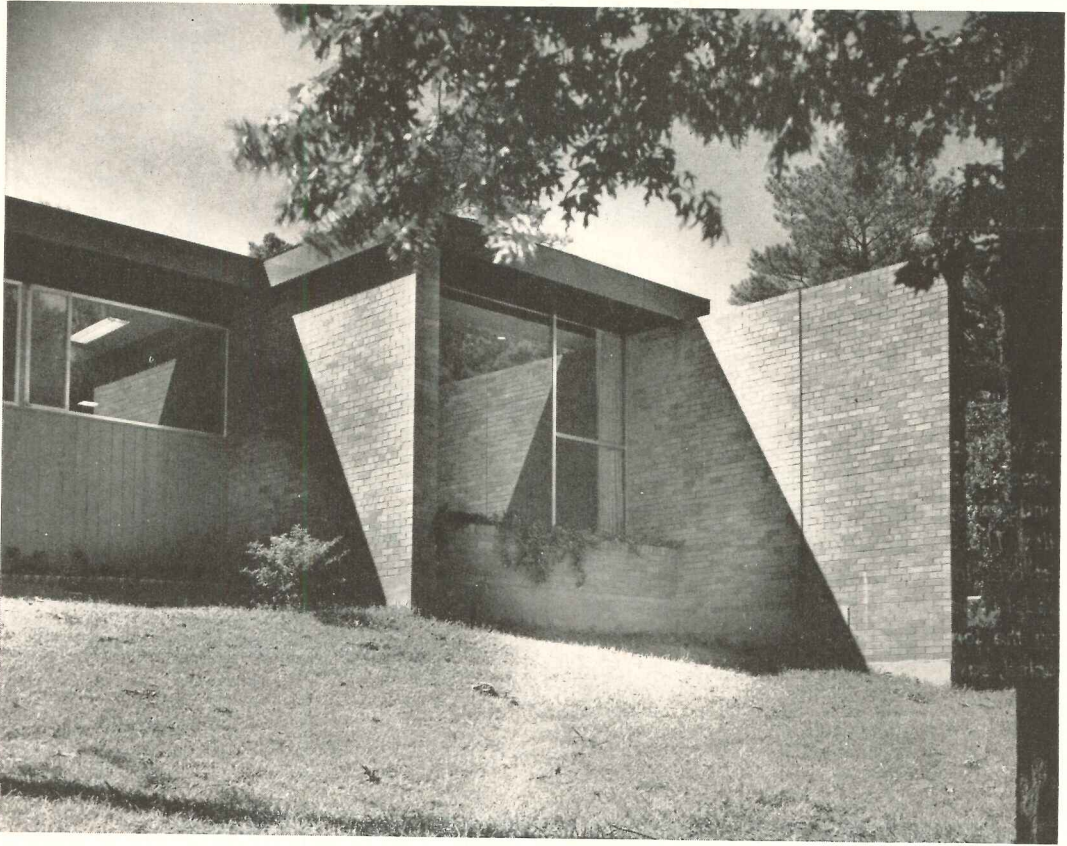
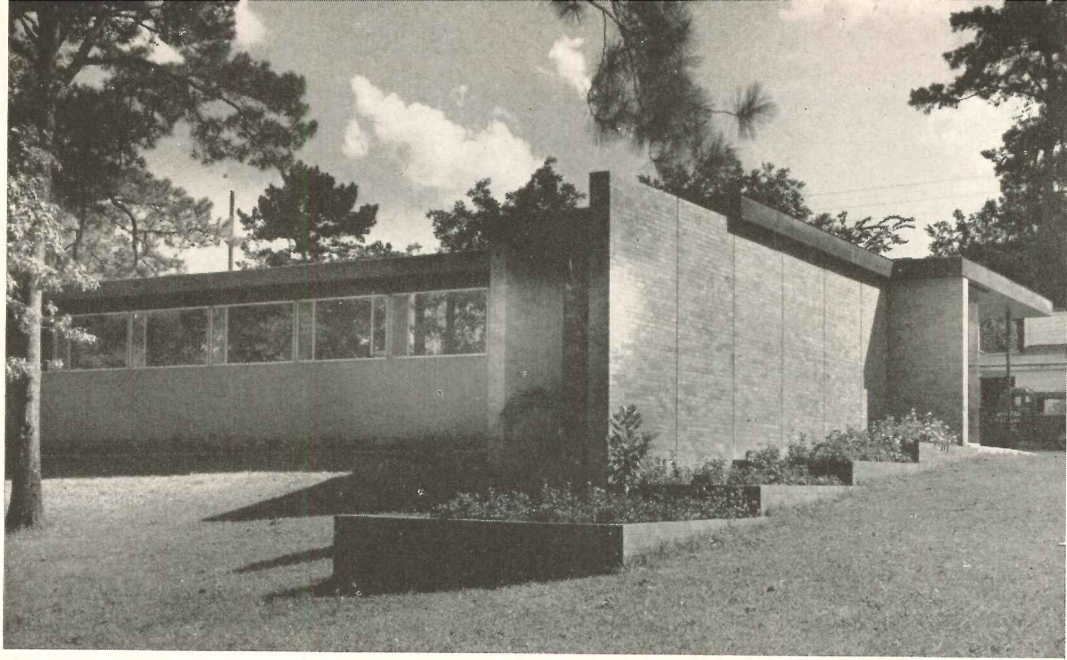
rooms on the south (dark) side. Easy access to parking by way of the side alley was gained by placing the clinic on the high north portion of the lot. The exterior walls are brick or vertical siding; note especially the skillful handling of brickwork expansion joints at the terraced portion of the building.

SMALL PROFESSIONAL BUILDINGS



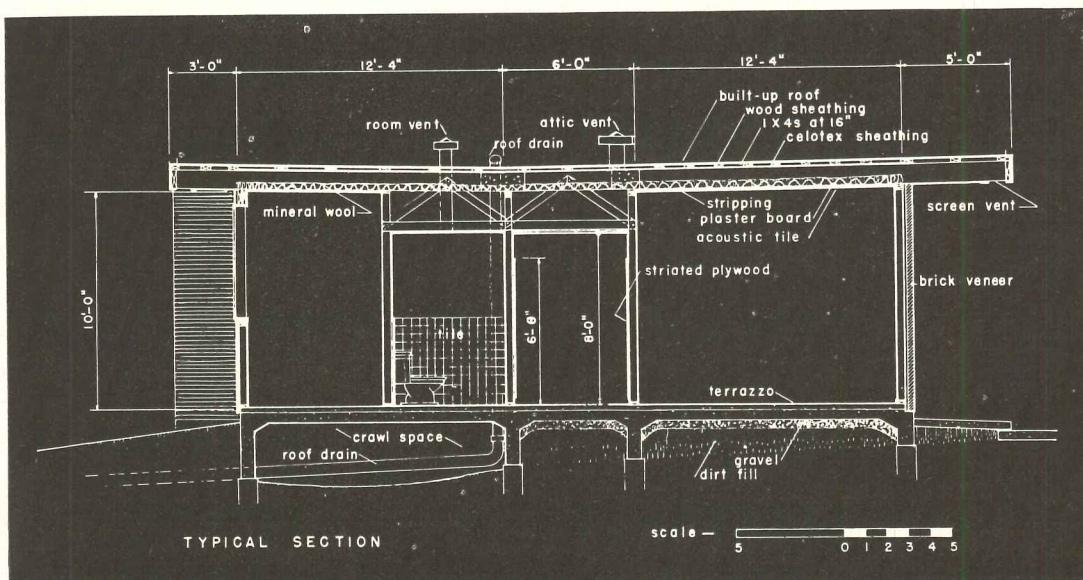
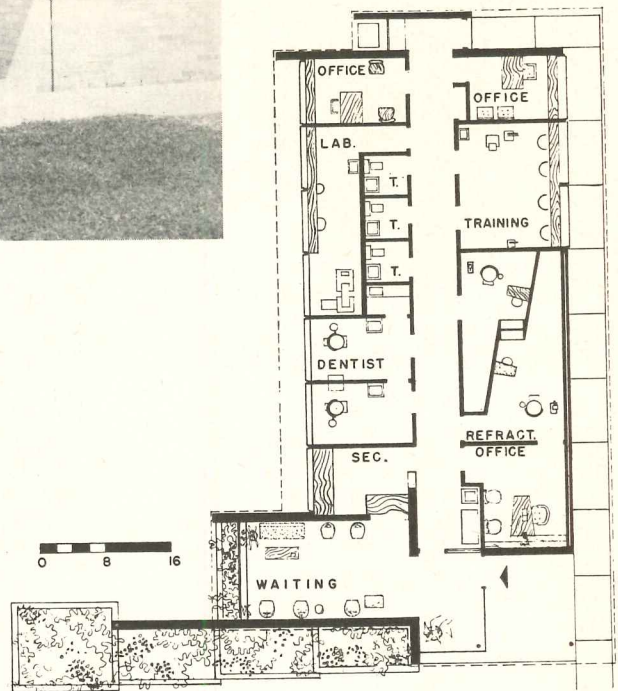
Clarence John Laughlin







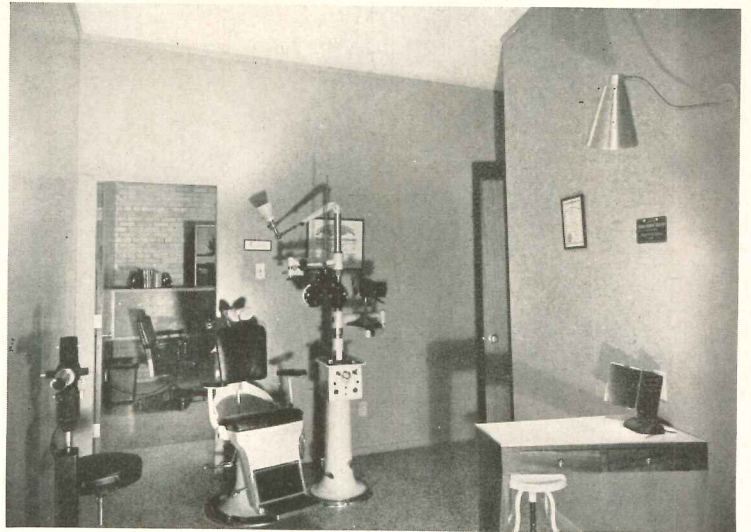
The posts which support the wood roof beams are 3-in. square steel tubes spaced 8 ft. on centers which rest on a foundation system of concrete grade beams on concrete piles. The unique and economical system of stud and joist bridging consists of stock 1½-in. plastering channels let into the wood and nailed. By placing and polishing the terrazzo floor before the superstructure was erected, savings in time and money were achieved

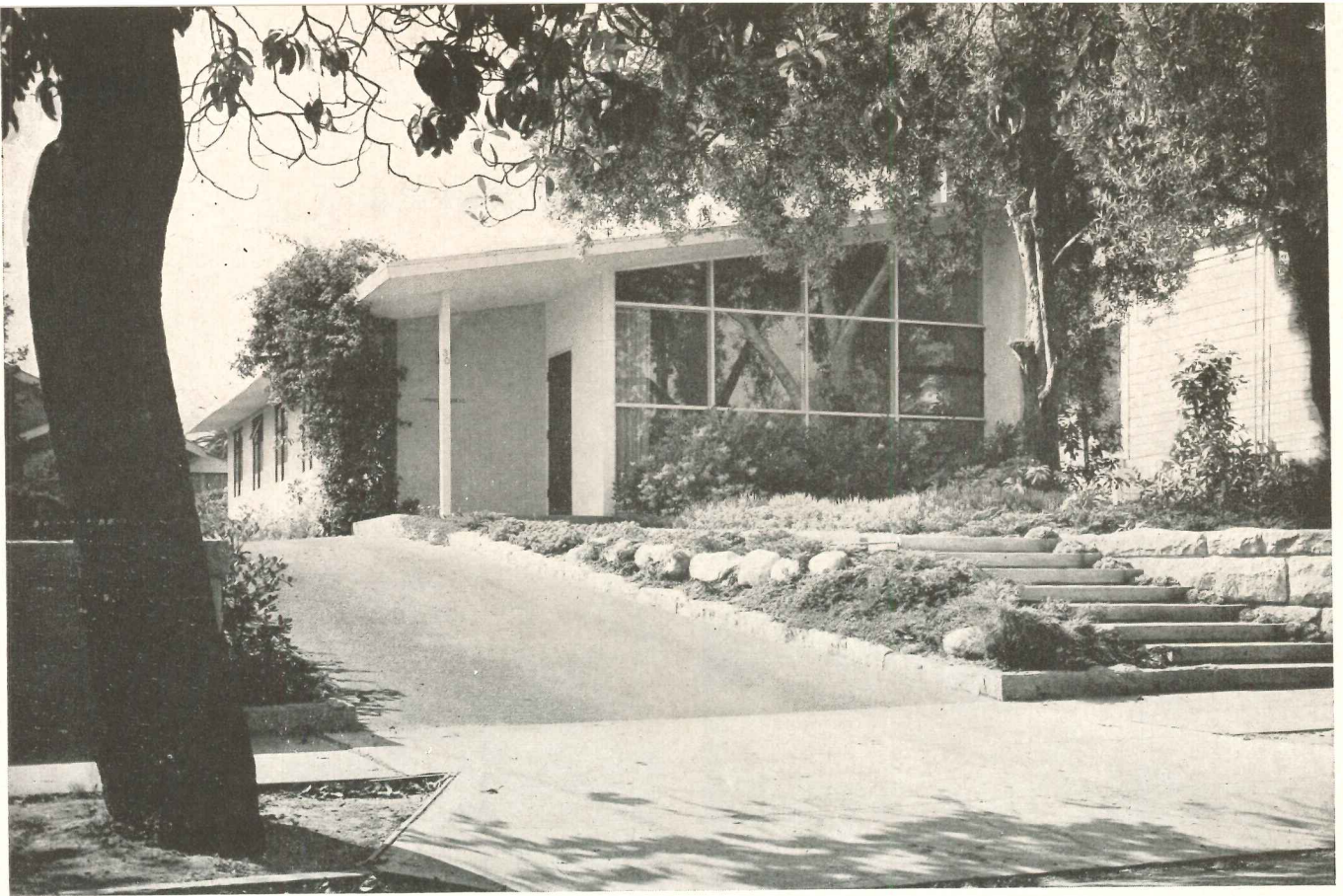


## SMALL PROFESSIONAL BUILDINGS

*Interior finishes: ceilings are 12-in. square acoustical tile cemented on plasterboard; walls are striated plywood (natural or painted) and mahogany plywood; floors are terrazzo throughout; walls of toilets are painted fir plywood or ceramic tile*

Clarence John Laughlin





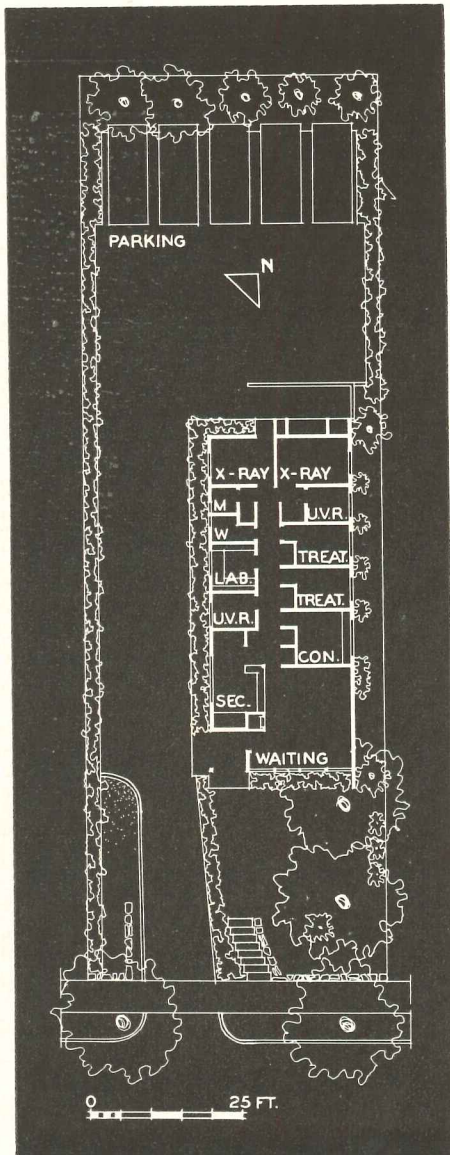
Fred R. Doppnich

## CALIFORNIA DOCTOR'S OFFICE

*Lulah Maria Riggs, Architect*

*Arvin B. Shaw, III, Office Director*

*Clayton Wesley Cook, Contractor*



THE OWNER of this building, a dermatologist, found it necessary to build new quarters within sixty days in order to carry on his practice, since he had been forced to vacate his former space on short notice. The resulting building is a pleasant one with the shaded glass wall of the waiting room opening out to the south. The scheme provides for simultaneous multi-patient treatment, common practice in the dermatological field, and includes two X-ray treatment rooms, two ultra-violet rooms, a lab, secretarial space, and office.

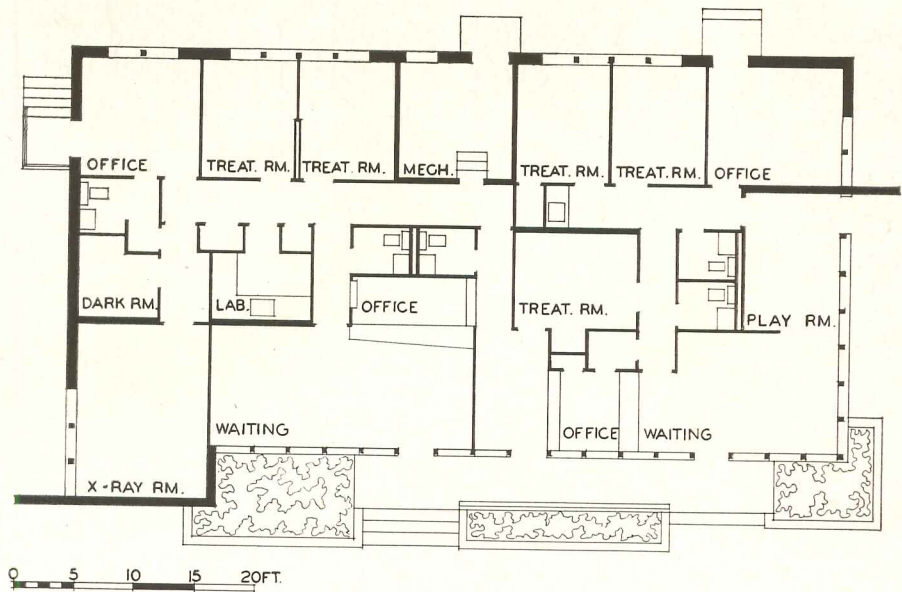
Built on a reinforced concrete foundation, the structure is 2 by 4 studs with painted stucco exterior finish and integrally colored interior plaster finish. The roof is red tile in accordance with zoning requirements for this part of Santa Barbara.

# FLEXIBILITY FOR POSSIBLE FUTURE CONVERSION

*Pearson, Tittle & Narrows, Architects*

*Mosley & Yarborough, Engineers*

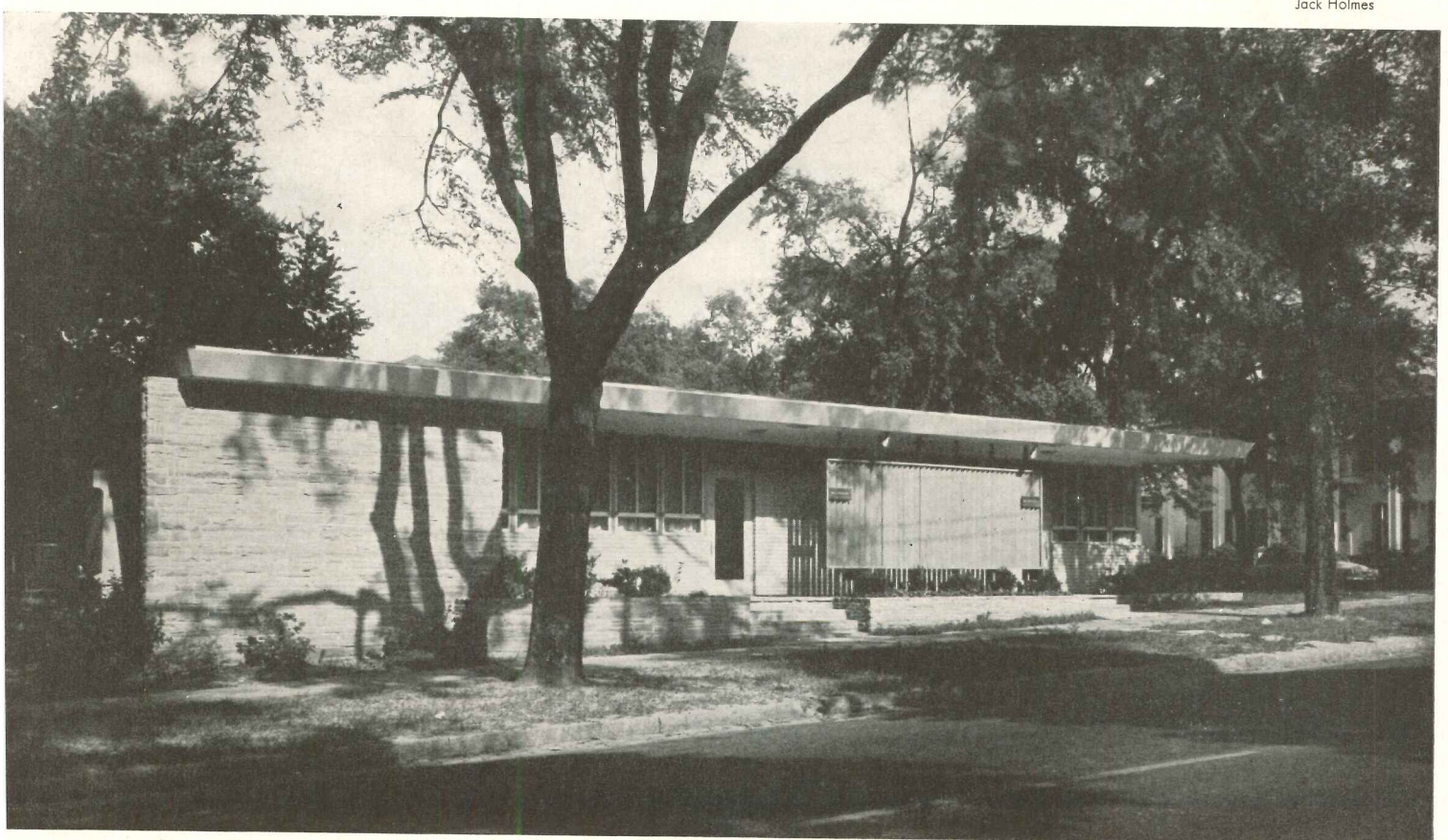
*Bear Bros. Construction Co., Builders*

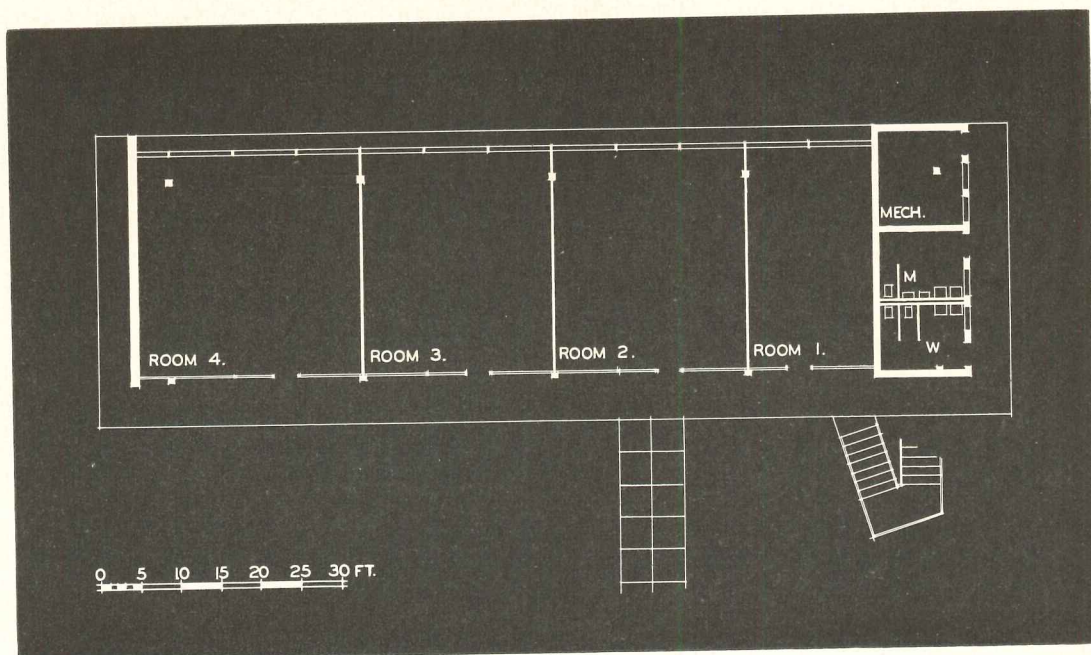


**T**HIS building, which received an award at the A.I.A. Gulf States Regional Convention in the fall of 1951, is notable for its two-part yet flexible plan. The owner, a pediatrician, wanted a building for himself and one other doctor, so arranged that it could easily be converted either into his own clinic or disposed for other types of business offices. This was accomplished by

providing in-line corridors for both suites, separated only by a storage closet and lab counter which can easily be removed to make the corridor one. All partitions are non-load-bearing, thus providing maximum flexibility. The owner's suite features a children's waiting room opening to an outdoor play terrace. Due to the small lot, no public parking was required.

Jack Holmes



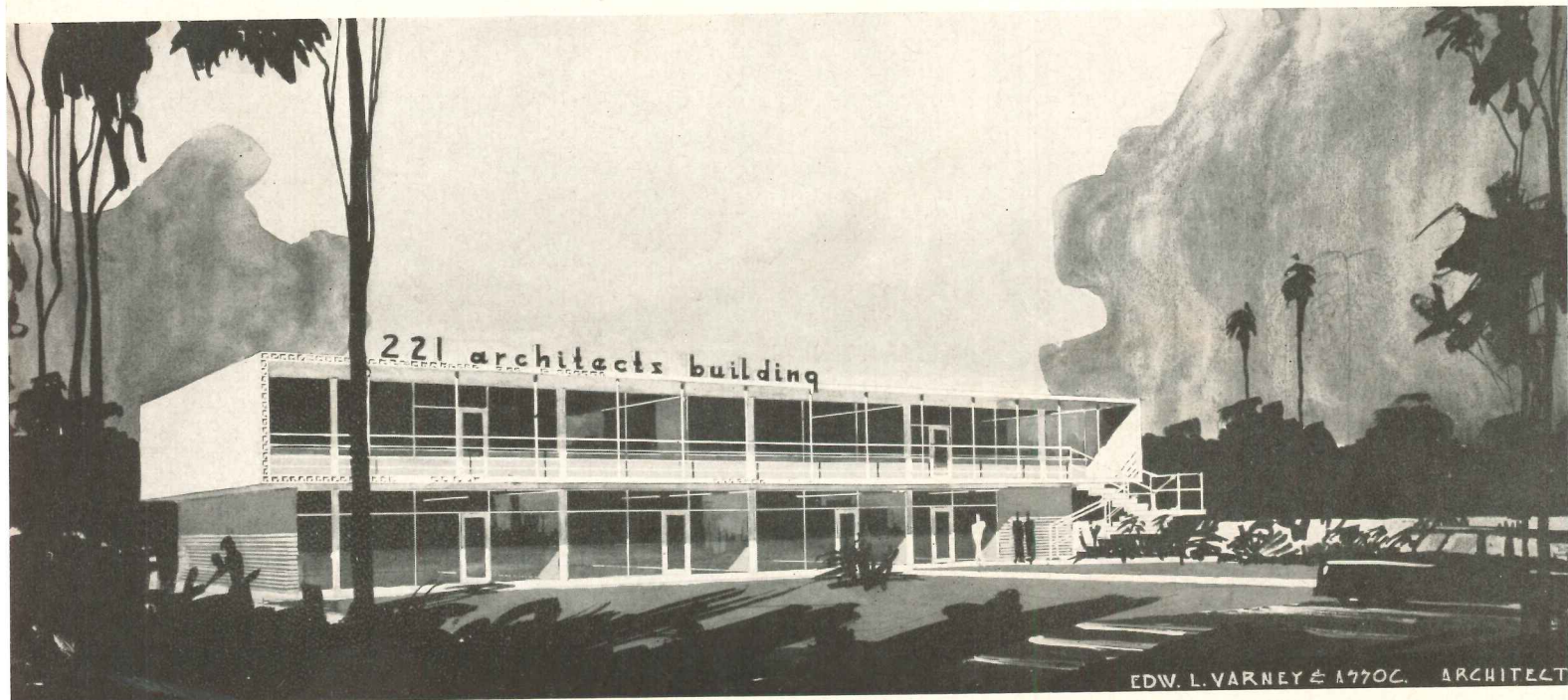


## PROPOSED ARCHITECTS' BUILDING IN PHOENIX

*Edward L. Varney Associates, Architects & Engineers*

WITH FIVE ARCHITECTS' OFFICES within two blocks, this enterprising practitioner envisioned a building center which might house not only those offices, but also engineers, manufacturers' agents, materials showrooms, and others connected with the building industry. The plan and rendering show the design for this projected structure, which is planned to be built following the

lift-slab technique. Circumstances forced postponement of that scheme in favor of proceeding at once with space for the architect's own offices, which will be housed in a one-story steel-framed structure to be enlarged, as conditions demand, to a two-story building. Later, the original lift-slab building will be erected in front of Varney's office, with a planted patio between.





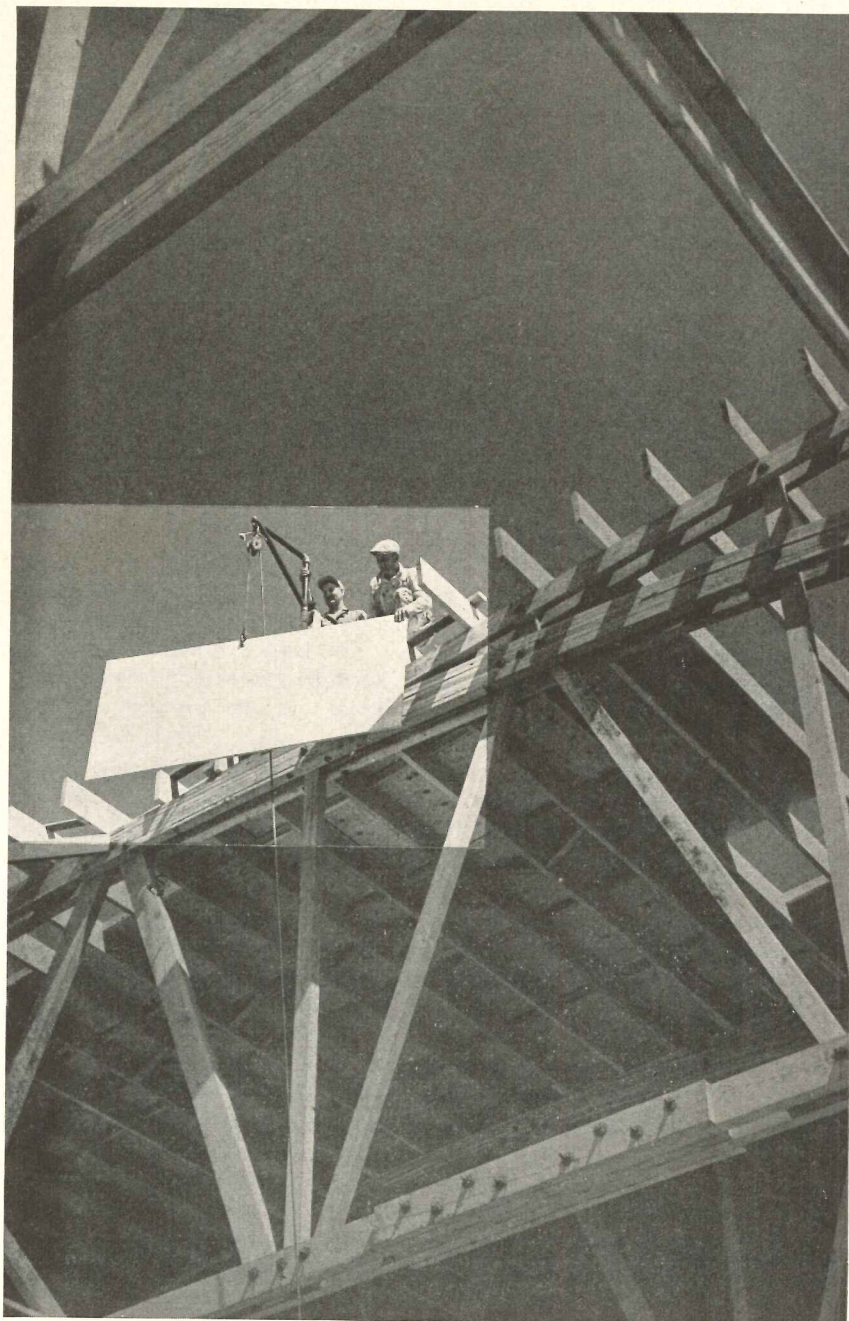
Part 1 | Grades, Uses and  
Methods of Application

## STRUCTURAL APPLICATIONS OF PLYWOOD

By Frederick F. Wangaard,

Professor of Forest Products, Yale University

Plywood today is a very familiar structural building material, but engineering developments in recent years promise to make it even more versatile. For example, recent tests have furnished accurate data for the design of nailed plywood panels in roofs and floors to resist wind and earthquake loads. This two-part article follows a previous one by the author on "Interior Applications of Plywood." (Nov., 1951)



Douglas Fir Plywood Assn.

**S**TRUCTURAL PLYWOOD is a relatively new building material. Although the forerunners of structural plywood preceded it by at least one hundred years, the development of this product as we know it today dates clearly from the Douglas fir panels that were first introduced at the Lewis and Clark Exposition held in 1905.

Those early plywood panels were utilized almost exclusively in the pro-

\* Numbers indicate references in the bibliography at the end of the article.

duction of doors. Slowly at first, and then with increasing momentum, the plywood industry grew and the uses of plywood expanded until billions of square feet are now being produced annually for a thousand uses.

The early glues were almost completely lacking in water resistance. In 1923, however, moderately moisture-resistant soybean glues were developed, and by 1927 Douglas fir plywood glued with this adhesive was finding increasing application as a structural material for interior use.

Even with this limitation, however, its place in house construction had not yet been realized, as witnessed by the publication in 1929 of an authoritative report<sup>1\*</sup> on frame wall construction which failed to mention plywood. Rapid developments in construction in the years immediately following led to the publication in 1934 of a supplementary report dealing with plywood as a structural covering for frame walls.<sup>2</sup>

The introduction in the mid 1930's of waterproof thermosetting phenolic resin adhesives led rapidly to the production

# STRUCTURAL PLYWOOD

Grade	Face	Back	Inner Plies *	Additional Limitation
A-A, Int. (Sound 2 Sides, Interior)	A (Sound)	A (Sound)	D (Utility)	Sanded two sides
A-B, Int. (Sound/Solid, Interior)	A (Sound)	B (Solid)	D (Utility)	"
A-D, Int. (Sound 1 Side, Interior)	A (Sound)	D (Utility)	D (Utility)	"
B-D, Int. (Solid 1 Side, Interior)	B (Solid)	D (Utility)	D (Utility)	"
C-D, Int. (Sheathing, Interior)	C (Ext. Back)	D (Utility)	D (Utility)	Unsanded grade; no belt sanding
B-B, Int. (Concrete Form, Interior)	B (Solid)	B (Solid)	C (Ext. Back) (All inner plies)	Edge-sealed and, unless otherwise specified, mill-oiled. Sanded two sides

\* Except center ply of panels with 5 or more plies.

Grade	Face	Back	Inner Plies	Additional Limitation
A-A, Ext. (Sound 2 Sides, Exterior)	A (Sound)	A (Sound)	C (Ext. Back)	Sanded two sides
A-B, Ext. (Sound/Solid, Exterior)	A (Sound)	B (Solid)	C (Ext. Back)	"
A-C, Ext. (Sound 1 Side, Exterior)	A (Sound)	C (Ext. Back)	C (Ext. Back)	"
B-C, Ext. (Solid 1 Side, Exterior)	B (Solid)	C (Ext. Back)	C (Ext. Back)	"
C-C, Ext. (Sheathing, Exterior)	C (Ext. Back)	C (Ext. Back)	C (Ext. Back)	Unsanded grade; no belt sanding
B-B, Ext. (Concrete Form, Exterior)	B (Solid)	B (Solid)	C (Ext. Back)	Edge-sealed and, unless otherwise specified, mill-oiled. Sanded two sides

of exterior plywood and opened the way to innumerable new uses for this versatile structural material.

Engineering developments, too, contributed to the phenomenal rise in the acceptance and use of plywood. In 1940, Newlin at the Forest Products Laboratory laid a groundwork for design methods applicable to plywood that embodied the stressed-skin principle.<sup>3</sup> Today Douglas fir plywood has come to be as well known as the lumber product of this species and is used as paneling, flooring, sheathing, exterior siding, concrete forms, and for hundreds of other purposes. The trend toward increasing use of Douglas fir plywood is clearly shown by the production statistics of the industry for the period 1925-1951 as plotted in Fig 1.

## Types and Grades of Plywood

Plywood types and grades are specified in Commercial Standards covering both Douglas fir and hardwood plywoods.<sup>4</sup> Inasmuch as most structural

plywood is Douglas fir, the following discussion will be limited to that species.

Two types of Douglas fir plywood are recognized in the Commercial Standard. These are the interior and exterior types. Interior plywood is usually bonded with soybean glue and is intended for permanent interior service but is also capable of resisting temporary weather exposure such as that encountered during construction. Exterior plywood is made with a hot-press phenolic resin adhesive and is designed to withstand permanent exposure to the weather.

Douglas fir plywood grades are based upon the quality of veneer employed in the face and back plies. Four veneer grades — A, B, C, and D — are recognized. These grades were described in the previous article. The quality of veneer required for each of the six grades of interior type plywood is indicated in Table 1. Similar requirements for the six grades of exterior type plywood are presented in Table 2.

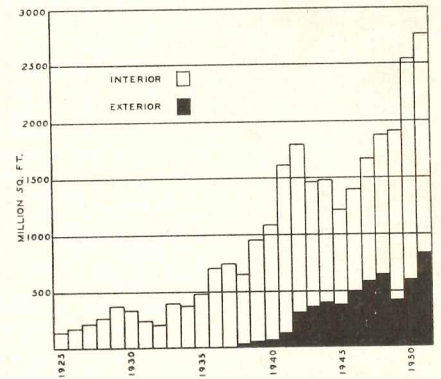
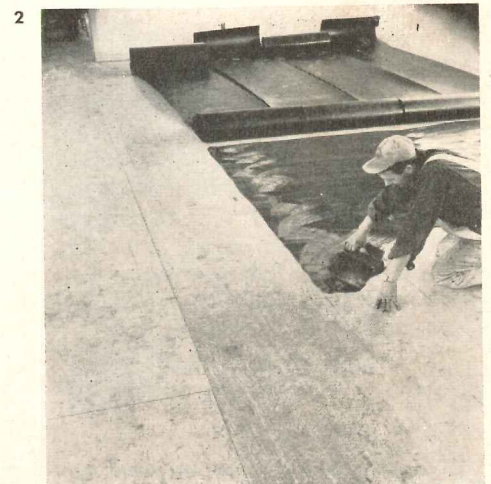
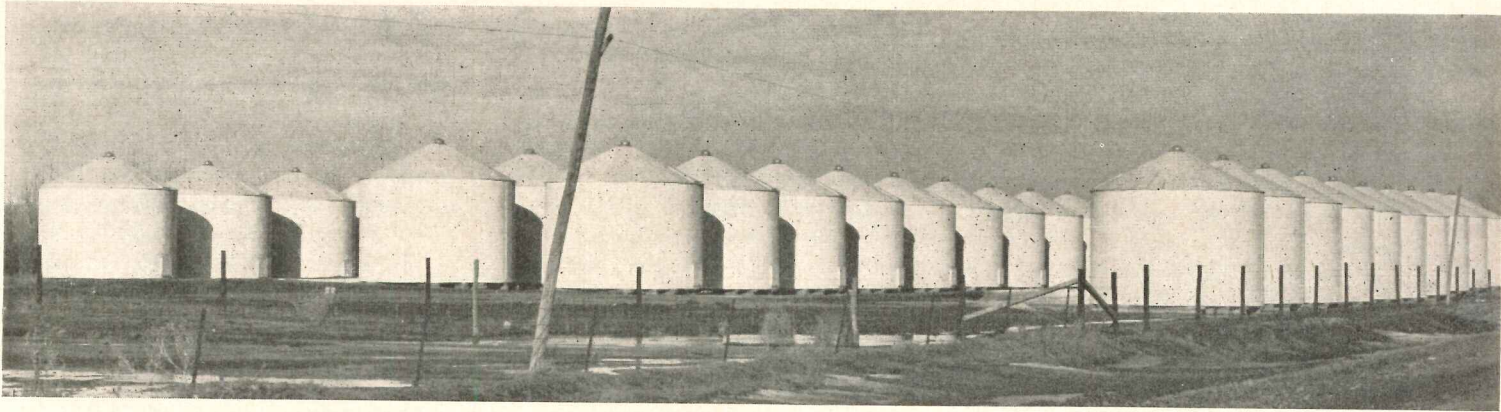


Fig. 1: Production of Douglas fir plywood, 1925-1951. Development of plastic adhesives in the mid 1930's and the introduction of stressed-skin panels for prefabricated structures in 1940 greatly stimulated the usage of plywood for exterior applications





Prefabricated plywood grain bins in South Dakota

All photos Douglas Fir Plywood Assn.

The *A-A, A-B, A-D (Plypanel,)* and *B-D (Plybase)* grades of interior type plywood are most commonly employed as interior wall coverings, ceilings, partitions, and as backing for floor coverings. These grades were discussed in the article previously referred to. More important from the structural standpoint are the remaining grades: sheathing (Plyscord) and concrete form panel (Plyform).

*Interior grade C-D plywood, known as Plyscord,* is an unsanded panel supplied in  $\frac{5}{16}$ ,  $\frac{3}{8}$ ,  $\frac{1}{2}$ , and  $\frac{5}{8}$ -in. thicknesses and intended primarily for use as wall and roof sheathing and as subflooring. The defects permitted in this grade do not affect its serviceability for these uses. This grade frequently sees dual service, first as concrete form material for basement walls, with subsequent re-use as subflooring in the same structure.

*Interior grade B-B plywood (Plyform)* is a multiple re-use concrete form panel. Face plies are solid, although

tight defects are permitted in this grade. The panels are sanded on both surfaces to permit the forming of smooth paintable concrete surfaces. This grade is edge sealed (green sealer for identification) and mill-oiled, unless otherwise specified. When properly maintained by re-oiling and suitable storage, as many as 12-15 re-uses of these plywood panels may be obtained.

*Exterior grades A-A and A-B* are available for uses in which the appearance of both face and back of the panels is critical. In both grades the face ply is sound and free of knots although neat patches are accepted. This is also true of the back ply of the A-A grade, whereas in the A-B grade the back ply, while paintable, may reveal minor surface defects through the paint coating unless special care is taken in finishing. Both face and back are sanded.

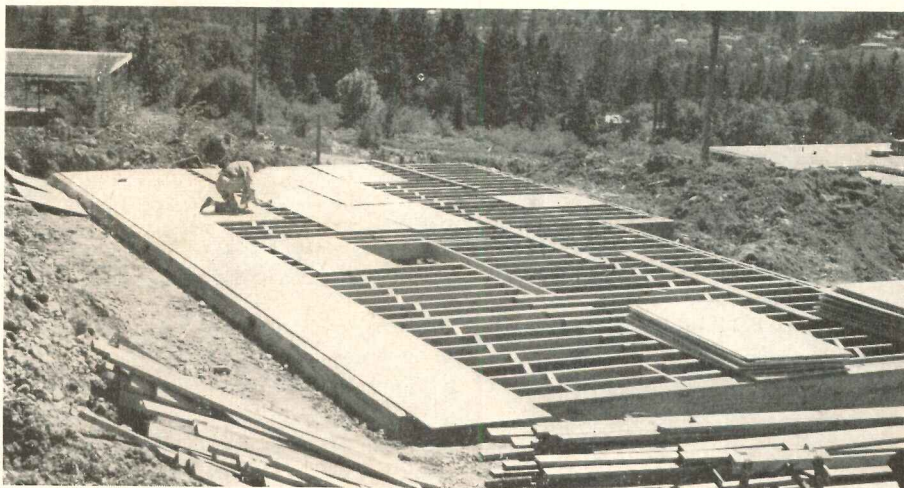
The most versatile grade of exterior plywood is the *A-C grade known as Plyshield.* The face of a Plyshield panel presents a smooth sound surface for

painting, identical to that of the previously named grades of exterior plywood. As it is intended for uses in which only the face is exposed, the back ply may contain a limited number of knots and open defects such that the serviceability of the plywood is not materially affected. Both sides are sanded.

This is the grade commonly specified for exterior wall covering for homes, garages, stores, and other commercial structures. It is also frequently used for such architectural components as gable ends, porch and breezeway ceilings, eave soffits, shutters, and entrance treatments.

*Exterior grade B-C, known as Utility plywood,* is a relatively new grade suitable for exterior uses that do not require complete masking of defects. Both face and back are sanded and the face presents a relatively good appearance when painted. Numerous applications in various farm and camp structures are among the preferred uses.

*Exterior grade C-C, the Sheathing grade of the exterior type,* is an



3

Several of the now familiar structural applications of plywood that account for the billions of square feet being sold today, as indicated by the chart across page, are: (1) roofing and sheathing for houses. (2) underlayment for linoleum in a commercial building. (3) subflooring for a house, first used as concrete forms for the basement

## STRUCTURAL PLYWOOD

unsanded panel, completely waterproof, which is recommended for uses that require a strictly structural type of plywood. The open defects permitted this grade do not interfere seriously with its structural values and are offset by the greater thickness of the unsanded panel.

**Exterior Plyform grade B-B** is the most durable concrete form material available. Its sanded surfaces are comparable in quality to the interior Plyform grade but inasmuch as the exterior concrete form panel is bonded with a waterproof adhesive, its serviceability is limited only when the wood is literally worn away after prolonged re-use. Edges are sealed with a red sealer and the surfaces are generally mill-oiled.

### Interior Uses of Plywood

The structural applications of plywood are too extensive to enumerate in detail. Included among them, however, are such varied uses as siding panels, wall sheathing, subflooring, roof decking, interior walls and partitions, ceilings, eave soffits, underlayments for floor coverings, concrete forms, stressed covers for prefabricated panels, removable floors, hangar doors, girders and arches. A number of these uses are illustrated in the accompanying photographs. Some of the major structural applications of plywood are discussed in detail in the following paragraphs.

**Wall Paneling.** The Plypanel grade of Douglas fir plywood is adapted to wall paneling which is to be painted, finished in natural color or given a light stain glaze, enameled, or covered with wallpaper.

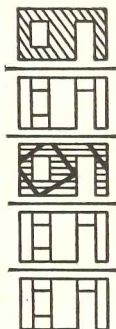
The Plybase grade approaches Plypanel in quality and should be suitable as a base for wallpaper or for canvassed and enameled finishes. In better construction panels  $\frac{3}{8}$ -in. thick are generally employed over studs spaced on 16-in. centers, although  $\frac{1}{4}$ -in. panels are often used for economy. The use of 6d finish or casing nails spaced 6 in. apart at the outer edges of the panel, and at 12-in. intervals on intermediate studs, is recommended for  $\frac{3}{8}$ -in. plywood. Fourpenny nails at the same spacings are similarly recommended for  $\frac{1}{4}$ -in. panels. Additional rigidity is provided when panels are applied horizontally across the studding.

The most satisfactory method of attachment from the structural standpoint is by gluing to the studs. By this method, which is ideally adapted to prefabricated construction, full advantage is taken of the stressed-skin principle. Other details

of installation were discussed in the previous article and will not be repeated here.

**Wall Sheathing.** The unsanded Plyscord grade of fir plywood is ideally adapted for use as a sheathing material of exceptional strength and rigidity. Table 3, based on tests conducted at the Forest Products Laboratory, illustrates the effectiveness with which plywood functions as a structural diaphragm in comparison with other sheathing materials in frame walls containing window and door openings.<sup>5</sup>

In these tests  $\frac{1}{4}$ -in. plywood nailed to the studs was shown to be twice as strong and rigid as 1- by 8-in. diagonal lumber sheathing in resisting shearing loads. The greater efficiency of plywood when glued to the frame is also clearly shown in the diagram, although this



**Table 3**  
Strength and rigidity of frame walls with door and window openings

Sheathing Material	Relative Rigidity *	Relative Strength *
1 x 8" Diagonal Sheathing	1.0	1.3
29/32" Fiberboard (8d nails, spaced 3" at all vertical edges, 5 1/2" to 6" elsewhere.)	1.6	2.1
Horizontal Sheathing (1 x 8" sheathing; 1 x 4" let-in braces; 8d nails, 2 per stud crossing.)	1.5	2.2
1/4" Plywood Nailed (6d nails spaced 5" at edges, 10" elsewhere.)	2.0	2.8
1/4" Plywood Glued to Frame	3.7	4.0

\* Relative values based on 1 by 8-in. horizontal sheathing without braces in a panel without openings taken as 1.0 for comparison.

Adapted from Forest Products Laboratory Reports R896 and R1025.

The above values represent results of tests involving framing, sheathing, and bracing as indicated only, and do not represent ratios for complete walls including interior and exterior covers such as siding, plaster, etc.

practice is generally feasible only in prefabrication.

With 16-in. spacing of studs,  $\frac{5}{16}$ -in. Plyscord is the minimum acceptable thickness. For 24-in. stud spacing,  $\frac{3}{8}$ -in. plywood is the minimum thickness recommended. Nail spacing for attachment to studs and horizontal framing members is 6 in. at the panel edges and 12 in. at other bearing surfaces using 6d common nails. No diagonal bracing is required under these conditions. When  $\frac{5}{16}$ -in. sheathing is used, special grooved nails are recommended in the application of asbestos cement or wood shingle exteriors.

The tightness of plywood sheathing requires that particular attention be paid to ventilation and to providing a vapor barrier which should be located at the warm side of the wall. If the inside wall covering is plywood, an effective

vapor barrier is provided by back priming the plywood with two coats of asphalt or aluminum paint or by finishing the exposed faces.

**Roof Sheathing.** Plyscord is also the grade of plywood employed for roof sheathing. The minimum thickness accepted for rafters on 16-in. centers is  $\frac{5}{16}$  in., while for 24-in. rafter spacing  $\frac{3}{8}$ -in. plywood is the minimum required. Wood shingles require nailing strips for application under FHA regulations unless sheathing thickness is at least  $\frac{1}{2}$  in. The foregoing are minimum thicknesses, based on installation of plywood with the face-ply grain direction running across the rafters for small home construction.

Specific recommendations for 20- and 40-lb per sq ft roof loads are as shown in tabulation at bottom of page:

### Recommended Thickness for Plyscord Roof Sheathing

Roof Load, lb/sq ft	Rafter Spacing, in.	Sheathing Thickness, in.
20	23	5/16
	27	3/8
	34	1/2
	43	5/8
40	18	5/16
	22	3/8
	27	1/2
	34	5/8

Based on deflection of 1/360 span with plywood continuous over two or more spans. Face ply grain direction running across the rafters.

Nailing recommendations are similar to those for wall sheathing except that 8d nails are used with panels  $\frac{5}{8}$ -in. thick. A detail of importance in the application of Plyscord sheathing is to protect panel edges from the weather

along cornices and in similar exposed locations. This may be accomplished by means of flashing or by a strip of lumber or exterior type plywood.

**Subflooring.** The Plyscord grade of plywood is an ideal subflooring material providing a tight level surface for the application of finish flooring and serving with particular effectiveness as a horizontal diaphragm contributing to the rigidity of the structure under wind and earthquake loads.

The 1/2-in. and 5/8-in. thicknesses are most commonly used as subflooring. A 1/2-in. panel will support a floor load of 100 lb per sq ft with a deflection of only 1/360 of span when laid with the grain of the face plies across joists spaced on 20-in. centers.

Actually a 5/16- or 3/8-in. Plyscord sub-

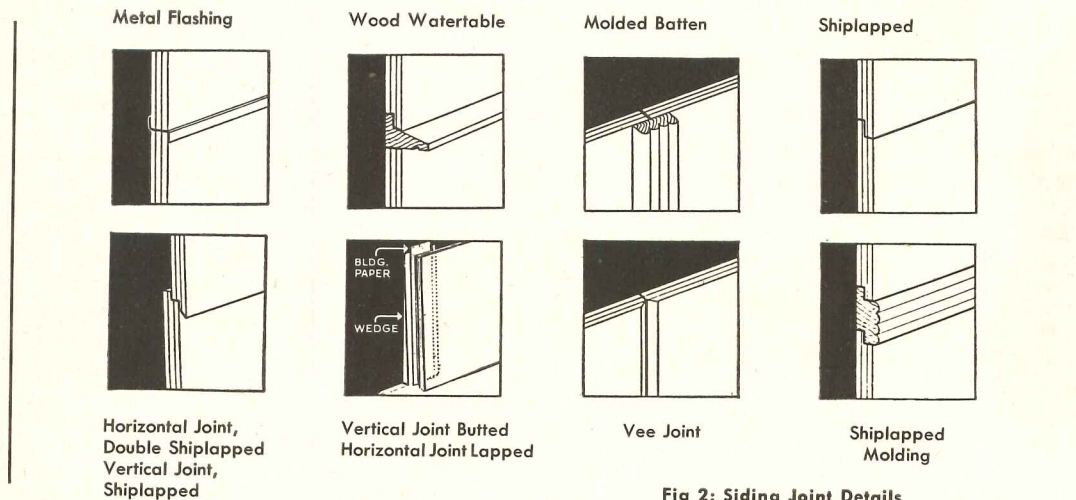
Plypanel or Plybase grades is recommended as a base over the subfloor for linoleum and composition floor coverings. These grades are also sometimes used as a combination subfloor and underlayment in thicknesses of 1/2 to 3/4 in. The unsanded Plyscord grade is not adapted to this application.

### Exterior Uses of Plywood

**Siding.** The Plyshield grade of exterior type plywood is designed for this and similar exacting types of service. In most construction, panels 3/8-in. thick are employed over studs on 16-in. centers, although 1/4-in. panels are sometimes used over sheathing. Thicknesses of 1/2 in. or more are also used, often in single wall construction, to meet the specific needs of special structures.

A number of methods of treating the joints between panels used for siding are suggested in Fig 2. Both vertical and horizontal joints are shown including such treatments as "v," butt, and ship-lap machined joints, as well as joints involving batten strips, metal flashing, and a wood watertable. In any case all edges of plywood siding should be sealed with a thick paste of oil and lead or other suitable material. A satisfactory sealer for this purpose may be prepared from 100 lb of paste white lead, 1 3/4 gal. raw linseed oil, and 1 pt of dryer. The proportion of dryer is reduced if boiled linseed oil is used instead of raw oil. The paste is applied at the time of installation of the plywood.

When exterior plywood is installed as lapped siding, the overlap of panels



floor is adequate from the standpoint of deflection when laid over joists on 16-in. centers and used with 2 5/32-in. wood finish flooring. In this event, however, care must be taken to nail the finish floor to the joists.

When finish flooring is non-structural or wood strip of less than 2 5/32-in. thickness, FHA requirements call for 1/2-in. thick plywood subflooring for 16-in. joist spacing, 5/8-in. plywood for 20-in. spacing, and 3/4-in. plywood for 24-in. spacing, with blocking installed at all panel edges perpendicular to the joists.

The nailing pattern commonly recommended is a 6-in. spacing at all panel edges and 12-in. spacing at all other bearing surfaces. Sixpenny common nails are used with 5/16, 3/8, and 1/2-in. Plyscord and 8d common nails with the 5/8-in. thickness.

Three-eighths inch plywood of the

Panels may be used full size and applied either horizontally or vertically to obtain desirable architectural effects or they may be ripped to half-panel or third-panel widths and installed as wide siding.

When full size panels 4 by 8 ft or larger are used, nails should be spaced not more than 6 in. apart at the panel edges and 12 in. at intermediate bearings. When narrow strips (12-24 in.) are used as lapped siding, nail spacing at the ends of the panels should not exceed 4 in. Sixpenny box nails (hot-dipped galvanized) should be used with siding of 1/4- or 3/8-in. thickness and 8d nails for thicker plywood.

As in the case of any plywood-covered frame, maximum effectiveness is realized when Plyshield panels are glued directly to the framework permitting design based on stressed-skin principles.

should be at least 1 1/2 in. with paste sealer knifed on the lapped edge. The use of asphalt-impregnated building paper as flashing under the vertical butt joint of lapped siding is illustrated in the diagram. A slight bevel of exposed horizontal edges of the panels in this application is also good practice so that water may drip from the outside edge.

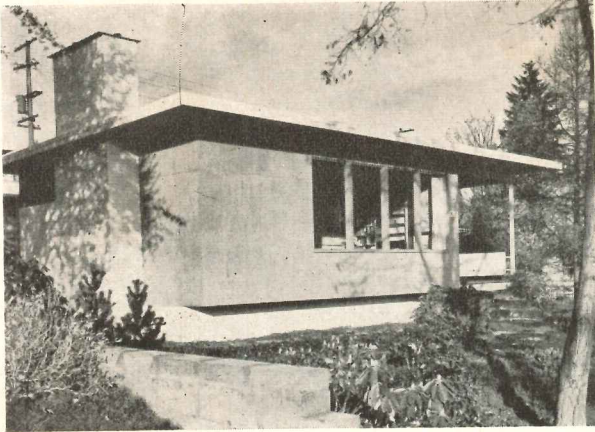
The finishing of plywood for exterior service is not essentially different than the finishing of other wood for similar conditions of use. It is highly desirable that plywood should be given a prime coat immediately after installation. High grade exterior house paints of white lead and oil or of titanium-lead-zinc formulation are well adapted to this use. Paints that form a hard brittle film are undesirable.

A satisfactory prime coat is obtained by thinning a quality exterior paint

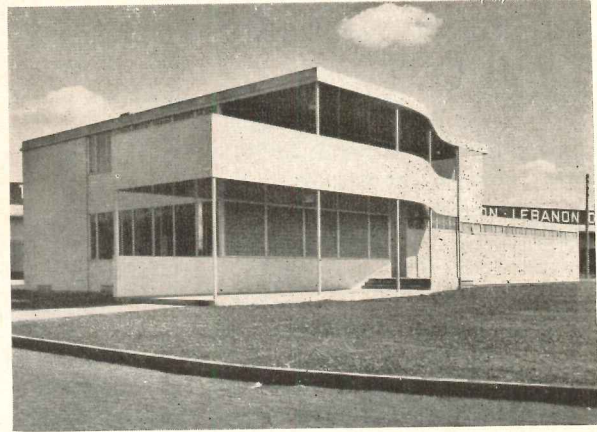
## STRUCTURAL PLYWOOD

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All photos Douglas Fir Plywood Assn.

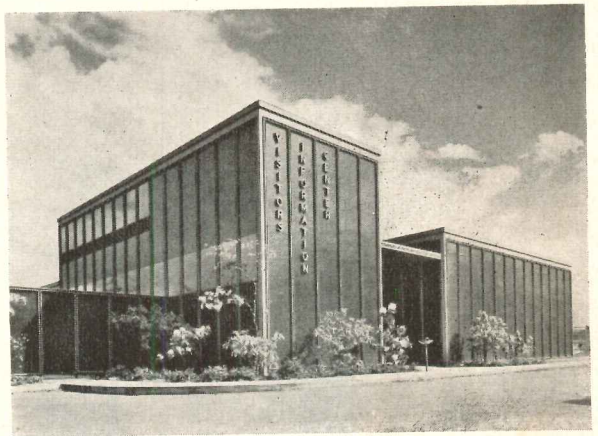


Exposed plywood exteriors find their way into commercial buildings as well as houses, witness these photos: (1) A combination of flat and curved plywood surfaces form the exterior skin for this small office building by Richard Neutra. (2) Small house by Paul Thiry with flush plywood covering. (3) Long length, scarf-jointed panels were set into the exterior framing members for this Information Center in Portland, Ore., which was designed by John Yeon



Richards Studio

3



primer at the rate of one pint of raw linseed oil per gallon. An alternative is an aluminum base primer compounded from  $1\frac{3}{4}$  lb of aluminum paste in 1 gal of long oil spar varnish. Two coats of paint should be applied over the primer as recommended by the paint manufacturer. In unusually damp situations plywood panels should also be back primed prior to their application in the structure.

**Concrete Forms.** As previously indicated there are two principal types of plywood concrete form material. The most widely used is the Plyform grade of interior type plywood. Although obviously not intended for permanent outdoor exposure, this type of panel with reasonable care has given an excellent account of itself with a dozen or more re-uses. When a greater number of re-uses than this is desired, the B-B grade of Plyform or exterior plywood should be employed. Both of these smoothly sanded grades are adapted to all but the most exacting requirements for concrete construction from the standpoint

of blemish-free concrete. Where special architectural effects require a still smoother finish, the A-A grade of interior or exterior plywood should be used rather than either of the regular concrete form grades. An alternative solution would be to employ plywood made with resin-impregnated overlay faces which is now obtainable.

Concrete form panels require support from studs or joists. Specific design recommendations are, of course, precluded

Plyform Thickness in.	Stud or Joist Spacing in.	Permissible Deflection Fraction of span	Load lb/sq ft
$\frac{5}{8}$	12	1/270	880
$\frac{3}{4}$	12	1/270	1330
$\frac{3}{4}$	16	1/270	560
$\frac{5}{8}$	12	1/360	660
$\frac{3}{4}$	12	1/360	1000
$\frac{3}{4}$	16	1/360	420

by the variables of height, rate of pour, and other factors that influence the pressures acting on the forms. The above tabulation serves as a guide to the thick-

ness of form panel required. The effects of wetting, period of loading and of continuous beam action have been taken into consideration for panels arranged with the grain of the face plies running across the studs or joists.

Nails for concrete forms should be as small and as few as is practicable.

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# RECENT DEVELOPMENTS IN HEATING, AIR CONDITIONING AND PLUMBING

By Nathan N. Wolpert, Associate Editor, Heating and Ventilating

## Part 2 | Ventilation and Plumbing

Last month, Part 1 reviewed products, equipment and systems for the heating and air conditioning of all types of buildings. Part 2 concludes the article and covers ventilation, water heaters and coolers, condensation, plastic pipe, controls, incinerators and plumbing equipment.

### Air Filters

The filter which uses electrical means for building up electrostatic charges on metal plates has proved its value in both industry and commerce as a means for removing fine dust particles from the air. Smaller size units have been designed as part of a forced warm air heating system. For persons suffering from hay fever, a **console type electrostatic filter** removes pollen from the room air to make life more bearable for the victims.

A **self-charging electrostatic, washable filter** that does not have to be connected to an electric power source, is made for use in forced warm air and air conditioning systems. The filter is made of a thin polyethylene film shredded into a porous mass which picks up an electrostatic charge to attract and retain fine dust, smoke or soot when exposed to the air.

Another type uses **aluminum wool packed in a metal frame** with a metal retaining mesh. Fibers are triangular in cross section and have microscopic dust catching barbs on all edges.

### Fans and Ventilation

The attic fan is favored by those who, because of expense, do not wish to install central air conditioning or even a window unit for the bedroom.

There are several models which can fit over narrow hallways or can be used in low attics or in kitchen ceilings. The **fan rests on the attic floor** and has a ceiling shutter which opens automatically when the fan is turned on.

A **combined ceiling heater, light, and ventilating fan** has an 1800-w heating element for rooms up to 575 cu ft. As the air rises in the room, it is drawn through the unit, heated, and forced down by the fan. The heating output is 6640 Btu per hr. Three switches, part of a wall plate, control the three functions of the unit.

There is a **ventilator for any double hung window** which in one position will supply all outside air and in another, it will expel foul air and smoke.

Any combination of supply and exhaust can be obtained.

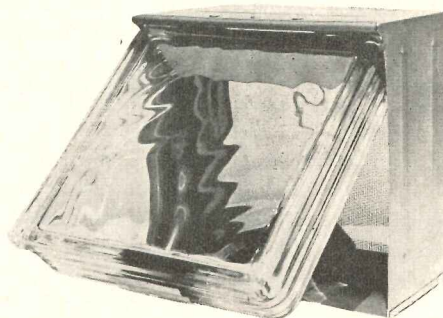
A **reversible two-speed window fan** fits various widths of sash windows and casement windows as well. A stand converts the fan to a portable model. The fan unit can be turned in the frame to make it reversible.

Where a motor is to be placed in a ventilating duct, a totally enclosed, **air cooled unit with flat design** is available in ratings from 1/20- through 5-hp. The frame design of the motor permits mounting by means of ears, drilled and tapped holes in endbells, or by other special means. Either a single phase or polyphase motor can be supplied.

An improvement has been made in the **schoolroom ventilator**. Instead of standing out as a conspicuous cabinet below the window, it can be obtained with metal shelves on either side so that a wall-to-wall installation of even line results. An interesting note in passing is that schoolroom ventilators are now available with **germicidal lamps** for destroying air-borne bacteria.

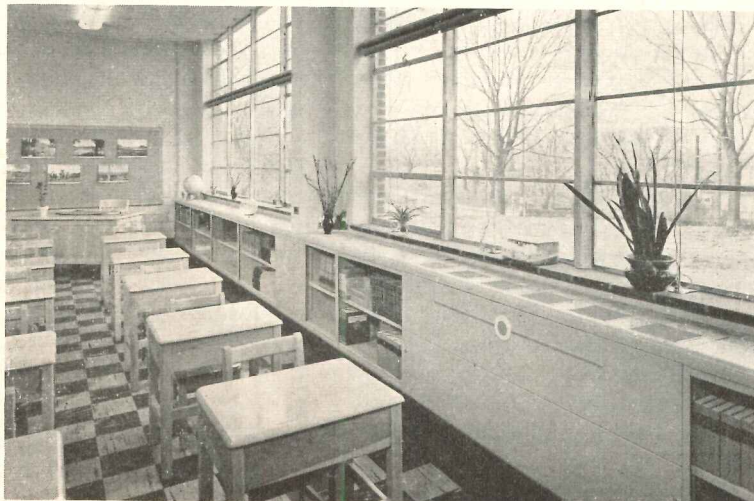
For **glass block panel walls**, there is a half block panel, which matches the pattern of the glass and swings out for

*Right: ventilator for glass block panel walls adjusts to desired opening. Below, left: unit ventilator comes with matching book shelves. Below, right: two-speed, reversible fan fits casement or sash windows; can be removed for portable use*

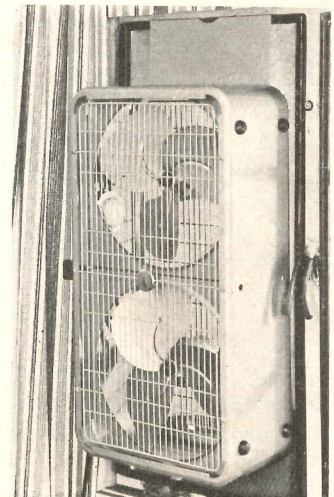


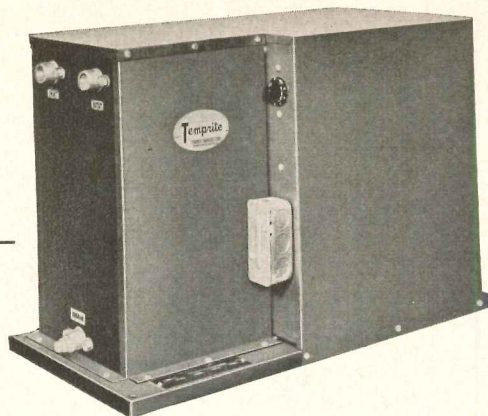
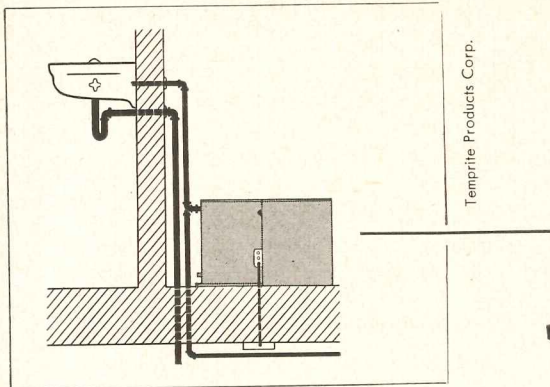
Kimble Glass Co.

American Air Filter Co. (Herman Nelson Div.)



Schwitzer-Cummins Co.





Remote-type drinking water cooler comes with the cooler, storage tank, compressor and condenser on a single base. Largest model (1/3 hp) measures only 35 by 14 by 16 in.

ventilation. A stainless steel handle, which operates from the inside, opens the ventilator or closes it tightly against a gasket in the frame. An inside aluminum screen keeps out insects.

### Water Heaters and Coolers

Increased use of automatic laundry units and dishwashers in the home has emphasized the need for a **hot water heater** that will supply 180 F water for these machines and 125 F water for household faucets. An **automatic gas water heater** has been designed to supply hot water of two different temperatures from a single tank. A separate line of high temperature water is run to the washers and a second source of water is blended to give a temperature of 125 F. The unit has a special burner for fast recovery and a low turbulence cold water injector.

An **oil-fired water heater for apartment houses** can raise 550 gal., 80 deg per hr. The unit has a storage capacity of 100 gal. and an oil burner firing rate of 3 gal. per hr. The burner can use No. 1, 2, or 3 oil.

Automatic **electric auxiliary heaters** have been designed for domestic and larger applications. The heating element is thermostatically controlled and is rated from 1000- to 7500-w.

For the small commercial building, a **remote type water cooler** can supply 50 F water through wall fountains. An air cooled model will supply 12.1 gal. per hr of drinking water where the inlet temperature is 70 F and the room temperature is 80 F; a water cooled model will supply 12 gph under similar conditions.

A **remote type drinking water cooler** comes with the cooler and storage tank, compressor and condenser mounted on a single base. Because of small space requirements, it is ideal for a number of applications.

### Glass

**Heat-absorbing glass** appears to be an item of the moment, as a means of reducing solar heat gain. The glass,

which has a greenish tint, absorbs the red portion of the solar spectrum, reduces fading of upholstery and drapes, and reduces eyestrain.

Glass of this type is also being used as part of a two-pane window. Such glass is used for the outer pane and conventional glass for the inner one, a hermetically sealed air space between.

### Condensation

New designs in housing, with emphasis on insulation, weather stripping and automatic heating equipment, have introduced new problems in the form of condensation and moisture. Research at the University of Minnesota has included investigations of vapor movement through both small and full-scale building structures as well as many different types of common building materials.

To prevent the blistering and peeling of paint as the result of moisture working out to the outside wall, a **small vent tube**, 2-in. long and 3-in. diam, is inserted from the outside of the house to relieve air pressure and to allow air circulation. The tube is made from a non-rusting alloy and has a dome with a small slot.

**Insulation prevents condensation on cold waterpipes.** It consists of a backing of waterproof, vapor-proof material and a thick insulation blanket. The edges are coated with an adhesive so that they can stick to the pipe.

### Plastic Pipe

Plastic pipe has progressed far from its first introduction into the house field many years ago. One authority states that the use of plastic pipe has expanded from 25 million ft in 1951 to 75 million ft in 1952.

Similar to copper tube, its use does away with many pipe fittings normally required with rigid pipe. Plastic pipe is not subject to corrosion and it will safely carry liquids that will attack either copper or ferrous pipe.

Several new forms of plastic pipe are now being extruded suitable for use as **heating coils in radiant heating sys-**

**tems** or for service lines to carry water from a street main to a building.

A **translucent polyethylene pipe** can be used to observe flow conditions and liquid levels. For this application, the plastic pipe may replace the more expensive glass pipe. Tubes up to a 1-in. diam are available in coils and pipe up to 2-in. N.P.S. diam are furnished in straight 20-ft lengths.

Another feature is **plastic pipe supplied in color** to conform with some code. A yellow plastic pipe will neither fade nor stain.

### Controls

Considerable progress has been made in the art of controls — not only units automatically operated but those of the manual type as well. For example, use of gas heating at one time presupposed the availability of electric power. Now there are several controls for gas heat that function independently of electricity. This has made it possible for homes away from electric lines to enjoy the benefits of gas heat.

An **automatic gas shut-off valve**, for which electric current is not required, has a precision timing mechanism that can be set for any period up to one hour. At the selected time, gas is shut off and a bell signal is sounded. The device is a self-contained unit that can be set in any position. It is suitable for room heaters, water heaters, and incinerators.

A **gas control valve** provides both modulating and snap action in one valve. One part of this control works automatically from a completely off position to a minimum flame that is preset to give proper ignition of the gas. If the inside condition is such that the minimum heat input is required, the snap valve will cycle between off and minimum so that no additional gas can enter. When additional gas is required, the modulating valve takes over and throttles the gas supply from minimum to full.

Another group includes the **time-delay control**. For use with high-pressure oil burners, a special control valve is placed in the high-pressure line be-



tween the pump and oil nozzle. After the burner starts, there is a 6- to 8-second delay before the valve opens to permit the fan to come up to speed in advance of the oil discharged at the nozzle. This avoids development of starting odors.

A control for hot water heating systems with mechanical operation anticipates changes in outdoor temperature and wind velocity before they are reflected in indoor temperature. It consists of a control regulator and a control valve. The regulator extends through the building wall, exposed to wind and weather. A flow of hot water circulates through the indoor end of the unit. The rate at which this heat is dissipated at the outdoor end determines the operation of the comfort control. For large buildings, the heating system may be divided into zones, each with its own comfort control system.

An automatically operated large-capacity mixing valve can deliver 180 F water in one service and 125 F water in another. It is operated by a thermostatic solid-fill bellows mounted in a protected chamber out of the water. Temperature changes in the mixing chamber produce hydraulic action in the external thermal element that actuates the valve. The valve automatically compensates for all normal pressure variations. A calibrated dial permits temperature settings from 90 to 180 F.

Hot water heating systems have always been bothered by air in the system which ultimately results in poor heating. One air eliminator is, in effect, a pipe within a pipe. The brass inner tube extends the supply main below the surface of the water in the boiler, preventing air from entering the piping and heating units. Air that collects at the top of the boiler is bled off to the compression tank through the outer casting.

Another approach to this problem is a control that scoops off the liberated air in a hot water heating system. Since the air tends to travel along the upper portion of a horizontal pipe, air bubbles that pass through the device are scooped by a series of baffles. This air passes on to completely fill an expansion tank. When this tank cannot hold any more air, the excess is removed through an air valve without disturbing the operation of the system.

There are new devices for freeing air in a steam or hot water heating system. As steam or water enters the air valve, the moisture swells the discs but these discs will not completely seal until all air has been forced out. The discs then dry, shrink, and are ready for another cycle.

Room temperatures are individually controlled through the use of a thermostatic radiator valve. A simple dial permits any temperature setting desired. This valve can be used in any low-

pressure one-pipe steam system without interfering with existing boiler controls. The valve body is brass and in the unit is a phosphor bronze bellows.

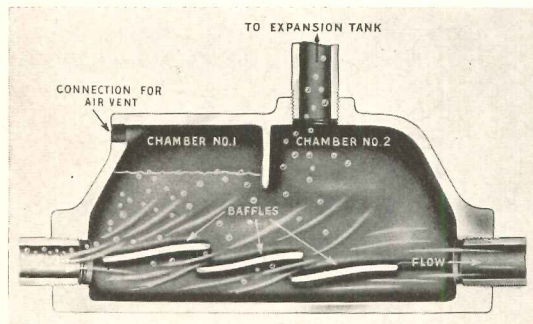
A device with a diameter slightly larger than a 50-cent coin is made to control standing pilots in domestic gas-fired heating appliances.

## Incinerators

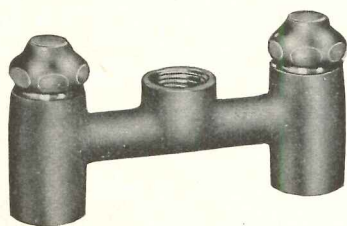
Some officials close to the gas industry assert that incinerators installed in homes and housing developments will be an important load for the gas utility. Incinerators are finding increased use in both public housing projects and in many private developments. They eliminate the aggravating practice of collecting refuse at stated times to be hauled away by a public waste collector.

Once considered a basement unit, there are now types designed to fit in with kitchen appliances. This unit can be loaded with either wet or dry trash. A burner control is set so that at the end of the preset burning period, a bell rings and the burning process ceases automatically. The incinerator has an outer shell and an inner shell in which the burning takes place.

For houses with masonry chimneys, the incinerator may be installed at the base of the chimney. The unit has a built-in screen to prevent a spark discharge, a cast iron feed door and grate,

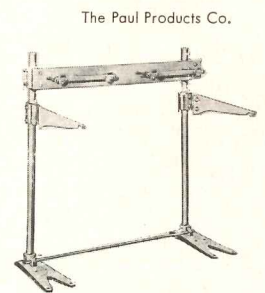


Taco Heaters, Inc.



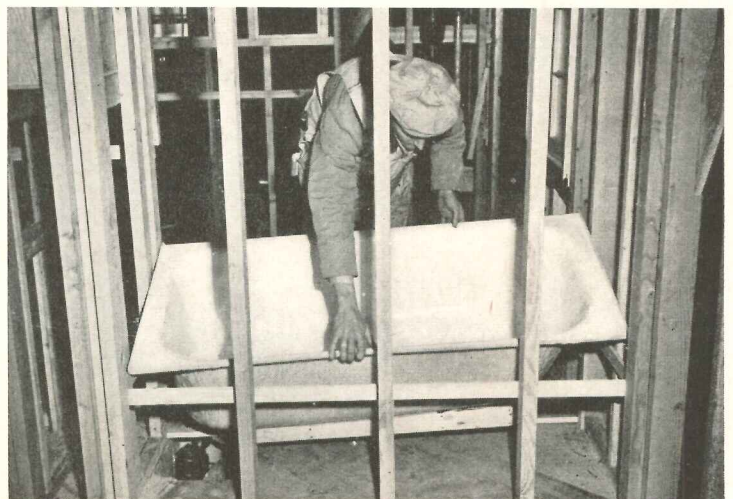
J. A. Zurn Mfg. Co.

Left: scoop removes air bubbles from hot water heating system by means of baffles  
 Right: special carrier supports wall-type kitchen sink and fits behind or within the wall  
 Below, left: valve blends hot and cold water to prevent condensation on toilet flush tanks  
 Below, right: reinforced plastic bath tub weighs only 17 lb, will not chip or dent



The Paul Products Co.

Strand-Plax Building Products Co.



and an ash door for removing residue.

A **two-part incinerator** dries waste matter in one zone of a divided revolving cylinder and burns it in the other. Refuse, if wet, is placed into the drying zone through a charging door on top of the unit. After pressing the ignition button, the unit functions automatically. Following the drying period, a rotating lever moves the material into the burning zone. It burns both garbage and dry refuse. A burner operates continuously at a rate of 2000 Btu per hr.

## Plumbing

Of great annoyance in the home, particularly in areas where the air may be humid, is the condensation of moisture on the cold walls of a toilet flush tank. There are three interesting methods for correcting this condition.

One device which is basically a **blending valve** connects to both hot and cold water lines to supply water at a temperature that is above the point at which condensation will take place. Only a small amount of hot water is used.

An electrical solution to the condensation problem is an **immersion heater**, thermostatically controlled, that is placed in the tank to raise the temperature of the water.

A **plastic flush tank cover** fits over the entire flush tank to provide a dead air space between the cold surface of the tank and the warm air of the room. This layer of dead air is said to prevent condensation.

Mounted under the toilet seat at the

back of a standard bowl is a **ventilator intake** which is connected with a vent pipe through a wall or roof so that a natural draft draws off odors. The ventilator has the advantages of negligible maintenance and no counter-odor or deodorizing agent to be replenished.

For destroying bathroom or kitchen odors, there is a special **lamp which discharges ultra-violet rays** and which has a rated life of 4000 operating hours.

A **powder for septic tanks** which is flushed into the tank through the toilet increases the biological destruction of fats, proteins or starch components. When treated with the enzymes in this powder, a septic tank is reported operable for 10 to 20 years between cleanings.

Newly installed bathtubs in incomplete bathrooms are often badly scarred by other tradesmen who follow. To protect the tubs from such damage there is a **reshaped cover to fit standard tubs**. The cover is made of sturdy heavy-duty kraft paper that is gummed on the back. To install, a wet cloth is used to moisten the gummed side.

Protection is also provided through the use of a powder that is mixed to form a **paste for brushing on the bathtub surface**. After the tub has been coated with this paste, a layer of newspaper is applied. This is followed by another layer of paste and newspaper until a protective coat is built up of the proper thickness. Warm water and soap are used when one desires to remove the coating.

While in appearance a **reinforced**

**plastic bathtub** resembles a conventional one, it weighs only 17 lb. The tub will not chip or dent even when subjected to a severe impact. Conventional fittings and fixtures are used so that the plumber has no unusual installation problems. The tub has a high gloss and is available in four colors and white and in lengths of 46½, 54 and 60 in.

An **island type kitchen sink** for installation in the center of a kitchen is accessible from all four sides to save steps in kitchen tasks. Two full-size sink wells are set on one side of the top and a drainboard of 816 sq in. covers the other side. A new type faucet can be reached from any side. A flexible spray attachment reaches to any portion of the sink.

To relieve the wall of any load when mounting wall-type plumbing fixtures, a special **chair carrier for drainboard sinks**. The unit has balanced, web-type foot supports, rigid tubular uprights and heavy cast-iron arms. It may be installed behind the wall or within the wall so that only the arms protrude through the finished wall. These supporting arms can be furnished in lengths up to 30 in. and with either lug adapters or screws as a means of supporting the fixture on the arms.

To make it easier to retrieve items which have fallen down lavatory drains, and to prevent stoppage of the drainage system, there is an **interceptor waste trap**.

Activated carbon has long been a means of absorbing odors in industrial plants. The same odor-removing agent is now put up in small containers for use in bathrooms.

## Other Trends and Developments

In several housing projects in New York City, it was found profitable to build the structures around the boilers so that every possible structural interference is avoided. In several projects using low-pressure steam boilers, as many as ten boilers were set in a row, even before the boiler room floor was poured and steel columns erected. There are no concrete forms, stored materials, or anything else to interfere when this plan is followed. Some time ago, a building might be half up before a contract would be awarded for mechanical equipment. Now such contracts are let about the same time as those for the building.

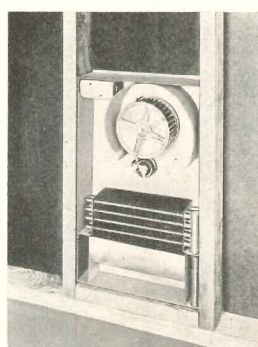
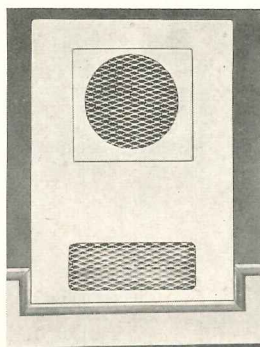
A **damper** has been designed to reduce the stack losses associated with the on-off type of oil burner systems. It

(Continued on page 208)

Left: powder actuated tool which drives studs into concrete or steel can be used to anchor duct and pipe hangers, fasten pipe stanchions in concrete, secure mechanical equipment, etc. Below: individual room radiator for residences and motels has automatic control and comes in 9000 and 18,000 Btu per hr capacities

Remington Arms Co., Inc.

Penn Boiler and Burner Mfg. Corp.



**PRODUCTS for Better Building**

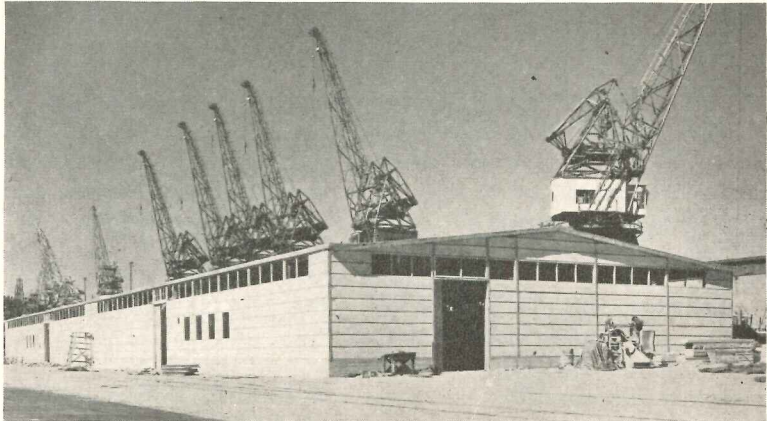
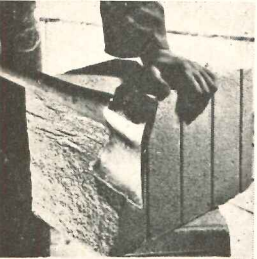
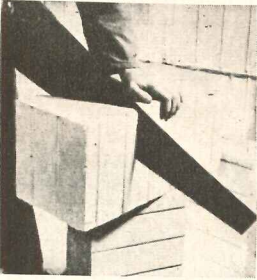
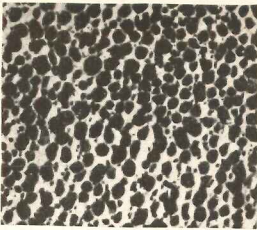
**VERSATILE BUILDING MATERIAL  
MAKES AMERICAN DEBUT**

U. S. architects are currently being given their first introduction to a versatile building material which has already been employed extensively in Sweden and other European countries for 15 years. To be manufactured and marketed here by United States Plywood Corporation under the trade name *Zeprex*, the lightweight mineral material is designed to replace concrete in building super-structures, but it is described as weighing only one-fifth as much as concrete and can be sawed, drilled, nailed or cut with an axe. Self-supporting in lengths up to 18 ft. and more, it is also incombustible, can be worked like wood, and, according to the manufacturer, affords 10 times the insulating quality of concrete, making it suitable for both arctic and tropical temperatures. It will be available in roofing slabs, wall

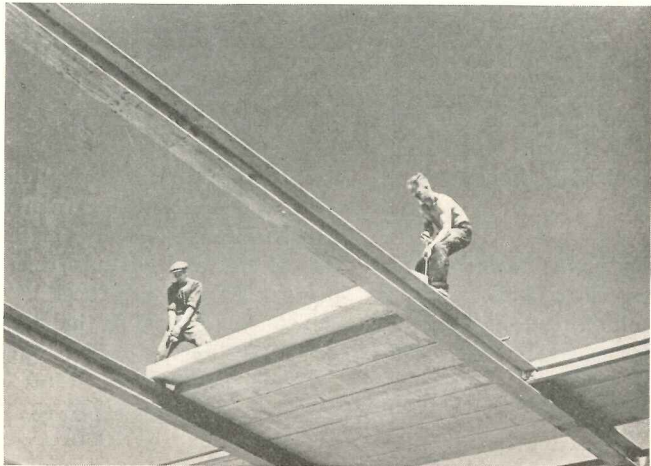
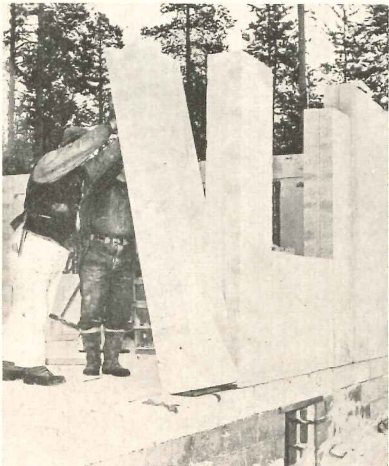
slabs, beams (reinforced with steel rods), insulation slabs and building blocks. Thicknesses can vary from 2 to 10 in., densities vary according to category and use, and the slabs can be made in a variety of shapes.

The material is essentially a siliceous compound of cement, water, monocalcium silicate and other chemicals, and it has a porous structure which looks like minute honeycombing. It was developed in Sweden in the early 1930's by a civil engineer, Ivar Eklund, and a cement chemist, Prof. Lennart Forsen. First put into commercial production in Sweden in 1934, it has since been produced and used extensively in Germany, France, Poland, Denmark, Norway and Finland. For a short while, it will be imported here to supply requirements of

*(Continued on page 210)*



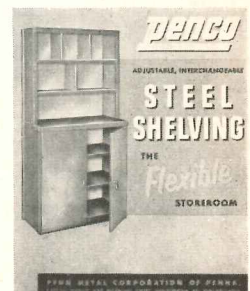
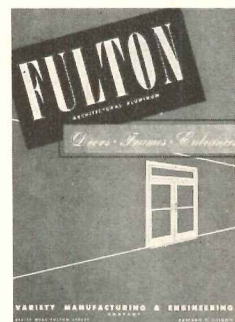
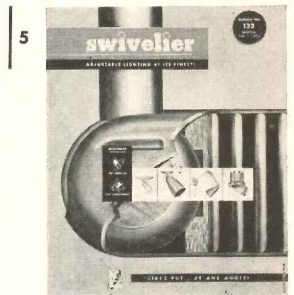
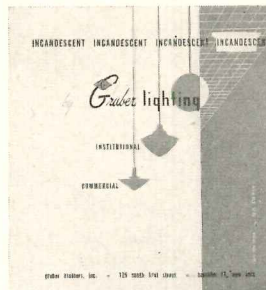
*Above, right: this warehouse building was constructed with roof slabs of the material. Below, left and right: construction shots illustrate ease of installation, made possible by the light weight of the slabs*



LITERATURE for the Office

EQUIPMENT FOR COMMERCIAL BUILDINGS

Catalogs featured at right and reviewed below are among current product literature available to architects concerned with the design of commercial buildings such as those presented in ARCHITECTURAL RECORD'S Building Types Study No. 198, pp. 162-186, this issue.



1. *Peg-Board*. This folder gives a brief, clear description — “from shovels to shoes” — of how the manufacturer’s perforated hardboard can be used for display purposes. Specifications, wall installation details and over 60 hanging fixtures are outlined, as well as suggestions for finishing and diagrams of the different types of the product. 3 pp., illus. B. B. Butler Mfg. Co., Inc., 3148 Randolph St., Bellwood, Ill.\*

2. *Certified Fire Protection with Remington Rand Vault Doors*. Informative booklet on fire protection of vaults or fire resistant record rooms presents photographs, drawings, complete descriptions and Underwriters’ Laboratories’ Certifications for each door in the line. Advantages and reasons for choosing either a six, four, two, one, or half-hour door are also cited. 7 pp., illus. Remington Rand, 315 Fourth Ave., New York 10, N. Y.

3. *Gruber Incandescent Lighting*. This catalog features ceiling, wall mounting and pendant units for use in hospitals, schools, institutions and public build-

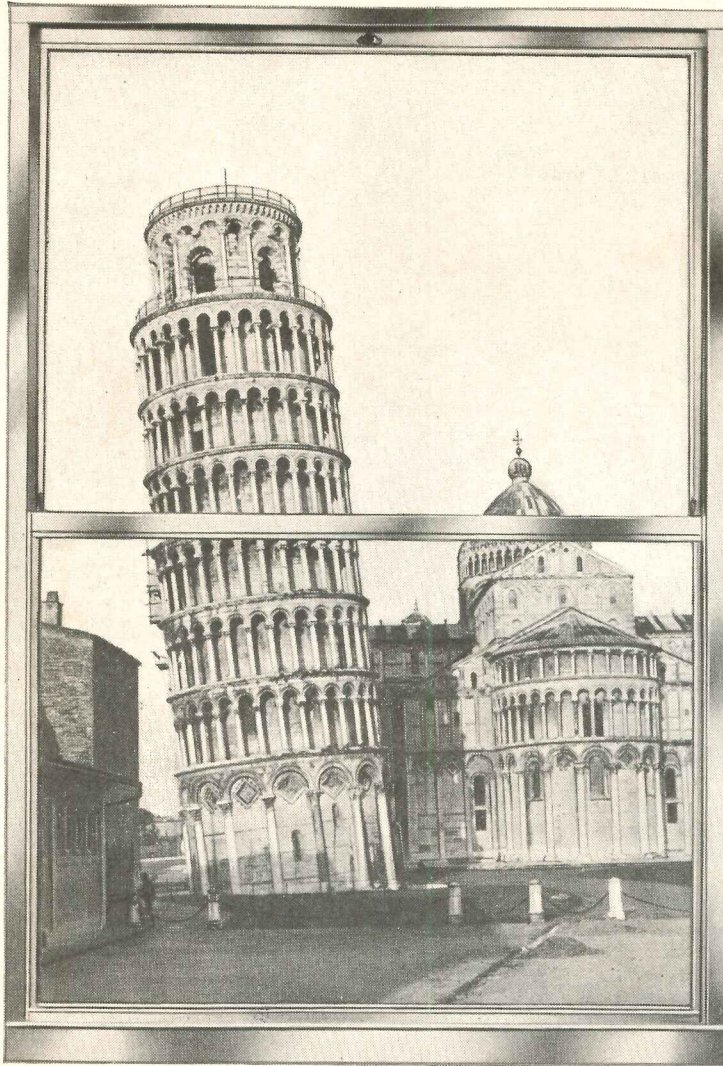
ings. Several types of safety and thumb screw holders are also included, as well as varied shapes of glass bowls. Photographs and drawings are accompanied by an engineering data sheet in each case, giving specifications and standard finishes. 16 pp., illus. Gruber Brothers, Inc., 125 S. First St., Brooklyn 11, N. Y.

4. *Seaporcel Architectural Porcelain Enamels*. Brochure reviews the manufacturer’s line of porcelain enameled metal products, including “Seaporclad” panels for insulated curtain wall construction. Characteristics are given, with some specifications and construction details. More complete detail sheets are available on request. 12 pp., illus. Seaporcel Metals, Inc., 28-25 Borden Ave., Long Island City 1, N. Y.\*

5. *Swivelier, Adjustable Lighting at Its Finest*. Newest catalog from Swivelier emphasizes the many places where swivel and socket lamps can be effectively used, and introduces its “Dextra-Lite,” or adjustable industrial unit, which will become available this spring. “Channelites,” “Vogue-Lites,” “Gyro-

(Continued on page 258)

\*Other product information in Sweet’s Architectural File, 1953.



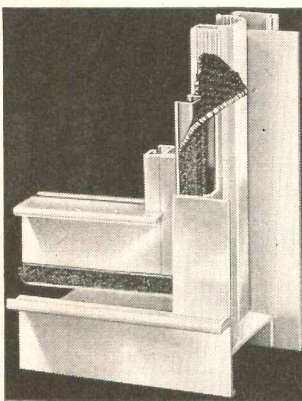
What?

# Adlake

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## TRU-PERIMETER HEAT *at a Country Club*

Forced hot water with Webster Walvector, some under floor, Webster Baseboard and Webster CF-2 Continuous Flow Control meets unusual architectural requirements.

When Architect William Henley Deitrick set out to design the new Carolina Country Club his aim was to provide complete flexibility to meet the requirements of approximately 600 members. In accomplishing his objective he provided for a terrace on three sides and for full length windows over practically the entire northern exposure.

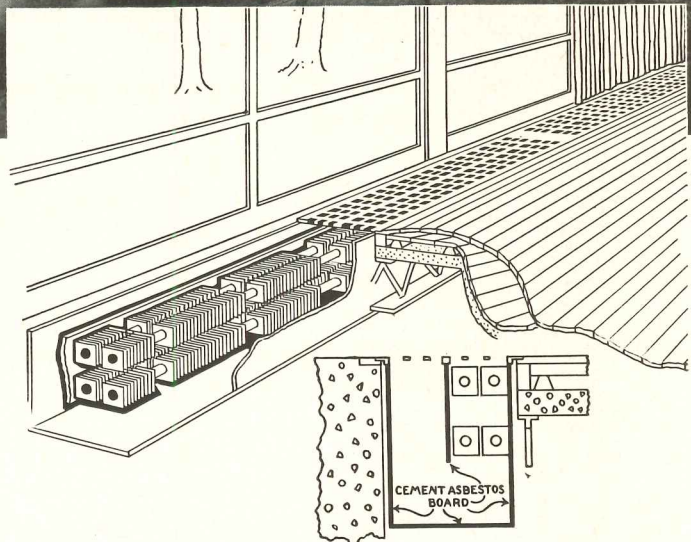
The resulting challenge to the heating engineer was fully met by Webster Forced Hot Water Tru-Perimeter Heating. Webster Walvector, installed under grilles the full length of the glass-enclosed side, provides complete winter comfort (see detail at right). Standard Walvector serves the Manager's office and kitchen. Other spaces and second floor lounges and toilets have Webster Baseboard. The separate locker building is supplied with a Webster Series R Unit Heater.

Are you planning a club or other difficult-to-heat building? Investigate Webster Tru-Perimeter Forced Hot Water Heating. For details write us or see your Webster representative.

Address Dept. AR-5

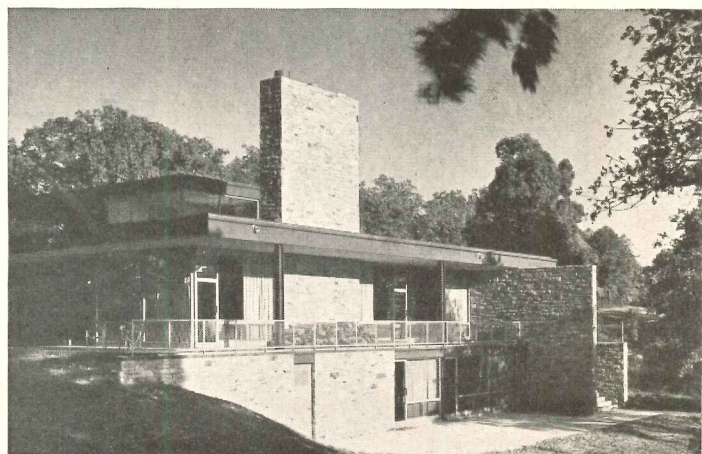
**WARREN WEBSTER & COMPANY**  
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*Webster*  
**WALVECTOR**  
REG. U. S. PAT. OFF.  
**For Steam or Hot Water Heating**



Sketch shows arrangement of Walvector below floor. Upper view shows lounge with sliding doors and grilles over Walvector.

Wm. Henley Deitrick, Inc., Architect; Ray V. Wasdell, Structural Engineer; H. W. Moser, Mechanical Designer; Matthew and Stanislaw Nowicki, Interior Decoration; E. G. Thurlow, Landscape Architect; Strong & Harmon, General Contractor; Smith & Mills Plumbing & Heating Co., Heating Contractor.



*Carolina Country Club, Raleigh, N. C.*

# METAL LATH MEMBRANE FIREPROOFING-7

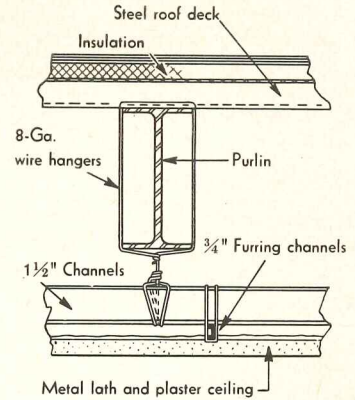
Presented through the Cooperation of Metal Lath Manufacturers' Association

TABLE G—FIREPROOFING FOR METAL ROOF DECKS

Roof	Suspended Ceilings of Metal Lath and Plaster	Fire Resistance Rating	Authority
2" vermiculite concrete	1" gypsum-vermiculite plaster <sup>2</sup>	4-hours	National Bureau of Standards Test No. 60, Report No. TR 10235-2; FP 2688, dated 1/31/49
1" insulation board of shredded wood bonded with Portland cement.	1" gypsum-vermiculite plaster <sup>2</sup>	3-hours	
1" insulation board of felted glass fiber.	1" gypsum-vermiculite plaster <sup>2</sup>	2-hours	
1 1/2" wood fiber-board insulation.	1" gypsum-sanded plaster, 1:2 mix	2-hours	NBS Test No. 58, dated 11/29/46
1 1/2" wood fiber and cement binder.	3/8" gypsum-sanded plaster, 1:2 mix	2-hours	NBS Test No. 56, dated 11/27/45
1" wood fiber-board insulation.	3/4" gypsum-sanded plaster, 1:2, 1:3 mix	1 1/2-hours	NBS Test No. 57, dated 1/15/46

(2) 100:2 1/2 mix

TYPICAL FIREPROOFING FOR METAL ROOF DECKS



## METAL LATH MEMBRANE FIREPROOFING FOR METAL ROOF DECKS

Ratings listed under cellular steel floors are applicable to steel roof decks, but usually roof decks are covered with insulation instead of

concrete. Tests were conducted at the National Bureau of Standards under the sponsorship of the Metal Roof Deck Institute. These assem-

blies meet the same ASTM standards as are required for floors. Equivalent insulation can be substituted for those listed.

## METAL LATH MEMBRANE FIREPROOFING FOR STEEL PLATE FLOORS

These ratings apply to steel plate floors or roofs on which finished flooring or covering is applied directly, and to the supporting steel beams and joists if they are not stressed beyond 20,000 psi in flexure.

Ratings by the National Bureau of Standards are based on tests in which the metal lath was located within an inch or two or in contact with the lower flange of the supporting steel beams.

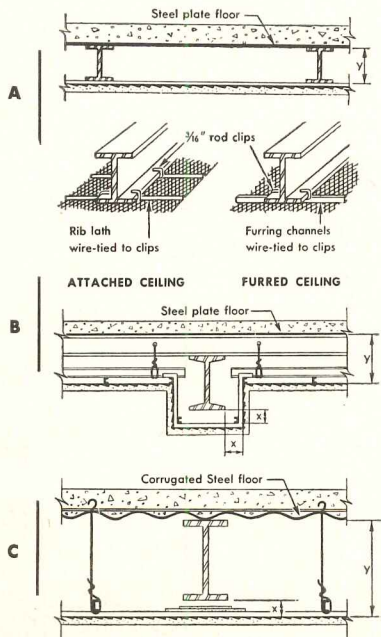
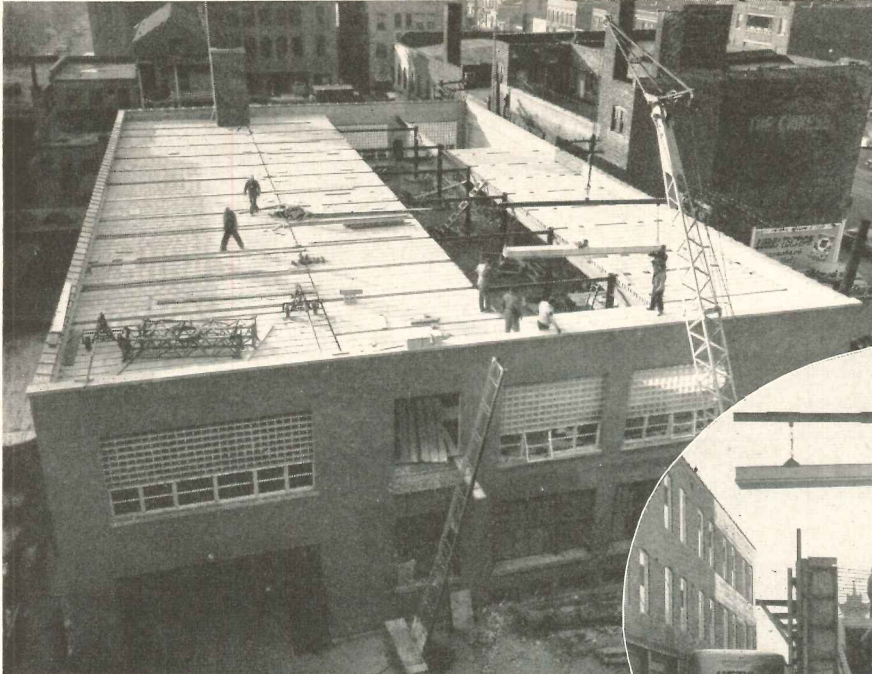


TABLE H. FIREPROOFING FOR STEEL PLATE FLOORS

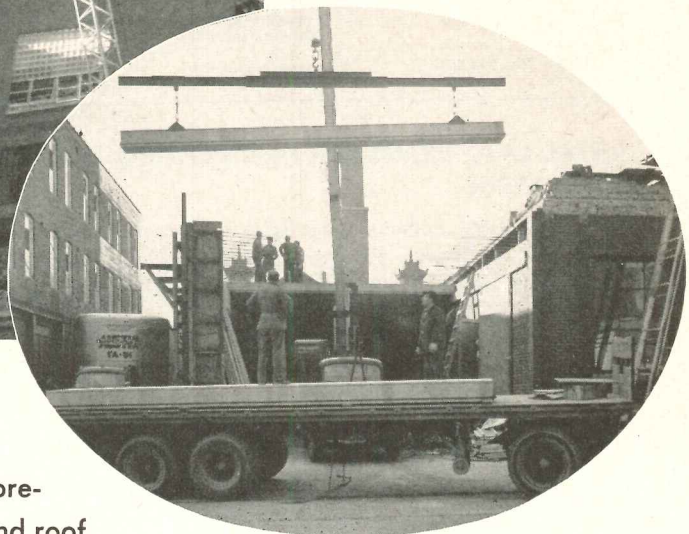
Floor	Attached, Furred or Suspended Ceiling	Fire Resistance Rating	Authority
2 1/2" 1:2:4 concrete (sketch A)	1" gypsum-vermiculite plaster 100:2, 100:3 mix Y = 3" min.	4-hours	National Bureau of Standards BMS-92, Table 44
2 1/2" 1:2:4 concrete (sketch A)	3/4" gypsum-vermiculite plaster 100:2, 100:3, mix, or 1" neat wood-fibered gypsum plaster. Y = 3" min.	3-hours	
2 1/2" 1:2:4 concrete (sketch A)	1" gypsum-sanded plaster, 1:2 mix Y = 3" min.	2 1/2-hours	
2" 1:2:4 concrete (sketch A)	3/4" gypsum-sanded plaster 1:2, 1:3 mix, or 1" Portland cement plaster 1:2, 1:2 1/2 mix with 10 lbs. hydrated lime added for each bag of cement Y = 3" min.	2-hours	
1 1/2" 1:2:4 concrete (sketch A)	3/4" gypsum-sanded plaster, 1:2, 1:3 mix Y = 3" min.	1 1/2-hours	
7/8" wood floor and wood screeds over asbestos paper weighing 14 lbs./100 sq. ft. cemented to steel deck with waterproof linoleum cement (sketch A)	3/4" gypsum-sanded plaster, 1:2, 1:3 mix Y = 3" min.	1-hour Combustible	
1" concrete (sketch A)	3/4" gypsum-sanded plaster, 1:2, 1:3 mix Y = 3" min.	1-hour	National Bureau of Standards TRBM-44, Table 22
2" reinforced vermiculite concrete (sketch B)	1" gypsum-vermiculite plaster 100:2, 100:3 mix X = 2 1/2" Y = 7"	4-hours	Underwriters' Laboratories Retardant 2773, dated 9/12/44
3 1/4" concrete (minimum thickness over steel floor) (sketch C)	1" gypsum-vermiculite plaster, 100:2, 100:3 mix X = 2 1/2" Y = 1 1/2"	4-hours	Underwriters' Laboratories Retardant

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 ... build with **Strestcrete!**



**RAPID ROLLER COMPANY**  
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 IRA SALZMAN, Builder



Where permanent, light or heavy duty construction must go up fast and with utmost economy, STRESTCRETE\* pre-assembled, reinforced concrete floor and roof slabs furnish the logical answer.

STRESTCRETE floor and roof slabs are fabricated to specifications and delivered to the job in sequence. Their dimensional accuracy permits them to be quickly positioned by a nominal labor force—only a few of whom need be skilled. In multi-story construction, STRESTCRETE's smooth, straight, machine-cast surface affords both ceiling and floor in one unit. Floors immediately become working areas for following trades. Space-wasting vertical supports are not needed with STRESTCRETE.

Completely fireproof and simply maintained, STRESTCRETE can be furnished to support any desired load—at surprisingly low initial cost.

• For detailed information—consult the STRESTCRETE Licensee nearest you. Planning assistance if desired.

**STRESTCRETE Licensees**

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- **ATLAS BUILDING PRODUCTS CO.**  
P. O. Box 601, El Paso, Texas
- **BASALT ROCK CO., INC.**  
8th and River Streets, Napa, California
- **CLEVELAND BUILDERS SUPPLY COMPANY**  
1276 West Third Street, Cleveland 13, Ohio
- **ILLINOIS BRICK COMPANY**  
228 North La Salle Street, Chicago 1, Illinois
- **LA BRIQUE DU NORD, LIMITEE**  
Rouyn, Quebec, Canada
- **PLASTICRETE CORPORATION**  
College Highway, Hamden 14, Connecticut
- **ROCKLITE PRODUCTS**  
Ventura Boulevard, Ventura, California

**STRESTCRETE**  
 Licensed under U. S. Patent  
 \*Trade Mark Reg.  
**FLOOR and ROOF SLABS**



# RADIANT HEATING SYSTEMS FOR HOUSES—23: ELECTRIC SYSTEMS

By William J. McGuinness, Professor of Architecture, Pratt Institute

## Electric Cables in Ceiling or Floor (Continued)

### Inspection and Tests

When the heating wires are in place and fastened but not covered and when all other wiring is installed and not closed an inspection should be called for. An ohm-meter or megger is used for checking possible damage to insulation. A lamp in series with the heating element will flicker or go out to indicate a severed heating wire. Tests should be made both before and after plastering or concreting. If trouble is found at either time, broken wires can have repair splices applied and damaged insulation can be reinforced by thermoplastic tape.

### Design Procedure

1. Compute hourly heat losses in each room without regard to the planned location of the panels. Losses should include heat flow through floors, ceilings, walls, perimeter and glass. Infiltration must be included.
2. Divide the hourly heat loss from each room in Btu per hr by the factor of 3.14 to obtain the required wattage of units to be selected for the room.
3. Select from Table 8 sheet 21 TSS, March 1953, one or more standard heating units for each room. Their total rated wattage must equal the wattage required in the room.
4. Make a layout of the placing of these units, maintaining a minimum spacing of 1½ in. for ceilings and 2½ in. for floors.
5. Select locations for room thermostats where they will not be too directly affected by sunlight, draughts or the action of heating panels.
6. Make a layout of the connections from rooms to the load center and size all wiring.
7. Design the load center and show its connection to other general house wiring for lighting, etc., and to the house switch.

### Spacing and Output of Cables

If a coil of heating wire is distributed uniformly over the entire ceiling (or floor) and if one unit is

used, the spacing between wires may be established by the formula

$$S = \frac{12 \times (W-1) \times (L-1)}{C}$$

where: S = spacing in inches between turns

W = width of the room in ft

L = length of the room in ft

C = length of the coil in ft

This is based on a space of 6 in. between wire and walls which should be observed. In the case of rooms with great heat loss it is well to consider the maximum possible output of ceiling and floor panels. For ceilings the recommended minimum spacing of 1½ in. between wires gives the following output in Btu per hr per sq ft of panel:

$$\frac{12''}{1.5''} \times 2.75 \times 3.14 = 69.5 \text{ Btu per hr per sq ft}$$

NOTE: 2.75 is the number of watts per ft of length for all cables  
3.14 is the number of Btu per

hr equal to 1 watt

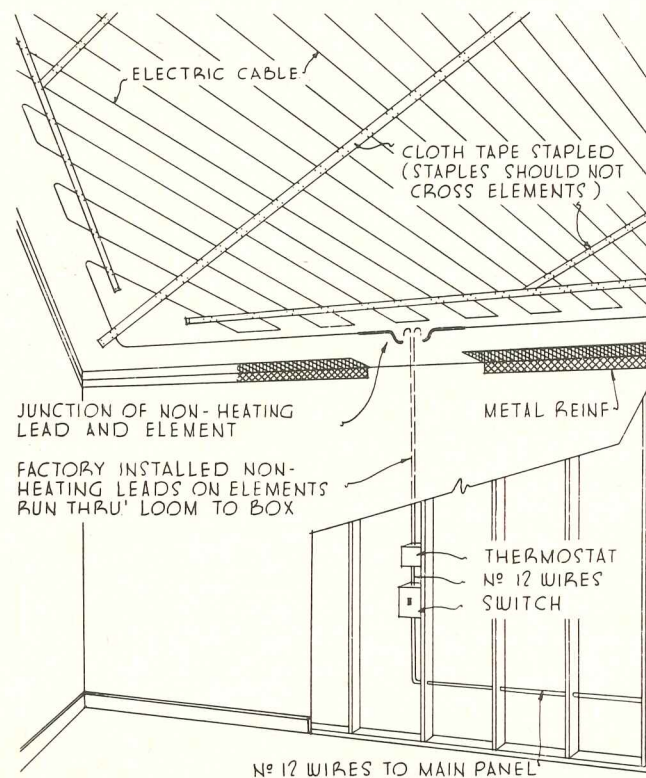
For floors the recommended minimum spacing is 2½ in. and gives an output of:

$$\frac{12''}{2.5''} \times 2.75 \times 3.14 = 41.5 \text{ Btu per hr per sq ft}$$

Reference to Table I, Sheet 4 of TSS, August 1951, will recall the recommended maximum outputs of 75 and 55 Btu per hr per sq ft for ceilings and floors respectively. It will be seen that the maximum outputs that are achieved by the minimum spacing of wires in electrical systems are within these limits.

The heating wires operate at about 165 F and therefore do not subject the plaster to a general average temperature of more than 150 F, which is the practical limit for plaster. If the suggested minimum spacing limits are observed, surface temperature of ceilings will not exceed 115 F and floors 85 F — which are often considered the high limits for comfort.

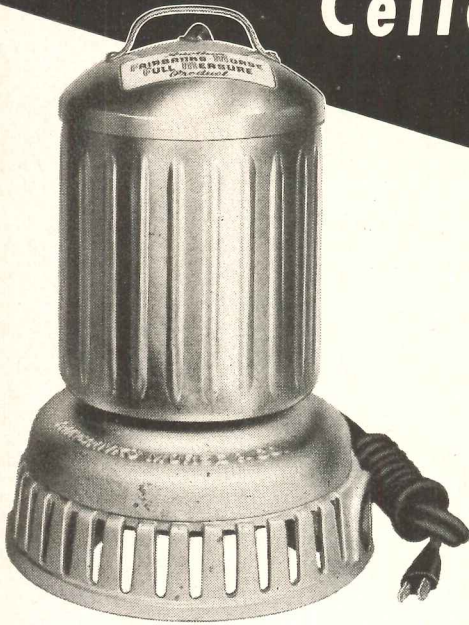
Variation in typical cable layout



You can recommend them with confidence!

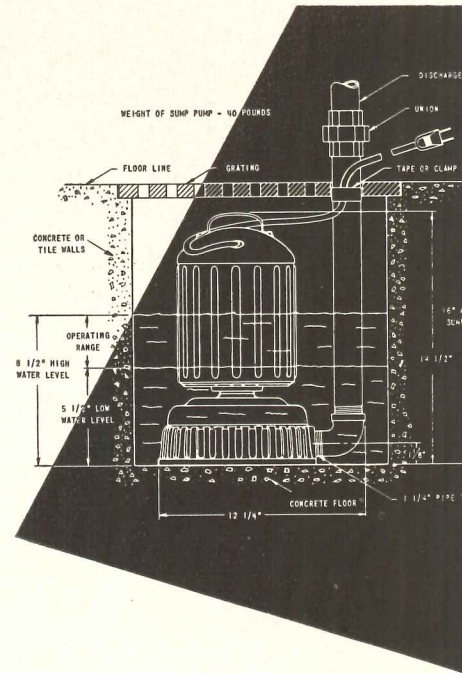
# FAIRBANKS-MORSE

## NEW Submersible Cellar Drainer



You and your clients can be sure of ample, dependable protection against damage in basements by flooding if you have this *new* Fairbanks-Morse submersible cellar drainer installed!

It has many advantages. It can be concealed in a sump only 16" x 16" x 16". (See diagram). It will discharge as much as 3600 gph. against a 10-foot head. The big screen area permits only trash-free water to reach the impeller. Operating range is set at the factory. Thus, no float adjustment is necessary. Motor and operating switch are enclosed in a water-tight stainless steel housing which also serves as a float control.



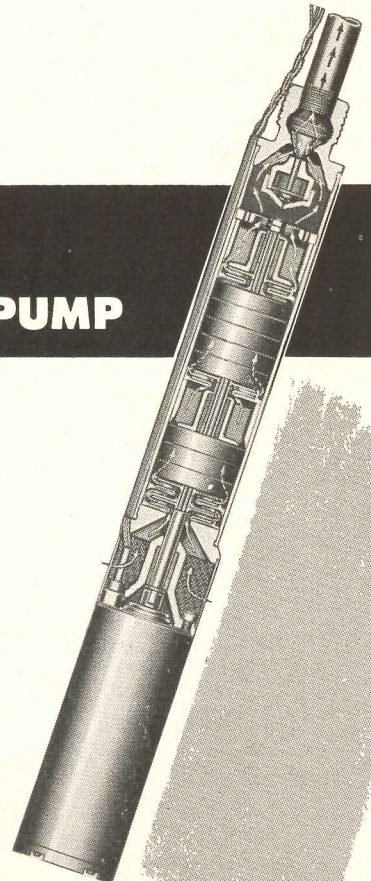
# FAIRBANKS-MORSE

## DEEP WELL SUBMERSIBLE PUMP

Architects, builders and drillers in all parts of the country are recommending the sensational Fairbanks-Morse submersible pump. It features complete submersion of *motor and pump*; absolutely quiet operation; ease of installation; minimum maintenance; single instead of double lengths of pipe; and a range of capacities at depths to 140 feet to meet all requirements.

### Send for Specifications

If you do not have complete specifications of the deep well submersible pump and the submersible cellar drainer in your files, ask to have them sent at once. Address, Fairbanks, Morse & Co., Chicago 5, Illinois.



# FAIRBANKS-MORSE

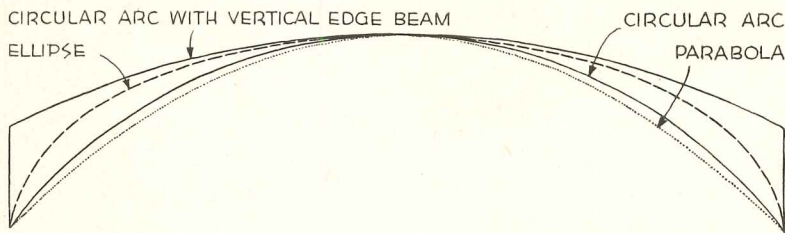
a name worth remembering when you want the best



STRUCTURAL FORMS-18: THIN SHELLS OF REINFORCED CONCRETE

By Seymour Howard, Architect, Instructor at Pratt Institute

A-1 Center(s) of Curvature below Shell (Continued)

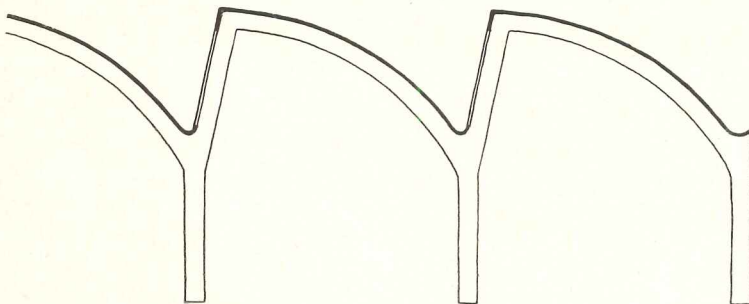


Some Typical Cross Section Curves

The parabola is as flat a curve as should be used. The vertical tangents at the bottom edges of the ellipse (or approximations by using two or three arcs) and of a shell with edge beams reduce or eliminate crown moments. It is not practical to place concrete at angles steeper than 45° without top forms; therefore job economy favors flatter curves. This requirement would limit depth to width ratio to 1 to 5 with circular arc. Cycloid has been used because of vertical tangent at bottom edges, but requires a depth to width ratio of 1 to  $\pi$  or 0.318 to 1.

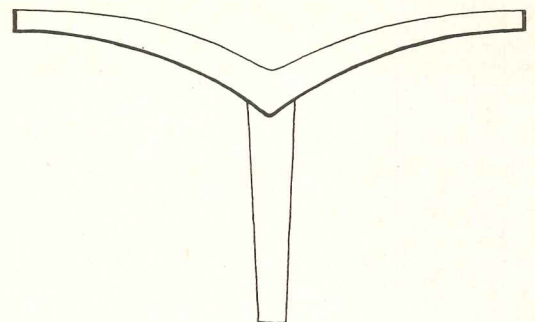
NOTE: For short barrels the curve is based on the arches and follows the pressure line for them, normally close to a parabola or catenary. The catenary would lie between the parabola and the circular segment.

Natural lighting can be provided by circular holes cut in shell, 3 ft-0 in. to 4 ft-0 in. diameter, or by glass prisms cast directly with the concrete



Typical "North Light" Shells

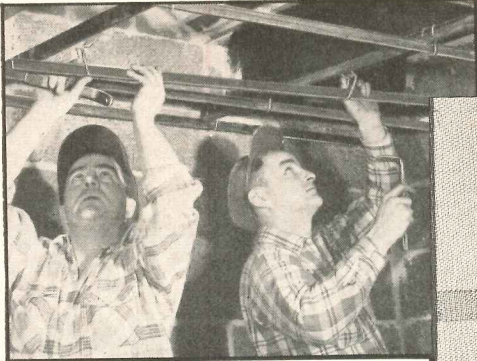
Note that, although these can be continuous, they cannot be multiple.



"Butterfly" Shell (Twin Cantilever)

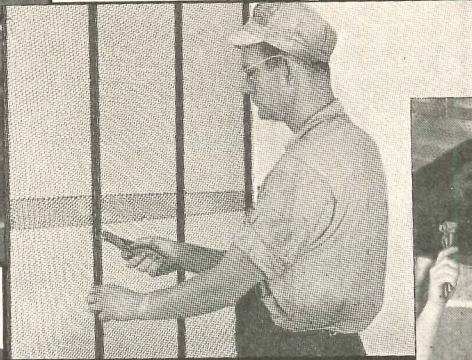
Can be used as shown for train or bus platforms; also grouped in pairs with skylight between and occasional ties to eliminate need for wide, rigid footings.

# IN KENTUCKY'S NEW

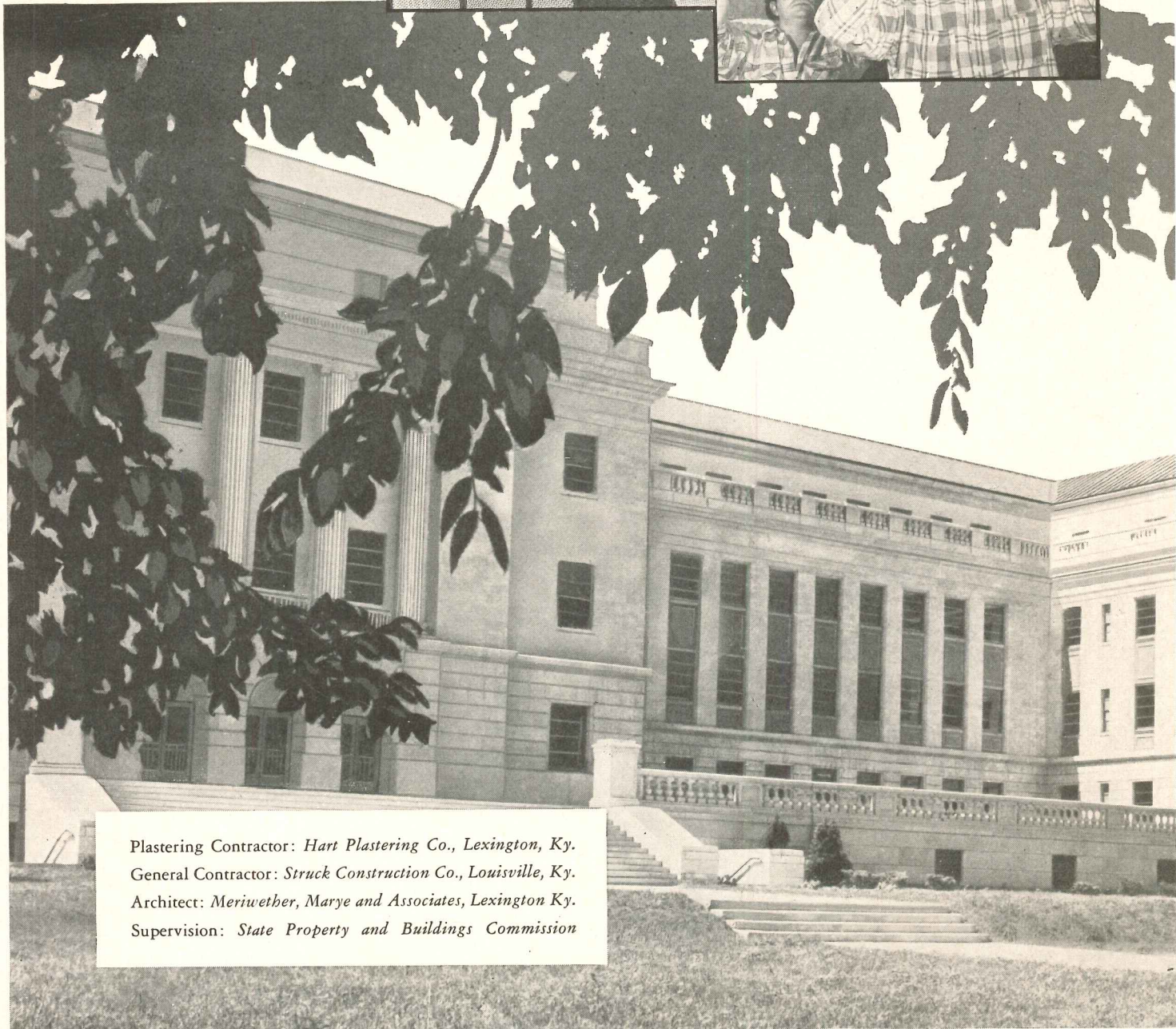
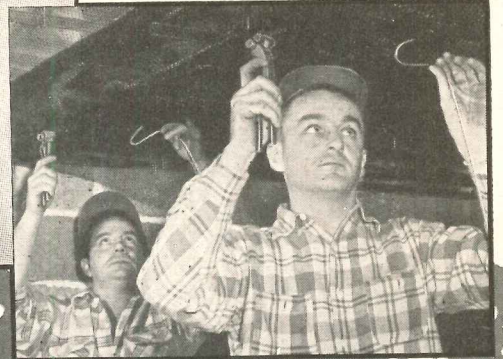


*Wheeling Channels go up quickly, easily.*

*Wheeling Metal Lath ties flat, stays rigid.*



*Attaches to form a firm, sturdy surface.*



Plastering Contractor: *Hart Plastering Co., Lexington, Ky.*  
General Contractor: *Struck Construction Co., Louisville, Ky.*  
Architect: *Meriwether, Marye and Associates, Lexington Ky.*  
Supervision: *State Property and Buildings Commission*

## MODULAR CONSTRUCTION

Coordination of modular design and modular brick eliminates cutting around openings, improves appearance, saves from 5%-15% in drafting time, from 8%-21% in on-site costs.

»» Case histories prove that modular-sized brick and tile save time and money for both architect and builder. Says the Department of Education and Research of the American Institute of Architects:

»» *“Architects who regularly use the Modular Method report a 5% to 15% increase in the rate of production of drawings. Two impartial studies showed in-the-wall savings of 8% to 21% due to the use of Modular-Coordinated masonry units.”*

# Modular brick and tile cut costs on the boards, on the job

The sketches at the right show how modular coordination of materials and design eliminates tedious cutting and fitting of brick and tile around window and door openings.

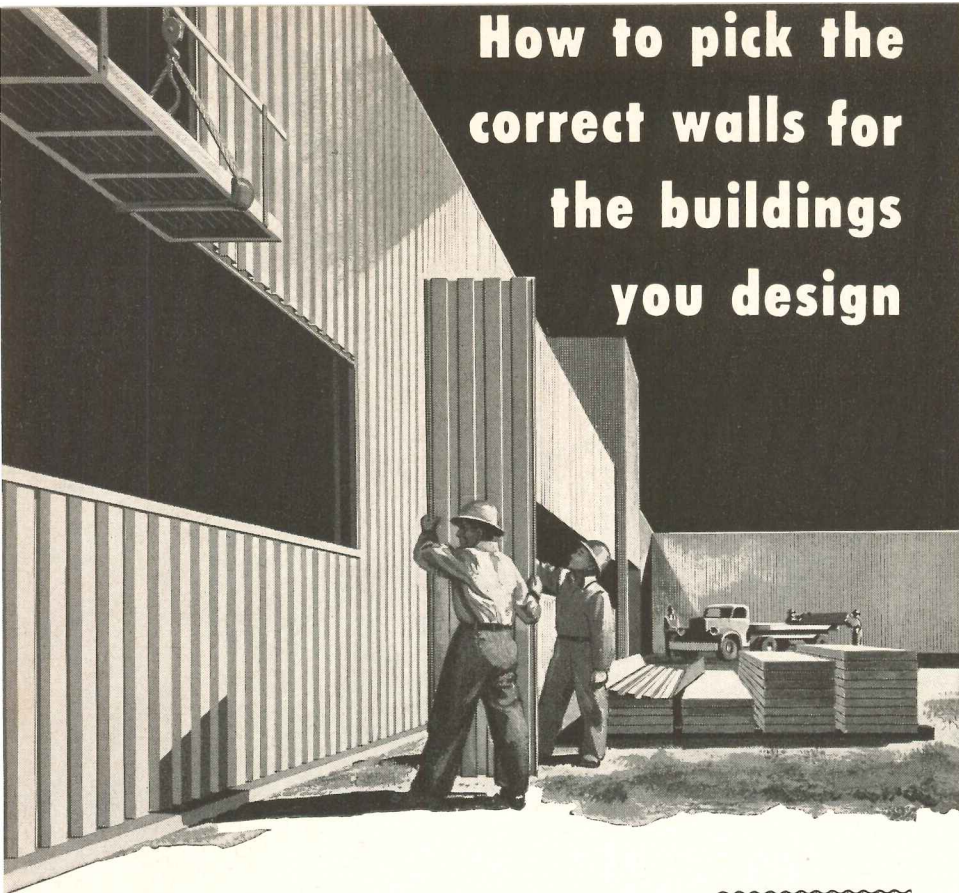
»» Carrying out its tradition of service to architects, the Structural Clay Products industry was the first to support modular coordination on an industry-wide basis. For full information on modular brick and tile, call your regional SCPI representative or write to our Washington office.

Get these two free booklets for your file on modular design: *“The ABC of Modular Masonry,”* *“Modular Sizes of Brick and Tile.”* Address AR-5.

## NON-MODULAR CONSTRUCTION

Lack of coordination between brick sizes and architects' dimensioning requires cutting and fitting to accommodate openings.

# How to pick the correct walls for the buildings you design



If you are designing a building, you can pick the correct wall by matching the function of the structure against the Robertson Q-Wall products shown here. These modern walls save construction time and money and give many extra years of maintenance-free service. They can be demounted and reused to keep pace with plant expansion. Q-Walls weigh less than 1/16th of the equivalent masonry wall.

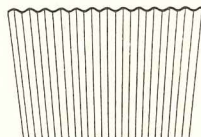
**1. Galbestos.** Ideal for standard industrial plants. Galbestos has the highest resistance to corrosion and weather of any protected steel siding or roofing you can specify. For mill buildings, warehouses, or any other industrial structures that do not require full insulation.

**2. Insulated Galbestos.** Perfect for a dry-occupancy industrial building that must be heated. Non-combustible insulation is installed on the job by the Robertson *Top-Speed* fastening method, and Galbestos applied over. Its heat transmission factor (U-Value) is 0.16 BTU per sq. ft. per hr. per degree of temperature difference, F.

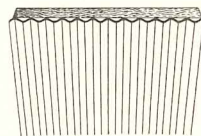
**3. G-Type Q-Panels.** This is a *field-assembled* wall made up of an interior steel vapor barrier, a layer of incombustible insulation, and an exterior of tough, long-lasting Galbestos. The proper combination for an industrial situation which requires both temperature and humidity control. U-Value—0.16 BTU.

**4. Q-Panels.** A quickly erected, *factory-assembled* panel combining strong, dry, lightweight construction with architectural beauty. Well adapted to air-conditioned buildings of all sizes, and obtainable with various exterior surfaces, either metal coated steel, stainless or aluminum. U-Value—0.16 BTU.

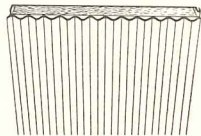
**5. H-Type Q-Panels.** Differ from standard Q-Panels essentially in that they contain twice as much insulation. Ideal for cold storage warehouses, refrigeration plants and structures subjected to Arctic conditions. U-Value is 0.08 BTU. Write for complete details.



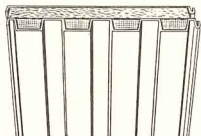
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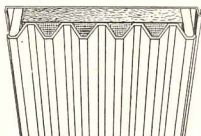
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3



4



5

## Robertson Q-Walls

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### Architectural Engineering

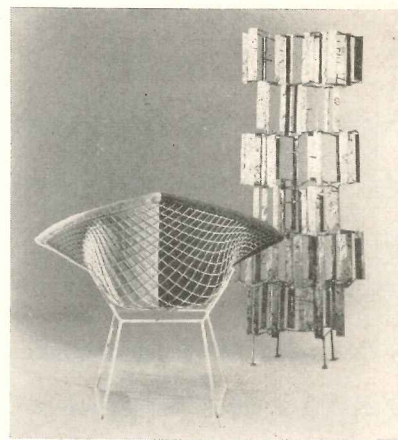
#### PRODUCTS

(Continued from page 210)

ing, or to an 18-in. brick wall); immunity to termites; almost complete freedom from swelling or shrinking; minimization of necessity for waterproofing; minimization of necessity for supplementary surface treatment; favorable competitive prices. United States Plywood Corp., Weldwood Building, 55 W. 44th St., New York 36, N. Y.

#### Free Form Furniture

Long recognized for his paintings, drawings, metal sculpture and his experiments in other graphic arts, Harry Bertoia has added furniture design to his repertoire with a new *Knoll* line of formed wire chairs, supported on steel cradles. Each of the various models is covered with a foam rubber seat cover,



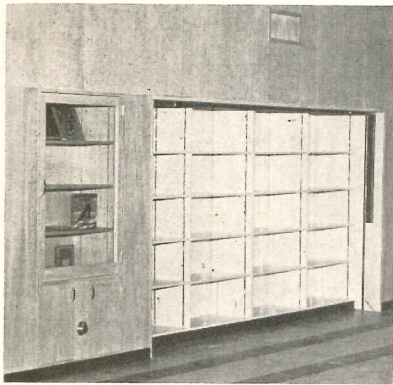
Bertoia's wire shell chair has removable foam rubber pads with prefixed upholstery in several colors. Sculpture at right is also by the artist

upholstered in a handsome fabric which is available in six colors. Most of the wire shells are plastic-coated, although they may be obtained with an oxidized finish if desired. A patented pivot-mechanism permits adjustment of the seating angle. Stationary construction is also available, however. The chairs have been designed for either indoor or outdoor use. Knoll Associates, Inc., 575 Madison Ave., New York 22, N. Y.

PRODUCTS

**Rolling Wardrobe Door**

The *Barcol Wardrobedoor* has been devised to save space in classrooms and provide additional wall space for bulletin boards or blackboards, which may be applied directly to the surface of the door. The door rolls straight up into the wall and does not stick out into the aisle. This reportedly helps eliminate minor accidents during the cloakroom rush. Both attractive and utilitarian,



Courtesy Donald K. Phillips

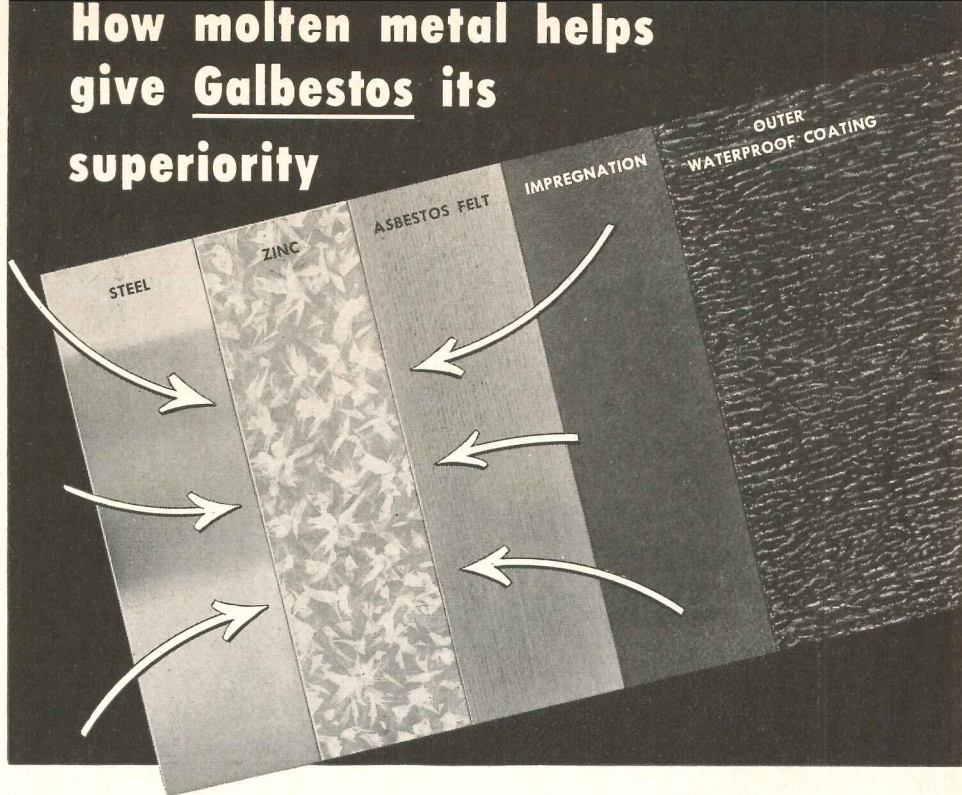
Wardrobe door rolls up into wall, operates smoothly, saves space

the rolling door has been installed in the Henry Barnard School, New Rochelle, New York, for which Lee Perry was the architect for the remodeling. Construction of the door is two-section Kaylo core made of non-select birch hardwood or rotary red oak. Mounted inside the door frame on 2 by 8 casing, the door has nylon rollers which provide a smooth, quiet operation. It requires 3-ft 6-in. headroom and 9-in. sideroom, and is made in two standard sizes, 12 by 6-ft and 10 by 6-ft, accommodating coats for 48 and 40 students respectively. Barber-Colman Co., Rockford, Ill.

**Insulation for Transformers**

A new insulating material, *Mylar Polyester* film, is now being used in the transformer field. The material, combined with Johns-Manville Quinterra and DuPont Dacron is used in *Marcus* transformers on Class B insulated magnet wire. It is claimed that the new  
(Continued on page 218)

How molten metal helps give Galbestos its superiority



Robertson Galbestos has the greatest resistance to weather and corrosion of any protected steel roofing or siding obtainable anywhere. This position of broad superiority is made possible by a unique manufacturing process exclusive with H. H. Robertson Company.

First, the steel sheet is pickled . . . then given a coating of molten zinc. Asbestos felt is then pressed on so that as the molten metal hardens in cooling it grips the felt fibers in absolute bond. The asbestos is then impregnated with a special asphaltic compound and, finally, given a tough weatherproof coating. Galbestos can be furnished flat or in the 3 well-known corrugations: Standard, Mansard, and V-Beam. The resultant material is so durable, it may be sheared, bent, rolled, crimped and riveted in the field as easily as ordinary unprotected steel. It will withstand the greatest possible extremes in weather temperatures without deterioration, and will actually retard fire better than naked steel. For an industrial roofing or siding that requires no maintenance under the most severe corrosive conditions, specify Galbestos.

**Long Service Life.** Galbestos will give longer maintenance-free service under the most severe weather and man-made corrosive conditions. Even salt air cannot penetrate its tough coatings to destroy the steel core.

**Not Fragile.** Galbestos' strong steel core sheet guarantees against breakage—during shipment or during erection.

**Resists Climatic Extremes.** Galbestos is not subject to damage either by tropic or frigid temperatures. Its coatings will not run under broiling sun or crack or spall in sub-zero weather.

**Goes Up Fast.** The exclusive Robertson *Top-Speed* method of attaching Galbestos to structural steel speeds up erection for quicker occupancy.

**Resists Flame.** Leading testing laboratories have made exhaustive tests on the fire resistance of Galbestos and have published the results. Copies of these reports are available for study.

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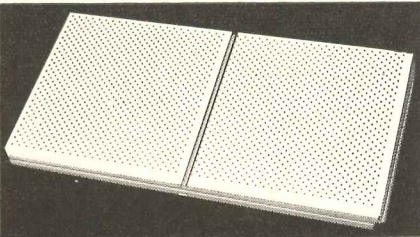
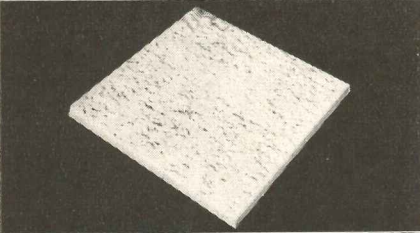
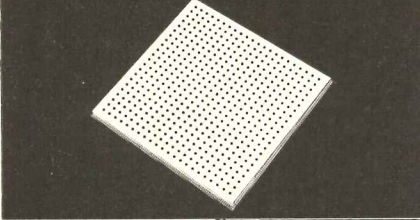
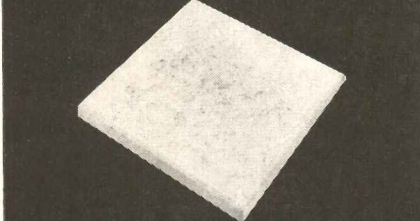
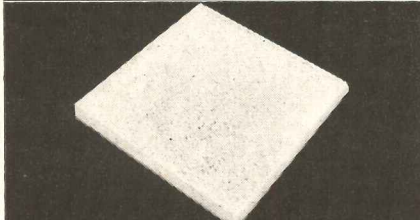
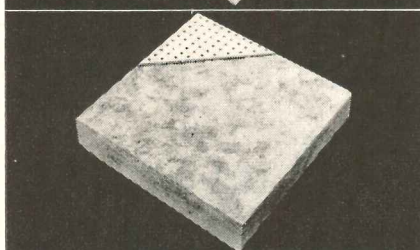


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	<b>ACOUSTIMETAL</b> Low maintenance cost. Can be washed or painted any number of times. Panels quickly removed for access to plumbing and wiring. Incombustible, permanent, salvageable. High acoustical efficiency.	.85	1 9/16"	12" x 24"	Alkyd resin enamel finish. Baked on by infra-red light. Bond-erizing of metal assures greater adhesion of paint.
	<b>TRAVACOUSTIC</b> Beautiful mineral tile resembling natural travertine stone. Fissures vary in size, depth and arrangement. Incombustible, sanitary, acoustically efficient. Resistant to mold and vermin.	.65 .70 .70	1 1/16" 1 3/16" 7/8"	6" x 12" 12" x 12" 12" x 24"	Non-glaring white finish applied at the factory gives high light-reflection. Repaintable with brush or spray gun.
	<b>ACOUSTIFIBRE</b> Repaintable wood fibre tile. Einhiple-drilled for round, clean holes deep into porous core. Finish resistant to mould and fungus. Sanitary, washable.	.55 .65 .70	1/2" 3/8" 3/4"	12" x 12" 12" x 24" 24" x 24"	Factory-applied, washable shell-white Restex or Flame Resistant finish on face and bevels results in high light-reflection.
	<b>ECONACOUSTIC</b> Low cost wood fibre tile. Distinctive brushed texture surface offers unusual natural beauty. Cleanable with vacuum cleaner.	.55	1/2"	12" x 12" 12" x 24"	Prepainted white. May be spray-painted when other colors are desired.
	<b>THERMACOUSTIC</b> A mineral wool product especially adaptable to irregular surfaces. Spray-applied to any desired thickness. Rotproof. Also provides thermal insulation and fire protection.	.80 at 1/2" thickness on metal lath	As desired	Mono-lithic	Fissured texture can be repainted to harmonize with the decorative scheme without destroying its acoustical properties.
	<b>PERFORATED ASBESTOS-ZEROCEL WOOL SYSTEM.</b> Durable, incombustible acoustical system. May be "custom built" to job requirements. Inorganic composition. Will not retain moisture.	.80	1"	12" x 12" 12" x 24" 24" x 24" 24" x 48"	Furnished unpainted in natural gray color. Can be painted any color and repainted any number of times.

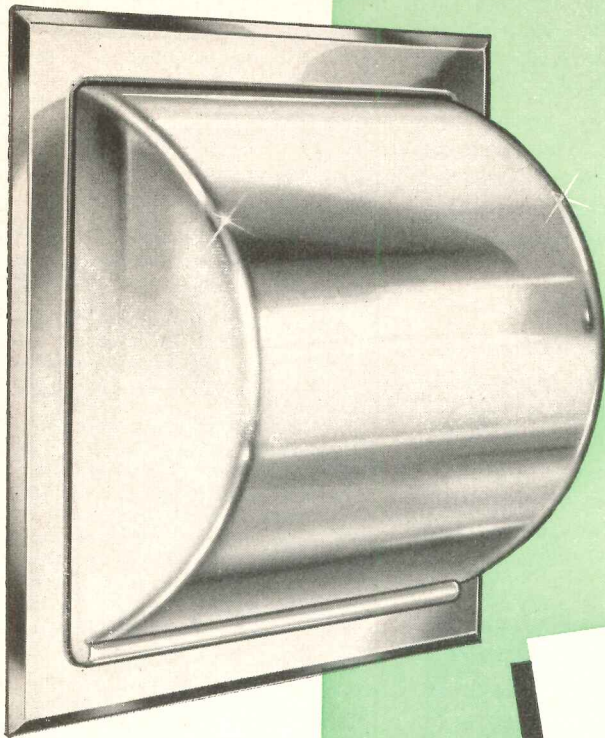
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# Design

**patent no.  
2561584**



This newest mark of refinement for today's bathrooms . . . Hall-Mack's new concealed Toilet Paper Holder . . . brings smart styling and tactful covering to a bathroom facility that hasn't changed much down through the years.

When not in use only the pleasing curvature of the chrome cover gives a hint of the contents . . . yet it opens instantly at the touch of a finger. It blends perfectly with all modern bathroom designs and colors . . . and easily accommodates a standard roll of toilet paper.

This new Concealed Toilet Paper holder is but another example of Hall-Mack quality expressed through originality of design.

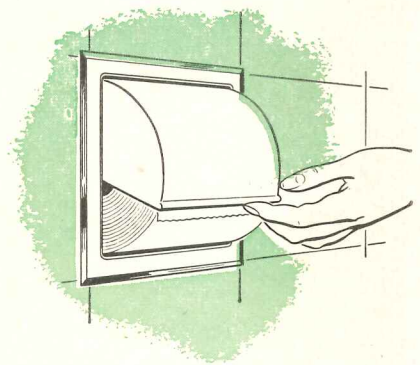
## **bathroom magic...**

An original Hall-Mack idea, this new Concealed Toilet Paper Holder is the extra touch of convenience and charm that makes a home more desirable . . . more saleable! Only the finest materials and craftsmanship go into bathroom accessories bearing the Hall-Mack name.

In Hall-Mack's complete line of bathroom accessories you'll find a number of original developments with the kind of special appeal that sparks up an entire bathroom . . . and conveys the impression that the entire home is the result of careful thought and planning.

May we send you complete information on Hall-Mack's new Concealed Toilet Paper Holder . . . and on other exclusive Hall-Mack bathroom accessories?

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*...for Every Style and Budget!*



*Sold by leading plumbing,  
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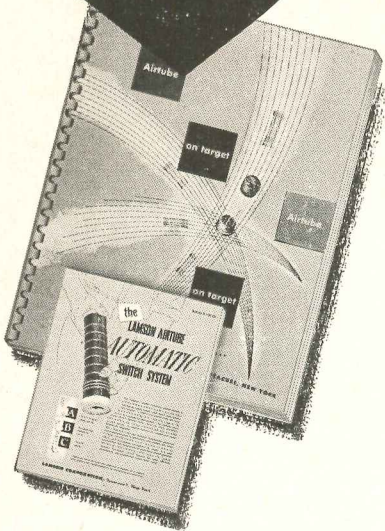
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Without any obligation on my part, please send me my copies of the Lamson Airtube Catalog and the Lamson Automatic Switch System Bulletin.

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**Architectural Engineering**

**PRODUCTS**

(Continued from page 215)

insulation imparts exceptionally high heat resistance and increases dielectric strength 10 times above conventional industry standards. It is reported that this new development makes possible performance levels that have been physically and economically impossible for dry type transformers. The new insulation is now being delivered as standard equipment on the manufacturer's transformers. Marcus Transformer Co., Inc., Hillside, N. J.

**New Products for Heating and Ventilating**

Several new products for home and industry were introduced at the 11th International Air Conditioning Exposition in Chicago by Trane Company.

Among these was a *Hidden Heating Baseboard Convector*, designed to blend with contemporary or traditional rooms.



Baseboard convector projects only 1½ in. from wall. Units may be painted to match most color schemes.

The units may be recessed so that they project only 1½ in. from the wall and they can be painted to match most color schemes. A sponge rubber gasket behind the back plate guards against streaks on the wall. A convex reverse radius curve instead of a regular quarter round is reported to make sweeping and cleaning the floor much easier.

Other new Trane products include a *Cold Generator*. This packaged water chiller was designed to provide a single-

(Continued on page 222)

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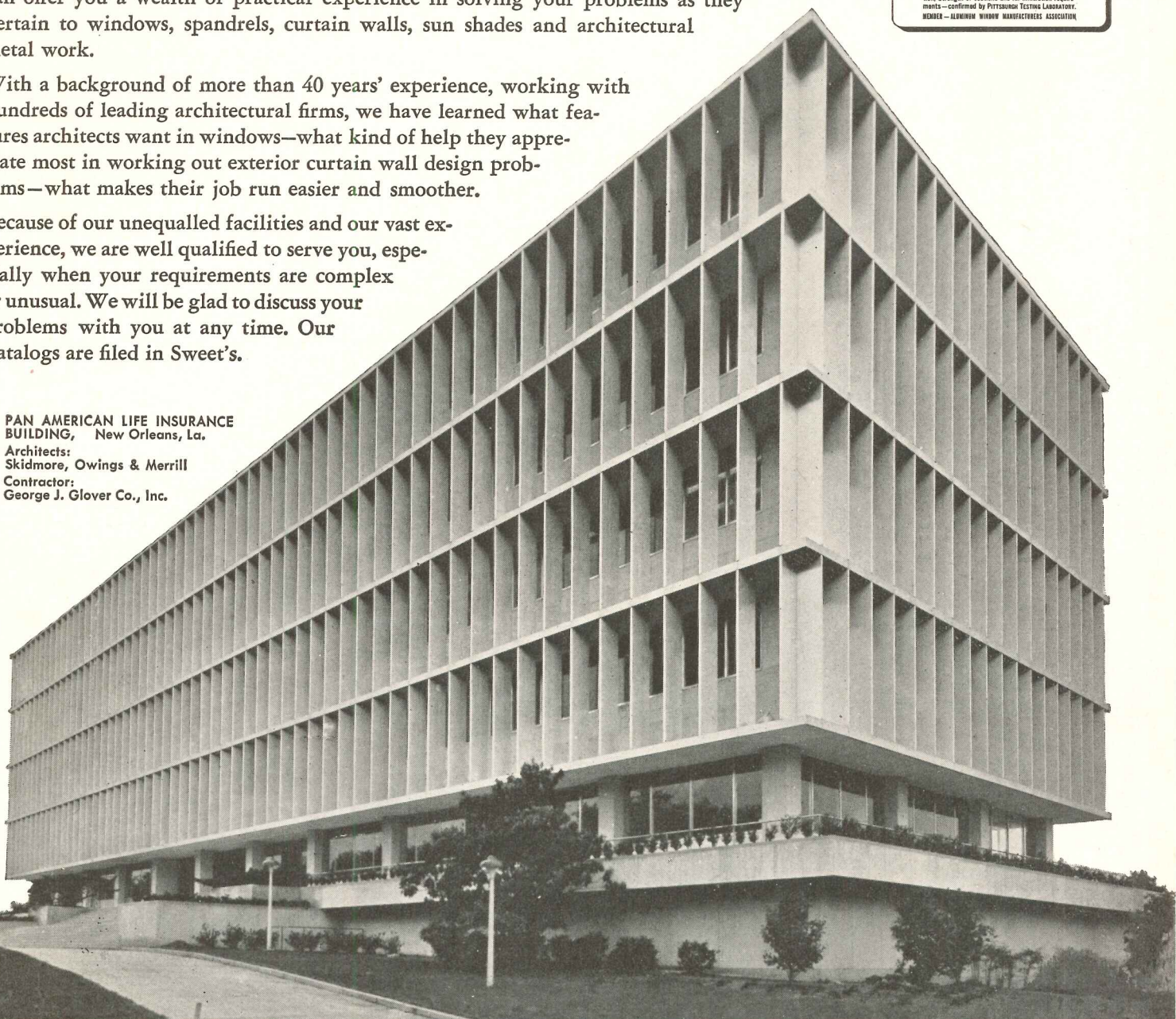
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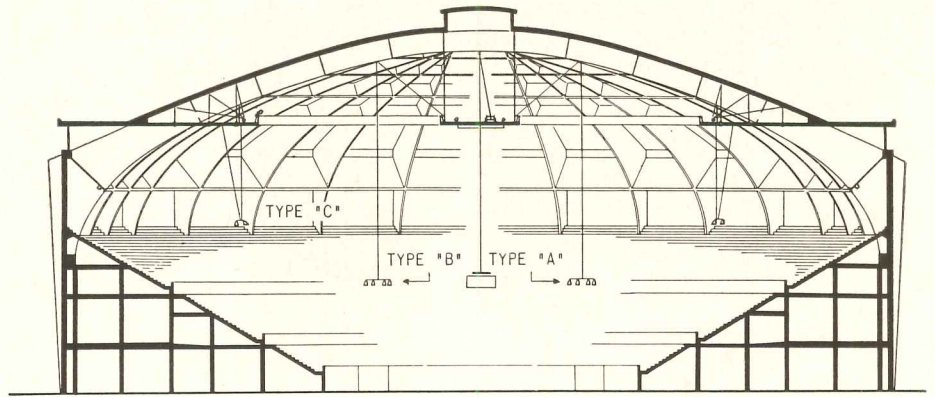
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# THE RECORD REPORTS

(Continued from page 330)

be built in Detroit's Civic Center, for which Giffels & Vallet, L. Rossetti, Inc., Associated Engineers & Architects, are the designers.

The jury reported that the winning design was "perfectly practical and made use of the best possibilities of the architects' design, with lighting sources well distributed as to vertical, horizontal and accent lighting."



Portions of the winning design by David Hamilton of Detroit in the Kirlin Company competition for a lighting scheme for the convention hall of Detroit's Civic Center

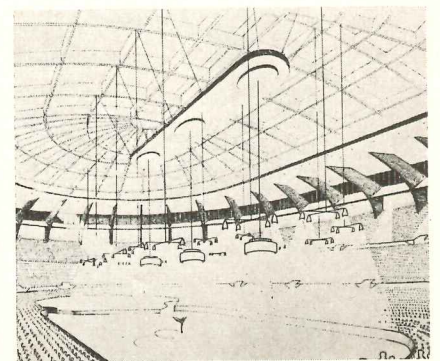
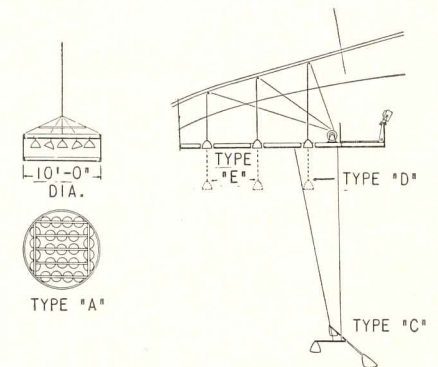
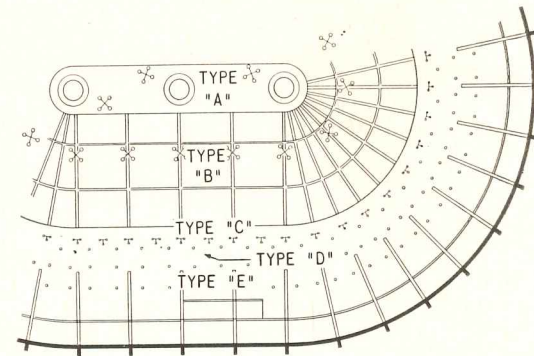
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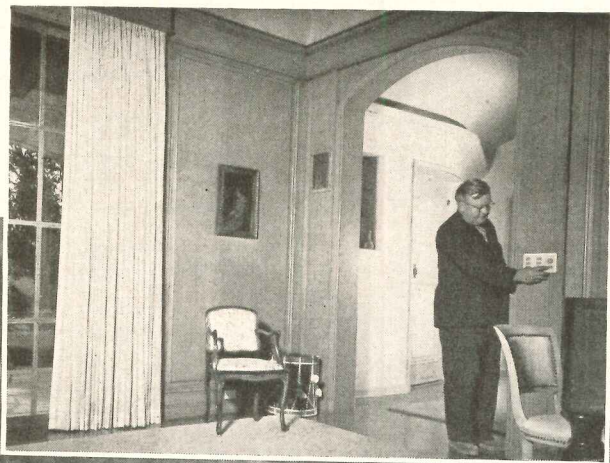
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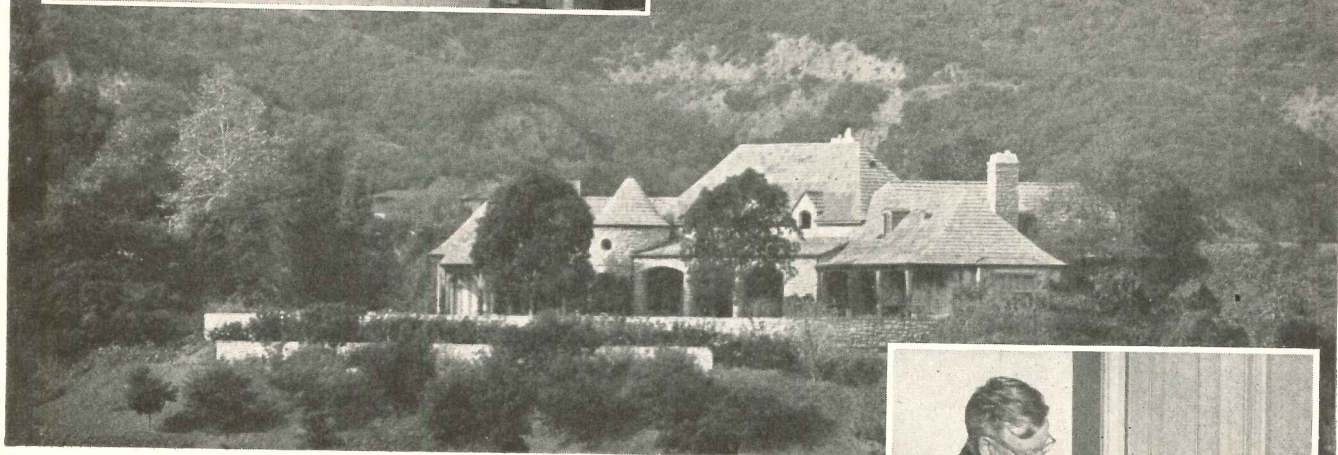
31-71 WHITESTONE PARKWAY, FLUSHING, N. Y.



(More news on page 334)



◀ Homeowner Sheriffs demonstrates the master selector switch in the living room that opens and closes draperies at the window. Switches also operate draperies in four other parts of the house. This master switch controls 8 additional circuits. There are five master selector switches in the Sheriffs home.



John Byers, A. I. A., Architect



▲ A flush mounted switch in the living room controls all garden, yard and driveway lights. Wiring costs are held down in the G-E remote-control system because small, lightweight control wire is used to connect switches to relays. You can have as many switches as convenience dictates without increasing the cost prohibitively.

## Lovely mountain-top home makes extensive use of

### **G-E REMOTE-CONTROL WIRING**

G-E remote control wiring is among the many delightful features which were designed into W. A. Sheriffs' new home in West Los Angeles. Mr. Sheriffs explains his reasons for selecting G-E remote-control wiring in this way.

"Even though we wanted a luxury home, our ideas for lighting and electrical control would have greatly increased the cost if it were not for G-E low-voltage remote-control wiring. As it worked out, we were able to provide as complete a system of electrical control as comfort and convenience dictates—and the cost was very reasonable."

*You can put your confidence in—*

**GENERAL  ELECTRIC**

#### **TOUCH OF LUXURY**

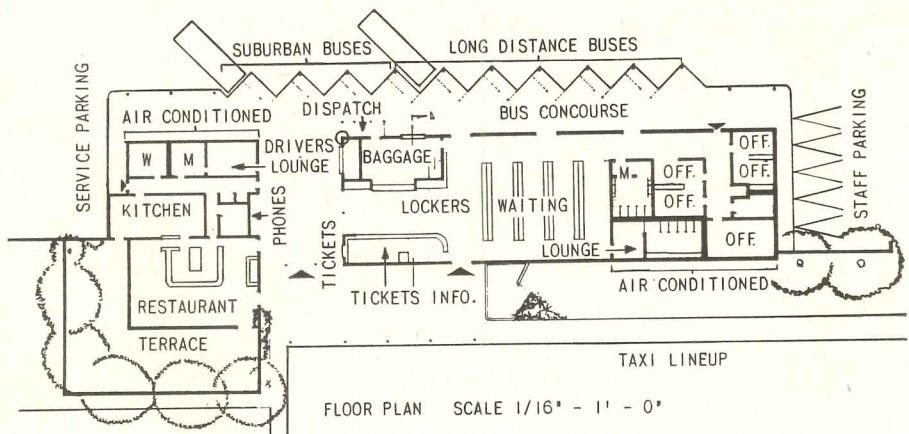
G-E remote-control wiring adds a touch of luxury to any home—for little more than the cost of conventional wiring. It is being used in home after home across the nation—some priced as low as \$9,500. For complete information on G-E remote-control, see your G-E Construction Materials distributor or write Section D56-55, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

## THE RECORD REPORTS

(Continued from page 332)

### STUDENT WORK HONORED IN FEATHERLITE AWARDS

An interstate bus station was the subject of the 1952 Texas Society of Architects-Featherlite Competition for students of the five architectural schools of Texas. The Featherlite Corporation contributed \$2500 in prize money; \$2000 was awarded in competitions at the in-



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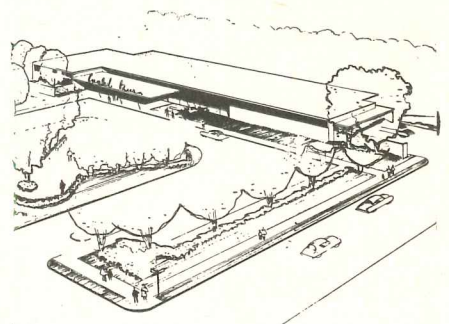
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Grand Award in the Featherlite Competition for architectural students went to Tom Conger of the University of Texas. Jury praised Mr. Conger's design (floor plan above, rendering below) for "straight-forward simplicity"



dividual schools to choose entries for the statewide competition at the Society's annual meeting at El Paso.

Tom Conger of the University of Texas received the \$500 Grand Award in the state competition; and special commendations were given by the Grand Award Jury to James B. Gatton, A. & M. College; Ben Lee Wilson, Texas Tech; J. A. Toline, University of Texas; and Langston Smith Jr., A. & M. College.

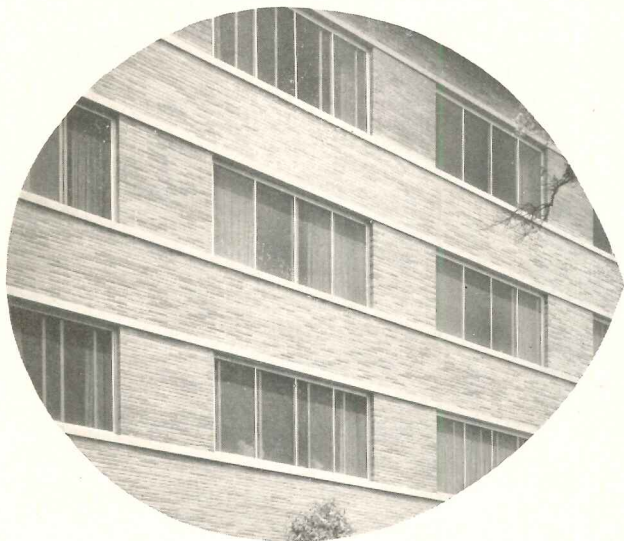
Judges were John G. York, Harlingen, Carl J. Young, El Paso, and Baldwin N. Young, Houston, all members of the Texas Society of Architects, and John M. Dockery of Fort Worth, a technical adviser for Greyhound Lines.

Commenting on the entries, the jury report noted that the primary problem of bus station design, the handling of vehicular and passenger traffic, was not solved in a completely satisfactory manner by any of the drawings submitted.

(Continued on page 336)

# Compare!

insulation OF GLIDE WITH OTHER WINDOWS



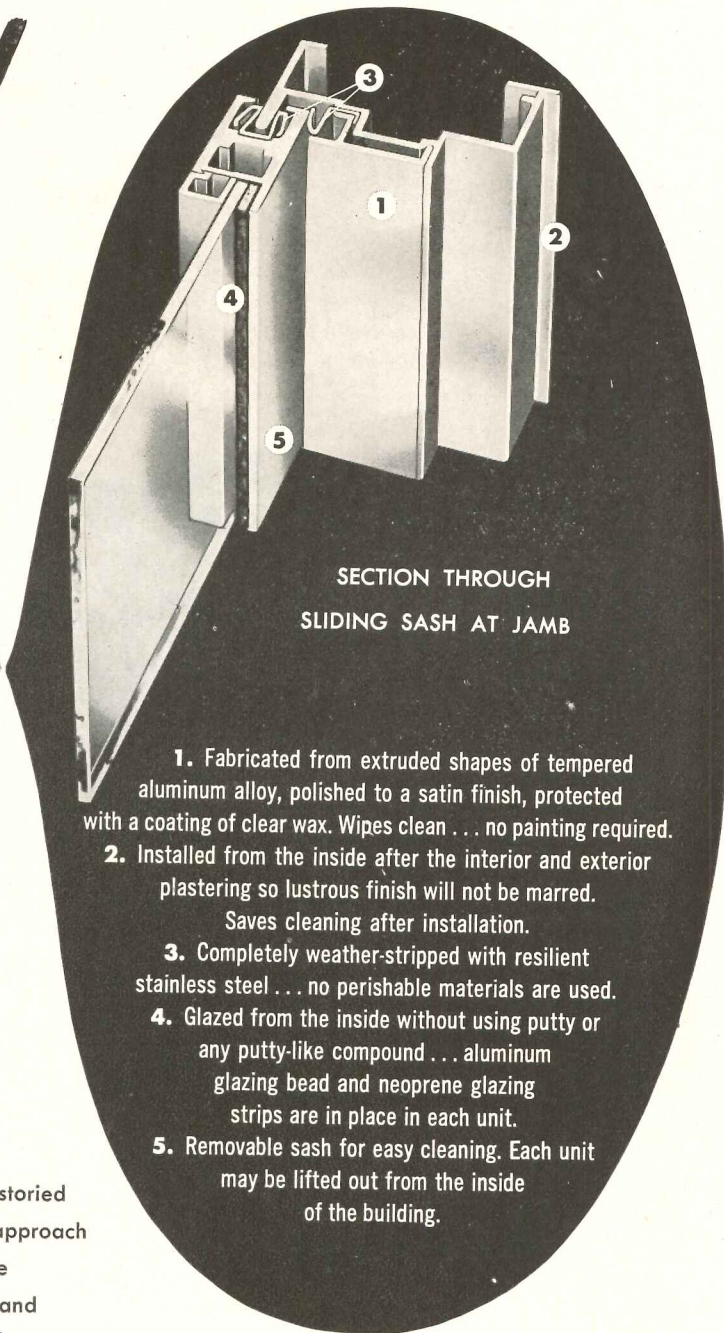
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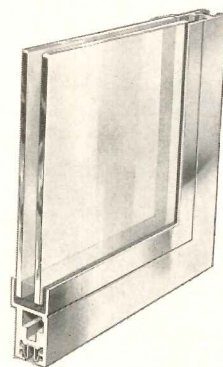
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**Direct Solution Praised**

Of the Grand Award winner, the report has this to say: "Jury and technical adviser concluded this problem to be the winner because of its straightforward simplicity in plan and elevation. The program was fulfilled in most phases of an operationally sound bus station. Clear thinking was evident in the use of

Featherlite Concrete for both roof and wall panel construction. The economical building layout has allowed for ample parking and approach from the business area, thus enhancing not only this property but also relieving the adjacent business blocks. Restaurant well situated for pedestrian traffic and for use by public without complicating traffic. Dispatcher control good, toilets and drivers' lounge well done. Bus ingress and egress pose a major traffic problem at adjacent intersections. In-line bus loading flexible and allows for direct baggage handling to long-distance busses. Would have been better to have grouped tickets with baggage handling. Landscaping a bit complicated. Stairway would have to be altered."

The Featherlite Corporation has offered to continue the competition for 1952-53 and the offer has been accepted by the Texas Society's Board of Directors.

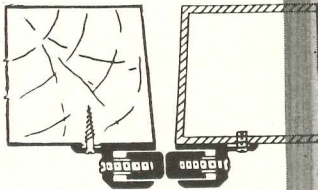
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... help eliminate drafts and air currents ... keep out dirt and dust. Made of extruded bronze, aluminum or nickel, they are simple, practical, rugged, easily installed and adjusted. Michaels Adjustable Astragals are available in several styles, two of which are shown below.

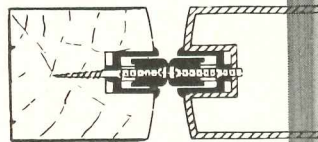
**Type A**

may be applied to either wood or hollow metal bevel doors, or as a stop bead.



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is for bullnose hollow metal or wood doors (double acting).



Michaels Adjustable Astragals compensate for the expansion and contraction of doors, and close, as nearly as possible, a door of any type. Write today for complete details and prices.

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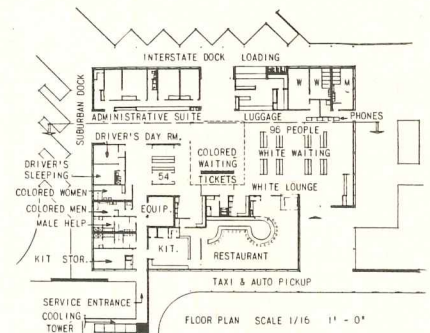
- Bank Screens and Partitions
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Literature on any or all Michaels products will be sent on request.

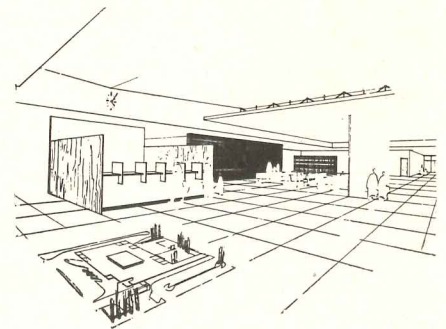
**THE MICHAELS ART BRONZE CO., INC.**

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One of four special commendations by the jury was given to entry of James B. Gattton, A. & M. College of Texas. Jury report noted "professional" detailing



Featherlite award winners look over some of the entries after judgment



(More news on page 338)



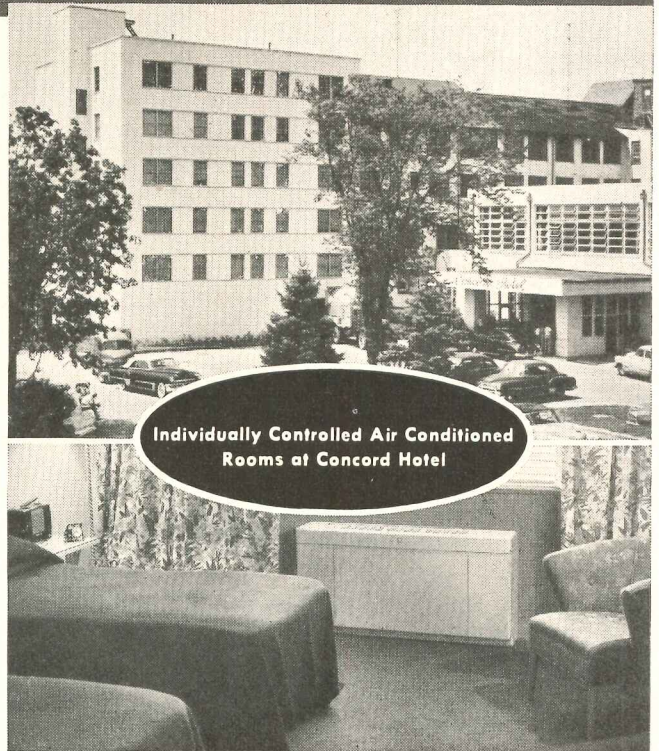
# Another interesting REMOTAIRE installation!

**Individual-room  
remote type units in resort hotel  
provide  
year 'round air conditioning**

*Summer cooling...  
winter heating*

● The Concord Hotel, Kiamesha Lake, New York, found the answer to efficient, economical year 'round air conditioning through the installation of the Remotaire Well Water System—one of a number of different Remotaire systems available for multi-room buildings.

The Remotaire Well Water System may be used in localities where well water is known to be available in adequate supply, proper temperature, and of good quality. The cold well water is used in lieu of a water chilling plant. Consisting of Remotaire Room Units in each room connected by a piping system to the central plant equipment (as shown in



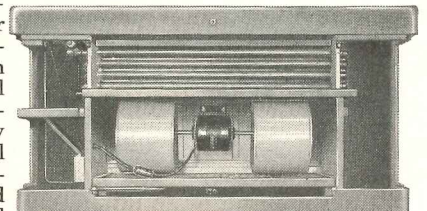
Individually Controlled Air Conditioned Rooms at Concord Hotel

the diagram), this system costs less to install and less to operate. Individual control of each Remotaire unit allows the occupant to choose the room temperature that suits him best without affecting adjoining rooms.

This resort hotel installation is another example of the versatility of the Remotaire for hotels, motels, hospitals, apartments, and other multi-room buildings.

## Top Quality Construction... Easy To Install

The Remotaire is sturdily built of heavy-gauge steel—plus a reinforced air grille—with a bond-erized, baked-on semi-gloss enamel finish. All air passages are acoustically insulated for thermal efficiency and quietness. Coil is designed for right or left hand connections. Spacious



end compartments permit easy access to coil connections and controls. Adaptable to a variety of ventilation systems, the Remotaire is ideal for modernization as well as new construction and is available in three models—200, 400 and 600 cfm.

Write for Remotaire Brochure, Form 298.

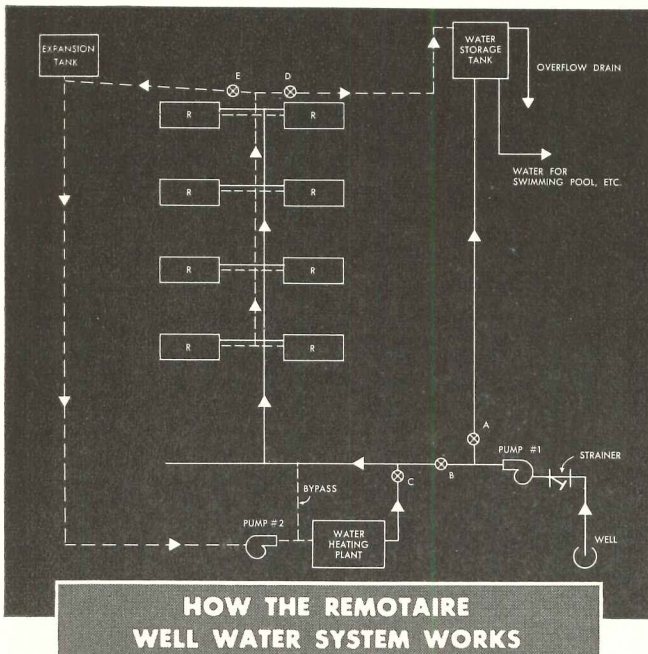
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**HOW THE REMOTAIRE  
WELL WATER SYSTEM WORKS**

The Remotaire Well Water System consists of Remotaire Room Units in each room connected by a simple piping system to the central plant equipment—a well with pump, water heater, water circulating pump, expansion tank, storage tank and water filter or strainer as shown above.

**FOR COOLING**—Valves A and C are closed. B is open. Pump No. 1 pumps water from well to Remotaire units on each floor from which it travels thru valve D to storage tank on roof. This water is usable for swimming pool or other purposes.

**FOR HEATING**—Heating circuit includes Water Heater, Valve C, Valve E, Expansion Tank, Pump No. 2 and bypass. For operation, close Valves B and D, start Pump No. 2 and boiler, and the hot water circulates through the system.

When cooling is not required, well water may be used for other purposes, and can be pumped direct through Valve A to Water Storage Tank by Pump No. 1.

## THE RECORD REPORTS

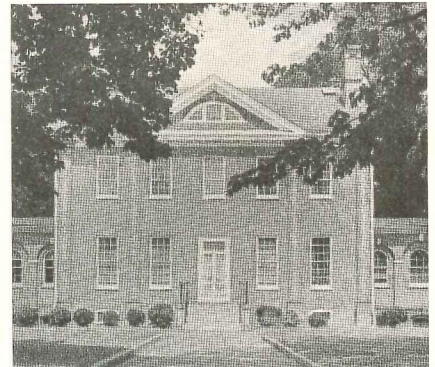
(Continued from page 336)

### Baltimore Architecture Show Reviews City's Heritage

Recently on view at Baltimore's Peale Museum, otherwise known as the Municipal Museum of Baltimore, was an extensive exhibition of the city's architecture, ranging from its earliest beginnings up to the present time. The exhibition furnished a rich survey of the



Two examples of Baltimore's Georgian houses. Above, "Homewood," 1801-1803, sometimes called the city's finest late Georgian country house, stands on Johns Hopkins University campus. Below, "Mount Clare," c.1764, probably the oldest house still standing in the city



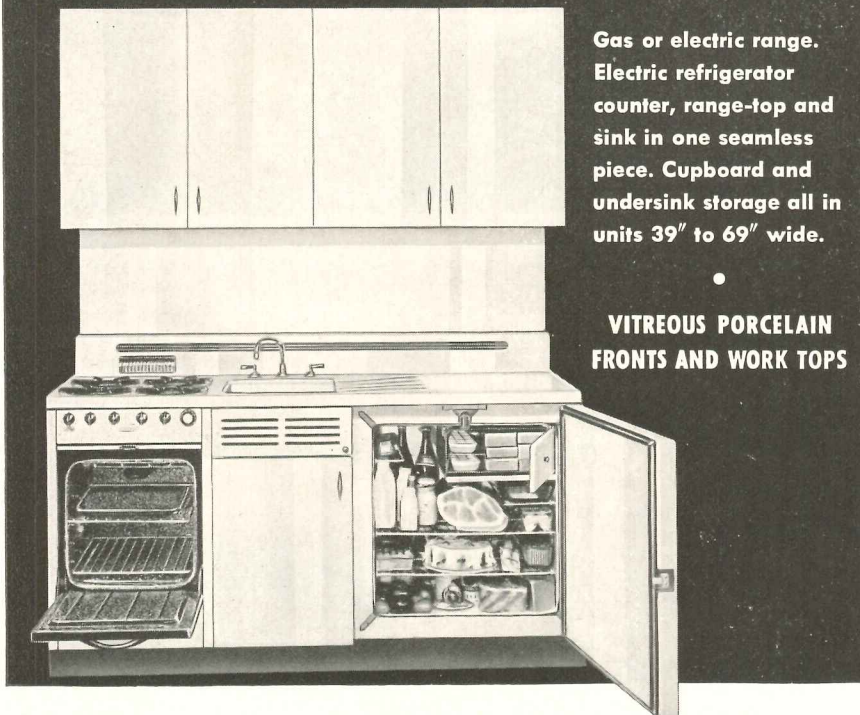
city's architectural development and included a wide variety of buildings, some of which are illustrated here.

Responding to the museum's project, civic-minded Baltimoreans joined in to make it a real event. The Johns Hopkins (University) Press undertook publication of a book on Baltimore architecture which could also serve as a catalog to the exhibition. The result was a handsome volume with numerous photographs and an accompanying text by Richard H. Howland and Eleanor P. Spencer, of the departments of fine arts of The Johns Hopkins University and Goucher College, respectively.

Baltimore members of the Society of Architectural Historians contributed to the proceedings by sponsoring a guided tour of some of the city's buildings. To round things off, the Municipal Art Society of Baltimore City, Goucher College and the museum itself each sponsored a lecture in conjunction with the exhibition. Speakers for these were Henry-Russell Hitchcock, Philip Johnson and Clarence Ward.

(Continued on page 340)

# DWYER KITCHENS



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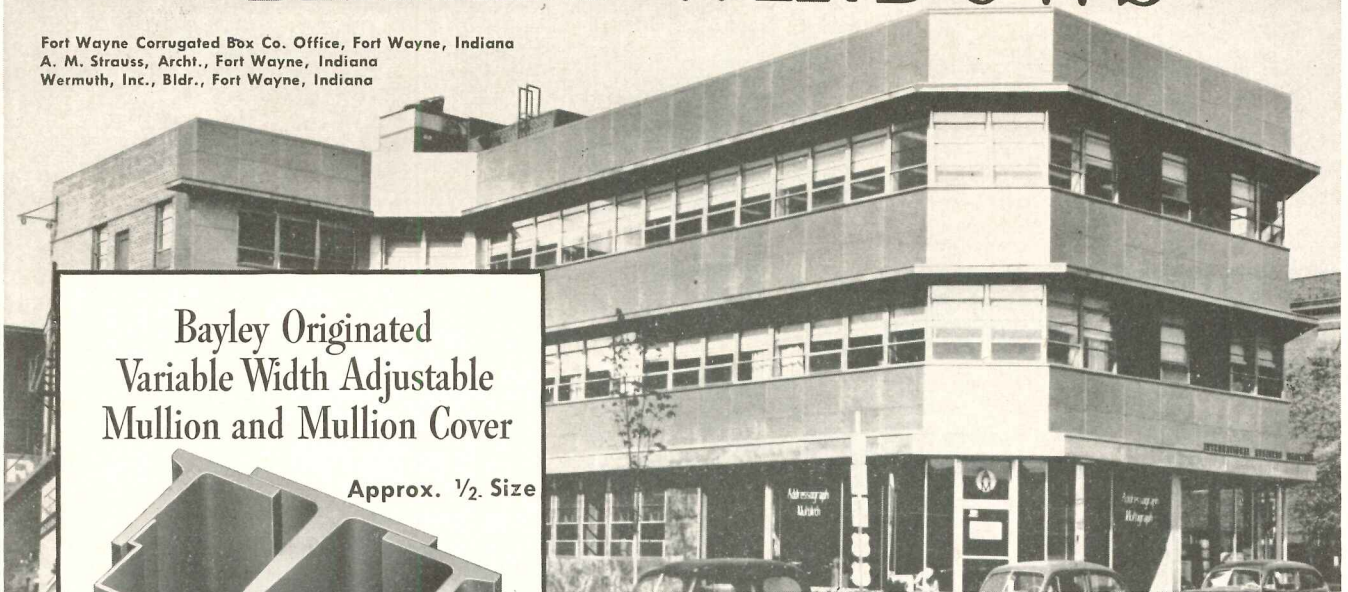
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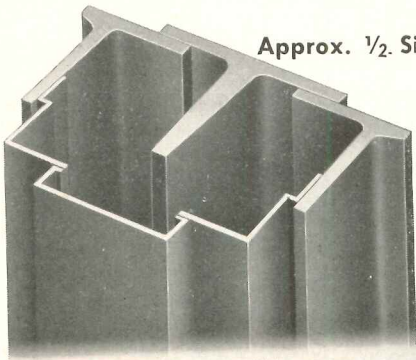
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# Where the *other* services also count - it's always BAYLEY WINDOWS

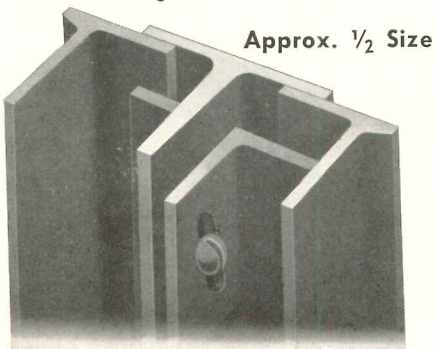
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## Bayley Projected Windows provide the modern building with better ventilation, vision and natural daylighting

The "better-serve" policy that, for so many years, has keynoted Bayley's client relationship is readily apparent in numerous ways. Constant improvement in product detail and quality is one. Another is exemplified in the Bayley Aluminum Projected Window (offered also in steel) that was designed to provide the window features requested by building designers. Such features as:

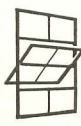
Modern appearance • Economy—painting unnecessary • Permanence — long carefree life • Simplicity — no complicated mechanism • Adaptable to all types of construction • Glazing outside — flat surface inside • Easily washed from inside • Prepared for screens • Permits use of accessories, such as draperies, shades, curtains, venetian blinds or awnings.

*Whatever your window requirement may be, Bayley's years of specialized window experience can undoubtedly be of value to you. Write or phone.*

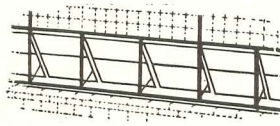
*See Bayley in Sweet's. Complete catalogs on aluminum windows, 16a/Bay; steel windows, 16b/Ba; Saf-T-Gard Hospital Detention Window, 16b/Bay.*



PROJECTED



PIVOTED



VueLINE



GUARD



SAF-T-GARD

## THE WILLIAM BAYLEY COMPANY

Springfield, Ohio

District Sales Offices:

Springfield

Chicago 2

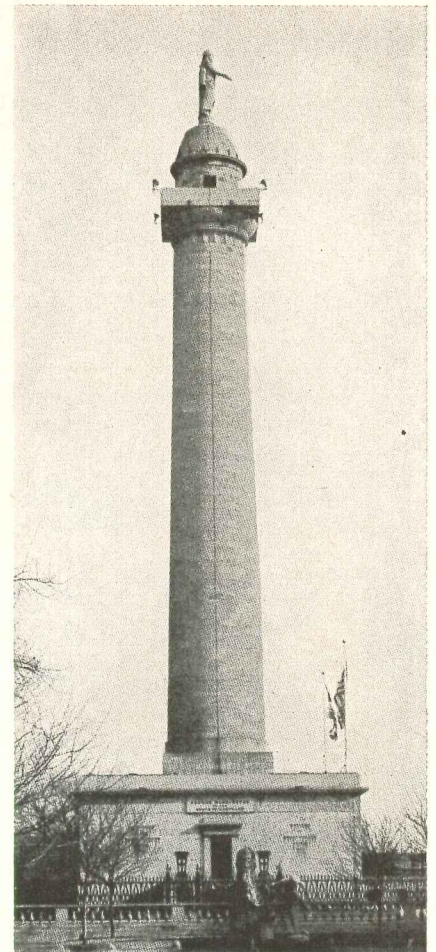
New York 17

Washington 16

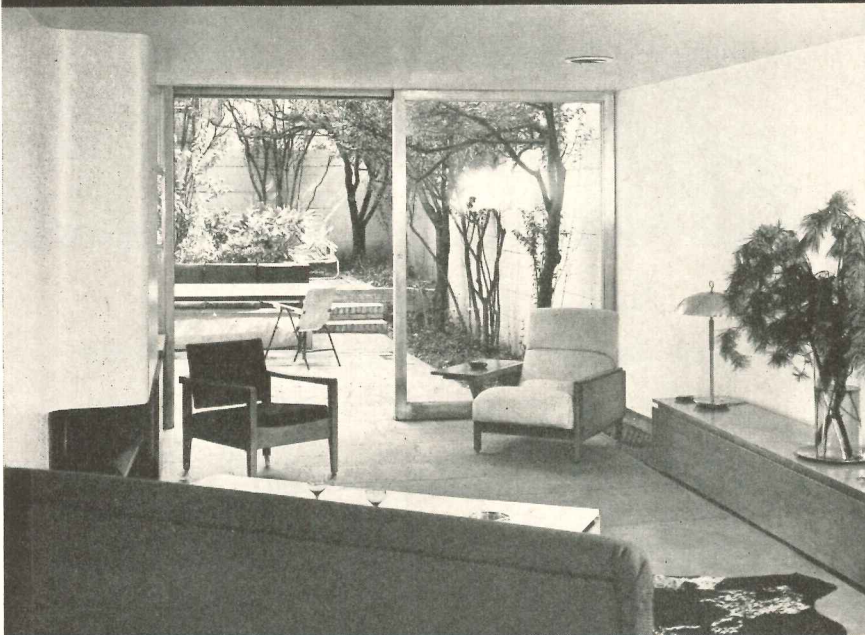
## THE RECORD REPORTS

(Continued from page 338)

The Classical Revival left Baltimore with many fine structures including, near right, Benjamin Henry Latrobe's Roman Catholic Cathedral (begun 1808, dedicated 1821 and finally completed in the 1870's), and Robert Mills' 1815 Washington Monument, which preceded his design for the monument in the nation's capital



## WEATHER STRIPS FOR SLIDING DOORS



*Add Zest to Living!*

**S-L-I-D-I-N-G D-O-O-R-S FITTED WITH  
"ACCURATE" DOOR SADDLES AND WEATHER STRIP**

Here again, a sliding door brings the pleasure of outdoor life right into the home. In this New York apartment of Russel Wright, well known Industrial Designer, one panel is stationary, the other slides back to create a one-room effect of garden and living room, thus achieving a welcome spaciousness. Smooth, easy operation and complete weather protection are assured by "Accurate" precision-built fittings.

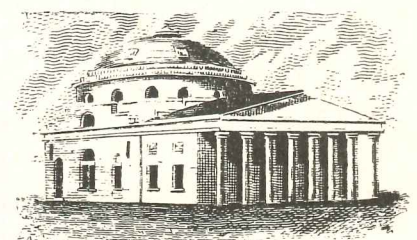
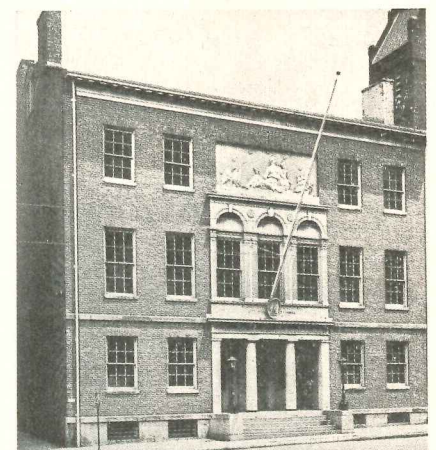


For doors and windows of all types, "Accurate" Metal Weather Strip is unsurpassed. Write for working drawings, or if you prefer

**ASK FOR ILLUSTRATED FOLDER**

**ACCURATE METAL WEATHER STRIP CO., Inc.**  
215 EAST 26th STREET, NEW YORK 10, N. Y.

Below are two buildings by Robert Cary Long Sr. Photograph shows the Peale Museum, 1813, at which the exhibition was held. It is said to be "the first substantial structure in the United States designed expressly as a museum." Sketch is of Long's building for University of Maryland's medical college



(Continued on page 342)

# NOW — a water-soluble water repellent for masonry



Note how water refuses to penetrate right half of masonry block (treated with G-E silicone water repellent) while untreated left half is saturated.

## WHERE CAN YOU USE SC-50?

Ask your supplier to tell you about the many applications for SC-50. Effective on both above- and below-grade masonry, water repellents formulated with SC-50 may also be used on pipe-insulating materials, asbestos shingles and to improve the washability of water-base paints. Where can you use SC-50? For the names of suppliers in your area, just mail the coupon.

**G-E SILICONES FIT IN YOUR FUTURE**

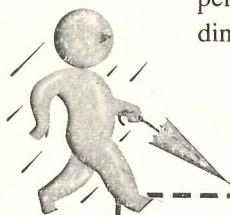
**GENERAL  ELECTRIC**

**G-E silicone, SC-50,  
eliminates solvent hazard—  
provides positive protection**

A new silicone product, just developed by General Electric, is now available to help your paint manufacturer or other supplier furnish you with improved water repellents. As the active agent in water-repellent formulations, this new *water-soluble* silicone provides superior weather and moisture protection for masonry and other structural materials.

Since it is water-soluble, SC-50 can be applied from water solution or incorporated in integral mixes of cement paint, gypsum and concrete. It can be applied to damp surfaces, is nonflammable, and is more effective than previous silicone water repellents on gypsum and limestone.

In addition to being water-soluble, SC-50 provides all the other advantages that make *silicone* water repellents superior to conventional non-silicone types. Silicone water repellents form an unusually high contact angle with water. They flow readily into masonry pores to provide repellency in *depth*. Inert, they provide extraordinary resistance to weathering and moisture.



General Electric Company  
Section 1355-1E, Waterford, N. Y.

Please send me names of suppliers in my area from whom I can obtain water repellents formulated with G.E.'s new SC-50.

Name \_\_\_\_\_

Firm \_\_\_\_\_

Street \_\_\_\_\_

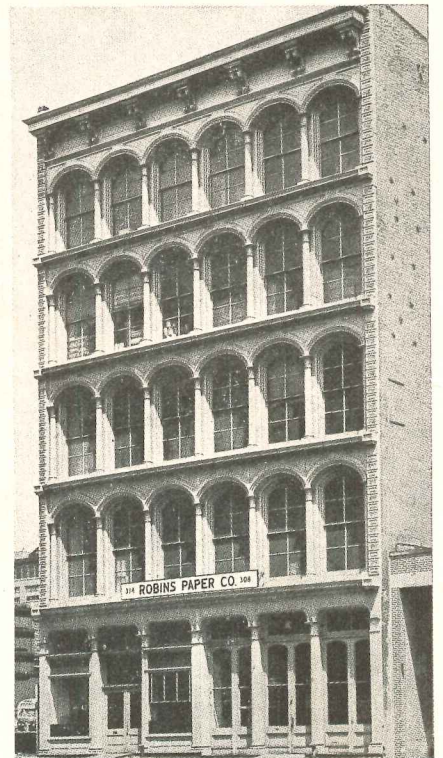
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

(In Canada, mail to: Canadian General Electric Company, Ltd., Toronto)

## THE RECORD REPORTS

(Continued from page 340)

Industrial Baltimore: near right, U. S. Appraisers Stores warehouse building, 1839, demolished in 1933. Far right, cast-iron front commercial building, built in the 1870's



## two of our best customers

Eskimo Joe runs a little trading post up near Nome. Jungle George has a brisk business down in the Congo. Both buy lots of Heinemann Circuit Breakers to supply the folks thereabouts. Whether it's cold enough to freeze a polar bear in its tracks or hot enough to wilt an elephant's ear, both get exactly the same performance from Heinemann Circuit Breakers . . . because they operate on a hydraulic-magnetic principle . . . and employ no thermal elements.



Capacity of Heinemann Circuit Breakers is not affected by temperature. You can locate them in the boiler room, kitchen or icebox. Summer or winter, in Florida or Maine . . . de-rating is never necessary . . . nuisance tripping never occurs. In effect, you have greater usable capacity in your branch circuits with the same wiring.

In addition, Heinemann Circuit Breakers have low wattage loss . . . consume less current themselves, thus pay for themselves quickly.

Send for your copy of Manual 101,  
"What You Should Know About Circuit Breakers."



**don't use heat . . . USE POWER**

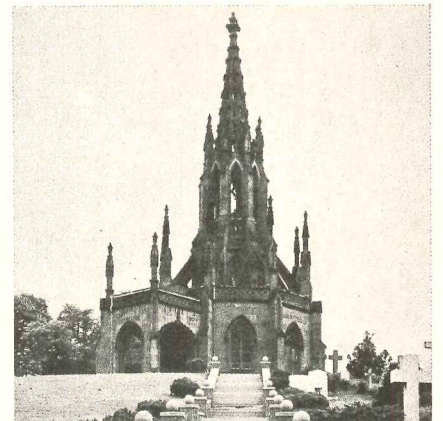
**HEINEMANN ELECTRIC CO.**

115 PLUM STREET • TRENTON 2, N. J.

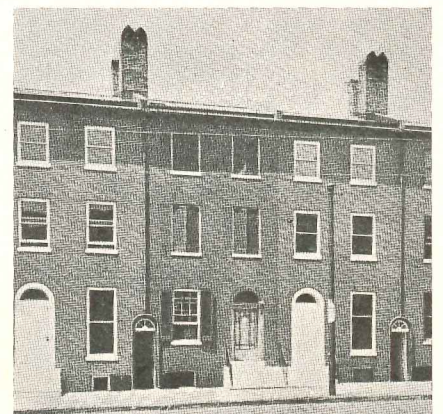
**HEINEMANN**

*Circuit Breakers*

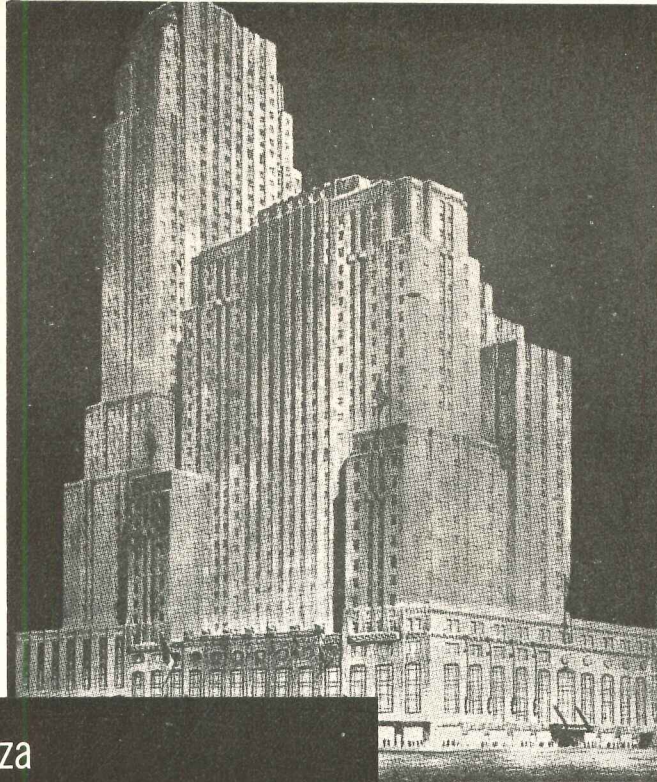
Below: Mortuary Chapel in Greenmount Cemetery, designed in 1856 by J. R. Nierensee and J. C. Nielson, is a brownstone example of Gothic Revival Baltimore



Below: Some of Baltimore's famous row houses. This particular group dates from the 1840's



(More news on page 348)



## The Netherland-Plaza Can Help Solve Your Air Conditioning Problems

The York High-Velocity System permits each room occupant to control climate and was installed with the minimum amount of dislocation to the normal running operations of the hotel.

**Fifteen years of York performance** in the public rooms of this world-famous hotel led to the recent selection of York equipment to air condition 14 complete floors of guest rooms.

York had the precise system for this important job because York has taken the compromise out of air conditioning. You need not put up with forcing a system to fit your building, or changing the building to fit a system.

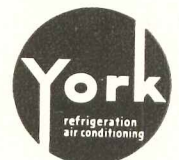
**Working with the industry's widest range** of equipment, York Engineers can recommend the precise system, or combination of systems, that give better performance, longer life . . . usually at lower initial investments and operating costs.

Your nearby York Engineering Office will be happy to work with you. It will save you time, money and worry to put your air conditioning problems in the capable hands of York Engineers. The number is in your Classified Telephone Directory. Or write to York Corporation, York, Pennsylvania.



**York Certified Maintenance.** York assumes the responsibility of keeping York equipment in first-rate condition under the economical York Certified Maintenance Plan. For a known-in-advance charge, equipment is checked regularly, reports and recommendations submitted in writing; necessary repairs made with genuine York parts.

**YORK** AIR CONDITIONING AND REFRIGERATION  
HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885



## THE RECORD REPORTS

matter to the attention of its members.

### Warn on "Compromise"

The A.I.A. and A.G.C. have been joining hands in opposition to localized efforts requiring separation of contracts on Federal construction projects, and they have been fairly successful to date. While no national drive is evident for separate contracts, there have been in-

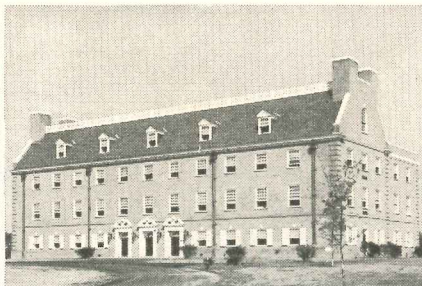
(Continued from page 15)

stances of efforts at state level to secure legislation of this type.

The contractors are confident they have the situation under control at the present time, but Mr. Snow issued this note of warning: "A strategic pattern may be developing such as to advocate and press for separate contracts and then offer a compromise to settle for legislation that would require naming of sub-contractors."



PSYCHIATRIC HOSPITAL, BALTIMORE, MD.  
ARCHITECT: JAMES R. EDMUNDS, JR.



RUTGERS UNIVERSITY — NEW BRUNSWICK, N. J.  
ARCHITECT: YORK AND SAWYER

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(18-600-0101)

### VA Changes Noted

Of interest to architects as well as contractors was the report that Veterans Administration now is giving its construction superintendents authority to approve changes costing not more than \$500. The agency also had inaugurated changes in procedure for handling change orders which eliminate many delays complained of by contractors building VA hospitals.

### Against ACE Transfer

The A.G.C. members reaffirmed their contention that the Federal agencies already handling big government construction programs should be allowed to continue to do so. They stand against a re-organization that would transfer the work of the Army Corps of Engineers and other functions to other old-line or new agencies. The A.I.A. Board of Directors, on the other hand, has approved a resolution recommending a coordinating body in the Federal Government structure for all construction programs except those of the defense and military. The position of the two agencies lines up on dead center insofar as the national defense programs are concerned.

### Quick Mobilization Cited

A.G.C. pointed out in a 1953 resolution that construction operations are basic to defense preparations, and such work continues as one of the industry's most important responsibilities. During the defense program prior to World War II, during the entire war period, and during the subsequent defense program, the resolution asserted, the industry has mobilized immediately for the fast and economical construction of defense projects.

The increasing promptness and effectiveness with which this mobilization has become possible depends first on the familiarity of the governmental agencies with the tasks for which they are responsible and second, on the familiarity of contracting organizations with the policies and personnel of the agencies, the A.G.C. resolution stated. Much of this familiarity, it added, is gained through execution of civilian construction work.

Thus it was recommended that, during periods of unsettled international conditions, the agencies which have mobilized themselves and contracting organizations, or can do so promptly, should continue administration of Federal and Federal-aid construction programs.