BUILDING TYPES

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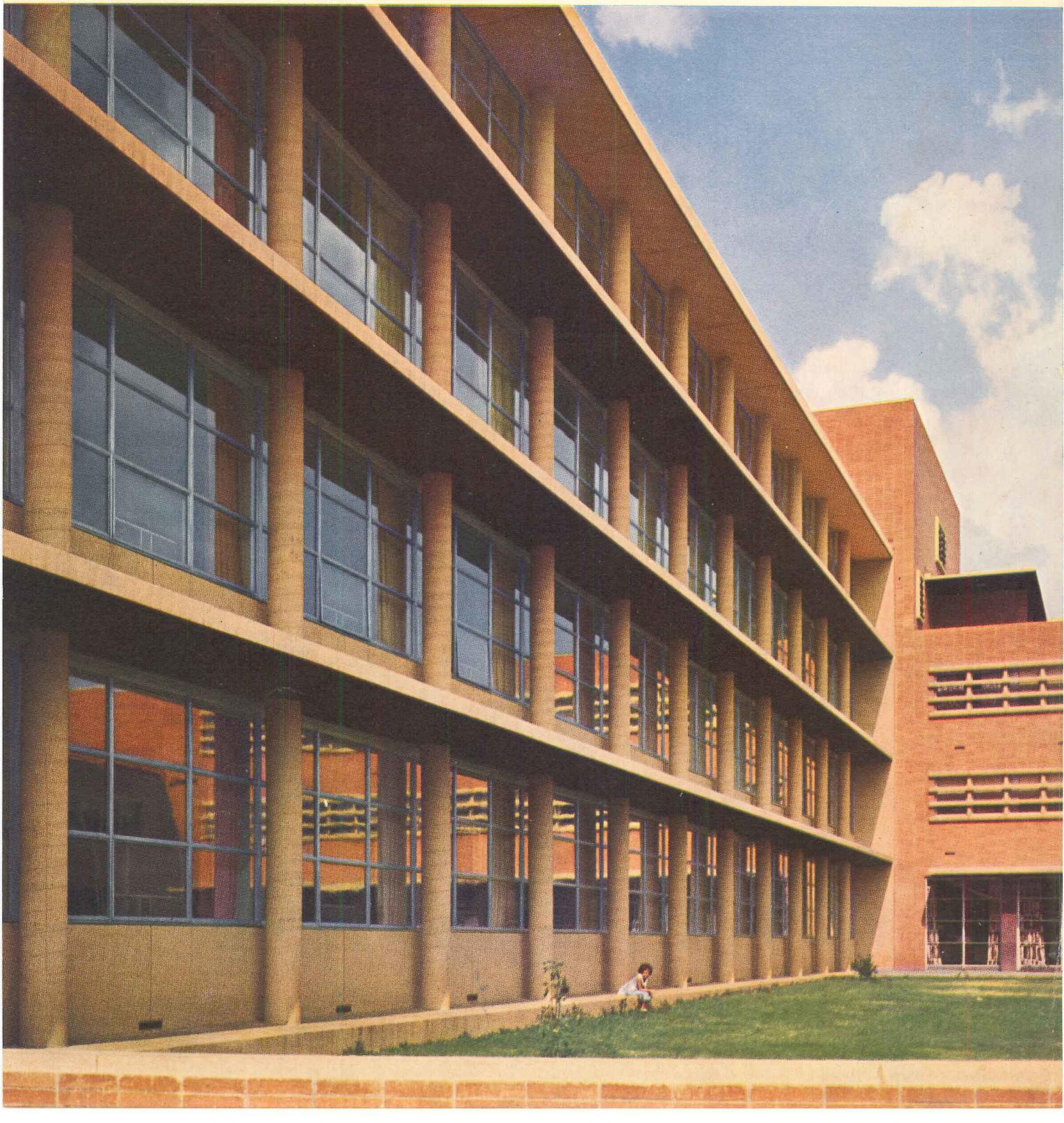
DECEMBER 1952

ARCHITECTURAL RECORD

Le Bonheur Children's Hospital, Memphis, Tenn.; J. Frazer Smith & Associates, Architects & Engineers



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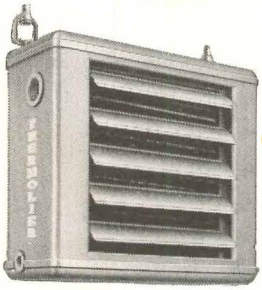
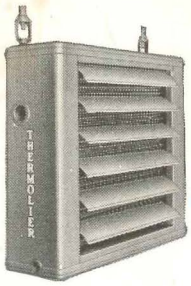
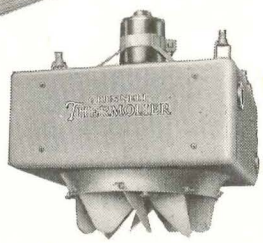


horizontal delivery



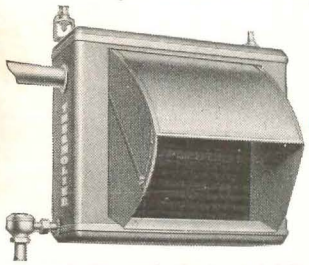
textile (horizontal delivery)



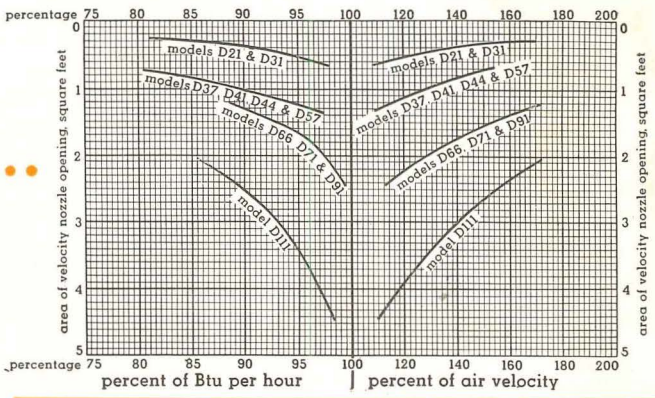
vertical delivery

model	total heat delivered, Btu per hr	sq ft edr (nominal)	air velocity at exit, louvers open, lin. ft. per min.
horizontal delivery			
D21	35,600	148	786
D31	48,700	203	851
D37	62,200	259	753
D41	71,000	295	901
D44	84,100	350	887
D57	101,300	422	1016
D66	128,700	536	779
D71	151,700	632	977
D91	196,000	817	985
D111	275,300	1147	1048
Textile			
TX70	69,800	291	826
TX110	113,700	474	877
vertical delivery			
VA1042	50,800	212	1399
VA1045	73,600	307	1287
VA1065	109,400	456	1354
VA1075	145,600	607	1231
VA1101	185,000	770	1495
VA1111	257,000	1071	1631

performance with velocity nozzle ▶



velocity nozzle (horizontal delivery)



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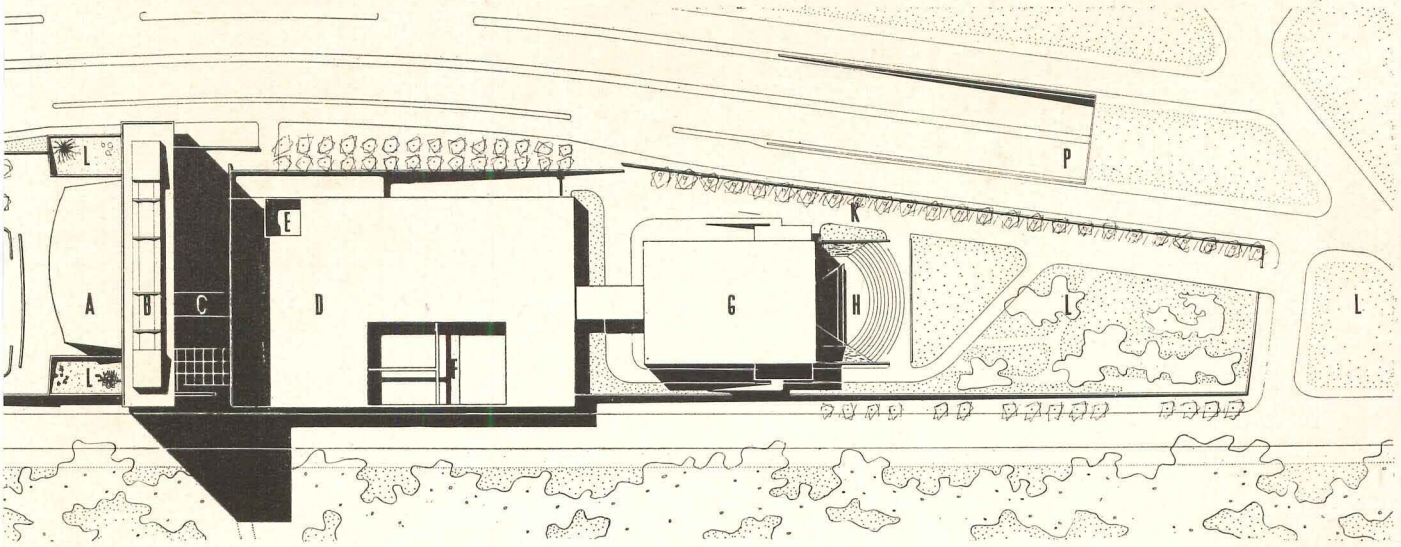


SITE PLAN

A. Main Lobby
B. Office Building
C. Central Patio
D. Central Building
E. Small Patio
F. Delegates' Patio
G. Plenary Hall
H. Open Air Theater
J. Piazza
K. Parking, 106 cars—outside only
L. Gardens
N. Thierry de Martel Underpass
O. Porte Dauphine
P. Admiral Bruix Underpass
Q. Avenue de la Division Leclerc
T. Vehicles

Below and across-page: west elevation; across-page, plan of typical floor of office building (16th): A. Office space to be partitioned; B. Stair reserved for firemen; C. Elevators; D. Freight elevator; E. Mechanical substation; J. Typical furnishing

THE OLD WORLD appears to have rejected the new; and as this is written, the future of the Breuer-Zehrfuss-Nervi plans for UNESCO's permanent headquarters in Paris is as shrouded in uncertainty as the future of the United Nations Educational, Social and Cultural Organization itself. The scheme would be presented to the UNESCO General Conference which opened in Paris November 12; only that much was certain.

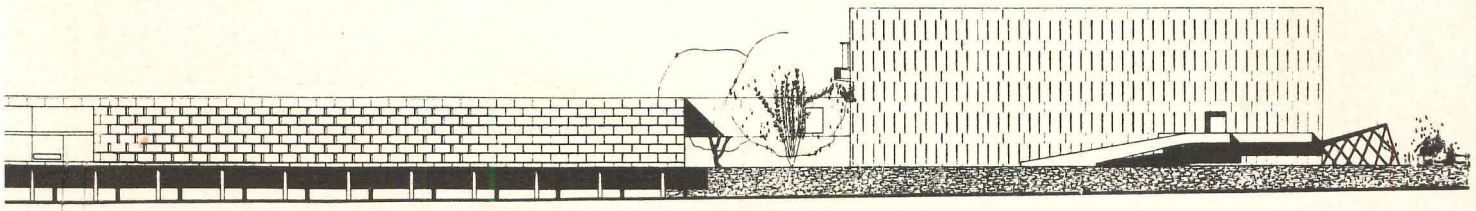
The place of the UNESCO building in "the great composition of Paris" was very much in the minds of the designers. In their report to UNESCO, they pointed out that despite its proposed height, the 16-story building would be lower than the principal monuments along the great transverse axis of Paris: Louvre-Tuileries-Place de la Concorde-Champs Élysées-Etoile-Porte Maillot-Porte de Neuilly-Rond Point de la Defense. They noted specifically that it would be 35 ft lower than the Arc de Triomphe at the Etoile.

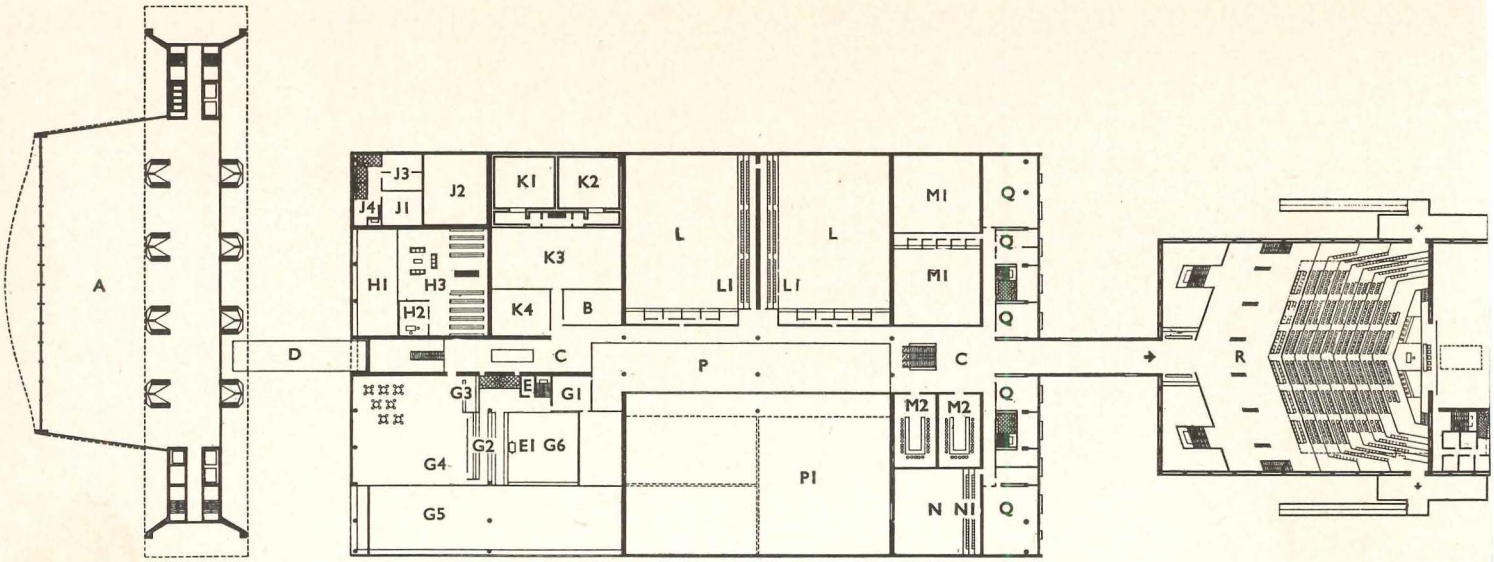
The building was planned to be parallel to the "Grand Axe" so the view from neighboring buildings of the Bois de Boulogne would not be obstructed. The distance between the proposed building and the nearest buildings would be about 270 ft, as contrasted with its height of 200 ft.

Before the Paris interdict fell, the plans had the enthusiastic approval of the international panel of architects appointed by UNESCO as an advisory group — Lucio Costa (Brazil), Le Corbusier (France), Walter Gropius (United States), Sven Markelius (Sweden) and Ernesto Rogers (Italy).

"The plans as submitted reveal an understanding of the obligations of architecture," they said in their report, "and are not only practical but inspired and capable of attaining UNESCO's aim in the building of its headquarters, which is destined to become a symbol of world significance."

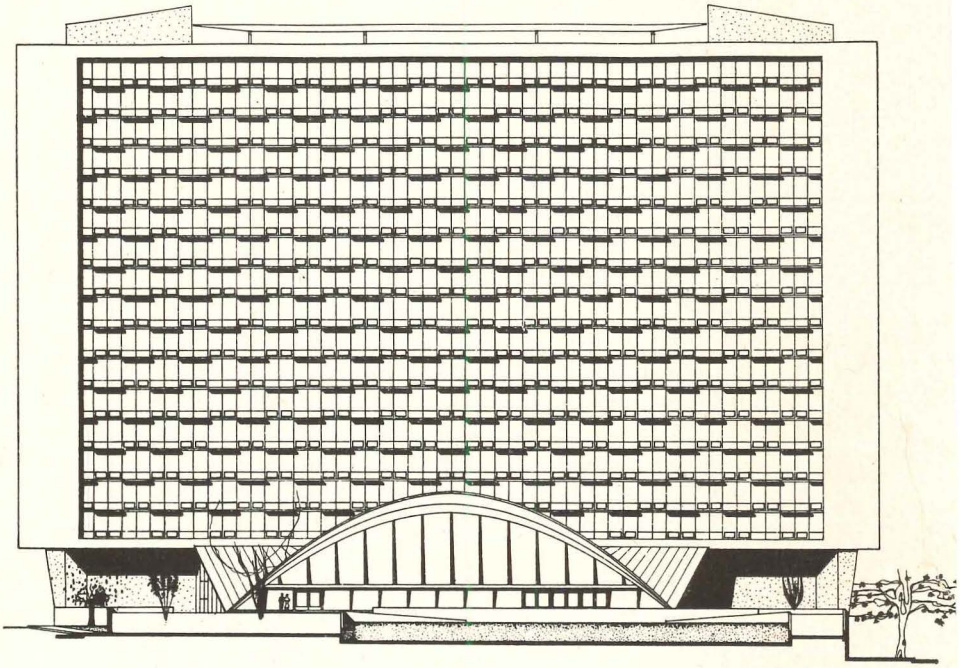
Ironically enough, the present site at Avenue Foch and the Bois de Boulogne was offered by the French government to help UNESCO out of an earlier embarrassment over headquarters plans. UNESCO had commissioned French Architect Eugene Beaudouin to design a headquarters building and then rejected his plans, the French tactfully suggested that perhaps the Place de Fontenoy site (in a Beaux-Arts neighborhood) was "unsuitable," and offered the new site on the main axis of Paris.

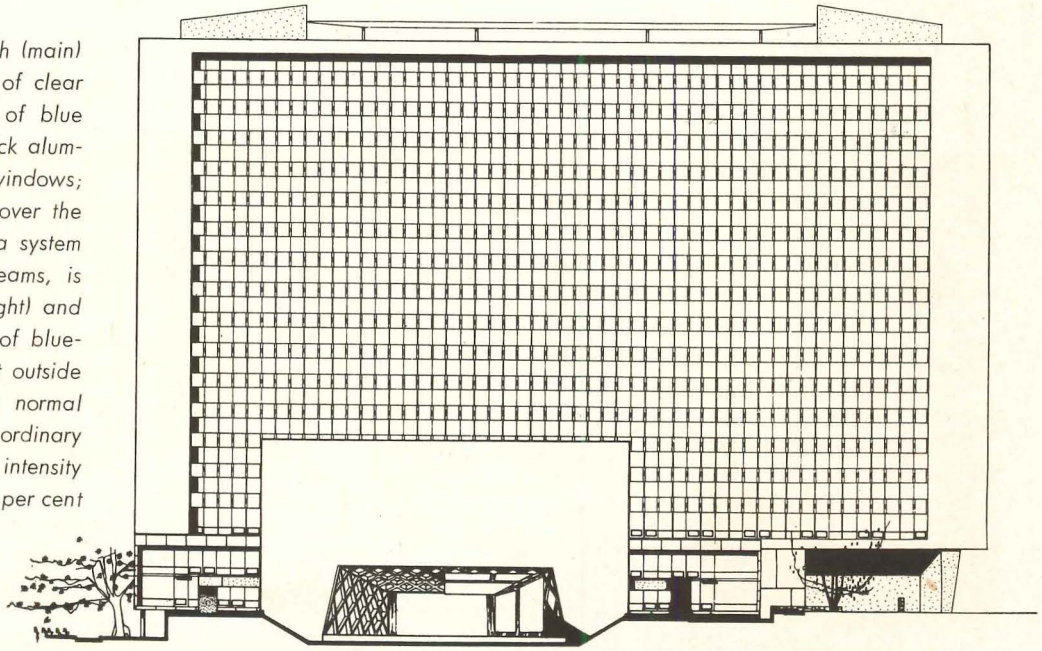




FIRST FLOOR PLAN

A. Void of Main Lobby
B. Air Conditioning
C. Public Gallery
D. Covered Passage
E. Freight Elevator
G. Restaurants
   1—Kitchen offices; 2—Serving Counter; 3—Cloakroom; 4—Cafeteria; 5—Void of Restaurant; 6—Void of Kitchen
H. Library
   1—Void of Reading Room; 2—Office; 3—Stocks
J. Nursery School
   1—Classroom; 2—Small Patio; 3—Office; 4—Storage
K. Department of Mass Communications
   1—Void of Dramatic Studio; 2—Void of Television Studio; 3—Press, Reception and Information; 4—Unallocated
L. Void of Commission Room
   1—Public and Press
M. Committee Rooms
   1—Void of Large Rooms; 2—Small Rooms
N. Void of Executive Board Meeting Hall
   1—Public and Press
P. Void of Delegates Lounge
   1—Delegates Patio
Q. Conference Secretariat
R. Plenary Hall





Elevation at right, above, north (main) façade: walls and windows of clear plate glass with projections of blue Ardoise stone above and black aluminum railings below sliding windows; sash is aluminum. The shell over the main lobby, reinforced with a system of geometrically arranged beams, is 175 ft wide. South façade (right) and east facade have sun filters of blue-green solar glass placed 4 ft outside the window walls, allowing normal daylight and view through the ordinary window glass while reducing intensity of solar radiation by about 65 per cent

Paris Bars a Skyscraper For U.N. to Preserve View

By The United Press

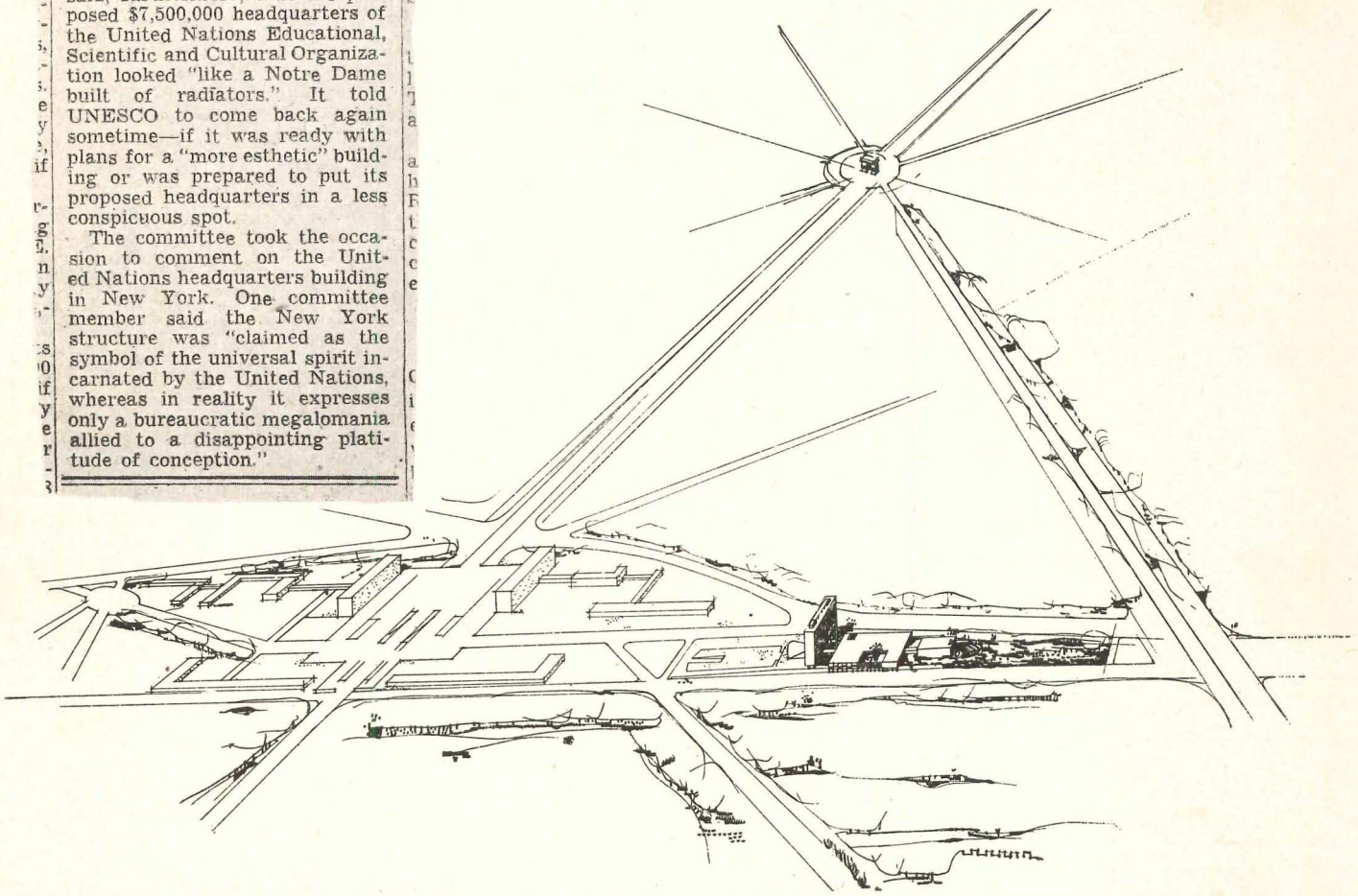
PARIS, Nov. 1—City authorities turned down today plans for a seventeen-story, sandwich-shaped United Nations "skyscraper" in Paris because it would interfere with the view of the Arc de Triomphe.

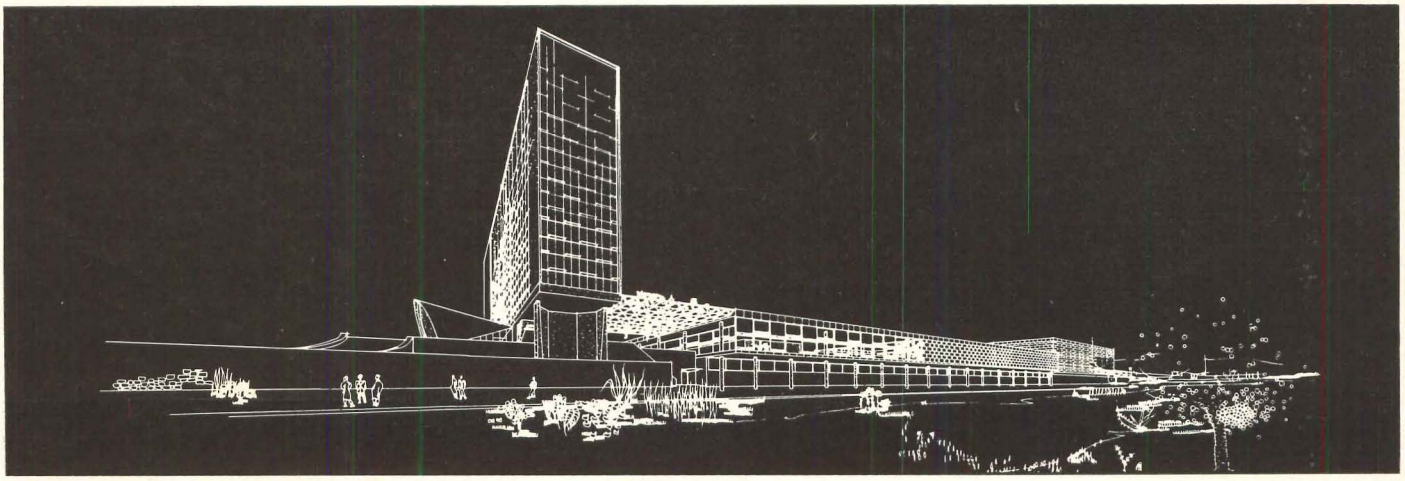
The Paris Building Committee said, furthermore, that the proposed $7,500,000 headquarters of the United Nations Educational, Scientific and Cultural Organization looked "like a Notre Dame built of radiators." It told UNESCO to come back again sometime—if it was ready with plans for a "more esthetic" building or was prepared to put its proposed headquarters in a less conspicuous spot.

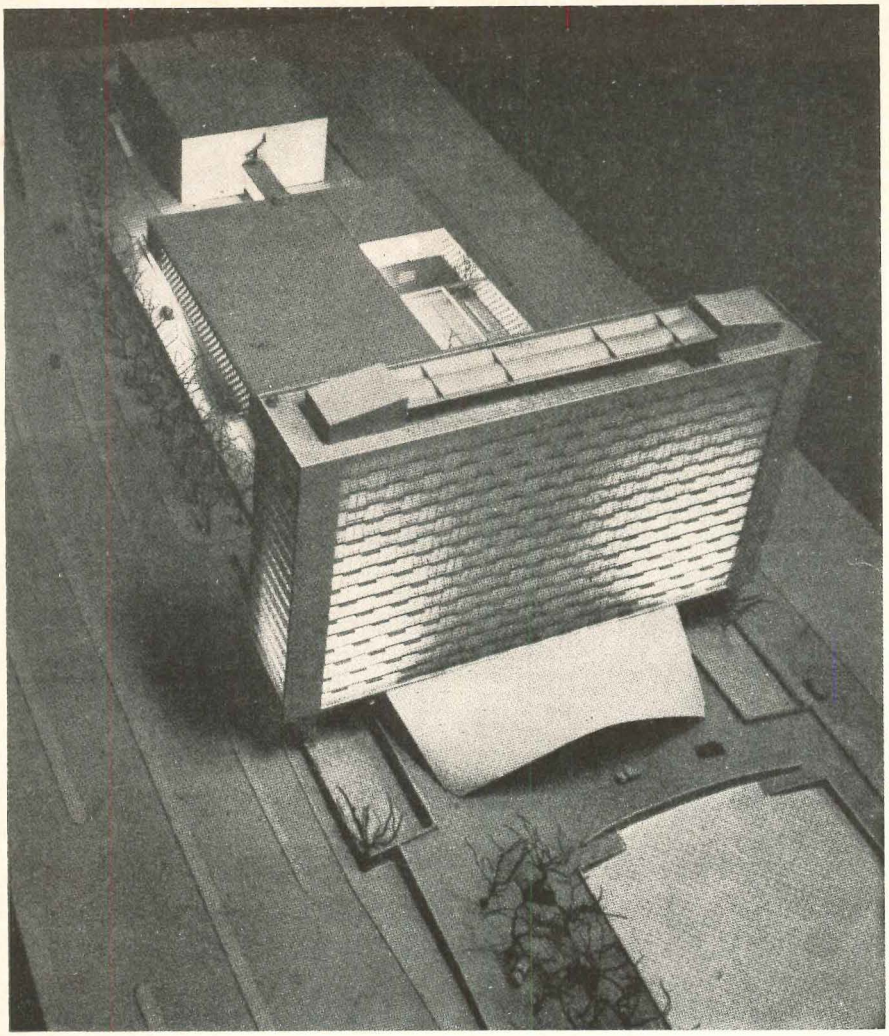
The committee took the occasion to comment on the United Nations headquarters building in New York. One committee member said the New York structure was "claimed as the symbol of the universal spirit incarnated by the United Nations, whereas in reality it expresses only a bureaucratic megalomania allied to a disappointing platitude of conception."

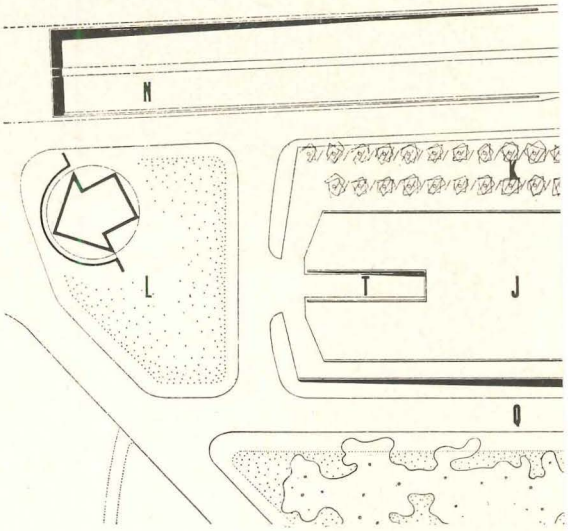
THE BUILDING PARIS DOESN'T WANT: PROPOSED HEADQUARTERS FOR UNESCO

Marcel Breuer (United States), Architect
Bernard Zehrfuss (France), Architect
Pier Luigi Nervi (Italy), Engineer

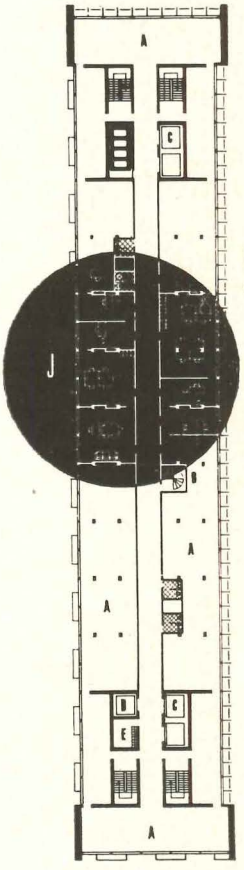


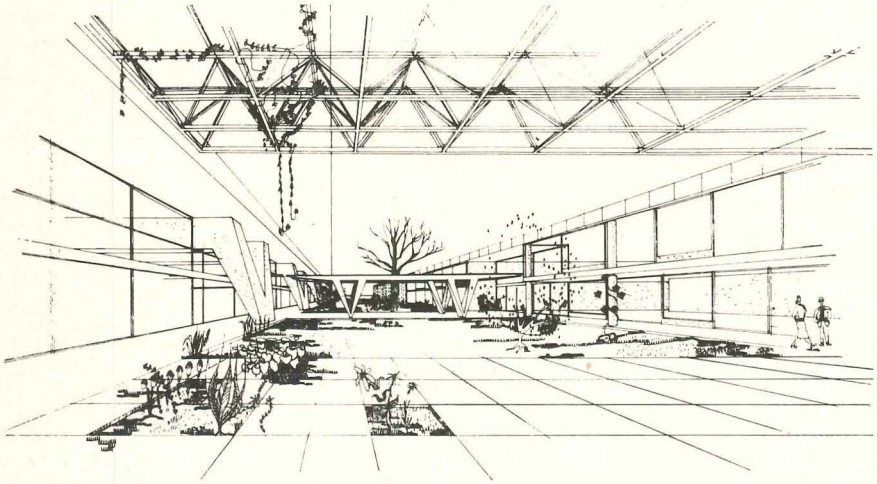


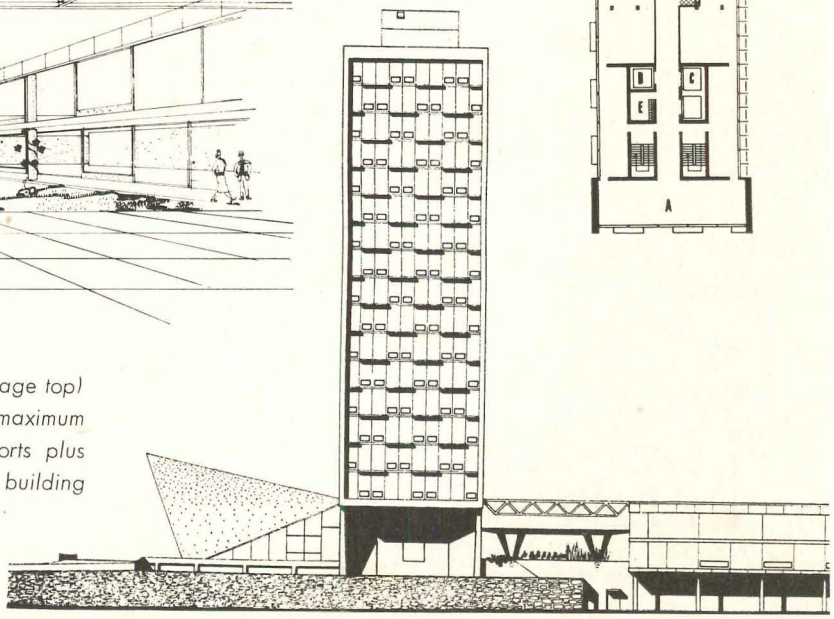




Three buildings (seen here in lighted model) make the scheme: 16-story office building, central conference building and auditorium (with amphitheater) for general conference plenary sessions. The reinforced concrete shell which covers the main lobby is supported on the north by a parabolic arch, on the south by main slab of floor above







The central patio (C in site plan across-page top) links office and conference buildings. For maximum ground floor openness, V-shaped supports plus two stair and lift enclosures carry office building

ARCHITECT AS BUILDER: CAN HE PLAY DUAL ROLE?

No, Say Panel Speakers at North Central States Regional Meeting

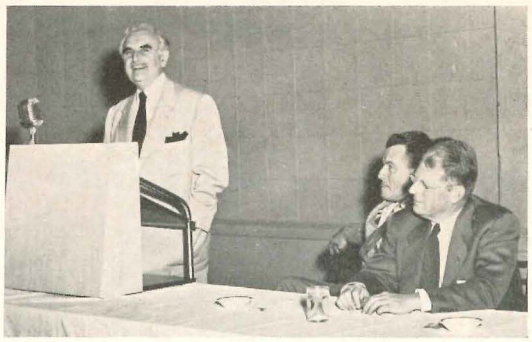
THE DEBATE touched off by Walter Gropius' declaration of war on American Institute of Architects Rule No. 7 — forbidding an architect to engage in building contracting — had a lively round at the final session of the North Central States A.I.A. Regional Conference in St. Paul November 7–8.

Speaking on a panel scheduled to be concerned with proposals to modify Rule No. 7, Philip Will Jr. thought that suggestions that the architect should attempt to re-establish himself as a master-builder were "naive" and "medieval." His partner, Lawrence Perkins, was sure that the need for the separated function of the conventional architect exists and that the conventional separation of responsibilities between architect and contractor can be demonstrated to be economical and in the client's interest. Prof. Roy C. Jones, head of the School of Architecture of the University of Minnesota, expressed the belief that the architect would only be adding a very large headache if he took on contracting.

Serge Chermayeff, visiting lecturer at Massachusetts Institute of Technology, was concerned that under the present system the architect is seldom in a position to do the basic research required to develop an outstanding structure, and that if he does do so he is not adequately rewarded, since his design can be freely plagiarized. He wanted the designers rewarded by the producers in industry rather than by the consumers, so fees could be spread over many units.

The conference had an attendance of 291, with members from Illinois, North and South Dakota, Wisconsin and Minnesota and sizable delegations from the Universities of Manitoba and Minnesota and from North Dakota State College. A.I.A. President Glenn Stanton and Regional Director Edgar H. Berners represented the A.I.A. Board.

In the opening session both Mr. Stanton and Mr. Berners recommended the formation of a regional council in the district, but since there had been no mention of the subject in the call for the conference, no action was taken. The local chapters are expected to consider the matter and, if favorable sentiment develops, a meeting of delegates to take action will be called.



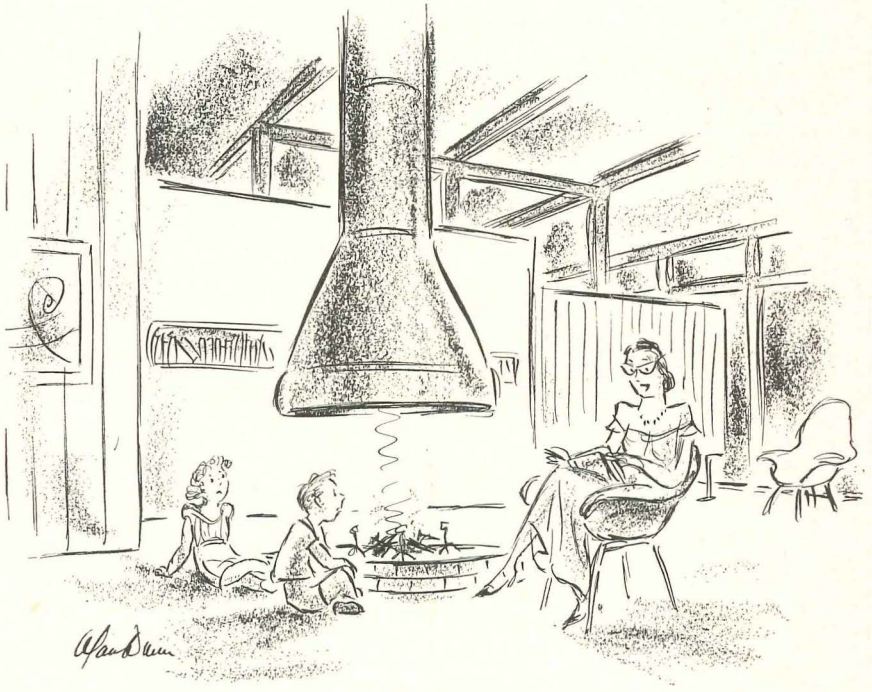
Above: speaker Richard Neutra and a rather quizzical pair—moderator Charles Granger and Don Barthelme of Houston, member of the panel. Right: the Texas Society's new president, Albert S. Golemon, with the retiring president, Herbert M. Tatum, and the new v.p., E. W. Carroll, El Paso

NEUTRA SPEAKS TO TEXANS

HIGHLIGHT of the Texas Society of Architects meeting at El Paso October 29–31 was a lively seminar "Structural Resources for Architectural Design" led off by Richard J. Neutra of Los Angeles. Other participants were Buford L. Pickens of New Orleans, Don Barthelme of Houston, and John Gaw Meem of Santa Fe. As was to be expected with this topic, there was a sharp difference of opinion among participants in the seminar, and interest was further heightened by unusually pointed and vigorous remarks from the floor.

The El Paso meeting, the thirteenth of the Texas Society, was well attended, with architects from all corners of the big state on hand. A striking exhibit, "Texas Architecture 1952," showed the varied work of the members, and a lively student competition sponsored by the Featherlite Corporation added a still further display, since all of the prize-winning designs for a bus terminal were on exhibit.

Albert S. Golemon of Houston was elected president, to take office January 1, and E. W. Carroll of El Paso, vice president. George F. Pierce Jr. of Houston was appointed secretary-treasurer. Herbert M. Tatum, retiring president, announced that Austin had been selected by the Board of Directors as the site of the 1953 convention.



—Drawn for the RECORD *by Alan Dunn*

" 'Twas the night before Christmas,
And all through the contained space . . ."

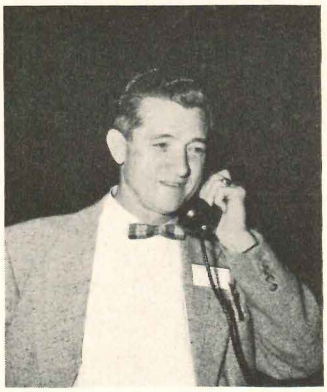
GULF STATES ARCHITECTS HOLD THIRD ANNUAL CONFERENCE

All photos: Depew Meredith

ARCHITECTS of the Gulf States Region of the American Institute of Architects, the first district of the A.I.A. to set up a regional council, held their third annual conference October 24–25 at Montgomery, Ala., under the sponsorship of the Alabama Society of Architects.

Built around the theme "Integration of Design, Engineering and Construction of Contemporary Architecture," the conference featured two seminars as well as talks by A.I.A. First Vice President Kenneth Wischmeyer, at the opening luncheon; Eero Saarinen, F.A.I.A., at the annual dinner; and A.I.A. President Glenn L. Stanton, at the final luncheon.

Announcement of the Honor Award and seven Awards of Merit (see page 22) for entries in the regional exhibit was, as always, a highlight of the annual dinner. Members of the Jury of Award were Harold Bush-Brown, head of the Department of Architecture of Georgia Institute of Technology, chairman; New York Regional Director C. Storrs Barrows, Rochester; Douglas Haskell, chairman of the editorial board of *The Magazine of Building*; Frank G. Lopez, senior associate editor of ARCHITECTURAL RECORD; and Irving G. Smith, Portland, A.I.A. Northwest regional director.



The energetic chairman of local arrangements for the Gulf States Conference, Clyde C. Pearson, was nominated for regional director beginning next June

A.I.A. President Glenn Stanton, who had just come from the Eighth Congress of Pan American Architects at Mexico City, with Regional Director Howard Eichenbaum. The conference voted to support Mr. Eichenbaum for second vice president of A.I.A.

In business sessions at the conference, it was voted to support Clyde C. Pearson of Pearson, Tittle and Narrows, Montgomery, as the Council's nominee for regional director and the present regional director, Howard Eichenbaum, for second vice president of the A.I.A., in the elections to be held at the national convention in Seattle next June. Other resolutions supported a proposed survey of architectural education in the Gulf States Region by the Southern Regional Education Board; directed that special committees be established in all chapters to impress Representatives and Senators with the serious threat both to private architects and to design and construction quality posed by the encroachment of Federal bureaus on the profession.

The proposed education survey was described in one of the business sessions by William J. McGlothlin, director of the Southern Regional Education Board, who pointed out that two states in the region, Tennessee and Mississippi, have no schools of architecture, and Arkansas' school is not accredited. The Board hopes in its survey to study both regional requirement sand existing facilities, he said.

Encroachment on the architectural profession of both Government and the "package" builder was the subject of a sober warning from Mr. Wischmeyer, who urged that architects lose no time in making their views felt.

From President Stanton there was a report on activities of the Eighth Pan American Congress of Architects in Mexico City.

CONFERENCE SNAPSHOTS

Walter T. Rolfe, Houston: Influence of Engineering and Construction Methods on Contemporary European Architecture

Parker S. Narrows, Pearson, Tittle and Narrows, Montgomery, the retiring president of the Alabama Society of Architects

Eero Saarinen, Bloomfield Hills, Mich., addressed the annual dinner, showed slides of his own work to illustrate his talk

John R. Fugard, Chicago: New Construction Methods and Materials—A Key to Progressive Architecture

Alfred Shaw, Chicago: Control—Design and Engineering. Dean Frank Orr, Auburn, moderated the seminars

Charles Leopold (engineer,) Philadelphia: Mechanical Engineering's Role in Architectural Progress

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1/8" 36 BTU/sq. ft./hr./°F	3/16" 3.7 BTU/sq. ft./hr./°F	1/8" 36 BTU/sq. ft./hr./°F
3/16" 24 BTU/sq. ft./hr./°F	5/16" 2.2 BTU/sq. ft./hr./°F	3/16" 24 BTU/sq. ft./hr./°F
	1/2" 1.4 BTU/sq. ft./hr./°F	

Based on the "K" factors at top of each table, heat transmission rates through the various thicknesses of KENTILE, KENCORK and KENRUBBER are shown. The °F means that this is the transmission rate when there is 1°F difference between the top and bottom of tile. The heat transmission rate increases proportionately with an increase in the temperature difference between the top and bottom of the tile; e.g., with ⅛" KENTILE, heat transmission rate would be 180 BTU/sq. ft./hr. if there were 5°F difference between top and bottom of tile.

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Wide Andersen Casements with picture sash—Charles Klopp, archite

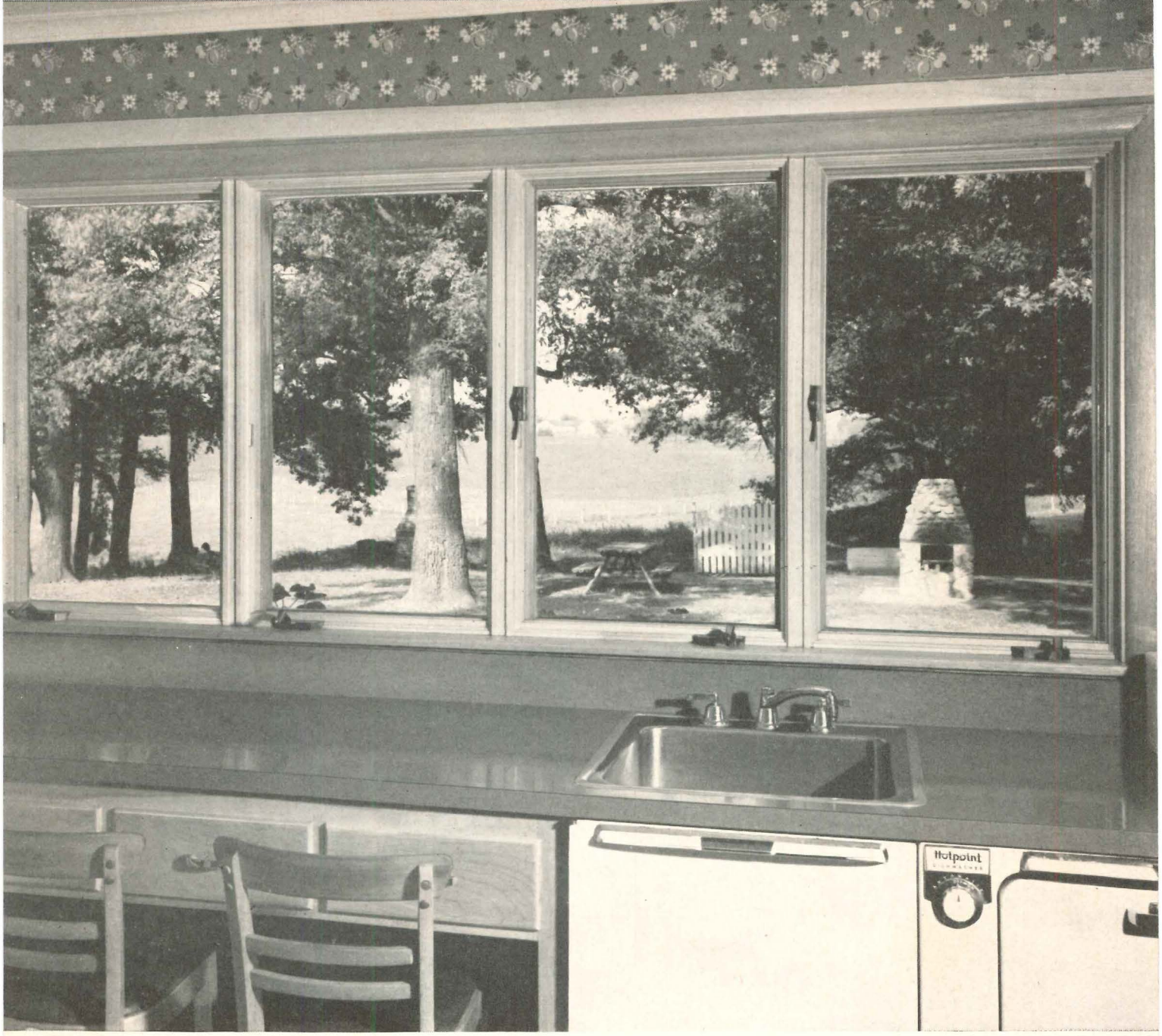
Now! New wider sizes, wider

Two glazing styles in wide casement sash... horizontal or one-light—Norman Johnson, architect

25 STOCK SIZES ADDED BY NEW SERIES OF UNITS

Just look at the pleasing effects possible with the new wide Andersen Casement Window Units! With 4½″ added to the sash opening, the new series gives larger glass areas, makes the distinctively narrow Andersen Casement mullions look even narrower. Particularly in the 5′ height sash proportions are more pleasing.

There's greatly increased selection of sizes, too. The wide casements add 25 stock units to the 34 formerly shown by



Wide Andersen Casements for both view and ventilation—Charles Klopp, architect

selection in Andersen Casements

ndersen in its unit catalog. And keep in ind, architects and builders can combine tock Andersen Casement Units and picure windows so that the number of posble combinations has no limit!

Sash of the new wide Andersen Caseent are 1′-10½″ wide. Available in single ght or horizontal light glazing. Also lazed single light with new Andersen Velded Double Insulating Glass. Five eights and five widths, plus combinations ith picture windows.

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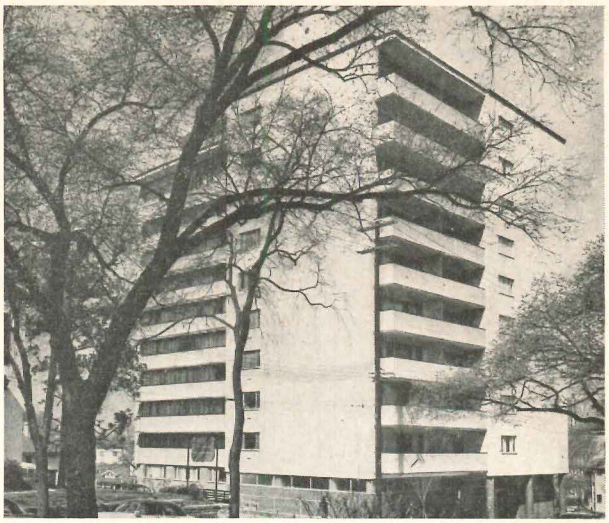
THE RECORD REPORTS

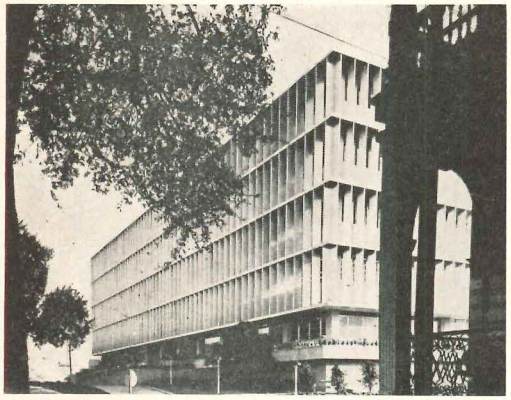
GULF STATES A.I.A. AWARDS

It was an exhibit of winners: each chapter was allowed to submit as many boards as it had delegates (one for each 10 members) and chapter competitions were held to make the selections for the regional exhibit. The regional awards are shown here



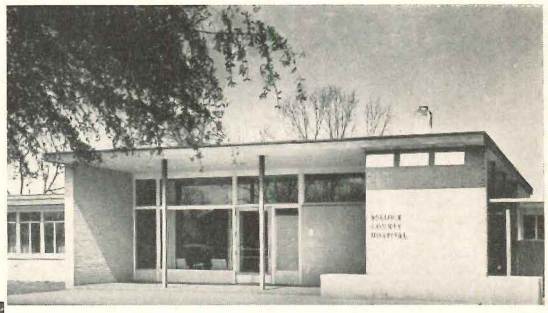
Honor Award: Sherlock, Smith and Adams, Montgomery, Ala., for Walter Bragg Smith Apartments, Montgomery

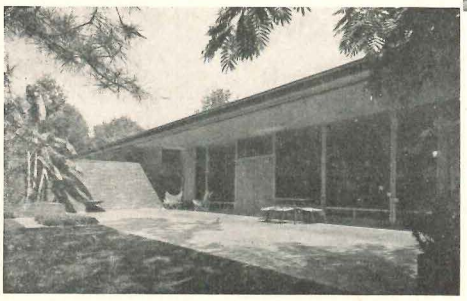
All photos this page: Albert Kraus



Merit Award: Claude Hooton, New Orleans, La.; Skidmore, Owings & Merrill, New York, for Pan American Life Insurance Building, New Orleans

Merit Award: Sherlock, Smith and Adams for Bullock County Hospital, Union Springs, Ala.

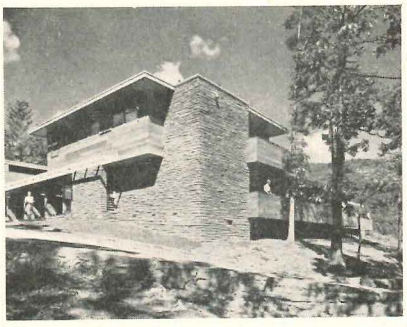




Merit Award: William B. Wiener, for his own residence, Shreveport, La.

Merit Award: James T. Canizaro, Jackson, Miss., for offices for Marquette Cement Manufacturing Company, Jackson

Merit Award: Pearson, Tittle & Narrows, Montgomery, Ala., for Anniston Junior High School, Anniston, Ala.



Merit Award: Painter & Weeks, Architects, Bruce McCarty, Dsnr., Knoxville, for Bon-Air Motel, Gatlinburg, Tenn.

Merit Award: Brueggeman, Swaim & Allen, Little Rock, Ark., for First Methodist Church, North Little Rock

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How Honeywell Customized Temperature Control helps people work better at American Institute of Baking Headquarters

Specially designed system meets wide variety of temperature control problems

One of the reasons the bakery goods you eat today are better bakery goods is because there's an organization called the American Institute of Baking.

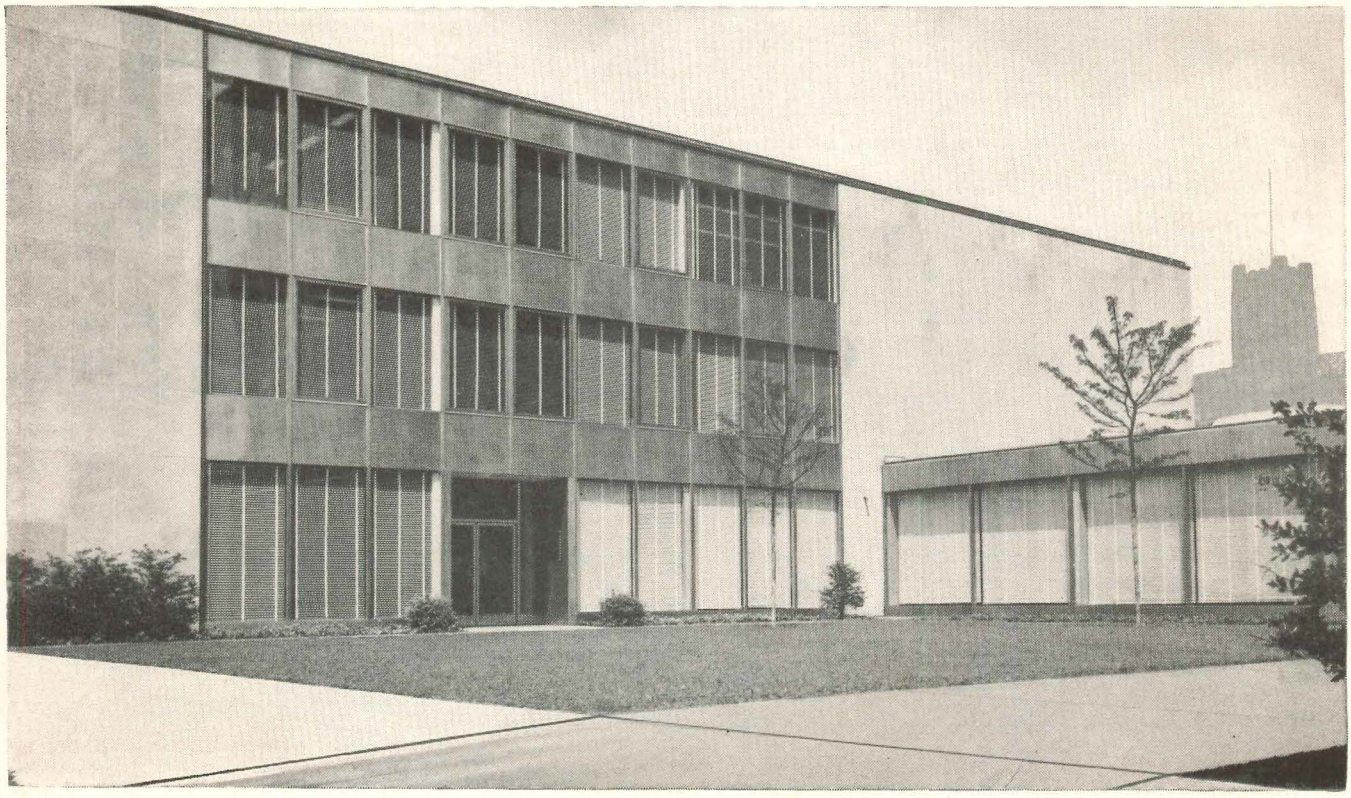
In its headquarters the Institute teaches better baking methods and conducts research dedicated to producing superior bakery products.

Specially designed to meet the variety of temperature needs of this modern three-story building is a Honeywell Customized Temperature Control installation.

This installation—with fourteen different temperature zones regulating heating and cooling—compensates for occupancy, use and exposure factors in the institute's kitchens, bakeries, classrooms, offices and laboratories.

And, according to Institute executives, the ideal "indoor climate" Honeywell Customized Temperature Control provides has helped appreciably in creating the organization's well-known atmosphere of efficiency.

Chicago headquarters building of American Institute of Baking was designed by Skidmore, Owings & Merrill



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Once equipped with Honeywell Customized Temperature Control, they'll have an ideal indoor "climate" – and save fuel besides.

And with a complete line of pneumatic, electric and electronic controls to choose from, Honeywell Customized Temperature Control offers you the greatest flexibility in design.

Then, too, when it comes to performance, Honeywell-built controls assure years of trouble-free operation. And they're backed by the finest service organization in the controls industry.

For full facts, call any one of the 96 local Honeywell offices. Or mail the coupon today.

Kasmir "Casey" Lemeka, American Institute of Baking's chief engineer, says: "First of all, I like our Honeywell Customized Temperature Control installation because it keeps people happy by furnishing constant comfort – everywhere in the building. But from my standpoint, another feature that's mighty important is the need for very little maintenance. In short, the system works right – and doesn't need to be babied."

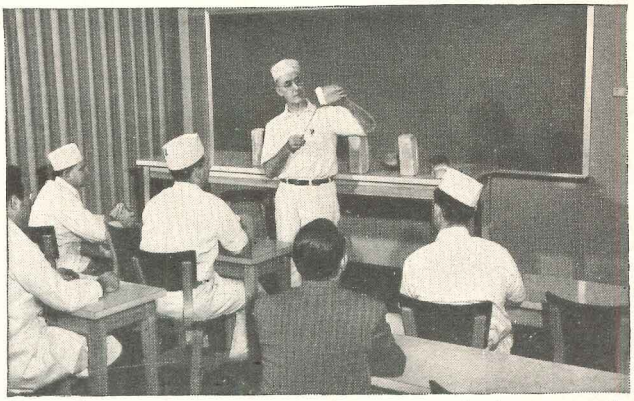
MINNEAPOLIS **Honeywell**

First in Controls

H HONEYWELL

Honeywell Customized Temperature Control helps promote worker efficiency by preventing offices from becoming uncomfortably hot – or too cold. In the above office – located in heating zone 1 – the system often must compensate for strong lake winds.

The test kitchen is located on the second floor in temperature zone 9. The thermostat in this temperature zone easily compensates for extra heat from the ovens and from solar radiation on sunny days, thus providing ideal comfort and raising worker efficiency the year 'round.



Zoned temperature control is extremely important in the large lecture room on the ground floor – located in temperature zone 2. Besides compensating for many large windows facing south, the thermostat keeps the temperature just right – for large or small classes.

MINNEAPOLIS-HONEYWELL REGULATOR CO.
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LUDWIG MIES VAN DER ROHE DESIGNS A CHAPEL

ILLINOIS INSTITUTE OF TECHNOLOGY has a new chapel, and it makes architectural news because it is the first ecclesiastical structure designed by its own director of architecture, Ludwig Mies van der Rohe.

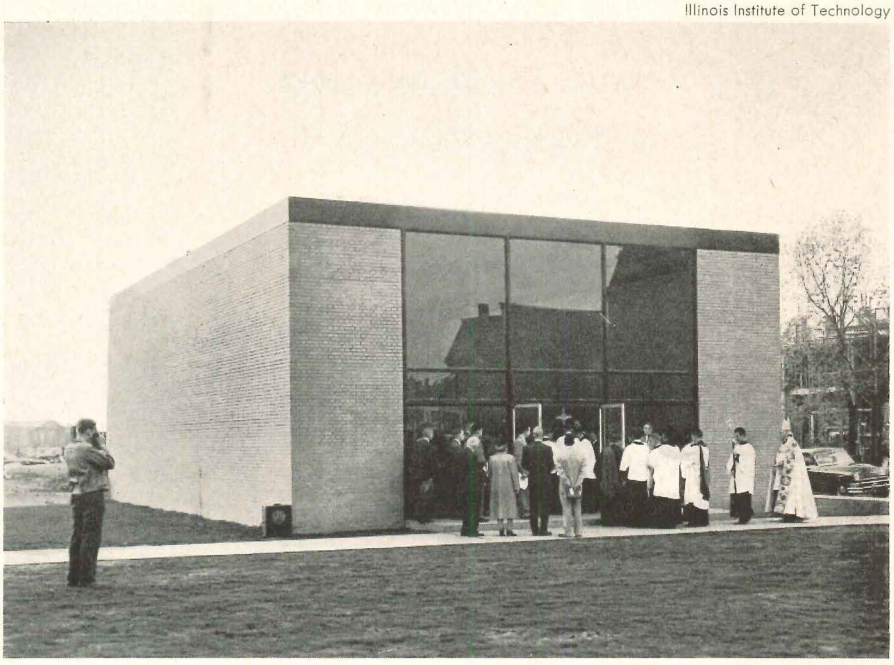
Mies says he chose "an intensive rather than an extensive form to express my conception, simply and honestly, of what a sacred building should be.

"By that I mean a church or chapel should identify itself, rather than rely upon the spiritual associations of a traditional fashion in architecture such as the Gothic."

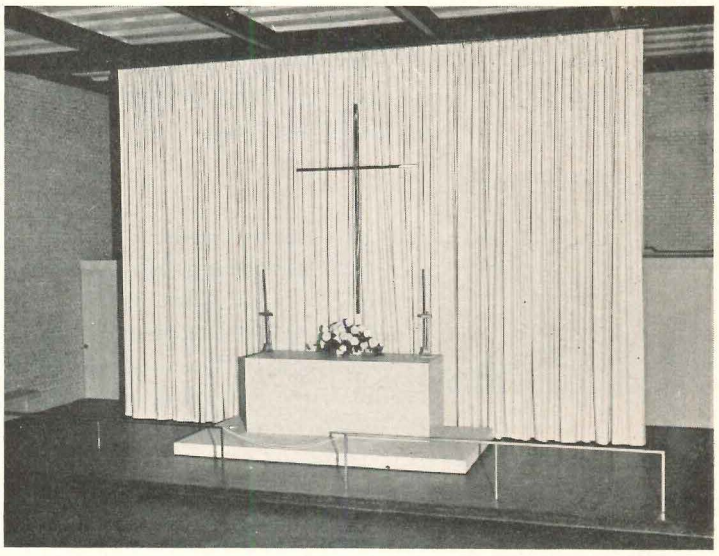
The chapel is 60 ft long, 37 ft wide and 19 ft high. Eastern and western exposures are floor-to-roof panes of glass. Walls are buff brick, topped by a flat roof of prefabricated concrete slabs.

The interior is severely honest. Steel roof supports are left exposed and brick walls unfinished. The altar is a single seven-and-a-half-ton block of Roman Travertine marble; both the altar cross and the altar rail are stainless steel. There is a drapery behind the altar, but it is raw silk in its natural color. If the use of invisible spotlights set in the roof supports to play upon the brick walls seems less than straightforward, it may be noted that the effect actually will be to stress the simplicity of the structure.

Illinois Institute of Technology



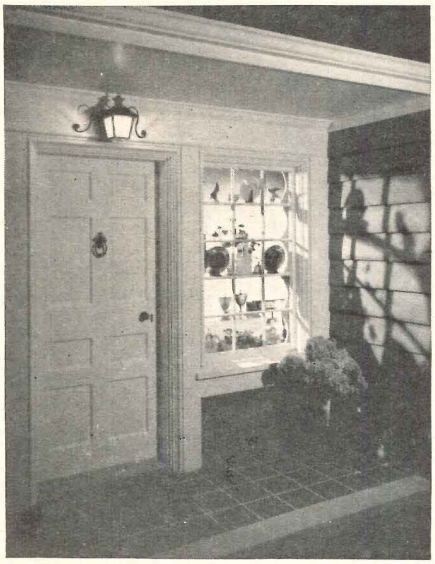
The new chapel for Illinois students and staff was dedicated October 26 in rather elaborate ceremonies. It will be known as the Robert F. Carr Memorial Chapel of St. Saviour



The stainless steel altar cross is 10 ft high by 6 ft wide, weighs 287 lb. It is secured to a wall hidden by the dossal drapery

The reed organ now in use will be replaced later by an "organ of classical design and voicing" to extend in gallery from one of the walls. All of the pipes will be exposed

Here is the doorway opposite but with a panel of regular single glaze glass. With a random clear glass block panel, prying eyes cannot see inside.



By night, the entranceway glows with a light that radiates welcome to friends. By day, inside rooms are flooded with natural daylight.

This random clear panel retains all of the doorway's colonial charm. The subtle variation in the block face is reminiscent of old handmade glass.

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NEWS FROM CANADA *by John Caulfield Smith*

White & Hastings of London, Ont., were architects for the Wallace Weinstein residence in London

National Gallery Contest Narrows to Six Firms

SIX ARCHITECTS and architectural firms have been chosen to develop further their original proposals for the current competition for a new National Gallery of Canada building in Ottawa. Announcement of the names of the six, who were selected from 104 original entrants in the competition, was made by officials of the National Gallery.

The individual architects and firms include Gordon S. Adamson, Toronto; W. J. McBain, Toronto; Green, Blankstein & Russell, Winnipeg; George A. Robb, Toronto; Vincent Rother, Montreal; and Smith, Munn, Carter, Katelnikoff & Ian Brown, Winnipeg. They have been asked to develop their sketch drawings for final presentation in March 1953. The winner of the competition will automatically be retained as architect for the proposed building.

Professional advisor to the Gallery for the competition is Prof. E. R. Arthur of the School of Architecture, University of Toronto.

U. S. Bidding Advantage Is Cited as Unfair

An unfair advantage held by U. S. contractors over Canadian contractors in competitive bidding on jobs in both countries has been charged by P. G. Wilmut, president of the Canadian Construction Association.

The existence of this handicap, according to Mr. Wilmut, mainly results from the protection afforded U. S. contractors by their government as contrasted with the lack of protection offered by the Canadian government.

Mr. Wilmut commented on the situation as follows:

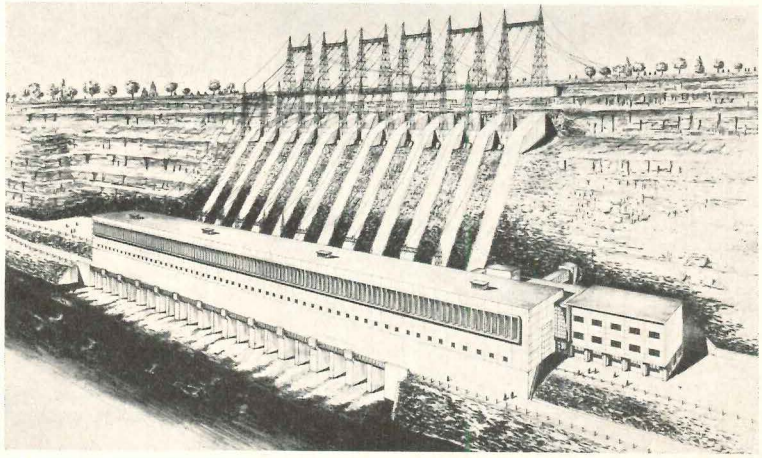
"It should perhaps be emphasized that the Canadian Construction Association welcomes foreign capital, technical skill and fair competition. There are, however, a number of factors that often place American contractors at an advantage over Canadian operators. Many of these can be counteracted by better merchandising of our services on our part. Some, involving tariffs and taxation, require government action to restore the balance.

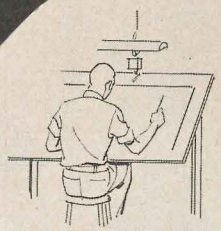
"Many of the plans and specifications for projects in Canada are prepared in the United States and it is not surprising that American designers are strongly biased in favor of engaging American contractors.

"As is only natural, the specifications drawn up by American designers are usually in accordance with American standards and usually call for American materials and equipment. If Canadian

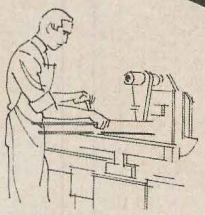
(*Continued on page 32*)

Sir Adam Beck Niagara Generating Station No. 2, Niagara River, Ont., is part of the great Niagara River project now in progress. The project, made necessary by the great industrial development in southern Ontario and, to some extent, western New York, involves vast diversion of water from the river above the Falls without impairing the Falls' scenic value, construction of tunnels under the city to carry the water and finally this huge generating station. Architect of the station is Kenneth H. Candy of the Ontario Hydro-Electric Power Commission

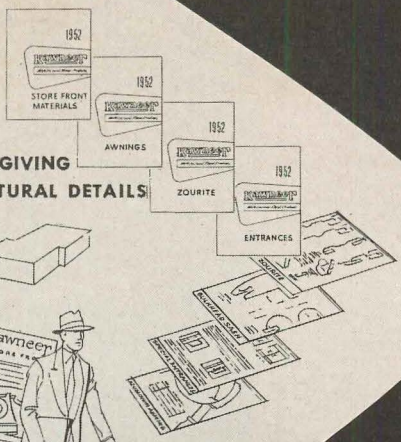




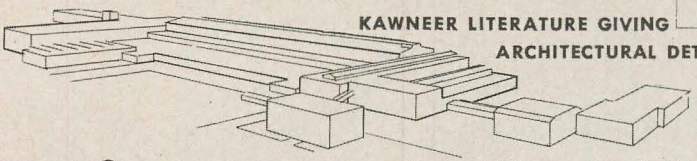
KAWNEER DESIGN ENGINEERS



KAWNEER CRAFTSMEN



KAWNEER LITERATURE GIVING ARCHITECTURAL DETAILS



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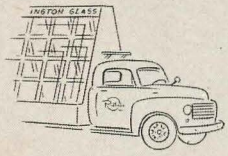

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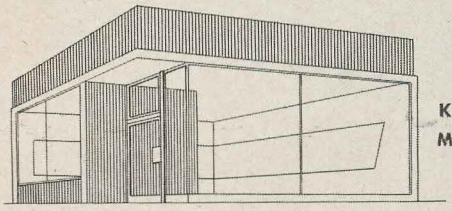

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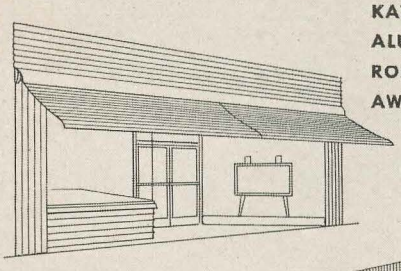

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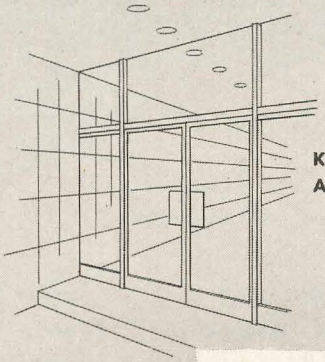

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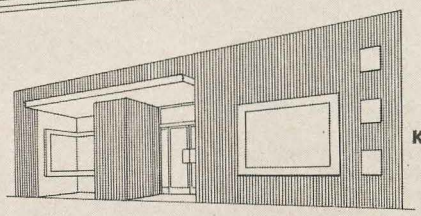

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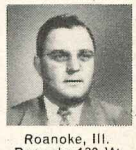
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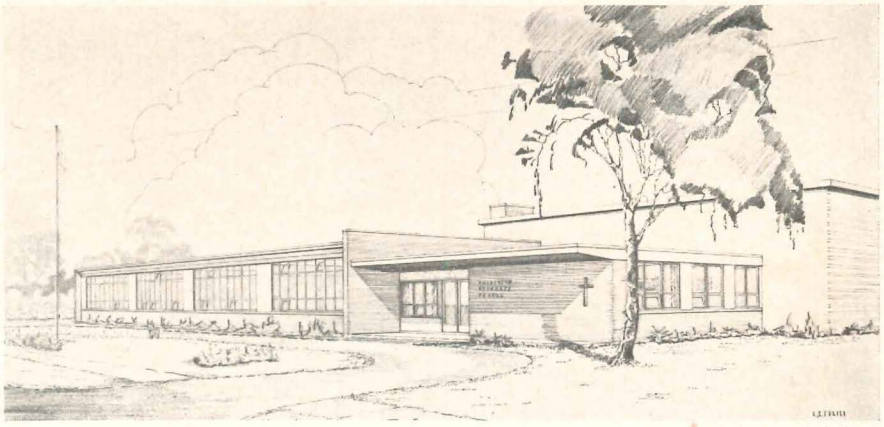
CANADA

(*Continued from page 28*)

firms are permitted to bid on these projects they do so at no little disadvantage in relation to American companies also tendering. This situation also deprives Canadian manufacturers of business which would accrue to them if the plans were executed in Canada."



G. E. Fraser

Above, Walkerton Intermediate Separate School, Walkerton, Ont. This is a Roman Catholic public school and is part of the Ontario educational system. Architect is J. D. Kyles, Hamilton, Ont.

"This inequity," Mr. Wilmut continues, "has been protested by the C.C.A. and the engineering institute of Canada for a number of years but no redress has been received from the tariff board. The U. S. Government, it might be added, makes no exception to its tariff on plans and specifications."

Equipment Problems Told

Citing the growing importance of heavy equipment as a factor in construction, Mr. Wilmut charged that U. S. firms have initial advantages in purchasing such equipment because they can borrow money at lower rates than those available in Canada and because equipment itself is cheaper in the United States.

"This situation," he said, "places American contractors at an advantage over Canadian firms with regard to both permanent or temporary importations. Up until last year it was possible under certain circumstances for firms to bring in equipment for temporary use upon payment of only 1/120th of the tariff and sales tax per month. The rate was doubled to 1/60th per month following C.C.A. representations and since last July all applications for reduced tariff have been referred by the government to the association office for checking as to the availability of the unit in question in Canada. The regulations have been further tightened by the restriction of these tariff concessions ordinarily to a six-month period. Once again I should add that the U. S. offers no similar conces-

(*Continued on page 34*)

Solve Tomorrow's Space Needs – Today

AGITAIR®

TYPE RC

With

REMOVABLE DIFFUSER CORE

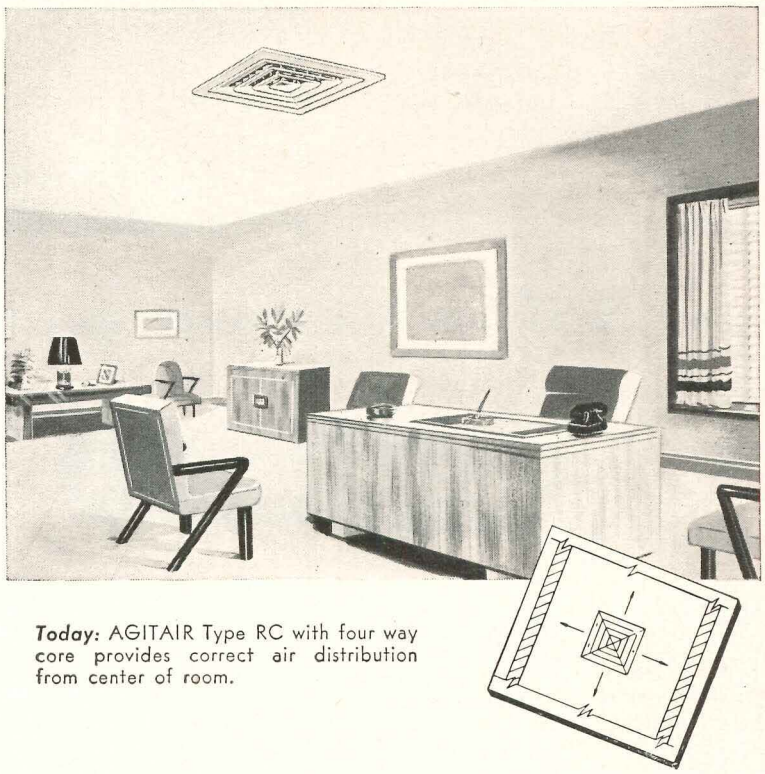
There's something really new in air diffusers — removable, interchangeable cores . . . and only AGITAIR Type RC Series has it!

To assure 100% air distribution in any area, simply choose the correct, tailor-made core from the unlimited pattern possibilities . . . and insert into the mounting frame of your choice.

Result for today: efficient performance, attractive appearance, quick, easy installation.

Result for tomorrow: when partitions are relocated, simply replace diffuser core with different pattern. No changes in frame or duct work necessary.

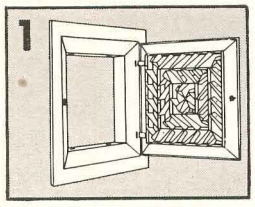
When you plan air distribution for the present, be sure to keep an eye on the future — specify AGITAIR Type RC—the diffuser that looks ahead.



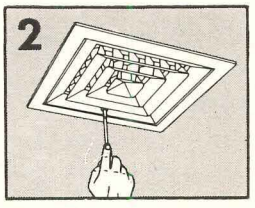
Today: AGITAIR Type RC with four way core provides correct air distribution from center of room.

Tomorrow: Walls are moved, the four way core snaps out and a three way core snaps in for correct air distribution from side of room.

1-2 YOU'RE THRU . . .



Insert diffuser "slip hinges" into frame slots



Turn mounting lock 90° with screw driver

Write For Complete Information

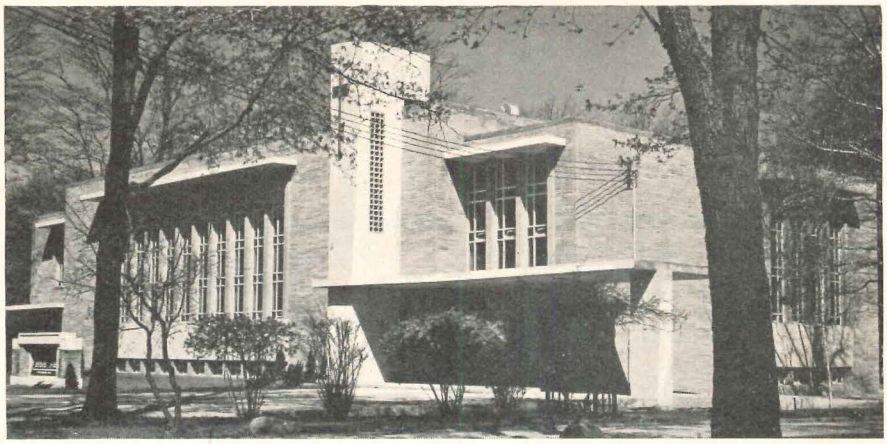
Air Devices Inc. 17 EAST 42nd STREET • NEW YORK 17, N.Y.

AIR DIFFUSERS • AIR AND GREASE FILTERS • EXHAUSTERS

CANADA

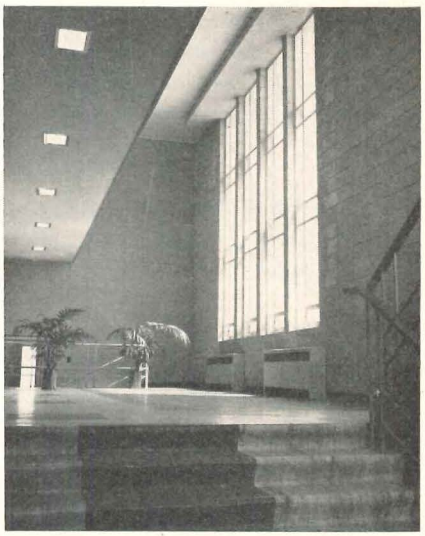
(*Continued from page 32*)

sions if a Canadian contractor wishes to take Canadian equipment below the border for temporary use. The full tariff has to be paid. It should be noted that Canadian manufacturers are discouraged from commencing the production of this machinery while this tariff situation exists.



Camera Records

Gospel Temple, Pentecostal Assembly, London, Ont., designed for economy, of concrete block and brick. Exterior view, above, shows front façade and principal entrance. Interior of hall is shown below. Architect for the building is Philip Carter Johnson, London, Ont.



Asks End to "Favors"

"The role of a Canadian contractor in the U. S. is not exactly made easy by a series of federal and state ordinances, union regulations, etc., all of which are designed to protect the interests of American firms. Our intention is not to exclude foreign contractors but rather to impress upon industry coming into this country that their construction work can be done more efficiently by Canadian organizations. At the same time, it seems only fair that the special favors available to foreign operators should

(*Continued on page 36*)

NEW YORK STOCK EXCHANGE

The Nation's Largest Securities Market Place

BULLS and BEARS all agree on the value of air conditioned comfort

Consulting Engineer present air conditioning system: Charles S. Leopold

POWERS®

AIR CONDITIONING CONTROL

Used in this World Famous Securities Market

No matter how the "temperature" of the market fluctuates, air conditions on the trading floor of the Stock Exchange remain stable throughout the year.

Back in 1903 the New York Stock Exchange pioneered with the installation of a comfort cooling system which Mr. Donald A. Kepler, Chief Engineer describes as follows:

"It was one of the first systems of its kind applied to a large densely populated market place and by far the largest plant devoted primarily to air cooling and dehumidification. No controls were employed in the cooling season but in winter temperature and humidity were automatically controlled by a pneumatic system.

The air conditioning system now in use, the third since 1903, is modern and reflects the progress of air conditioning during the past 50 years."

Other Prominent Users of Powers Control

TORONTO STOCK EXCHANGE • **MIDWEST STOCK EXCHANGE**

When temperature and humidity control problems arise contact Powers nearest office. Our 60 years of experience gained in many important buildings may be helpful to you.

Factory and General Offices: Skokie, Ill.

Mr. D. A. Kepler, Chief Engineer, in the photograph above, reports temperature is held within limits of approximately 1° F. plus or minus.

POWERS CONTROL — TEMPERATURE AND HUMIDITY

(a94)

OFFICES IN OVER 50 CITIES **THE POWERS REGULATOR COMPANY** Established 1891

THE RECORD REPORTS

CANADA

(*Continued from page 34*)

either be reciprocated by their government or eliminated by our own. Of these two courses of action, I would personally prefer the latter."

Cites Tariff Rates

Mr. Wilmut pointed out that U. S. consulting engineers have the privilege of sending their plans to Canada either on a duty-free basis or upon payment of a negligible tariff. The rates on architectural plans are only slightly higher, he added.

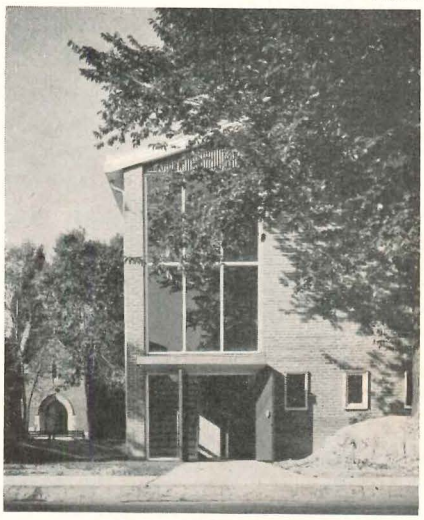
Town Planners Reorganize Defunct Institute

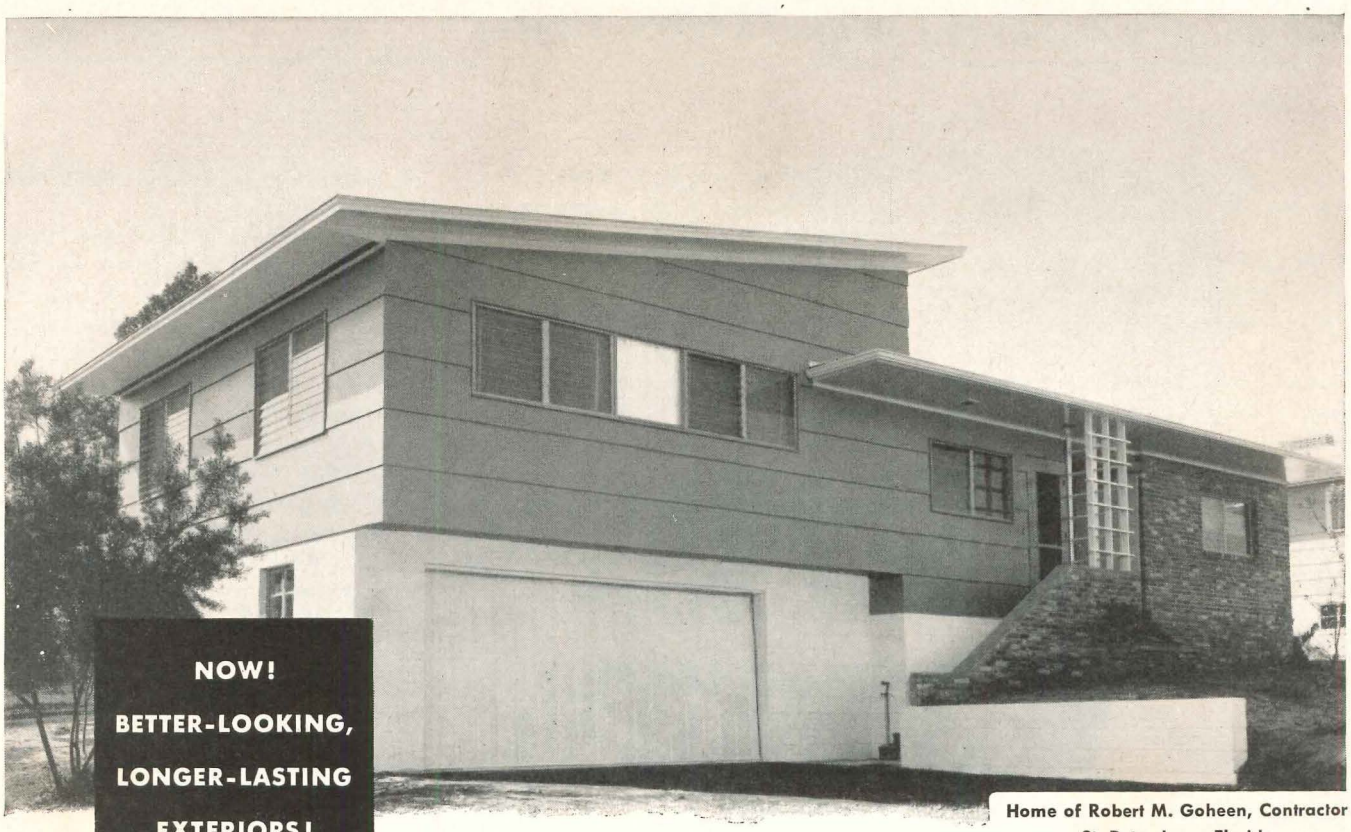
THE TOWN PLANNING INSTITUTE of Canada, defunct since 1931, has been revived. At a meeting held in Montreal the organization, which was active from from 1919 to 1931, was reorganized.

A. Cousineau of Montreal was elected president of the new group, with A. J. Walker of Vancouver chosen first vice president and Eric Thrift of Winnipeg second vice president. Dr. E. G. Faludi of Toronto is secretary-treasurer.

Below, Sunday School addition for Manor Road United Church, Toronto, Ont. New addition, right of photo, offers interesting contrast to original building, left background. Architect, W. J. McBain; Associate, Kent Barker; both of Toronto

Neider





NOW! BETTER-LOOKING, LONGER-LASTING EXTERIORS!

Home of Robert M. Goheen, Contractor
St. Petersburg, Florida

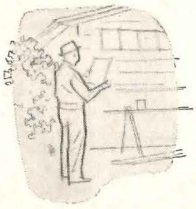
New! MASONITE SIDING

A PACKAGED PRESDWOOD PRODUCT

Here it is! The siding that meets every requirement: good looks, ease of application, paintability and economy. It's the newest member of the famous Masonite Presdwood® family. Masonite Siding increases the value of every home . . . new or old.

Holds paint better, longer...takes less to cover.

Deeper shadow! Shadowline wood strips, specially designed for use with Masonite Siding, produce a deep shadow. Permit smaller overlap—put more of the width to work.



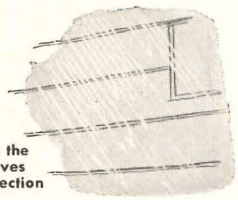
Uniform lengths... saves time and money.

Smoother! Forms a perfect, smooth base that won't check and crack the finish. Takes less paint to cover, holds it better and longer. Repainting is *extra* years away.

Stronger! Tough—resists dents, bumps, scrapes and other surface hazards. Won't split, splinter or crack. Won't push nails out.

Lasts longer! Sun, wind, rain, snow, even hailstones don't bother this durable, all-wood hardboard. Lasts indefinitely. Won't rot or corrode.

Saves money! No short lengths. Packaged in convenient 8′, 10′ and 12′ lengths in conventional 12″, wide 16″ and extra-wide 24″ widths. ¼″ and 5/16″ thicknesses.



Out-weathers the weather...gives permanent protection

TESTED FOR YEARS!
Exhaustive tests have proved this superior product, both in the laboratory and in actual application on homes built and lived in. You cannot recommend a finer, more durable siding for any of your homes...large or small!

Please send me complete information about the new Masonite Siding and other uses of Presdwood.

Name.....

Address.....

City..... *State*.....

"Masonite" signifies that Masonite Corporation is the source of the product

better hardboards for better homes

MASONITE® CORPORATION
Dept. AR-12, Box 777, Chicago 90, Ill.

By Ernest Mickel

NPA CLINGS TO MAY 1 AS DATE TO EASE CURBS

Industry Wants Out January 1; How Much Will GOP Victory Effect Materials Decontrol?

NEITHER THE MOST ELOQUENT reasoning from leading segments of the building industry nor the Republican victory at the polls could move the National Production Authority last month to any abrupt reversal of its announced decision to postpone major relaxation of building controls to May 1.

What the industry wanted, as formally communicated to NPA by the Construction and Civic Development Department of the U. S. Chamber of Commerce, was immediate relaxation of materials controls and complete suspension January 1.

A task group of NPA's Construction Industry Advisory Committee, meeting in Washington at the end of October, insisted NPA's relaxation date could be moved up to January 1 without any disruption of the defense program.

A barrage of statements urging decontrol from nearly every organized group in the industry was likewise descending on Washington.

The prospect of the first Republican administration in a generation appeared likely to speed wage and price decontrol, as ceilings due to expire April 30 are now regarded as unlikely to be extended; but materials controls authority does not expire until June 30 and NPA did not expect that the new Administration would alter its timetable.

N.A.R.T.B. REPORT DISCUSSES DESIGN OF TV STUDIOS

THE SPECIAL DESIGN REQUIREMENTS of television studios are discussed in the second edition of a cost study series developed by the engineering department of the National Association of Radio and Television Broadcasters.

The report, which emphasizes the urgency of close collaboration of architect and studio engineers at all stages of planning, discusses space requirements as well as general planning problems.

Some specific comments by N.A.R.T.B.:

Antennas — Most existing antennas are 500 ft above ground, only five to ten per cent of new ones will be over 900 to 1000 ft. Location should be high point near center of area to be served. Using single supporting structure or common site for more than one television antenna installation has some advantages, can result in lower initial cost for each party. Antenna "farms" are approved by Civil Aeronautics Administration, are said by broadcast engineers to result in easier receiver installation, better reception.

Location — Joint housing of transmitting and programming plants means lower initial cost, perhaps lower operating cost — duplication of some equipment and some personnel is avoided; need for a complete studio-transmitter link is obviated.

(*Continued on page 250*)

4-Hour Fire-Safety at Every Floor

Bethlehem Open-Web Steel Joists, combined with concrete floor slab and plaster ceiling, will give this building—or yours—an incombustible barrier against the spread of fire at every floor.

This construction withstands fire for a period of up to four hours, depending on the type of slab and ceiling used. It's suitable for floors and roofs in such structures as stores, schools, apartments and hospitals.

Another advantage of Open-Web Joists is stiff, substantial floors that resist vibration and sound. And because Bethlehem Steel Joists won't sag, warp or shrink, ugly, unsanitary cracks can't form between baseboard and floor.

Bethlehem Open-Web Joists speed construction, help cut costs. They reach the job clearly marked and ready for immediate placing. Two men can install them without falsework or special equipment. Pipes and conduits are run through the open webs.

If you'd like to have more information about Bethlehem Open-Web Steel Joists, please call the nearest Bethlehem sales office, or write to us at Bethlehem, Pa.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation
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BETHLEHEM STEEL

BETHLEHEM OPEN-WEB JOISTS

AMERICA'S *Number 1* BUILDINGS USE

This is Nashville's new pride!

Nashville Electric Service Building ▶
Architects: HIBBS-PARRENT & HALL, Nashville, Tenn.
Gen. Contractor: FOSTER & CREIGHTON CO., Nashville, Tenn.
Hardware: KEITH-SIMMONS CO., Nashville, Tenn.

"of course, Yale specified

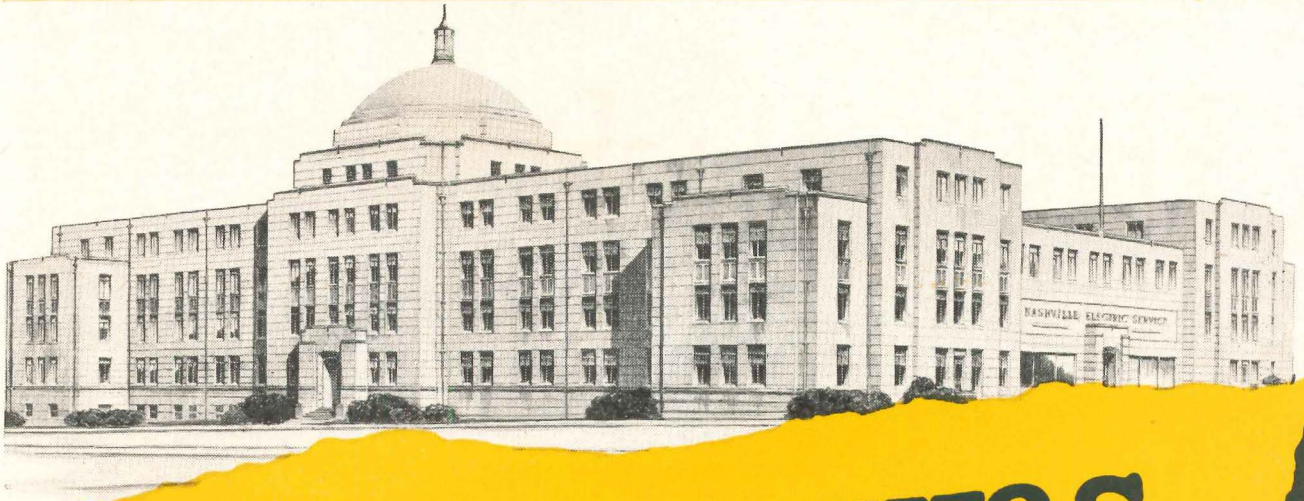
New beauty... unusual dependability... long range economy make Yale the choice again!

Here's new evidence of the superiority of Yale. Nashville's new pride, the magnificent Electric Service Building is equipped throughout with Yale hardware. And, the reasons for this thumping endorsement are impressive as they are obvious to builders, today.

The men responsible in Nashville wanted hardware that could be counted on for peak performance year after year under all operating conditions . . . hardware that could keep maintenance at a minimum while providing maximum security. They specified Yale!

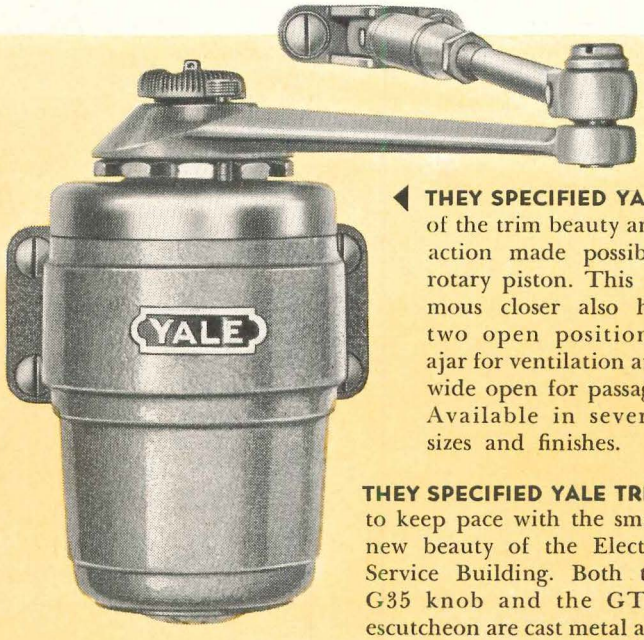
These are reasons that are well worth your consideration. Let a Yale distributor or your consultant show you how Yale benefits can be applied to those important jobs you have on schedule now. For further information write to: The Yale & Towne Manufacturing Company, Stamford, Conn. (In Canada: St. Catharines, Ontario.)

AMERICA'S *Number 1* HARDWARE



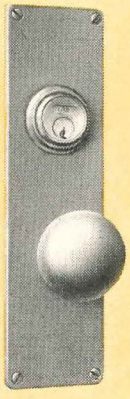
hardware was exclusively"

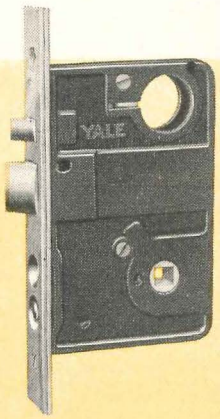
writes THE KEITH-SIMMONS COMPANY, HARDWARE CONSULTANTS



◀ **THEY SPECIFIED YALE CLOSERS** because of the trim beauty and quick, quiet closing action made possible by the new type rotary piston. This famous closer also has two open positions: ajar for ventilation and wide open for passage. Available in several sizes and finishes.

THEY SPECIFIED YALE TRIM ▶ to keep pace with the smart new beauty of the Electric Service Building. Both the G35 knob and the GT87 escutcheon are cast metal and finished in dull chrome.





▲ **THEY SPECIFIED YALE LOCKS.** Ease of installation . . . the extra durability of bronze front and bolts . . . five pin-tumbler security . . . and master-key feature made the Yale 7656 best suited to meet the rugged requirements of the builder and architect.

Yale is a registered trade mark

YALE & TOWNE

CONSTRUCTION COST INDEXES

Labor and Materials

United States average 1926–1929 = 100

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

NEW YORK

Period	Residential		Apts., Hotels Office Bldgs.	Commercial and Factory Bldgs.	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1925	121.5	122.8	111.4	113.3	110.3
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1940	126.3	125.1	132.2	135.1	131.4
1946	181.8	182.4	177.2	179.0	174.8
1947	219.3	222.0	207.6	207.5	203.8
1948	250.1	251.6	239.4	242.2	235.6
1949	243.7	240.8	242.8	246.4	240.0
1950	256.2	254.5	249.5	251.5	248.0
1951	273.2	271.3	263.7	265.2	262.2
July 1952	278.1	275.0	270.9	273.8	271.4
Aug. 1952	279.7	276.6	274.4	276.5	274.3
Sept. 1952	279.7	276.6	274.4	276.5	274.3
	% increase over 1939				
Sept. 1952	**126.5**	**126.0**	**109.9**	**107.3**	**110.8**

ATLANTA

Period	Residential		Apts., Hotels Office Bldgs.	Commercial and Factory Bldgs.	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1925	86.4	85.0	88.6	92.5	83.4
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1940	91.0	89.0	96.9	98.5	97.5
1946	148.1	149.2	136.8	136.4	135.1
1947	180.4	184.0	158.1	157.1	158.0
1948	199.2	202.5	178.8	178.8	178.8
1949	189.3	189.9	180.6	180.8	177.5
1950	194.3	196.2	185.4	183.7	185.0
1951	212.8	214.6	204.2	202.8	205.0
July 1952	219.1	220.7	213.5	211.5	215.5
Aug. 1952	219.1	220.7	214.2	211.9	216.8
Sept. 1952	219.1	220.7	214.2	211.9	216.8
	% increase over 1939				
Sept. 1952	**153.9**	**165.6**	**125.2**	**117.6**	**128.9**

ST. LOUIS

1925	118.6	118.4	116.3	118.1	114.4
1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1940	112.6	110.1	119.3	120.3	119.4
1946	167.1	167.4	159.1	161.1	158.1
1947	202.4	203.8	183.9	184.2	184.0
1948	227.9	231.2	207.7	210.0	208.1
1949	221.4	220.7	212.8	215.7	213.6
1950	232.8	230.7	221.9	225.3	222.8
1951	252.0	248.3	238.5	240.9	239.0
July 1952	260.9	254.2	252.8	259.0	252.9
Aug. 1952	260.7	254.0	253.0	259.1	253.7
Sept. 1952	260.9	254.1	253.5	259.7	254.0
	% increase over 1939				
Sept. 1952	**136.8**	**137.5**	**114.8**	**116.8**	**113.4**

SAN FRANCISCO

1925	91.0	86.5	99.5	102.1	98.0
1930	90.8	86.8	100.4	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1940	106.4	101.2	116.3	120.1	115.5
1946	159.7	157.5	157.9	159.3	160.0
1947	193.1	191.6	183.7	186.8	186.9
1948	218.9	216.6	208.3	214.7	211.1
1949	213.0	207.1	214.0	219.8	216.1
1950	227.0	223.1	222.4	224.5	222.6
1951	245.2	240.4	239.6	243.1	243.1
July 1952	253.1	248.0	247.8	251.4	252.4
Aug. 1952	253.1	248.0	248.2	251.6	253.1
Sept. 1952	252.6	247.8	248.5	251.6	253.2
	% increase over 1939				
Sept. 1952	**139.2**	**149.5**	**111.7**	**106.4**	**117.3**

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

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

index for city A = 110
index for city B = 95
(both indexes must be for the same type of construction).
Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

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

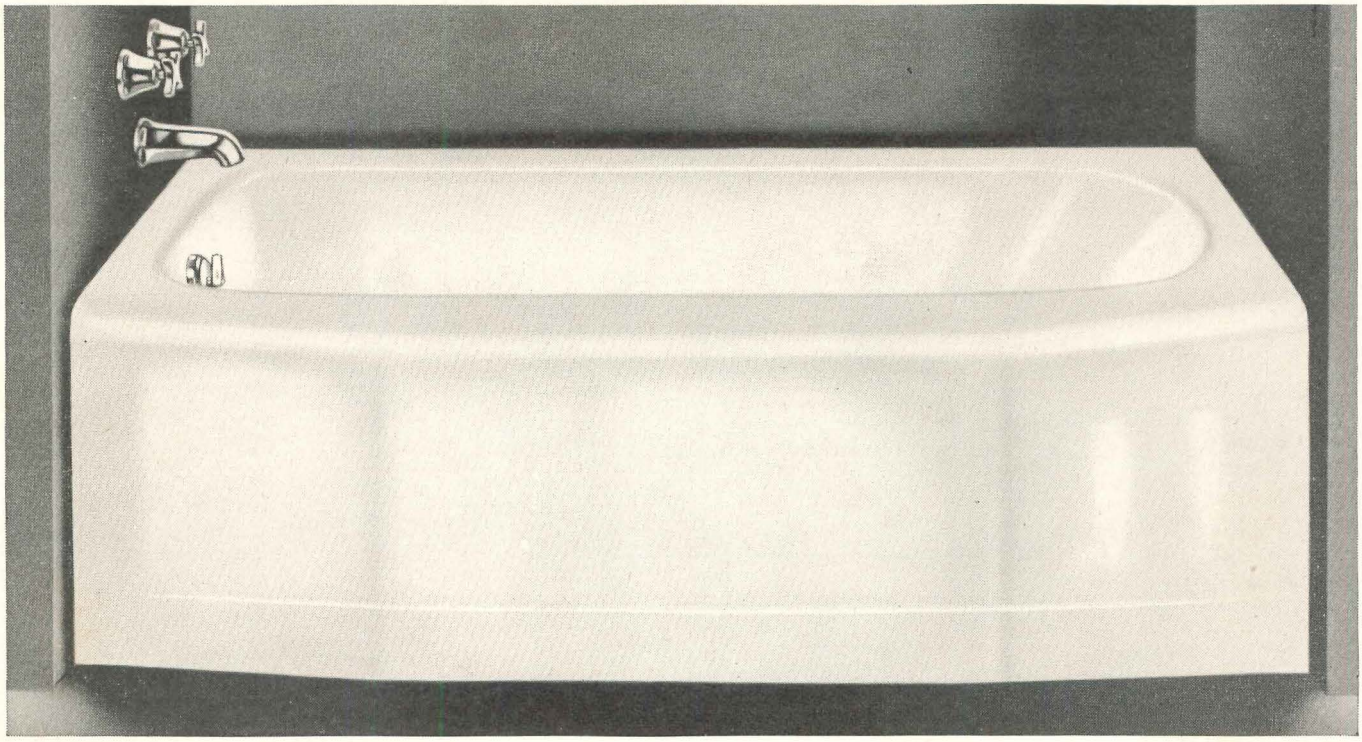
$$\frac{110-95}{110} = 0.136$$

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

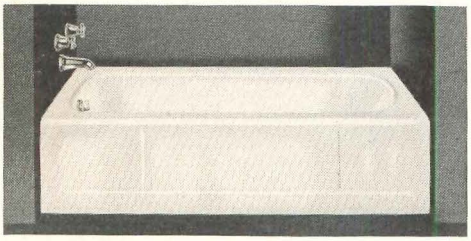
Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear regularly on this page.

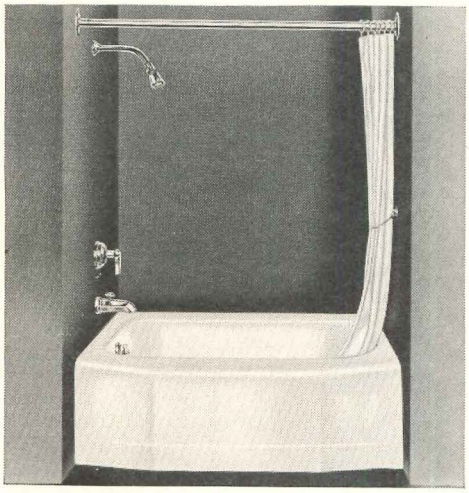
3 NEW BATHS



COSMOPOLITAN *recess bench bath. Length 5′, width 33″, height 16″.*



MINOCQUA *recess bath*
Length 5′, width 29″, height 14″.



STANDISH *recess shower bath*
Length, 42″, width 36″, height 14″.

Modern designs and practical sizes to meet every requirement

Three new models in the Kohler line of baths offer fresh beauty, convenience, safety, ease of cleaning, for bathrooms of any size.

The Cosmopolitan, popular choice for the average home, provides maximum roominess and comfort, with a wide flat bottom, slope end and 6-inch bench rim. Available in standard 5-foot length (also 4½ and 5½) for recess building-in—and 4½ and 5-foot lengths for corner installations.

The Minocqua offers first quality in a bath of standard length, but slightly less-than-average width and height. Widely specified for homes where space or budget is restricted.

The Standish affords exceptional space economy for homes, apartments, hotels, motor courts and dormitories. Shorter and wider than the average bath it is roomy and deep for showering—and suitable for bathing. Bench rim is 5 inches wide.

The lustrous, glass-hard enamel of Kohler baths is fused to non-flexing iron, cast for strength and rigidity. The chromium-plated fittings match in style and quality.

Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS • AIR-COOLED ENGINES • PRECISION CONTROLS

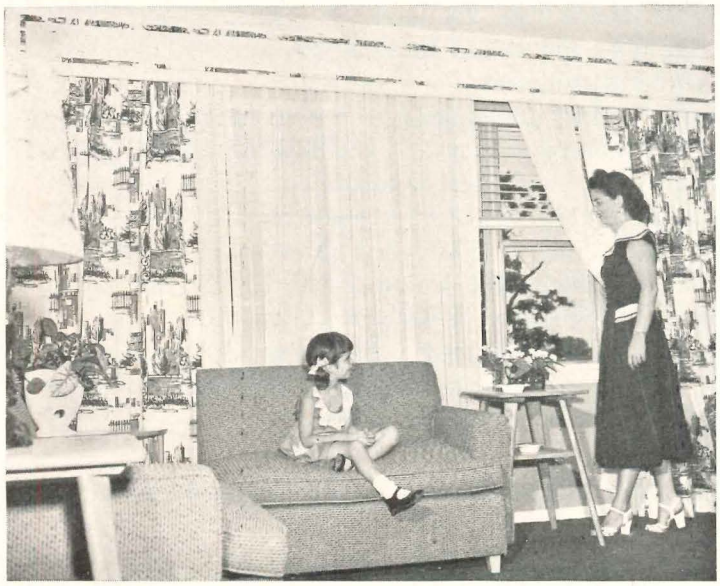
BREWSTER MANOR HOMES FEATURE

One of the highly popular Brewster Manor 3-level homes.

UNUSUAL VALUE FEATURES OF BREWSTER MANOR HOMES

3 level plan
Full size attached garage
Completely insulated walls and ceilings
3 large bedrooms
1½ baths—ceramic tile
Venetian blinds
Rusco Prime Windows
Finished rumpus room
Poured concrete foundation

ARCHITECT
OSCAR SILVERSTONE, A. I. A.



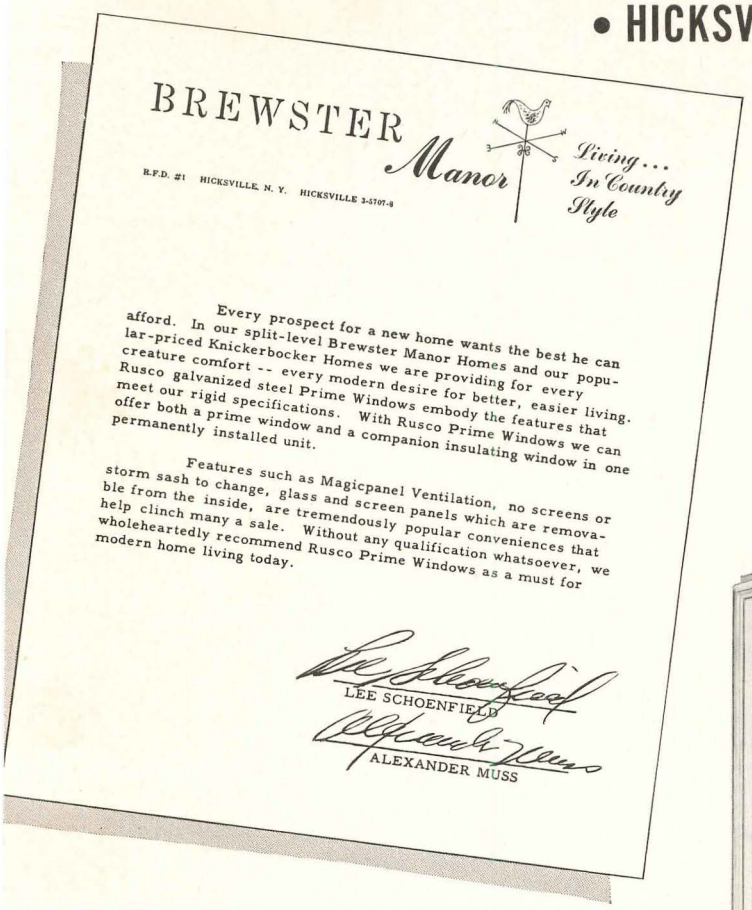
Rusco Prime Windows with insulating sash keep Brewster Manor homes cooler in summer, warmer in winter . . . provide rainproof, draft-free ventilation regardless of weather or season.

Used as flankers with fixed center unit, Rusco Prime Windows give picture-window visibility with added convenience of ventilation and movability.

RUSCO Galvanized Steel PRIME WINDOWS

• HICKSVILLE, LONG ISLAND, BUILDER SAYS:

"We Wholeheartedly Recommend Rusco Prime Windows As Best For The Home of Today"....



BREWSTER *Manor* — *Living... In Country Style*

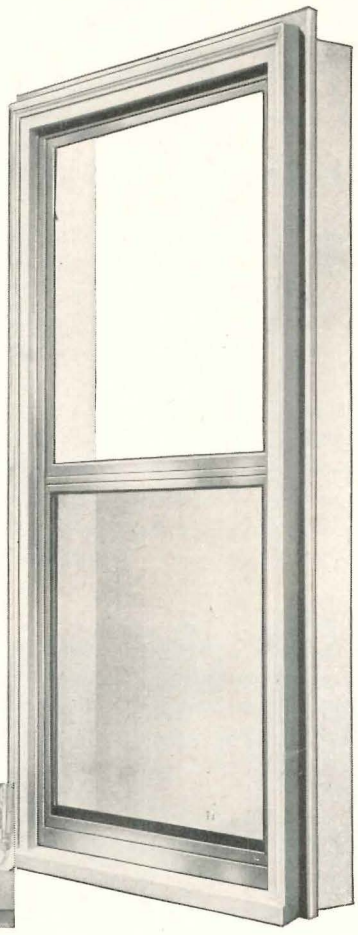
R.F.D. #1 HICKSVILLE, N. Y. HICKSVILLE 3-5707-8

Every prospect for a new home wants the best he can afford. In our split-level Brewster Manor Homes and our popular-priced Knickerbocker Homes we are providing for every creature comfort -- every modern desire for better, easier living. Rusco galvanized steel Prime Windows embody the features that meet our rigid specifications. With Rusco Prime Windows we can offer both a prime window and a companion insulating window in one permanently installed unit.

Features such as Magicpanel Ventilation, no screens or storm sash to change, glass and screen panels which are removable from the inside, are tremendously popular conveniences that help clinch many a sale. Without any qualification whatsoever, we wholeheartedly recommend Rusco Prime Windows as a must for modern home living today.

LEE SCHOENFIELD

ALEXANDER MUSS



A Fully Pre-Assembled Window Unit

Factory-Painted, Hardware Attached—
All Ready to Install in Window Opening!

GLASS • SCREEN • BUILT-IN WEATHERSTRIPPING
INSULATING SASH* • WOOD OR METAL CASING
. . . OR STEEL FINS

*OPTIONAL

Glass and Screen Inserts easily removed from inside for convenience in cleaning. The Rusco removable sash feature has tremendous appeal as a convenience and safety feature.

Completely Installed in as little as 5 minutes!

1. Rusco Prime Window, with glass and screen panels removed, is taken from stockpile . . .

2. . . . placed in stud opening and plumbed . . .

3. . . . nailed to studs . . .

4. . . . glass and screen panels slipped into slides . . .

5. . . . and in less than 5 minutes the fully-installed window is ready for service!

RUSCO Galvanized Steel PRIME WINDOW

VERTICAL SLIDE

THE F. C. RUSSELL CO.

DEPARTMENT 7-AR-122 CLEVELAND 1, OHIO • IN CANADA: TORONTO 13, ONTARIO

REQUIRED READING

THE ROOTS OF CONTEMPORARY AMERICAN ARCHITECTURE

Roots of Contemporary American Architecture. By Lewis Mumford. Reinhold Publishing Corporation (330 West 42nd St., New York, N. Y.) 1952. 6 by 9 in. 460 pp. $7.50.

REVIEWED BY JOSEPH HUDNUT

All those persons who love modern architecture — and there are persons who do love it! — will applaud Lewis Mumford for having set before them a table so delightful and so fortifying.

Mr. Mumford has brought together in one volume a collection of excerpts from the writings of American authors who from time to time over a space of a hundred years have commented upon architecture. These form as a whole an anthology of opinion in which the reader may trace the development, not of that art of architecture which develops only in space, but of the ideas which have played so critical a part in the development of architecture. These ideas, presented by more than 25 writers each of whom is in some way distinguished for insight and artistry, gain exceptional strength and beauty from the light which each radiates upon the others.

Among these ideas two have had the greatest influence upon American design. These are, first, the concept of architecture as a social phenomenon and, second, the concept of architecture as an art having its basis in structure and in the industrial processes through which structure is created.

These ideas, with infinite variations, appear in all of the texts brought together in "Roots of Contemporary Architecture." We look at them from as many points of view as there are authors included — as if we were to see a cathedral nave through as many windows. And what eloquence they gain from translucencies at once so clear and so colorful!

Functionalism cannot long remain arid or doctrinal when we see it through the reasonable glass of Horatio Greenough and then through the romantic glass of Henry David Thoreau; when it is equally illumined by the agonized rhetoric of Louis Sullivan and the cool common sense of John Wellborn Root; when it is glorified by the prophetic voice of Matthew Nowicki and the blythe idealism of Catherine Bauer. And it will not be denied that functionalism is in need of this apotheosis!

THE PLANNING OF ELEMENTARY SCHOOL BUILDINGS

Planning Elementary School Buildings. By N. L. Engelhardt, N. L. Engelhardt, Jr. and Stanton Leggett. F. W. Dodge Corporation (119 West 40th St., New York, N. Y.) 1952. 8¾ by 11⅝ in. 275 pp., illus. $12.50.

REVIEWED BY JOHN W. MCLEOD

This volume deserves a place on the bookshelf of any architect who is designing, or who expects to design, an elementary school building. The authors, members of a well-known firm of educational consultants, have wisely chosen to emphasize that particular segment of school planning with which they are generally identified — interpretation of modern educational activities in terms of the facilities needed to house them.

Perhaps a word of warning should be entered here for the benefit of those persons, whether educators, administrators, or architects, who might expect to find, in a book with this title, an assortment of predigested, tried-and-true school plan layouts. They won't find them here! In fact, this book contains a minimum of drawings, and these are generally in the form of freehand diagrams to illustrate a particular point.

Obviously, a work of this kind is not directed solely to architects, but probably will reach into all fields of school administration from superintendents to school business officials and students. Architects then, should bear this in mind when appraising some of the more technical chapters, which may appear to them to be over-simplification of rather complex subjects.

(*Continued on page 48*)

writing, and ...
working models in the community.

A wide variety of enterprises may be used from time to time ... ample, an insurance company to insure children against loss in breakage of dishes, a cooperative enterprise to raise hamsters for sale, a parking authority to operate a bicycle parking area, and similar activities.

TYPICAL ACTIVITIES	FACILITIES NEEDED
Operating a bank	Open floor area
Playing store, firehouse, courtroom, post office, newspaper office, etc.	Props and prop storage
Operating student government, modeled on local community	Hollow blocks, crates, lumber to use in building a structure
Operating cooperatives, parking authority, corporations, companies (to sell hamsters, do research, etc.)	Storage for building materials
Operating a newspaper	Storage for bank records, post office records, and records of student organizations
	Storage for newspaper materials, records, etc.
	Use of duplicating equipment
	Platform

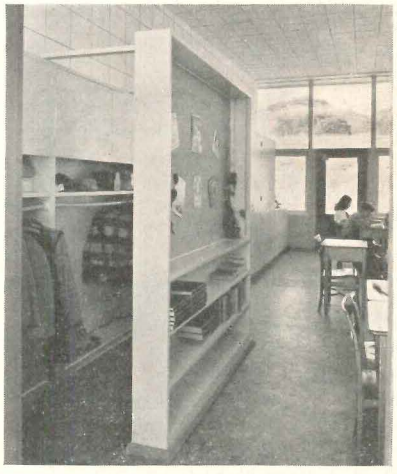


Illustration from Engelhardt and Leggett book, above. Portion of page, left, shows use of charts to show facilities needed for classroom activities

INSULATED METAL WALLS

for INDUSTRIAL and COMMERCIAL BUILDINGS

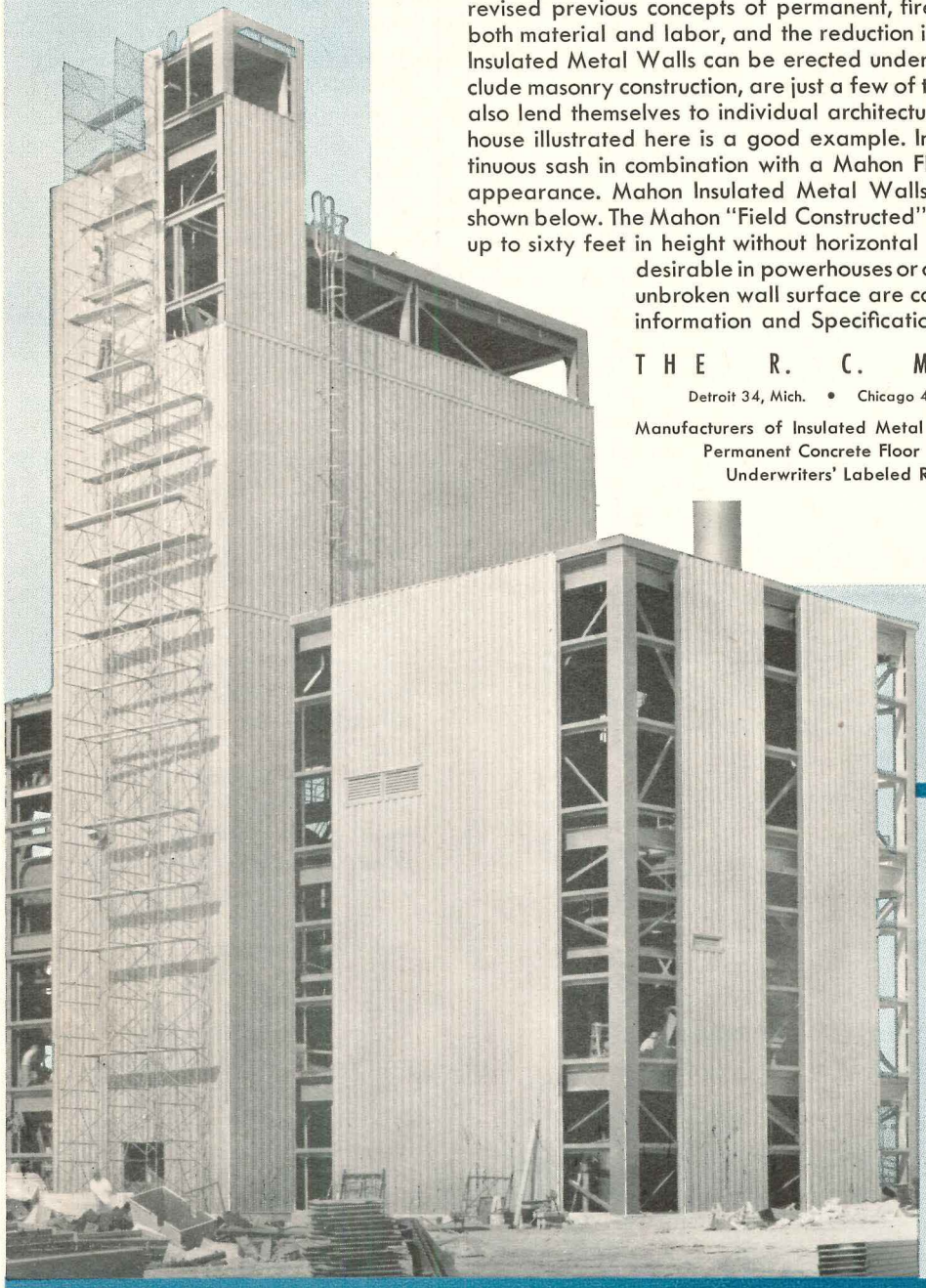
ALUMINUM, STAINLESS or GALVANIZED STEEL

Insulated Metal Walls continue to gain favor with both Architects and Owners throughout the country. And, the reason is obvious . . . these modern walls have revised previous concepts of permanent, firesafe construction. Their lower cost, in both material and labor, and the reduction in construction time—plus the fact that Insulated Metal Walls can be erected under weather conditions which would preclude masonry construction, are just a few of the advantages. Insulated Metal Walls also lend themselves to individual architectural expression in design—the powerhouse illustrated here is a good example. In this building, vertical panels of continuous sash in combination with a Mahon Fluted Metal Wall produces a striking appearance. Mahon Insulated Metal Walls are available in the three patterns shown below. The Mahon "Field Constructed" Fluted or Ribbed wall can be erected up to sixty feet in height without horizontal joints—a feature which is particularly desirable in powerhouses or other buildings where high expanses of unbroken wall surface are common. See Sweet's Files for complete information and Specifications, or write for Catalog No. B-53-B.

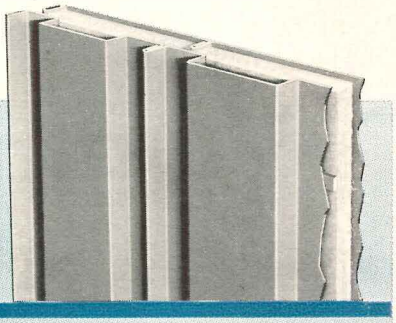
THE R. C. MAHON COMPANY

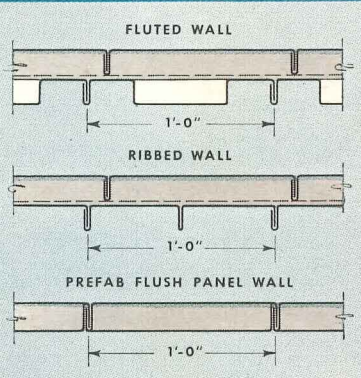
Detroit 34, Mich. • Chicago 4, Ill. • Representatives in All Principal Cities

Manufacturers of Insulated Metal Walls; Steel Deck for Roofs, Partitions and Permanent Concrete Floor Forms; Rolling Steel Doors, Grilles and Underwriters' Labeled Rolling Steel Doors and Fire Shutters.



In the Powerhouse above, the Insulated Metal Walls up to the first eave line are constructed without a horizontal joint. Continuous Exterior Wall Plates 56'-10" long were employed in these wall areas.





The Over-all "U" Factor of the various Types of Mahon Insulated Metal Walls is Equivalent to or Better than a Conventional sixteen inch Masonry Wall.

MAHON

REQUIRED READING

(*Continued from page 46*)

For the architect, the greatest benefit will come from a close study of the forepart of this book, wherein the authors have done an outstanding job of exploring the entire modern elementary school plant — from classroom to custodial space, analyzing and evaluating each and every activity which might take place within a given area. This is the first time, to this reviewer's knowledge, that such a comprehensive documentation of function has been attempted in the school field, and as a result, the authors have succeeded in producing an excellent guide-book which should clear-up, particularly for architects, some of the fog of modern educational terminology and practice.

To give the reader some idea of the scope of these analyses of classroom activities it need only be said that some twenty separate activities, including the three R's and such other diverse subjects as "cooking," "dancing," and "puppetry" are carefully scrutinized and the facilities needed to accommodate them are suitably tabulated.

While it is quite true that the architect is not required to make provision in all cases for separate facilities for each and every one of these activities, since many of them make use of the same equipment or space, it is clearly the architect's responsibility to bear in mind the needs to be met in planning the space. A section of this book is devoted to the various elements which, when added together, make up an integrated and workable classroom, but the authors do not themselves attempt to "package" a solution. This is presumably left to the architect for his consideration of the individual situation.

Beside the classroom, considerable space is given over to the study of all of the specialized educational spaces, such as the library, lunchroom, multi-purpose room, etc., and also in the development of outdoor educational areas. All of the auxiliary and service spaces are treated in more-or-less detail.

The section devoted to "Organization and Size" of school plants is also worthy of careful reading, particularly that part which discusses, in some detail, the "Home School." This trend toward the smaller, neighborhood type of building is receiving serious consideration in many areas and considerable discussion

(*Continued on page 304*)

General Concessions Building Cafeteria, Battery Park, New York

CLAY TILE...FINEST FRAMEWORK FOR FOOD SERVICE

Wherever food is handled, prepared or served, certain basic requirements for the surrounding surfaces must be met: maximum maintenance economy, extreme durability, utmost resistance to grease, food acids and cooking fumes . . . plus the handsome good looks that stimulate both employee morale and repeat customer business.

Clay Tile meets all these standards—as in this beautiful new clay tile cafeteria. Glazed tile will keep the walls permanently beautiful and easy-to-clean. Unglazed tile on the floor will carry heavy traffic indefinitely with minimum cleaning care and maximum wear resistance.

If you design, plan or build food service areas, you'll be rewarded by a fresh look at clay tile. Clay tile is proof against water, fire, staining and scratching. The increasingly wide range of clay tile colors and designs assures unique decorative possibilities for restaurants, cafeterias, diners, commercial kitchens and other areas.

Consult your Tile Handbook for technical information on types and sizes.

Tile Council of America, Room 3401, 10 East 40th Street, New York 16, N. Y. or Room 433, 727 West Seventh Street, Los Angeles, Calif.

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INSTALLATION: Fanny Farmer Candy Store, 50th St. & 6th Ave., New York City, New York.

DESIGNER: Lippincott & Margulies.

ELECTRICAL CONTRACTOR: Reksal Electric Company.

FIXTURES: Litecontrol Luminous Lens Ceiling Panels, 45" x 48", each using 4-3 lamp 48" slimline fixtures, and 16 Holophane No. 9015 lenses in lucite frame.

WATTS PER SQUARE FOOT: 3.1.

APPROXIMATE REFLECTANCES: Wall (Wallpaper), 63%. Floor(Beige-grey terrazzo), 10%.

AVERAGE INTENSITY: 63 footcandles initially at counter height.

BRIGHTNESS: (One of center lenses).
Normal to lamps, at 30°, 1.0 candle per square inch.
at 45°, 2.07 " " " "
Parallel to lamps, at 30°, 1.0 " " " "
at 45°, 1.99 " " " "

LIGHT

— for Sight and Sales

. . . with Fixtures by LITECONTROL

Lighting by LITECONTROL is an important member of the sales staff in this Fanny Farmer store.

LITECONTROL'S Luminous Lens Ceiling Panels bathe every surface in a flattering, even illumination...show merchandise in its *best* light, without ugly shadows, glare or harsh contrasts.

Note entire surface of each panel is aglow. Holophane No. 9015 Low Brightness Lenses make display light but not bright, just right for sweet selling.

Why not discover for yourself the selling magic in standard lighting fixtures that are fashioned right for good sight, good looks and easy maintenance — see your local LITECONTROL Representative.

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Architects: Skidmore, Owings & Merrill, Chicago

5,948 Extra Square Feet Of Usable Floor Space With

*MEDART

TELESCOPIC* GYM SEATS

Take a close look at the pictures above. At the top, all the Medart Seats are in open position ready to comfortably and safely accommodate a packed-to-the-rafters *audience of 3,200!* The inset shows side seats closed, and seats at one end still open.

These two pictures explain why this gym, with seating capacity for 3,200 persons, requires a *building virtually no larger than one without seats for spectators!* Imagine what the size of this building would be, and the startling extra cost, if 3200 expensive fixed seats had been installed!

Here is an example proving how Medart Telescopic Gym Seats actually regain the use of *5,948 square feet of extra floor space* for daily class activity—evidence of the tremendous savings in building costs made possible by better utilization of space.

Convenience and Ease-of-handling are important factors too. Because of Medart's exclusive "Floating Motion" design, it takes little effort and only a few moments to completely open or close Medart Seats. If all the seats are not needed, only one row, or as many rows as required, can be provided and remaining rows left closed.

Safety is assured, even under loads of 400 Lbs. per lineal foot. Medart's steel understructure is a complete free-standing assembly. Solid, one-piece wood seats, risers and footboards add *extra* strength and are not used to tie together the steel understructure members. Each row of seats is supported from the floor by four vertical steel members.

Many Other Exclusive Features make Medart Telescopic Gym Seats a "best buy". If you have a seating problem, write Medart.

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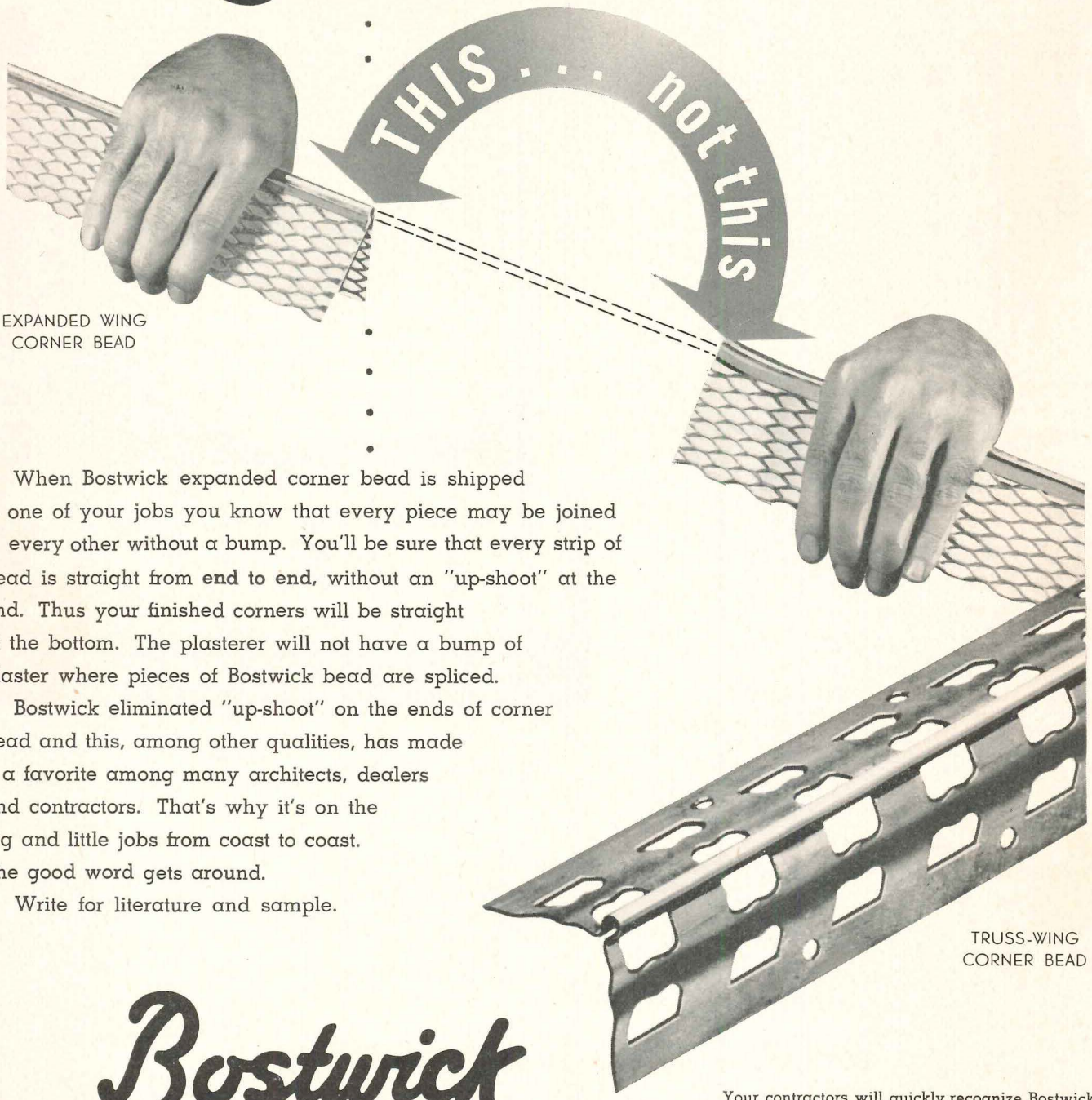
SEE OUR CATALOG IN SWEET'S

*Medart Telescopic Gym Seats are fully protected by U. S. Patents

The good word gets around . . .

about Bostwick CORNER BEADS



EXPANDED WING
CORNER BEAD

When Bostwick expanded corner bead is shipped to one of your jobs you know that every piece may be joined to every other without a bump. You'll be sure that every strip of bead is straight from **end to end**, without an "up-shoot" at the end. Thus your finished corners will be straight at the bottom. The plasterer will not have a bump of plaster where pieces of Bostwick bead are spliced.

Bostwick eliminated "up-shoot" on the ends of corner bead and this, among other qualities, has made it a favorite among many architects, dealers and contractors. That's why it's on the big and little jobs from coast to coast. The good word gets around.

Write for literature and sample.

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CORNER BEAD

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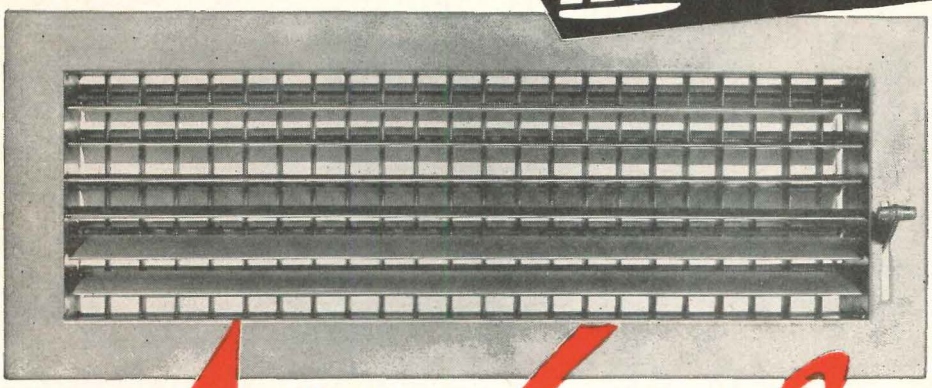
MAKES ANY AIR CONDITIONING SYSTEM A BETTER AIR CONDITIONING SYSTEM

Yet it COSTS LESS.....

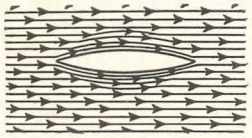
● *Illustrated below—*
#276 4-way multi-shutter register . . . features front louvers and rear damper blades parallel to long dimension . . . second row louvers parallel to short dimension.



Air Foil

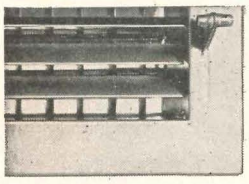
4-WAY MULTI-SHUTTER REGISTER

SOLID-SECTION AIRFOIL LOUVER



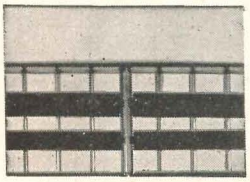
● Louver knifes air in wind tunnel tests. Turbulence has been almost eliminated giving noiseless control of air.

LEVER CONTROL



● Inconspicuous lever in face of frame controls dampers for complete shut-off.

EXTRA-STRENGTH FRAME . . . . .



● New, exclusive Titus *concealed support* eliminates unsightly mullions and butted construction.

The smartly designed #276 combines *4-way #270 grille* with the *multi-shutter damper* to assure maximum directional control with positive volume control and shut-off. Damper blades interlock for complete shut-off.

The two front sets of louvers are individually adjustable with blades on ¾ inch centers.

Dampers are controlled from face of grille by inconspicuous lever. Removable lever furnished at no extra cost.

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Sound, inspired know-how engineering gives the #276 superb simplicity of design with no unnecessary parts—no clumsy bulk. A special patented, *concealed support* eliminates unsightly mullions and butted construction permitting superior strength with no added weight.

EASY TO INSTALL

#276 grilles are light in weight—easy to carry—easy to fit—easy to put in place. *Save much costly time and labor.*

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AIRFOIL grilles are priced down to give you more value—more performance—more efficiency—at less cost.

NOTE THESE OUTSTANDING AIRFOIL FEATURES . . .

- Smooth-as-glass AIRFOIL louvers.
- Extra-heavy frames.
- Airtight rubber gasket.
- Positive shut-off.
- Individual louver adjustment.
- Removable lever.

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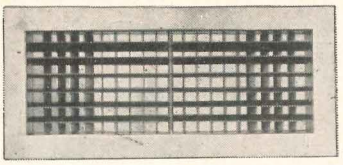
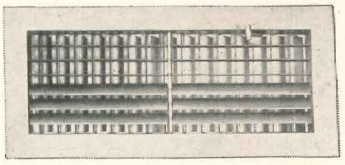
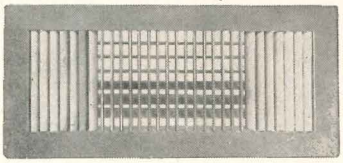


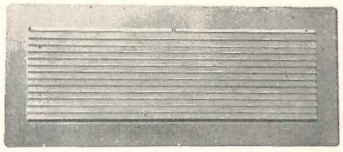
L-270 4-way directional grille for complete control of air stream.



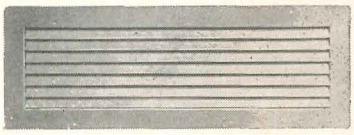
L-274 Double directional grille with multi-shutter damper.



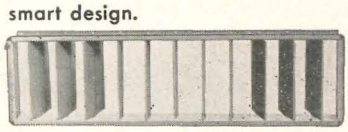
S-8 4-way grille with louvers on ½" spaced front.



RL-21 Return air grille of fixed deflection type with closely spaced louvers.



RL-230 Return air grille incorporates rugged construction and smart design.



AG-25 Volume controller designed to fit behind grille.

CHECK TYPE OF GRILLE ON WHICH INFORMATION IS DESIRED

- ☐ Air conditioning outlets
- ☐ Return air grilles and registers
- ☐ Volume controllers
- ☐ Perforated metal and ornamental grilles
- ☐ Door ventilators
- ☐ Special made-to-order grilles

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You can SEE the *Engineered Strength* in PAINE REZO DOORS

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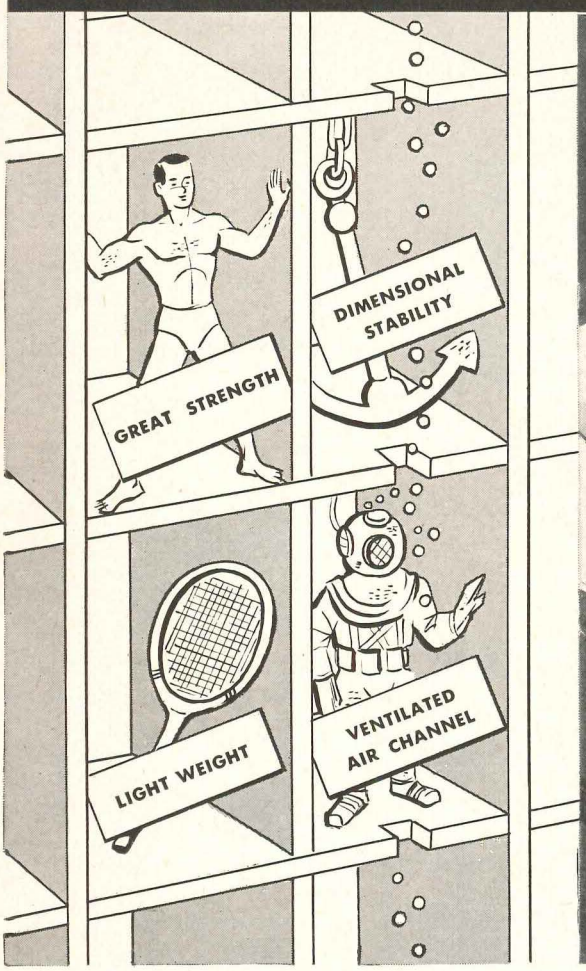

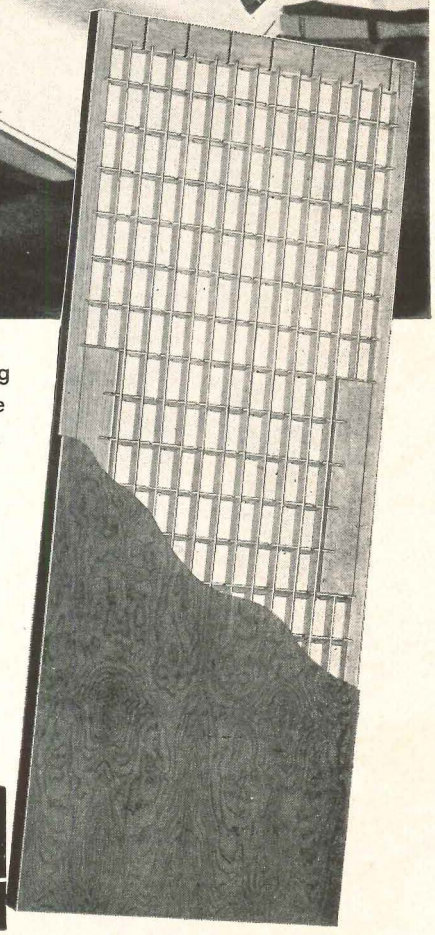

IT'S SO EASY to fit the strongest — and best — flush door into your building plans, for the structural superiority is plainly evident . . . and the cost is fully in line with the market price for commonplace doors. Paine Rezo offers you exclusively: the ventilated air-cell principle that maintains the same atmospheric conditions inside the door as exists outside; the interlocked, interwoven all-wood core that provides unmatched stability.

The case history of this original construction goes back in the building industry to 1936. It has so impressed architects and contractors everywhere that they have decided more than five million times to install the Paine Rezo door — a decision that has made the company behind it the world's largest mills devoted exclusively to the production of hollow core flush doors. See Sweet's File, or write today for an illustrated factual bulletin.

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ESTABLISHED 1853

Chairs or Chocolates...

Crown Furniture Co. Skylike provides an easily-maintained, high-level incandescent lighting system for the Crown Furniture Company's new Detroit store. 100 foot candles were required to overcome the daylight pouring in both glass-walled ends of the showroom, yet individual area intensities may be modified for special effects by simply changing lamp sizes. Floor-level relamping with pole-type changers offers maintenance savings by eliminating the use of ladders or disturbing the floor displays.

SKYLIKE lighting shows off merchandise at its selling best.

Loft Candy Shops — As a part of its progressive modernization program, Loft has specified Skylike units as the primary light source in its stores. Experience showed that incandescent light presented its fine chocolates and other candies in the most appealing manner. Careful tests were made by Loft executives to assure them that Skylike's diffused radiation eliminated the heat problem at the display level. The view at left is of Loft's new White Plains store.

How SKYLIKE blends 2 types of Lighting Units into 1

SKYLIKE systems for stores are flexible and easy to plan. Modular 24" x 24" units can be recessed, semi-recessed, or surface mounted. They require low initial investment, too — cost only ½ to ⅓ as much as other equipment delivering comparable results.

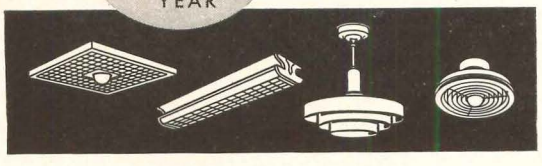
Note these additional SKYLIKE advantages: high-maintained light output; softly diffused shadows; warm color values; instant starting; floor-service re-lamping; variable lamp size (150-to 500-watt).

Try SKYLIKE on your next lighting installation.

1. Soft, indirect light from silvered-bowl incandescent lamps...

2. The modern look of fluorescent-type troffers.

1927 • 1952 OUR 25TH YEAR **Silvray** *ALWAYS... the best In lighting*



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SKYLIKE LIGHTING, INC. — A Silvray-associated company
102 West Main Street, Bound Brook, New Jersey

Gentlemen:

Please send me further information on Skylike lighting.

Name_____

Firm_____

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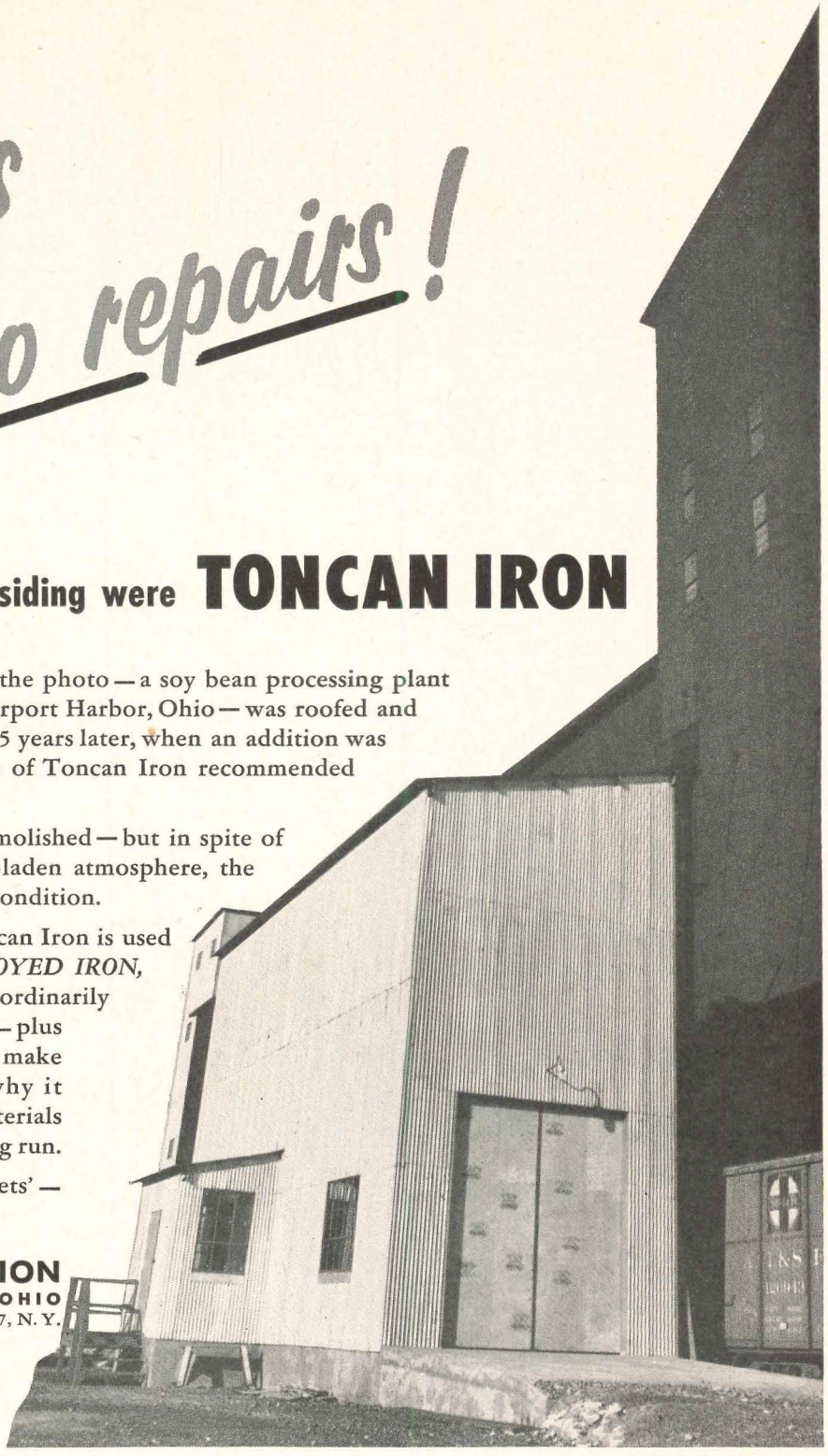
City_____ Zone_____ State_____

27 years and no repairs!

...because the roofing and siding were TONCAN IRON



● In 1924, the tall building shown in the photo—a soy bean processing plant located on the shore of Lake Erie at Fairport Harbor, Ohio—was roofed and sided with rust-resisting Toncan Iron. 15 years later, when an addition was necessary, the trouble-free performance of Toncan Iron recommended that it be used a second time.

Last year, in 1951, the building was demolished—but in spite of lake front service in smoke and fume-laden atmosphere, the Toncan Iron Sheets were still in good condition.

Service like this is typical wherever Toncan Iron is used for the sheet metal work. It is an *ALLOYED IRON,* containing twice the amount of copper ordinarily used in copper-bearing steels or irons—plus just the right amount of molybdenum to make the copper most effective. That's why it resists rust—outlasts other ferrous materials in its price class—saves money in the long run.

Read more about Toncan Iron in Sweets'—or write for literature.

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FOR MORE THAN 40 YEARS . . .
HIGHEST RUST-RESISTANCE OF ALL
FERROUS MATERIALS IN ITS PRICE CLASS

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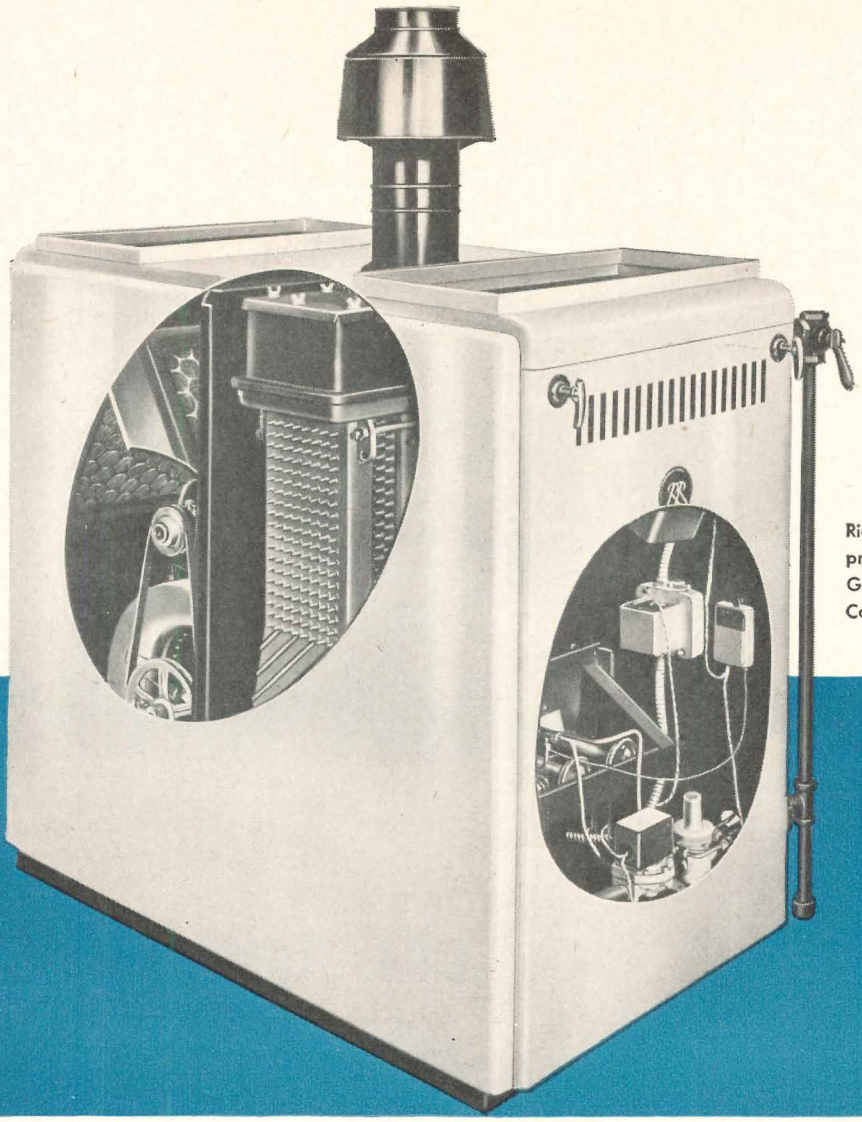
TONCAN® COPPER MOLYBDENUM IRON

—for ducts, gutters, conductor pipes, roofing, siding, tanks, ventilators, skylights, hoods and other sheet metal applications requiring rust-resistance—and for corrugated metal drainage products.



Richmond's new and improved GHA Horizontal, Gas-Fired Winter Air Conditioner

A Fine Unit Now Made Even Finer!

Now the popular Richmond GHA will deliver more heat more efficiently than ever before. Thanks to a new sectionalized heating element, with easily removable individual burners for each replaceable section . . . all designed to produce maximum heating performance.

Other GHA features include: cast-iron heat exchanger for longer life and greater resistance to corrosion . . . new single-unit design for installation on combustible floors . . . handsome white enamel jacket . . . full range of sizes (single: 75,000 to 175,000 input BTU/hr.; twin: 200,000 to 300,000 input BTU/hr.) . . . fully approved by the AGA.

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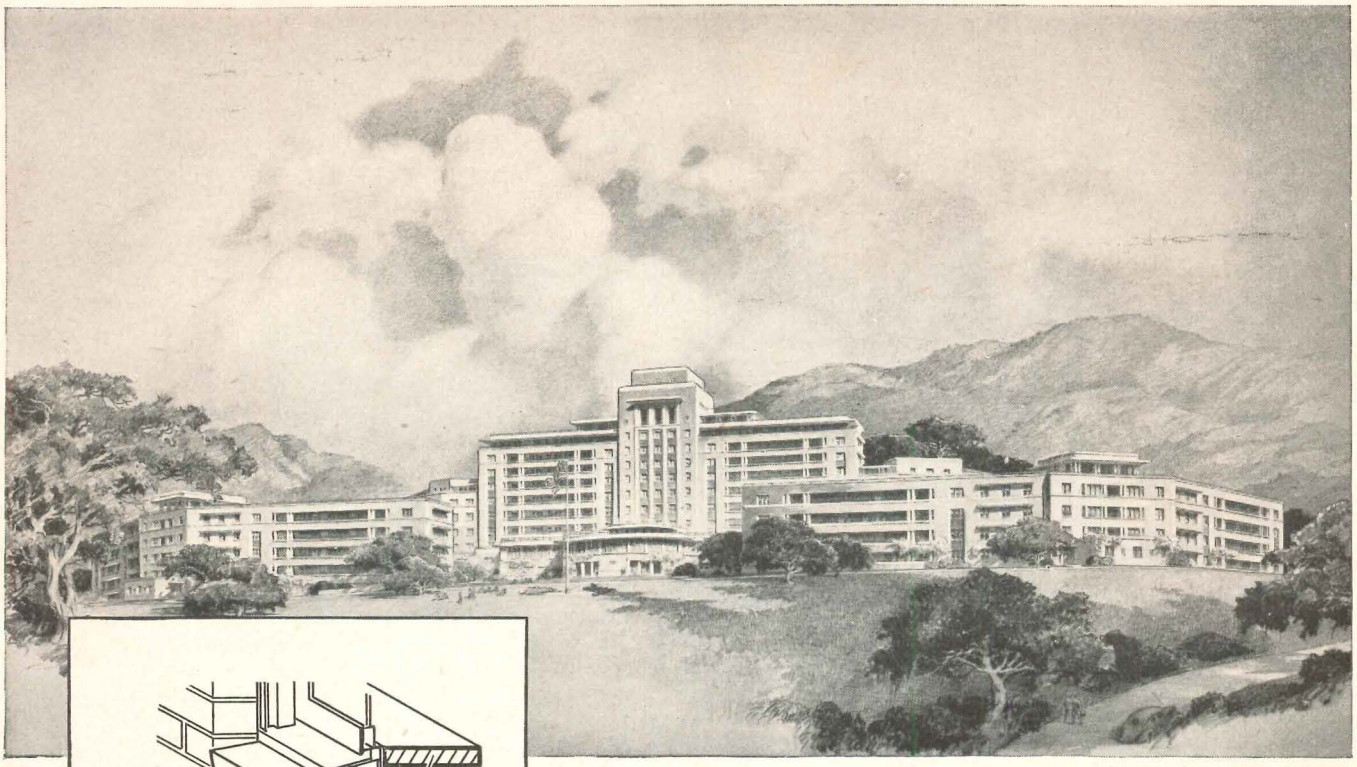
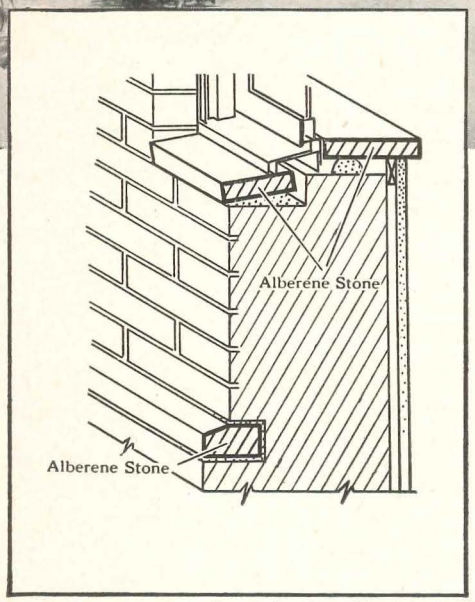
We are ☐ plumbing wholesalers ☐ plumbing contractors ☐ building contractors.



Tripler General Hospital, U. S. Army Medical Dept., Hawaii — Architects: York and Sawyer, New York City. 1½" Alberene slip sills.



Detail showing 1½" thick slip sill with 1¼" stool and 2¼" belt course.

sills, stools, and trim of ALBERENE stone are DURABLE and ECONOMICAL

Regular Grade Alberene Stone is an ideal material for exterior trim because it can be cut into thin sections, permitting substantial economies. It offers freedom to the designer — by making possible greater reveal, to give just one example.

The stone has no cleavage planes, is dense, non-absorbent, and chemically-resistant. It is free of maintenance cost. Its color — silver gray in rubbed finish and a pleasing blue gray when honed — harmonizes well with almost any color scheme.

Where a darker color is desired, we suggest Alberene Serpentine. It is a darker gray in rubbed finish, blue-black when honed, and blue-black or black when polished.

The high chemical resistance of both stones, which has made them favorites for use in laboratory equipment, also makes them ideal for *window stools* in laboratory buildings.

Since there is a decided difference in price between Alberene *Regular Grade* and *Serpentine*, architects' specifications should be carefully worded so as to clearly call for the type desired. Ample supplies of both materials are available.

ALBERENE STONE CORPORATION

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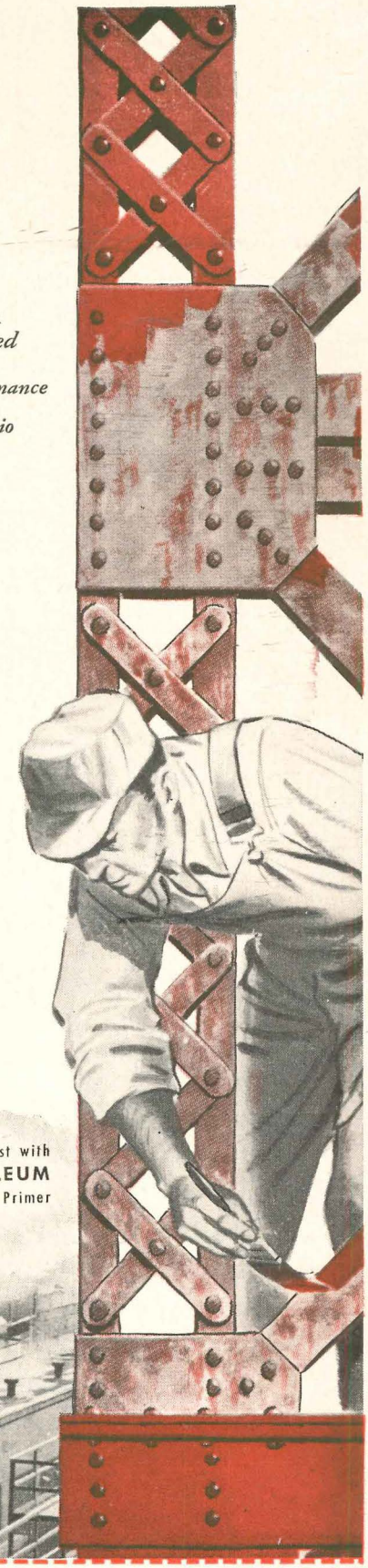

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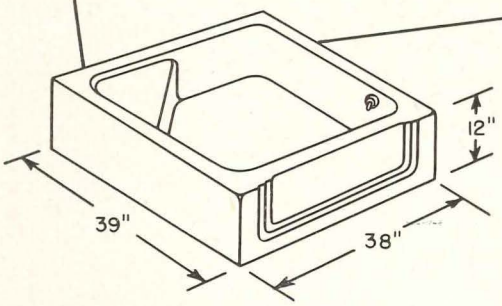
AMERICAN-Standard
BATHROOMS

To help you pack a lot of bathing convenience into a limited space



LITTLE IN SIZE
BIG IN CONVENIENCE

The 12″ high Restal fits a finished compartment approximately 36″ x 37″, yet affords complete bathing facilities. It has all the advantages of sturdy construction, being made of rigid cast iron smoothly coated with acid-resisting or regular enamel in white or five popular colors. It comes with left or right hand outlet. Streamlined fittings are of non-tarnishing Chromard.

...here's the new
RESTAL Receptor Bath

THE new Restal receptor bath provides complete bathing convenience in a shower stall space. And its cost is comparable with that of a properly-installed conventional shower stall.

Doubling as both a shower receptor and a bath, the Restal permits you to add an extra *complete* bathroom in small space in the homes you plan. And when it comes to modernizing, you can turn an unused closet, alcove, or sewing room into a really complete bathroom with the help of this space-saver. The Restal is ideal for use in small bathrooms of apartments, hotels, and motels, too.

Designed for utmost convenience and safety, the Restal is so low that even elderly people can enter and leave it with safety. Its corner seat facilitates foot and sponge bathing. And the Restal is particularly useful when bathing children.

Consider the Restal receptor bath in your planning. It will help you give more client convenience in minimum space. For complete details, contact the American-Standard sales office serving you or write for literature—Form No. 227.

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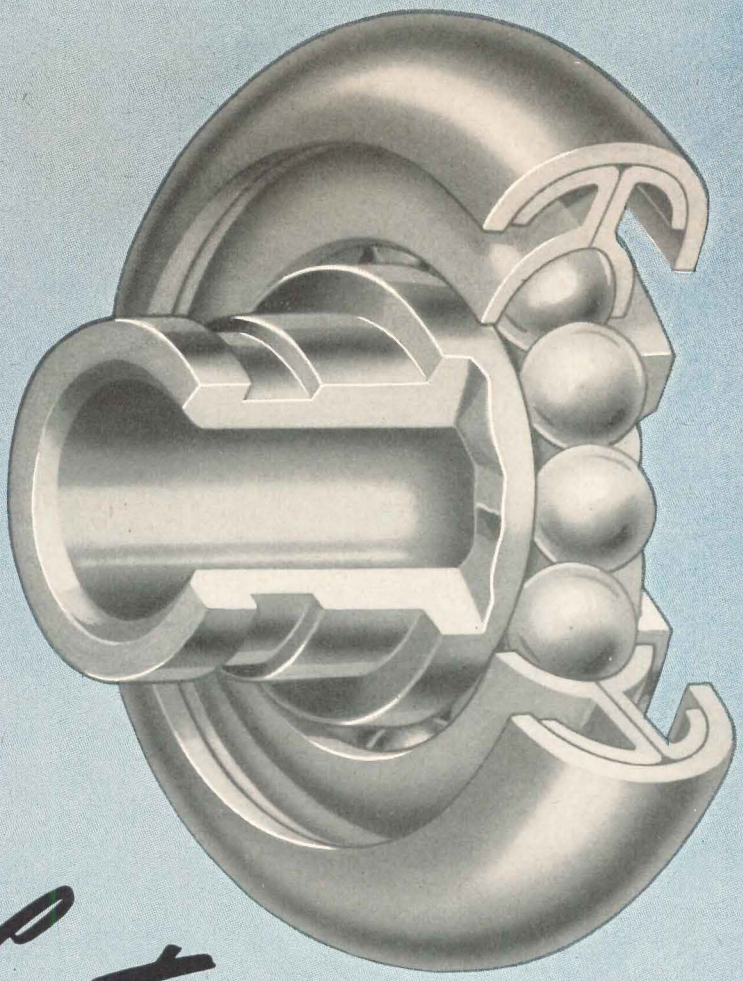
OUTWEARS ordinary rollers 2 to 1.

NEVER needs oil—bearings are plated, too.

Collects NO dirt.

Withstands 50-Hour SALT SPRAY STEEL test.



Zin-Cote PLATED HARDWARE

This roller typifies the quality that goes into every part of the Crawford Marvel-Lift Door.

The hard steel sleeve is half-an-inch wide, grooved to provide a raceway for ten quarter-inch, hardened, steel roller bearings.

The body is built up of two hard steel plates which enclose the roller bearings and form the outer raceway.

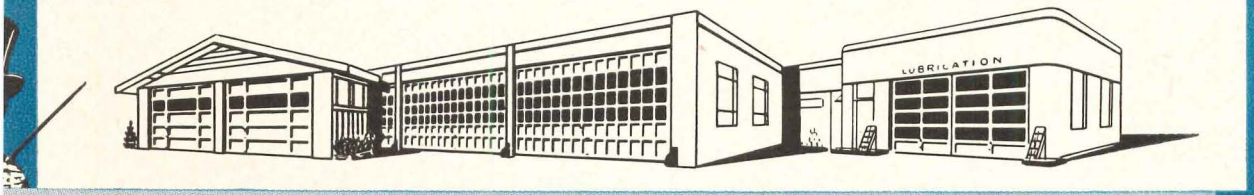
The steel tire is rolled on in one piece and never wears flat.

(Many ordinary rollers have *no* sleeve, *no* tire, and as few as *five* bearings.)

The entire assembly is made to fine limits of precision to prevent looseness and avoid running sound. The distribution of load over such large bearing surfaces spreads wear and prevents looseness. Zin-Cote Plating on *all* surfaces—sleeve, bearings, body, tire—further reduces wear. No other rollers are so well made or last so long.

Our entire product is made with equal care. You can specify Crawford Marvel-Lift Doors with complete confidence. Call your local Crawford Door Sales Company, listed in your local phone book under "DOORS." Crawford Door Company, 106-401 St. Jean, Detroit 14, Mich.

Crawford *MARVEL-LIFT* Doors



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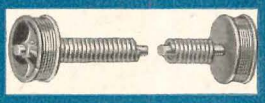
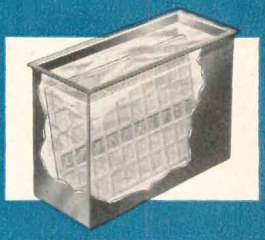
ROLL CALL OF Crawford SPECIAL FEATURES



MARVEL-LIFT MECHANISM

Standard equipment at no extra cost.

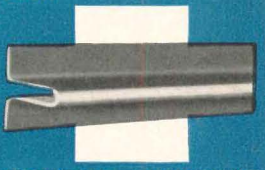


MAGI-COTE WOOD SEAL DIP

Only protective treatment in the industry. Standard on Crawford Marvel-Lift Doors at no extra cost.

ZIN-COTE PLATING

On all hardware attached to the door—standard at no extra cost.



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To prevent vertical and horizontal distortion—standard on all larger doors at no extra cost.

FEATHER-WEIGHT ALLOY REMOVABLE MULLIONS

Between doors in batteries—only mullions that can be handled easily by one man.

Crawford MARVEL-LIFT Doors SALES SERVICE

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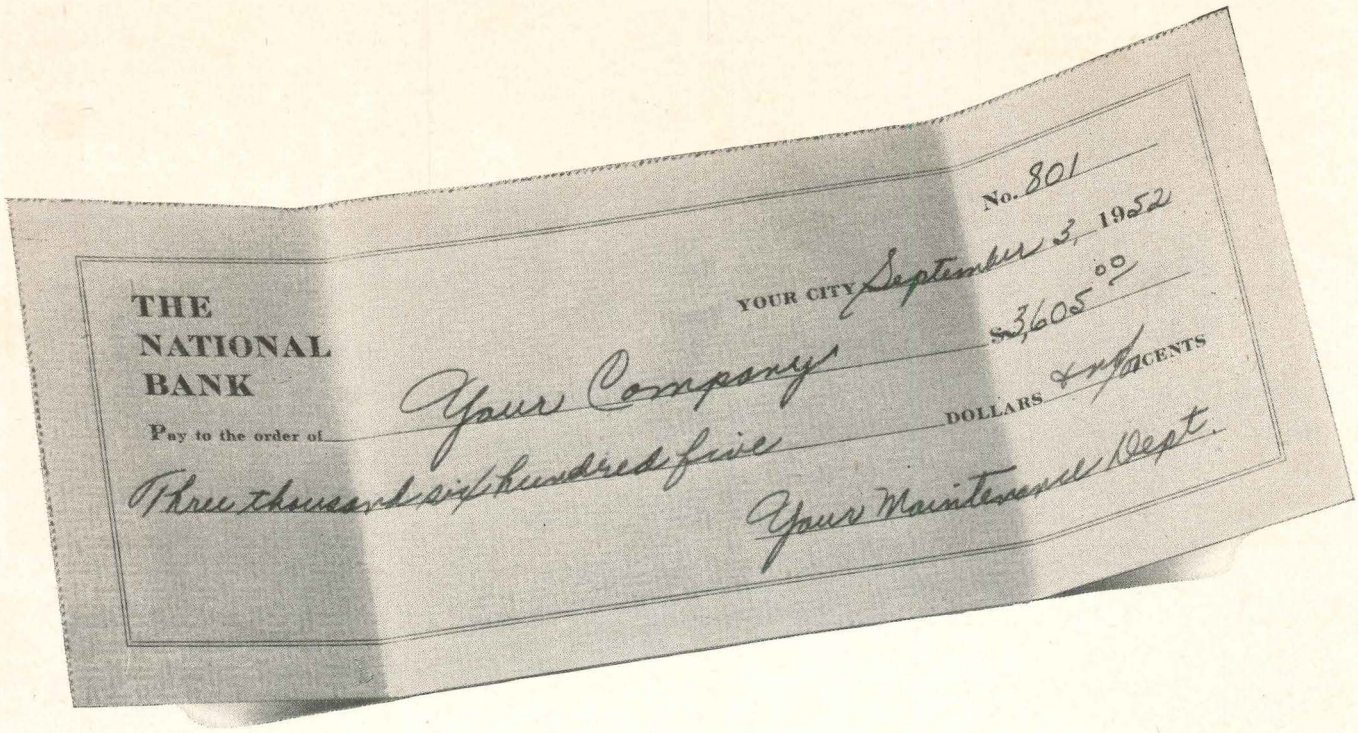

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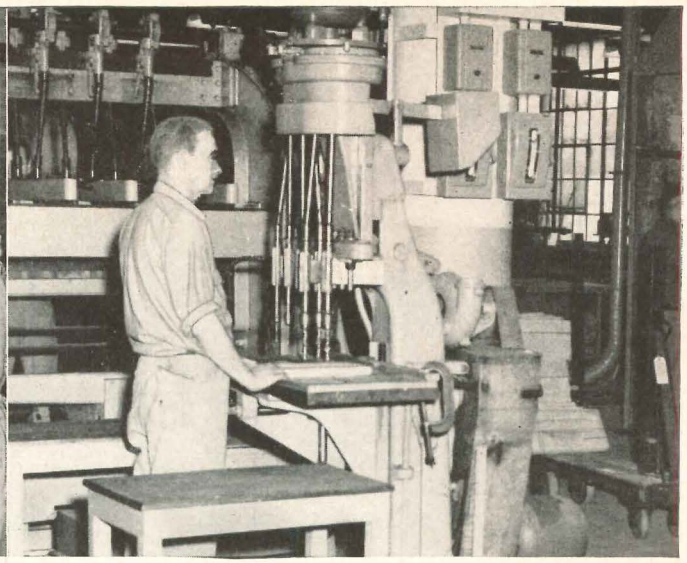

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Safeguard the buildings you design against lighting failure. In many cities emergency lighting protection is a legal requirement for hospitals, schools, stores, theaters, restaurants, factories and other buildings where large numbers of people assemble. Similar legislation is being considered in other cities. It is important, for despite all precautions of utility companies, storms, fires, floods and accidents can interrupt normal supply of current.

Exide provides units and systems for every emergency lighting requirement. Large systems for entire buildings and groups of buildings. Other systems and units for selected rooms, corridors, stairways, exits. Small portable units—the Exide Lightguard—for localized needs. In each system and unit, batteries are always fully charged and ready to respond *instantly* and *automatically*.

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Here's a portable, low cost unit that can be plugged into any 115 Volt, 60 Cycle A.C. lighting socket. When normal current is cut off, a built-in relay instantly and automatically turns on the powerful floodlight. After normal service is restored, the relay shuts off floodlight and turns on the charging current. The Exide battery is always fully charged ready for immediate action.

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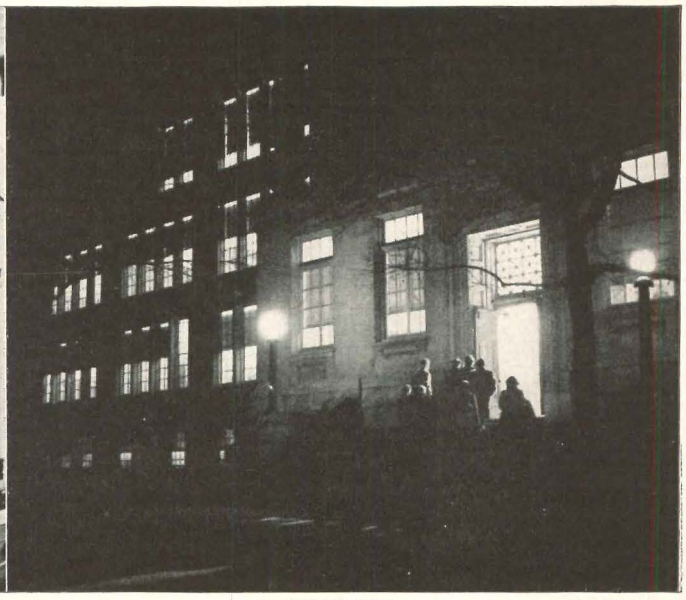
Exide Batteries of Canada, Limited, Toronto

"EXIDE" *and* "LIGHTGUARD" *Reg. Trade-Mark U. S. Pat. Off.*

STORES



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Prove It Yourself-PlyScord® Roof Decks Actually Cost Less

HERE'S paper and pencil proof that you *can* cut costs with PlyScord grade plywood. Figure it *both* ways on the chart below. Then make a special note to put PlyScord on your next bill of materials—for better construction . . . for lower in-place costs.

Estimating Chart to Cover 1,000 Square Feet of Roof Area*

PLYSCORD	RATE	TOTAL	LUMBER	RATE	TOTAL
1,056 sq. ft. 3/8" or 5/16"			1,200 ft. b.m. 1x8 shiplap		
Nails 6d-12 lbs.			Nails 8d-20 lbs.		
Carpenter 6 Hours			Carpenter 11 Hours		
Helper 3 Hours			Helper 5 Hours		
TOTAL COST IN PLACE.....			TOTAL COST IN PLACE.....		

*Data developed from Walker's "The Building Estimators' Reference Book"

Douglas Fir Plywood

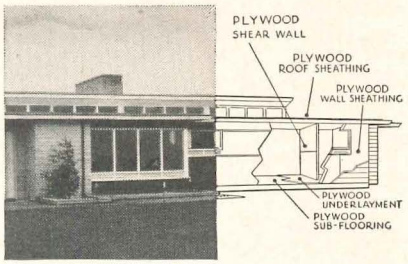
AMERICA'S BUSIEST BUILDING MATERIAL

® PlyScord is the unsanded construction grade of Interior-type plywood bonded with highly water resistant glues. For subflooring, sheathing, backing, one-use forms. PlyScord is a registered grade-trademark identifying quality plywood manufactured in accord with U. S. Commercial Standards and inspected by Douglas Fir Plywood Association (DFPA).

PANEL DISCUSSION

Plywood Structural Strength Vital In Windy Location

Situated on a picturesque view-bluff overlooking Puget Sound—and subject to the same strong prevailing winds which blew down the first Tacoma Narrows Bridge—this modern home relies



on the strength and rigidity of PlyScord grade plywood sheathing throughout. Even the interior cross walls have a membrane of plywood to give added lateral bracing. In all, four short shear walls are used to work with plywood sheathing and subflooring to compensate for loss of rigidity due to unusually large glass areas on the view side of the home.

Architect-owner, Charles T. Pearson, of the Tacoma, Washington, architectural firm of Lea, Pearson and Richards, says that the unusually windy location and lavish use of glass made the specification of plywood doubly important. "The strength and rigidity of the material definitely contributes to better construction," he says.

Plywood Forms Play Important Role in Parkmerced Project

Three prime factors—re-use, speed and appearance—dictated specification and use of plywood forms for both interior and exterior concrete surfaces on the new Parkmerced apartment project, San Francisco.

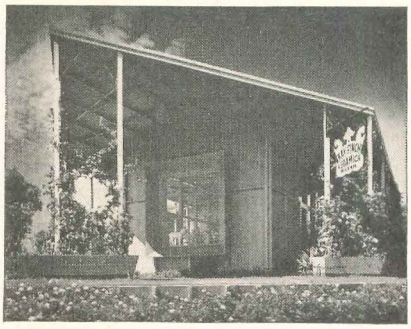
According to W. A. Bender, superintendent for Starrett Bros. & Eken, Inc., contractors on the job, plywood panels gave up to 15-18 re-uses, helped speed formwork application time and construction costs by about 20 percent and produced uniformly smooth, fin-free concrete surfaces. In fact, Bender reports, plywood-formed ceiling slabs were smooth enough to be painted after a minimum of grinding and application of spackling material—permitting a savings by eliminating expensive plastering.

(Advertisement)

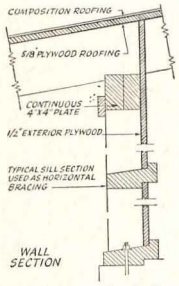
Large built-up form sections 11 feet high and ranging from 20 to 48 feet long, were used on the walls. Forms were built of ¾" Exterior plywood, nailed to 2x4 studs, 12" o.c., backed by 2x4 and 3x4 walers. After each pour, sections were stripped and raised to the next story. Forms were used 13 times on the eleven 13-story tower buildings, then in some cases re-used further on the two-story Colonial type apartment buildings which dot the 200-acre tract.

Parkmerced was planned and built by Metropolitan Life Insurance Co. General Contractor: Starrett Bros. & Eken, Inc. Dinwidde Construction Co. was the subcontractor on concrete work. Leonard Schultze & Associates were the architects, with the firm of Thompson and Wilson serving as architectural consultants.

Single Wall Construction Used For California Studio



A single thickness of Exterior-type Douglas fir plywood attached to the inside of 4x4 posts serves as the exterior walls of this striking Corona del Mar, California, ceramics studio and shop. Designed by California Architect Frank Gruys, the structure also uses Douglas fir plywood roof sheathing.



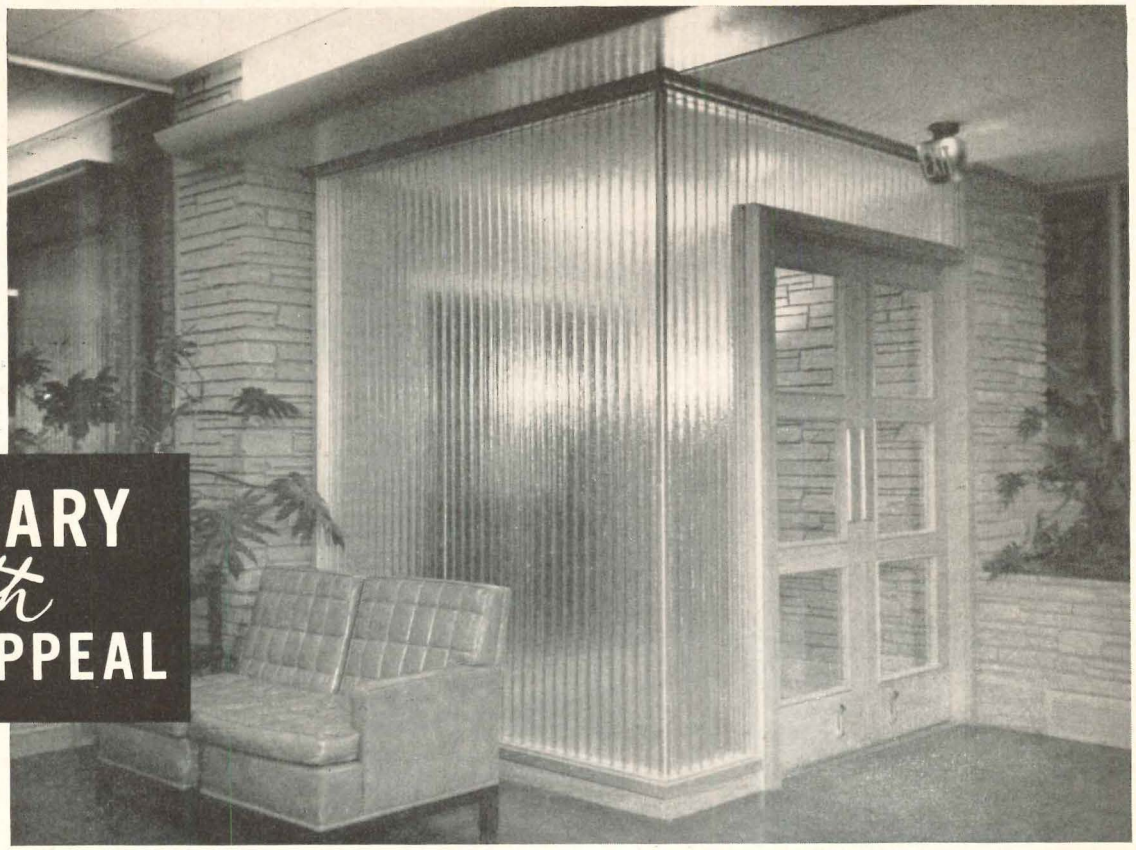
Exterior-type fir plywood was specified for single-thickness walls because of the unique combination of properties which permits the panels to act simultaneously as both a structural and finish material.

Because good lighting is needed for work done in the studio, the building features large glazed areas. With so many windows, the insulating quality of double walls is not important. In addition, the mild climate provides good conditions for the use of plywood single wall construction.

Exterior walls of the Kay Finch studio are A-A grade Exterior plywood placed on the inside of 4x4 posts on four foot centers so that the plywood presents a smooth wall on the inside. Windows are top hung or are in fixed sash between posts.

The overhanging roof which reduces sun glare forms a definite architectural feature. Exterior plywood ⅝"-thick is used for decking beneath built-up roofing.

LIBRARY *with* EYE APPEAL



Hutchinson Public Library, Hutchinson, Kansas
English, Miller & Hockett, Architect

Structural Corrugated Glass by Mississippi Gives Modern Look to Well-Designed Structure

This library took a page from one of its own books. Carefully planned treatment of entrance and exterior walls to take fullest advantage of the properties of translucent glass achieves an atmosphere that invites the reader. The entire room is flooded with soft, natural light by day... glows a warm welcome to patrons at night. The effect is that of clean, crisp, modern efficiency that still retains a friendly feeling.

Structural Corrugated Glass by Mississippi is being specified by architects everywhere for its beauty and utility. This modern material offers new scope for talents, suggests numerous ways to handle design problems. Manufactured in a wide variety of patterns and surface treatments, Mississippi Figured glass is available wherever quality glass is sold. Select glass by Mississippi for your plans and add sparkle to your ideas.

Write today for free booklets, "Figured Glass by Mississippi" and "Modernize Your Home With Decorative Glass". Contain many ideas on ways to utilize this dramatic material in modernization or new construction.

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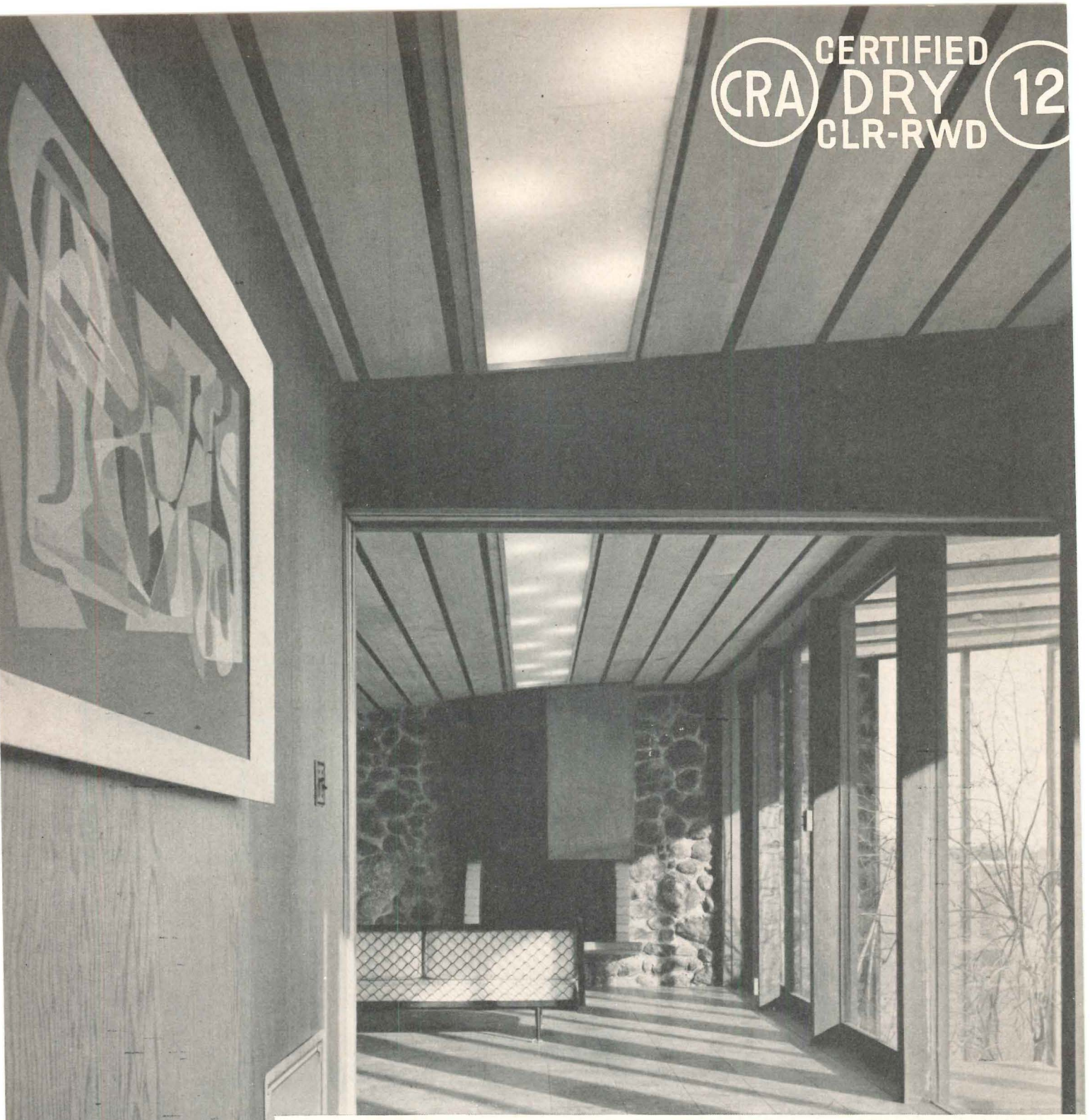

MARIO CORBETT, AIA ARCHITECT

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Two New Ways to Please Your Clients

New 1953 Westinghouse LAUNDRY TWINS

Here, improved in convenience and newly styled, are the 1953 models of America's favorite laundry "twins" which have been performing to the satisfaction of users in hundreds of thousands of homes across the nation.

Homemakers want and like these features:

For the Laundromat®

New, Larger Weigh-to-Save Door serves as a convenient loading shelf door. Actually *weighs* each size load of clothes.

Automatic Water Saver accurately measures amount of water needed. Assures soap and water savings.

Flexible Control provides a choice of washing time, water temperature, and use of all or any part of the washing cycle.

Agi-Tumble Action—washes all clothes uniformly clean. Drains dirty water *away* from clean clothes, never *through* them.

For the Clothes Dryer

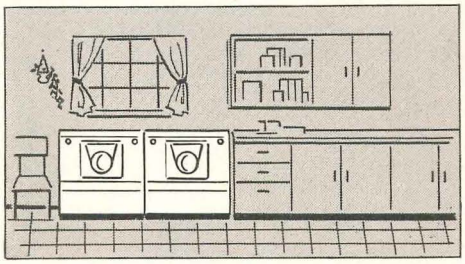
Larger Loading Shelf—handy loading shelf eliminates stooping, bending or lifting.

New 3-Way Dry Dial automatically dries clothes three ways—set on "Dry" for clothes that don't need ironing; time settings for damp-drying clothes to be ironed; and time setting to dry synthetic fabrics requiring low heat and minimum time and temperature.

Faster Direct "Air-Flow" Drying. Fresh, filtered, heated air is blown directly through clothes tumbled in basket.

Singing Signal plays a tune, "How Dry I Am". Tells user when clothes are dry. Prevents wrinkles.

Your clients are predisposed to endorse heartily your recommendation when you specify Westinghouse—it is a name they know and respect.



Westinghouse "jewel-case" styling makes planning easy. They "belong" wherever you want to place them—in kitchen, laundry or utility room.

Westinghouse Electric Corporation
Electric Appliance Division
Mansfield, Ohio

Send me information on Westinghouse "Twins".

Name_____

Street_____

City_____ Zone____ State_____

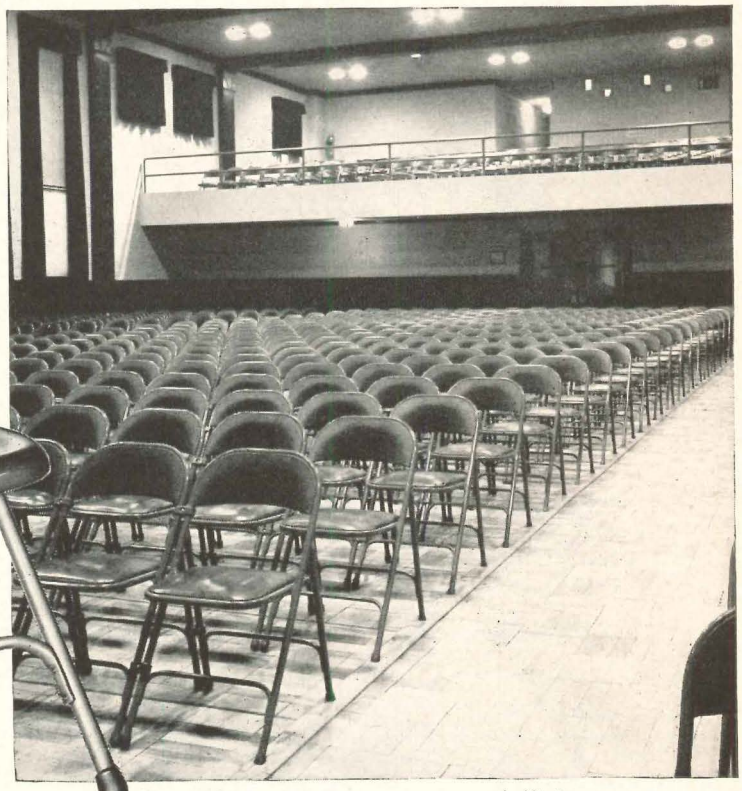
. . . of course, it's electric!

YOU CAN BE SURE..IF IT'S Westinghouse

FROST-FREE • VENT FAN • LAUNDROMAT • DRYER • ELECTRIC SINK • WATER HEATER • WASTE-AWAY • RANGE

Men Who Design America's Finest Buildings Specify America's Number One Public Seating Buy!

Samson Folding Chairs



Memorial School, Hull, Mass. Architects: Edmund I. Leeds & Associates, Inc.

Scores Of Special Seating Problems Solved For Architects By These Fine Folding Chairs . . . Posture-Designed For Comfort And Built To Last!

HERE are three big reasons America's leading architects specify Samson Folding Chairs. They're low in cost, low in upkeep, long lasting!

Samson chairs are made of tubular steel of even heavier gauge than required by U. S. Bureau of Federal Supply specifications. They are electrically welded and cross-braced for extra strength. All metal is Bonderized, and the baked enamel finish resists chipping. Pittsburgh Testing Laboratory found that these chairs withstand metal finish tests actually in excess of Federal specifications!

Leading Users Of Samson Folding Chairs

Denver University, *Denver, Colorado;* Corning Glass Works, *Troy, New York;* Woodward & Lothrop, *Washington, D. C.;* Hotel San Carlos, *Pensacola, Florida;* Columbia Broadcasting System, Studio 21, *New York, New York;* St. Gregory's Church, *St. Louis, Missouri;* E. I. DuPont DeNemours & Co., *Wilmington, Delaware;* Matson Steamship Company, *San Francisco, California;* Kalamazoo State Hospital, *Kalamazoo, Michigan.*

Strong Enough To Stand On!

THERE'S A Samson FOLDING CHAIR FOR EVERY PUBLIC SEATING NEED

ARCHITECTS EVERYWHERE CHOOSE

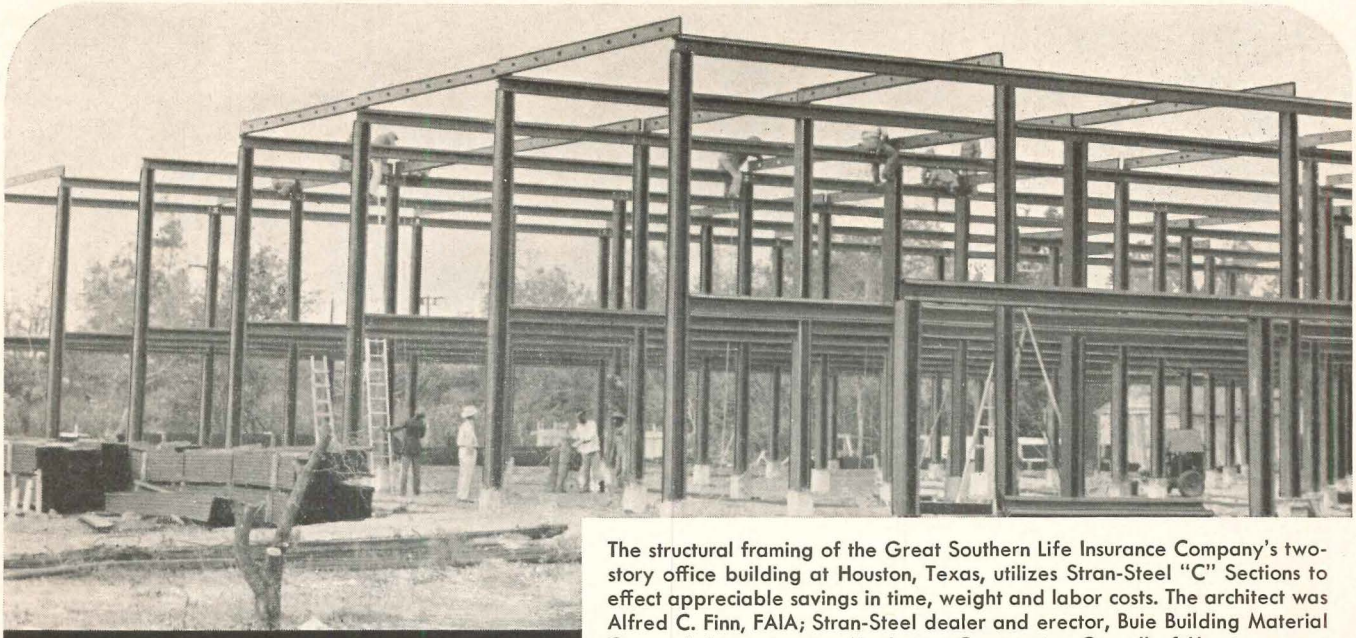
Samson Folding Chairs

For Outstanding Appearance, Comfort And Ruggedness!

Special low prices on quantity purchases. Ask your Samson distributor or write us direct!

Shwayder Bros., Inc., Public Seating Division, Dept. S-2, Detroit 29, Mich.

ALSO MAKERS OF FAMOUS SAMSON FOLDAWAY FURNITURE FOR THE HOME AND SMART SAMSONITE LUGGAGE FOR TRAVEL

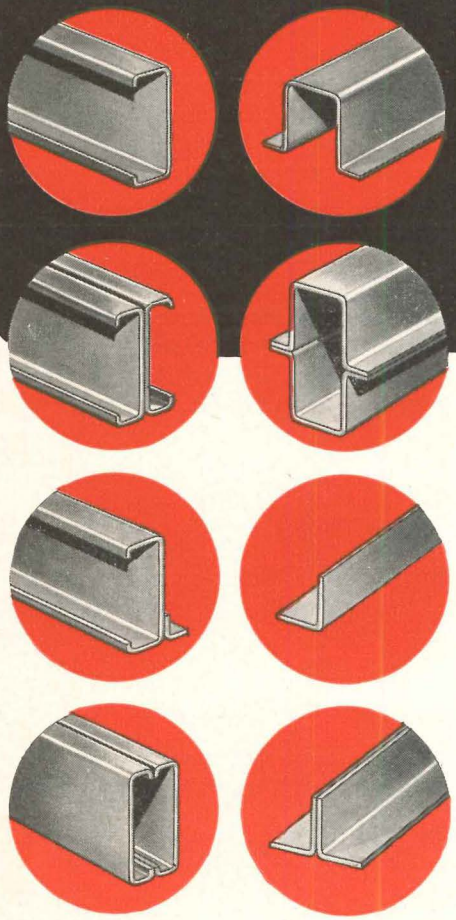


The structural framing of the Great Southern Life Insurance Company's two-story office building at Houston, Texas, utilizes Stran-Steel "C" Sections to effect appreciable savings in time, weight and labor costs. The architect was Alfred C. Finn, FAIA; Stran-Steel dealer and erector, Buie Building Material Co.; and the contractor, Manhattan Construction Co., all of Houston.

Here's new economy for buildings framed with steel

Stran-Steel®

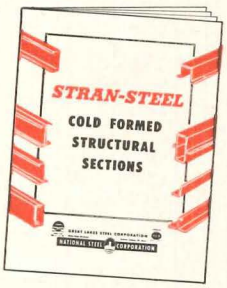
COLD FORMED STRUCTURAL SECTIONS



Stran-Steel Cold-Formed Structural Sections bring a new dimension of economy within the reach of designers and engineers. Manufactured from strip steel, in a variety of shapes, sizes and gages, they may be used in different combinations for almost any building design. Because of their high strength-to-weight ratio, Stran-Steel Structural Sections bring worthwhile savings in the cost of completed structures.

All Stran-Steel Structural Sections meet the specifications of the American Iron and Steel Institute for the design of light-gage steel structural members. Your local Stran-Steel Framing dealer can furnish costs F.O.B. job site or quote on the material completely erected. Call him today.

WRITE FOR THIS NEW BOOKLET. It gives complete engineering data on Stran-Steel Cold-Formed Structural Sections, plus a typical example of the economy possible with this modern building material.



STRAN-STEEL STRUCTURAL SECTIONS are made in three different shapes and in a wide range of gages. They may be used in practically any combination for maximum economy. When used in conjunction with nailable Stran-Steel Framing, the result is a complete steel frame.

YOU NAIL TO STRAN-STEEL FRAMING

STRAN-STEEL AND QUONSET REG. U. S. PAT. OFF.

GREAT LAKES STEEL CORPORATION

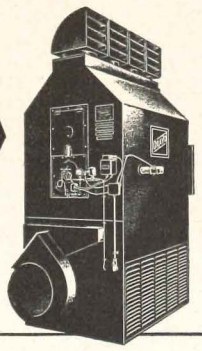
Stran-Steel Division Ecorse, Detroit 29, Mich.

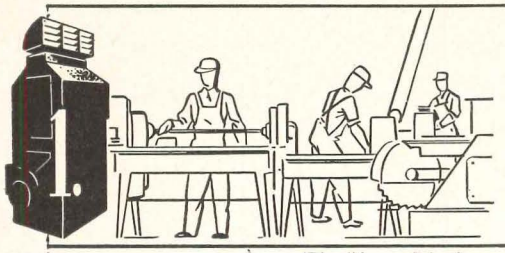
NATIONAL STEEL CORPORATION

NATIONAL STEEL

PRODUCER OF NA-X HIGH-TENSILE STEEL

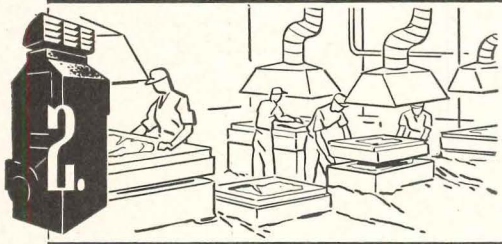
HERE ARE 5 ways → A DRAVO *Counterflo* HEATER CAN WORK FOR YOU!





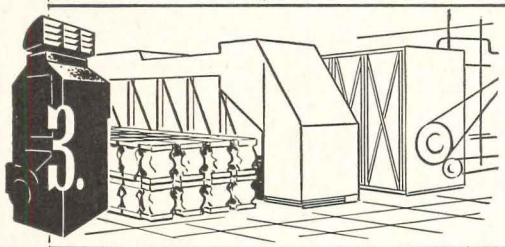
COMFORT HEATING *(commercial and industrial)*

Dravo Heaters have a 150-foot air throw and recirculate warm air at the working level, giving maximum comfort with minimum roof heat loss. No expensive pipe covering, radiators or ducts required. Quick warm-up; automatic on-off or modulating controls.



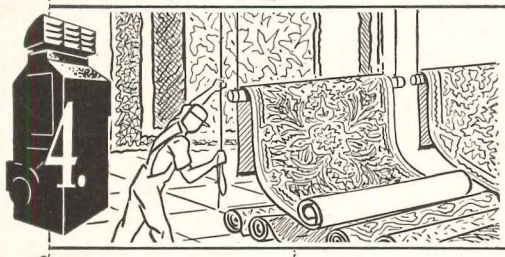
TEMPERING MAKE-UP AIR

Where dust-filled or fume-filled air must be removed from a building by exhausters, this air can be replaced and tempered by Dravo Heaters. Equal pressure is maintained . . . working conditions are kept comfortable.



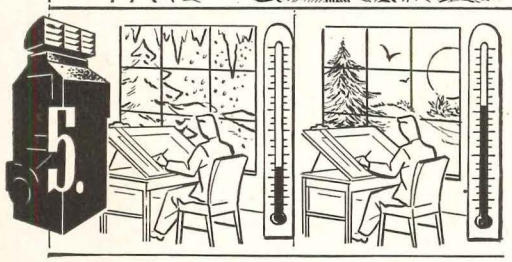
HEAT CURING

Dravo Heaters can be used independently or in combination with other equipment for process curing concrete, plastics, paper, fibre containers, rubber and many other products. Automatic temperature controls keep air flow at desired temperature.



PROCESS DRYING

Moisture content of air can be controlled or removed entirely by using fresh or recirculated air. Immediate response to temperature controller demand makes it ideal for drying paint, farm crops, wood products, rugs (after cleaning) and many other processes.



YEAR-'ROUND VENTILATION

In addition to comfort heating, Dravo Heaters provide fresh-air ventilation in warm weather and can be easily tied in with air-conditioning systems.

DRAVO HEATER *Plus* VALUES

- **Low initial cost . . . users report 30% to 60% savings on installation.**
- **Direct-fired . . . low fuel consumption . . . burn gas or oil . . . readily converted.**
- **Available in sizes from 400,000 to 2,000,000 Btu/hr.**
- **Easily moved to any location to fit your requirements.**
- **Flexibility . . . can be mounted horizontally or vertically on floor, walls or ceiling.**
- **Long service life, low maintenance . . . stainless steel combustion chamber eliminates refractory lining.**

DRAVO CORPORATION

HEATING DEPARTMENT
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Manufactured and sold in Canada by Marine Industries, Ltd., Sorel, Quebec

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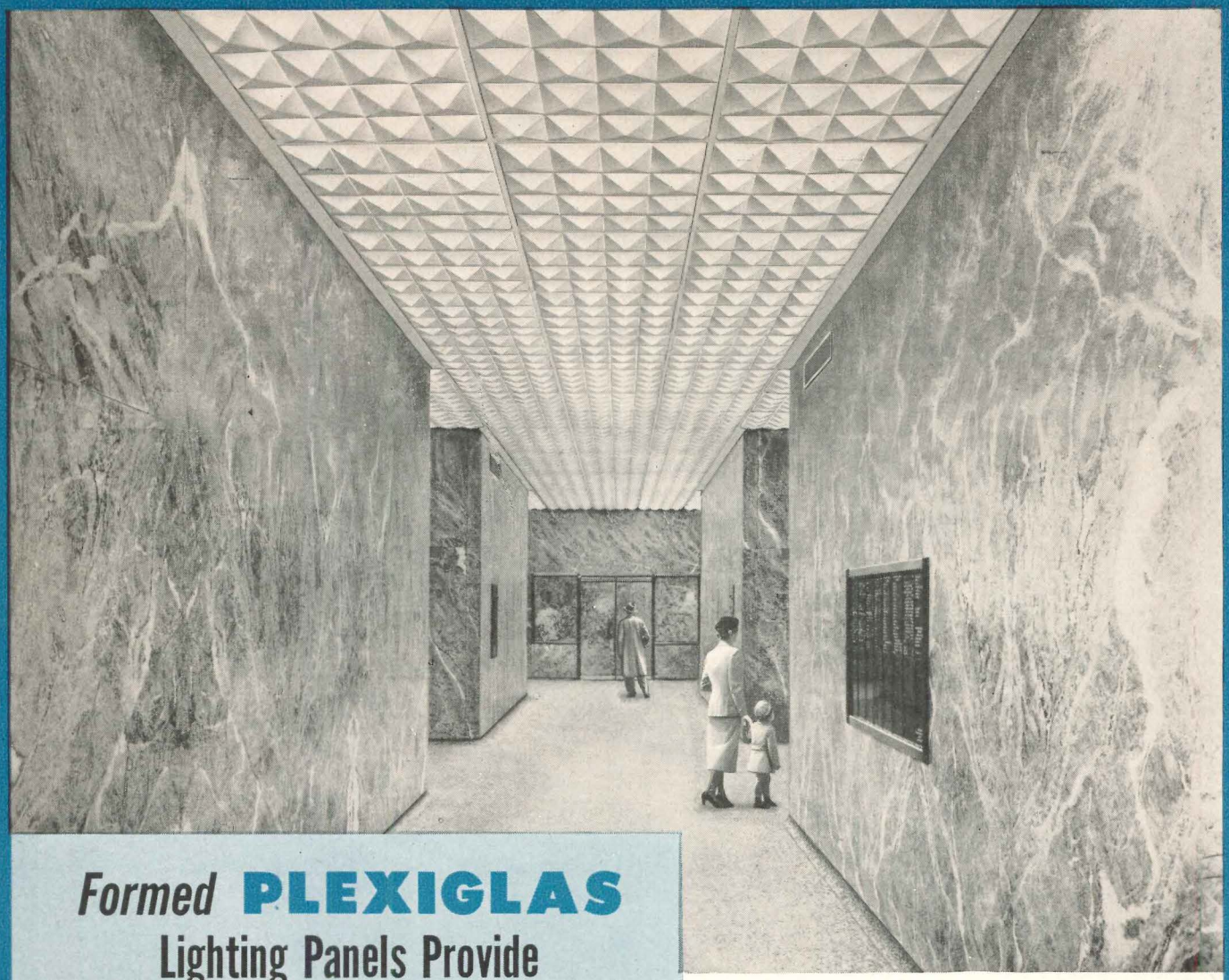

Formed PLEXIGLAS Lighting Panels Provide Decorative Appeal at Gateway Center

All lobby corridors of the Gateway Center buildings in Pittsburgh are lighted as shown above, by custom-formed panels of PLEXIGLAS acrylic plastic suspended beneath cold cathode tubes.

The architects wanted a faceted ceiling design that would give sparkling texture to the lighting. The designer achieved this by having multiple pyramids formed into each acrylic plastic panel; mounted wall to wall along the corridors, the panels contribute marked decorative appeal to the lighting installation.

Thermoplastic PLEXIGLAS panels can be formed easily to almost any shape or design. This makes it possible to combine lighting with decorative treatments of ceilings—frequently at substantial cost savings. In addition there are the advantages of diffused illumination, low brightness ratios, and fixture-free appearance.

We will be glad to send you design details of the luminous ceiling shown above.

Gateway Center, Pittsburgh, Pa.—a trio of steel-clad office towers erected by the Equitable Life Assurance Society as part of the city's famed redevelopment program. Approximately 11,000 square feet of PLEXIGLAS diffusing panels are used for luminous ceilings in lobby corridors.

Architects:
Irwin Clavan and Eggers & Higgins, New York

Builder:
Starret Bros. and Eken, New York

Lighting Design:
Lighting by Feder, New York

PLEXIGLAS Fabrication:
Dura Plastics, Inc., New York

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HOW YOU CAN REDUCE COSTS WITH MACOMBER

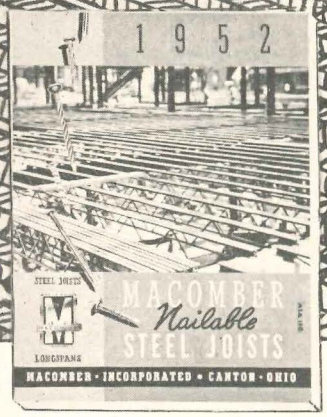
Nailable STEEL JOISTS

PATENTED

TOP LATH IS SECURELY ANCHORED

NO DEEP POCKETS BETWEEN JOISTS

LESS TIME AND LABOR PER FASTENING



Write for ***THIS CATALOG*** ——

These Savings

IN TIME, LABOR AND MATERIALS ADD UP FAST FOR THOSE WHO SPECIFY AND USE MACOMBER NAILABLE STEEL V BAR JOISTS.

A summary of the latest information including specific engineering details, dimensions, properties and safe load tables for spans — 4 to 44 feet.

SERVICE IN STEEL · STANDARDIZED CONSTRUCTION · MACOMBER · CANTON, OHIO

STANDARDIZED STEEL BUILDING PRODUCTS

MACOMBER • INCORPORATED

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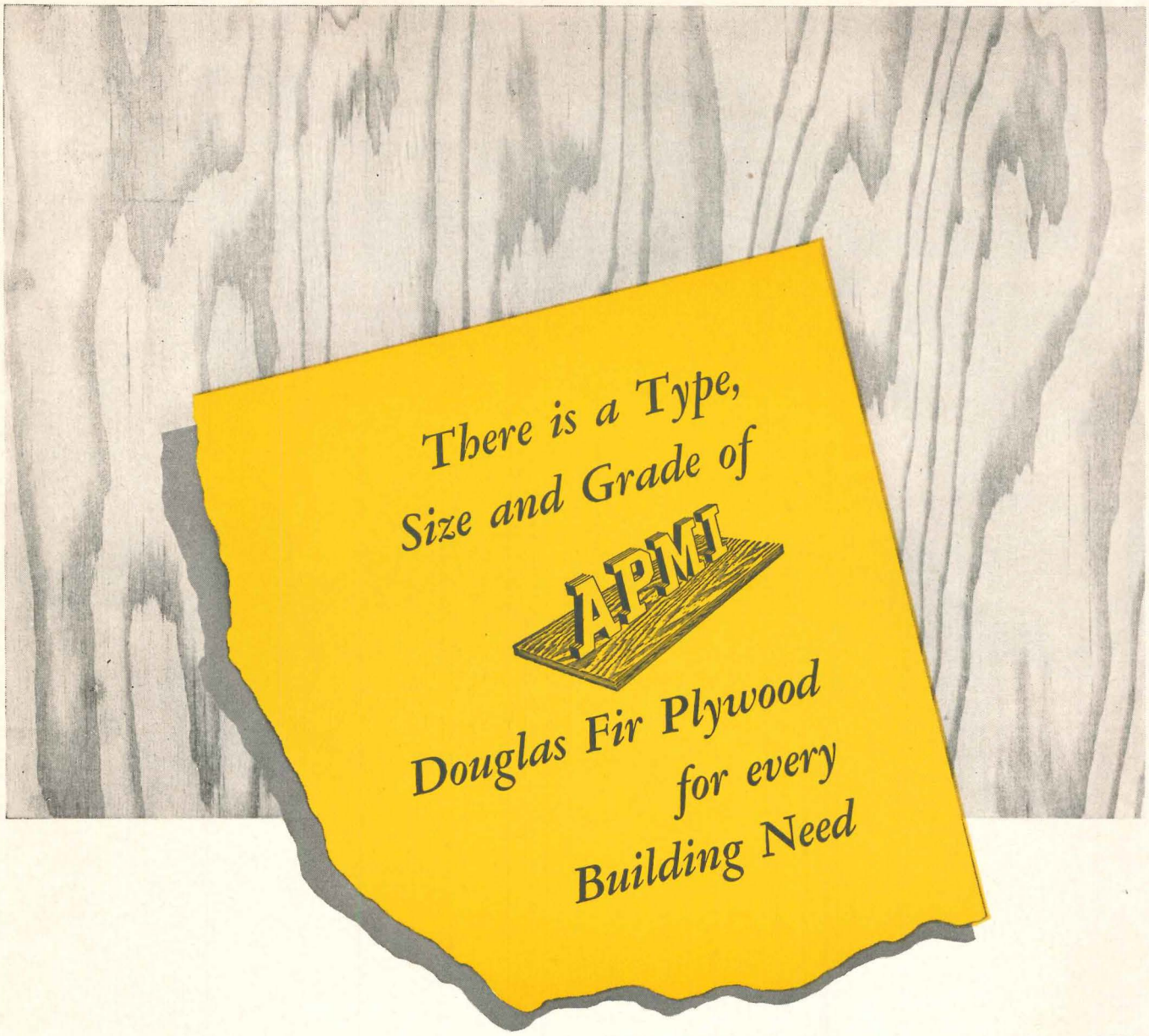
V BAR JOISTS • LONGSPANS • BOWSTRING TRUSSES • STEEL DECK



As one of the oldest and largest producers in the industry, Associated makes a type, size and grade of Douglas fir plywood for every building need:

Interior-type: For walls, ceilings, cabinets, built-ins; for sheathing and subflooring.

Exterior-type: For siding, outdoor signs, farm structures, boats of all sizes and shapes.

Sea Swirl (interior and exterior). A beautiful decorative plywood for remodeling and new construction.

Plastic surfaced plywood (exterior-type): For concrete forms, siding for commercial and industrial buildings.

Plyron (interior and exterior). Plywood core between hardboard surfaces. For all types of construction; built-ins, furniture.

All APMI plywood is manufactured in the heart of the Douglas fir region of Oregon; is grademarked and trademarked; is available through branch sales warehouses in major building cities, sold by experienced plywood men. Your inquiries are invited.

BRANCH SALES WAREHOUSES:

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SALES OFFICES:

31 State Street, Boston, Massachusetts
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ASSOCIATED PLYWOOD MILLS, INC.

General Offices: Eugene, Oregon

Plywood plants at Eugene and Willamina, Oregon
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Who said only cucumbers are cool?

More and more of the country's foremost frozen food producers depend on Worthington refrigeration for the fast freezing which insures that fresh-picked flavor.

And more and more food outlets of every size protect produce . . . keep customers contented regardless of the weather . . . with Worthington air conditioning.

For any job—large or small—when you specify "Worthington" for air conditioning or refrigeration you specify the equipment your client links with the "first" names in every field.

No other manufacturer makes *so complete* a line. A Worthington system is all Worthington-*made*. . . not just Worthington-assembled . . . assuring perfectly balanced operation and unit responsibility.

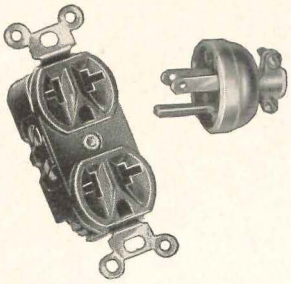
Worthington Corporation, Air Conditioning and Refrigeration Division, Harrison, New Jersey.

A.2.10

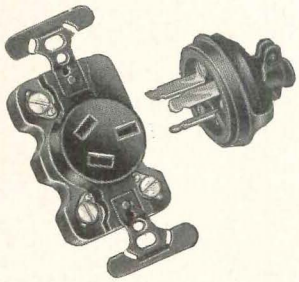
Visit us at the International Heating and Ventilating Exposition, Booth 824 in Chicago, January 26 to 30.

WORTHINGTON

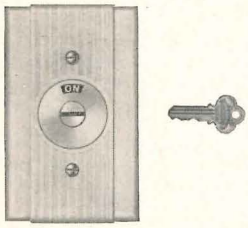
AIR CONDITIONING AND REFRIGERATION



GROUNDING TYPE DEVICES, 2-3 WIRE. Here is the newest development to provide positive identification of grounded circuits. This is the most complete line of standard items available anywhere.

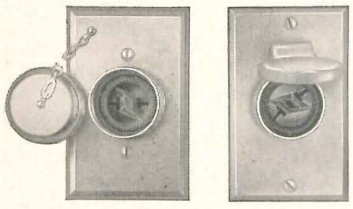


POLARIZED DEVICES, 2-3 and 4 WIRE. Protects valuable equipment by maintaining polarity at all times. Ideal for such portable equipment as power tools, heating and lighting units and many other applications. 10 to 50 ampere capacity.



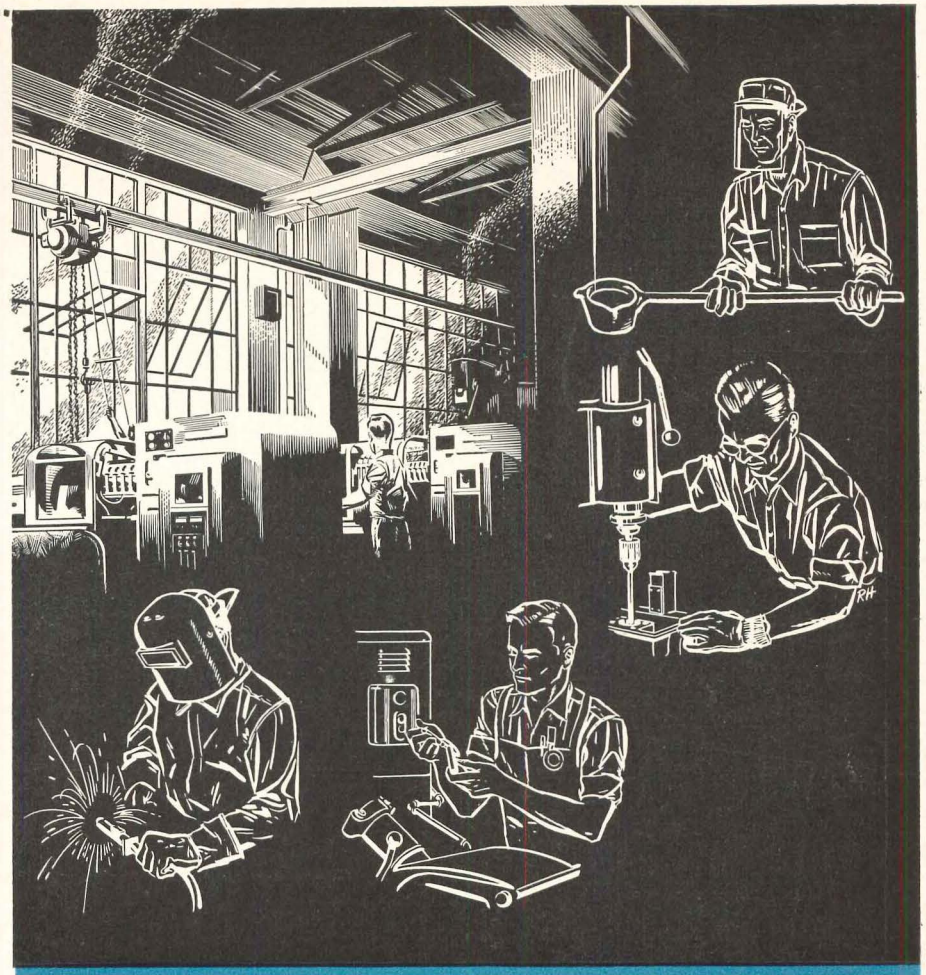
CORBIN ROTARY LOCK SWITCHES

This is the *only* switch that gives absolutely foolproof protection against the unauthorized operation of vital safety lights and other circuits. Can be actuated only by turning the proper key in the Corbin Pin Tumbler Lock. Features Uniline plate design.



WEATHERPROOF RECEPTACLES

The complete H&H line includes outdoor receptacles for every circuit requirement. Single and duplex models with self-closing or screw-on cover caps are available.



ELECTRICAL AVAILABILITY *IMPORTANT* TO INDUSTRIAL PLANTS

Modern industry depends more and more on an ever increasing variety of portable and semi-portable electrical tools and equipment. Carefully planned electrical availability is more important now than ever before. Make sure that your electrical specifications allow for today's needs and tomorrow's expansion. To help you give your client truly modern electrical convenience in his plant, look to the complete H & H line. You'll find there's an H & H wiring device for every circuit requirement. The big, fully illustrated H & H catalog can really make your electrical planning job easier — and better. Send for your copy today; just write to 1912 Laurel Street, Hartford 6, Connecticut.

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Wiring Devices
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THE ARROW-HART & HEGEMAN ELECTRIC CO., HARTFORD, CONN.

Branches in: Boston, Chicago, Dallas, Denver, Detroit, Los Angeles, New York, Philadelphia, San Francisco, Syracuse. In Canada: Arrow-Hart & Hegeman (Canada) Ltd., Mt. Dennis, Toronto.

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

Greater Pittsburgh Airport, Allegheny County, Pa.

Joseph Hoover and Dept. of Aviation, Designers, Allegheny County, Pa.

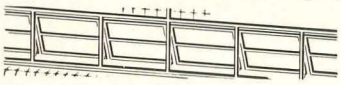
Dick Construction Company, Bldrs., Pittsburgh, Pa.

Ask For Copy of These Catalogs

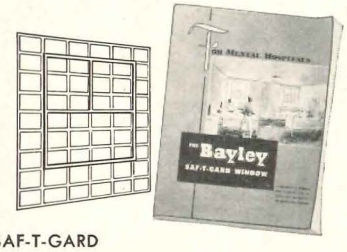
– or see them in Sweet's

PIVOTED WINDOWS (STEEL ONLY)

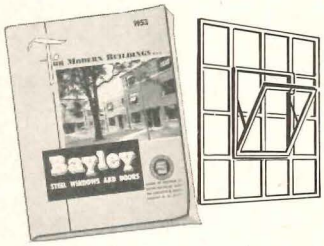
PROJECTED WINDOWS (ALUMINUM OR STEEL)



PROJECTED RIBBON WINDOWS (ALUMINUM)



SAF-T-GARD WINDOWS (FOR MENTAL HOSPITALS)



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For Factory and Power Plants

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- Monumental Buildings • School Buildings
- Hospitals and Sanitariums • Prisons and Institutions.

Steel or Aluminum Windows of *Time-tested Design for Modern or Traditional Buildings of all Types*

Through 73 years of serving the construction industry Bayley has never been satisfied to build for quality *alone*. They also recognized the need for a fully cooperative relationship from the time of a building's inception to its occupancy. With that sense of responsibility, they pioneered during those years many of the most worthwhile developments in the design of metal windows.

The objectives of Bayley Window design have always been to improve natural daylighting, vision and ventilation with an enduring window, and to constantly develop products in harmony with advancing architectural trends.

The efficiency, quality and all-around economy of Bayley Windows — in either steel or aluminum — is evidenced by their use in outstanding buildings throughout the world. The nationwide Bayley Organization — through District Offices and local representatives — places on ready call a trained Window Engineer to work with you on any window requirement, from inception to completion of a project. Write or phone.

See Bayley in Sweet's. Complete catalogs on aluminum windows, 17 a/BA; steel windows, 17 b/BAL; Saf-T-Gard Hospital Detention Window, 17b/BAY.

The William **BAYLEY** *Company*

Springfield, Ohio

District Sales Offices: Springfield, Chicago 2, New York 17, Washington 16

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73 *Years of* **RELIABILITY**

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Like the engineers you consult for professional advice and assistance on your building plans, "The Hardware Consultant" (certified) is fully qualified to advise and cooperate with you in the selection, detailing, supervision of installation, and maintenance of builders' hardware.

This *hardware engineer* has complete facilities for specification-writing and furnishing price-data (relieving you of a mass of tedious detail). He has, moreover, the specialized knowledge and training required to service the job.

When you deal with an architectural Hardware Consultant, you may be sure that the hardware he recommends will meet the requirements of the structure you are planning—from the point of view of design, function, and performance. For that's his specialty.

Take full advantage of the valuable services this hardware specialist in your area is prepared to render to you. If you do not know his name, a letter to Stanley will put you in touch with him promptly.

The Stanley Works, New Britain, Conn.

STANLEY

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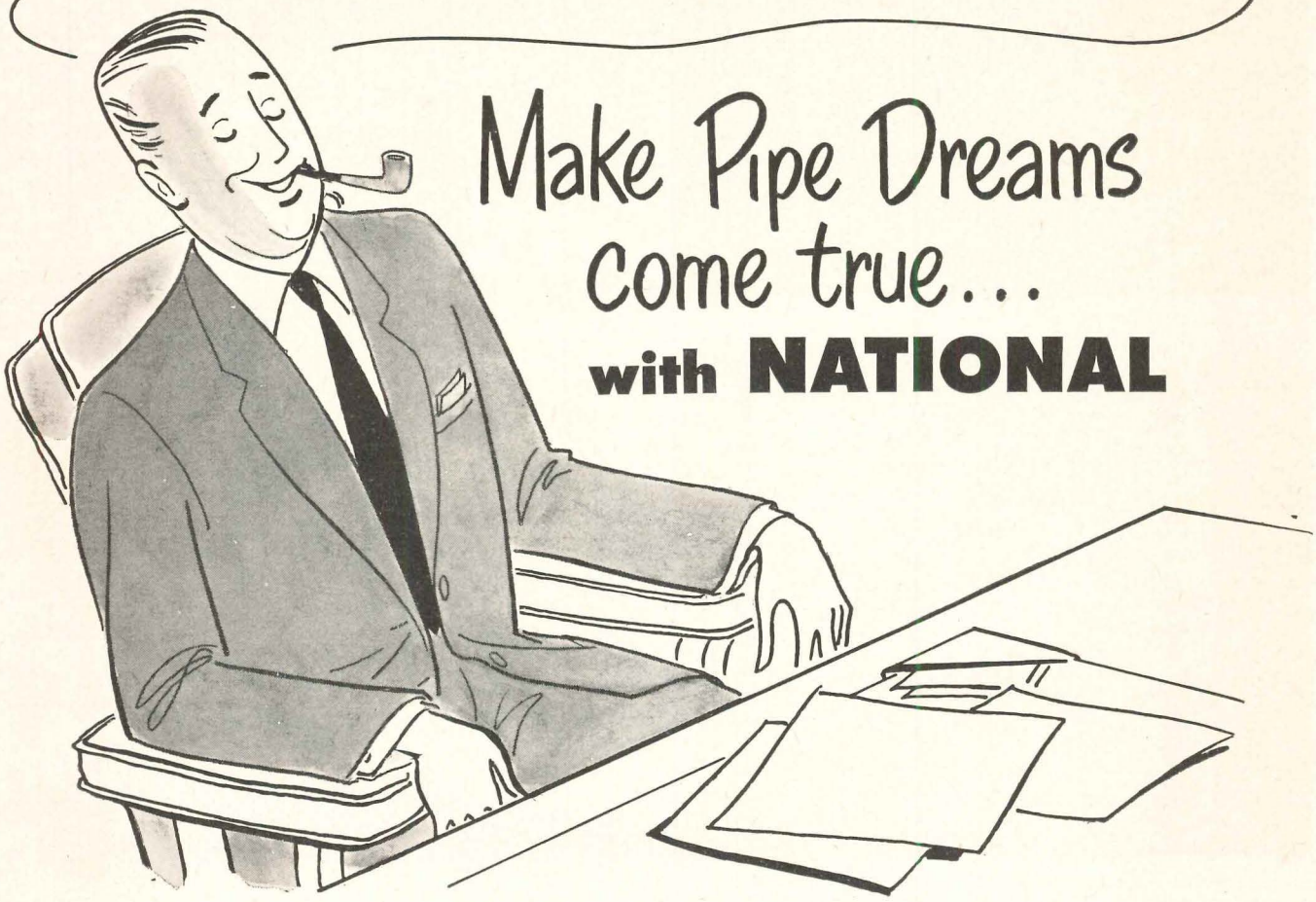
STEEL STRAPPING • STEEL

SPECIFY *ONE* WORRY-FREE PIPE . . . THAT HAS *ALL* DESIRED QUALITIES . . . MEETS ALL SERVICE REQUIREMENTS . . . LOW FIRST COST, MINIMUM MAINTENANCE.



Make Pipe Dreams come true . . . with NATIONAL

If you have been wishing you could find *one* brand of pipe that would meet *all* service requirements, it's high time you got better acquainted with National Steel Pipe. So many architects, engineers and contractors have found the National line the solution to so many piping problems—during more than half a century—that they have made National the largest selling pipe in the world.

That preference was earned by the uniform high quality and complete dependability that is built into U·S·S National Steel Pipe. From raw material to finished pipe, every step in its production is controlled by one responsible organization. Improved steel-making facilities, special manufacturing processes and the lifetime experience of many skilled craftsmen, combine to produce pipe whose metallic structure, strength, sound joints, superior welding, bending and threading properties, assure low cost installation and long trouble-free performance.

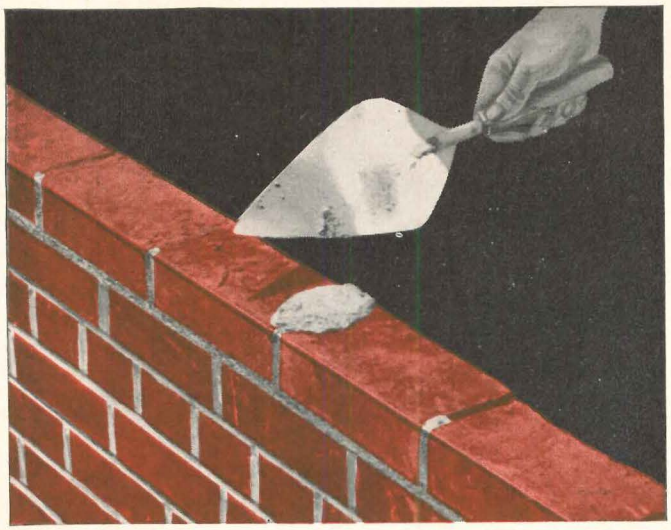
That is why shrewd pipe buyers—generation after generation—continue to specify National, whenever they need pipe. They know that it fits every purpose at a cost that fits every purse.

So, whenever you need pipe for any type of building, make your pipe dreams come true. Get U·S·S National Steel Pipe.

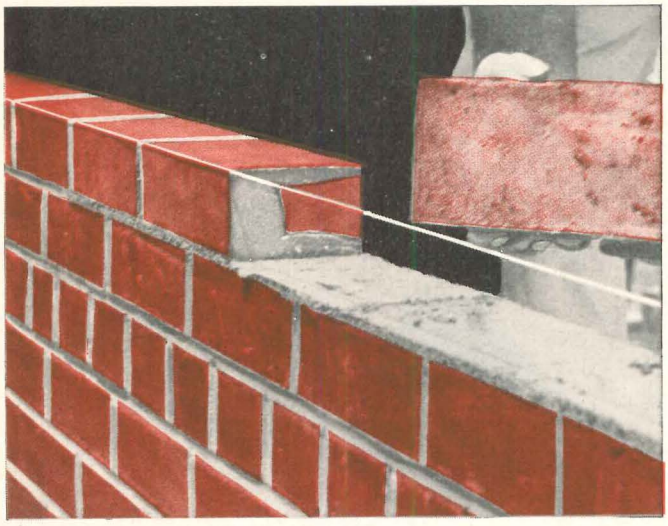
NATIONAL TUBE DIVISION, UNITED STATES STEEL COMPANY, PITTSBURGH, PA.
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

U·S·S NATIONAL Steel PIPE

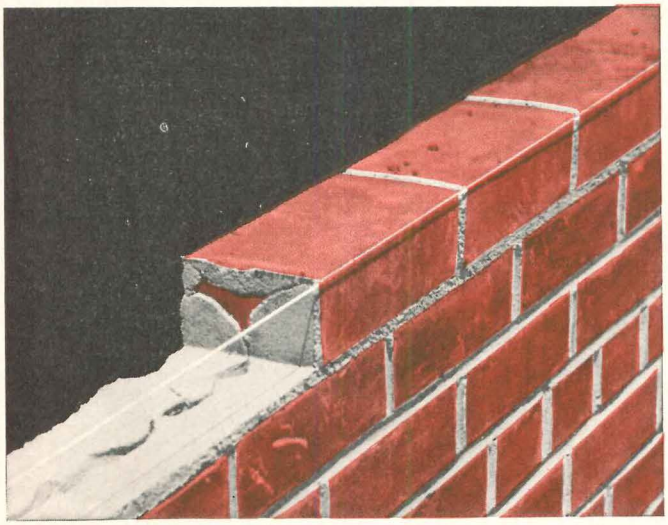
UNITED STATES STEEL



Slushing does not properly fill the voids in the head joints.



When mortar is spotted on only one corner of the brick, slushing seldom fills the voids.



Even when mortar is spotted on both corners of the brick, slushing will not always fill the voids.

"SLUSHING" INVITES LEAKAGE IN BRICKWORK

WE SUGGEST THAT—

Brick should always be so laid that when the brick is shoved into place, the head or cross joint will be *filled solid* with mortar, *without slushing*. If the joints are not completely filled, water may leak through the voids to the inside of the building.

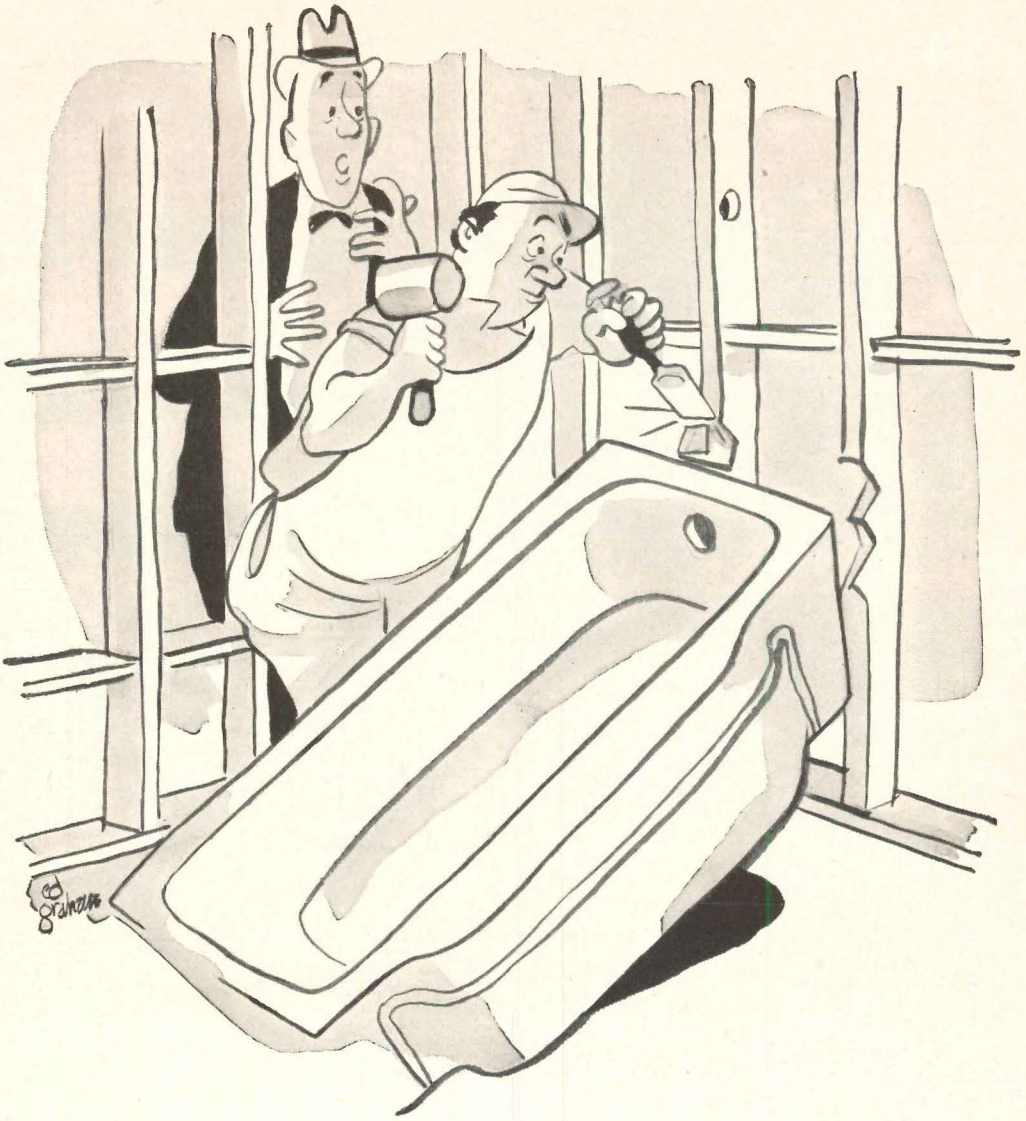
The photos at the left show the voids that often result when slushing is used to "fill" a joint. Even when mortar has first been spotted on both corners of the brick, *slushing cannot be relied upon to fill the voids completely.*

The great plasticity of Brixment enables the bricklayer to throw plenty of mortar onto the brick to be placed — to use plenty of mortar in the bed joint — and still shove the brick easily into position, with excess mortar oozing out all around, and with all voids filled.

BRIXMENT

Brixment mortar has greater plasticity, higher water-retaining capacity and bonding quality, greater resistance to freezing and thawing, and freedom from efflorescence. Because of this combination of advantages, Brixment is the leading masonry cement on the market.

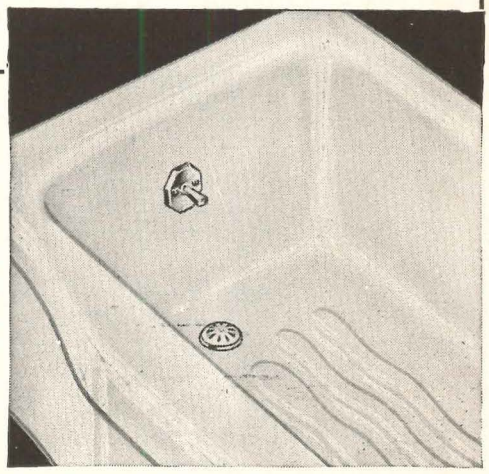
LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY



Don't have a fit... have a perfect fit with BRIGGS!

This crisis could never come about on a Briggs Beautyware installation. All goes smoothly when you're handling this modern die-formed *steel* bathtub for, when you specify a 5′ Briggs tub, you can be sure it is exactly 60″ long. Briggs is the bathtub that eliminates the problem of leaks at tub-wall line (integral lip flange makes it leakproof) . . . and banishes the labor of lifting (weighs only 110 pounds). It's the tub that's furnished in luxurious stainproof (acid resistant) porcelain enamel at no *extra cost!* That tells you why Briggs Beautyware—with its top quality, moderate price, and revolutionary features—is today's best buy in plumbing fixtures. Write *now* for new catalog featuring Briggs plumbing fixtures and Briggs brass. Briggs Manufacturing Co., 3001 Miller Ave., Detroit 11, Michigan.

BRIGGS *Beautyware*



Briggs Beautyware bathtub is *exact* in dimensions—die-formed and engineered to permit easy installation. If it's Briggs, it fits! Notice the patented Safety-Bottom, another great Briggs exclusive.

Plate No. 323
Tile Specifications: Walls—28 Pearl Gray and 68 Rose; Base—26 Clover Red; Decorative Strips—R86-C107; Inserts—Gull H21, Duck H22, Flamingo H24; Floor—Slate Textone

NEW... Booklet on Industrial Washrooms Shows How To CUT *Maintenance* and BUILD *Morale*

In industrial and institutional buildings, where maintenance costs and employee morale are important factors, more and more architects are specifying tiled walls and floors.

Our new Booklet 300 has been prepared to help architects plan these types of installations. It shows how real clay tile can cut janitor costs 50% or more . . . how it will end repair and maintenance expenses for good . . . how it will build morale with cheerful, colorful, easy-to-keep-clean rest areas.

Page after page of major industrial installations are shown in exact color. Ready-to-use wall and floor tile specifications are included. Colors, patterns and types of tile can be selected easily from accurate color panels.

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AMERICAN-OLEAN TILE COMPANY
930 Kenilworth Ave., Lansdale, Pa.

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AMERICAN-OLEAN TILE COMPANY
Executive Offices, 930 Kenilworth Ave., Lansdale, Pennsylvania

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Architectural Service

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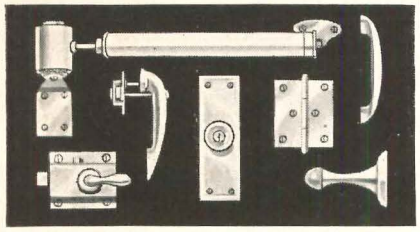
Adverse climatic conditions and weathering have no effect on rust and corrosion-resistant aluminum used for combination storm-screen doors. In addition to assuring homeowners of longer life and absolute minimum maintenance, these durable, always attractive aluminum doors also permit fast, easy interchangeability of lightweight screen and storm panels. There are many excellent makes of these doors on the market today. Write for list of aluminum storm-screen door manufacturers.

Quality Thresholds

Aluminum thresholds give that important "first" impression in quality home and commercial construction. Always bright, aluminum thresholds are economical in both initial cost and maintenance. They are the lowest in cost of non-rusting metals. Enduring aluminum thresholds assure a permanently snug relationship to doors. The wide variety of Reynolds designs provides a type for every entrance or between rooms application—including pivot door installations. Aluminum thresholds are available through architectural metal distributors.

Attractive Hardware



Aluminum hardware completes the white metal theme in modern design. Like other aluminum trim, the natural color of aluminum hardware, in a wide range of finishes, harmonizes with all decorative schemes in residential, commercial and industrial buildings. Aluminum hardware won't rust or corrode—stays bright and attractive. A full line of aluminum hardware—closers, escutcheons, knobs, hinges, stops, strike plates, push bars—is available. Write to Reynolds for list of aluminum hardware manufacturers and for information on any other architectural aluminum applications.

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MODERN DESIGN HAS ALUMINUM IN MIND

One of a series of papers prepared by leading authorities on air conditioning. The opinions and methods presented are those of the author and are not necessarily endorsed by the Du Pont Company. Reprints of this article, and others in the series, may be had free upon request.

AIR CONDITIONING for Modern Food Processing and Packaging Operations

By T. W. Reynolds

T. W. REYNOLDS—*formerly Chief, Air Conditioning Div., Abbott, Merkt & Co., N. Y. During Mr. Reynolds' varied career in air conditioning, he has contributed greatly to the advancement of the profession. A wartime consultant to the W.P.B., he passed on all mechanical construction in the U. S. Among his many outstanding achievements was designing the air conditioning system used in the Perisphere at the New York World's Fair, 1939.*

The food processing industries were the largest single industrial group reported by the last Census of Manufactures, numbering close to 40,000 plants. During 1950 and 1951, the food group invested about $600 million in new plants and equipment each year and is expected to spend more than this in the years ahead.

TECHNICAL TREND

Current emphasis continues to be on better engineered and equipped processing and packaging operations. The trend toward continuous production operation, and away from batch processing, continues. This increases the need for new factory alterations and construction design, and for new refrigeration and air conditioning equipment.

Food plants use more process refrigeration and air conditioning than any other industrial group. More and more attention is being paid to the multiple uses of air conditioning in the economics of the food industry . . . including humidification, dehumidification, air circulation, air cleaning, heating and cooling. While comfort cooling for both plant and office workers, bringing improved productive efficiency, is a modern consideration of good management, the prime incentive is the necessity for accurate plant temperature and humidity controls in order to keep a wide variety of products uniformly up to specifications.

HUMIDITY CONTROL

Humidity requirements cover a wide range, varying with the nature of the product and stage of the processing operation. Some baked goods, such as melba toast, crackers, etc., and crisp goods, like cereals, require not over 10% relative humidity. Flour contains 13% moisture, by weight, and would rapidly lose it if stored in too dry an atmosphere. Once lost, the humidity cannot be regained by mixing. Flour is also susceptible to odor and mold.

Many products, in production or in secondary use as ingredients, need close protection because they are hygroscopic and sensitive to moisture conditions. These include dehydrated vegetables, herbs, salts, sugars, milk powders, malt powders, etc. All dry mixes, generally, need controlled humidity to assure a stable and standardized product, from ingredient storage through processing and packaging.

Candy and products using much sugar, glucose, corn syrup, dextrose, sucrose and similar substances also need close control to regulate the crystallization and grain structure of the finished goods. Sugar-coating chewing-gum centers or almonds, for example, is ideally done within a range of 35% r.h. at 90°F. to 50% r.h. at 75°F. The following table shows some representative temperature and humidity ranges in processing various foods.

PROCESS	TEMPERATURE (DRY BULB)	RELATIVE HUMIDITY
Fruits for canning (storage)	36°F.—45°F.	80%—85%
Vegetables canning (storage)	36°F.—45°F.	65%—85%
Candy coating room	60°F.—65°F.	50%
Candy enrobing (cold end)	65°F.—	50%
Candy enrobing (hot end)	80°F.—	30%—50%
Candy hard	75°F.—65°F.	40%—45%
Candy hand dipping	62°F.—65°F.	50%
Candy marshmallows	75°F.—	35%
Candy nougats	65°F.—	50%
Candy packing	65°F.—	50%
Candy storage	65°F.—	50%
Flour (storage)	65°F.—75°F.	55%—65%
Bread coolers	70°F.—75°F.	80%—85%
Brick cheese (salting rooms)	80°F.—90°F.	50%—60%
Brick cheese (curing rooms)	80°F.—	45%—65%
Brick cheese (storage rooms)	60°F.—	35%

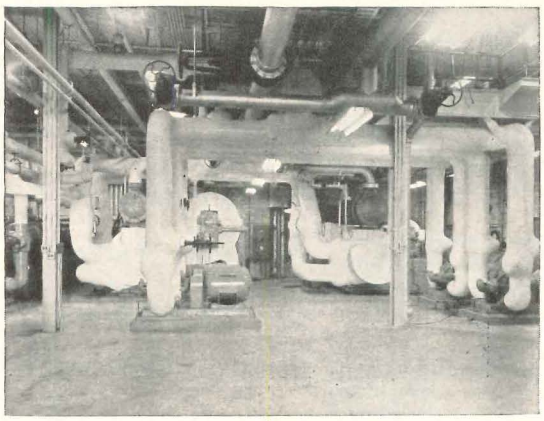
Humidity control also plays an important part in packaging. Paper and paper products are highly hygroscopic. Packaging and labeling machinery works better when the paper items have been pre-conditioned in a humidity-controlled storage space prior to use. Paper works well at 50% r.h. at 65°F. to 75°F., while a lower relative humidity is desirable for Cellophane.

AIR CIRCULATION

For many years it was not unusual to encounter temperatures of well above 100°F. in many food processing rooms—heat not only from cooking operations, but also in rooms where a mass of machinery and connected horsepower were in use. In summer, these heat conditions would frequently become unbearable. Today, with better building construction and insulation against the summer sun and winter heat loss, plus cooler lighting, hoods and exhaust fans over high-heat units, improved general ventilation and air conditioning control have now become not only possible, but profitable in terms of product control and employee efficiency.

AIR CLEANING

The value of filtered air has been gaining recognition during the last thirty years. Meat packers eliminated the moldy bacon problem by installing bacteria filters in the air ducts of their slicing rooms. Powdered milk manufacturers found that by using filters they could produce a product that would stand up under severe climatic conditions.



Double centrifugal, "Freon"-charged air conditioning installation in large midwest candy manufacturing plant.

Air-borne organisms are carried on dust particles; so mechanical filters, packed with a suitable fibrous material, are used to remove the coarse particles of dust. If very fine matter is suspected, or very close control is essential, electrostatic filters are installed in addition.

Methods have been developed by which the effectiveness of filters may be tested. A fine diffuse spray of a suitable bacteria is introduced at the fresh-air inlet. Samples of the air, before and after passing through the filters, are exposed to a nutrient culture medium. These are incubated and the colonies counted.

AIR HEATING

With a duct system installed to provide for air circulation at a suitable velocity, and for the control of humidity, it is only logical to install heating coils in the air system for winter heating. This eliminates radiators, risers, and many overhead pipe runs and pipe hangers, which are dust traps and create additional maintenance problems.

The Btu. capacity of the coils, depending on the steam pressure, is figured on the basis of internal plant heat factors in connection with the average winter low temperature level.

AIR COOLING

Certain food processes and food-storage requirements demand a controlled temperature the year round. By controlling the temperature and the humidity of the storage rooms, products are preserved and standardized for process. Control in the process rooms assures uniformity of product. Control in packaging rooms makes certain that the product will go to the consumer protected for edibility, palatability and salability.

Tonnage of refrigeration required will depend on prevailing weather conditions, nature of the product and method of processing, number of workers, type of structure and the number and kind of motors and machines in use within the manufacturing plant.

ZONING

For the food industries it is particularly important to control odors, as well as bacteria, humidity, and temperature. Some steps in processing are not compatible with others, air-wise. Some areas are only used 8 hours or 16 hours a day, while other spaces, including sensitive storage rooms, may require full-time regulation. It is, therefore, a more economical installation to group the related spaces. It may also be desirable to install a multiple-unit setup instead of central-station units, for full operating flexibility and economy.

★ ★ ★

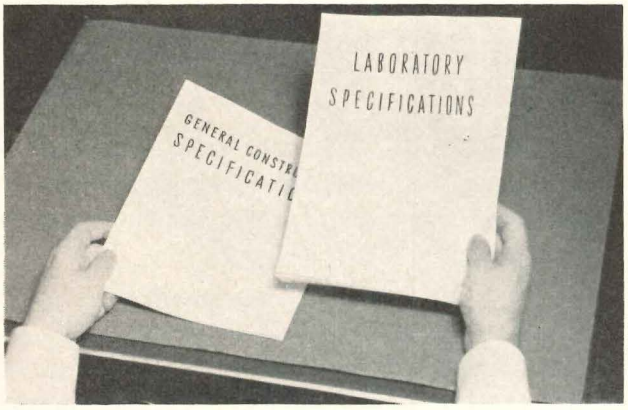
Of course, the food industry is of such proportions that, at best, only a few of the more important highlights relating to its use of air conditioning and refrigeration can be included in this paper by Mr. Reynolds.

However, as will be seen from the foregoing, air conditioning and refrigeration are of major importance throughout the food field. And installations in the most modern food processing and packaging plants are charged with "Freon" refrigerants.

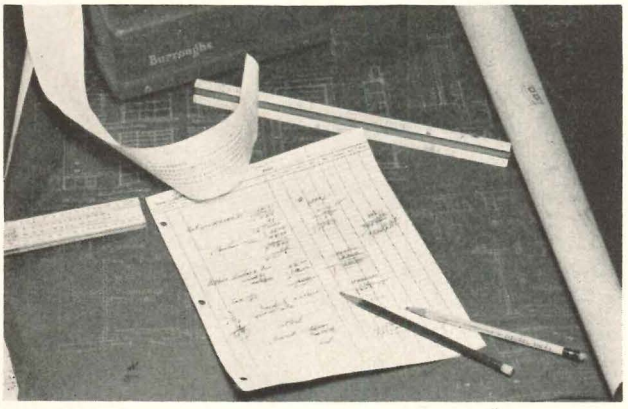
There is good reason for this. "Freon" refrigerants are safe . . . nonflammable, nonexplosive, virtually nontoxic, and their purity further insures long, efficient, trouble-free and economical operation of the equipment. Whether or not your current commission is concerned with the food industry, your consulting engineer will enthusiastically suggest suitable "Freon"-operated machines to fully meet your client's needs. There are many dependable, well-known makes available, and you, in turn, may be sure that they will render highly satisfactory service. "Freon" refrigerants also comply with all building code requirements. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.

This better laboratory planning method assures highest value and permanent client satisfaction

1 Contact a Professional manufacturer of laboratory equipment while plans are still at the preliminary stage. Let an experienced representative of this firm contribute to the solution of your problem knowledge gained through years of laboratory planning.



2 Prepare separate specifications covering laboratory equipment, or have these made a separate section of the general construction specifications. This permits Professional manufacturers to consider those portions of the job they are especially equipped to produce.



3 Secure direct bids from Professional manufacturers to the owners, or, when indicated, to the general contractor. In this way you receive the full benefits of specialized manufacturing facilities, volume production of standard components and thoroughly trained installation personnel. 1, 2, 3—that's all there is to it!

The simple 3-step planning method illustrated here has helped produce fine, permanently useful laboratories in schools, hospitals and industrial plants all over the country. By following it, you bring to bear on your laboratory projects an enormous resource of experience and the ultimate in specialized talents and production facilities.

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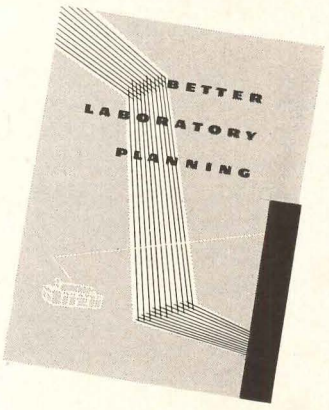

Better Laboratory Planning is an authoritative examination of some key considerations in planning modern laboratories. If you do not have a copy for your reference library, you may secure one by writing to—

LABORATORY EQUIPMENT SECTION

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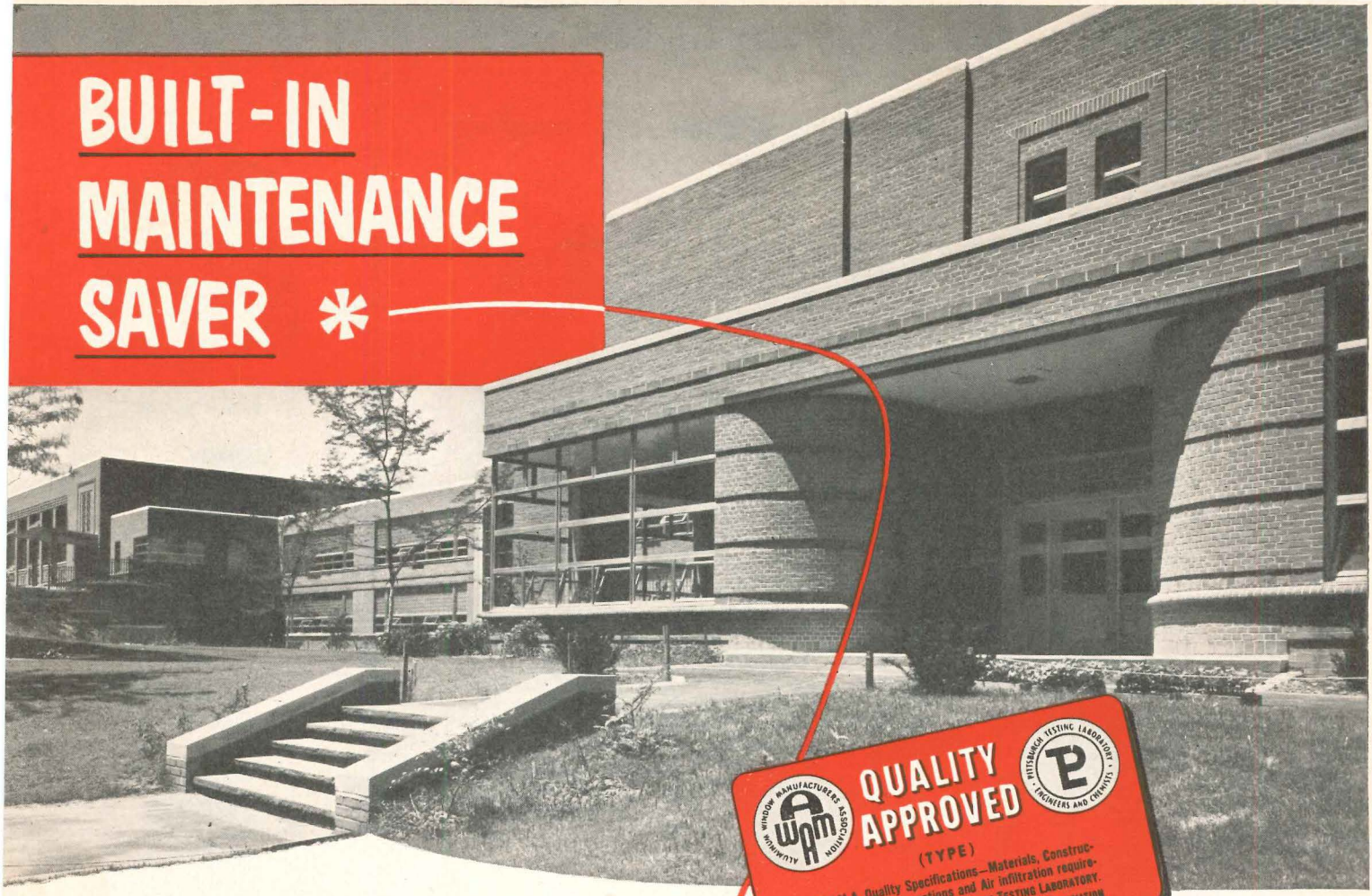

Quality Approved

ALUMINUM WINDOWS

ictured above:
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Great Neck, N. Y.
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Reginald E. Marsh
Contractor: Wm. A Berbusse, Jr., Inc.

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Aluminum Window Manufacturers Association

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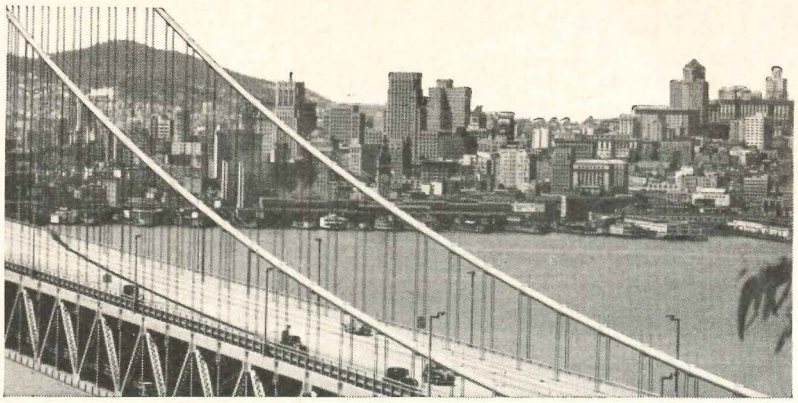
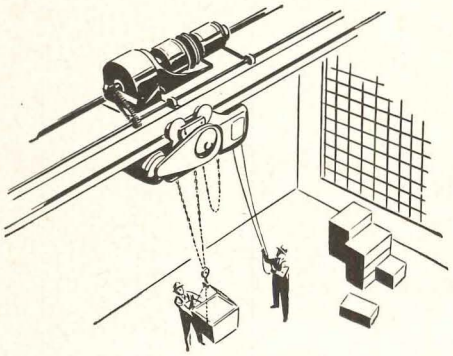


San Francisco has a conveniently located American Blower office to provide you with data and equipment for air handling. You can reach American Blower in San Francisco by calling Sutter 1-1024. In other cities, consult your phone book.



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If you're concerned with power transmission you'll want to know more about our Gyrol Fluid Drives. They offer three important advantages—smoother acceleration, overload protection and substantial power savings. One company uses Fluid Drive on a crane that picks up ladles of hot metal. Before they were installed, the ladles got a violent swing from the quick start and were hard to control. Since using Fluid Drives they've had no trouble.

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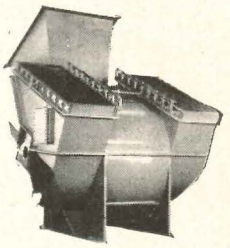
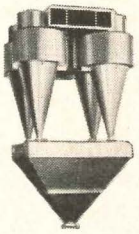
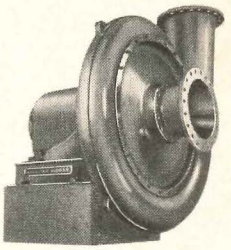
Unit Heaters



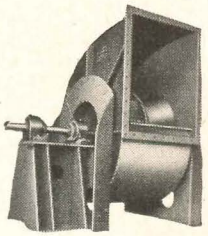
Mechanical Draft Fans



Dust Collectors



Centrifugal Compressors



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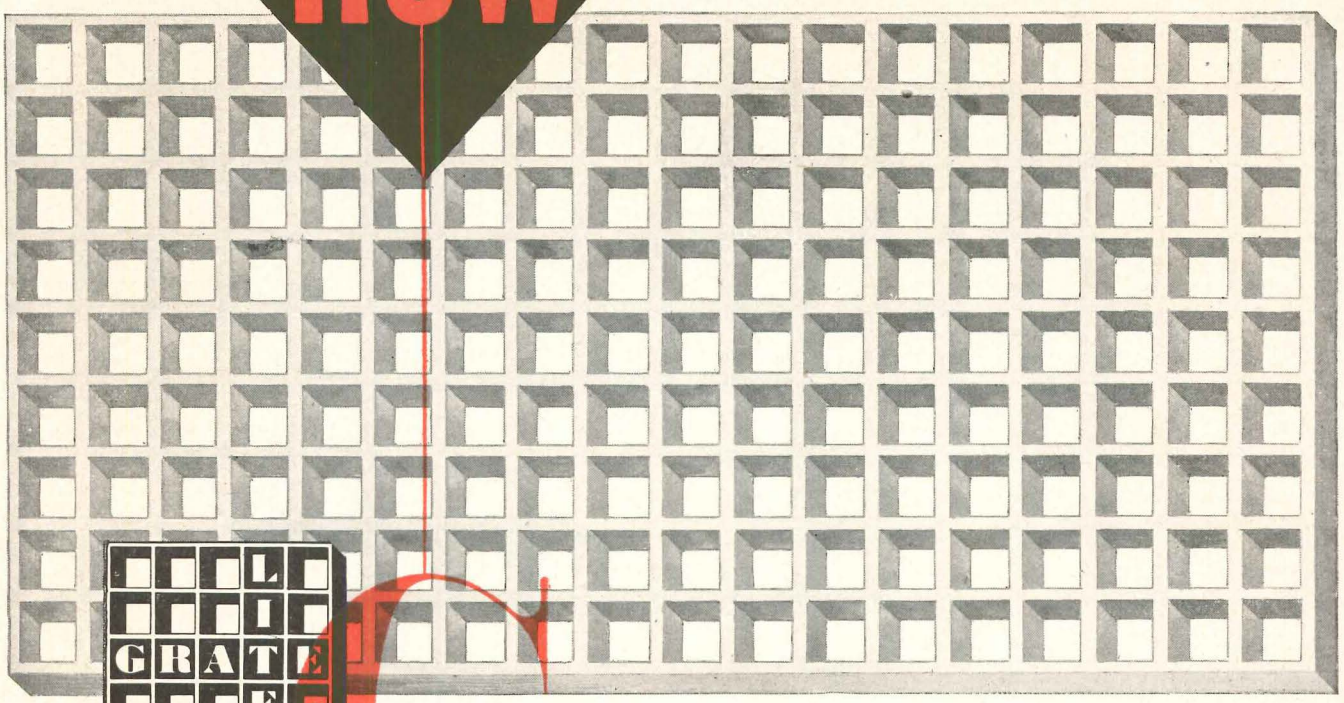

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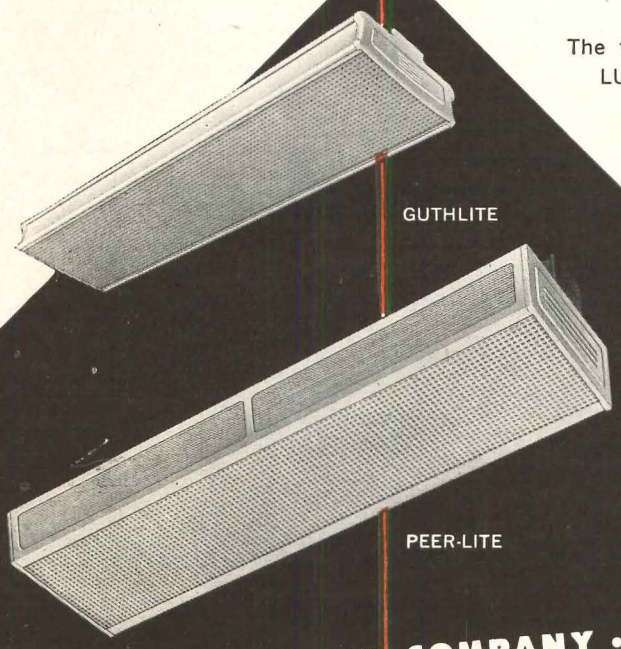

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THE EDWIN F. GUTH COMPANY • ST. LOUIS 3, MO.

Try this for two minutes!

Just close out those distracting noises for two minutes. Footsteps, voices, buzzers, machines. All the annoying noises that threaten the efficiency and productivity of offices, workrooms or other business quarters.

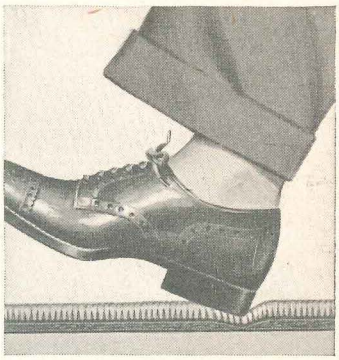
Enjoy the peace and quiet that can be yours with Bigelow's Cushionlok. The new acoustical carpet that absorbs up to 90% of floor noises and helps deaden other echoed sounds.

It is not unusual to find that Cushionlok insulates and absorbs sound so effectively that often no further acoustical treatment is necessary.

Bigelow's Cushionlok can be installed while "business goes on as usual." It requires no cushion lining —the rubber cushion is built-in. It can be laid directly on concrete or any-type floor. It can be cut in any shape, matched, pieced and even relaid, if necessary.

When you realize how this handsome, practical carpet combines impressive good looks with the functional properties of sound absorption —you'll agree Bigelow's Cushionlok is the *best* floor covering for offices, stores, banks, hotels, etc., where there is noise and traffic.

For a sample of Bigelow's Cushionlok, write on your business stationery to Dept. A, 140 Madison Avenue, New York 16, N. Y.



BIGELOW'S CUSHIONLOK absorbs up to 90% of floor noises and helps deaden other sounds.

Bigelow Rugs and Carpets

Leaders in the development of home and commercial floor covering since 1825.

Bigelow sales offices are located in the following strategic cities: Atlanta, Ga.; Baltimore, Md.; Boston, Mass.; Buffalo, N. Y.; Chicago, Ill.; Cincinnati, O.; Cleveland, O.; Columbus, O.; Dallas, Tex.; Denver, Col.; Detroit, Mich.; Hartford, Conn.; High Point, N. C.; Indianapolis, Ind.; Kansas City, Mo.; Los Angeles, Calif.; Milwaukee, Wisc.; Minneapolis, Minn.; New York, N. Y.; Philadelphia, Penna.; Pittsburgh, Penna.; St. Louis, Mo.; Salt Lake City, Utah; San Francisco, Calif.; Seattle, Wash.

Otis

AUTOTRONIC®

Without Attendant

ELEVATORING

SETS A LIVELIER PACE

MAKES TENANTS FRIENDLIER

Passengers simply press buttons for the floors they want

Autotronic—WITHOUT ATTENDANT—Elevatoring gives tenants a sprightly feeling of independence. All they have to do is step into the car and press buttons for the floors they want. Operation is like magic.

Tenants quickly accustom themselves to automatic dispatching and door closing. They step livelier. This speeds service. Tenants even push buttons for one another. They tell new riders what to do. Everybody's friendlier.

Tenants like to talk about this new advance in elevatoring. Word of their satisfaction spreads around town. It increases a building's prestige.

In no instance has a building switched back to attendants.

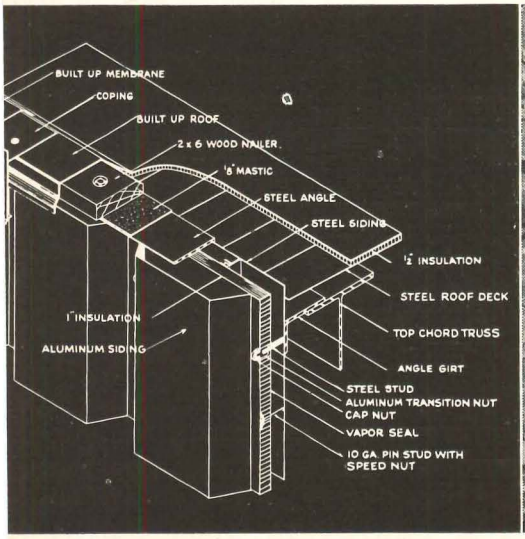
Autotronic—WITHOUT ATTENDANT—Elevatoring has been handling heavy traffic for more than two years. It offers an attractive saving in building operation. It saves up to $7,000 a car, each year. Why not visit a new or modernized installation? Ask any of our 266 offices for details.

Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.

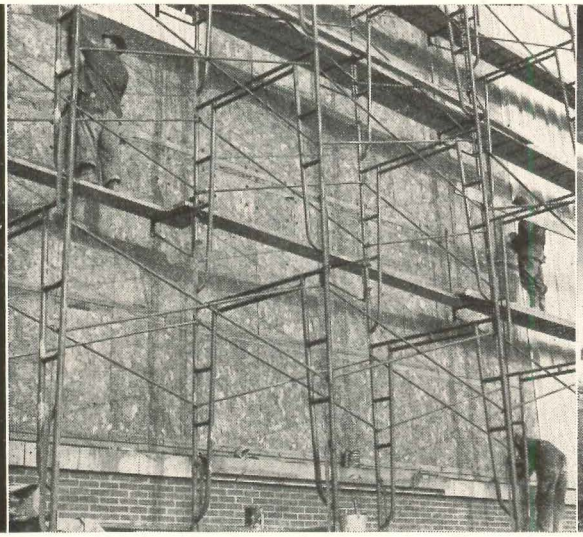
BETTER ELEVATORING IS THE BUSINESS OF OTIS

Lincoln Electric Company plant, Cleveland, Ohio. Designed and built by The Austin Company. Exterior walls of Alcoa Aluminum fabricated by Truscon Steel Company. Ornamental aluminum by Ornamental Metal Company.

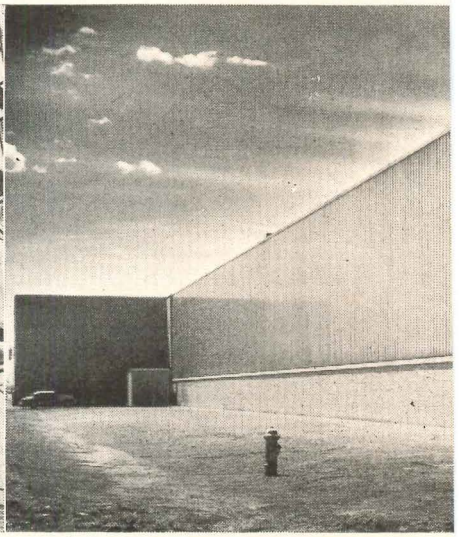
BUILT TO SAVE MONEY



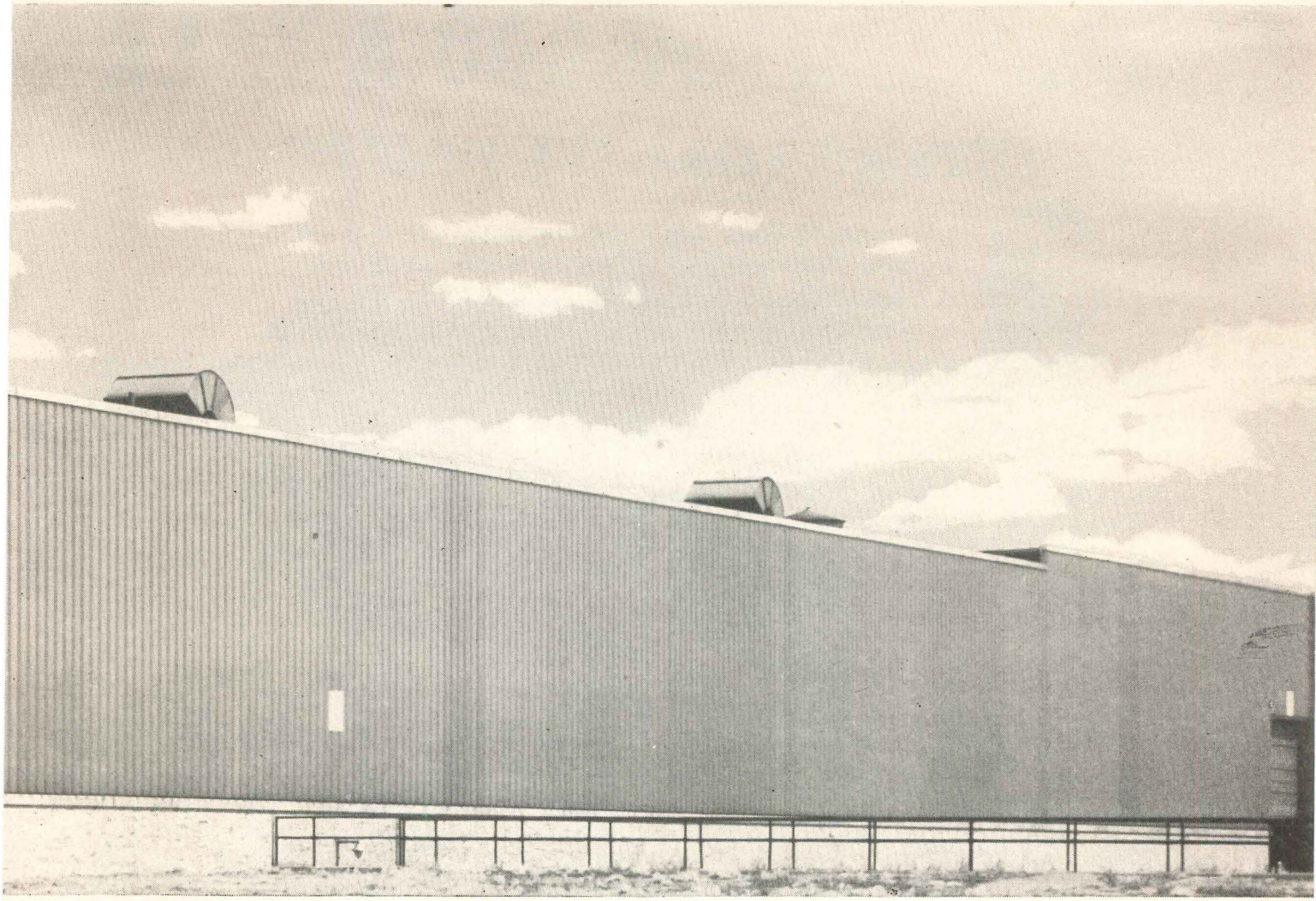
Detail of wall panel. Completed wall has heat-transfer coefficient of .25 BTU per sq ft, is 6¼ inches thick, weighs 3¾ lbs per sq ft. Compare with .50 BTU for 8 inch brick wall weighing 50 lbs per sq ft.



Speed clips over ten gauge, headless pins welded to inner wall hold Fiberglas insulation in place. Aluminum exterior panel then is fastened to studs with aluminum transition and cap nuts.



Twenty-five foot, inner (Ferroboard) panels studs fastened to girts at sill line and parall and bottom chord of trusses. Fourth girt, additional row of studs is arc welded to inn



.Inside and Out

Dedicated to a policy of constant cost reduction, Lincoln Electric Company built a complete new plant designed to slash or eliminate materials handling, storage, maintenance and other indirect production costs of manufacturing welding equipment.

Insulated, aluminum-faced panels were used for exterior walls because they were, "faster to put up, lower in cost for equal insulating value, require less maintenance."

Alcoa engineers worked with the builders of this plant as they have with the designers of nearly every pioneering use of aluminum in the building field. They will be glad to work with you. Nowhere else will you find so many men who know so much about aluminum. For information on any application of aluminum call your local Alcoa sales office or write:

ALUMINUM COMPANY OF AMERICA
1888-M Gulf Bldg. • Pittsburgh 19, Pa.

ALCOA

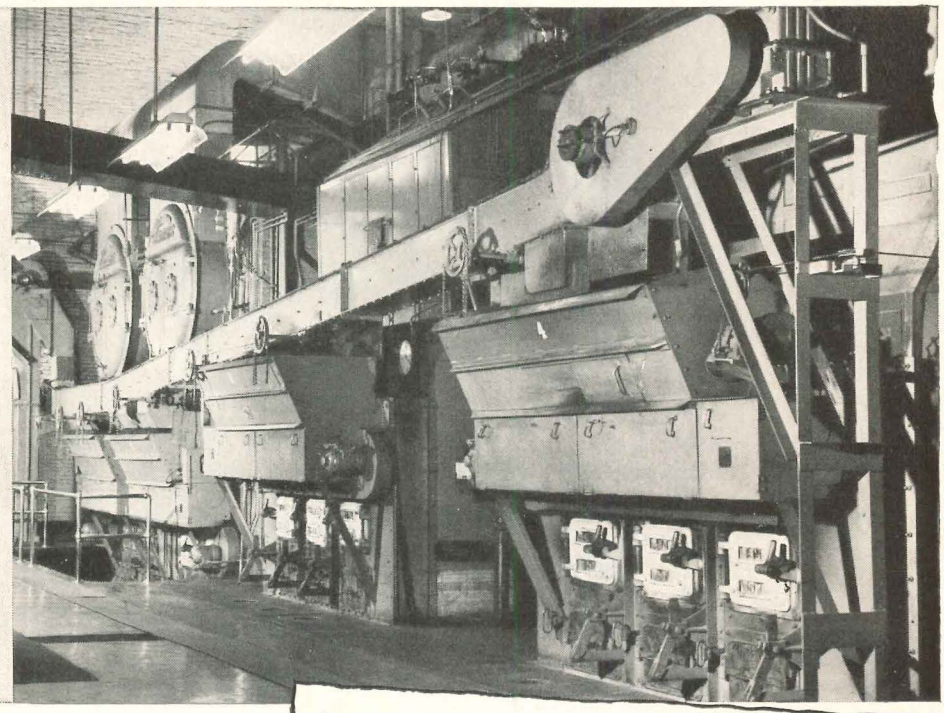
ALCOA ALUMINUM ®

FIRST IN ALUMINUM

"WE SAVE MORE THAN $50,000 A YEAR —BY BURNING COAL THE MODERN WAY!

"MODERNIZING OUR COAL INSTALLATION CUT OUR FUEL CONSUMPTION 21.4% . . . LABOR COSTS 60%!"

says Oliver Moses, 3rd, President, Worumbo Manufacturing Company, Lisbon Falls, Maine—makers of WORUMBO FABRICS.



This modernized steam plant will pay for itself in 3 years! The two new boilers shown on the right now carry the complete plant load. They replaced five boilers of the type shown on the extreme left—two of which are still in standby service. The new equipment saves Worumbo nearly 30¢ on every thousand pounds of steam. Automatic, dustless coal and ash handling has helped cut weekly labor costs from $606 to $242! The new plant has a 20% greater capacity—burns 150 *fewer* tons of coal each month.

Today coal can give you more steam per dollar than ever before. With modern combustion equipment, you can get anywhere from 10 to 40% more power from a ton of coal than was possible a few years ago. And with up-to-date automatic coal- and ash-handling systems you can cut labor costs to a minimum.

Building a new plant? Planning to modernize? Then, get the advice of a consulting engineer! He'll show you the way to *big* savings—burning coal in a modern plant designed to meet your specific needs.

Powering your plant with coal makes good sense for the future, too. Coal is the only fuel with really abundant reserves—enough to last for centuries. And this coal is supplied by the world's most efficient and productive coal industry. That's why coal is the only fuel that can offer dependable future supply and greater relative price stability.

If you operate a steam plant, you can't afford to ignore these facts!

COAL in most places is today's lowest-cost fuel.

COAL resources in America are adequate for all needs—*for hundreds of years to come.*

COAL production in the U.S.A. is highly mechanized and by far the most efficient in the world.

COAL prices will therefore remain the most stable of all fuels.

COAL is the safest fuel to store and use.

COAL is the fuel that industry counts on more and more—for with modern combustion and handling equipment, the inherent advantages of well-prepared coal net even bigger savings.

BITUMINOUS COAL INSTITUTE

A Department of National Coal Association, Washington, D. C.

FOR HIGH EFFICIENCY FOR LOW COST

YOU CAN COUNT ON COAL!

This FREE MANUAL brings you up-to-date on the use of IMPROVED PLANT LIGHTING to SOLVE defense production problems

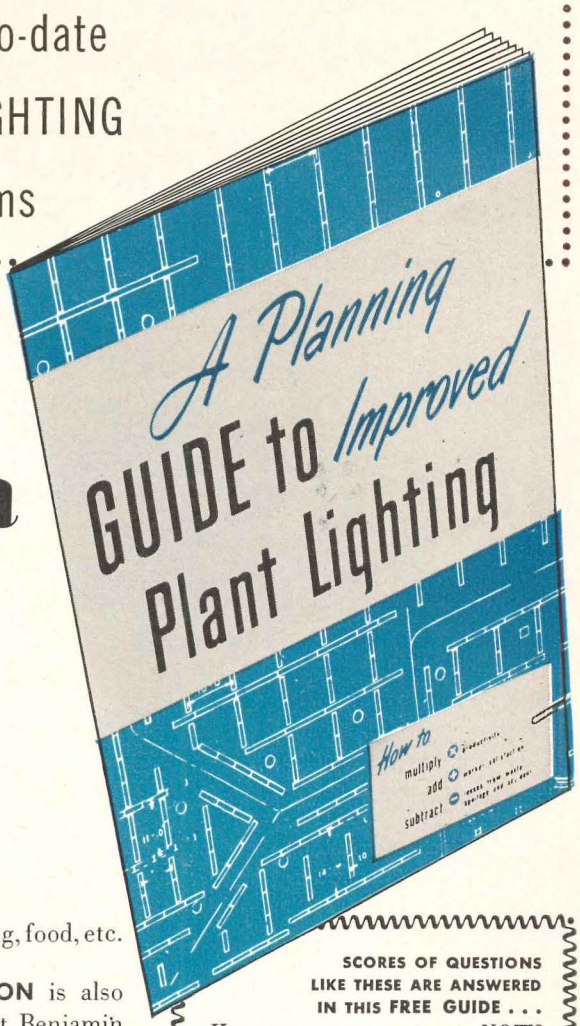
32 PAGES OF THE

Latest Lighting Data

AND OVER 50 ILLUSTRATIONS SHOWING

How Leading Factories

are obtaining more production . . . greater precision . . . fewer rejects . . . lower accident rates . . . higher employee morale through the use of the 12 BASIC BENJAMIN LIGHTING SYSTEMS and many other lighting units for special applications



PURPOSE OF THIS GUIDE is to provide you with up-to-the-minute information on the elements involved in securing *better lighting for industrial production*. It is designed to show you how to analyze lighting problems and serve as a guide to their solutions.

THE GUIDE TELLS YOU HOW Benjamin Lighting Specifications can be applied today . . . under today's conditions . . . *to meet today's production problems*, today's need for greater use of floor areas and today's problems of installation.

12 BASIC BENJAMIN LIGHTING SYSTEMS and many specialized lighting units to help solve production problems, are recommended by Benjamin. These Systems are the result of *50 years of specialization* in the lighting of all types of factories, large and small. Included are those engaged in the manufacture of essential goods, such as aircraft, guns, ships, tanks, powder, ammunition, chemicals, clothing, food, etc.

IMPORTANT INFORMATION is also included, concerning recent Benjamin developments which *facilitate maintenance, cut operating costs* and *provide sustained lighting efficiency*. Covered are such advancements as the new "Magna-Flo" Systems which utilize the new Slimline Fluorescent Lamps; "Springlox" Lampholders, which speed up fluorescent lamp maintenance; and "Turnlox" reflector equipment, which promotes simplified maintenance of incandescent units.

THE GUIDE IS WRITTEN for the busy industrial executive, engineer, foreman, architect, and all others concerned with the planning, purchasing and installation of industrial lighting equipment in plants engaged in essential production. For your free copy, sent without obligation, write today to

BENJAMIN ELECTRIC MFG. CO., DEPT. Q-1, DES PLAINES, ILLINOIS.

SCORES OF QUESTIONS LIKE THESE ARE ANSWERED IN THIS FREE GUIDE . . .

How many can you answer NOW?

What Defense Production Problems can be solved with Improved Plant Lighting?

What are the 6 steps in the initiation, development and completion of a successful planned lighting program?

How to analyze present lighting
How to determine how much light and what kind of light is needed
How to select the lighting system best suited for each lighting requirement
How to solve special lighting problems with special lighting units
How to secure specifications and estimates
How to appraise lighting equipment for plant lighting
How to determine which lighting system best answers your needs.

Attach this to your letterhead and mail to:

Benjamin Electric Mfg. Co., Dept. Q-1
Des Plaines, Illinois

Please send, without obligation, the FREE GUIDE to IMPROVED PLANT LIGHTING, containing up-to-date information on how to solve defense production problems by the application of latest lighting practices.

B-5488-R

BENJAMIN *Lighting Equipment*

SOLD EXCLUSIVELY THROUGH ELECTRICAL DISTRIBUTORS

EVERY NEEDED UNIT FOR IMPROVED PLANT LIGHTING

face the future... **FACE IT WITH REYNOLDS ALUMINUM**

Store front of Ludwig Baumann's Hartford, Conn., branch using Reynolds *Lifetime* Aluminum embossed corrugated sheet and extruded sections. Architect: Morris Lapidus, New York, Contractor: Julius Greenberg Co., Hartford.

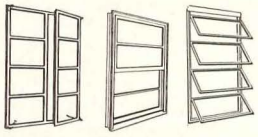
To adapt Reynolds standard aluminum building products to special purposes is an obvious economy...and a challenge to the designer's originality. Reynolds *Lifetime* Aluminum Corrugated is a good example. In .019" and .024" thickness, it is used increasingly for interior and exterior facings, ornamental trim, canopies, etc. Reynolds .032" Corrugated is, of course, a recognized specification for industrial roofing and siding.

Consider the adaptation of Reynolds Aluminum Residential Windows (casement, double-hung and awning, with fixed and picture window combinations) ...and the rustproof durability of Reynolds *Lifetime* Aluminum Gutters. Check the convenience of Reynolds Aluminum Reflective Insulation wherever you require efficiency without bulk plus perfect vapor barrier. You get the advantages of Aluminum at low initial cost and with labor-saving application through well developed methods. Write for literature. **Reynolds Metals Company**, Building Products Division, 2015 South Ninth Street, Louisville 1, Kentucky.

This Kansas City apartment building uses 306 Reynolds Aluminum casement windows. Architect: J. F. Lauck. Owner-Builder: George C. Norton. Write for catalog showing also Reynolds new awning window.

One of thirteen industrial, commercial and school buildings designed and built by George Mole in the Amityville, L. I. area—all roofed with Reynolds .032" Industrial Corrugated.

Reynolds Aluminum Reflective Insulation is a superior lamination of embossed foil on kraft paper. Double-faced (Type B) and Single-faced (Type C). In rolls of 250 sq. ft., 25", 33" and 36" wide.



Remember, aluminum flashing costs far less than any other rustproof material. Works easiest, looks best. Specify Reynolds *Lifetime* Aluminum Flashings—rolls or flat sheet.

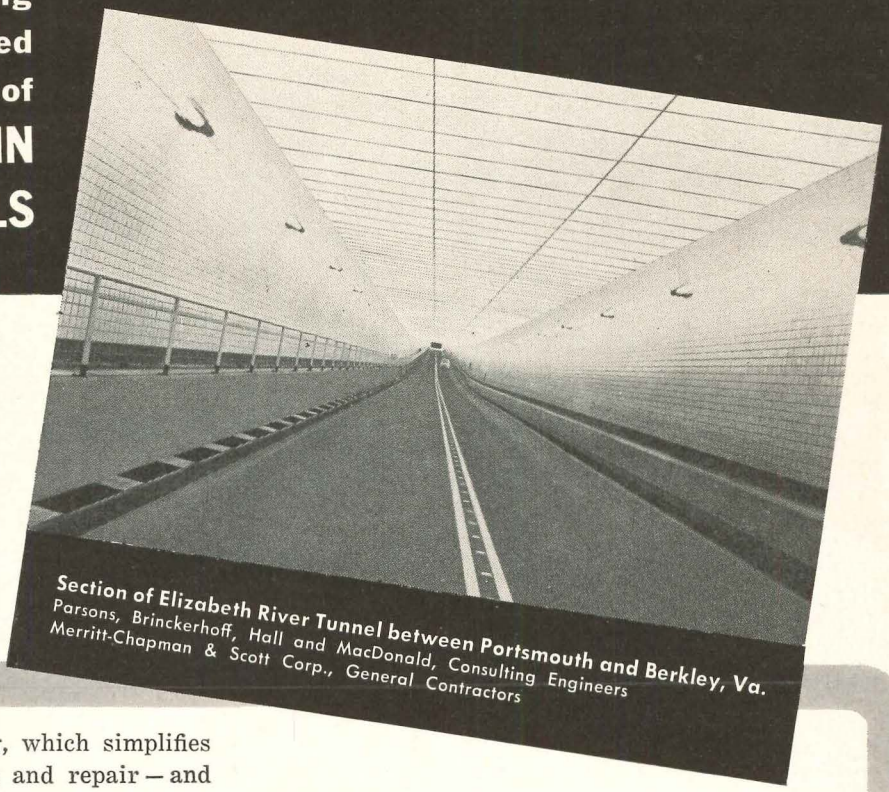
Military demands for aluminum limit supply of these products. Reynolds is rapidly expanding aluminum production. Keep checking your supply source.

REYNOLDS METALS

REYNOLDS ALUMINUM

NEW PROOF OF SEAPORCEL ADAPTABILITY

Improved Tunnel Ceiling Constructed of PORCELAIN ENAMEL PANELS



Section of Elizabeth River Tunnel between Portsmouth and Berkley, Va.
Parsons, Brinckerhoff, Hall and MacDonald, Consulting Engineers
Merritt-Chapman & Scott Corp., General Contractors

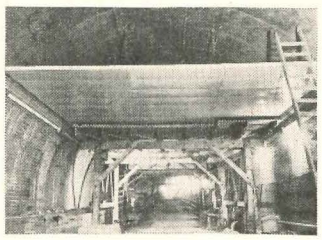
This is another example of SEAPORCEL architectural porcelain enamel adaptability ... of engineering ingenuity ... to make better use of better materials ... for today's expanding needs for greater efficiency.

This new type of ceiling, which simplifies installation, maintenance and repair — and offers important safety features — is composed of 4000 individual porcelain enameled panels measuring 7½ by 2½ feet, with a thickness of only 3 inches.

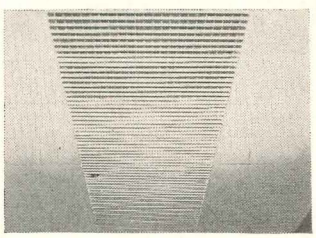
Engineered and erected by Seaporcel's own erection crews, installation was by simple and fast method and resulted in reduced field labor costs. This Seaporcel porcelain enamel ceiling is highly resistant to rapid change in temperature and remains unharmed up to 1600 degrees Farenheit.

Almost one mile of Seaporcel Porcelain Enamel Flush Type Patented Handrails line the tunnel. Designed with concealed internal fastenings, completely prefit, readily installed and eliminating on-the-job welding.

FOR SOME JOB ... SOMEWHERE ... YOU CAN USE SEAPORCEL*



View of construction detail.



One of numerous porcelain enamel ventilating louvers.

For suggestions on how Seaporcel can help you, ask for our field representative to call, or write for typical detail folder No. 2

SEE OUR CATALOG IN SWEET'S 1953

Seaporcel

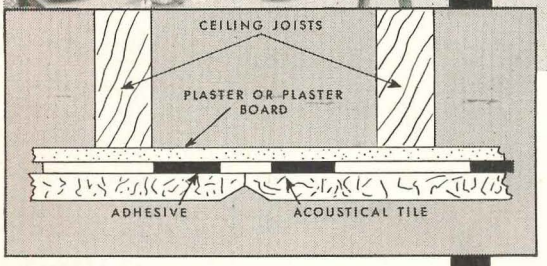
SEAPORCEL METALS, INC.
2800 Borden Avenue
Long Island City 1, New York

SEAPORCEL PACIFIC, INC.
1461 Canal Avenue
Long Beach 13, California

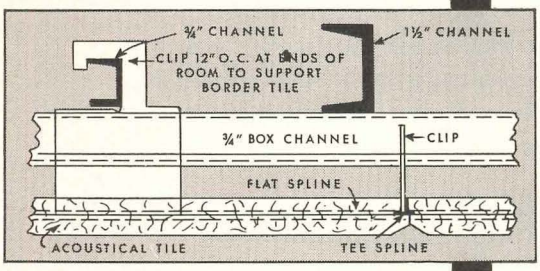
ARCHITECTURAL PORCELAIN ENAMEL Member: Porcelain Enamel Institute A. F. OF L. METAL FABRICATING & ENAMELING PLANTS

*Reg. U.S. Pat. Off.

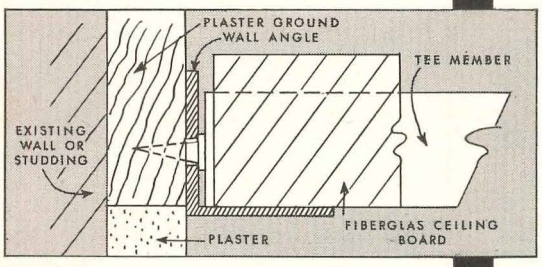
COMPLETE ENGINEERING & ERECTION DEPARTMENTS



ADHESIVE APPLICATION



MECHANICAL APPLICATION
(TILE)



MECHANICAL APPLICATION
(CEILING BOARD)

Quiet, Fire safe Beauty

that's easy to install...

Whether you plan an acoustical ceiling for a new building, or include it as part of a remodeling scheme, Fiberglas* Sound Control Products are easily installed. They offer the advantage of being light in weight, with resultant savings in suspension system materials and installation time.

Easy-to-handle Fiberglas Textured, Perforated and Sonofaced* Tiles—or Fiberglas Ceiling Board for large-area, low-cost suspended ceilings—offer a wide selection of practical acoustical materials and bring distinctive beauty to your plan, too. Fire safety is an important factor and many Fiberglas Sound Control Products are available with the Underwriters' Laboratories Label.

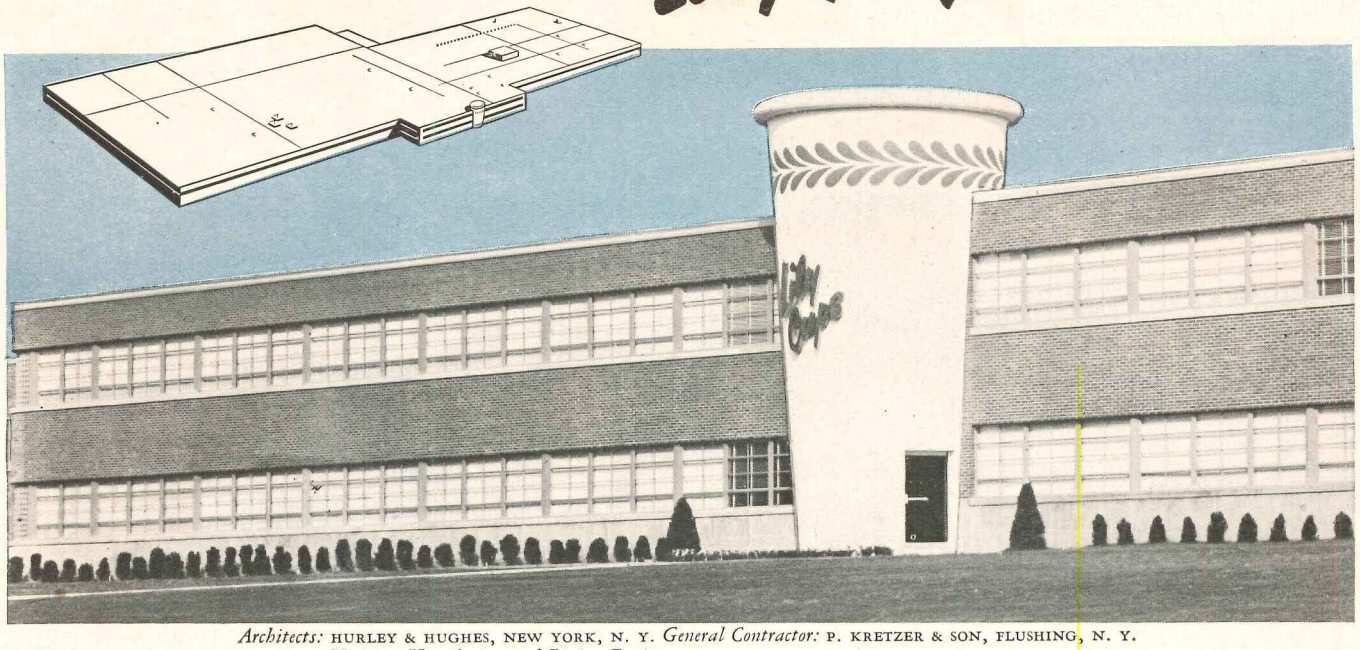
So for complete data, including installation methods, call your Fiberglas Acoustical Contractor listed in the yellow pages of the telephone book, or write: Owens-Corning Fiberglas Corporation, Dept. 68-L, Toledo 1, Ohio.

OWENS-CORNING
FIBERGLAS
SOUND CONTROL PRODUCTS

Textured, Perforated and Sonofaced* Acoustical Tile • Ceiling Board (Painted and Sonofaced) • Noise-Stop* Baffles

*Fiberglas (Reg. U.S. Pat. Off.) and Sonofaced and Noise-Stop are trade-marks of Owens-Corning Fiberglas Corporation for a variety of products made of or with fibers of glass.

newest *Lily-Tulip* plant



Architects: HURLEY & HUGHES, NEW YORK, N. Y. *General Contractor:* P. KRETZER & SON, FLUSHING, N. Y.
Heating, Ventilating and Piping Engineers: ABBOTT, LESTER & CO., NEW YORK, N. Y.

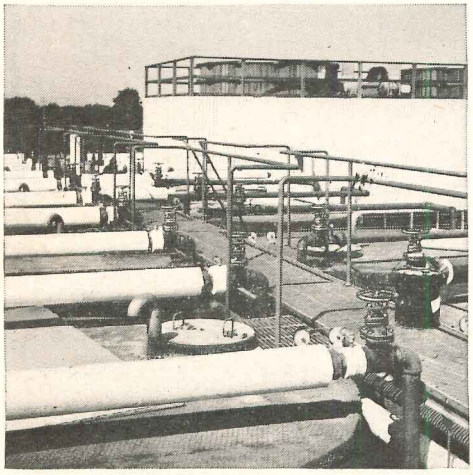
equipped with JENKINS VALVES for peak operating efficiency

"All this to make a paper cup!" exclaim visitors, viewing the more than 1000 ft. long modern plant of the Lily-Tulip Cup Corporation completed recently in Springfield, Mo. Even more impressive is the amount of long-range planning required to attain and *maintain* peak operating efficiency in so massive a building.

With its eleven different service pipelines, as well as a giant air-conditioning and humidity control system, the choice of valves for this plant required future-minded planning. Only after careful comparison of performance in all types of services, and of maintenance economy records, was the decision made to standardize on Jenkins Valves.

This confidence in the demonstrated *extra measure* of efficiency and economy provided by Jenkins Valves is shared by plant operating management in every type of industry.

Despite this extra value, *you pay no more* for Jenkins Valves. For new installations, for all replacements, let the Jenkins Diamond be your guide to lasting valve economy. Jenkins Bros., 100 Park Ave., New York 17.



JENKINS
LOOK FOR THE DIAMOND MARK
VALVES
SINCE 1864
TRADE JENKINS MARK
Jenkins Bros

Miles of piping includes service lines for water, steam, gas, compressed air, vacuum and liquid paraffin, as well as fire protection lines with 4,500 sprinkler heads. Gate valves on water lines feeding the evaporative roof cooling system are shown above, some of the thousands of Jenkins Valves installed at control points throughout the plant.

REVERE COPPER FLASHING

SURVIVES 3 HURRICANES, 4 ROOFS AND 16 YEARS OF RUGGED WEAR WITHOUT ONE LEAK!

ANOTHER CASE OF COPPER WHERE IT COUNTS! Sixteen years ago Revere Copper Flashing was applied to the "Home of the Century, Atlantic City, N. J." It has seen 3 hurricanes blow by and has survived, 4 roofs, but has remained watertight the entire time. An outstanding performance to be sure. But let's not give copper all the credit; proper installation had a lot to do with this performance, too. So, for a trouble-free flashing job, first specify or use easy-to-work, non-rusting, long-lasting Revere Copper; second, make sure it's properly installed.

For through-wall applications, ask the Revere Distributor about Revere Keystone Thru-Wall Flashing*. He also will advise you of the availability of materials and put you in touch with Revere's Technical Advisory Service should you want to discuss your technical problems.

* PATENTED

REVERE

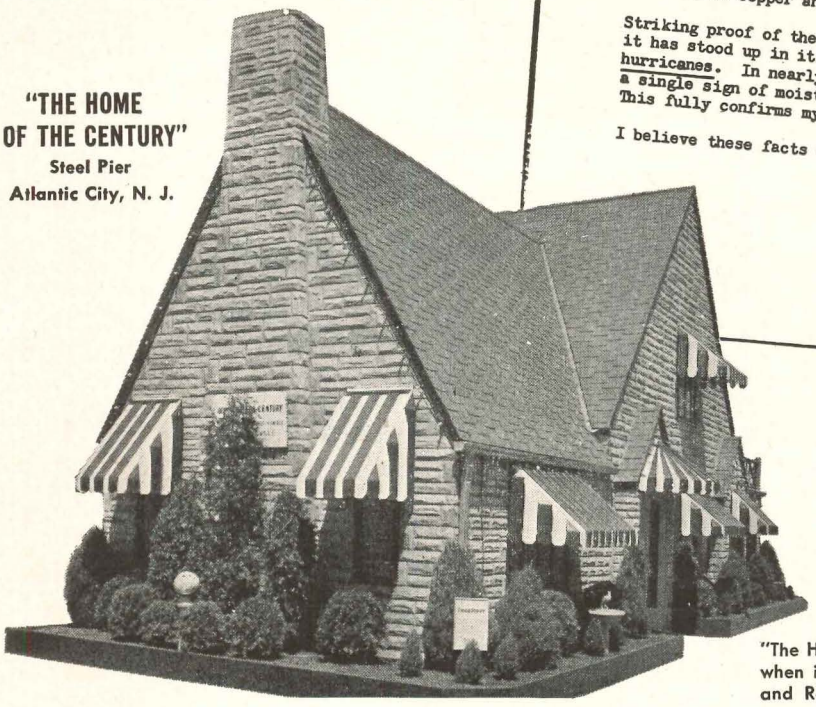
COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, New York

Mills: Baltimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y. Sales Offices in Principal Cities, Distributors Everywhere

SEE REVERE'S "MEET THE PRESS" ON NBC TELEVISION EVERY SUNDAY



"THE HOME OF THE CENTURY"
Steel Pier
Atlantic City, N. J.

·WM · F · B · KOELLE ·
· ARCHITECT ·
·122·So·17TH·STREET·
· PHILA. ·

May 1, 1946

Revere Copper and Brass Incorporated
230 Park Avenue
New York 17, N. Y.

Dear Sirs:

In answer to your question as to why I selected Revere sheet copper for all gutters, eaves, valleys, flashing and conductors on The Victory Home of the Century, I would like to explain my basic idea in designing and building this house.

My wish is to stimulate interest in building better homes. Naturally, The Victory Home of the Century is completely equipped with every convenience, and is beautifully decorated--for I want our visitors to know how deeply comfortable and attractive a moderate priced home can be made.

But this is not enough. The unseen parts of a house must be equally fine if the home is to be a place of happiness and freedom from care through the years. I have stressed this point with our visitors. And I have built accordingly.

I selected Revere copper for all exterior sheet metal construction because of Revere's experience as the oldest fabricator of metals in America. I am familiar with Revere's extensive research in sheet copper for building, and I know that there is no more imperishable material that can be used to seal a building against rain, snow, moisture and wind than Revere copper. The same reasoning holds true for the plumbing and piping, which are also of copper and brass.

Striking proof of the matchless performance of Revere copper is the way it has stood up in its exposed position on the Steel Pier through two hurricanes. In nearly ten years not a trace of a leak has occurred. Not a single sign of moisture has ever appeared on inside walls and ceilings. This fully confirms my own confidence in the lifetime service of copper.

I believe these facts are important to all who expect to build.

Very truly yours,

Wm. F. B. Koelle

Wm. F. B. Koelle, Architect

NOTE: "Since writing the above letter 6 years ago we have had, last fall a year ago, another hurricane, violent enough to tear a large section of the Brighton Hotel Solarium away. Still not a leak occurred in 'The Home of the Century.'

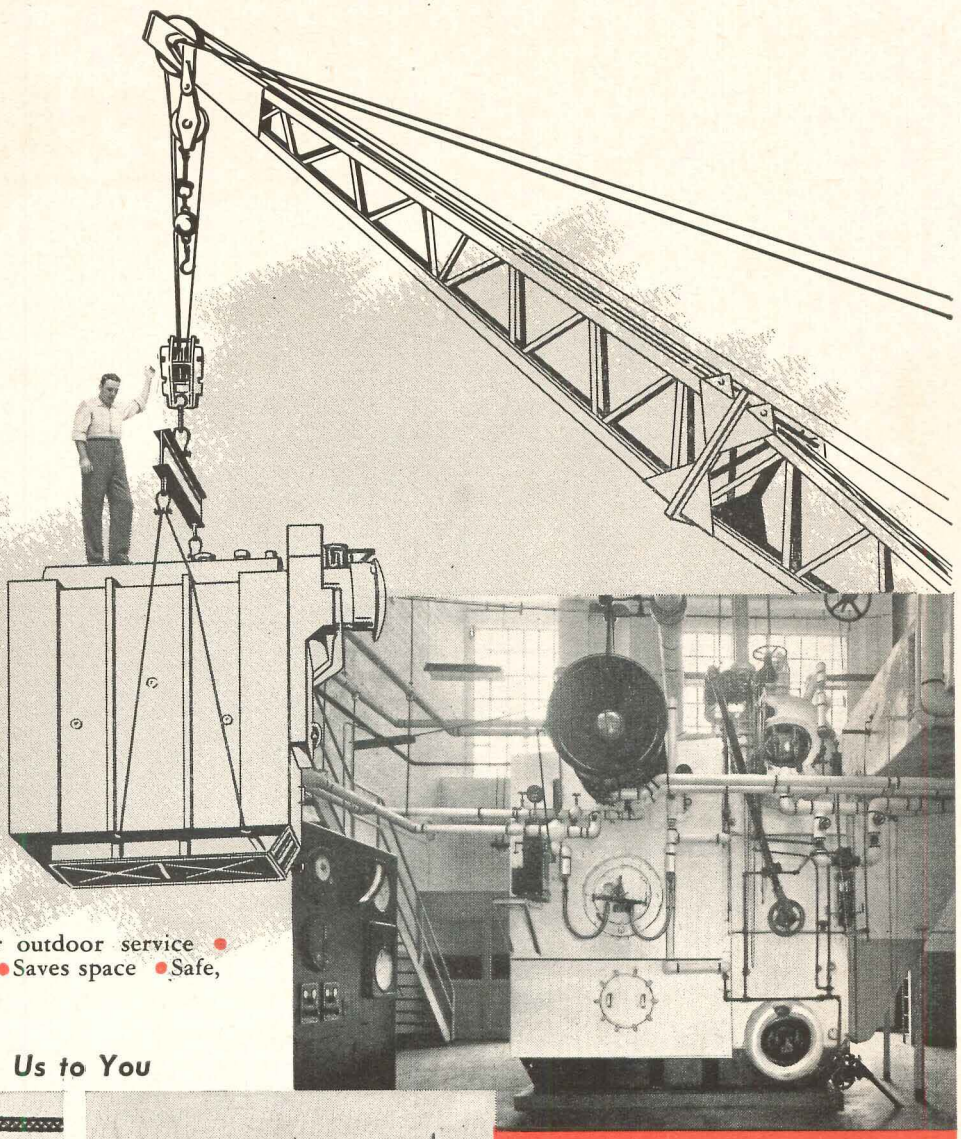
"Four different manufacturers' roofs have been applied to the 'Home' in the past 16 years, but the original Revere Copper valleys and flashings are still intact."

Wm. F. B. Koelle

"The Home of the Century" was flashed with Revere Copper when it was erected in 1936. Revere Copper Water Tube and Revere Brass Pipe also were installed at that time.

IF YOU WANT TO

Bring Steam Costs Down

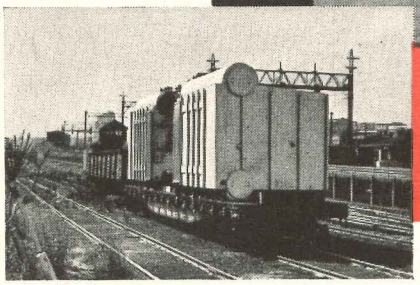


CONSIDER THIS
Factory-assembled, Self-contained B&W Integral-Furnace Boiler, Type FM

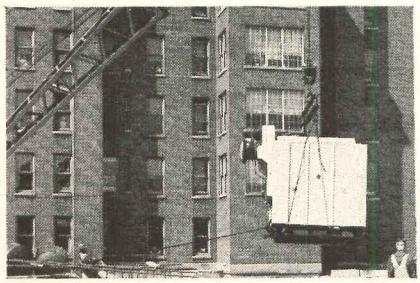
- Saves erection time and cost
- Meets wide range of services
- Handles quick load changes
- Fast steaming
- Low maintenance
- Easy accessibility
- Suitable for outdoor service
- Burns oil and or gas
- Saves fuel
- Saves space
- Safe, automatic operation.

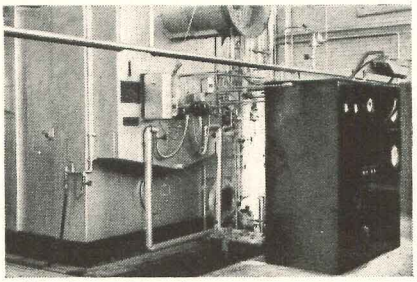
It Is Easily Shipped from Us to You

By Truck . .



. By Rail





Set it down where you want it . . . Set it up in a hurry

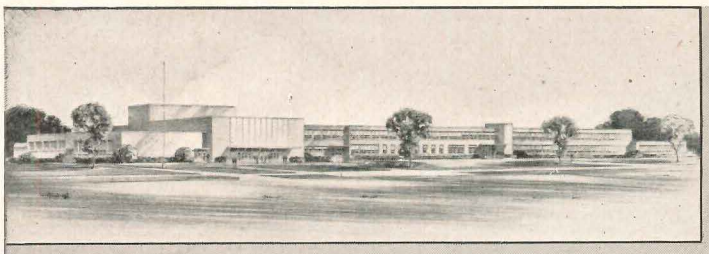
Steam Capacities 2900 to 28,000 lb. per hr. at 15 to 250 psi

There's no law against buying more than one FM unit if you need BIG BOILER capacity. Many companies have, and pocketed the money they would otherwise have spent tearing their buildings apart to put in a large boiler. Ask your nearest B&W man to explain the economical service you can expect from Type FM boilers . . . or send for Bulletin G-76.

THE BABCOCK & WILCOX COMPANY
BOILER DIVISION
85 Liberty Street, New York 6, N. Y.

B&W **BABCOCK & WILCOX**

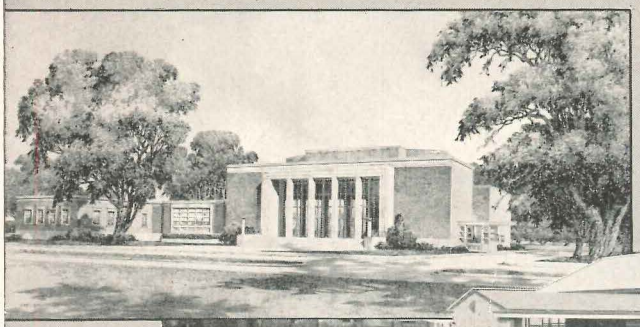
G-564



1

modern schools and universities everywhere

choose G-J Door Devices



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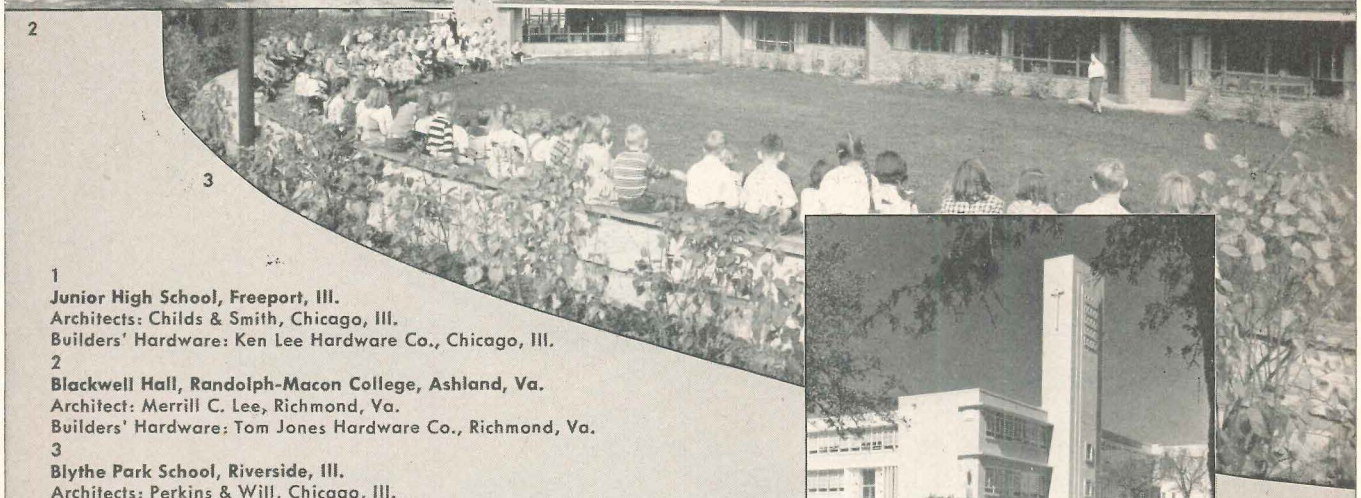


3

4

1
Junior High School, Freeport, Ill.
Architects: Childs & Smith, Chicago, Ill.
Builders' Hardware: Ken Lee Hardware Co., Chicago, Ill.

2
Blackwell Hall, Randolph-Macon College, Ashland, Va.
Architect: Merrill C. Lee, Richmond, Va.
Builders' Hardware: Tom Jones Hardware Co., Richmond, Va.

3
Blythe Park School, Riverside, Ill.
Architects: Perkins & Will, Chicago, Ill.
Builders' Hardware: Clark-Barlow Hardware Co., Chicago, Ill.

4
Incarnate Word High School, San Antonio, Texas
Architects: Julian & White, San Antonio, Texas
Builders' Hardware: Dumas Hardware Co., San Antonio, Texas

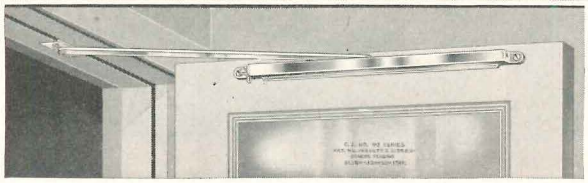
For over a quarter century Glynn-Johnson has manufactured door devices and specialties of original distinctive design. The quality built into each G-J product renders long, hard service for the protection and control of all types of doors in educational buildings.

Refer to G-J Catalog for complete line of door holders, bumpers, and specialties.

Floor Type

Push and Pull Action

DOOR HOLDERS AND BUMPERS



OVERHEAD DOOR HOLDER Surface Type

Floor Type

HERCULES DOOR HOLDER

DOOR BUMPER
Dome Type

Glynn-Johnson Corporation

Builders' Hardware Specialties for Over 25 Years

4422 N. Ravenswood Ave. *Chicago 40, Illinois*

G-J devices for all types of doors in modern school buildings:

Overhead Door Holders • Wall Type Stops and Bumpers
Transom Adjusters • Floor Type Holders and Bumpers

CUT voltage loss to a minimum

with re-designed high efficiency feeder busduct

IT'S THE LAST WORD in efficient, flexible and economical power distribution from service entrance to distribution center, from generator to switchboard and from switchboard to distribution center.

Re-designed, inside and out, to assure maximum efficiency, Ⓕ High Efficiency Feeder Busduct has proven, in actual tests, that it will *reduce voltage loss to less than 2 volts per 100 feet at 80 percent power factor.*

Made for either indoor or outdoor installation, this new, more efficient method of power transmission has smaller size enclosures, less weight, and perforated sectional covers — top and bottom — for maximum heat dissipation.

Conductors are insulated with varnished cambric tape and plastic type tape for maximum protection. Joints are electrosilver plated (by immersion) for better low resistance contact and secured by either two or four brass jam bolts that fit into elongated fastening holes to allow for expansion, and phosphor bronze-cupped washers to maintain pressure.

The fact that sections can be run either vertically or horizontally, up and around pipes and other difficult angles and through walls, floors and ceilings, makes this type Ⓕ Feeder Busduct even more desirable.

Ⓕ High Efficiency Feeder Busduct is available in capacities, from 600 to 4,000 amps., 600 volts single phase for welder service, three phase for power, three-phase, four wire service for light and power.

For additional details, consult your nearest Ⓕ representative listed in Sweets. He'll gladly tell you more about this modern, more efficient system of power and light distribution.

Frank Adam Electric Co.

P. O. BOX 357 ST. LOUIS 3, MISSOURI

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Makers of BUSDUCT • PANELBOARDS • SWITCHBOARDS • SERVICE EQUIPMENT • SAFETY SWITCHES • LOAD CENTERS • QUIKHETER

Johns-Manville Permacoustic*

. . . a decorative acoustical unit

Specify Permacoustic for ceilings that provide maximum acoustical efficiency, unusual beauty and fire safety

Johns-Manville Permacoustic is exceptionally sound-absorbent, attractive and noncombustible. Its random-fissure surface increases its noise-reduction qualities and provides texture and decorative interest.

Made of baked rock wool fibres, molded into 12″ square panels ¾″ thick, J-M Permacoustic is fireproof . . . *meets all building code fire-safety requirements.*

Permacoustic is easy to install on existing ceilings or slabs, or by suspension using a spline system of erection.

Send for your free copy of the new brochure about Permacoustic. Write Johns-Manville, Box 158, New York 16, New York. In Canada, write 199 Bay Street, Toronto 1, Ontario.

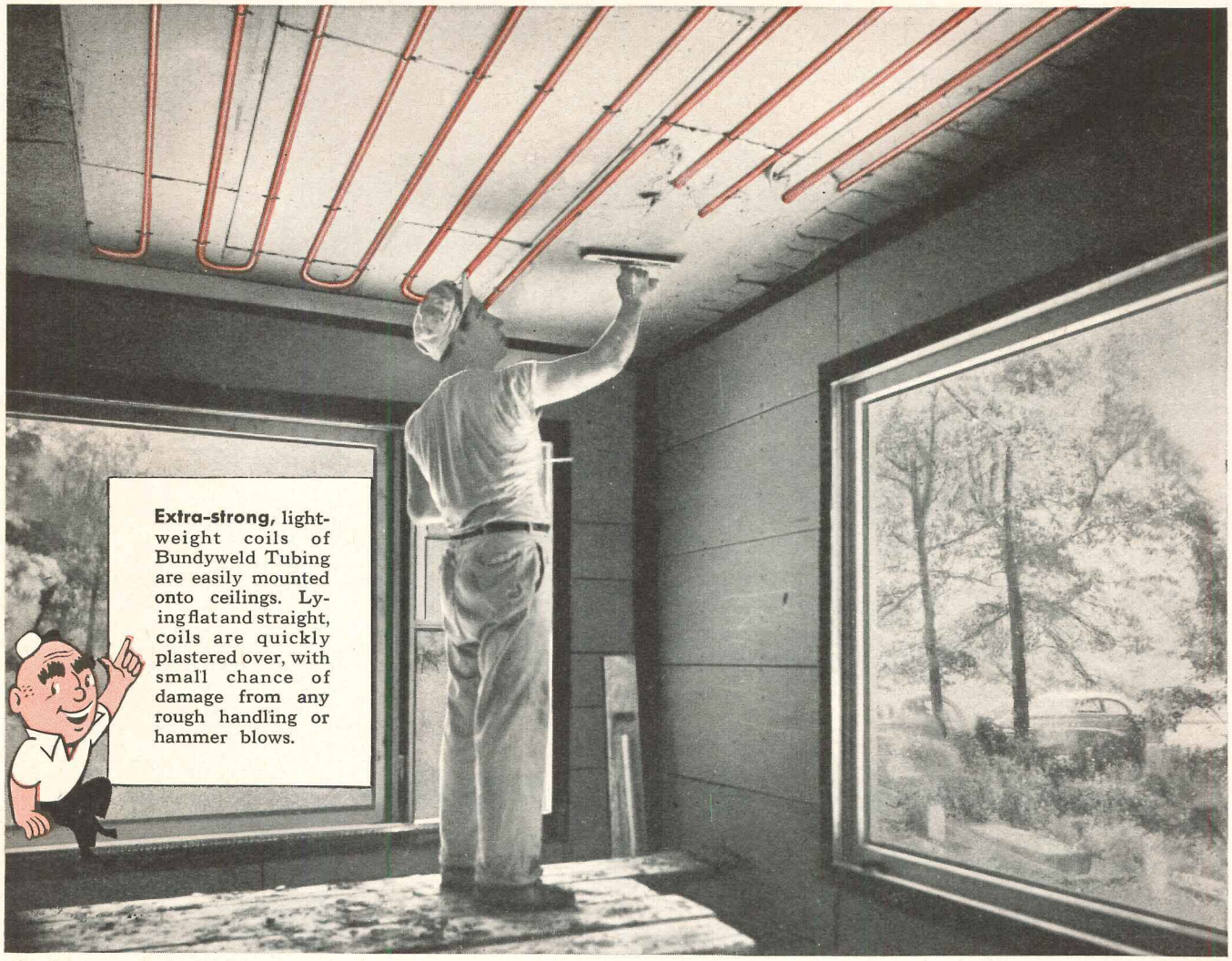
*Reg. U. S. Pat. Off.

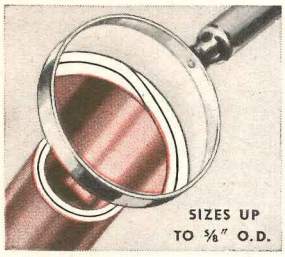
DESCRIPTION AND DATA CHART, ¾″ thickness—12″ x 12″—color, white

mounting	acoustical efficiency 125	250	500	1000	2000	4000	noise reduction coefficient	weight per sq. ft.	test no.
No. 1—cemented to plaster board	.04	.21	.75	.88	.85	.77	.65	1.3	A51-98
No. 7—furred by 1″x2″ wood strips 12″ o.c.	.56	.53	.60	.73	.88	.88	.70	1.3	A51-99

JOHNS-MANVILLE JM PRODUCTS **Johns-Manville**

J-M Acoustical Materials include Sanacoustic* Units, Transite* Acoustical Panels, and drilled Fibretone*





Key to Low Cost

Bundyweld is the only tubing double-walled from a single strip, copper-brazed through 360° of wall contact. It's leakproof, thinner walled, yet stronger. It transmits heat quickly, has high bursting strength. It saves on material costs and installation time.

Standard 20′ or 24′ lengths of Bundyweld are easily formed into coils in shop or on job site. Expanded ends (furnished when specified) are quickly soldered into leakproof union. Joined, lightweight coils are easily mounted onto ceiling, quickly plastered over.

Now—the new sales feature your houses need...Bundyweld Ceiling Radiant Heating

Today, every house features sleek, shining kitchens and bathrooms. Buyers demand them.

But here, in Bundyweld Ceiling Radiant Heating, is the exciting *new* sales feature that will put your houses years ahead of competition.

This is heating that outmodes all other heating systems. It's the cleanest, most comfortable, economical and convenient of all. Imagine offering your prospects heating that will cut housekeeping chores by hours, that will reduce fuel bills sharply, that will postpone their wall washing, redecorating and cleaning of furnishings for years.

Chances are that your prospects have already heard about this wonderful new heating system. Enthusiastic users are spreading the good news among their friends. Millions are reading Bundy ads in *Better Homes & Gardens* and *American Home*. They're rushing coupons through the mail to request literature. They're writing for the names of builders and architects handling Bundyweld Ceiling Radiant Heating *in their areas.* Send for your free literature, too.

Radiant Heating Division

BUNDY TUBING COMPANY

Detroit 14, Michigan

SEND FOR FREE LITERATURE!

Bundyweld
Ceiling Radiant Heating

Radiant Heating Division, Dept. AR-1252
Bundy Tubing Company, Detroit 14, Mich.

☐ Send free 20-page nontechnical brochure explaining Bundyweld Ceiling Radiant Heating.

☐ Send Bundy technical radiant heating pamphlet.

Name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____

Westinghouse Slashes Costs!

Cuts style numbers of all AB Circuit Breakers by half; now rate breakers 600 volts a-c* — 250 volts d-c;* saves time, saves space, increases stock flexibility

EQUIPMENT BUILDERS! SAVE THESE 5 WAYS!

FASTER JOB LAYOUT . . . Reducing style numbers by half simplifies and speeds the work of specifying engineers. No change in breaker design, dimensions or drawing.

EASY ORDERING . . . 49% fewer style numbers speeds purchasing, cuts catalog work.

LESS INVENTORY . . . Simplifies record keeping for stores' supervisors. Saves space.

MORE FLEXIBILITY . . . In stocking, one breaker takes the place of two.

BETTER CUSTOMER SERVICE . . . With the same or even less investment in circuit breakers, full line inventory broadens the base of types immediately available for special jobs and emergencies.

No other manufacturer can offer such a diversified line of molded case breakers. Call your Westinghouse representative for full details, or write for free booklet B-5407, Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-30127

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AB CIRCUIT BREAKERS

THE COMPLETE LINE

Except P-1, Quicklag® and E Breakers

You get the same strength with less steel

when you use American Welded Wire Fabric

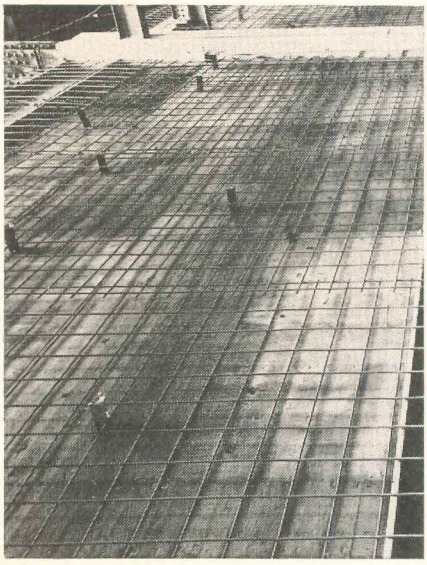
● A quick glance at the American Concrete Institute Code will show you how to save steel by buying American Welded Wire Fabric for concrete reinforcement.

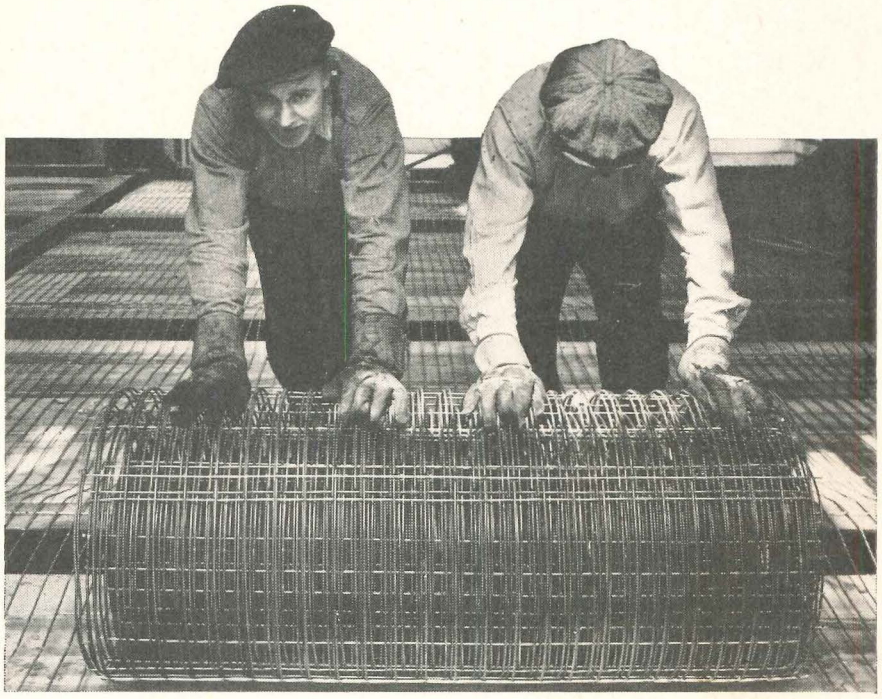
In the first place, American Welded Wire Fabric is allowed a 40% greater working stress than ordinary reinforcing materials. That's because our fabric is manufactured by the electric welding process from *cold drawn* steel wire having a guaranteed yield strength of 56,000 psi. Compare that to other reinforcing materials! Also, cold drawn wire has no well-defined yield point. It continues to resist stress throughout its entire strength range. And the ultimate tensile strength is *70,000* psi. Each welded intersection of the wire in the fabric provides special anchorage of the reinforcing members in the concrete slab.

When you use American Welded Wire Fabric for reinforced concrete walls, you can use *28% less steel area* than with ordinary reinforcing materials. You just don't have to buy so much steel to do your job. This specification is partly due to the high strength of American Welded Wire Fabric, and to its efficient bond provided by small high strength members closely spaced and by the positive anchorage provided by the cross wires rigidly welded to the longitudinal wires.

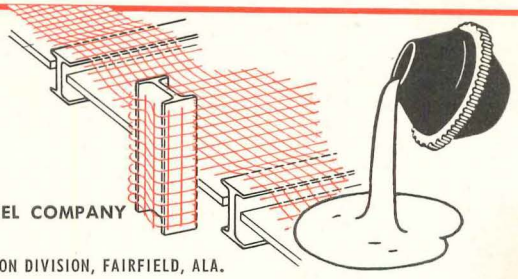
But here's the best part: American Welded Wire Fabric is a prefabricated reinforcing material that is easy to install. Labor costs for placing will go down drastically. As a matter of fact, installation is so easy that there's simply no comparison with other materials.

Many standard designs and sizes are now available from jobbers' and dealers' stocks as well as prompt mill shipments to identified projects. Present CMP Regulations assure adequate warehouse stock of Welded Wire Fabric. If you would like further information, or literature, just drop a line to our nearest sales office.





This sketch shows where American Welded Wire Fabric is used in modern concrete buildings. It reinforces walls, floors and roofs, can be draped over beams and girders and wrapped around pillars. Many uses of concrete in irregular structural shapes are made practical by American Welded Wire Fabric reinforcement.



AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL COMPANY
GENERAL OFFICES: CLEVELAND, OHIO
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO · TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

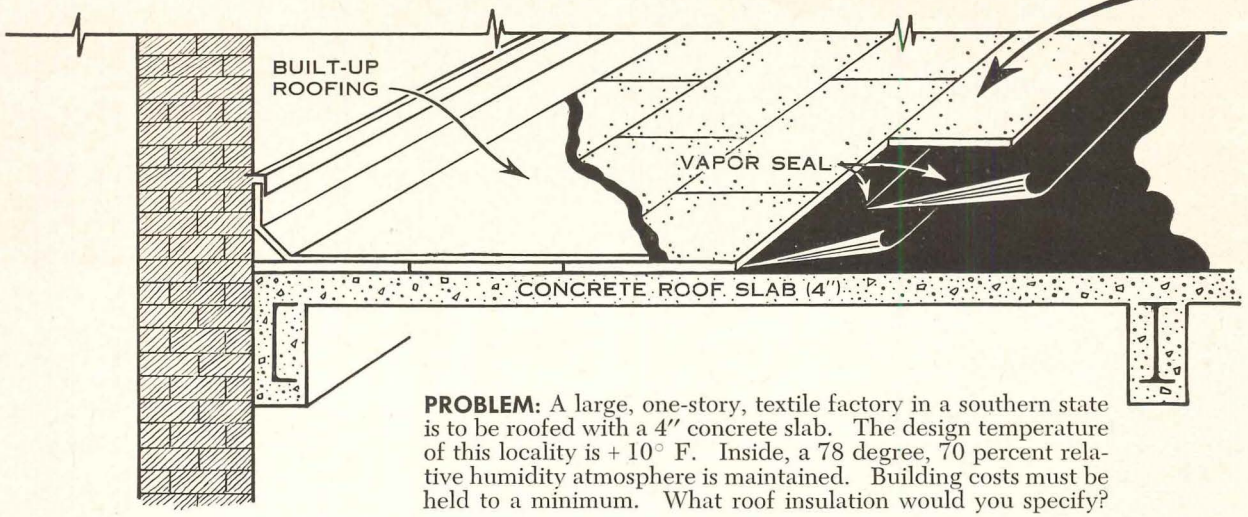
Every type of concrete construction needs

U·S·S AMERICAN WELDED WIRE FABRIC

reinforcement

UNITED STATES STEEL

How would you insulate this roof?



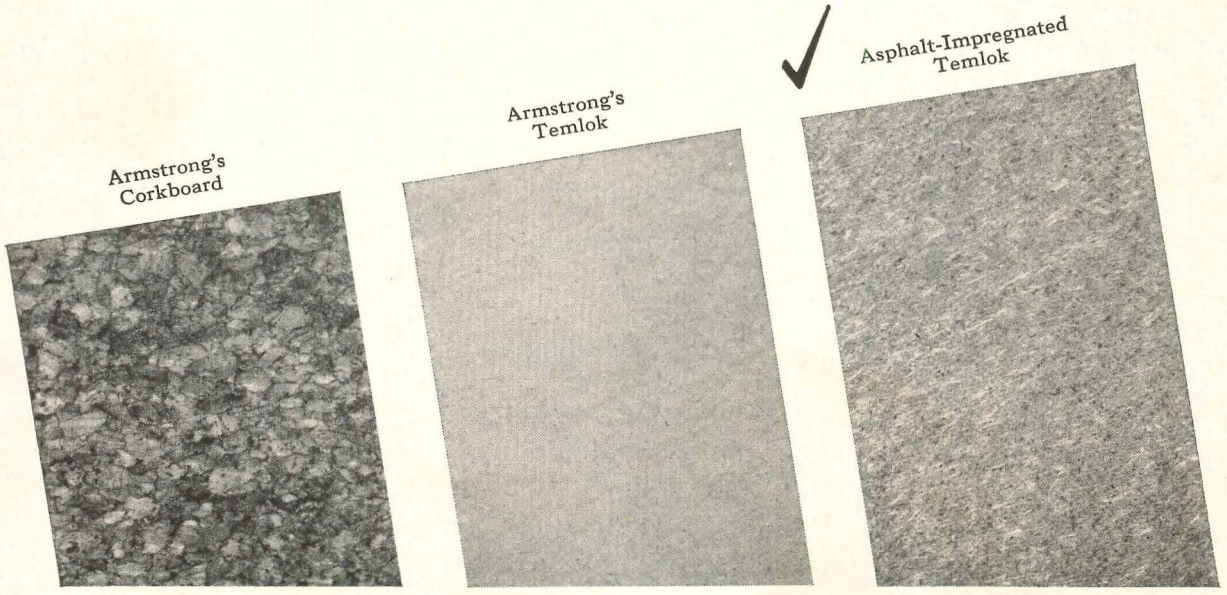
PROBLEM: A large, one-story, textile factory in a southern state is to be roofed with a 4″ concrete slab. The design temperature of this locality is + 10° F. Inside, a 78 degree, 70 percent relative humidity atmosphere is maintained. Building costs must be held to a minimum. What roof insulation would you specify?

SOLUTION: Economy, insulating efficiency, and extra resistance to moisture in the case of this high-humidity textile plant are the chief factors to consider. Armstrong's Asphalt-Impregnated Temlok® is the standard choice of many architects for such a job. A 1″ thickness of this material used over a vapor seal prevents condensation and provides the roof with the best of low-cost, efficient insulation. High resistance to moisture makes this type of Temlok especially practical for textile mills, laundries, and other buildings where humidity creates problems and where low cost is important.

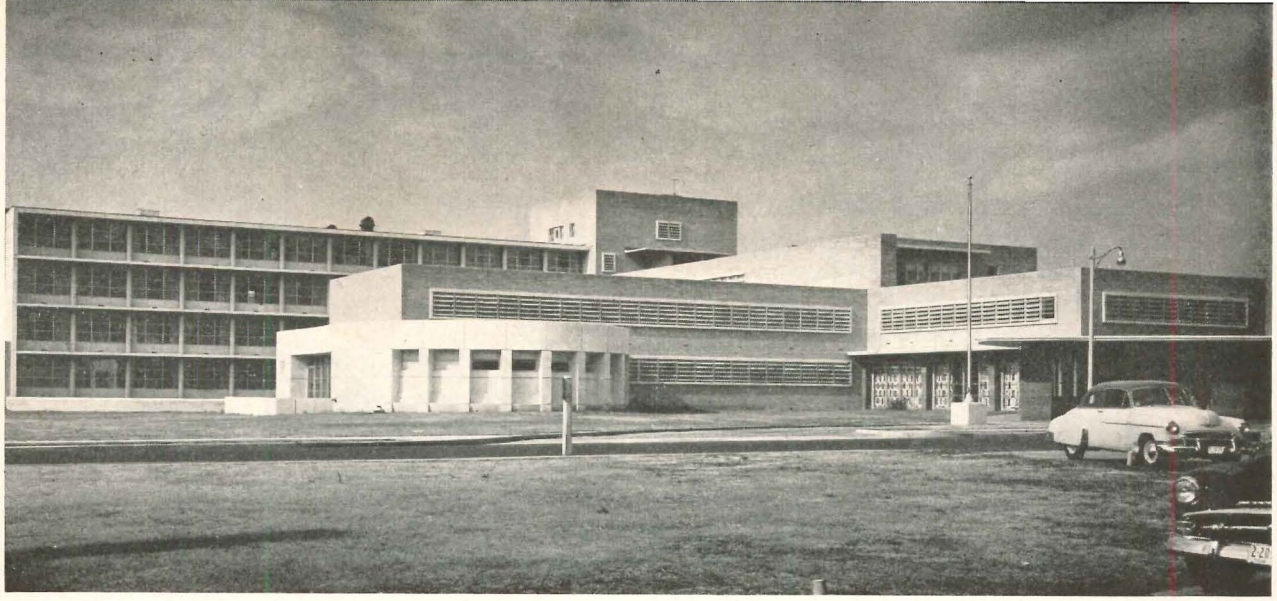
Asphalt-Impregnated Temlok is a sturdy, pine fiberboard, impregnated with a special asphaltic compound. Each individual fiber is coated to provide a waterproofing seal. This asphalt impregnation also gives it many advantages over other fiberboards, including greater edge and transverse strength. This extra strength helps reduce breakage during handling and cuts down waste. During installation, hot asphalt or pitch bonds securely with the firm surface of the Asphalt-Impregnated Temlok, yet very little is absorbed by the board.

There are Armstrong roof insulations to meet all requirements. Where service conditions are exceptionally demanding, you may want to specify Armstrong's Corkboard Roof Insulation. For normal, low-budget jobs, Armstrong's Temlok is the ideal material. For full details, call your nearest Armstrong office or write to Armstrong Cork Company, 2412 Concord Street, Lancaster, Pennsylvania.

ARMSTRONG'S ROOF INSULATIONS

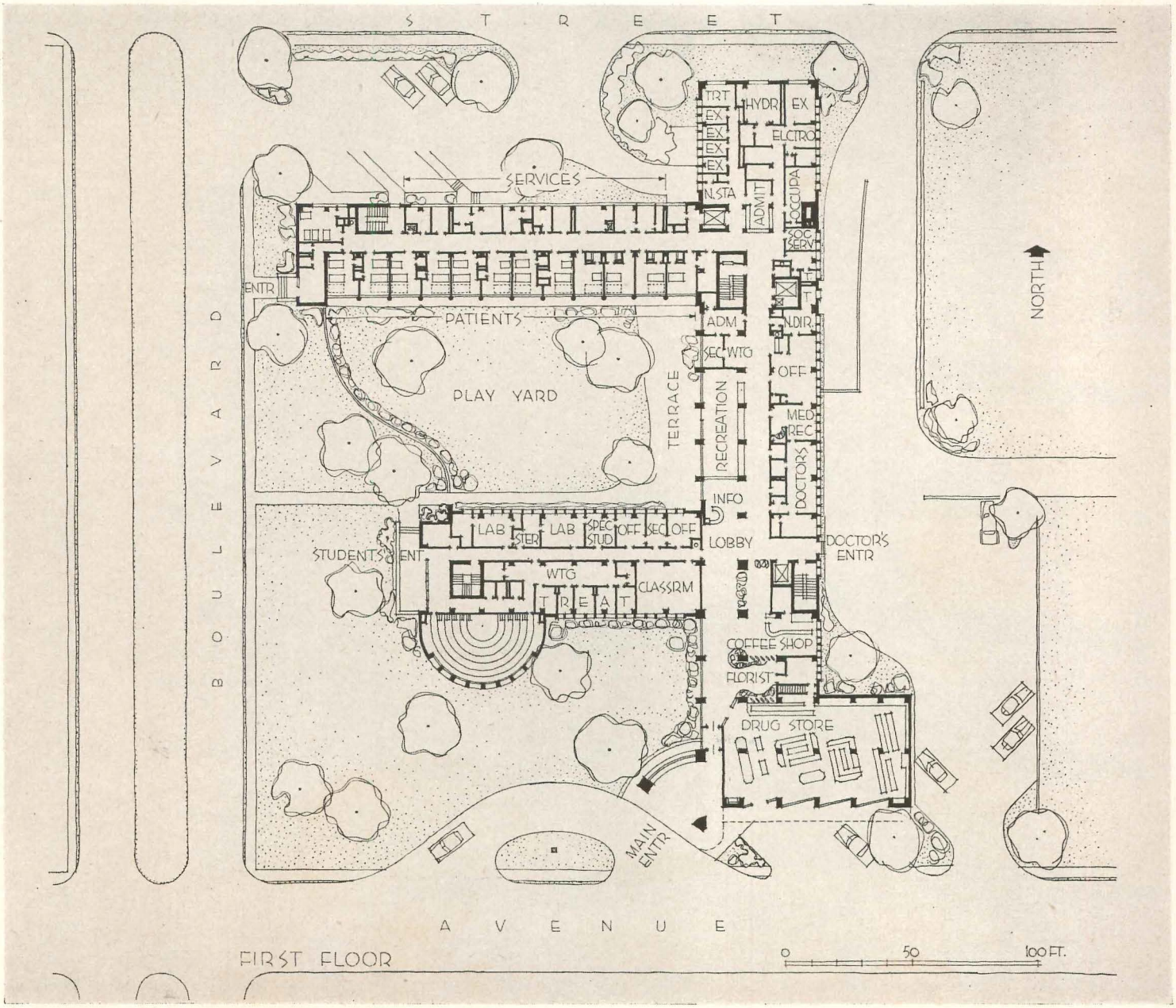


ARCHITECTURAL RECORD



Le BONHEUR CHILDREN'S HOSPITAL

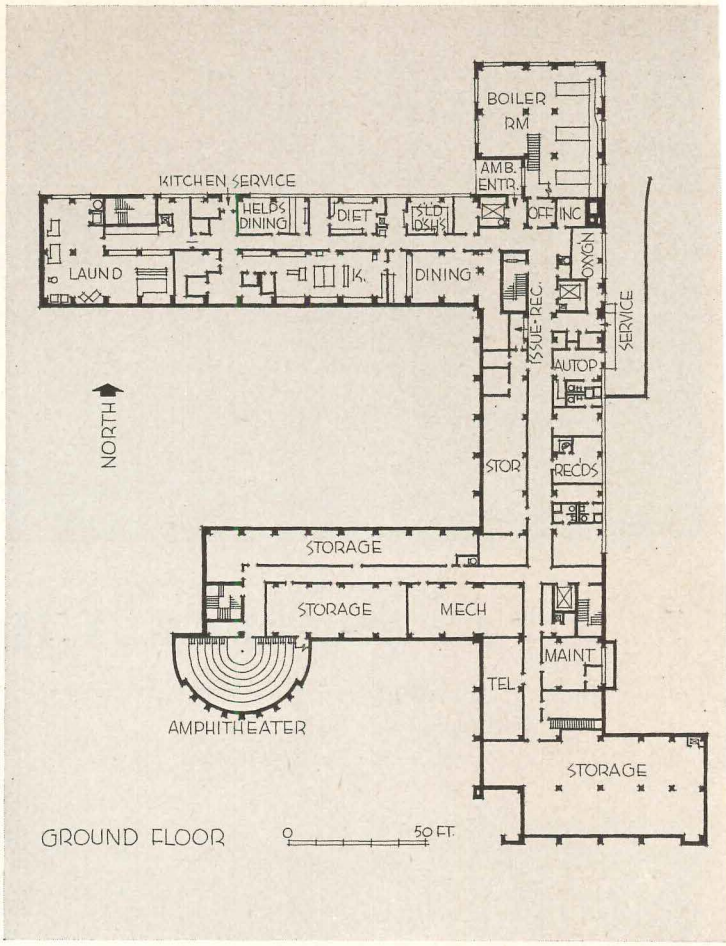
Memphis, Tenn. — *J. Frazer Smith & Associates, Architects & Engineers*

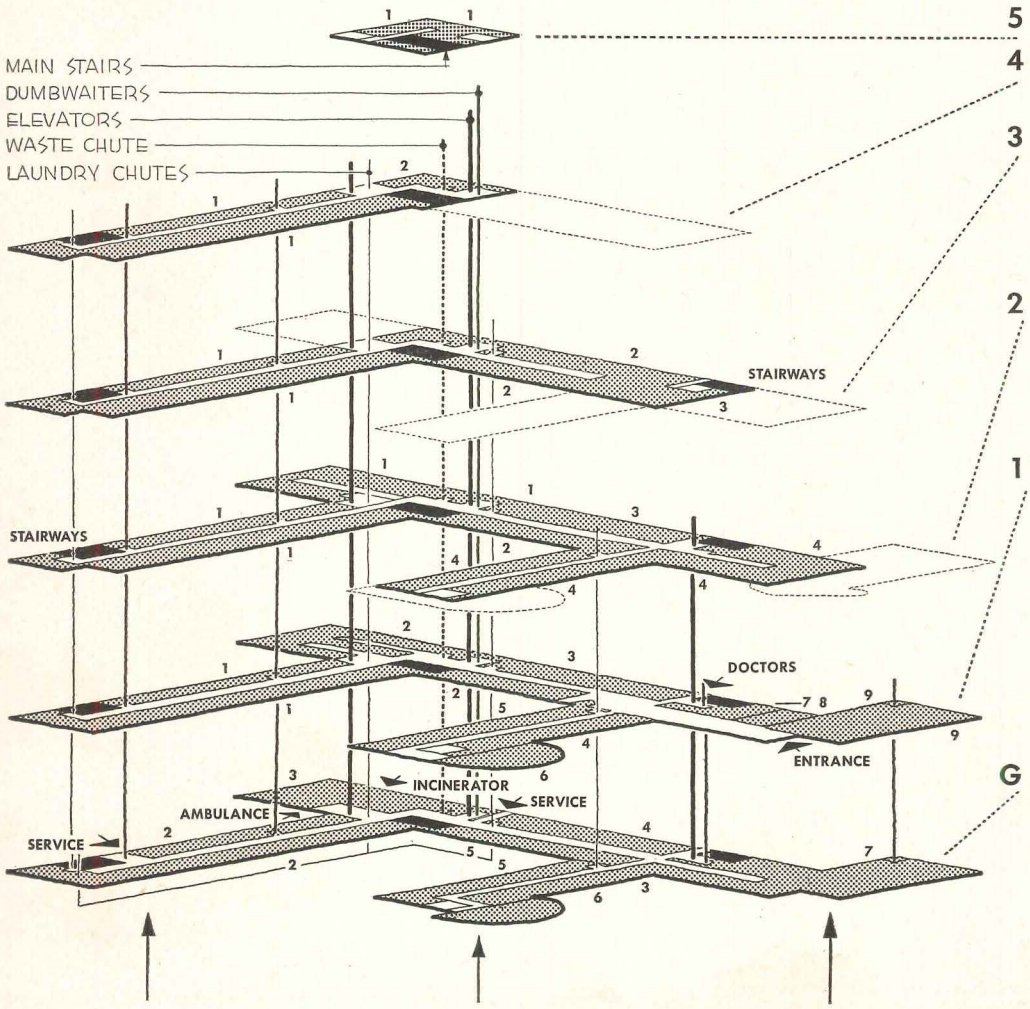


CHILDREN'S HOSPITAL

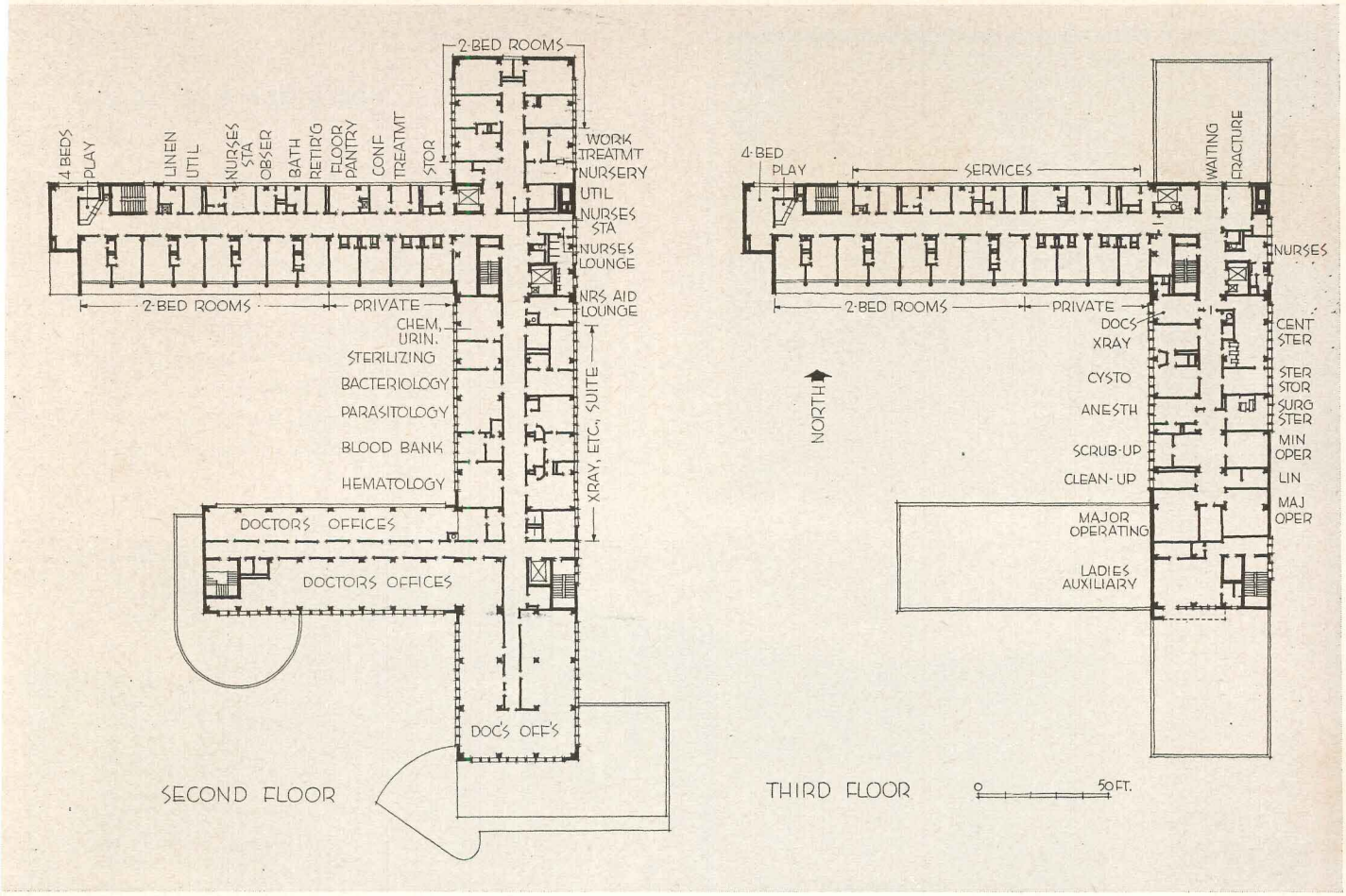
LE BONHEUR CHILDREN'S HOSPITAL in Memphis is in many respects unique. It is a general hospital for children, designed for a philosophy of nursing which requires the continued presence of a member of the patient's family. It is designed to reassure, not to awe, children; not just as a humanitarian measure but also because a pleasant atmosphere, more residential than commercially medical and more comprehensible to youngsters, is believed to have positive psychological and therapeutic value. This means liberal use of gay — but not garish — color; sanitary fabric wall coverings; draperies at the large expanses of insulating double glass; and planning to minimize in every respect the frightening aspects of the hospital.

Programming was done in consultation with representatives of the Memphis Pediatric Society, University of Tennessee College of Medicine, Memphis Hospital Association, Le Bonheur (a charitable organization and prime mover in establishing the hospital) Board of Directors, Crippled Children's Hospital, Tennessee Dept. of Public Health and U. S. Public Health Service. With the program set, the architects and medical consultants visited other children's hospitals and accumulated information from all over North America and parts of Europe. Sharing responsi-

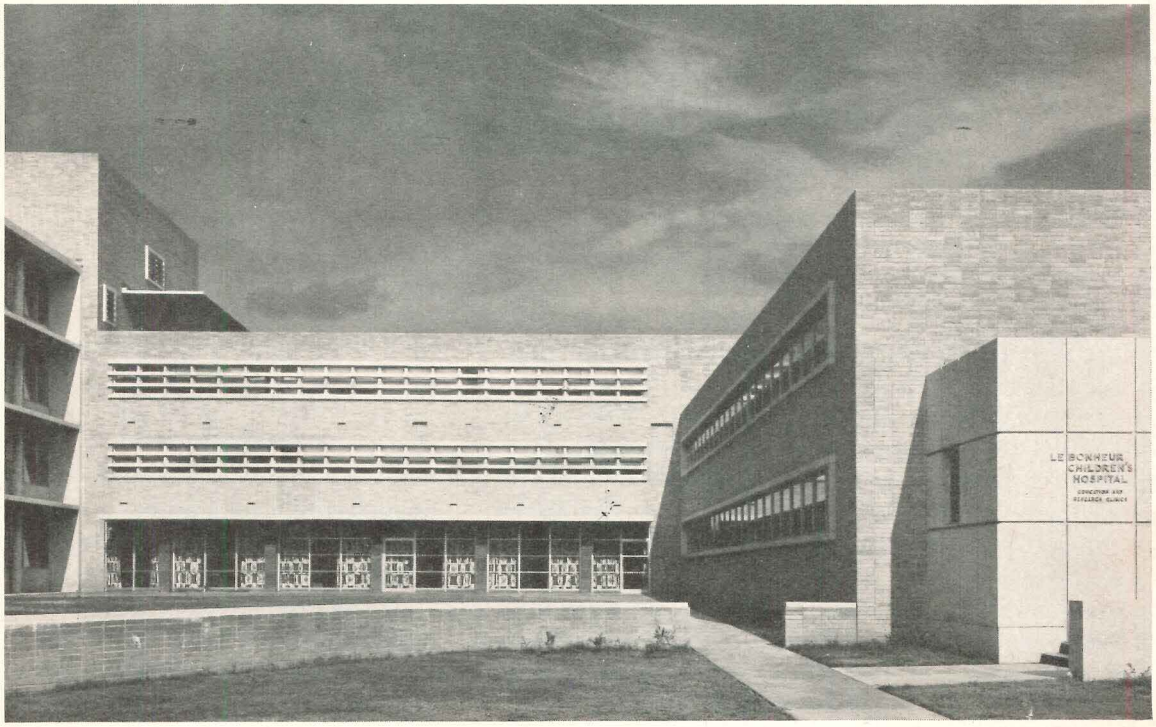




DEPARTMENT	AREA
1. STAFF RESIDENTS	1,090
circulation	422
NURSING DEPARTMENT	
1. patient areas	4,549
circulation	2,457
2. STAFF RESIDENTS	700
NURSING DEPARTMENT	
1. patient areas	4,549
circulation	1,574
SURGICAL DEPARTMENT	
2. surgical	4,208
circulation	1,143
ADMINISTRATION DEPT.	
3. meeting room	1,150
circulation	313
NURSING DEPARTMENT	
1. patient & nurses areas	7,364
circulation	2,527
ADJUNCT FACILITIES	
2. pathology	1,700
3. radiology & fluoroscopy	1,238
circulation	697
4. DOCTORS' OFFICES	5,921
circulation	1,776
NURSING DEPARTMENT	
1. patient areas	5,113
circulation	1,774
ADJUNCT FACILITIES	
2. therapy	2,088
circulation	200
3. ADMINISTRATION DEPT.	5,087
circulation	2,027
EDUCATION & RESEARCH	
4. clinic & classrooms	2,300
5. laboratories	1,477
6. amphitheater	1,215
circulation	748
COMMERCIAL FACILITIES	
7. coffee shop	970
8. flower shop	540
9. drug store	2,740
SERVICE DEPARTMENT	
1. housekeeping	1,852
2. dietary facilities	3,763
3. mechanical facilities	4,249
4. employees facilities	1,771
5. storage	5,285
circulation	2,829
EDUCATION & RESEARCH	
6. storage	1,020
circulation	504
COMMERCIAL FACILITIES	
7. storage (service dept.)	
total area	90,930 sq. ft.
GROSS CUBAGE	1,057,052 cu. ft.

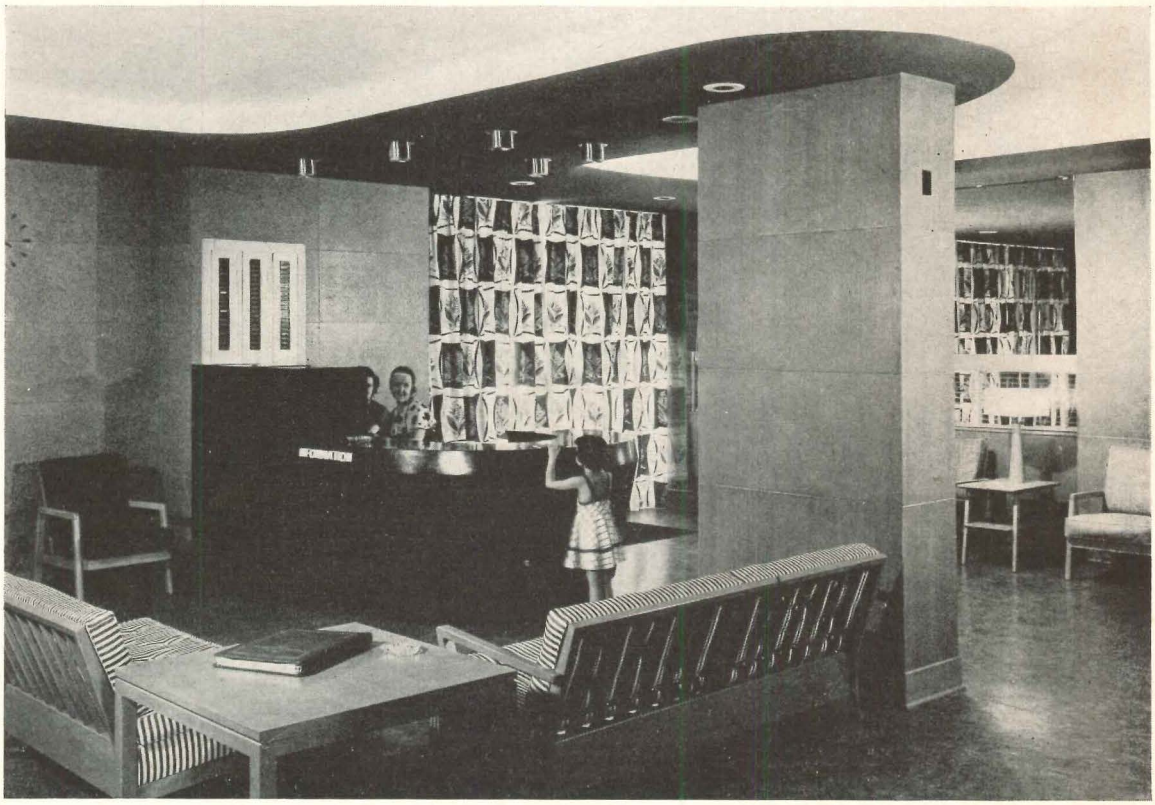


Below: left, part of the nursing wing; center, connecting block houses administrative areas and recreation room on first floor, laboratories and operating suites above; right, education and research with doctors' offices on floor above



Joseph W. Molitor

Left, public entrance. From this one passes the commercial facilities (drug store, florist, coffee shop shown at top of facing page) and Le Bonheur charity headquarters, from which the children's lobby (below) opens invitingly. Child patients are encouraged to play here; in fact it is called the Department of Recreational Therapy. Pleasantly



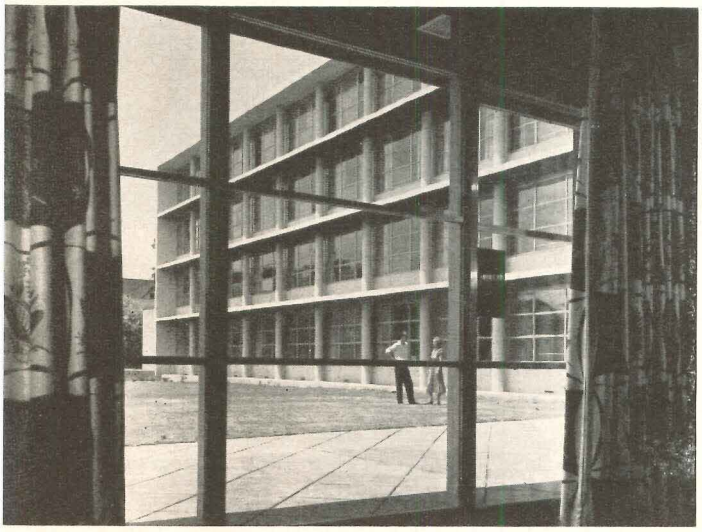
Joseph W. Molitor

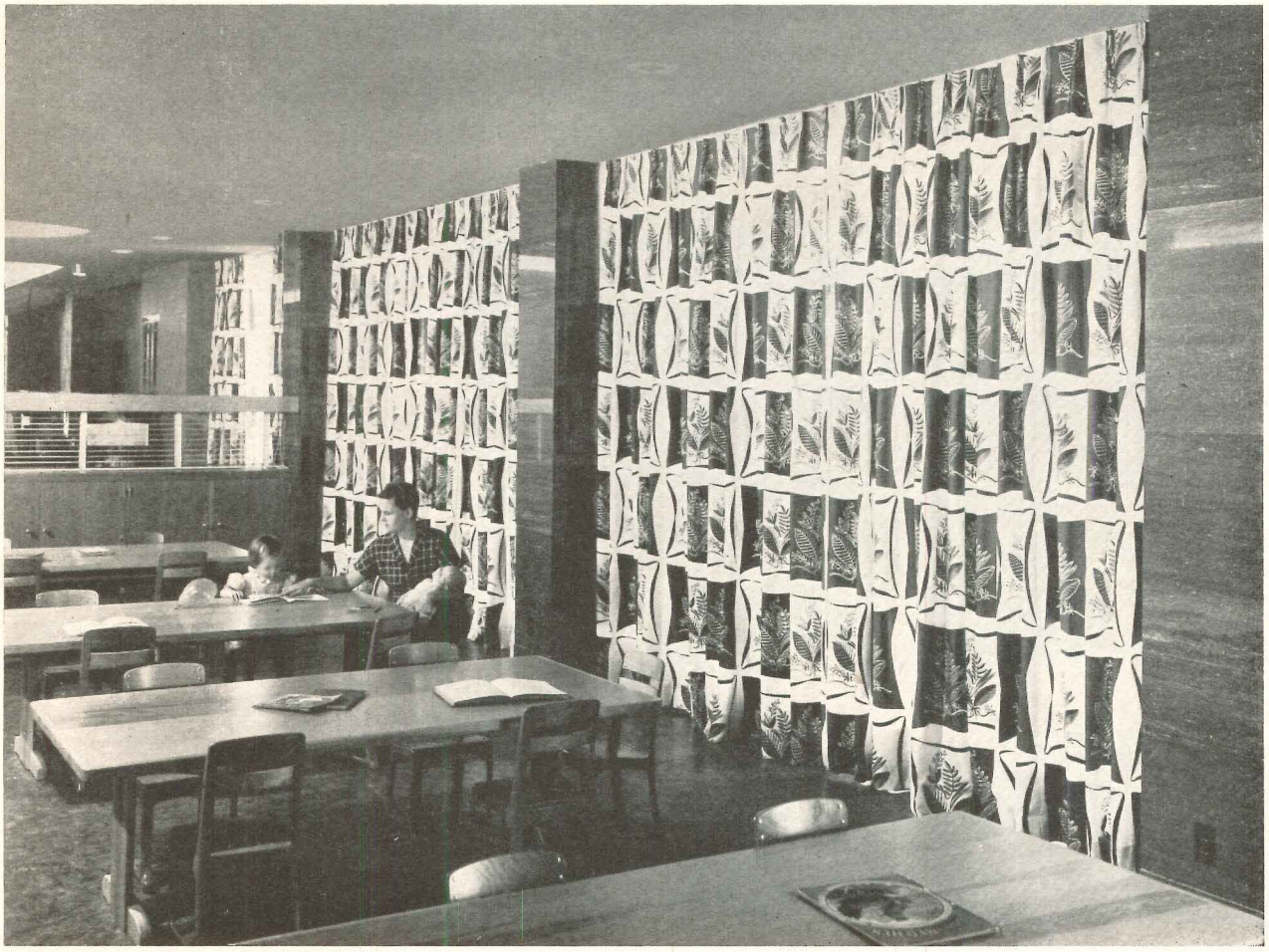
bility for design and construction were: Zeno L. Yeates, associate architect; S. L. Burns, Jr., associate engineer; Robert F. Elliott, landscape architect; William B. Bekemeyer, equipment; Harmon Construction Co., general contractors. Started in July 1950 and opened June 15, 1952, the building cost slightly over $2,100,000 including landscaping, fees, equipment, etc.; or $23.23 per sq ft.

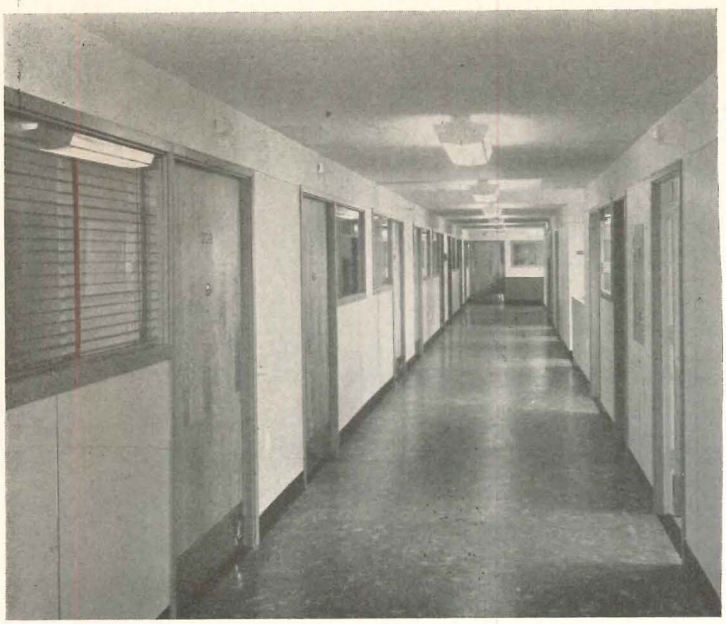
Le Bonheur has 128 beds of which 16 are bassinets, 16 incubators; the remainder are cribs or beds. There are laboratories for research and teaching facilities, commercial spaces to help sustain the building financially and offices for private pediatricians (who have full access to hospital facilities). Quarters are provided for resident doctors and interns; circulation of people and things has been carefully laid out (corridors, three elevators, five dumbwaiters) to solve traffic problems of personnel, supply, visitors, etc. In addition to all this, the plan and program are integrated with the city's hospital and health center — the site, donated by the city, is surrounded by other components of the center — and with the state's hospital facilities plan.

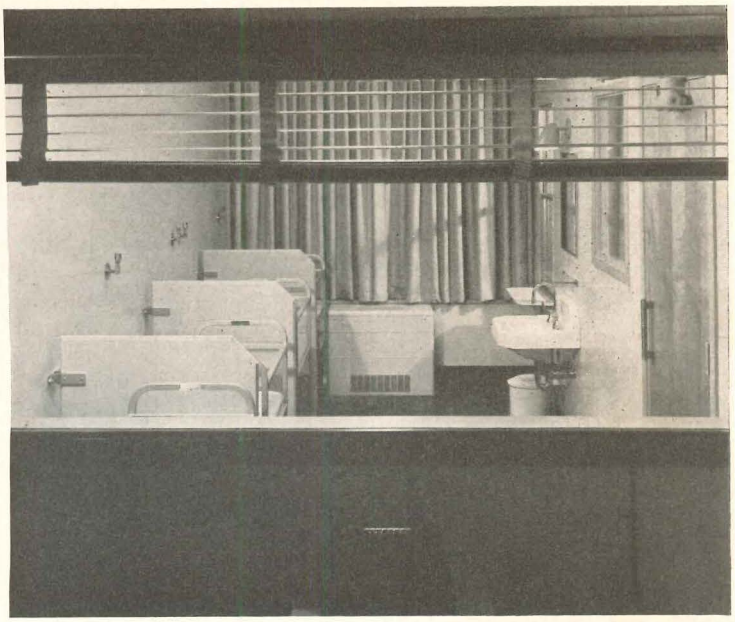
All patients' rooms were required to have southern exposure. An eight-story, 400-bed hospital across the avenue might have blocked southern sun. Hence the nursing wing is at the north side of the site, overlooking a wide, well-protected lawn and paved terrace on which children are encouraged to play. From the window-wall

gay color, comfortable furniture and children's books, plus the impression of children enjoying themselves, reassure entering children. Through wide windows the play terrace and grassed court are visible. At rear is the admitting desk, convenient to outpatient, emergency and nursing units yet isolated for efficiency



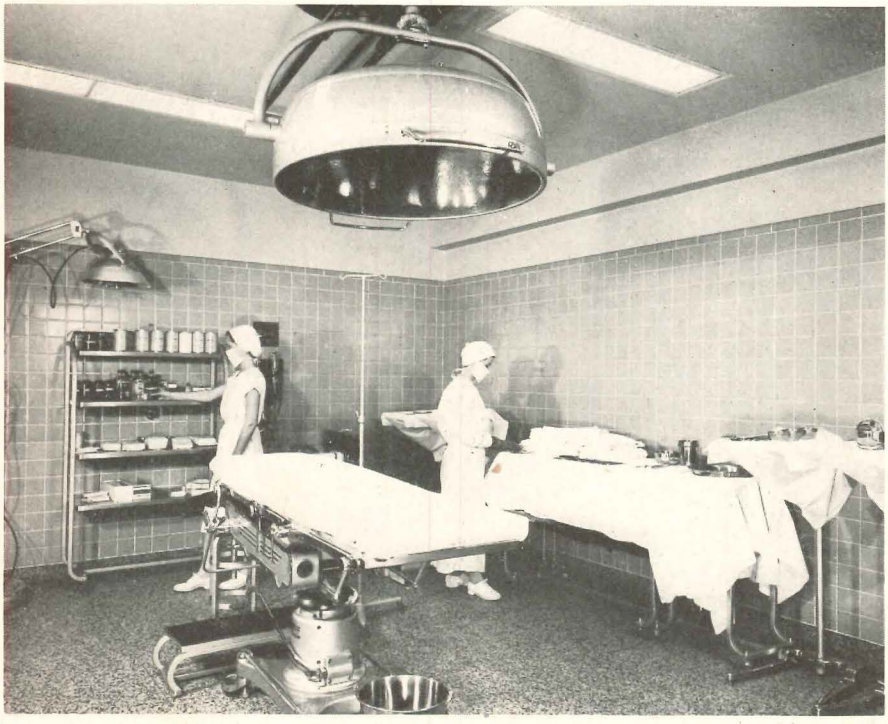






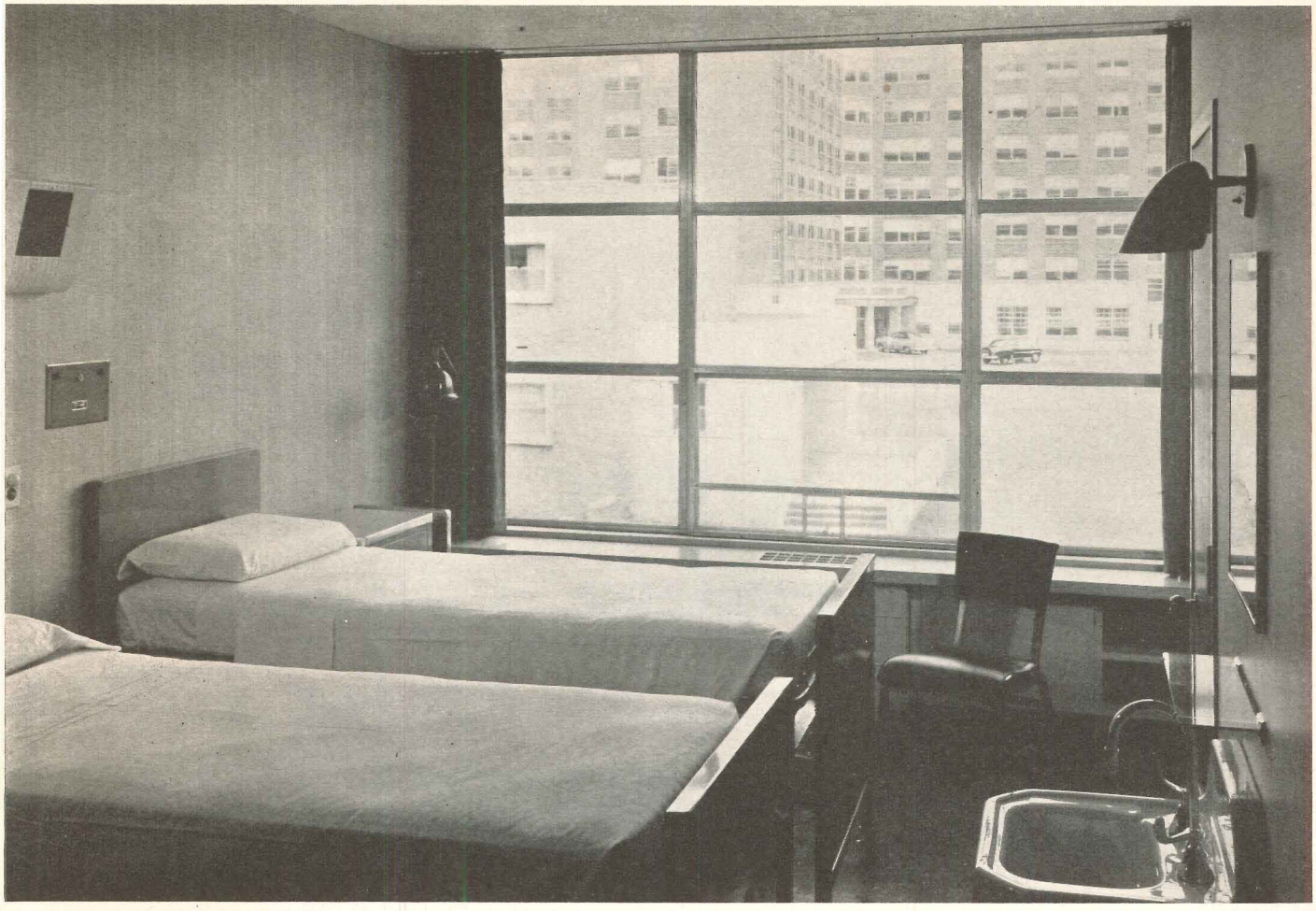
of a patient's room, activity in this pleasant court can be watched as if from a theater balcony.

Construction is reinforced concrete frame with 6-in. slab floors. The exterior is architectural concrete with an "aggregate-transfer" finish obtained by securing selected aggregate to forms with a water-soluble adhesive; when forms are removed, the exposed aggregate is polished much like terrazzo. A warm buff brick is also used. Interiors have acoustical ceiling treatment; floors are asphalt tile generally with linoleum tile in administrative areas, quarry tile in dietary portions, concrete in service areas and conductive terrazzo in surgical suites. Partitions, as far as possible, are "dry-wall" construction with asbestos or gypsum board surfacing; some gypsum plaster is used. Except for ground-floor service areas, the entire building is air conditioned, with an independent system for the surgical suite. Oxygen is piped to all nursing rooms and surgical areas, which also have suction outlets. A pneumatic tube system extends throughout the hospital. The low-voltage electrical systems include nurses' call, nurse-patient communication, paging, master clock, fire alarm and provisions for sending recorded music or programs to each nursing room.

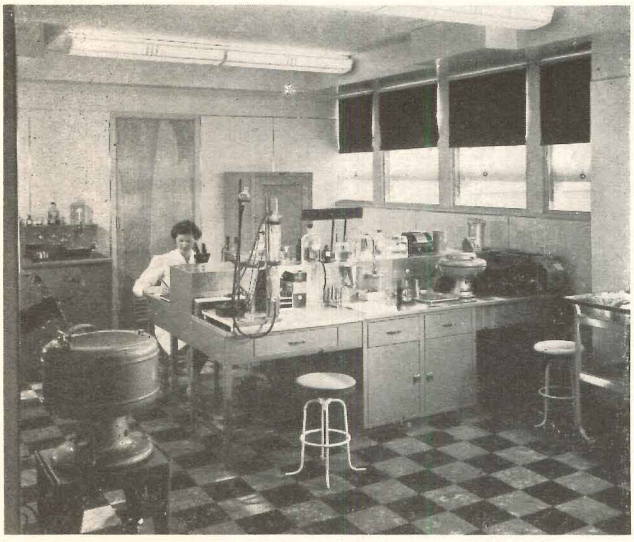


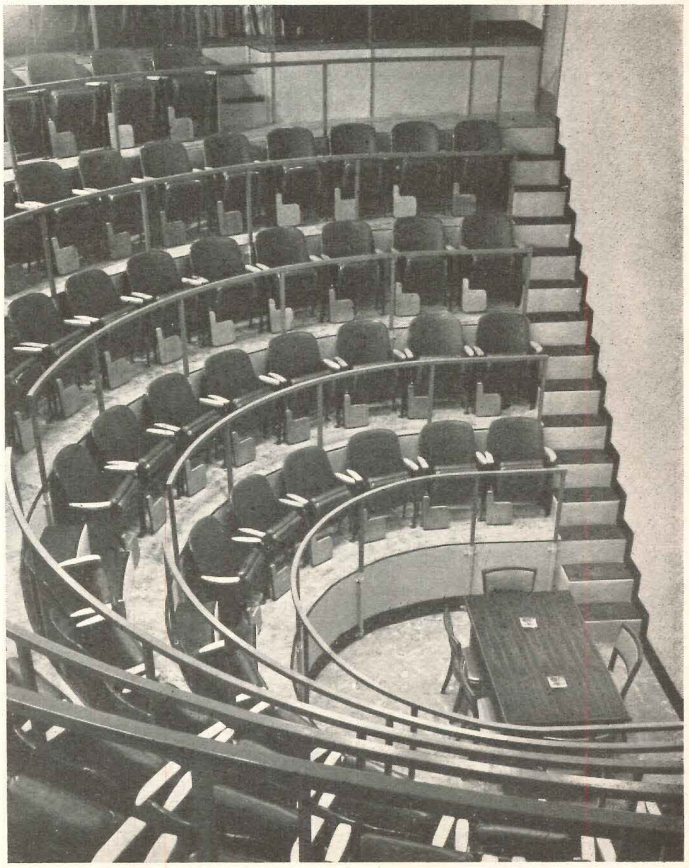
Left, operating room; left on facing page, bacteriology and parasitology laboratory, looking toward blood bank. Far right, amphitheater in education and research wing

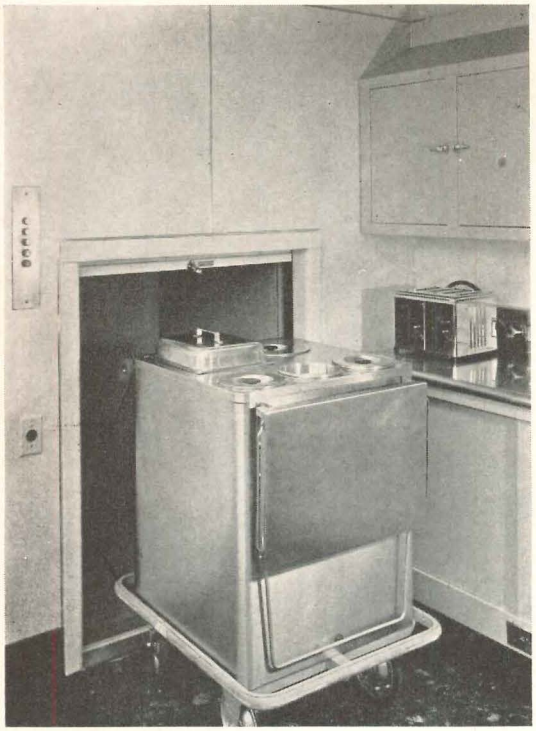
Across top of both pages are shown nursing facilities. Far left, typical corridor; left, a nursery (on fourth floor); below, typical room. All patient nursing rooms have one bed for a child, one for a parent, with private toilets and laboratories; all details are arranged to include parents



Joseph W. Molitor

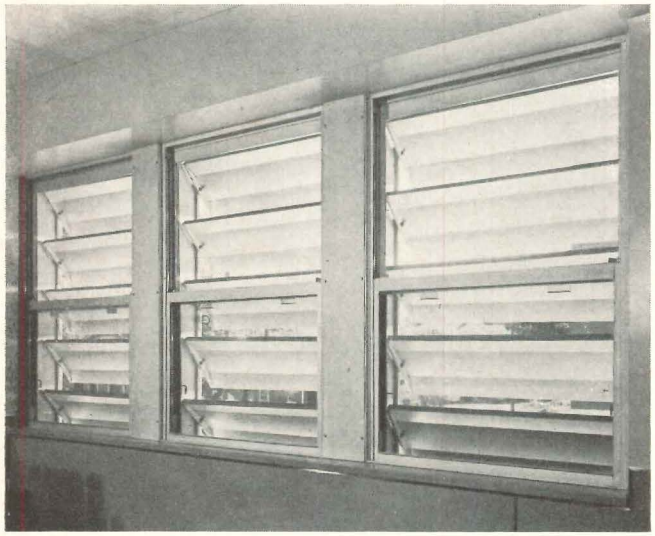




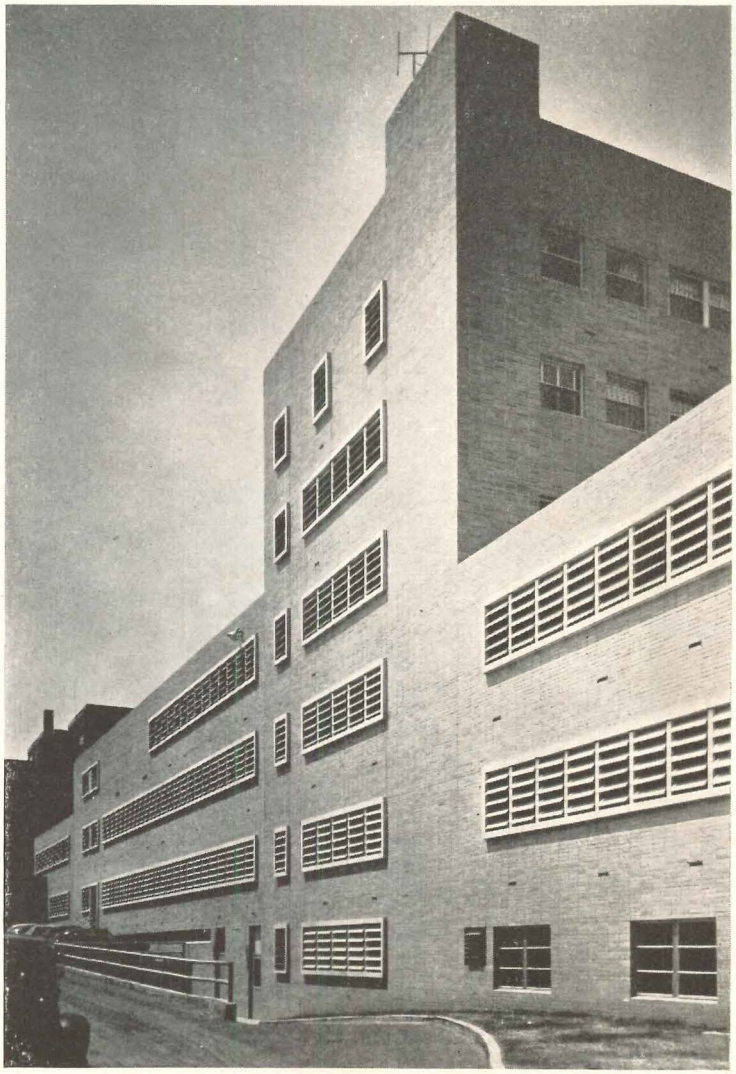


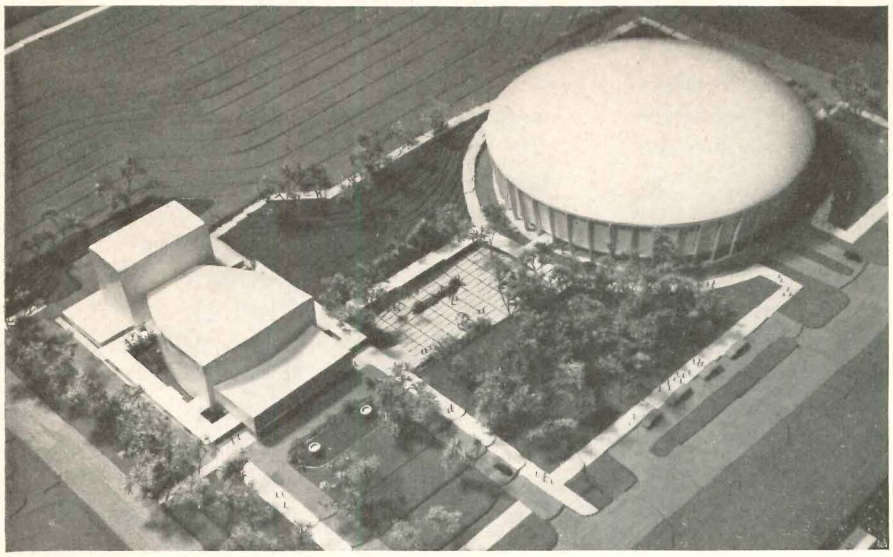
Joseph W. Molitor

Food for regular and special diets is prepared in central kitchens (above, right) and delivered to floor pantries in electrically heated stainless steel carts via one of five dumbwaiters. Thus food service does not cross circulation of people through the building

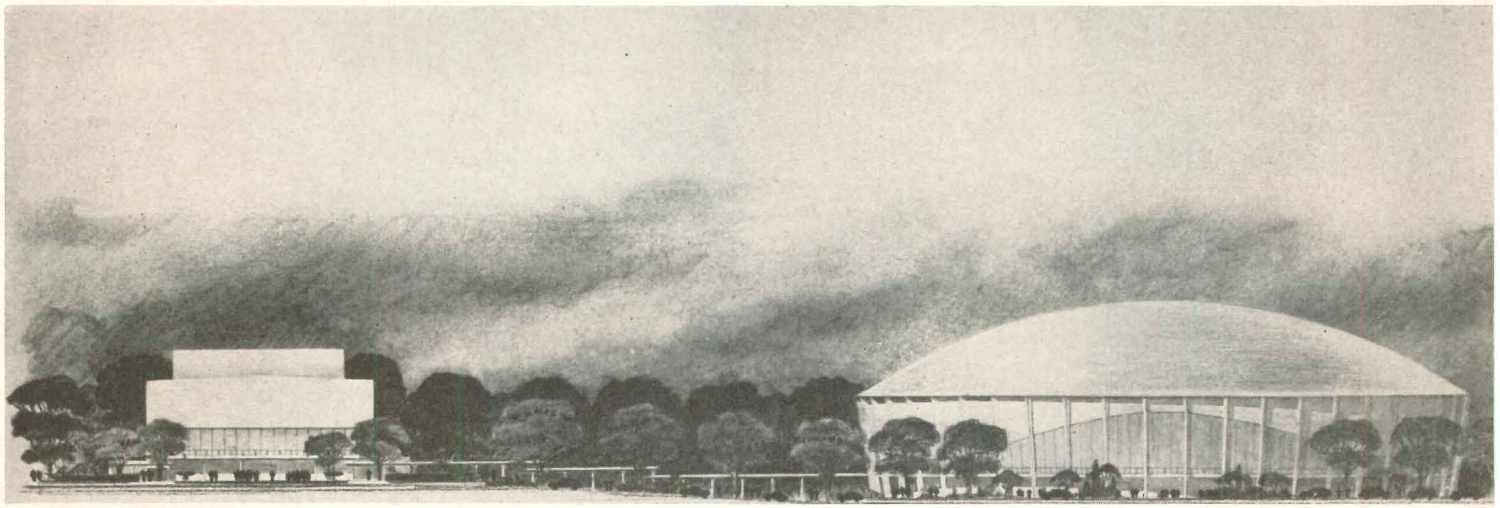


All windows facing south or west are shaded against strong sun by concrete overhangs or adjustable aluminum louvers. Hospital is completely air conditioned; keeping summer sun off glass has both reduced air conditioning installation cost 60 per cent and lowered operating cost





Concrete is used in many ways in Center design: tilt-up exterior panels, cast-in-place columns, precast seat tiers, lightweight insulating panels. Dome frame is structural steel



STRUCTURAL FORMS KEYNOTE CIVIC CENTER

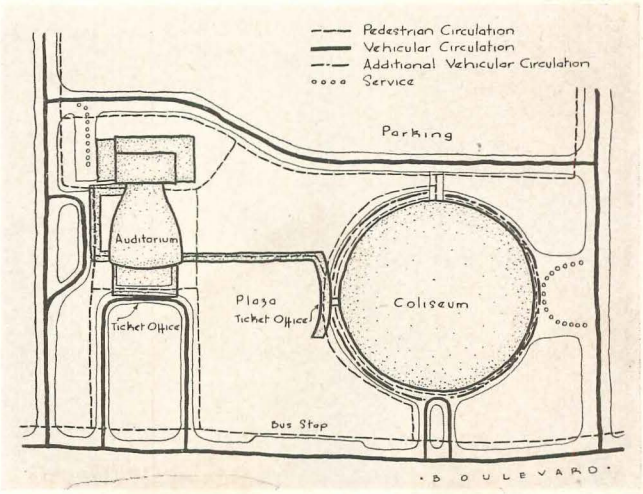
Charlotte, North Carolina

A. G. Odell, Jr., and Associates, Architects

Severud-Elstad-Krueger, Consulting Engineers

THE SIMPLE EXPRESSION of structural forms in these two structures — an auditorium and a gymnasium for a new Civic Center in Charlotte — has produced a quiet, positive character which readily identifies their purpose. An enormous number of preliminary studies and models of possible structural schemes were made by the architects and engineers to arrive at final designs which would combine economy of construction and maintenance, flexibility and ease of circulation. At the same time it was desired to stress both apparent and real safety, and give a pleasing appearance suited to the spectacles the buildings will house. A few of these early studies, many of which were rejected because they looked unsafe, are shown on the next page. A third building eventually will connect the two units and will house exhibit and meeting rooms.

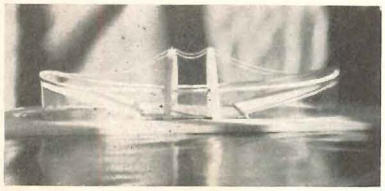
Sketch by Alan C. Hills

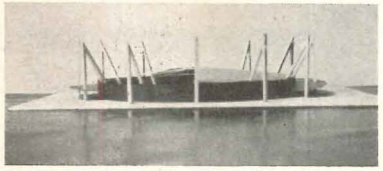


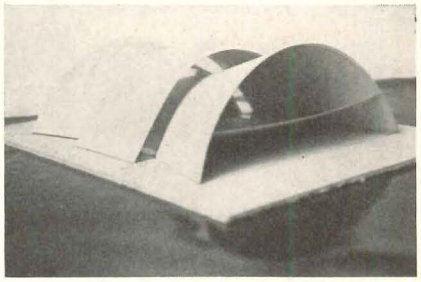
THE COLISEUM was planned to accommodate a variety of attractions, ranging from large athletic events, circuses, ice shows, horse shows and rodeos, to small exhibitions and conventions. There is also space at one end for a large stage for speeches and related events. Services have been located to give a large amount of open space to be used for exhibits, meetings, storage, additional dressing areas and other special uses. Overhead type doors are planned to partition off certain areas when needed. There are permanent seats for 10,000; portable seats for 3500 can be placed in the arena for such events as boxing matches. Large stairways are used to draw the spectators up to the second level concourse which surrounds the seating area. All aisles and passageways are designed to empty the building within four minutes.

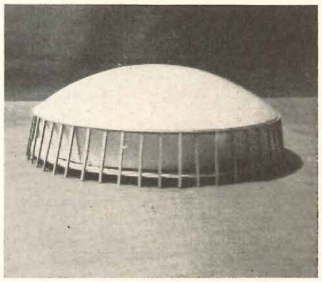
The circular shape was chosen over a rectangular one for a variety of reasons: it gives a maximum square footage for the perimeter, a more economical roof structure, and places the greatest number of straight-section seats at the sides of the arena. All seating areas were planned as straight sections to facilitate use of economical precast seat beams throughout the building.

The structure will be supported by exposed concrete columns sloped inward from the top to give greater protection from the weather. These support a shallow steel dome surfaced with lightweight slabs of wood shavings and cement, covered with built-up roofing. The dome has a diameter of 332 ft, 4 in., one of the largest of its type. Precise mathematical methods were used to analyze its structure and stiff joints by assuming certain lines of symmetry to reduce the statically indeterminate factors.

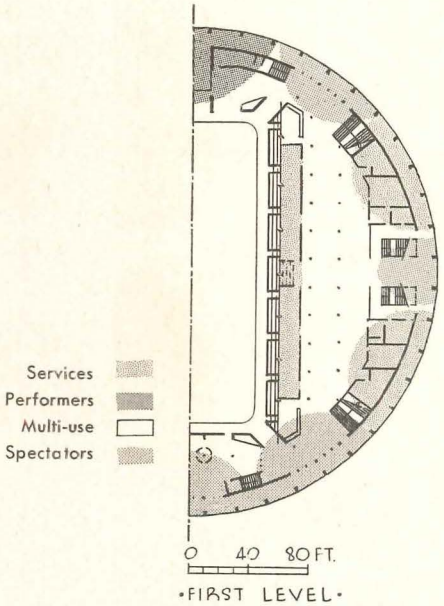




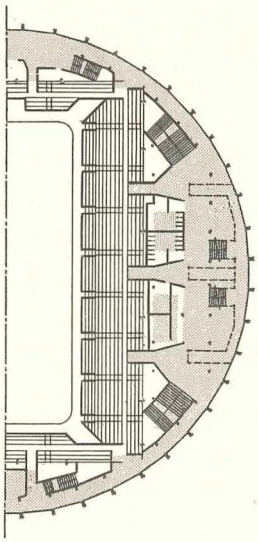




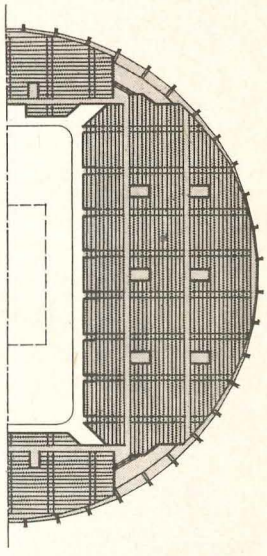
Various ideas were studied for the coliseum; a few are shown above. Of especial interest were studies for a catenary roof structure, with roof of chains hung from arches, and covered with steel mesh filled with concrete. Model at right approaches final



•FIRST LEVEL•

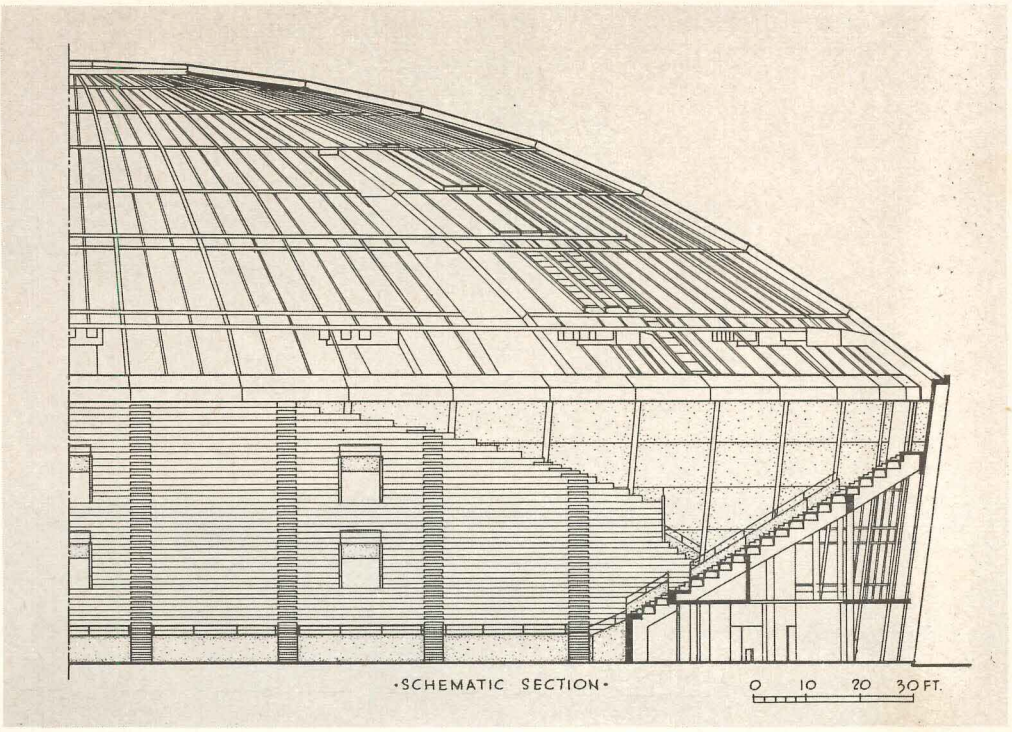


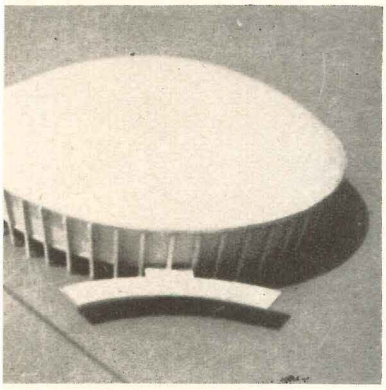
•SECOND LEVEL•



•SEATING LEVEL•

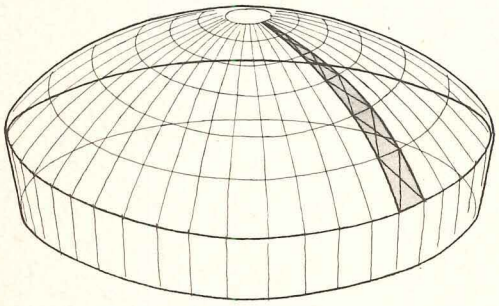
Sketches by Alan C. Hills



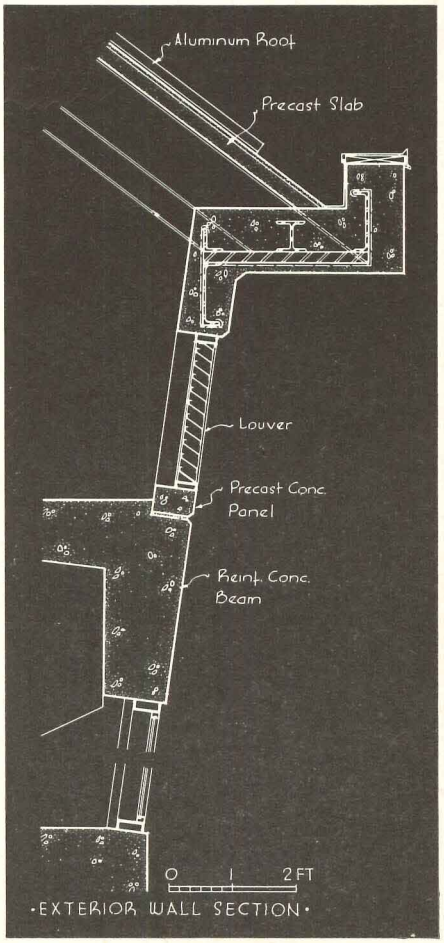


Final design (left) slopes columns inward. Structural members are frankly expressed as shown in sections

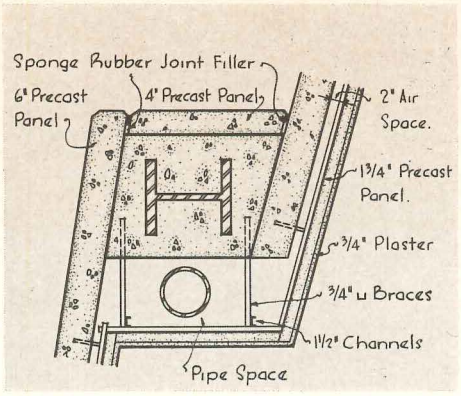
Sketch by Tom Ballenger

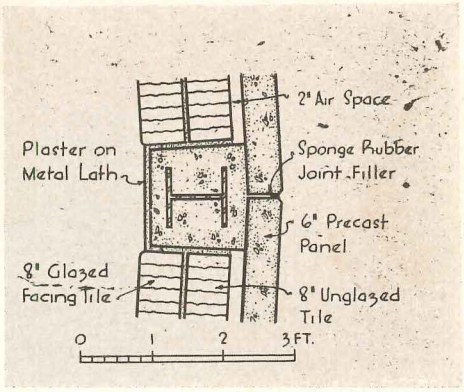


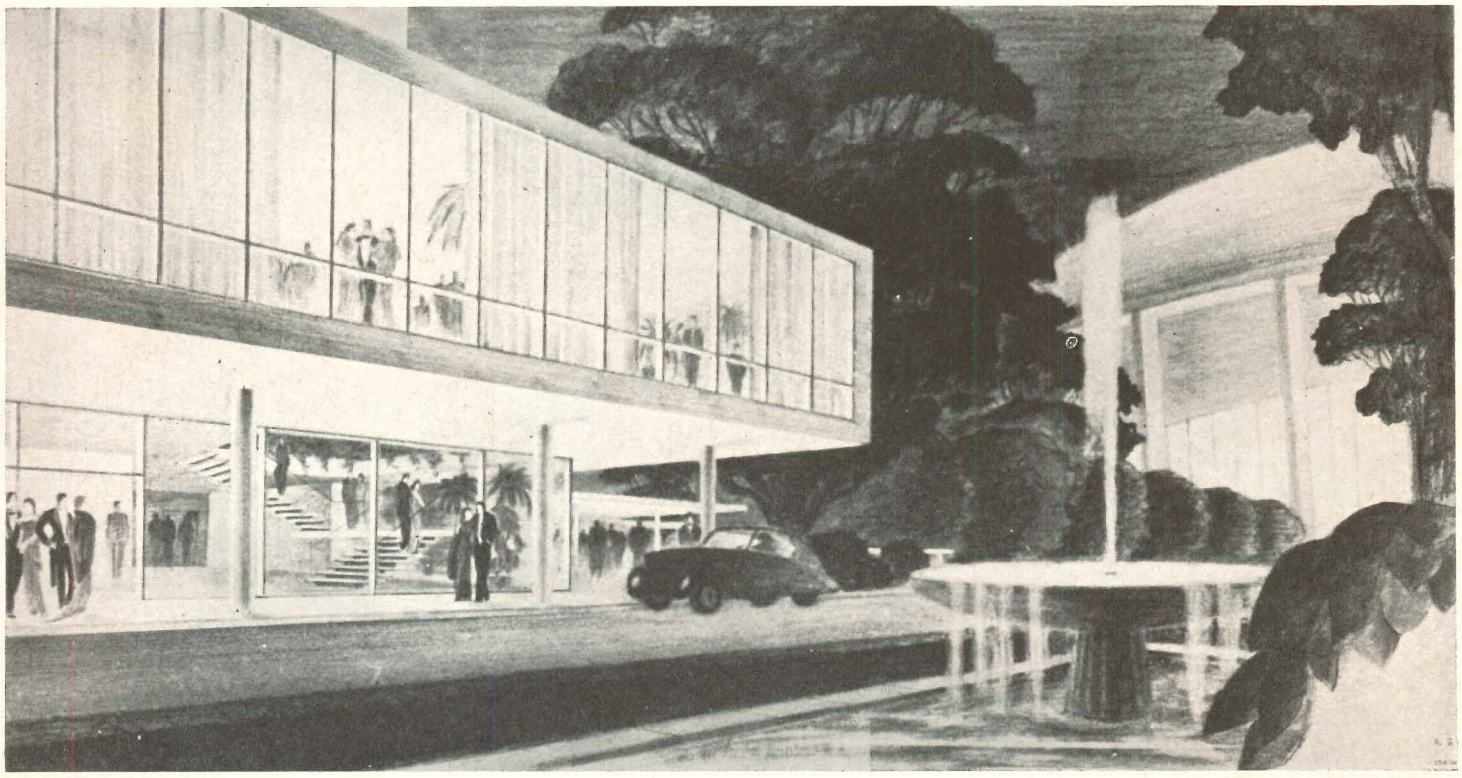
The dome structure (above) is made of WF steel ribs supported and braced by spliced welded rings. Diagonals (shaded area), filler beams and rails will support precast panels and built-up roofing



CHARLOTTE CIVIC CENTER



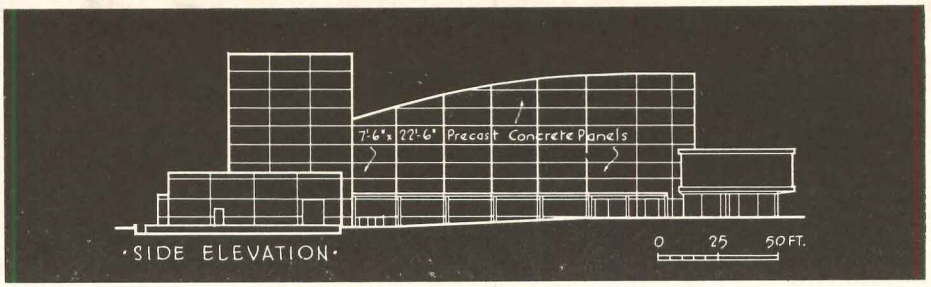




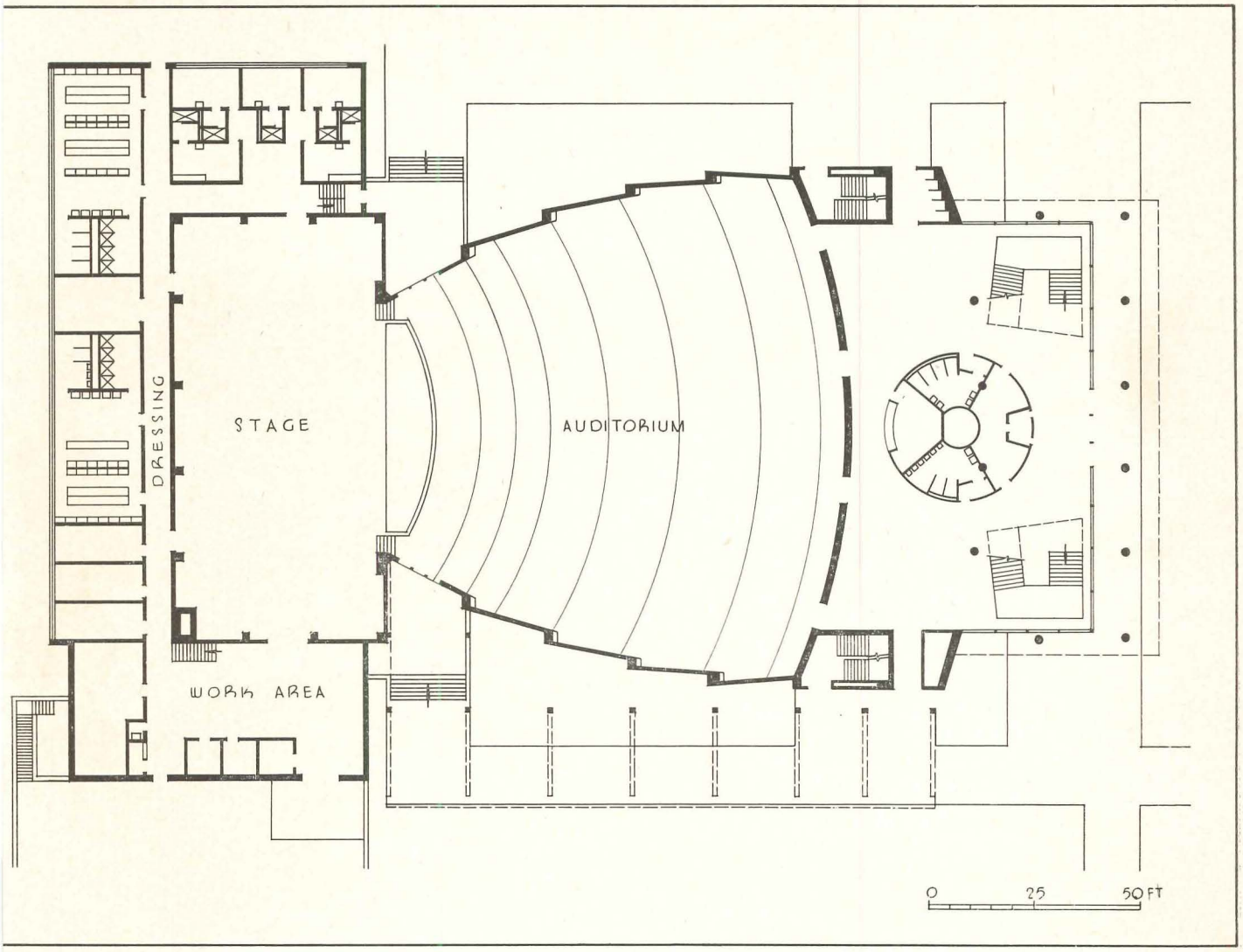
THE AUDITORIUM was planned for the presentation of plays, concerts, musical shows and other theater-type attractions. Studies were made to determine the optimum seating facilities for 2500 people, and the final shape of the building is the direct result of these studies. Roomy accommodations have been provided to meet the varied requirements of theatrical productions: a big stage area, large dressing and work areas, a brilliantly lighted lobby and a large semi-darkened lounge on the second floor. The lounge will have concession facilities for the convenience of the audience during intermissions. A covered walkway along the drive at one side, and the overhang of the second-floor lounge will provide protection during inclement weather. As will also be the case in the coliseum, bright primary colors will be used to alleviate the large expanses of concrete.

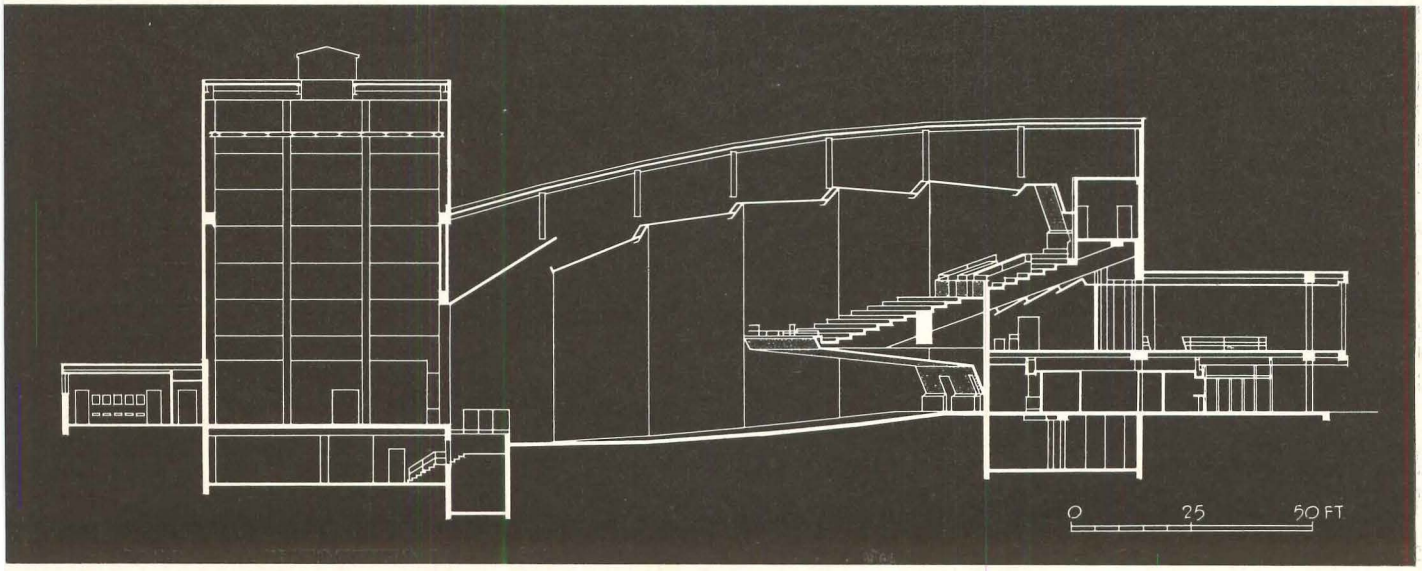
The auditorium and coliseum were separated to reduce conflict between their respective noises and traffic. To prevent additional traffic loads on downtown Charlotte, a site with several good means of access was selected about 3 miles from the business district. Parking is provided on the site for 1500 to 2000 autos; it is connected to coliseum by a bridge.

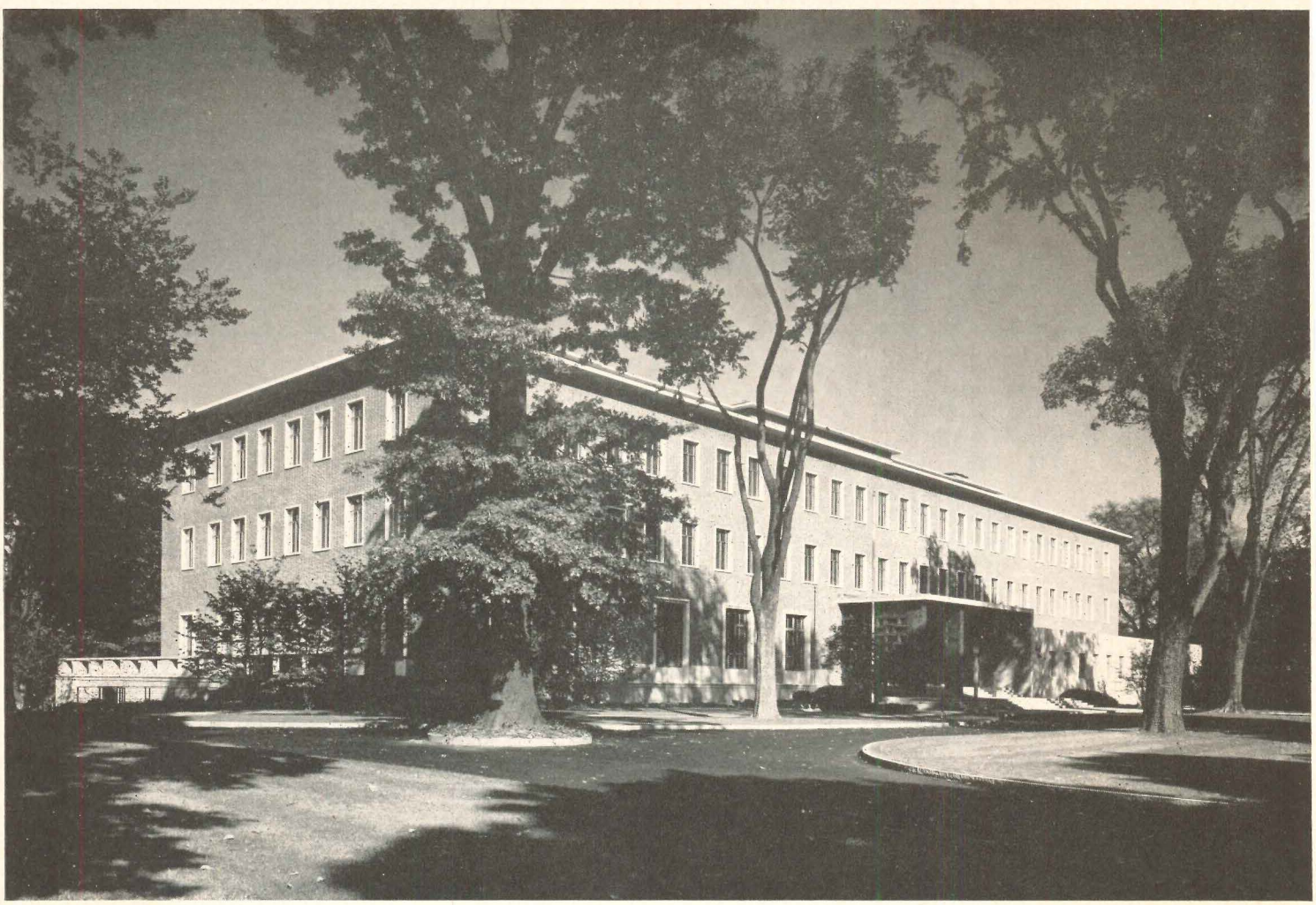
The exterior of the auditorium is surfaced with precast tilt-up concrete panels. Details (left) show typical joints



Sketches by Alan C. Hills





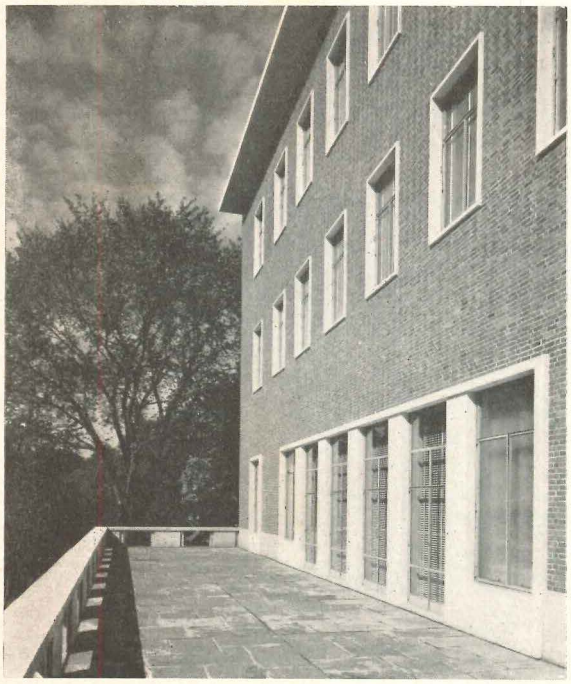


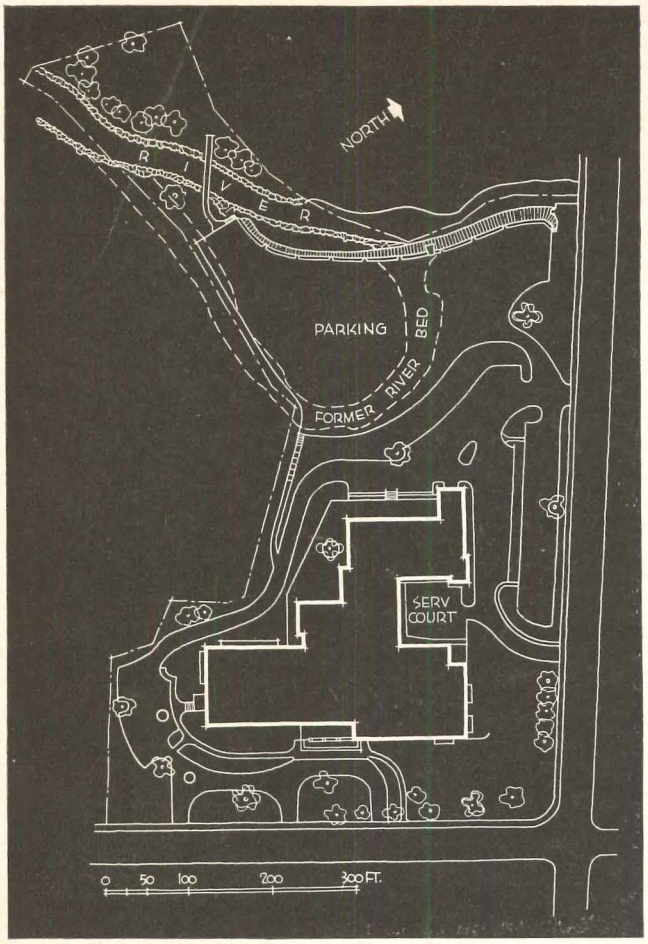
DESIGNED TO BE FUNCTIONAL IN PLAN

Home Office Building for Phoenix Insurance Co., Hartford, Conn.

Seelye, Stevenson & Value, Structural Engineers

Meyer, Strong & Jones, Mechanical Engineers
A. F. Brinckerhoff, Landscape Architect





QUIET IN EXPRESSION

R. B. O'Connor and W. H. Kilham, Jr., Architects

Teresa Kilham, Color Consultant

PERHAPS it should be assumed that every important office building would be thoughtfully planned, functional to a high degree, beautiful and inspiring as may be. These are normal objectives. But this one, new home office building for a large insurance company, seems distinguished for the assiduous analysis of purposes, the detailed study of many factors frequently taken for granted. Naturally in a special-occupancy building these matters are possible of positive determination. But there was also a special reason here, in that the decision for a new building was not made without a long study of the company's old building, to check in detail its inadequacies, to set against these the specific possibilities of a fresh start.

For example, take space use in an insurance building. What is the basic space unit for large occupancy? Has it changed? How can units best be combined?

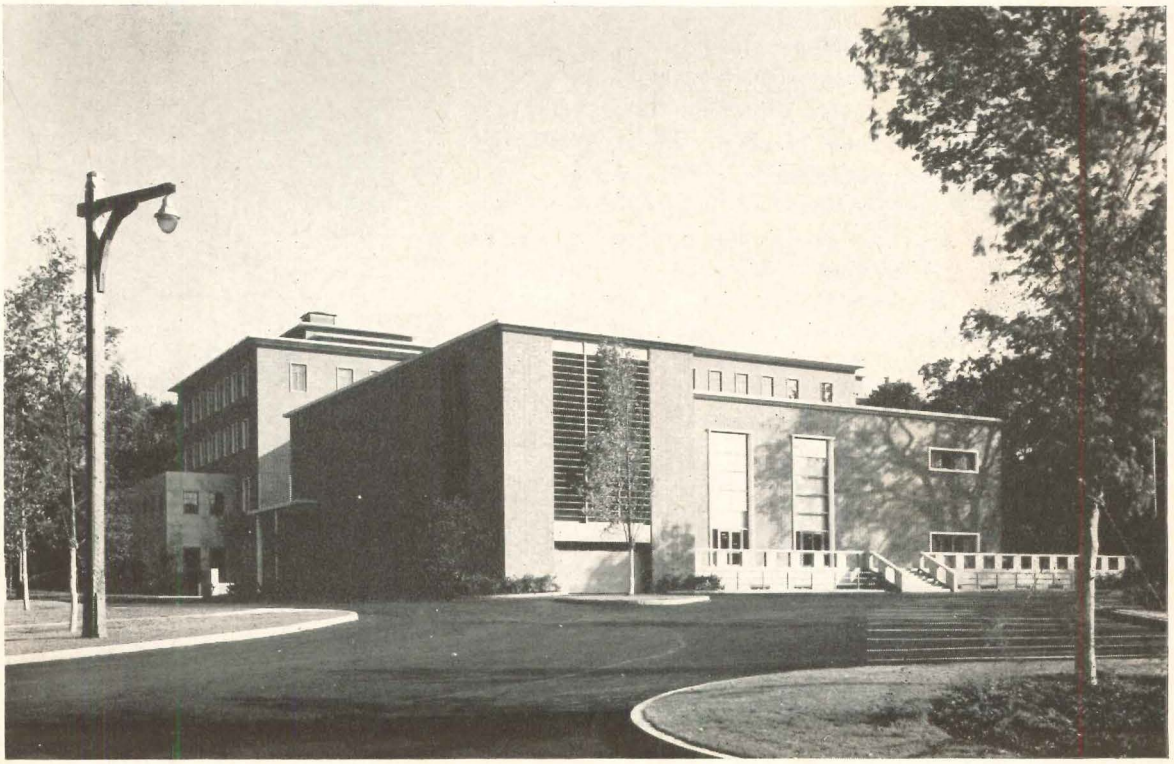
Or, what is the exact purpose of a window?

How exactly can a building contribute to better employee relations? How far to go? How evaluate good lighting, air conditioning, social and recreational facilities, a pleasant site or general "atmosphere"?

As to fenestration, a client group with the architects visited a great many buildings with widely different fenestration. The windows seen here, then, were a deliberate decision, specifically a vote against the strip window fad. Reasons cited were: cold areas near windows, windows found largely shielded by drapes, unbalanced light (especially in deep space as here contemplated), a sense of "special privilege" near windows. Windows — this is the group decision — should not be relied on for lighting, should give a normal sense of unconfined outlook, should not be glare spots, should not be designed for striking esthetic effect.

Recreational facilities for the use of the employees have been very liberally provided, again a firm determination, based on company policy.

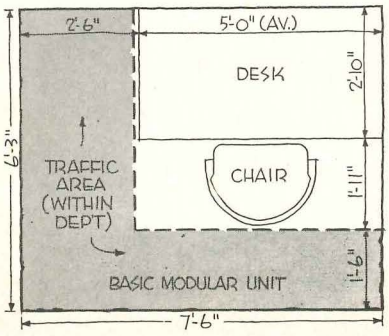
Joseph W. Molitor

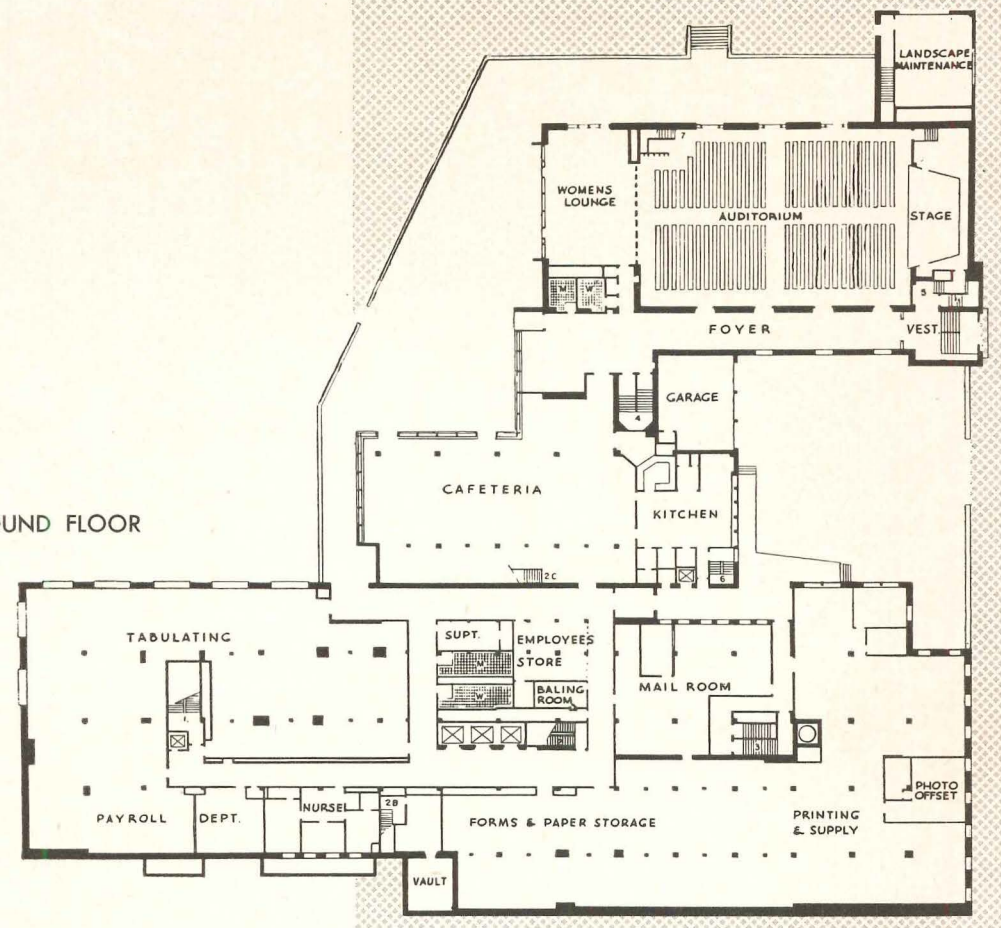


Joseph W. Molitor

Space needs were the subject of much paper work. Total space requirements were questionnaired by departments, with expansion estimated for ten years ahead. It all sifted down to a space module, for a man at a large desk (34 by 60 in.), of 6 ft 3 in. by 7 ft 6 in. This was later increased to 6.6 by 7.8 to allow a bit more for passages and partitioning. This latter unit became the basis for column spacing, which is 46 ft by 19 ft 6 in. The architects say that this might be splitting hairs — maybe the shorter dimension should be an even 20 ft, to give a bit more freedom where, say, tile walls might tend to squeeze interiors an inch or so.

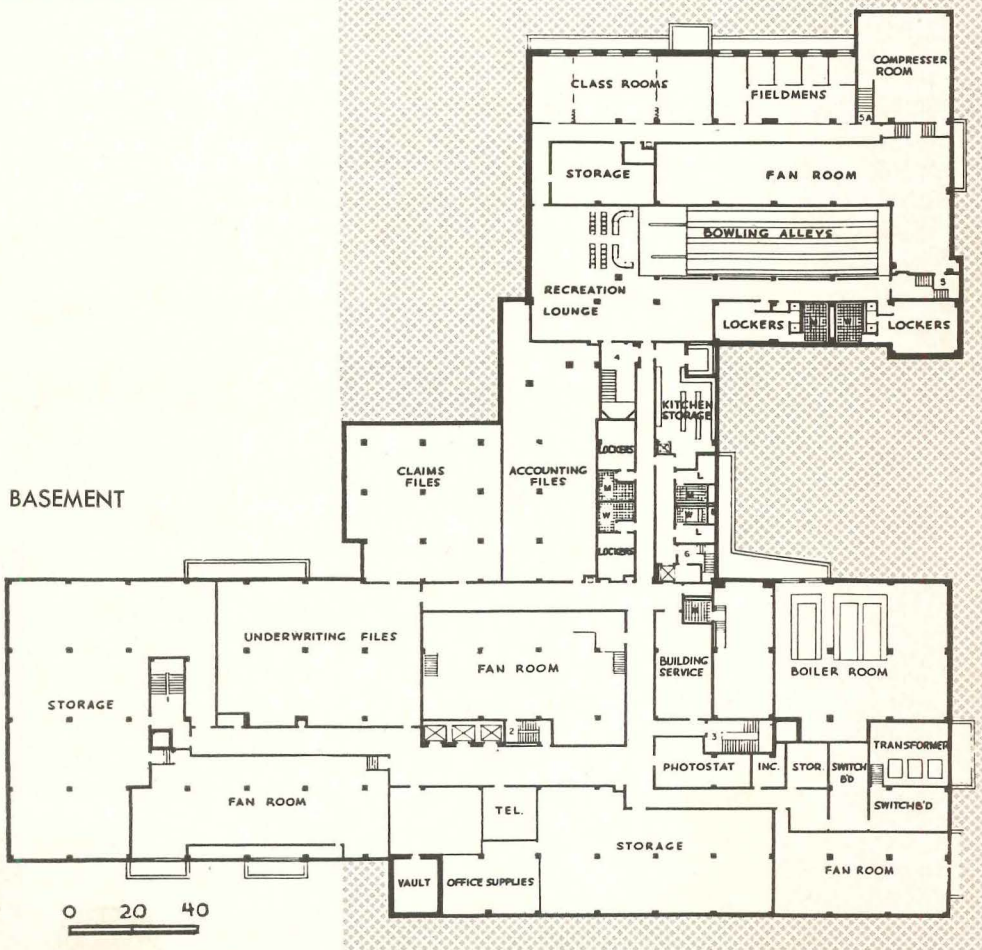
As for architectural esthetics, the decision was to be neither sentimentally old-hat nor doctrinaire modern, but to have the building fit pleasantly into a residential area of a New England city, with familiar materials and with reliance on good taste and good proportions.



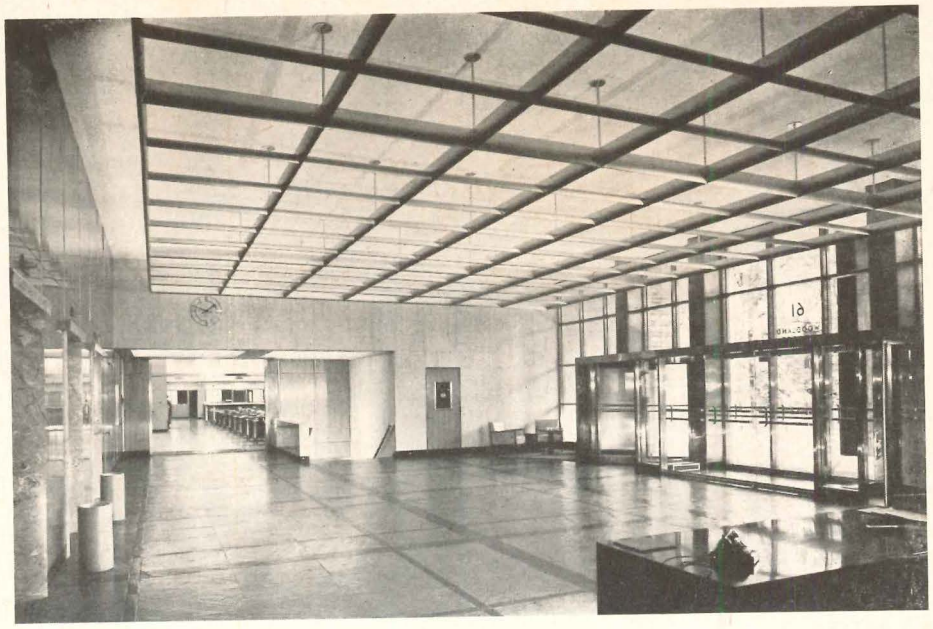


GROUND FLOOR

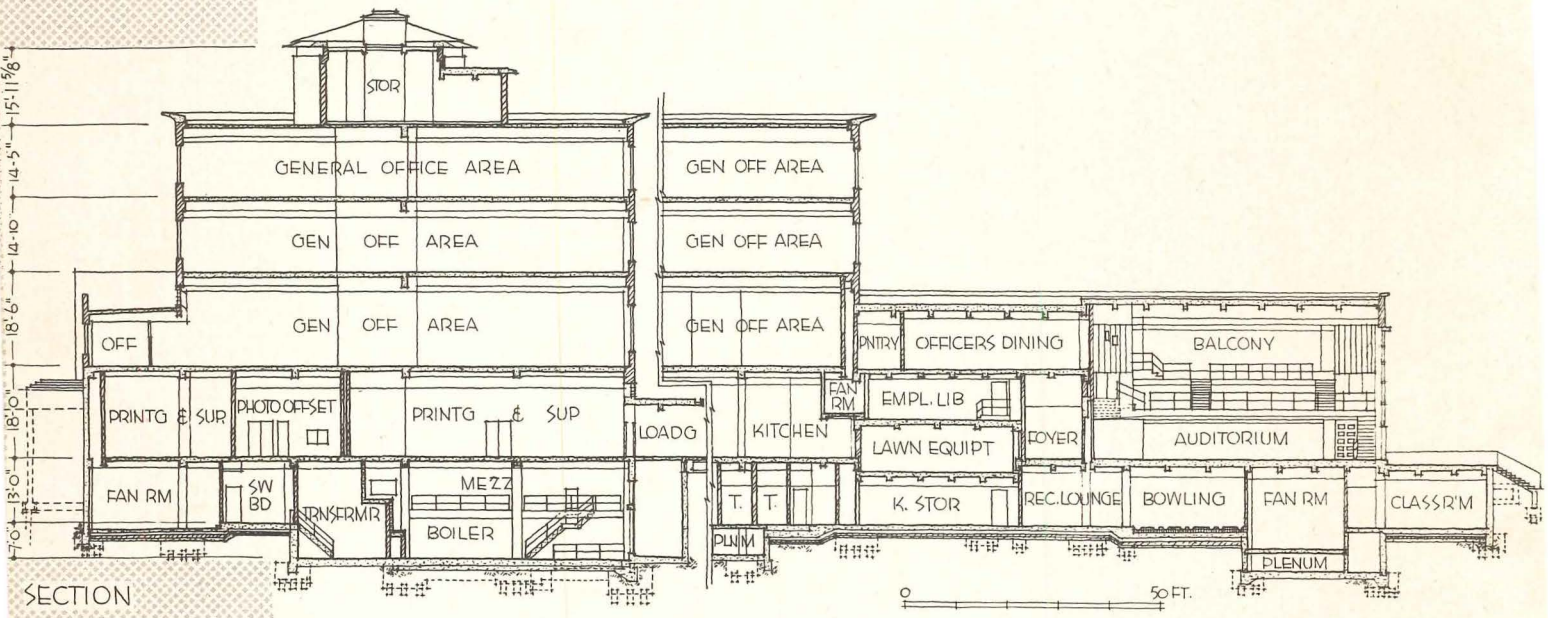
Ground floor is at ground level in rear only, due to slope of site. There are actually three levels below first floor



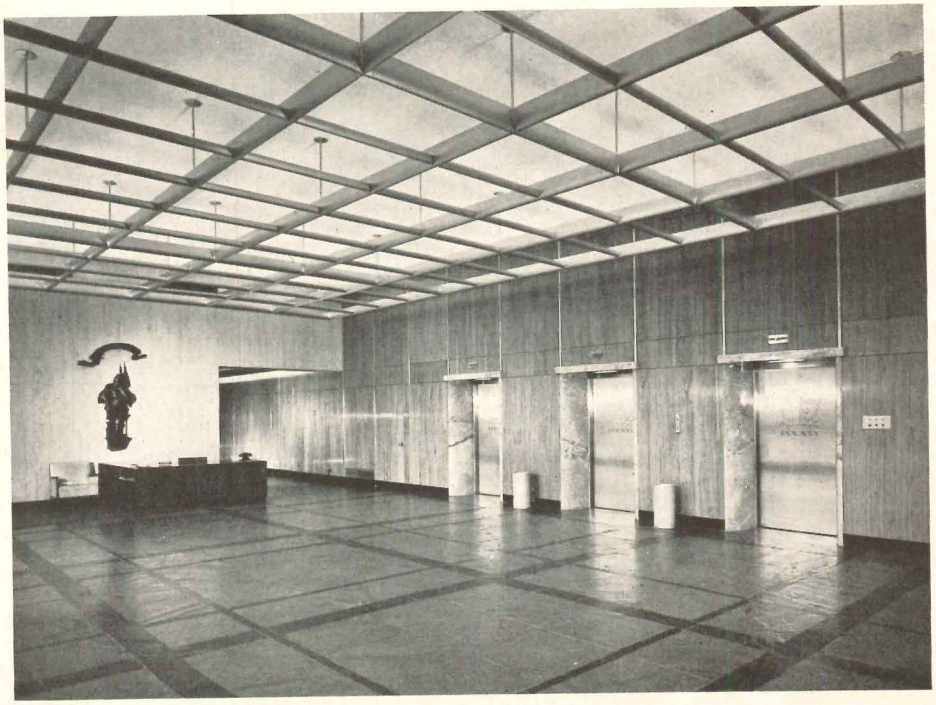
BASEMENT

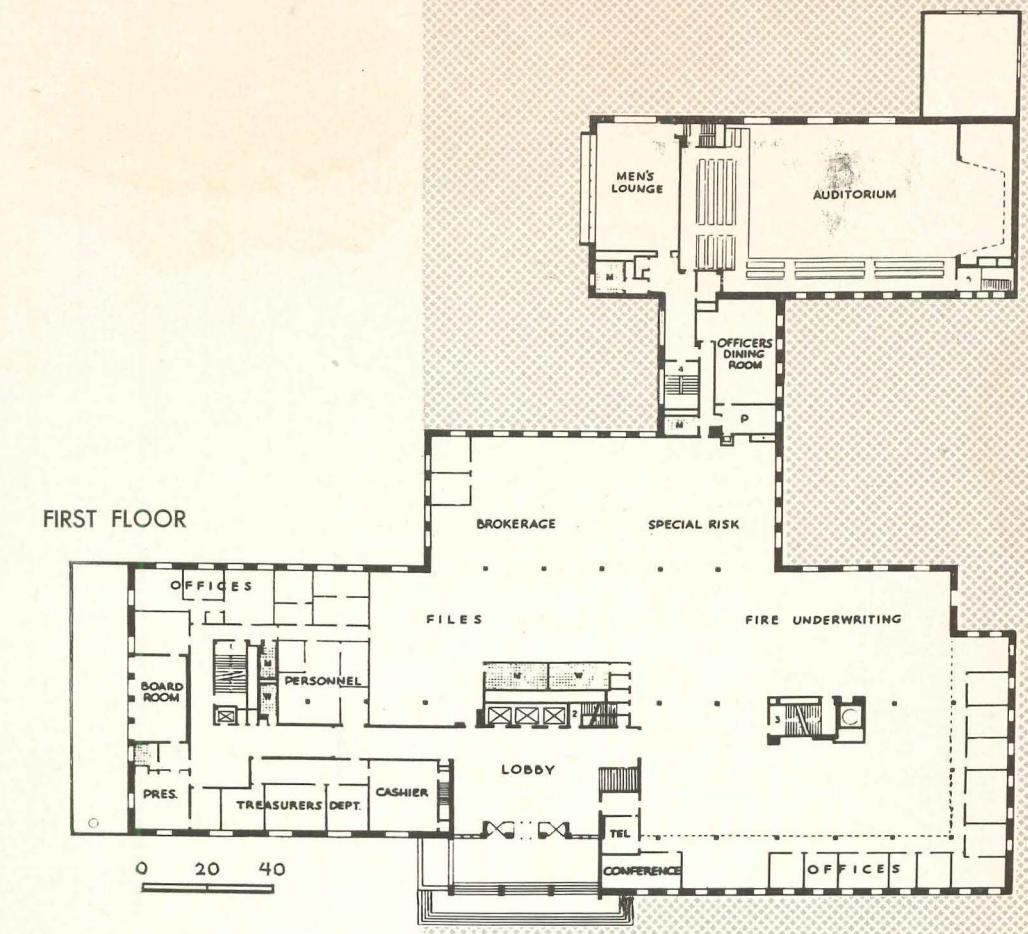


Joseph W. Molitor

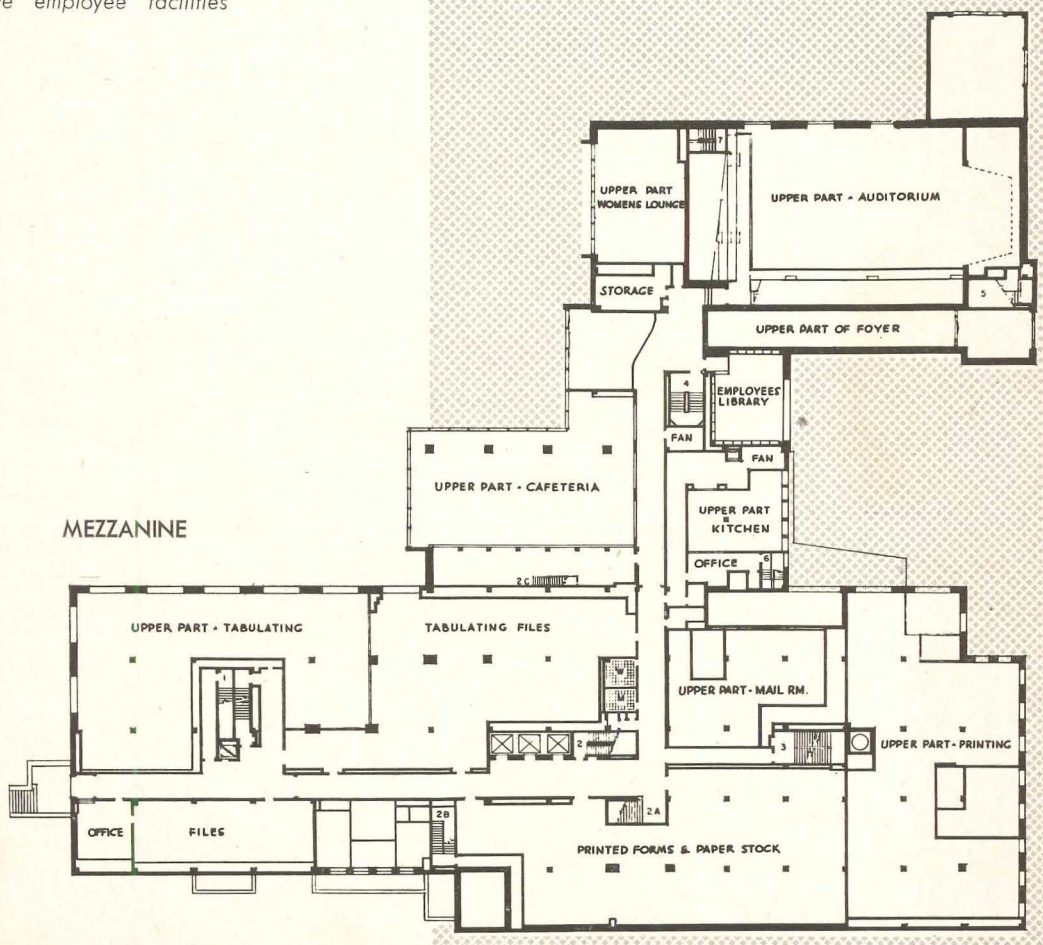


SECTION

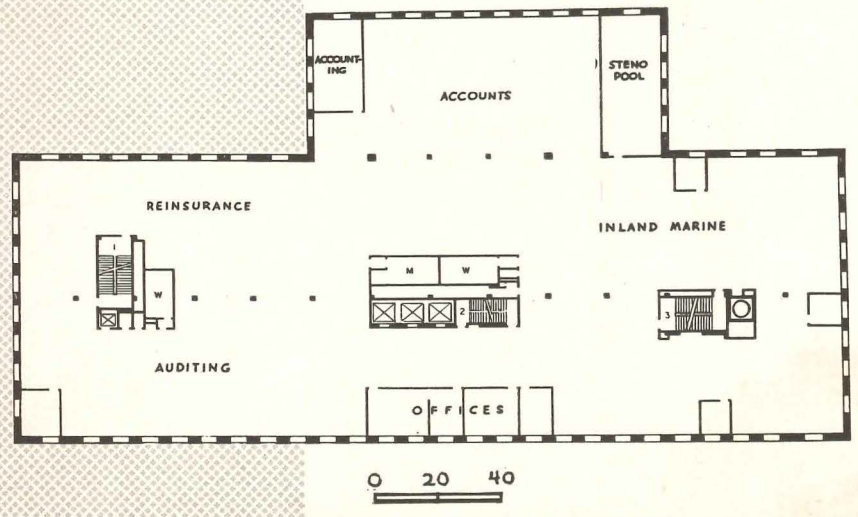




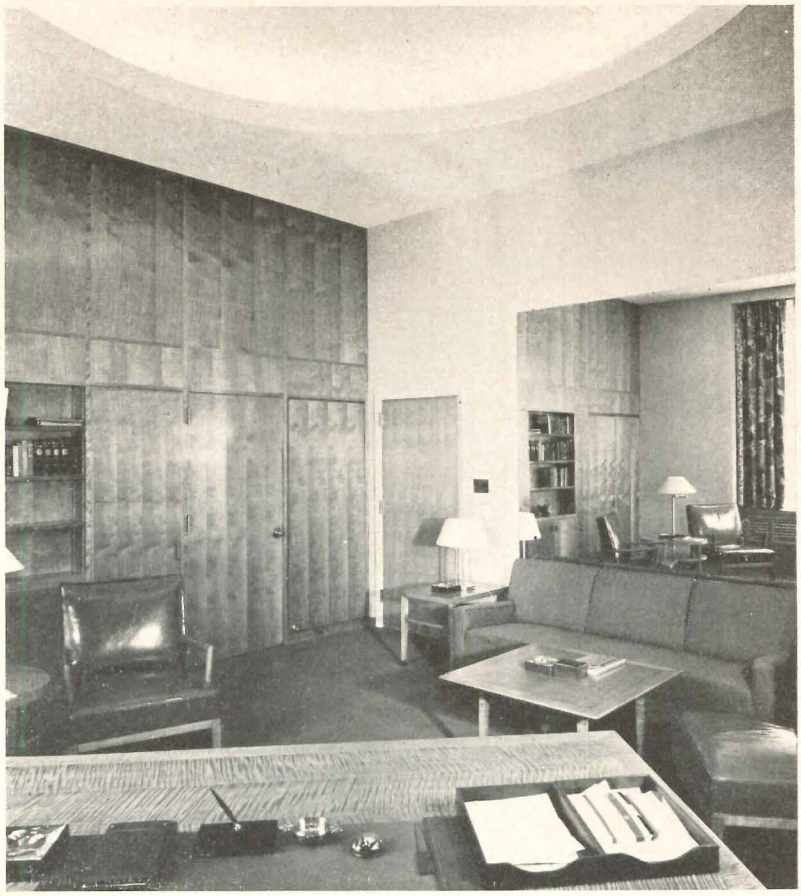
Mezzanine comes between ground floor and first. Lower floors are largely occupied by heavy operations, of which there are many like tabulating and printing, and for extensive employee facilities



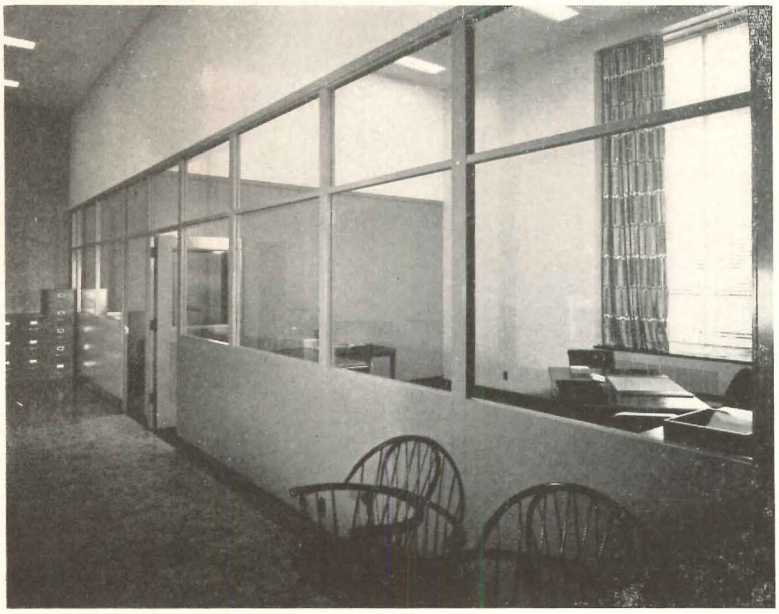
Second floor (and third) becomes the typical insurance company office space, mostly open with few partitioned offices. Lighting, acoustic treatment, air conditioning are important



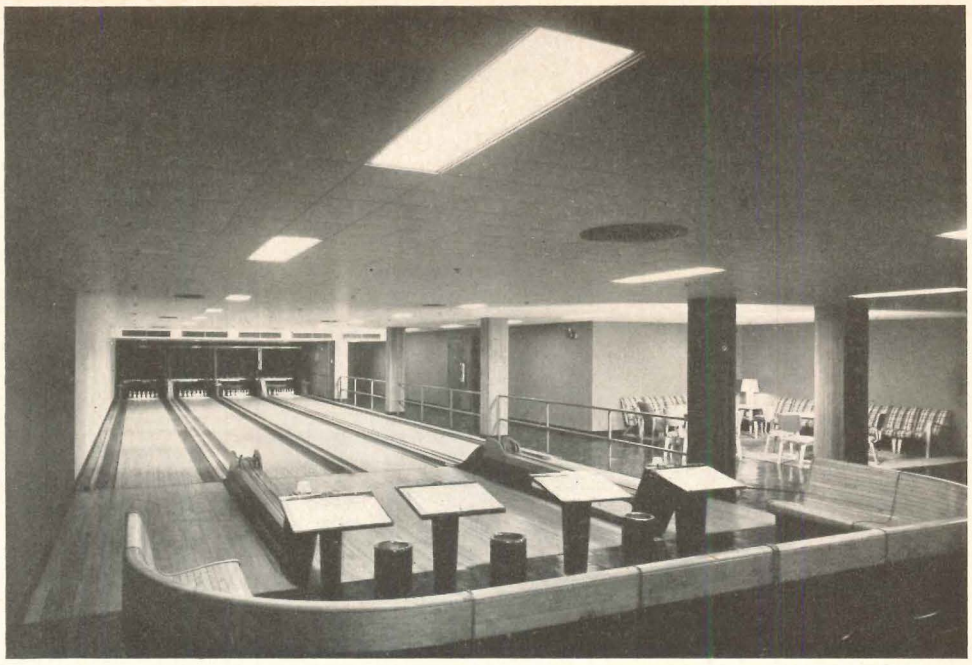
SECOND FLOOR

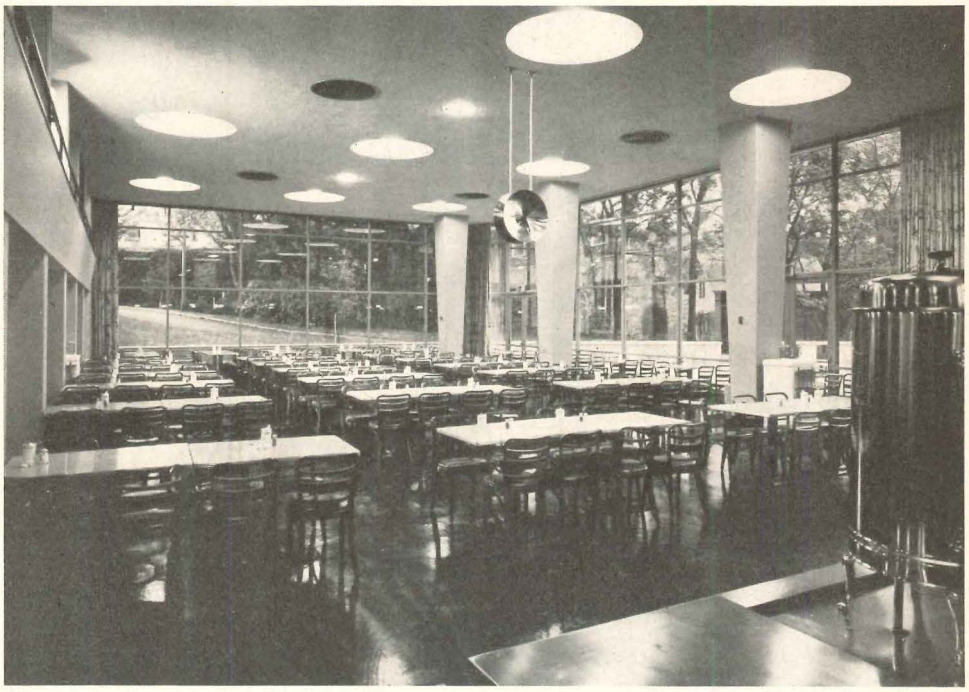


Joseph W. Molitor



Typical office partitioning is metal and glass, for flexibility. Only executive offices, above and below, have plastered partitions

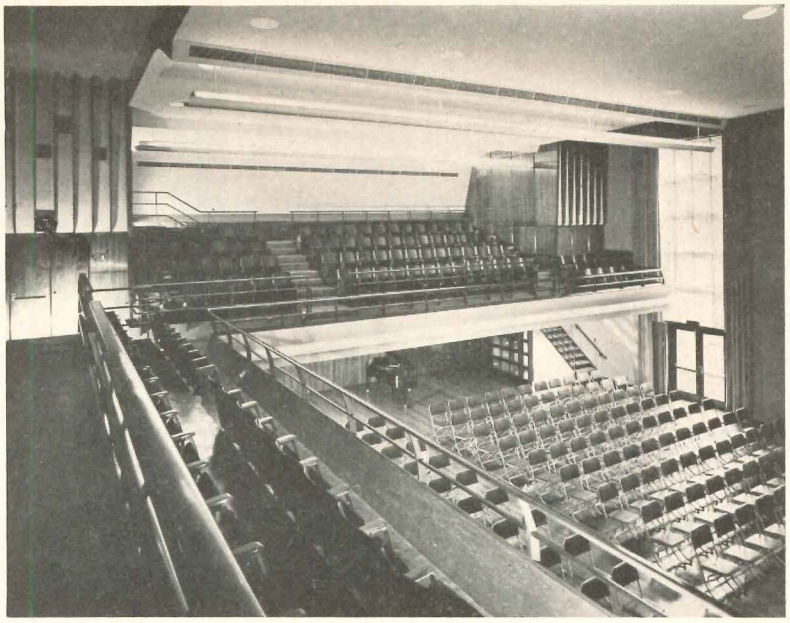


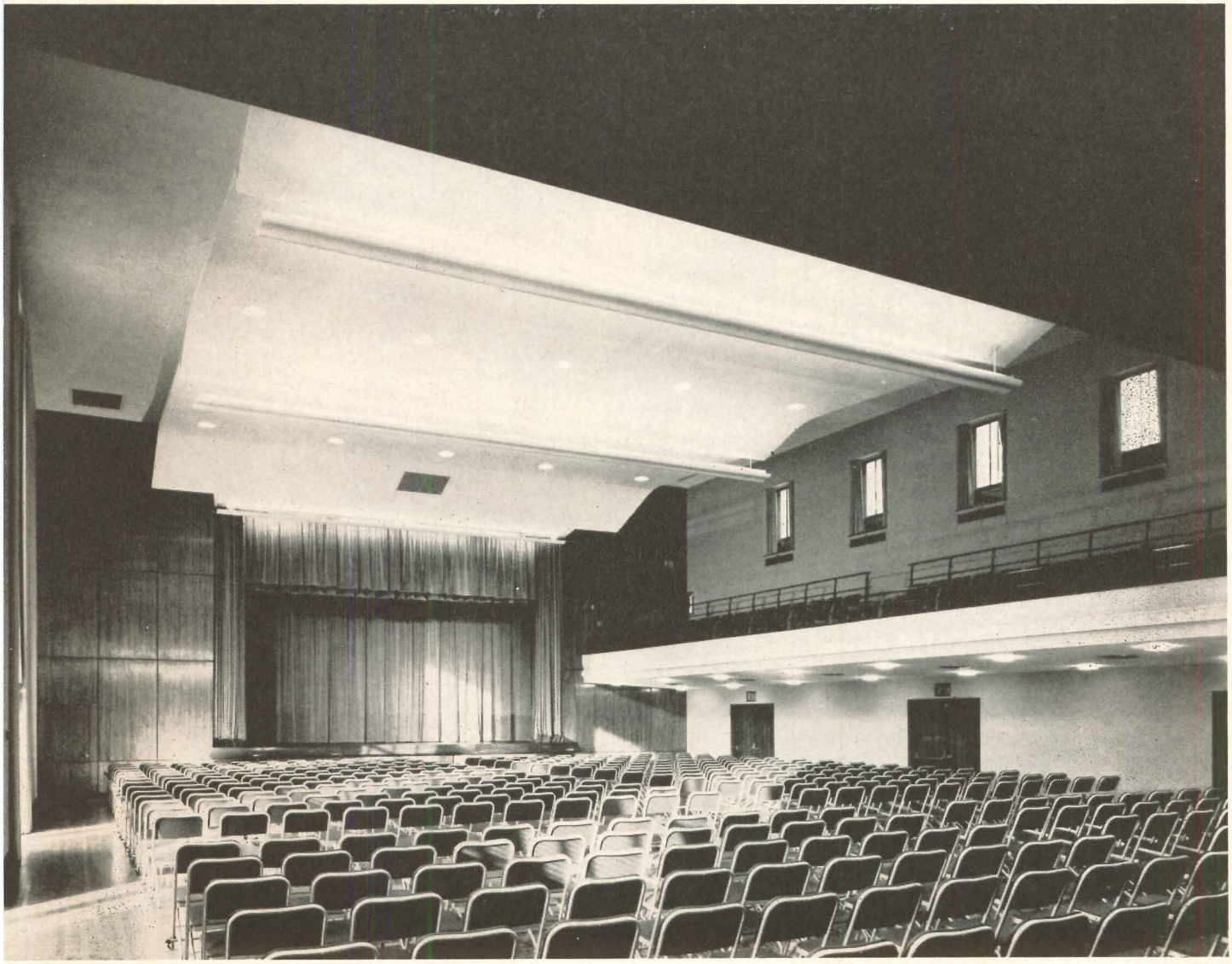


Joseph W. Molitor

Bowling alleys, employees' cafeteria and lounges are part of extensive installations many insurance companies make to brighten the working and evening hours of their workers. Indeed these things are among the important reasons-for-being for this new building vs. converting the old

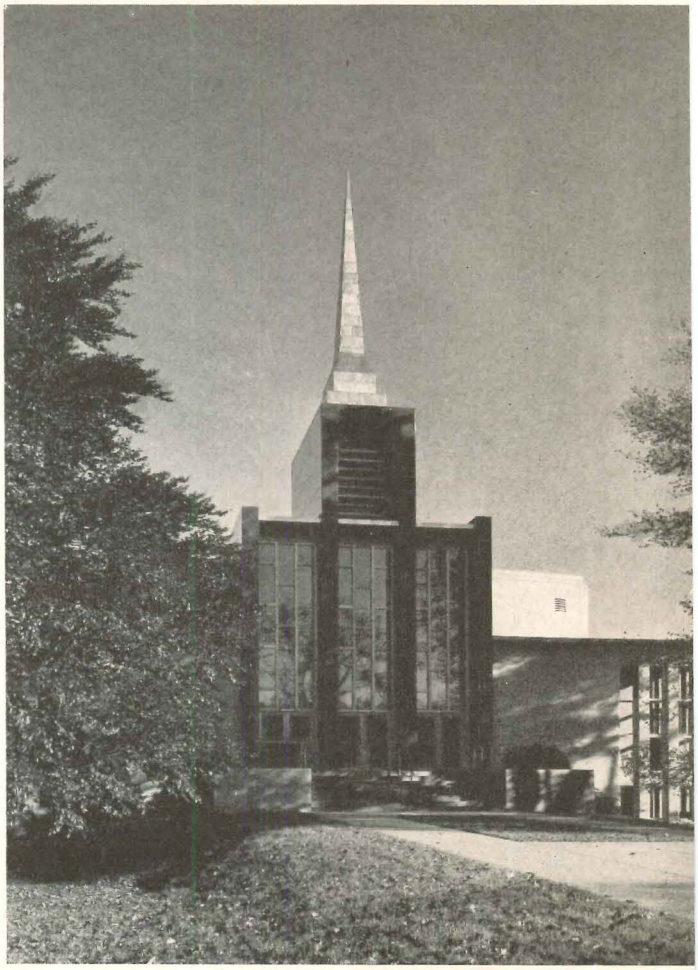
Auditorium, also part of employee facilities, has its acoustic design done frankly and expressively. The curved panels in the hung ceiling are smooth surfaces to reflect sound properly to back of auditorium. Other ceiling surfaces are acoustic treated to soften unwanted reverberations





SCIENCE CHURCH IN CONTEMPORARY FORM

First Church of Christ, Scientist
New Haven, Connecticut
Office of Douglas Orr, Architect



Monumental entrance wall is largely glass, framed in polished purplish red granite. Spire has light framework faced with light sheet aluminum

CHURCH DESIGN is probably the single most difficult problem in contemporary architecture. Compared to design in the great eras of the past, it is said, today's efforts are pretty feeble. We scorn the architectural symbolism of the past, not without good reason, but can't seem to find our own. It has even been said that today we are devoted to science, to intellectualism, and don't really find inspiration in a church, lamentable as that may be. Be that as it may, it is certainly true that church architecture is in a period of feeling about uncertainty, a time of "transitional" architecture.

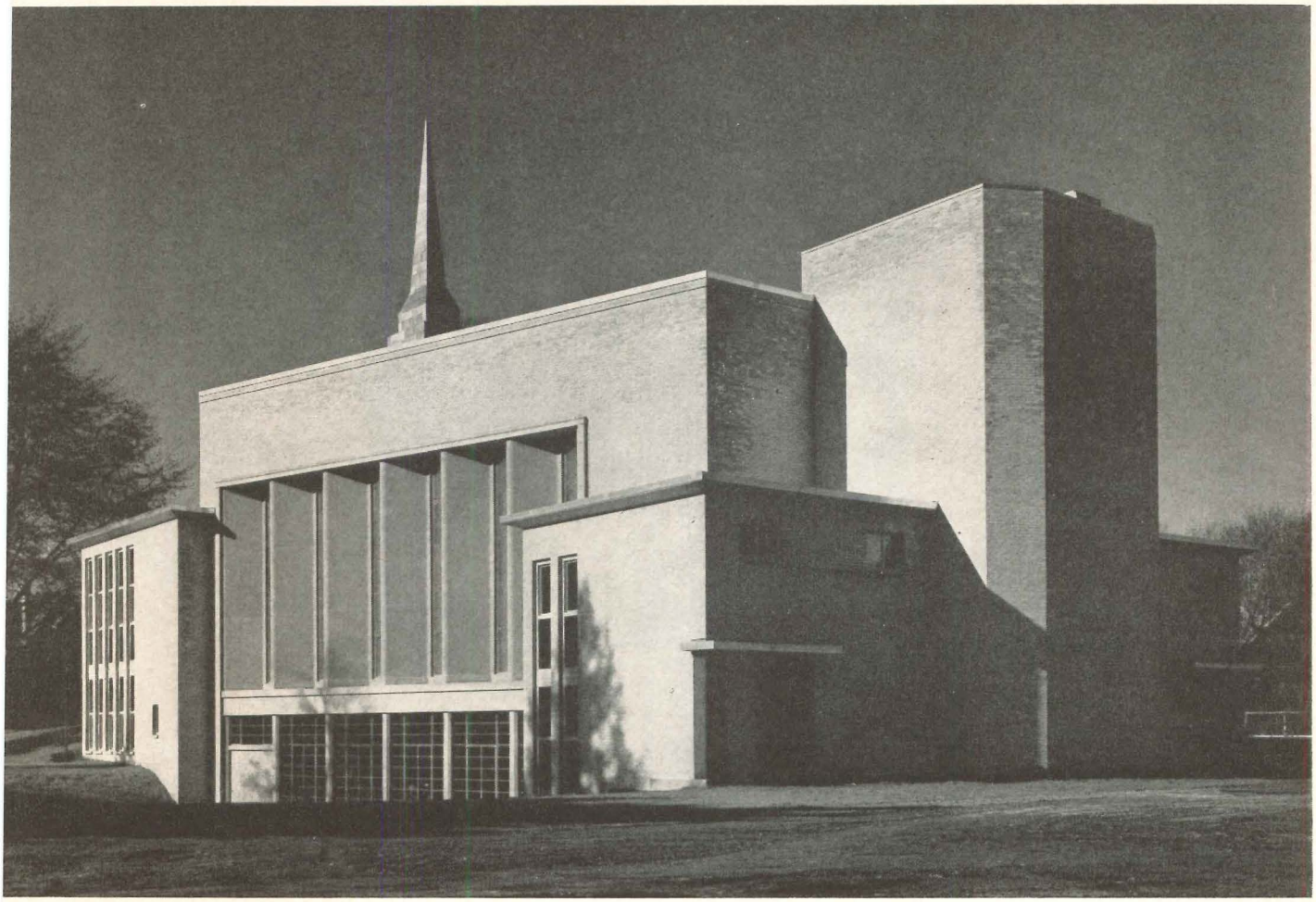
This one, being a Christian Science church, is not so tied as most to liturgical or traditional dictates. But that fact is not overly important, except in details, for basically it is intended to inspire one to faith through Christian teaching, and so needs all of the age-old qualities of a church.

This, then, is a contemporary church, transitional in some respects, bold in some others. It has a spire, in fairly traditional form, but done with modern science and modern materials — a light structural framework with aluminum facing. In many other matters it utilizes modern methods and efficiencies.

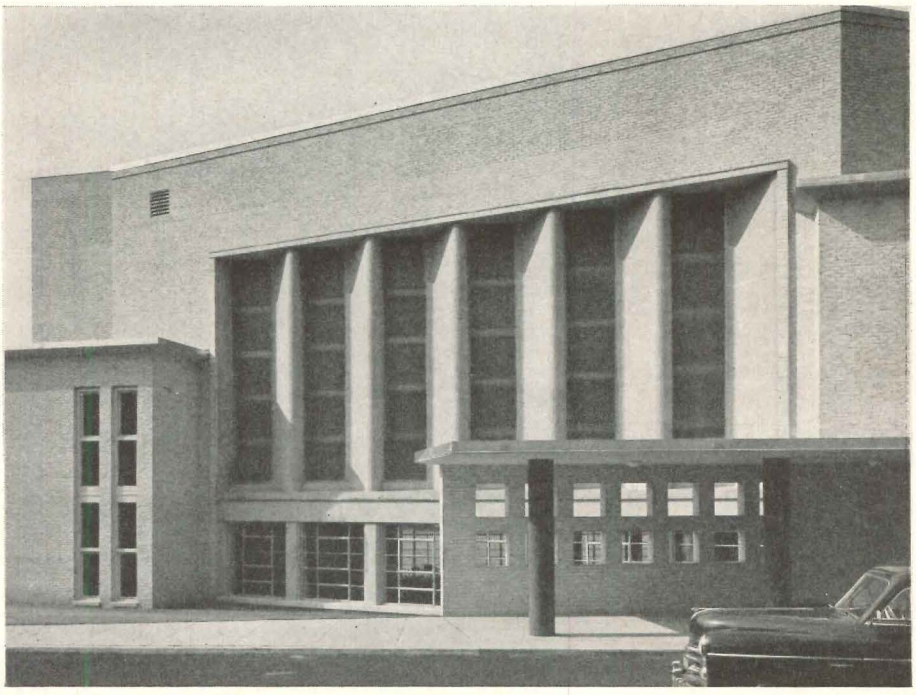
Purely functional, the auditorium is laid out in the shape of a truncated fan, this shape setting the form of the building and seen clearly in the exterior. The side walls are serrated to provide suitable acoustics, so that people speaking from the pews can be heard as easily as those on the platform. This arrangement also minimizes sun glare. The openings in these serrations are permanently glazed with double windows with one foot of air space between. This space is also used for indirect lighting.

To insure proper view of the platform the auditorium floor is curved downward, while similarly sloping ceiling planes are designed to aid the acoustics and provide troughs for concealed lighting to augment the down lighting.

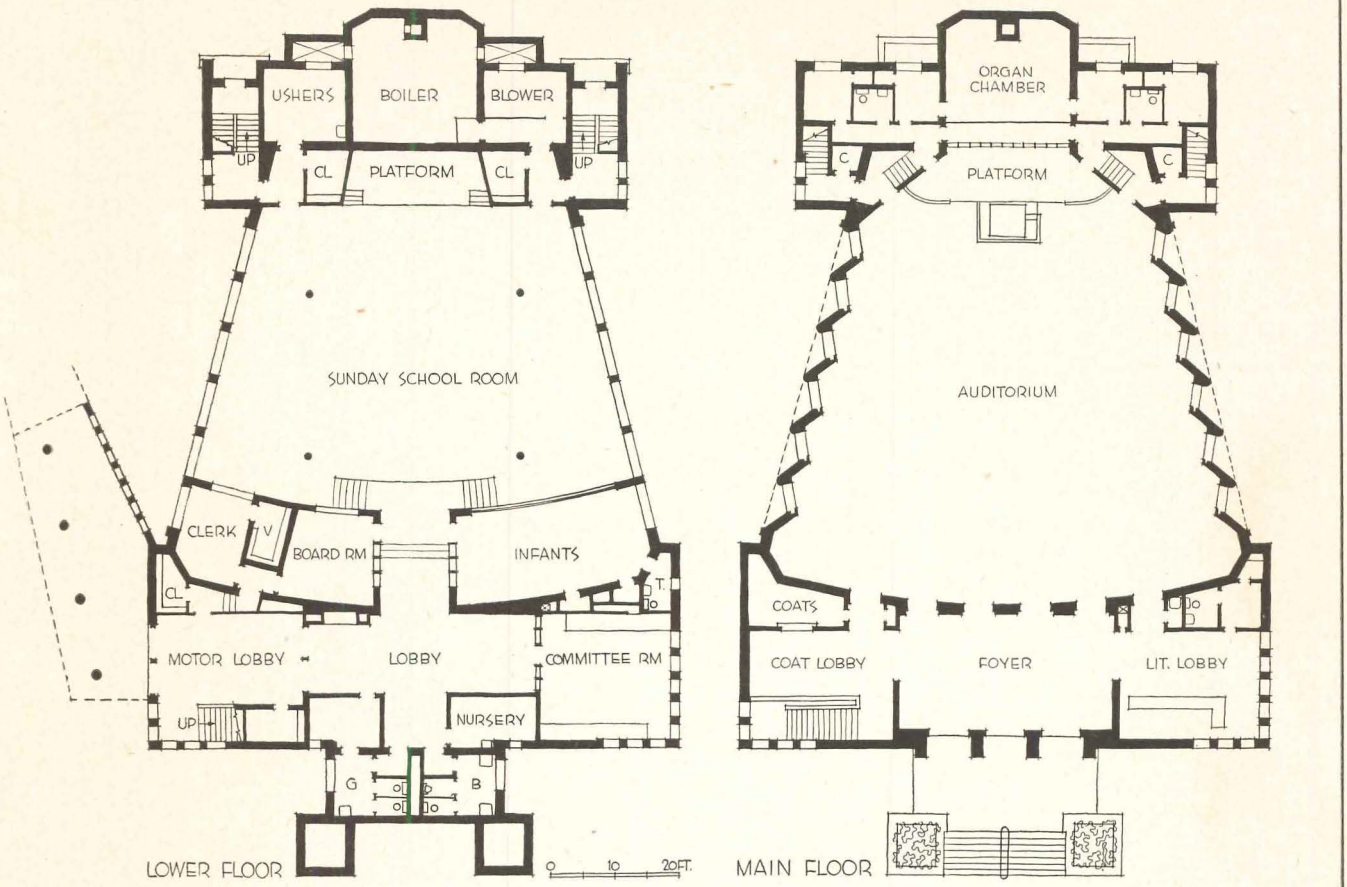
The auditorium will seat 500; with a built-in speaker system to the outer lobby and Sunday school room, 900 persons will be able to hear visiting lecturers.



Joseph W. Molitor



For a church of rather massive appearance it has a surprising amount of glass; daylight is especially effective in the tall and open entrance lobby, with its openness heightened by the addition of literature lobby beyond. Sunday school room (here shown furnished as reading room) also makes much of daylight. Auditorium has alternate panels of glass and plaster, with space between double glazing used for artificial lighting. Room is designed for good acoustics in two directions—both toward and away from the speaker's platform



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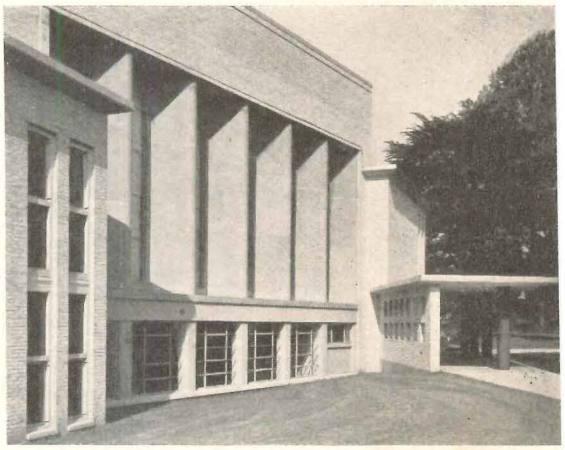

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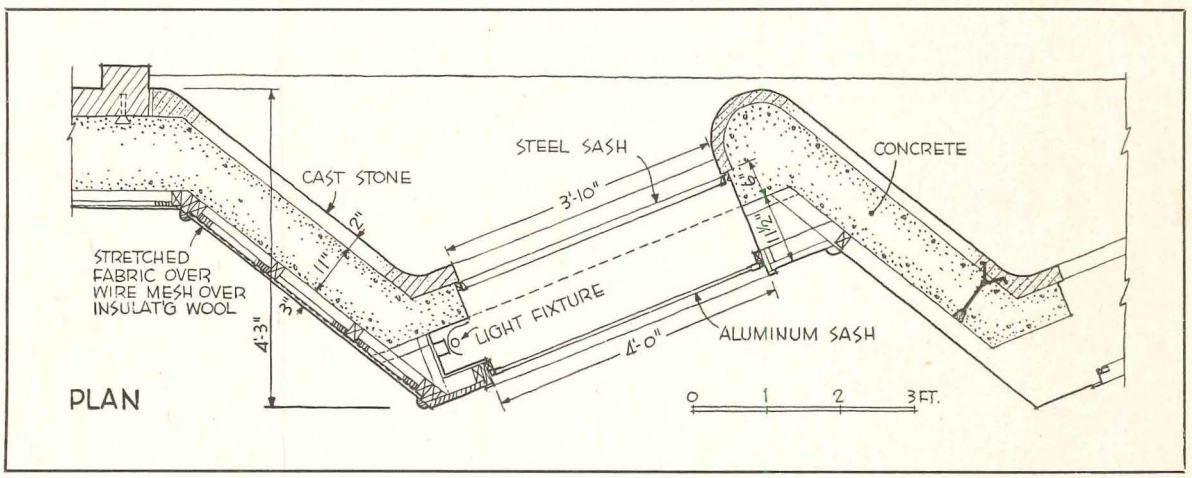
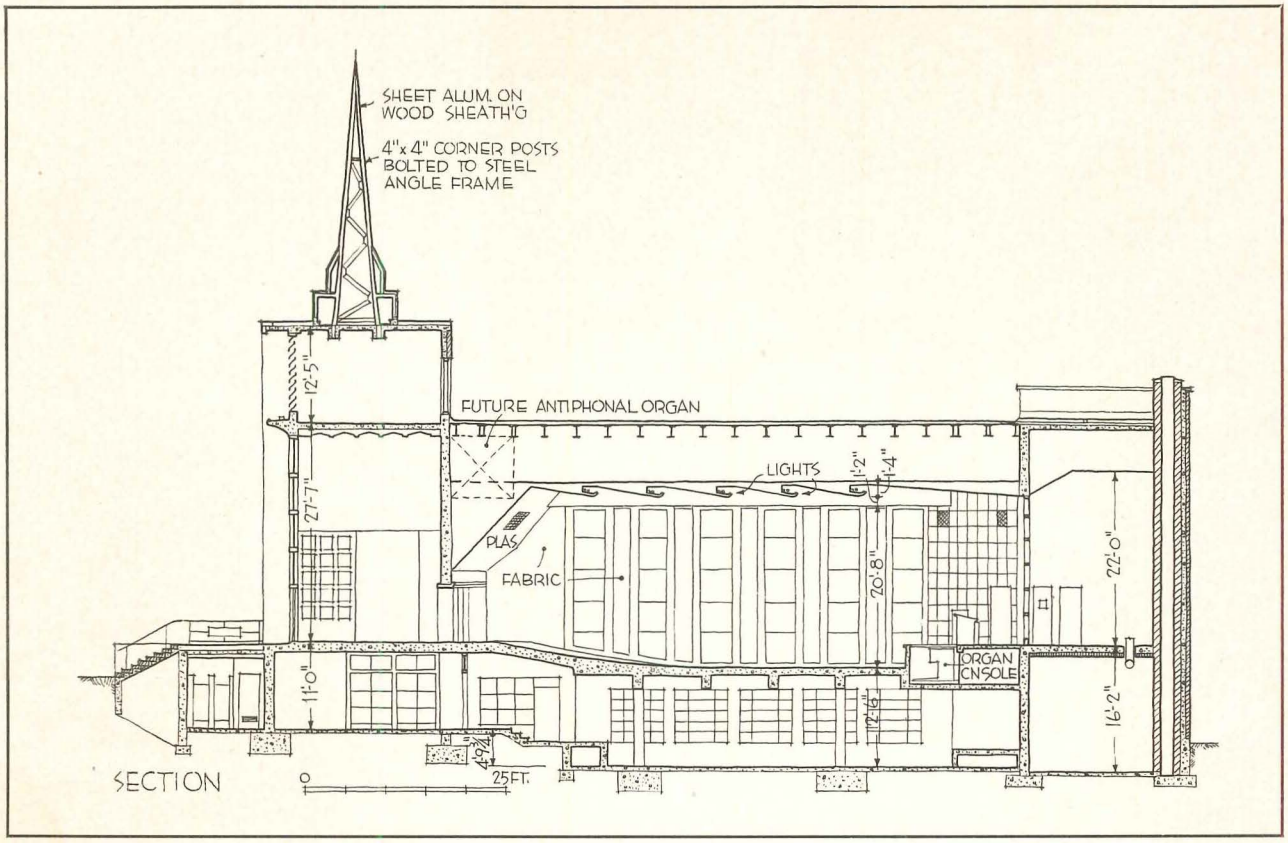
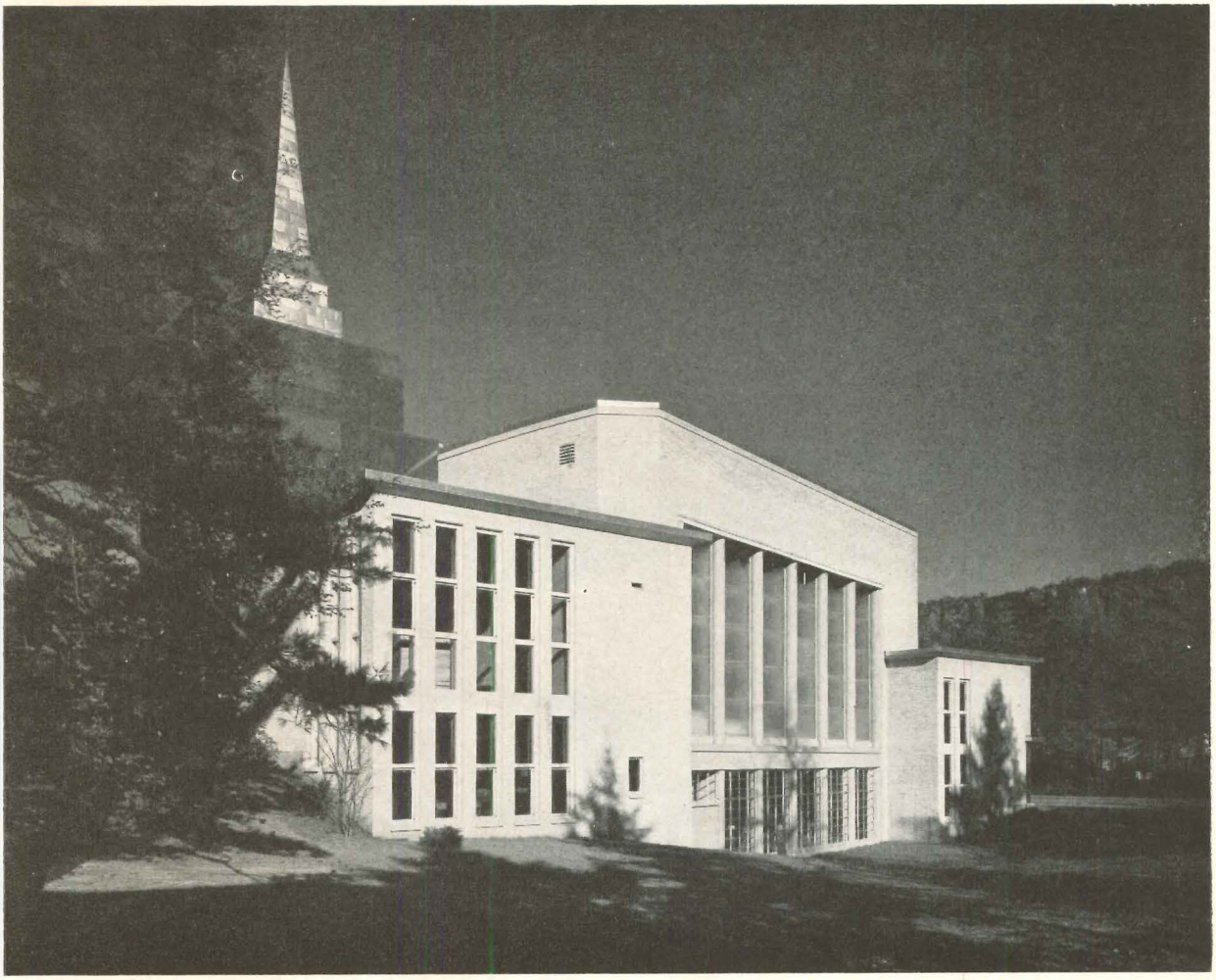
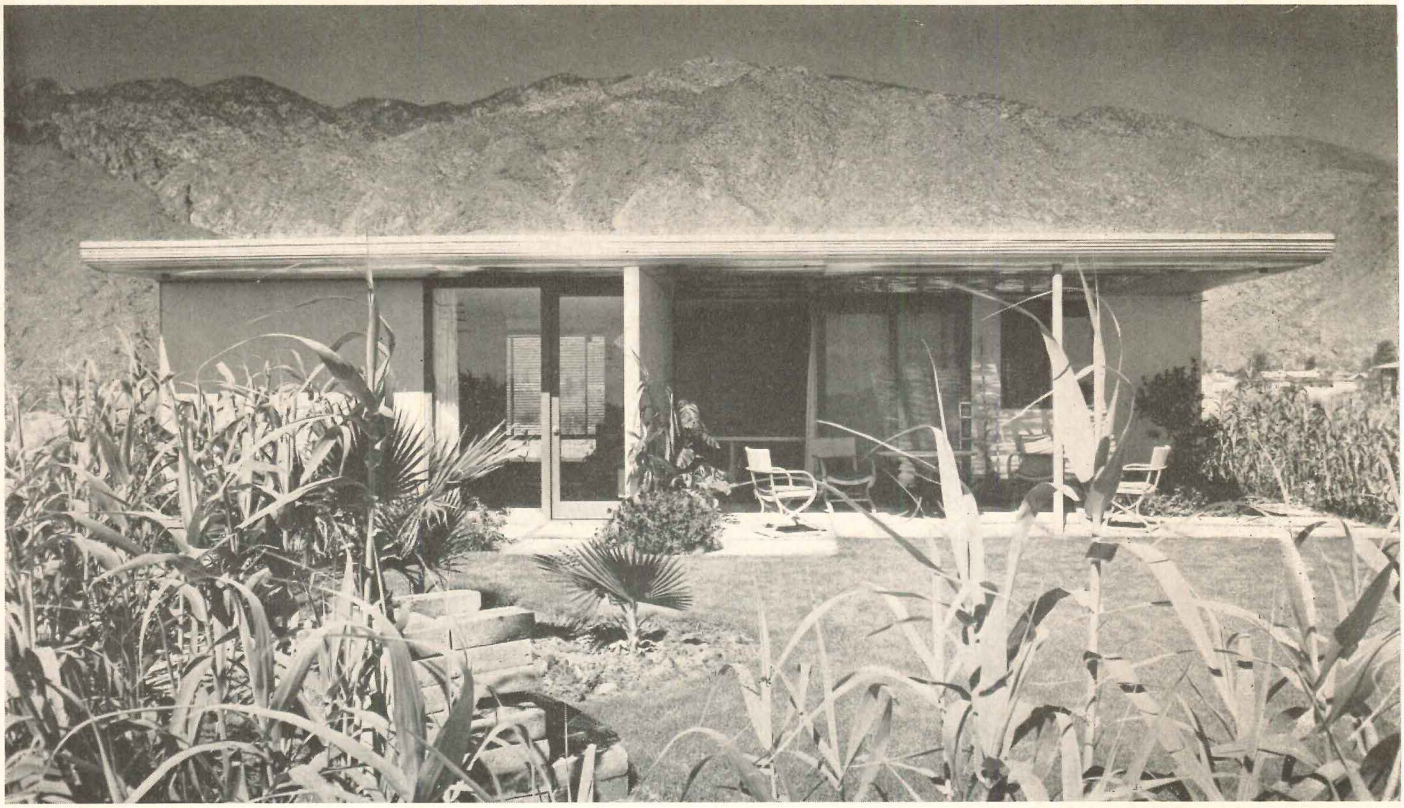



SHEET ALUM. ON WOOD SHEATH'G
4"x 4" CORNER POSTS BOLTED TO STEEL ANGLE FRAME
12'-5"
27'-7"
FUTURE ANTIPHONAL ORGAN
LIGHTS
1'-2"
4'-4"
PLAS
FABRIC
20'-8"
22'-0"
ORGAN CONSOLE
11'-0"
4'-2"
12'-16"
16'-2"
SECTION
0
25FT.





ARCHITECT'S HOUSE BUILT IN TWO STAGES

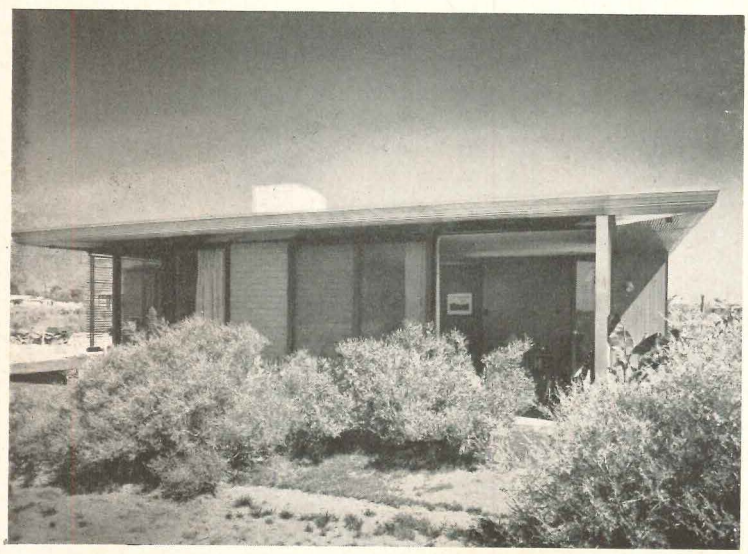
Residence of Mr. and Mrs. Robson Chambers

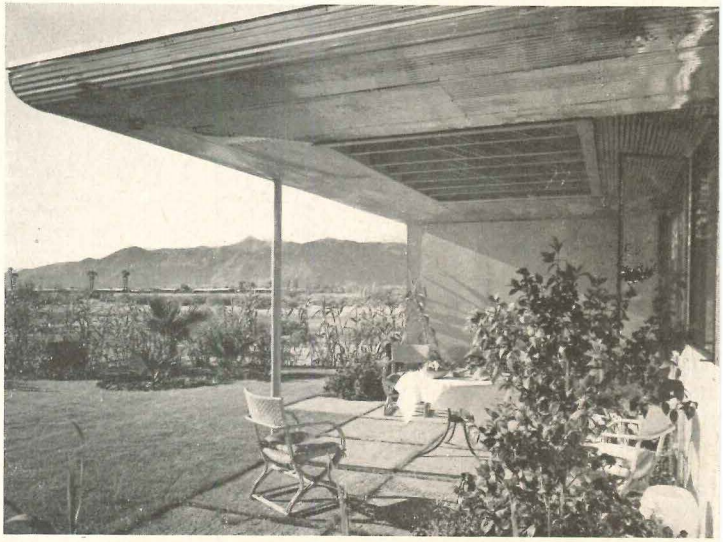
Palm Springs, California

Clark and Frey, Architects; Robson Chambers, Partner

HERE IS A HOUSE WELL PLANNED at the outset to meet the changing needs of a young couple. Small and compact at first, it was easily enlarged several years after it was built, when the size of the family was increasing. At that time the new master bedroom suite shown in the plan opposite was added, the porch was enclosed in obscure glass to form a dining room, a sun bathing patio off the three bedrooms was closed off with an aluminum and redwood fence 6 ft high, and a double carport was built.

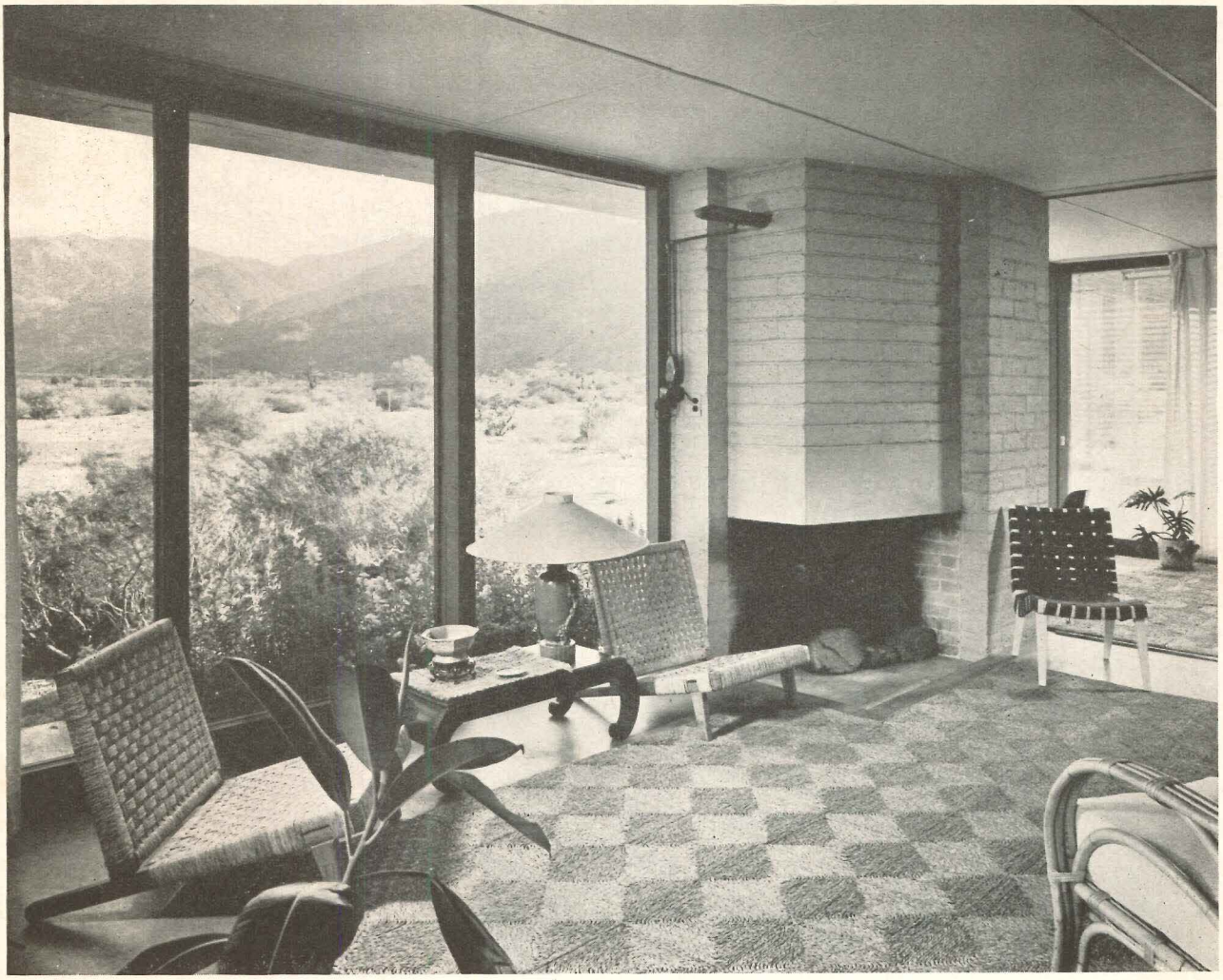
Living room and bedrooms have large glass areas on the south to admit winter sun and a wide roof overhang to shut out the hot summer sun. All major rooms open to the outside through 8-ft-wide sliding glass doors. The house is fully insulated, air cooled and electrically heated. Construction is wood frame.

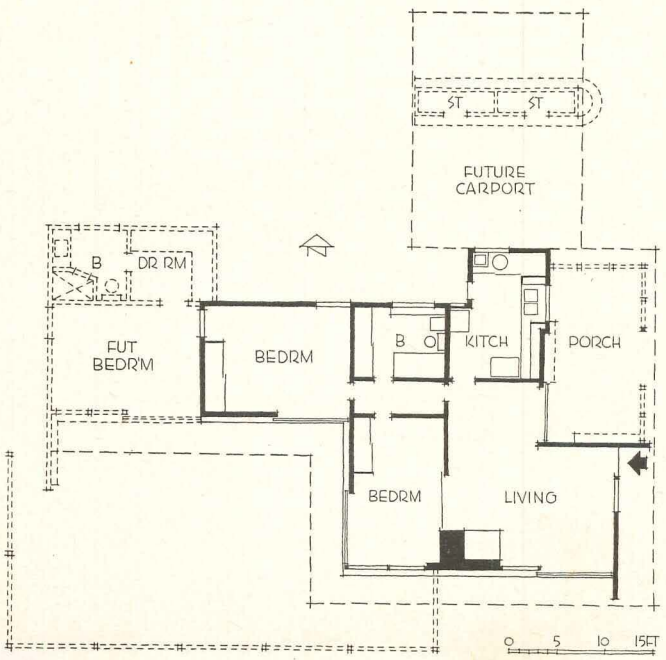


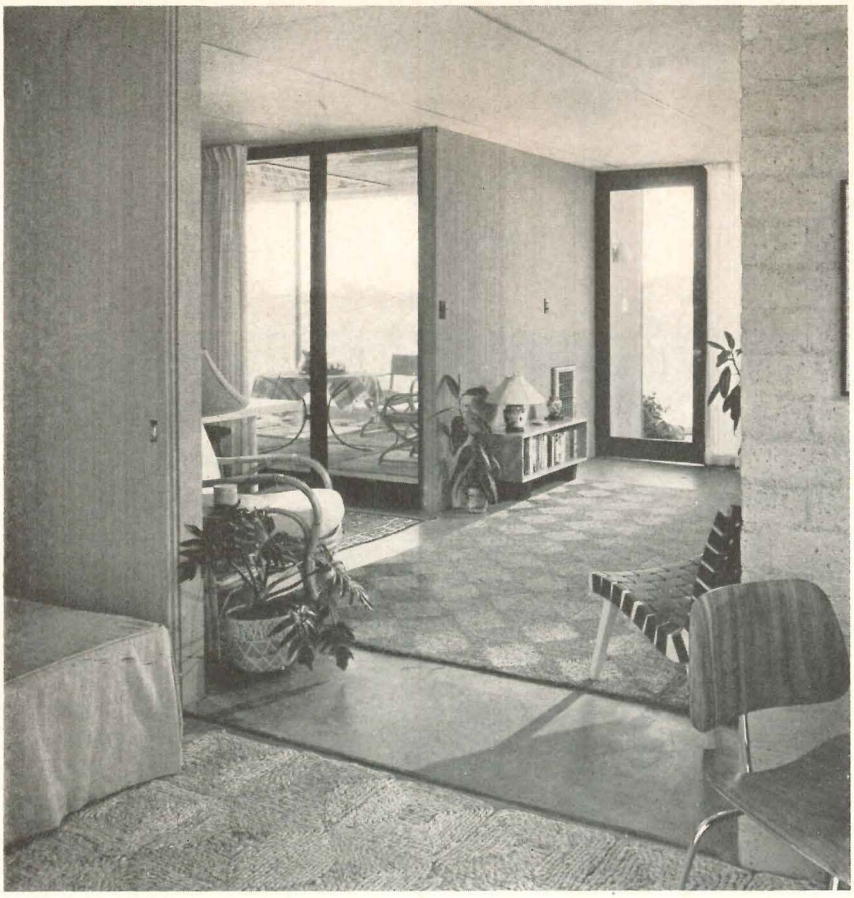


Photos opposite and below were taken before house was enlarged and grounds were landscaped; see next page for recent view of exterior. Oleander hedges form separate outdoor courts

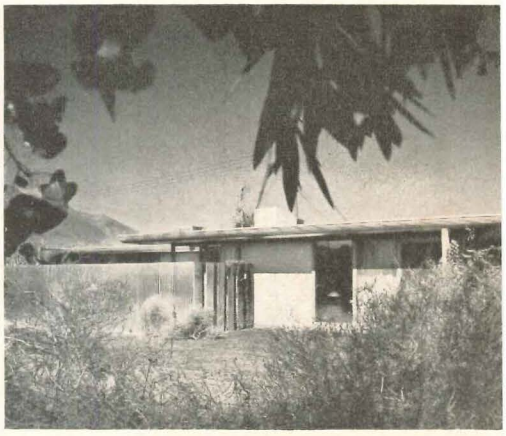
Julius Shulman

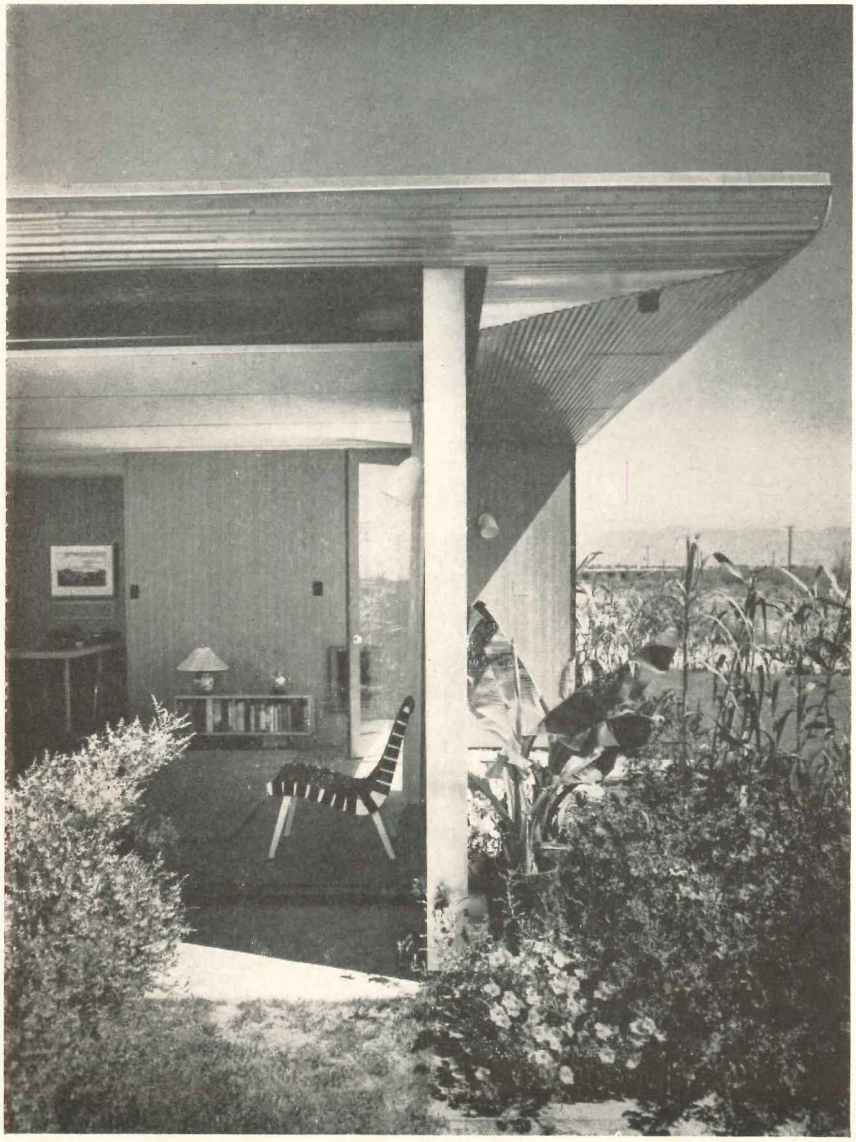






CHAMBERS HOUSE

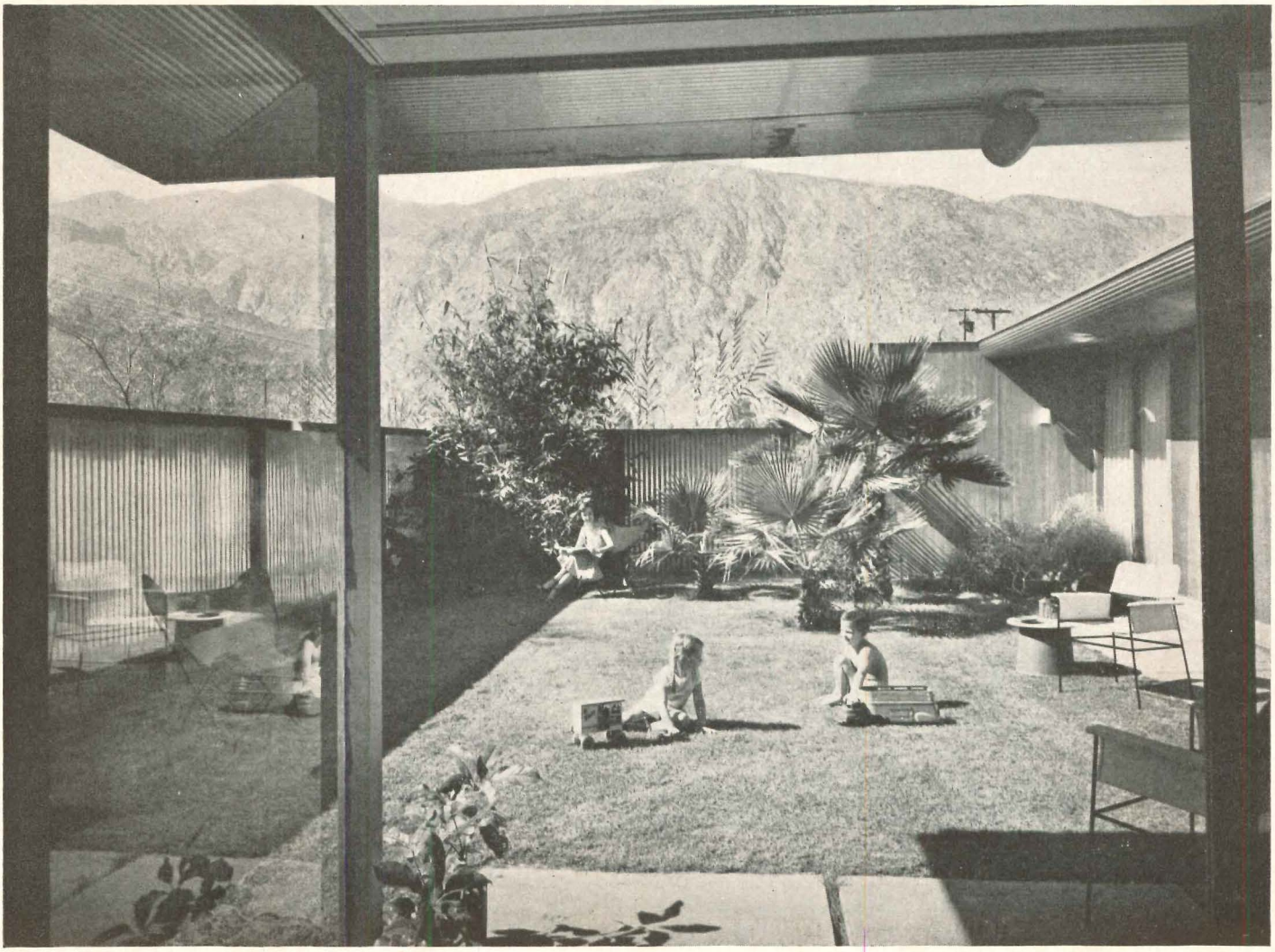


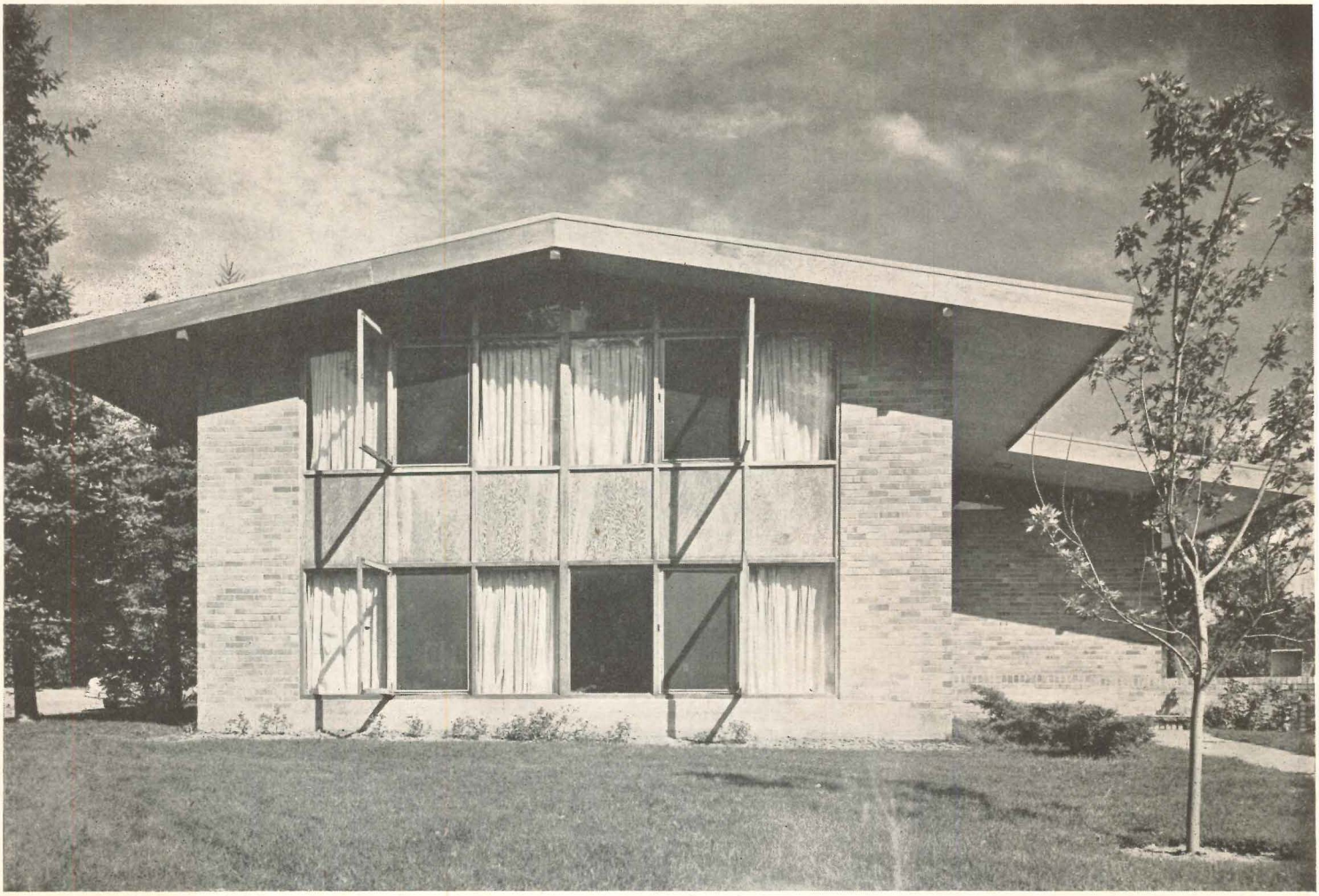


Left above: flexibility of living room is increased by sliding plywood panel between it and guest room. Left: roof is so framed that no lintels appear over sliding glass doors, but ceilings carry outside unbroken. Under side of overhang is corrugated aluminum

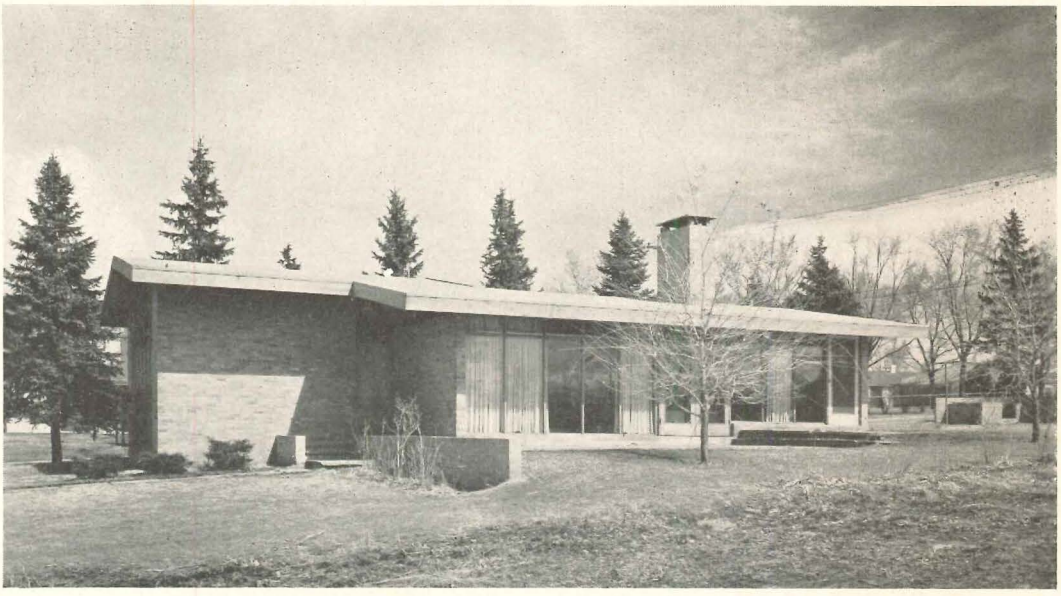
Opposite and below: high aluminum and redwood fence now closes off sun bathing patio. These new photos show how the additions and landscaping have carried original design of house to completion

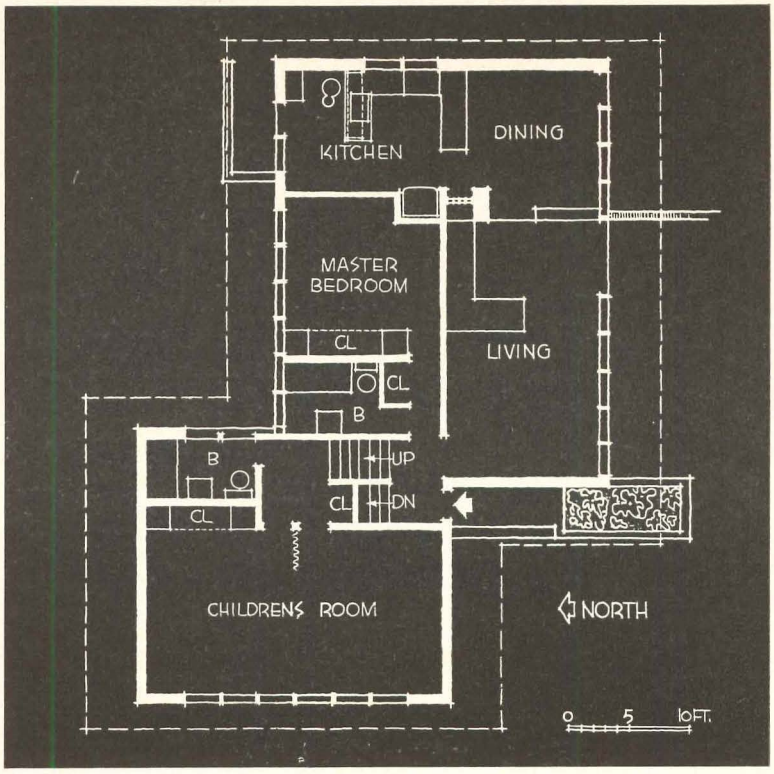
Julius Shulman





Hedrich-Blessing





ARCHITECT'S HOUSE IS ACTIVITY-ZONED

Residence of Mr. and Mrs. Joseph Marlow

Denver, Colorado

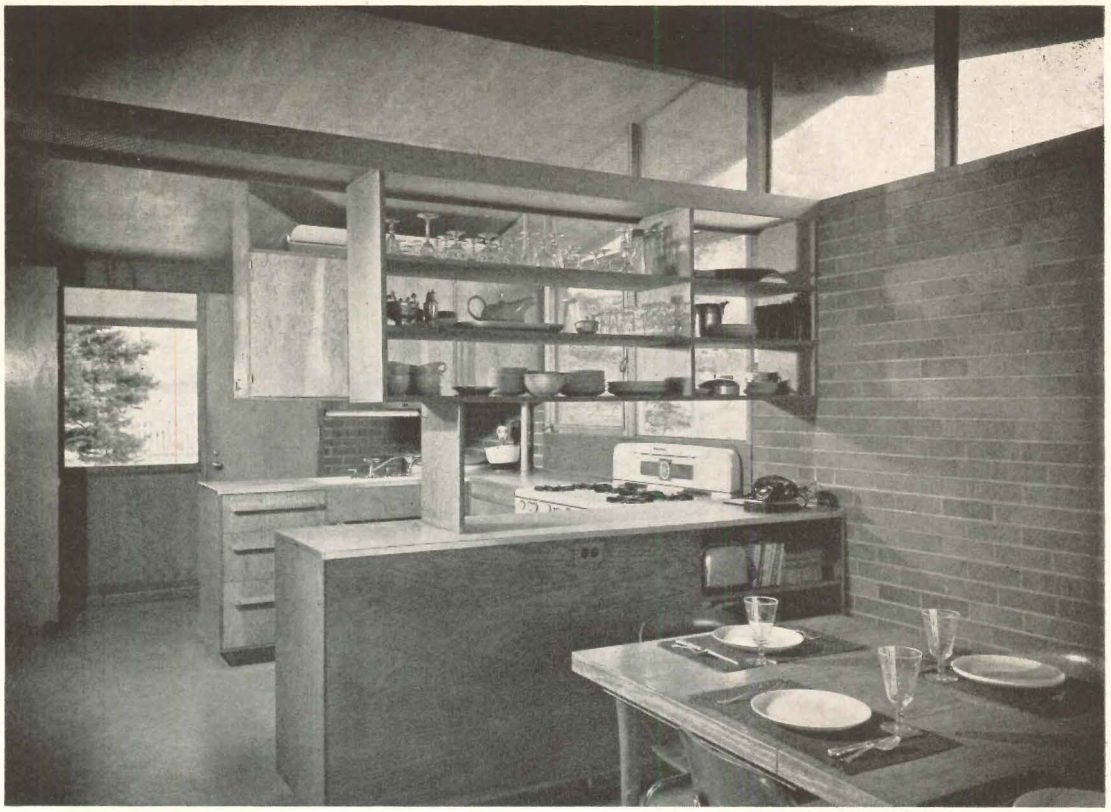
Joseph Marlow, Architect

Louise Marlow, Associate

THE TWO PHOTOS OPPOSITE tell the story of this house: a gently sloping site used to achieve the desired interior heights. The three levels are "zoned" to separate adult and children's activities. Living and dining rooms, kitchen and master bedroom are on the main level; half a flight above is the children's bed-playroom and bath; half a flight below (not shown on plan) is the architect-owner's office, originally designed as a recreation room easily convertible into two additional bedrooms. Since the stairway is immediately adjacent to the main entrance, there is no cross-traffic between zones.

The house is set back 40 ft from the property line, giving the children ample outdoor play space. A flagstone terrace along the south side, not visible from the main entrance, provides a sheltered spot for adult entertaining.

Exterior walls are brick, interior partitions and ceilings are birch plywood, lacquered. Floors are concrete, waxed. The built-up roof has 4-in. rock wool insulation. Heating is radiant.



Dining room is separated from kitchen (above) by serving bar, from living room (below) by steps and two-way fireplace. Entire south wall is floor-to-ceiling glass, with doors opening to terrace

Hedrich-Blessing

PUBLIC LIBRARIES

By Charles M. Mohrhardt & Ralph A. Ulveling

Editorial note: The public library of a quarter century ago was too often a prominent example of civic pompousness; too typically a monument rather than a structure calculated to adapt itself to wide community service. Fortunately the character of libraries is changing: the trend veering away from ostentation and towards friendlier buildings that open out to the sidewalk and invite the public to come in.

Librarians too are steadily becoming more conscious of the importance of public relations and the ways and means by which the library can work itself into community life until it becomes the focus for a wide area of civic activity. This is all to the good and offers a sharp contrast to the old hushed institutional atmosphere that caused young and old alike to begin tip-toeing as they entered the carefully guarded silence within.

These developments are important because the need for new library buildings is immediate and widespread: significant as a segment in the over-all evolution of a new architecture.

About the authors: Charles M. Mohrhardt is associate director of the Detroit Public Library and chairman of the Building Committee of the Public Library Division of the American Library Association.

Ralph A. Ulveling is director of the Detroit Public Library and past president of the American Library Association.

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BUILDING TYPES

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After 25 years of relative quiescence, public library construction is booming. In metropolitan Detroit alone 17 public library buildings have been planned or erected in the past four years. Branch libraries are going up in cities all over the nation. Main library buildings for medium-sized cities are appearing in such widespread places as Phoenix, Stockton, Topeka, Winston-Salem, Miami and others. In smaller communities, the number of new libraries planned or under construction probably exceeds the combined total of both the aforementioned categories. Only the large central library buildings in major cities are as yet outside the boom, although many of these are now preparing for major enlargements. In terms of new construction needs throughout the country, the library potential far exceeds that which has been completed.

The best of the new buildings show that a basic change in concept is taking place. The library is no longer a mere symbol of culture or a civic monument with pillars and impressive masses of steps: instead it is becoming a friendly place which reveals the resources within and invites one to share its hospitality. Simplicity of form, openness and a functional layout are its basic characteristics. But its apparent simplicity is achieved only as the result of much study.

The change in public library design has been brought about by several influences: a natural dissatisfaction with the too often inefficient, uninviting and poorly lighted buildings of the past; rising construction costs; modified physical requirements due to improved methods of library operation; the inauguration of new serv-

ices to make the public library's resources more useful; a realization that the site has an important bearing on the design and use of the library; and the need for greater efficiency in operation and economy in maintenance.

This brief introduction merely points in general terms to the problems in modern public library design. The methods for dealing with them will be considered later. Before considering them in detail, however, we would like to point out that to obtain the best possible library building, close cooperation between the architect and the librarian and his staff is required. The specialized knowledge of each is essential to provide a workable solution. The development of a successful library building is dependent upon a well thought out service plan and an efficient layout. These in turn are dependent upon the librarian's clear statement of the problem and the writing of a library program.

I. THE LIBRARY PROGRAM

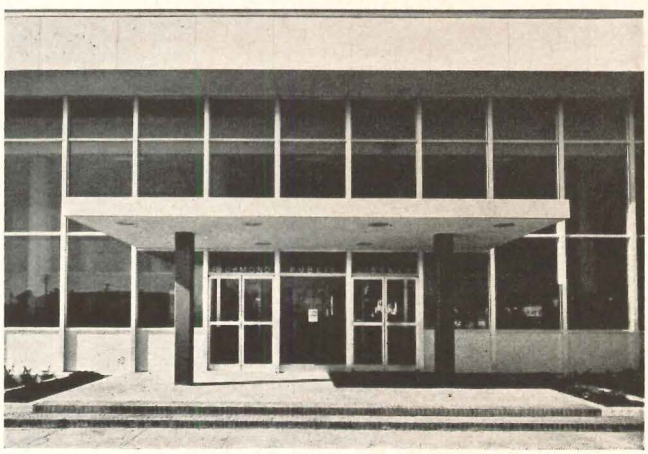
In planning a new library building, the first step is the preparation of a program which will serve as a guide for the architect. In creating such a program the librarian and his staff should outline the objectives, the services and their interrelationships, the physical requirements and the operational procedures of the projected library. A carefully prepared program will help the skilled architect prepare a workable plan and proceed without delay and uncertainty.

Consultant. The translation of the program into a workable plan is difficult for the average librarian since he is usually inexperienced in building matters. As John E. Burchard, architect-librarian-educator, has stated, "Librarians, like cooks, know what they do but not *why* they do it nor *how* they could do it better." It is therefore advisable and highly desirable from the architect's point of view to retain a library building consultant — a librarian who has had wide and recent experience in both planning and building problems. The library building consultant usually translates the librarian's program into building requirements, recommends means for fulfilling these requirements and confers with the librarian and architect as the plans are developed. He also draws on his experience to avoid unnecessary features and to incorporate those which will produce a sound plan — one which will keep annual operating costs at a minimum and yet provide a maximum of public service.

Clientele. The public library is a community center for those who want information on any subject or who are interested in self improvement through home reading and study or who read for pleasure. Businessmen, professional persons, skilled and unskilled workers, teachers, students, housewives and children, are all a part of the clientele served. The total number of people who use their community library is far larger than generally realized. A library's registration file is the record of people who have applied for the privilege of borrowing books and usually comprises the largest credit file in the community, with the possible exception of those the utility companies own. The library directly serves more individuals in the course of a year than any other department of local government except the water department, the department of streets, the police traffic division and the garbage collection services. In spite of its size and importance, even the public school system does not work with as many persons over a twelve month period as the public library does.

Services. Public libraries are much more than book warehouses and book distribution centers. Were these their functions, housing them would be simple; extensive book stacks in the basement or elsewhere, together with a room for delivering books to the patrons would fill these requirements. Instead, libraries must stimulate people's interest by bringing to their attention books that can be helpful to them even though they may be unaware of their need for help. Parents having disciplinary or other child training problems may not realize that patterns have been worked out to deal with such questions until a book on the subject is brought to their attention. This is but one example of hundreds that could be cited. With the vast diversity of peoples' interests and needs, special display racks are not enough; the entire book collection must be organized as a continuous display so individual patrons will be drawn to the section of greatest concern to them. Recently the typical book collection has been organized according to the so-called *reader interest* classifications: that is, into such categories as The Home, which includes gardening, house repairs, interior decoration, etc.; Today's Events, which includes social, economic and political problems; Self Improvement, which has a strong appeal to many; and nine or ten other classifications. Librarians are

City of Miami News Bureau



Philip Fein

concerned with providing stimulation of this and other types to individuals using the library, but the best means for achieving it within limited space is yet to be achieved. The implementing of this fundamental of library service calls for brilliant and imaginative design which architects and librarians must deal with as a joint problem.

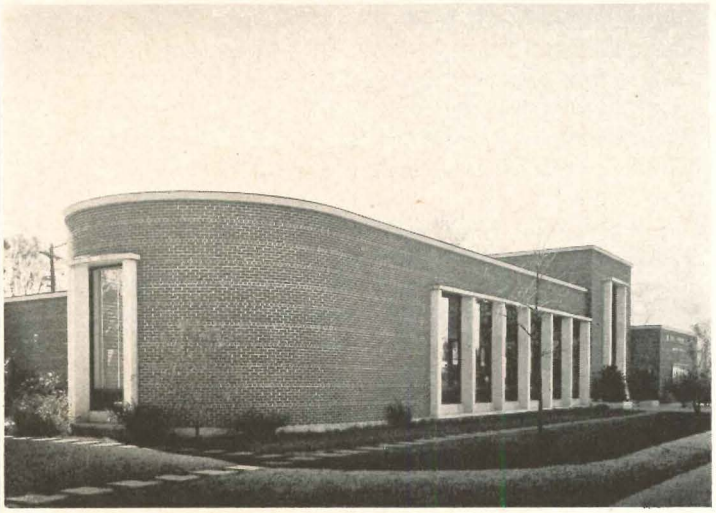
Stimulation of group interests by means of meetings, film forums, discussions and story hours is another important aspect of modern public library service. Facilities must be provided for such activities.

During the war great advances were made in the scope and use of recordings and educational motion pictures. Both of these media now occupy a definite and increasingly important area within the framework of library service.

All of the above are types of service which can be employed for both young and old, but because of fundamental differences between age levels, even the smallest library's book collection is separated further into groups for Adults, Children and frequently for Youth (the teen-ager), and in addition all libraries provide a Reference section. In larger libraries a further breakdown becomes necessary, organized around broad subjects such as Science and Technology, the Fine Arts and Music, History and Travel, Social Sciences, or other combinations designed for a particular community's needs. This may appear to be a complex pattern, but the total interests of a community are also complex.

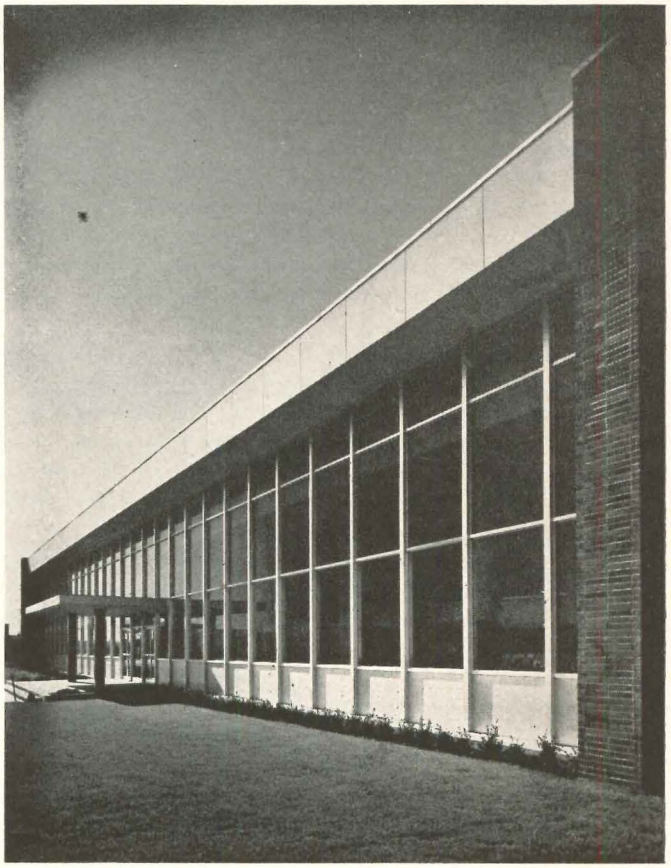
The Community. Though the library has its own promotional program aimed at individuals and groups, it occupies also a significant place as a community center for furthering civic undertakings not of its own sponsoring. Some state laws provide that any public building may be commandeered for polling purposes. Even without such legal compulsion many libraries provide quarters for voting booths and for the registration of voters. Civil defense training classes are sometimes held in libraries. In other ways libraries often become integrated into community life: businessmen's associations, women's clubs, hobby groups, community councils, and sometimes girl and boy scout troops meet regularly in the library. Thus the library's facilities must be planned to accommodate these varied needs with a minimum of expense and a maximum of convenience.

Top left: Miami Public Library, Steward and Skinner, architects. Below: Sherwood Forest Branch, Detroit, William E. Kapp, architect



Phil Olsen

Left & right: Richmond, Calif. Library, Milton T. Pflueger, architect



Philip Fein

Physical Requirements. The program should contain detailed information on the spaces needed for public service, staff operations, meeting and community service rooms, the book collection, seating requirements, service points, communication equipment, public toilets, and in some instances telephone and check room facilities, booklifts, elevators or still other physical elements. The interrelationship of subject materials, service areas, work rooms, offices, etc., must also be carefully studied and explained in the program. Before preparing this data the librarian should give careful consideration to non-book materials and equipment such as phonographs, records and microfilm readers.

Operational Procedures. An attempt should be made to simplify operational procedures since they will affect the plan. A management analysis will often reveal simpler and more efficient methods for accomplishing routine procedures. Modern methods will produce a more efficient layout and reduce space requirements. For example, the recently perfected transaction method of book-charging has made it possible to simplify the control desk design and effect economies in over-all building requirements. Whether this transaction system is carried out photographically, by means of punched cards, or by the audio-recording method, these procedures eliminate the need for such space wasters at the desk as the old fashioned book-card slipping trays. Similarly modern methods reduce the registration file by one half because the "number file" can be entirely eliminated — thus saving area, files and staff.

II. SITE AND BUILDING

Site. The choice of a site has an important bearing on public acceptance and use of the library. A prominent, easily accessible location is required to attract a large number of persons. Therefore, the library should be placed where people naturally converge — in the heart of the shopping and business district, rather than in a remote location such as a park, civic center or quiet side street.

The site should be large enough to provide parking space for both staff and public. A slight setback from the sidewalk will yield space for a small planted area and a bicycle rack, the latter located near the entrance so it will eliminate the usual clutter of bicycles about the door. The planting bed will add to the building's attractiveness and will focus attention on it.

As we know, the shape of the lot will inevitably affect the layout of the building. A square lot often presents difficult problems unless it is of rather large area, while a rectangular lot with long street frontage is perhaps the most usable, though a deep lot can also be adapted successfully if the frontage is not disproportionately small. Triangular sites should in general be avoided. Lots facing north or east seem desirable for they permit large glass areas in the street façade and yield a maximum of natural light in the large reading areas. South and west exposures usually present the problem of glare which must be controlled by blinds, draperies or other means.

Buildings. The most readily noticeable exterior features characteristic of recent public library buildings are the entrance at sidewalk level and the generous glass areas in the front. The more accessible entrance, without steps or terraces, makes it as easy to enter the library as to enter the neighboring shops. The big expanse of glass enables those who pass to see the colorful and inviting interior, the books and the people reading. At night the library appears as an attractively lighted showcase — a most effective and desirable public relations feature.

The space for public service is no longer divided into boxlike rooms for juvenile, adult and reference services since solid walls freeze the plan. Where a separation is desirable the division can be made by freestanding bookcases or other low elements. Then when the proportion of children to adults rises or falls, the library service areas can be adjusted to meet this change. Flexibility has become a fundamental requirement of great importance.

Convertibility is another important characteristic, especially of the new type branch library. Many of the older library buildings are still operating in poor locations because the buildings cannot be sold for any other use. Neighborhoods change over a period of years and a site well chosen today may be a poor one 25 years hence. The modern branch library building with its large open areas devoid of columns and interior bearing walls can easily be converted to commercial purposes and will have a good resale value in the future.

Illumination should be evenly distributed over the public service areas so that freestanding bookcases, tables, chairs and other equipment may be moved to new positions and still be well lighted. Desk and floor lamps are generally not satisfactory for public library use as they create a disturbing contrast in light intensity, require numerous power outlets and give the room a cluttered appearance. Though there is no general agreement on the amount of light required for large reading areas, experience indicates that 40 ft-candles is adequate for most readers.

At the risk of seeming too obvious, we remind our readers that air conditioning is desirable for the preservation of books and highly recommended for staff efficiency and the comfort of patrons. This feature has been incorporated in many recent library buildings with good results.

A number of design principles can be employed to change the often forbidding atmosphere of earlier days into one of cheerfulness and welcome. Such features as lower ceilings, elimination of corridors and stairways

Phil Olsen

Main reading area, Sherwood Forest Branch, Detroit Public Library, William E. Kapp, architect

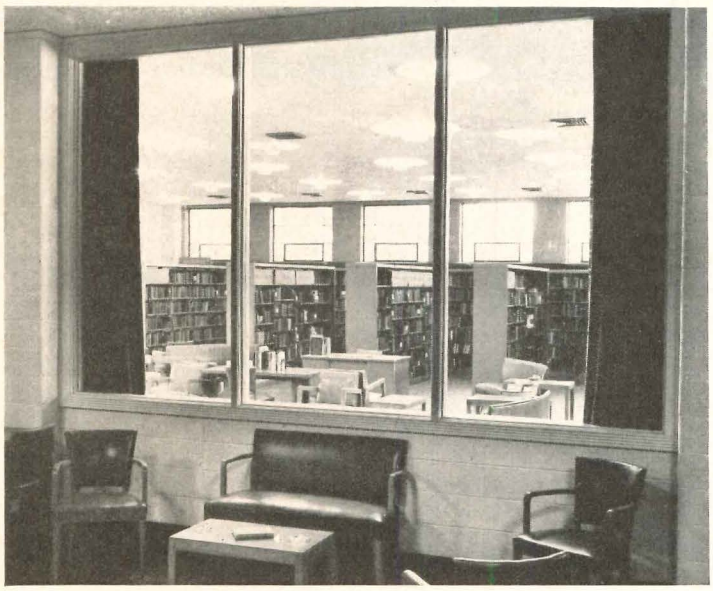
wherever possible, colorful walls, gay colors on rebound books, and furniture upholstered with plastic in inviting colors offer a sharp contrast to the pretentious architecture and somber tan and brown vogue of the past. The long rows of tables and chairs can also be a thing of the past. They can be replaced by inviting lounge areas equipped with comfortable chairs, sofas and light end-tables one can pull close to his chair for writing. Reference areas can be provided either with individual tables or those which seat four. In selected areas the installation of a public address system for the piping of music or library announcements is an innovation.

III. LAYOUT

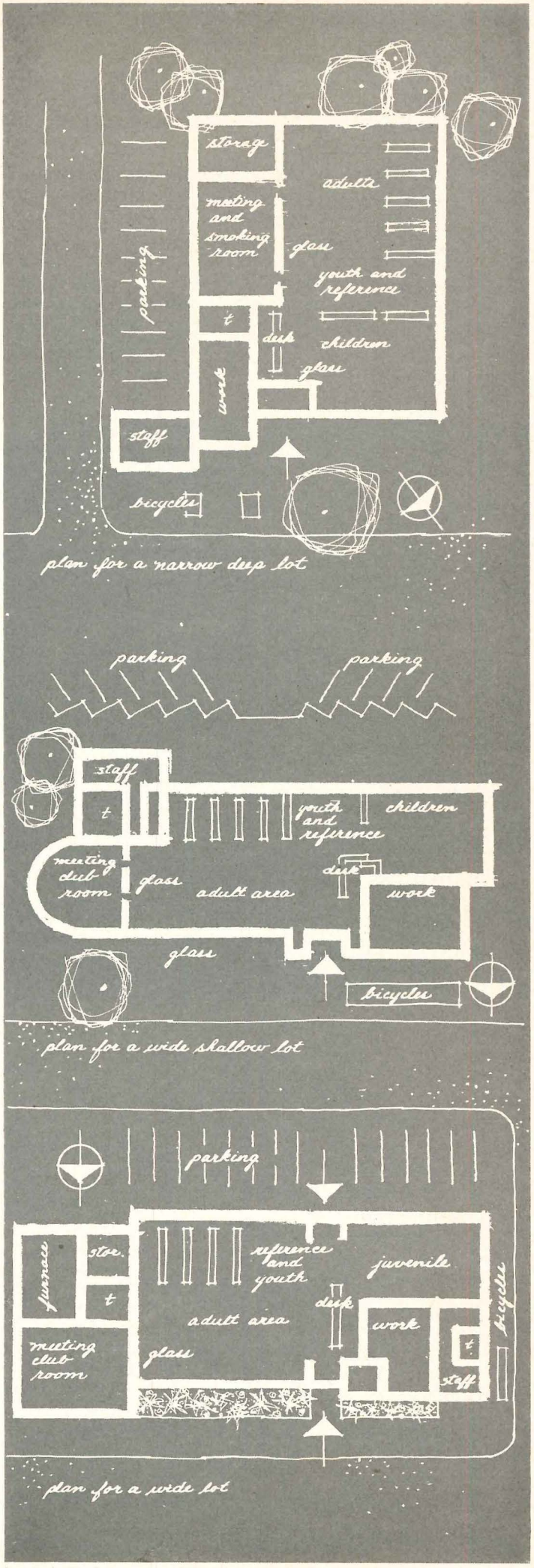
In planning a public library building certain principles of desirable interrelationships between the various functions or service units must be recognized. The degree to which planners succeed in applying these principles will determine in large measure the success or failure of the plan. In almost every situation, however, certain compromises will be necessary. The careful weighing of the advantages and disadvantages of each such compromise against some alternate compromise is important. Without creating confusion in the minds of readers, it is impossible to consider here the principles applicable to every type of building. Therefore, we will discuss here only those which apply to the small or branch library.

The *youth service* should be located between the children's and the adult areas. Thus the youth in the transitional period may progress from one service to the next as rapidly as his intellectual interests permit.

The *reference* facilities, because they are used heavily by boys and girls of high school age, should be closely



View from smoking room, Thomas Jefferson Branch, Detroit Public Library, William E. Kapp, architect



Drawing by Don Ervin

adjacent to and sometimes in the area used by the youth group. Except in a very unusual situation it is unwise to locate them in a remote part of the building merely because it offers quiet.

The *adult lounge* should be near the adult book stacks and also directly inside the large glass area where it can easily be seen from the street. This is likely to be the library's most attractive feature.

The *meeting room* should have direct or nearly-direct access from the children's area as well as from the adult area. This arrangement will permit crowds of children to move in and out for story hours or other meetings without disturbing the other patrons. Its proximity to the adult area makes it useful as an adult smoking room when it is not being used for meetings. An exit from this room to the street allows the library proper to be closed at its usual time while late meetings continue.

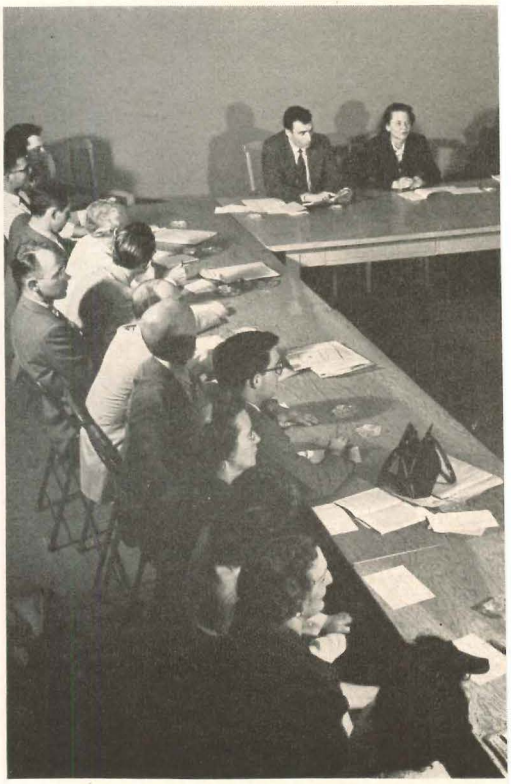
A *storage room* for folding chairs should adjoin the meeting room, thus permitting the janitor to set up or remove the chairs without disturbing people in the large reading areas.

Public toilets should serve both the public service areas and the meeting room when the rest of the building is closed. It is desirable to have toilet entrances visible from the control desk.

The *staff workroom* is best placed directly behind the control clerk's desk so routine operations such as sorting returned books, etc., may be removed from the desk and yet be conveniently nearby. This room should also have direct access from outside or from the vestibule so truckers making deliveries will not interfere with the public service.

The *branch librarian's office* should directly adjoin the work room for supervisory purposes but should also have an entrance from the public areas so patrons desiring to visit may do so without difficulty.

The *staff kitchenette* may be located adjacent to the work room for staff use only, or it may be near the meeting room where it then performs the dual function of staff use and occasional use by groups holding meetings in the building.



Phil Olsen

Packaging, that is, the grouping together of non-public service areas, produces a cleaner plan by consolidating these units in one area to provide an open and regularly shaped public service space. The work rooms may be exceptions to this principle when other factors control their location.

A common planning mistake is the setting up of multiple small work rooms instead of uniting several in a large package. For instance, one work room for the adult, juvenile and reference units will save in building costs. Further, it will permit a saving in both maintenance and management costs since one or perhaps two typists may serve all three departments rather than having separate typists and equipment for each.

Though the frame of reference for the above principles is a branch library, many of these principles can be applied as well to other types of library buildings.

IV. BUILDING DETAILS

The foregoing section was concerned with the larger problems of layout. Very often, however, a library's convenience and operating efficiency depend on the detailed considerations that have been incorporated into the scheme. We list some of the more important here.

1. When space permits, all public service should be located at ground-floor level. Such an arrangement makes the library more accessible to the public, concentrates the public service staff on one floor, permits more flexibility and coordination in work assignments, eliminates duplication of control desks, typewriters and other equipment, and also obviates space-consuming public stairways and corridors. If a large book storage area is required it can be located in a basement directly below public service areas. With service stairways piercing the floor this places the storage area within 8 ft of the reader. Storage stacks on upper levels are usually more remote because public areas are higher.

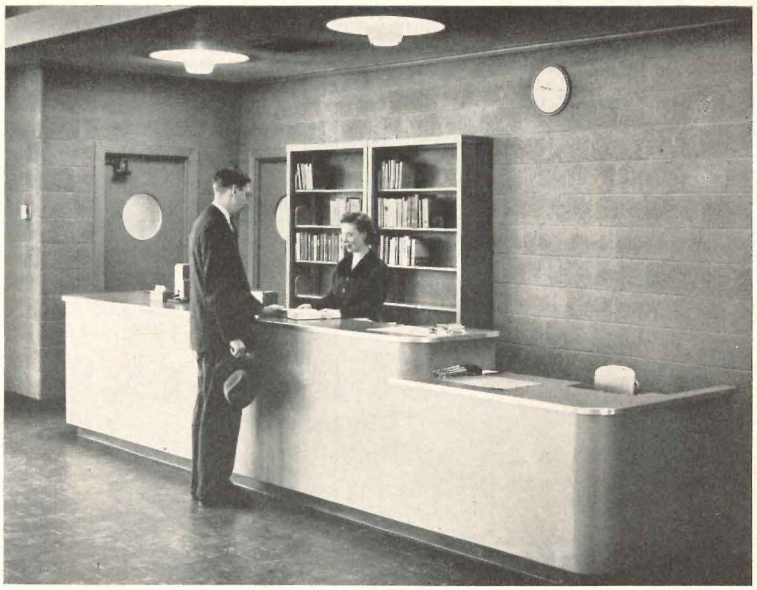
2. Each floor should be level. Though some interesting architectural effects may be achieved by stepping down or up into another space, even one step or a ramp will hinder the easy movement of book trucks for the life of the building.

3. Light colored floors are recommended because they reflect more light upon the lower bookshelves and make dirt less apparent. Many people find a contrasty checkerboard floor to be disturbing when reading; the floor appearing to be in motion when viewed from the corner of the eye. Composition flooring is recommended on the basis of color, cost and maintenance.

4. In the meeting room, an underfloor conduit carrying wiring from the sound motion picture projector to the loud speaker near the screen eliminates the hazard of an electric cable on the floor. A three-way switch near the projector will enable the operator to control the room lights without leaving the projector.

5. Lower ceilings have many advantages. They facilitate good lighting and the replacement of electric lamps, reduce heating costs, and because of smaller wall areas make cleaning and repainting cheaper.

Joe Clark



Phil Olsen

Far left: Sherwood Forest Branch, Detroit Public Library, William E. Kapp, architect. Center: meeting in Detroit Public Library: folding tables and chairs for multi-use. Above: Thomas Jefferson Branch, Detroit Public Library, William E. Kapp, architect

6. Acoustical treatment by means of acoustic ceiling tile, cement and cinder block interior partitions, the arrangement of book stacks, draperies and other elements must be considered by the architect. Librarians no longer talk in whispers and try to maintain the tomblike silence of older days, but they do like to keep the noise level low so it will not disturb readers.

7. Librarians have come to recognize the need for smoking facilities. Experiments with smoking in all public areas have been found unsatisfactory for several reasons; insufficient ventilation for smoke removal, objections of non-smokers and burns on furniture. However, these difficulties can be lessened by providing a designated area for smoking. If space is limited, a smoking room can be gained by planning a dual purpose room which can also be used for meetings. A glass partition separating this room from the general reading area will

permit excellent supervision and allow it to be shut off for meetings by means of curtains.

8. A glass enclosed vestibule is a pleasant building feature giving the patron an immediate view of the book collection and reading area as he enters. Oversize vestibules, long corridors, stairways, turnstiles and other impediments confuse and deter the public.

9. The control desk is best located adjacent to the entrance and in a controlling position for all or nearly all of the public service area. Psychologically, locating this desk parallel to the borrower as he enters seems better than confronting him with it. The old type control desk was a bulky and forbidding barrier to borrowers, who felt they were under observation from the moment they entered the building. Furthermore, the mass of routine functions carried on at the desk gave the impression that libraries were more concerned with cards and records than with readers and books. The contemporary control desk is smaller and lower: 35 in. high at the adult end and 30 in. high at the juvenile end. Such a desk is made feasible by locating a work room directly behind it and removing from it much of the routine work formerly visible to the public.

10. The use of contemporary colors for walls and floors is a comparatively recent trend in library decoration. Unlike the somber tones of the past, such a scheme has done much to create a more cheerful atmosphere. Color can also be used effectively for such equipment as book shelving, vertical files, desks and map cases.

11. Attractively simple and sturdy furniture is now available in a wide variety of designs and colors. Many libraries are using chairs and sofas upholstered with plastic over sponge rubber. This combination has proven to wear well and is easy to keep clean. When subject to continual wear, chairs designed for commercial use have proven more durable than the domestic type. Fabric covered chairs and sofas, although attractive, seem more difficult to keep clean than those with plastic upholstering. In selecting equipment it is important to keep in mind the height of elements and to avoid the confused and displeasing look that results from too many variations.

12. The elimination of closets will help reduce building costs and provide greater flexibility. In older buildings it was found that oversize closets were apt to be filled with junk and undersize closets were useless. Movable steel or wood storage cabinets have proved to be satisfactory and additional units may be added if the need for more capacity occurs.

13. Permanently built-in features such as phonograph listening booths and microfilm reading booths are of questionable desirability since they tend to freeze the plan and require expensive duct work for heating and ventilating. Furthermore, they are wasteful of floor area. Microfilm reading devices of the newer type can be used satisfactorily in brightly lighted rooms. Table-top record players with earphones have been found highly satisfactory. We advise a power grid under the floor for such areas.

14. A bin type periodical case is desirable. Current issues of magazines are displayed on its hinged sloping surfaces; previous issues are stored behind.

15. In the work rooms both space and expense can be saved by employing work stations instead of desks. Each work station can be assigned to a staff member, thereby providing each with ample work and shelf space as well as one or more drawers.

16. Metal book shelving, now available in a variety of sizes, shapes and colors, is generally economical to purchase and easy to clean and maintain.

17. Light-weight racks on wheels are a convenience in transporting and storing folding chairs. Such equipment is now available from several manufacturers.

18. Self-contained kitchen units incorporating a small stove, refrigerator, sink and cupboard space provide the necessary equipment for both staff lunches and teas in the meeting room. The use of this type of unit together with a snack bar attached to the wall is recommended to conserve space in the staff quarters. Enough area for a small staff lounge can then be gained within the same room.

19. Two exterior conveniences are also suggested — one for the staff and one for the public. An automatic timer to turn off the floodlight for the parking lot will permit the staff to leave while the lot is still lighted.

A drive-up book return box at the curb in front of the building will permit patrons to return books when the library is closed. These have proved to be an effective device for good will as well as a convenience to patrons. The boxes were designed by a librarian and are now available commercially.

Detroit Free Press

Above, record players with earphones, Detroit Library. Right, bin-type periodical case, all Detroit branches. Far right, drive-up book return, now a standard product

V. CONCLUSION

In the face of rising taxes and costs, both municipal officials and a vociferous public are insisting on economy in municipal expenditures. Librarians, however, steadfastly hold that service cannot be skimped and that new educational opportunities create the need for improved service. In the face of these conditions this study has attempted to provide sensible, helpful guidance to architects and librarians concerned with this common problem. Our conclusions are based on long study of the physical requirements for successful library service and on analysis of the current trends in building which are evident across the country. Since buildings of the type here presented have met the test of use, it is logical to ask the question, "What has this new development meant to libraries?" As far as possible we will answer this question from personal experience since this is something we can speak of with certainty.

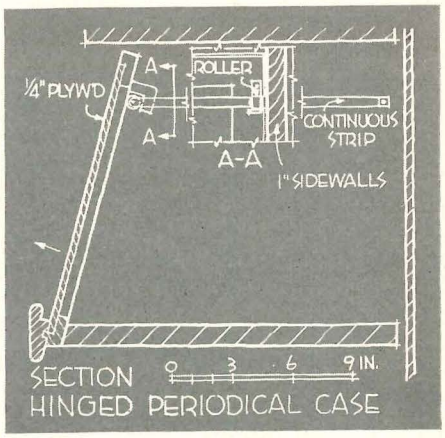
In communities where Detroit's new branches were built, the attitude of citizens has been one of unqualified approval and enthusiasm. Instead of suffering by comparison with the more monumental branch buildings of earlier years, these new structures have been acclaimed for their attractiveness and simplicity. Unusual evidence of the community's feeling came recently when the executive vice president of one of the city's largest banks asked if he and other bank officials might be shown through several of the library's new buildings in order "to get ideas" for their new branch bank buildings. As a result of his first trip, he has returned twice to see them again.

Municipal officials responded with equal enthusiasm. The first of the post war branch libraries was erected for less than half the cost of the last pre-war building (1939). Repeatedly since then the heads of other municipal departments who have sought building funds have been told to "do something like the library did." The sincerity of that remark was evident when funds for two branch libraries were allowed in the next budget. We are now completing our seventh branch since 1950 and more are contemplated.

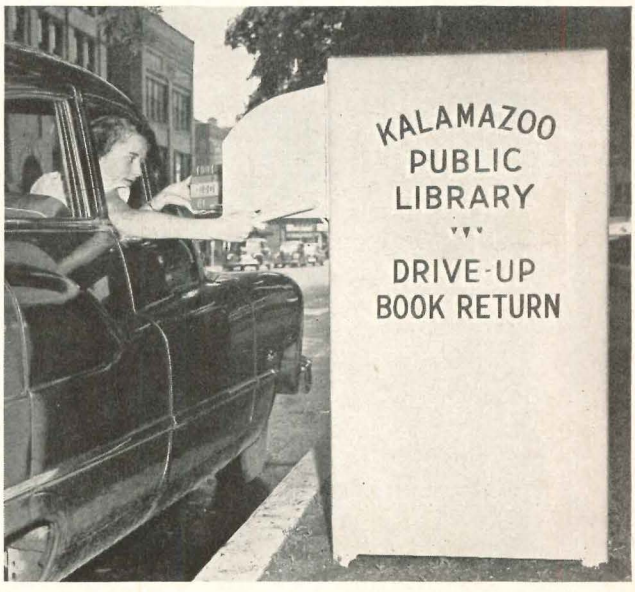
From the standpoint of operating costs the results have likewise been favorable. Despite larger service demands, the new buildings are being operated with from two to four less staff members than their earlier counterparts. Since this represents a continuing economy, year after year, the benefits will be prolonged.

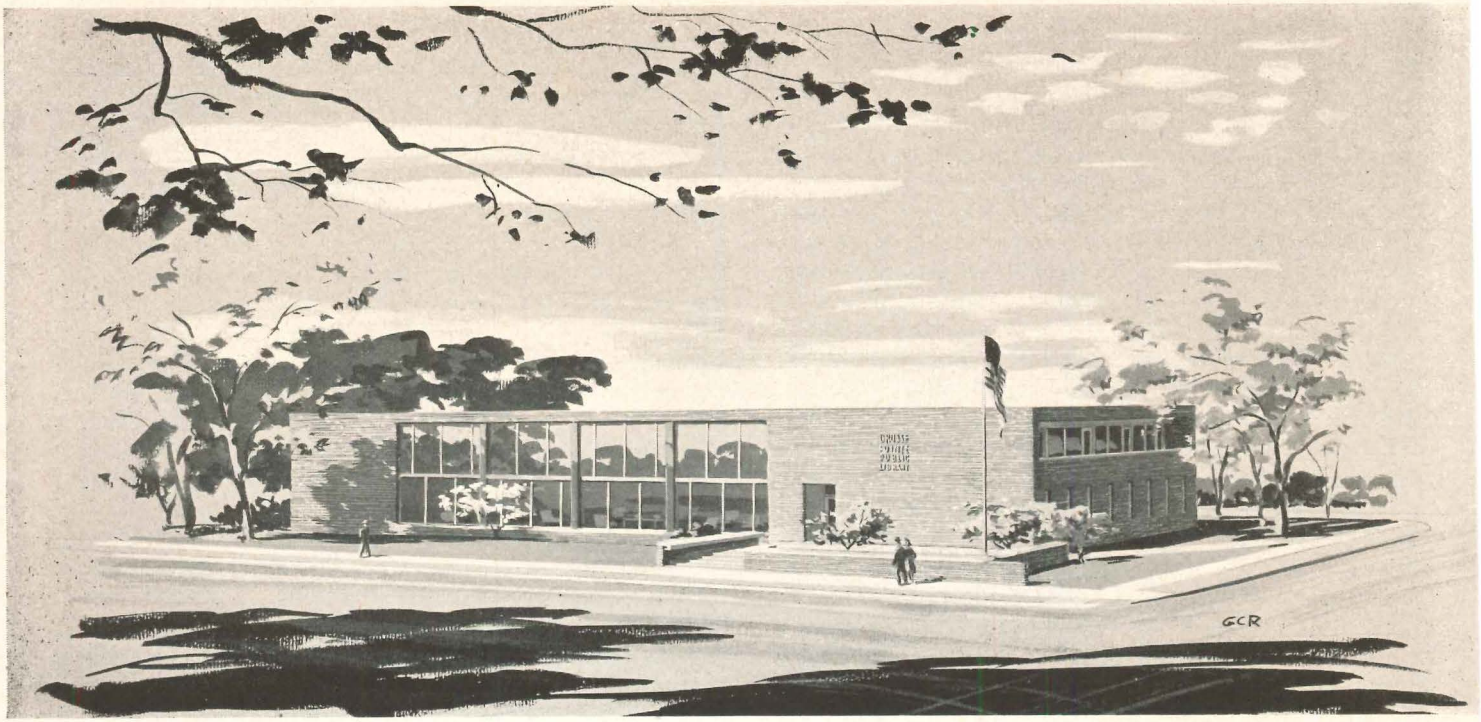
Thus with the benefit of public support and administrative approval, the public library is advancing its service program more rapidly than at any time in its 90-year history.

Phil Olsen



Kalamazoo Gazette

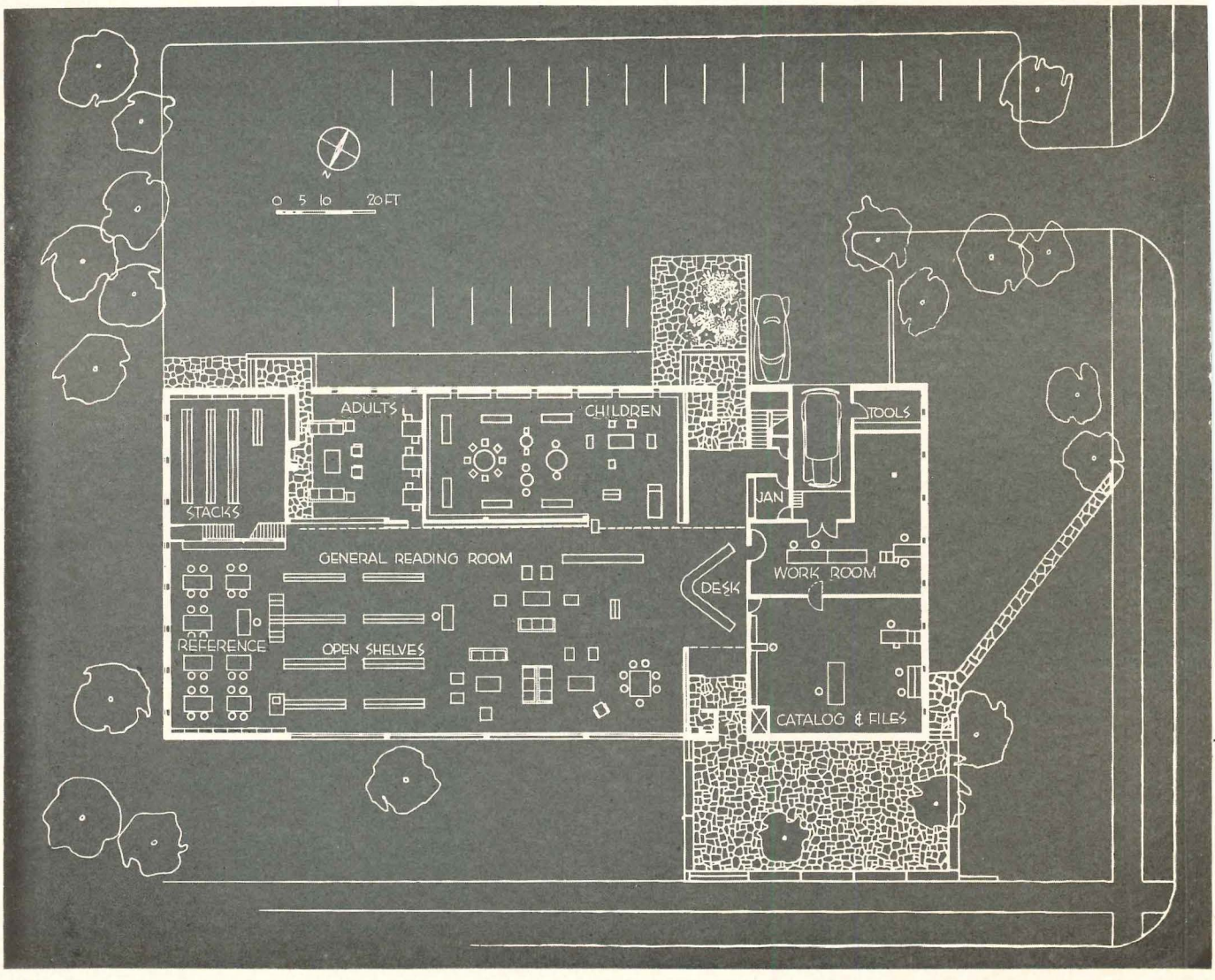




Rendering by George Cooper Rudolph

GROSSE POINTE PUBLIC LIBRARY

Marcel Breuer, Architect

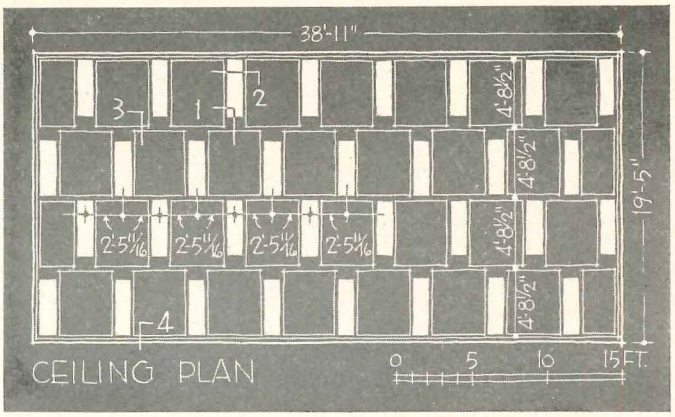


Library Consultant: Charles M. Mohrhardt
Structural Engineers: Farkas & Barron
Mechanical Engineer: Benjiman L. Spivak
Electrical Engineer: Bernard L. Greene
Contractor: Albert A. Albrecht Co.

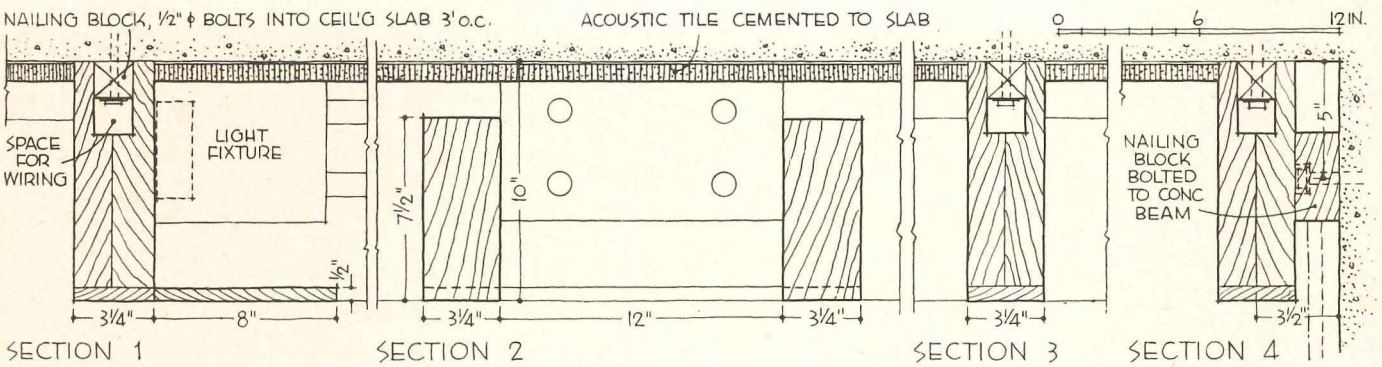
LOCATED in one of Detroit's older and more prosperous suburbs, this new library is now under construction and will be fully reported in the RECORD after completion. The building will be a part of the town's principal shopping area; should strike a refreshingly contemporary note in its predominantly conservative surroundings; may point the way towards a more forward-looking future architecture about it.

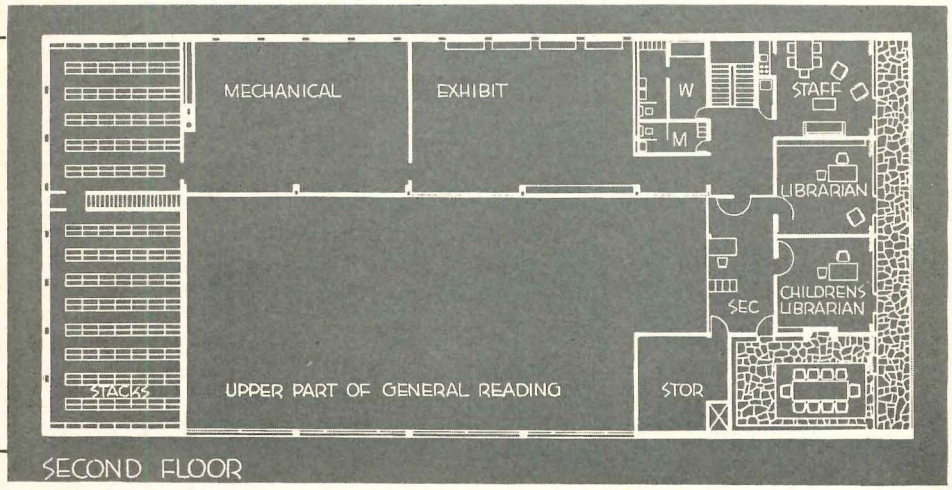
Many of the principles our author-consultants have discussed in their text have here been skilfully translated into reality: the attractive two-story reading area opening to the street to tempt passers-by inside; adequate parking with direct access; furniture arranged in lounge groups rather than rows of tables; stacks open to the public; a low control desk that actually points the way inside rather than barring it.

Since the architect is doing the interiors, design unity should be achieved throughout.

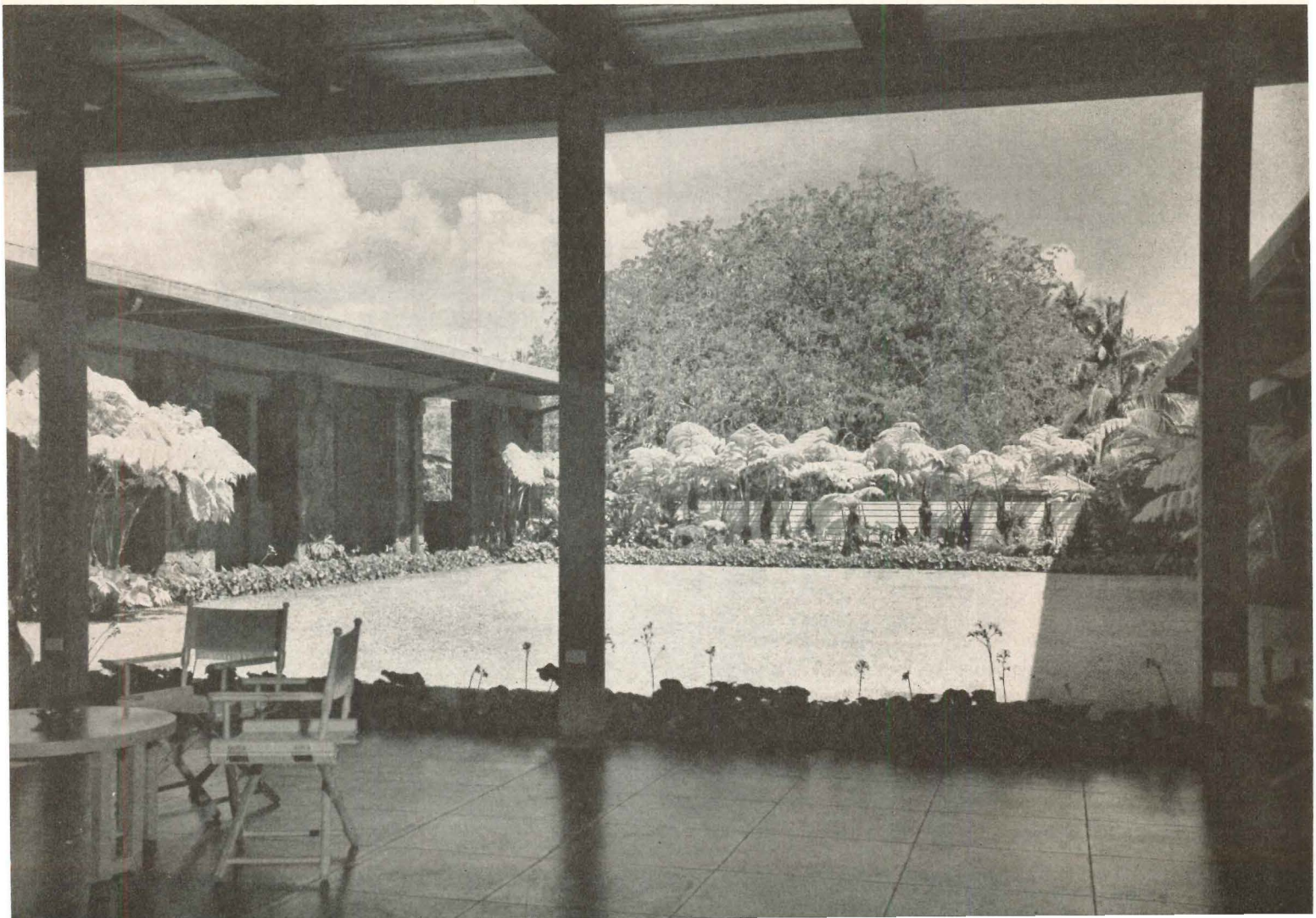


For main public area, lighting of approximately 40 ft-candles will come from cold cathode tubes placed within the smaller rectangles of an overall ceiling pattern of 3 by 8 wood baffles. Detail shown below





Ground floor, left, is entered either from street or from parking area, with central desk controlling both means. Second floor, above, is mainly devoted to staff use, with the exception of the exhibition room



R. Wenkam

HAWAII COUNTY LIBRARY

Hilo, Hawaii Island, Hawaii

Merrill, Simms & Roehrig, Architects

The reading lanai and the landscaped court it faces, left page, constitute a pleasant place for light reading, chatting or strolling. The main façade and auto entrance court are shown above with the Naha Stone, a relic of national significance, in the foreground

FINISHED IN LAVA ROCK from two neighboring volcanoes and native hardwoods of two varieties, this handsome structure is both successful functionally and attractively indigenous in character. It was opened for use early in 1951.

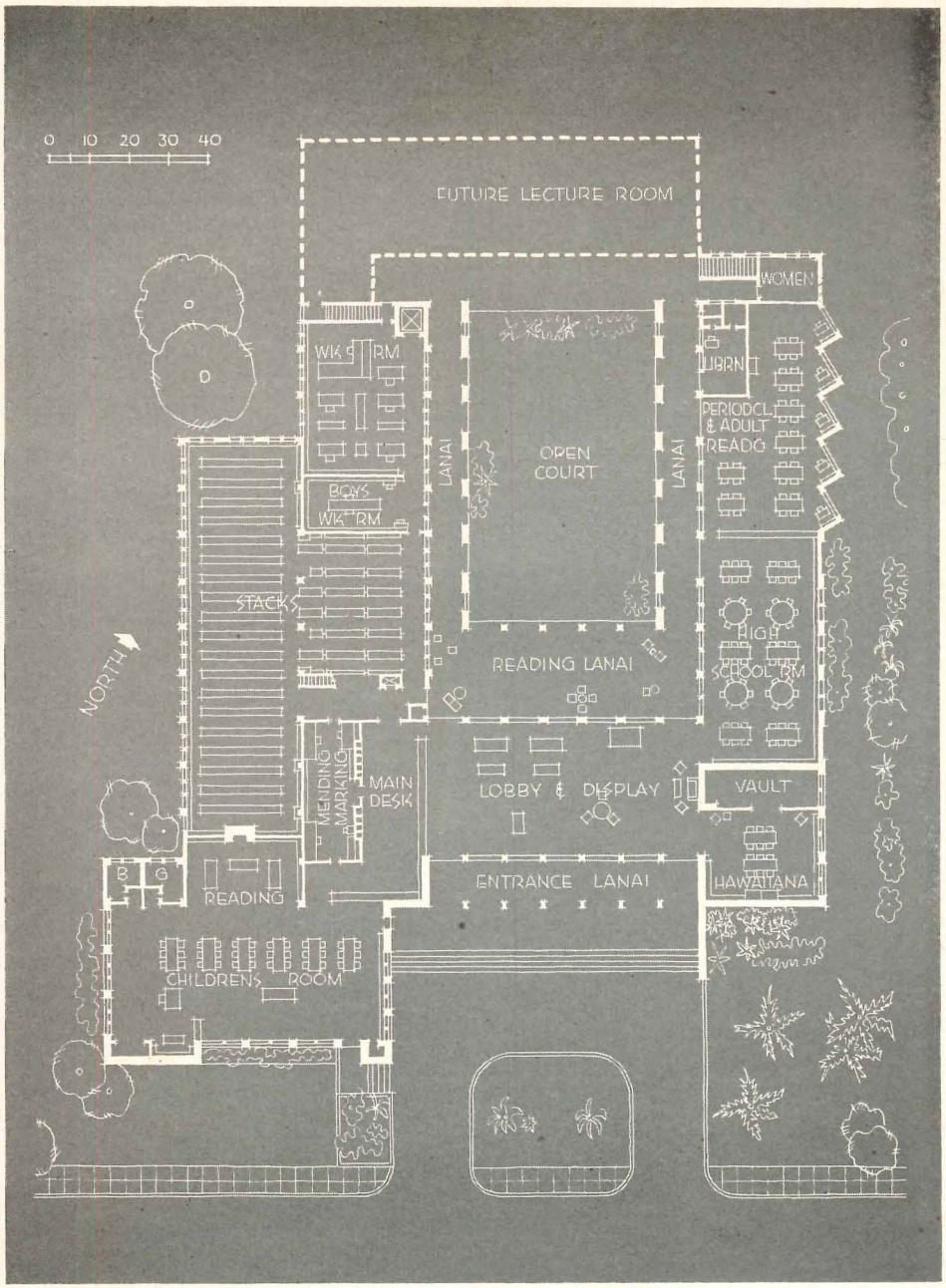
This is the central library building for the entire County of Hawaii and also serves the city of Hilo as a free circulating library, offering books, pamphlets, periodicals, phonograph records, maps and mounted pictures. The aforementioned materials are distributed to the entire island through 100 odd branches, deposit stations and schools. The basement floor is set aside to service a bookmobile which covers rural districts and schools.

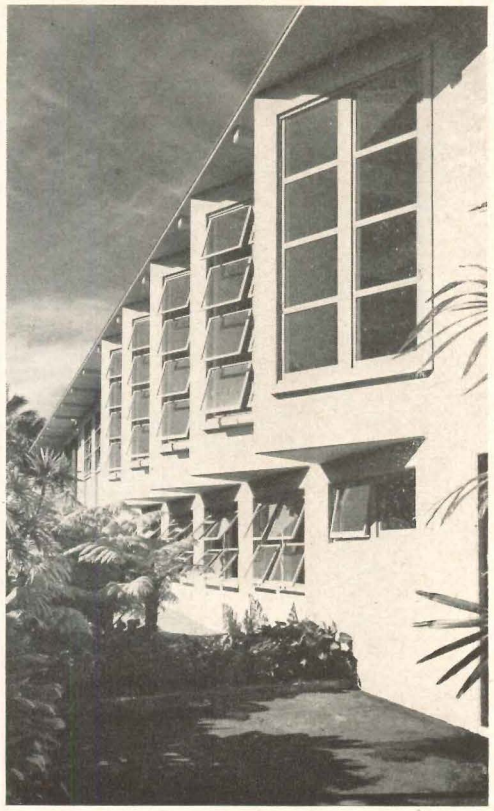
The librarian, Helen Willocks, is enthusiastic over the natural and rapidly developing emergence of the new building as a community cultural center. Facilities are available for committee meetings, lectures, film showings, art exhibits, civic discussion groups, etc.

The structure centers about a landscaped rectangular court which is open to the sky and bounded on three sides by the present building; a future lecture room and gallery wing will complete the quadrangular scheme. Entrance is through a glass enclosed lobby opening out to a pleasant lanai beyond, which forms the main outdoor reading area.

Walls are reinforced concrete faced with lava rock: roof is mineral-surfaced built-up over 2-in. redwood plank on redwood purlins and fireproofed steel girders.

HAWAII COUNTY LIBRARY





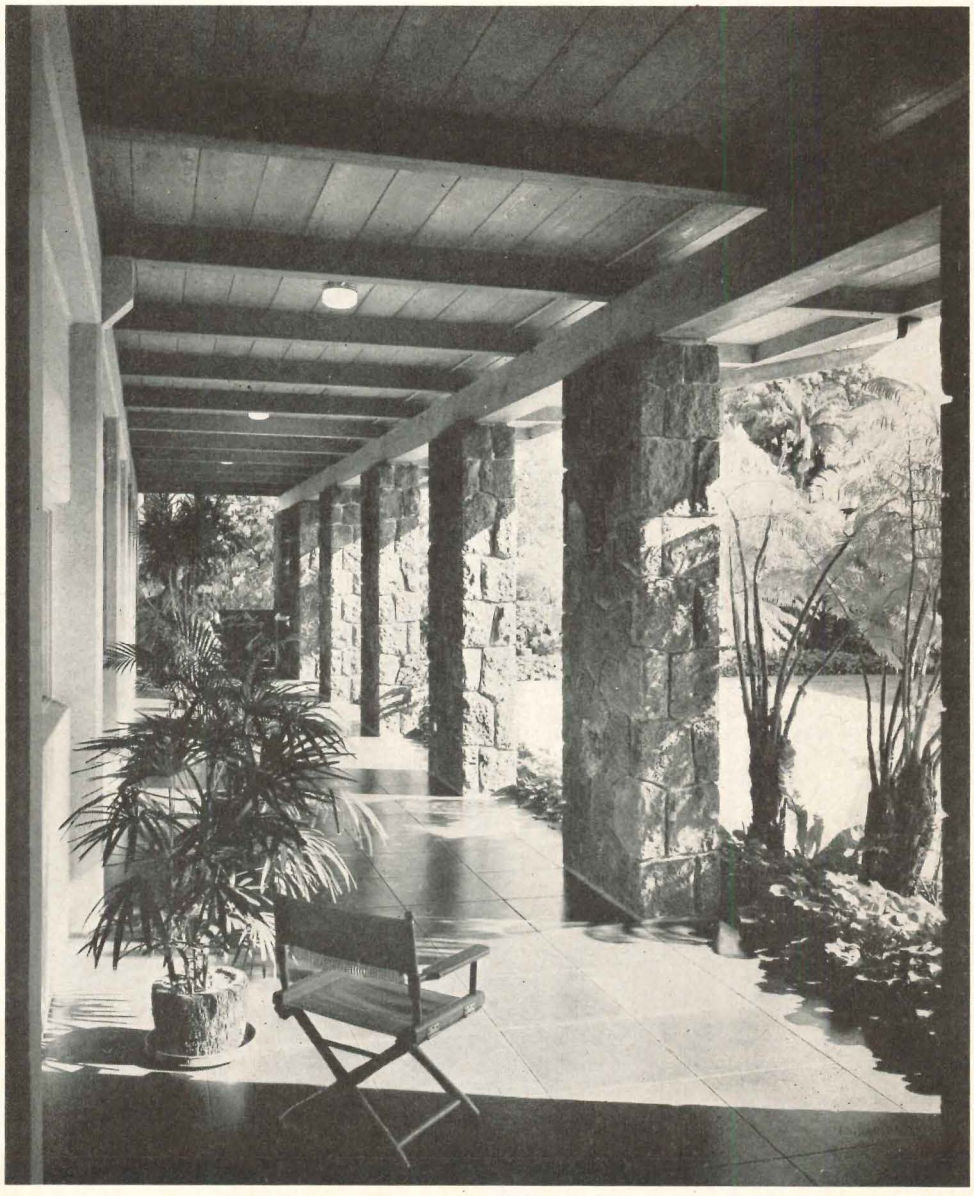
R. Wenkam

Plan, above, shows organization of principal rooms about the open court and lobby; a future wing to the north will complete the quadrangle. Children's library area is separate

Entrance lobby and display area, above and below, are enclosed by glass on two sides, affording a pleasant vista of the garden and reading lanai as one approaches the building from the street. Redwood ceiling, asphalt tile floor, natural koa and monkeypod

Hawaiiana Room, above, houses the rare book collection. Work room, right, is sequestered for serious study; is reached by shaded lanai facing the garden

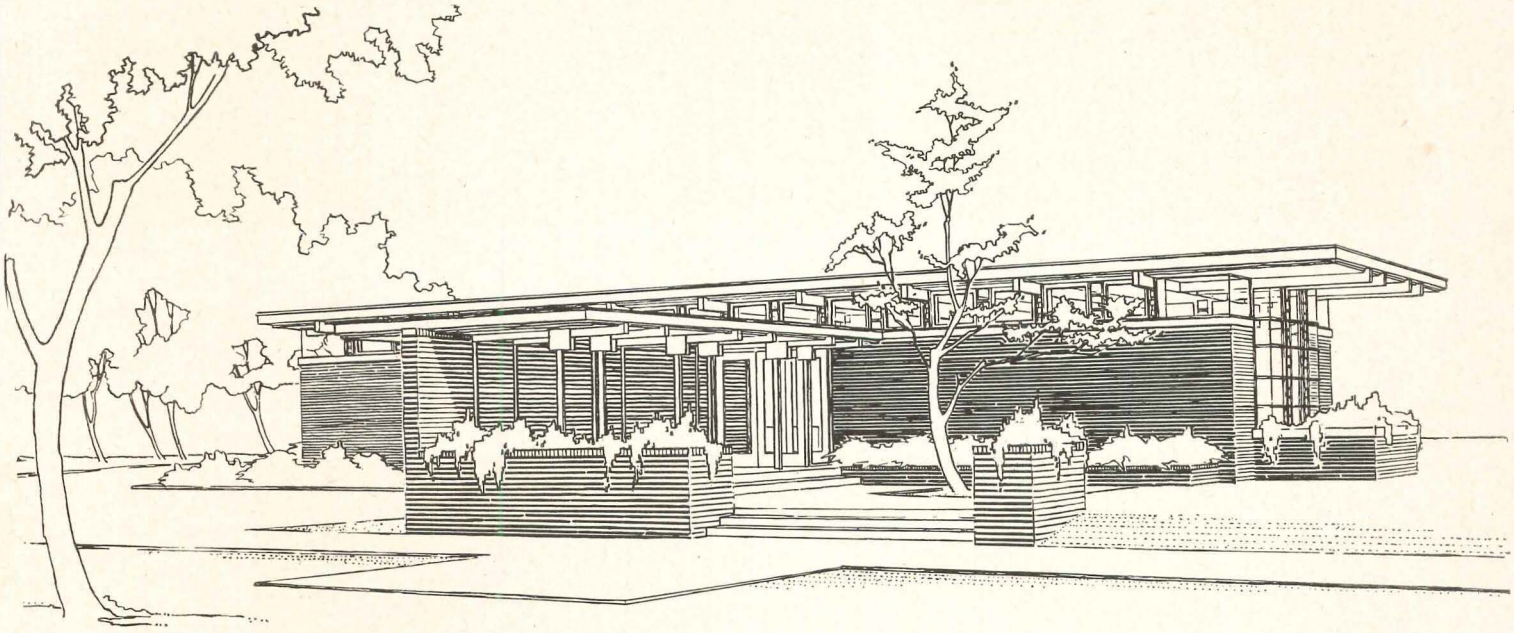
HAWAII COUNTY LIBRARY



R. Wenkam

PUBLIC LIBRARY, AURORA, COLO.

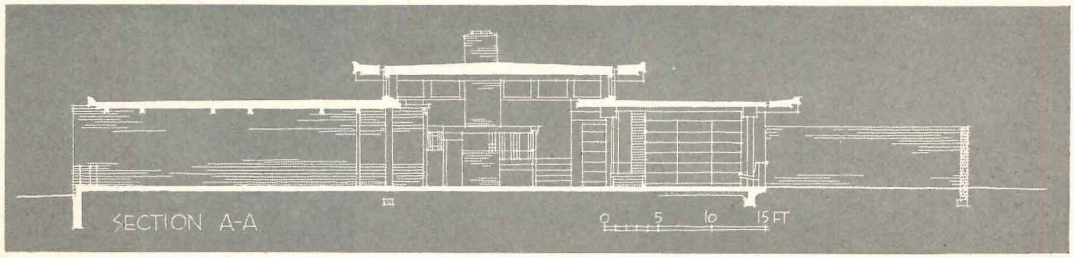
Victor Hornbein, Architect

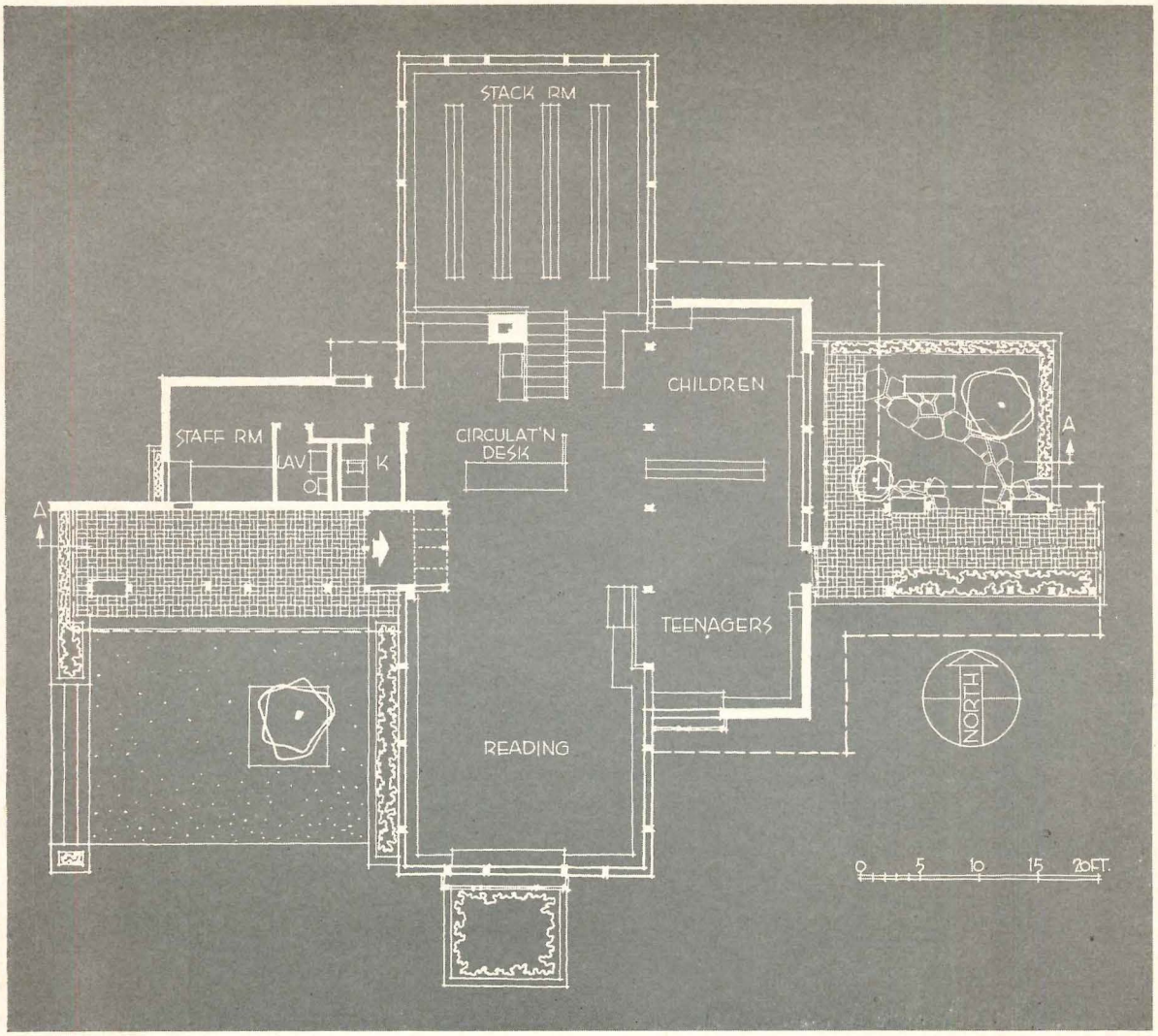


LOCATED OPPOSITE A PARK which will contain a city hall and fire station in the future, this structure is the first of a projected civic group to be built.

Aurora is a Denver suburb and has a population of 10,000, but is located near an Air Force base and an Army hospital; which situation materially increases the load on its community facilities. Seven years ago the Women's Club started a public library, ran it on a voluntary help basis, and managed by hard work to build up a collection of 10,000 volumes. The city assumed management only a few years ago, and at present employs non-professionally trained personnel.

The building will be faced with 12 by 2¼-in. red brick; fascias will be painted blue-green; decorative elements of the columns will be painted vermillion; all interior wood will be oak in a natural finish.

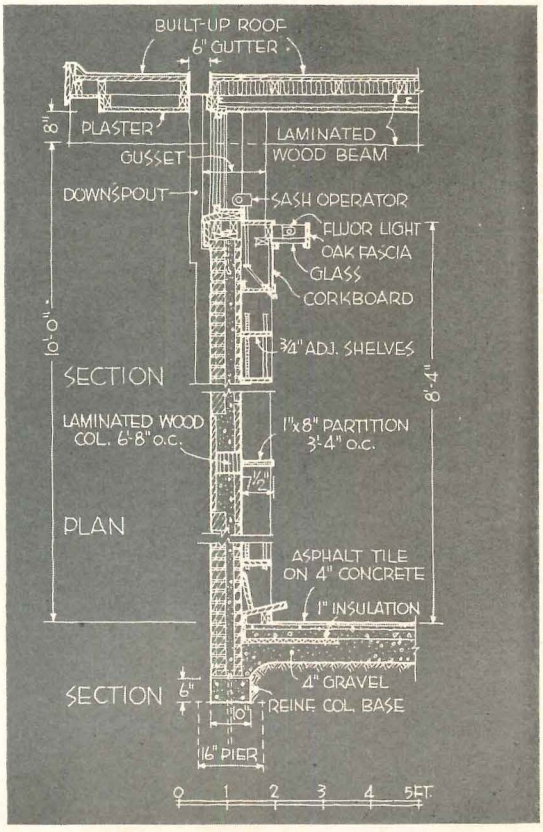




AURORA PUBLIC LIBRARY

Plan, above, is based on sound principles: desk parallel to entrance, backed-up by work rooms and book stacks; adult and teen-age areas adjoining; children's area defined but not separate; a pleasant outdoor reading garden for summer months; a mezzanine which will at present serve as a meeting place for community activities, in the future will house more stacks for the growing collection

Typical wall section, right, shows 7-ft high shelving topped by shaded continuous sash for daylighting, fluorescent tubes for night



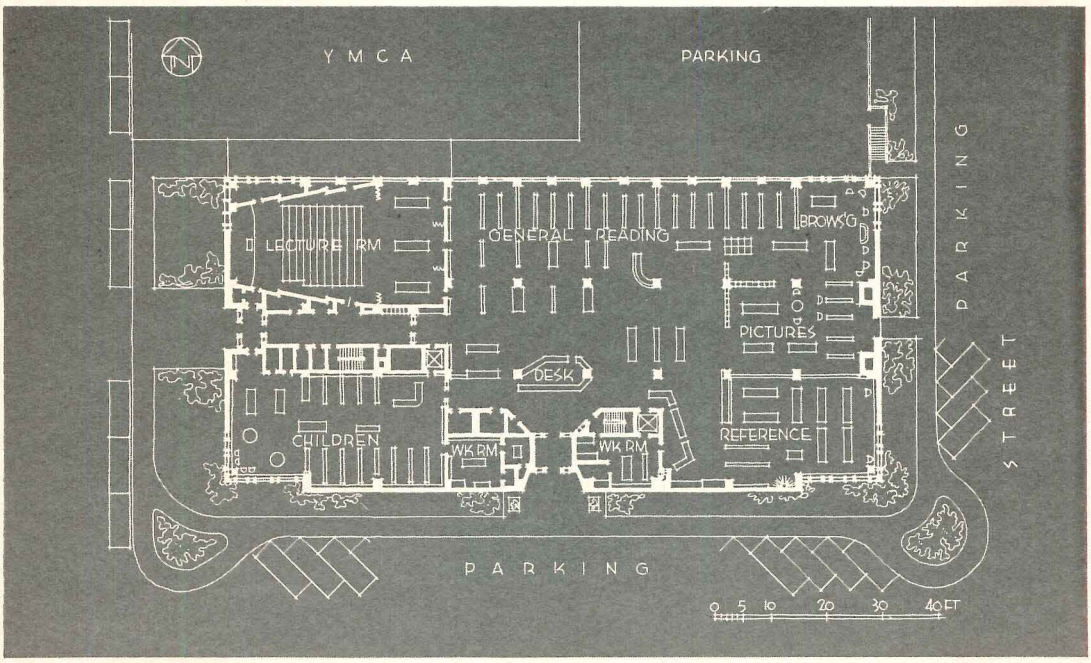
NEW PUBLIC LIBRARY, STOCKTON, CALIF.

Peter L. Sala, Architect

Francis Keally, Consulting Architect

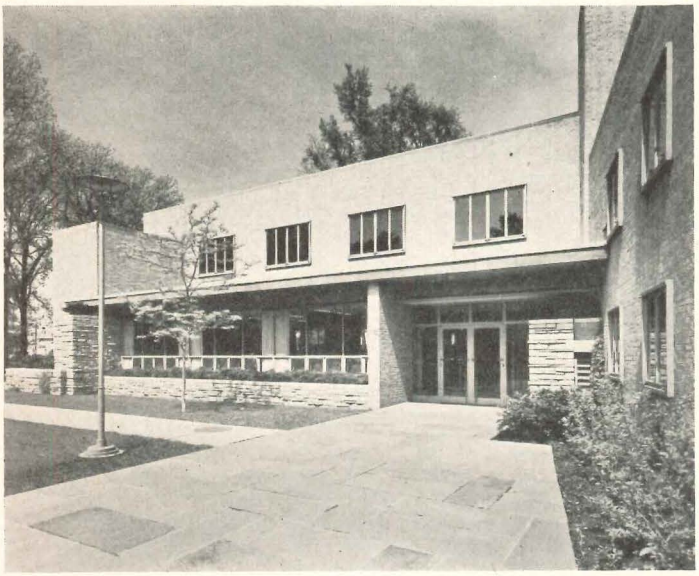
STOCKTON IS LOCATED only a few miles from the scene of the famous 1849 gold rush in a fertile farming district a scant 50 miles from San Francisco. The new public library there is now in working drawings stage — actual construction will start in a year or two.

The possibly conventional appearance of the building does not preclude incorporation in the plan of many of the principles discussed in the foregoing text. The public area is a large open space free of walls, the division into sections for reference, browsing, art, music, etc. being accomplished by low open bookshelves or movable screens. Large glass areas face the street. The control desk facing in several directions provides for maximum control with a minimum staff. Toilets are strategically placed. The browsing area is informal in character and in addition, the third-floor penthouse features a public smoking lounge as well as a terrace and dining room for the staff. The second floor is devoted to book processing and storage stacks, the area being ample to accommodate expansion as it occurs.



PUBLIC LIBRARY, WILMETTE, ILL.

Holabird & Root & Burgee, Architects
Alfred M. Githens, Consulting Architect



A CHICAGO SUBURB of 18,200, Wilmette opened its new stone and tan brick library in 1951. The structure is planned to accommodate an eventual collection of 90,000 volumes as well as audio-visual material.

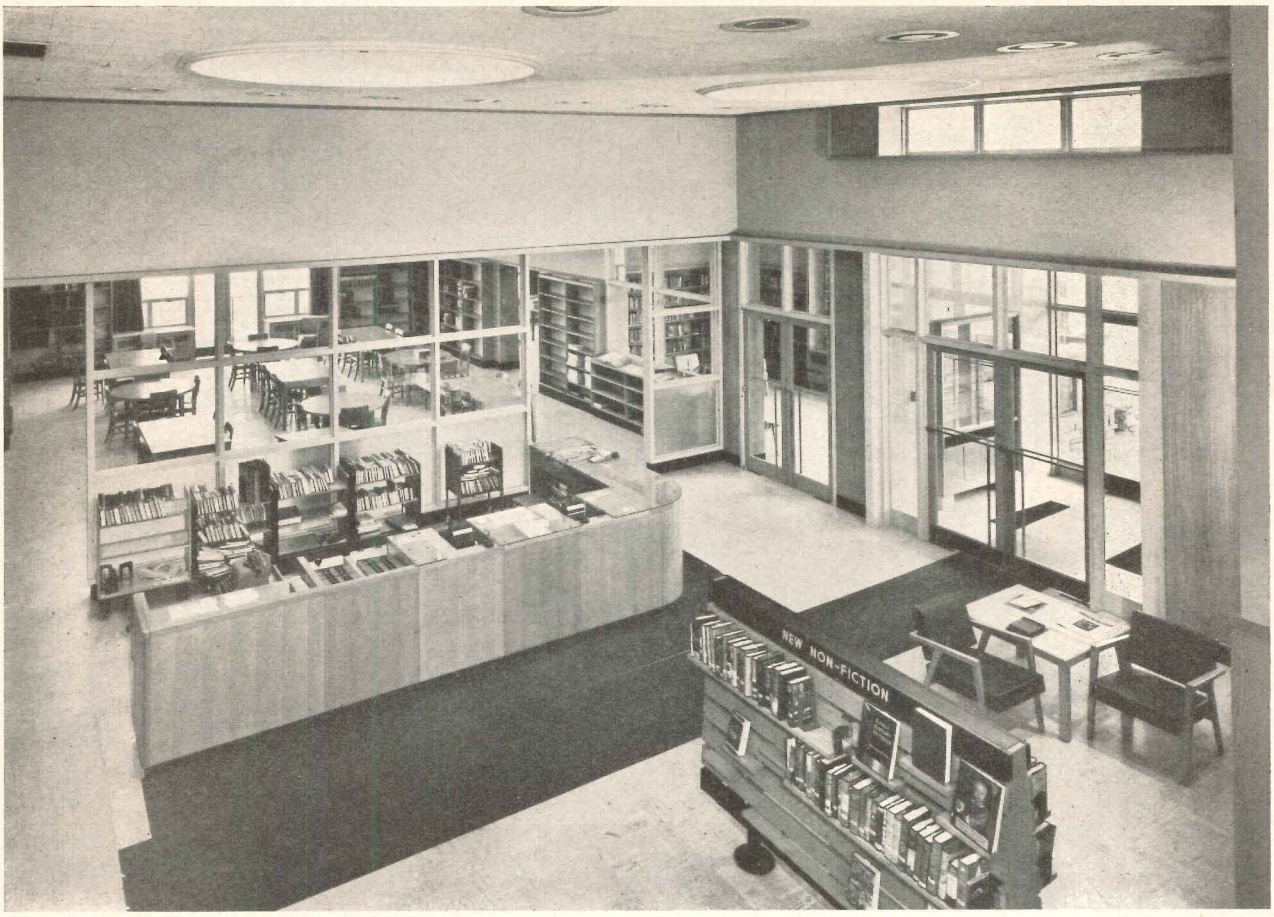
All main public areas are at one level, accessible from the street without steps. The plan comprises three principal areas roughly equal in extent; these are separated but not box-like in definition.

The two-story main stack room houses open bookshelves, a reading area, special sections for art and music and also a mezzanine for book collection growth, used at present for exhibits and committee meetings.

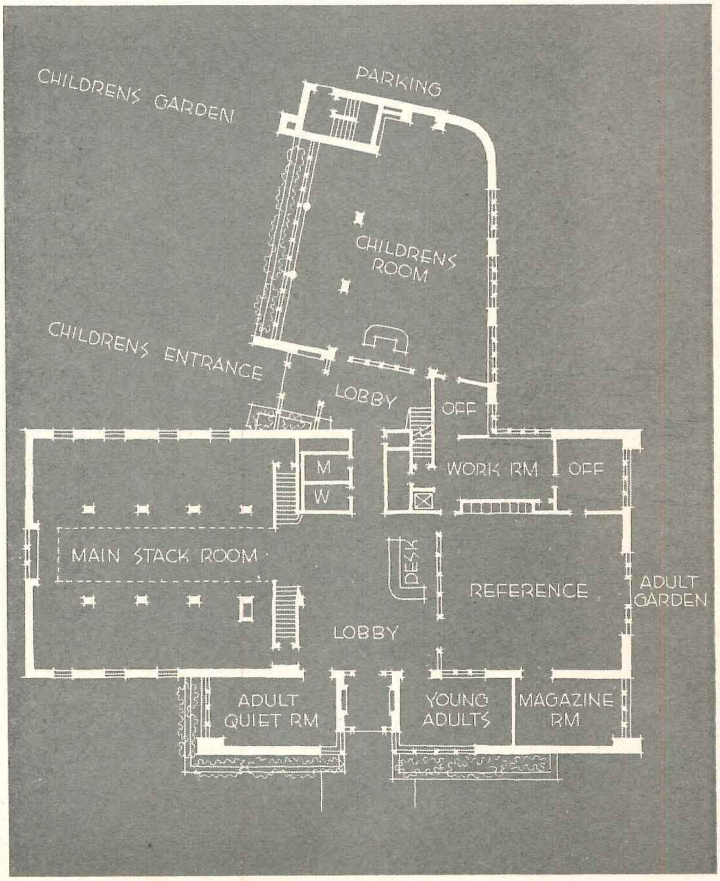
The teen-age and reference area is devoted especially to high school but also to general use. The adjoining periodical room contains a five-year accumulation of magazines for current history study.

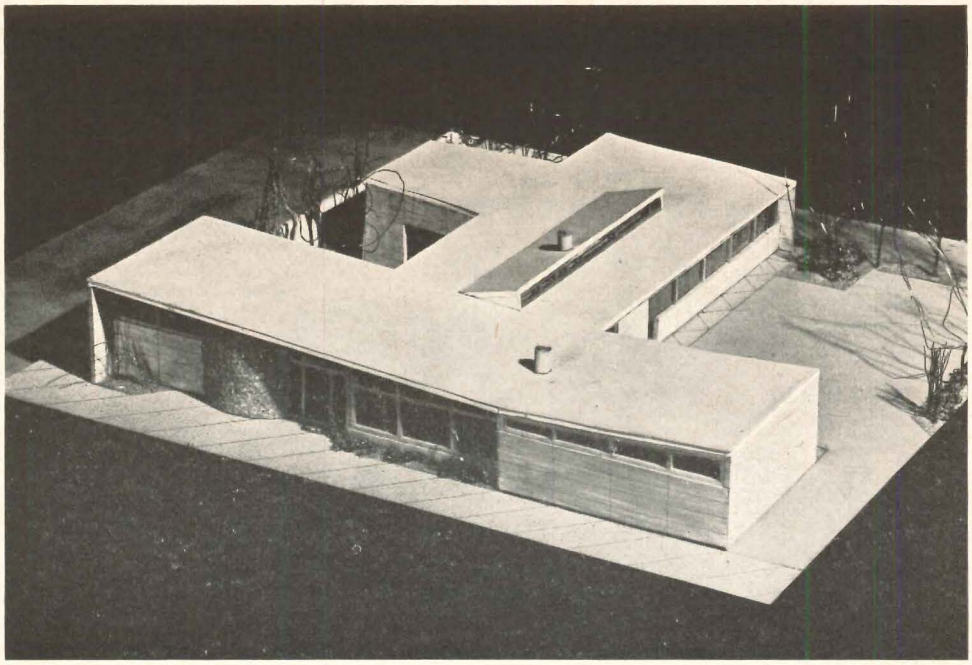
The children's wing is two stories in height, with the juvenile library space at ground-floor level and an auditorium for community use over.

Chicago Architectural Photography Co.



Left page, interior and exterior views of children's section. Above, control desk looking towards main adult entrance door, shown below





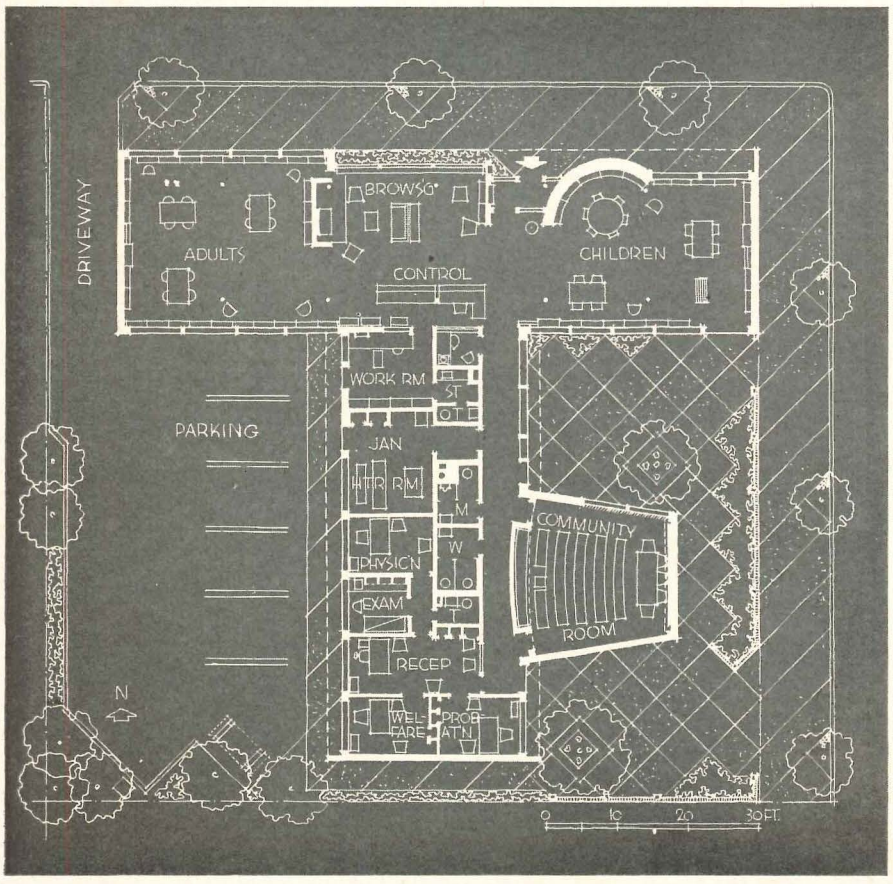
Roger Sturtevant

BISHOP, CALIF., BRANCH, INYO COUNTY LIBRARY

Francis Joseph McCarthy, Architect

BOTH LIBRARY USERS and their new building in Bishop, a town in the Owens Valley high in the Sierras, will undergo temperatures ranging from 104 to −10 as well as the unhappy possibility of earthquake shock. These considerations led to an air conditioned structure with light steel frame and roof deck and a concrete slab on grade; the whole tied against lateral stresses. Walls will be concrete block slabs locally made; masonry will be local river boulders. The program called for the inclusion of the three following main functions:

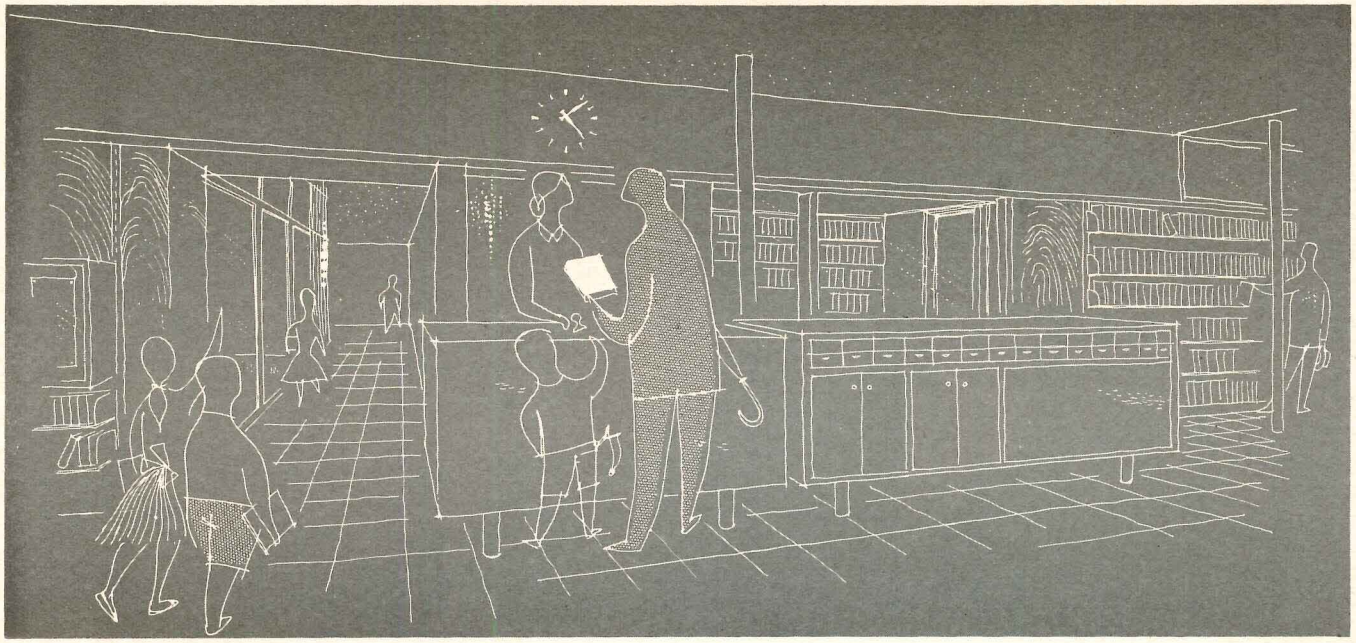
1. *An office section* for county welfare, probation and medical departments. When these offices can occupy their own building, the space can become stacks or exhibit area.
2. *The community room*, seating 40, for various civic gatherings, meetings and motion picture showings.
3. *The library*, with provisions for both browsing and study, grownups and children. The patio will serve for general outdoor reading and children's story hours. All fixtures and furnishings are architect-designed.



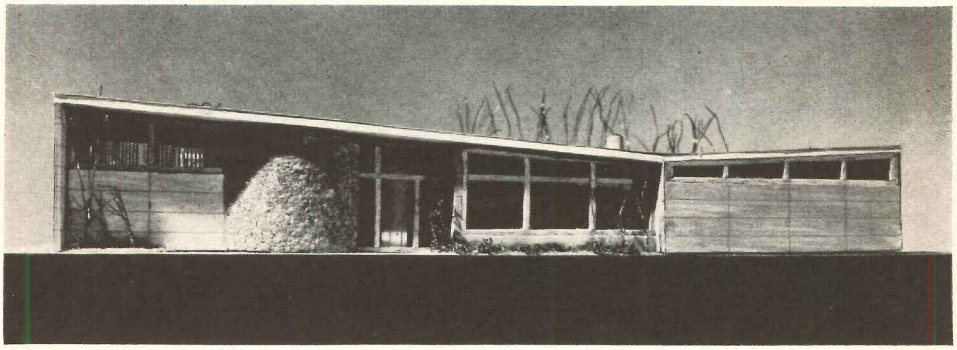
Plan, left, shows juxtaposition of the three main elements and their placement on the site

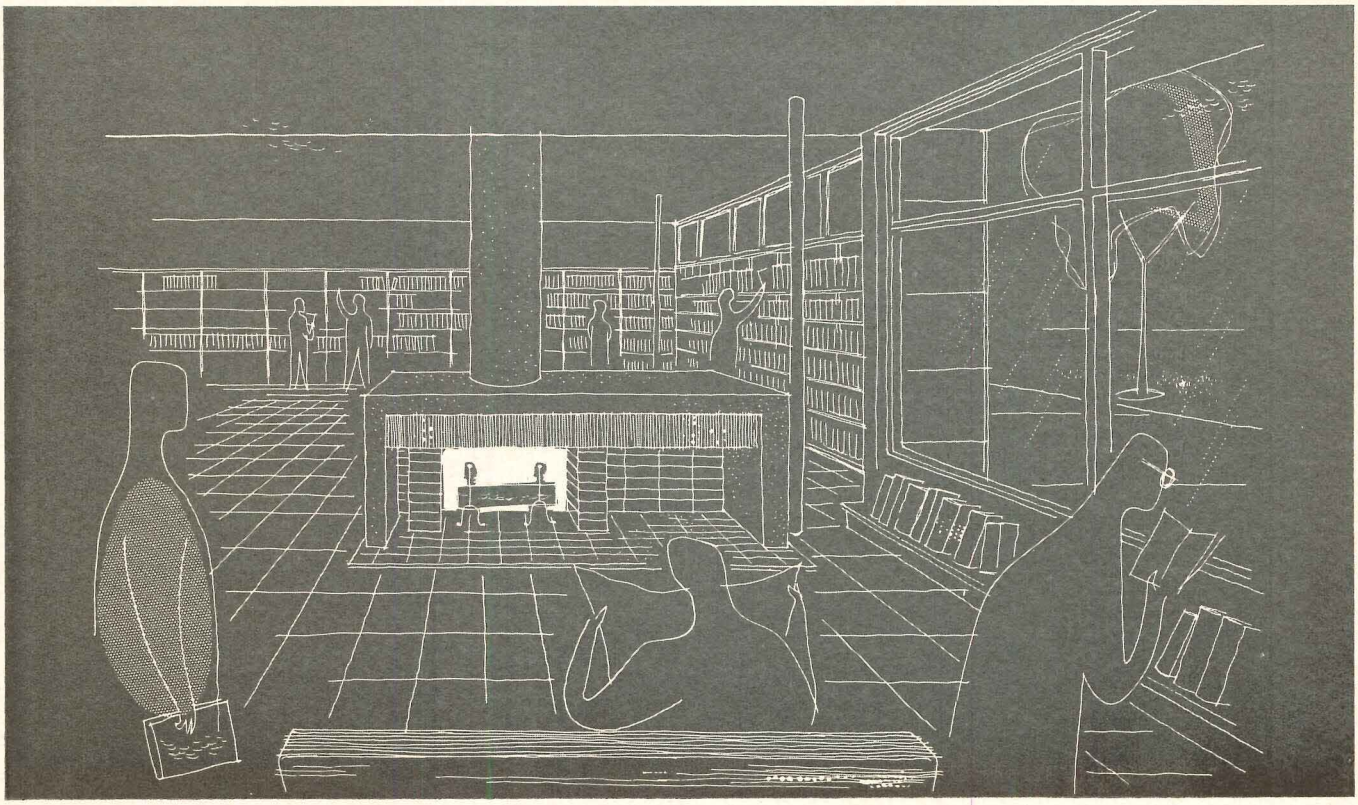
Top right, interior view from entrance looking toward control desk and work room beyond

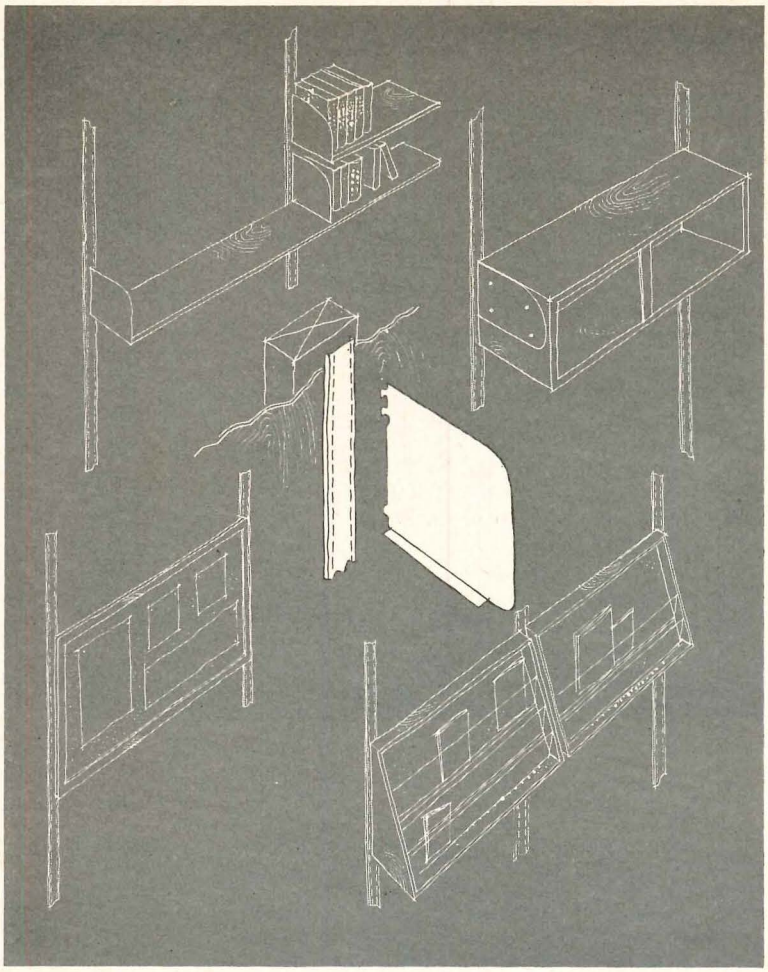
Bottom right, browsing area, which features a fireplace; main adult reading area is beyond



Tom Ballenger, courtesy Jock McKay



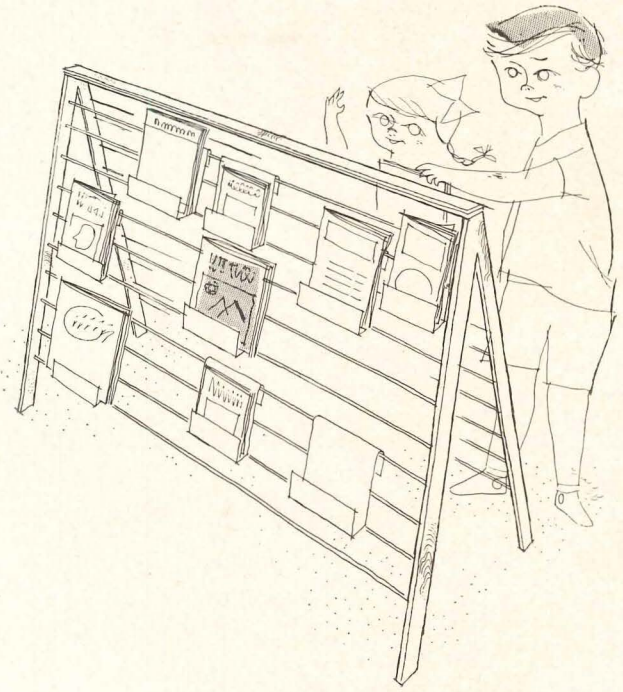




Ingenious detail, left, consists of double-slotted vertical strips on a 3-ft module to provide support for open bookshelves, glass-front display cases, sloping racks for periodicals or cork bulletin boards

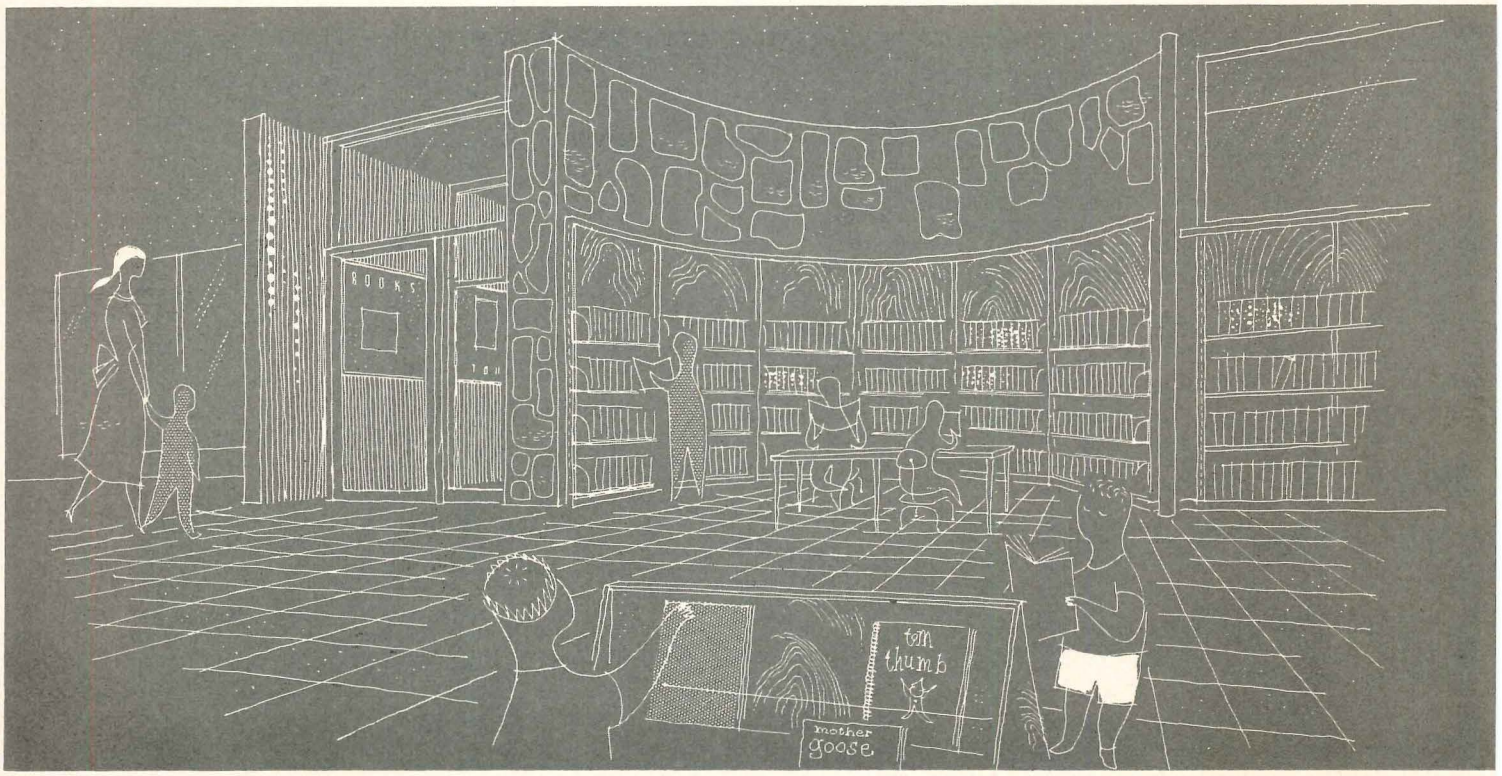
Below, metal hangers on a series of rods support odd sized books and magazines

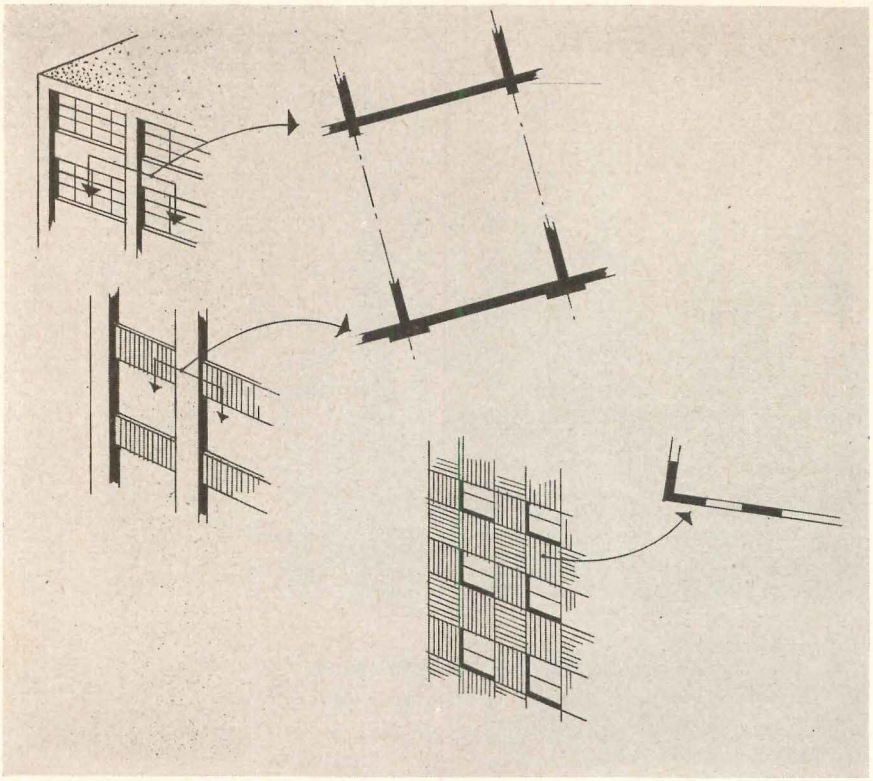
At bottom, main library area for children looking towards the curved masonry alcove



INYO COUNTY LIBRARY

Tom Ballenger, courtesy Jock McKay





Windowless buildings of reinforced concrete would provide the greatest amount of protection against atomic blast at a cost little, if any, above that of existing construction. Appreciable, though more expensive and less effective, resistance is possible in windowed buildings. Exterior appearance need not be a bugaboo. There can be a variety of treatments: the right-hand building has an exterior concrete membrane pierced by windows (this is next best to windowless construction); the other sketches show how buildings having larger windows might look

BLAST RESISTANT BUILDINGS

How Practical Are They?

By Boyd G. Anderson

Ammann & Whitney, Consulting Engineers

WITH OUR DEFENSE POTENTIAL closely related to the use of atomic weapons as indicated by widely publicized news stories and reports, it is only logical to expect our consideration of these weapons in case of all-out war, and retaliation, if not initiation in kind, by our enemy if used. This possibility was grimly emphasized recently when Department of Defense officials warned us to expect sudden and devastating atomic bomb attacks in case of such a war. It is inconceivable, therefore, that the safety of life, investment and productive facilities can be ignored in the face of such a threat.

Bomb Damage in Japan

The holocaust of Hiroshima and Nagasaki give an indication of possible effect of such attacks on the United States. A single bomb in each city resulted in approximately 130,000 deaths out of a one-half million total population. All except the strongest industrial and commercial buildings were completely destroyed over an area of 4 square miles, with homes razed over a much larger area. This tragic and moving incident was followed in each case by complete chaos and a mass exodus of the population from the stricken cities. It is reasonable to expect that the more powerful weapons developed since that time would be equally disastrous in the more densely populated areas of the U. S.

Protection at Little Increased Cost

In view of the seriousness of this threat, it is important that steps be taken to minimize the effect of such an attack by producing as strong and as resistive new buildings as can be afforded economically and accepted functionally.

Obviously this does not mean that it will ever be possible to provide complete protection in all buildings, for the costs of stronger and stronger structures erected to cope with weapons of increasing potency would be prohibitive for a competitive economic market. Furthermore, the Government certainly could not subsidize protection costs that would be greater than the probable loss that might be expected in a few local areas of attack.

Fortunately, however, the greatest amount of protection and the maximum reduction in the destruction caused by the blast can be effected at little increase in the cost. Through awareness of the more resistant types of construction and by alerting clients to advantages achieved at nominal costs, the architect can do much which in time will assure more bearable prospects for the future.

The Trend to Cellular Construction

While the bulk of existing construction consists of either load-bearing walls or skeleton and rigid frames with curtain walls, recent construction experience in Europe typified by the Spa Green Estate

apartments in London and by planning studies as described in various technical publications* have shown that conventional methods may not furnish the most logical and economical structural systems even without consideration of the blast problem.

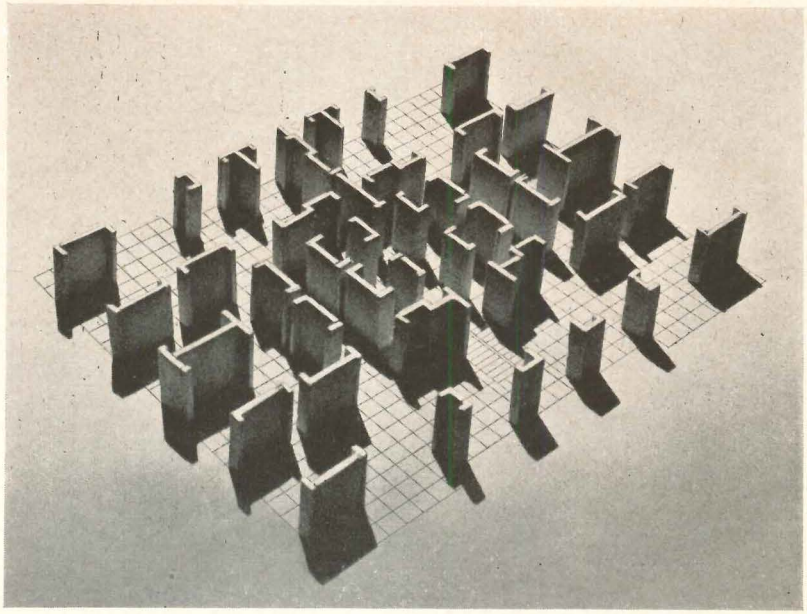
Instead, more efficient systems consisting of relatively light, high-strength walls of varied shape which combine structural and architectural functions can be used in place of the heavy bearing walls or the separate frames with added walls and partitions.

While this construction is similar in principle to the old bearing wall construction, the high-strength materials permit members thin and light enough to be controlled in thickness by thermal and sound insulation rather than structural considerations. Even in skyscraper construction where necessary thicknesses previously made the old bearing wall impractical, there is every reason to believe that building heights comparable to the tallest existing buildings are completely feasible using a high-strength wall construction.

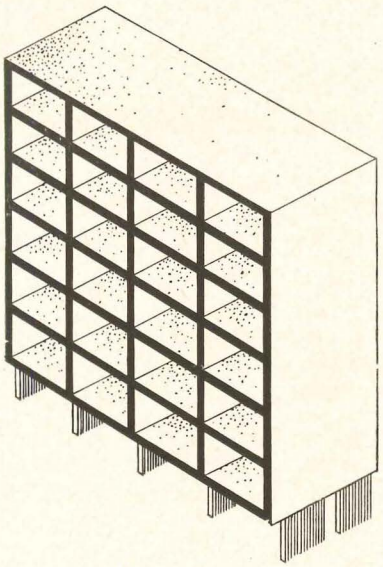
In fact these taller structures might be constructed using reinforced concrete walls 10 to 12 in. or less in thickness, and they would have the advantage of being stronger and undergoing less motion under wind and other lateral loads than similar buildings supported by skeleton frame construction. With the high-strength structural wall system capable of developing resistance at a greater rate than the masonry partitions, maintenance problems due to wind and other loads would be greatly reduced.

The most advantageous and efficient use of building materials to resist atom bomb forces would of course utilize such

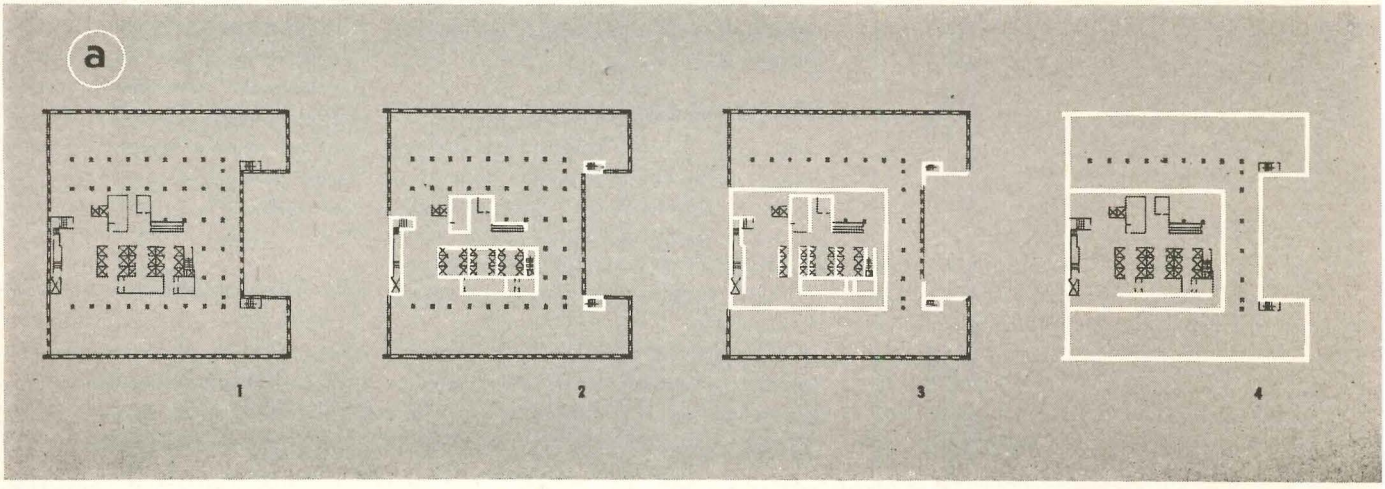
*Such as ARCHITECTURAL RECORD, Jan. 1951, p. 134.



This recently developed structural system, used for apartment houses in Budapest, Hungary, and shown in model form here, can provide a high degree of blast resistance. Relatively thin, reinforced concrete walls of varied shape combine structural and architectural functions (See ARCHITECTURAL RECORD, Jan. 1951). Architects: Olgyay and Olgyay



Although "box-frame" construction, which has been used in Denmark, England and elsewhere, was selected for its merits of sound control, construction standardization and absence of projections into usable areas, it can be easily adapted to blast resistant buildings



Above: "box-frame" construction was recently used for a series of apartment buildings in London, England. (Photo: The Architectural Review, Oct. 1952)

Figs ***a, b:*** *sketches 2, 3 and 4 show the most promising types of blast resistant construction, in order of increasing resistance, as applied to two existing, multi-story buildings. The No. 2 plans have shear walls replacing fixed interior walls—there is no sacrifice of flexibility or windows. Fig* ***b****, 3 has, in addition, structural exterior walls, pierced by small windows. No. 4 buildings are windowless; dashes indicate possible walls at corridors*

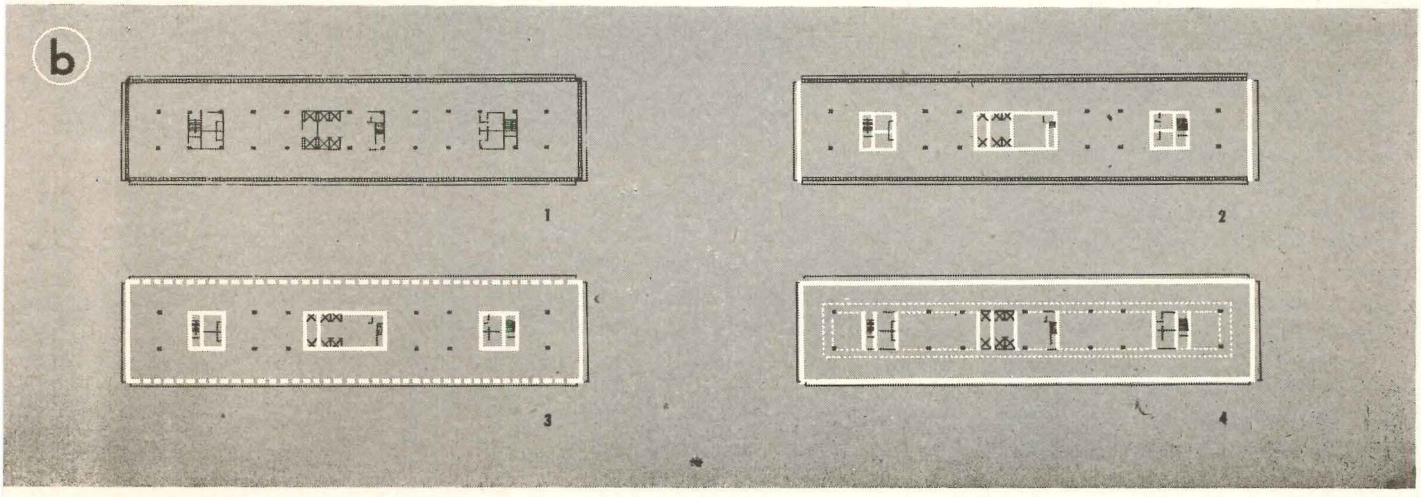
high strength walls as a structural membrane. By curving or folding the membrane into large cellular shapes common to use in modern aircraft, ship or other construction, strength adequate to resist intense lateral forces could be provided without necessity of fantastic thicknesses and unit strength in the members. Nor would such framing necessarily result in restrictions in usable floor area. In fact one of the expressed advantages of similar construction now, using horizontal and vertical slabs as floors and walls, is that projecting columns and beams are eliminated from the useful floor area.

Strengthening Conventional Framing

While conventional frames also can be strengthened to a certain extent by care in the selection of materials and details, the possibilities of developing any degree of resistance are much more limited than they are in membrane construction. For example, if the strength of the frame were doubled — which may be the limit that can be accomplished for nominal increased cost through minor increases in strength, and improved connections of conventional frame construction — the radius of destruction would only be decreased by 20 to 25 per cent, and the future usefulness of the structure after exposure to the blast would be limited due to large distortions.

Furthermore, the curtain walls and interior of the structure would be subject to extensive damage by the blast forces. Though this increase in resistance is appreciable and should not be overlooked, the load capacity possible for any given cost is much less than is inherent in the membrane construction.

Conventional load bearing wall construction is weak against atomic blast forces and would result in extensive



casualties due to collapse, flying debris and fire.

Windowless Buildings

Windows represent a luxury in blast resistant construction. The reasons for the desirability of eliminating windows are several:

(1) Unless windows or fragile wall areas are carried to the extreme of including practically the entire wall and partition areas, the relief in load caused by openings in the first wall is largely negated by the suctions and pressures on the succeeding walls, and there is little difference in the load impulse transmitted to the structure in buildings with and without windows.

(2) Failure of the walls or glazed areas also will expose personnel and building contents to blast and fire damage during and after the explosion. This damage may be as critical in many respects as the destruction of structure.

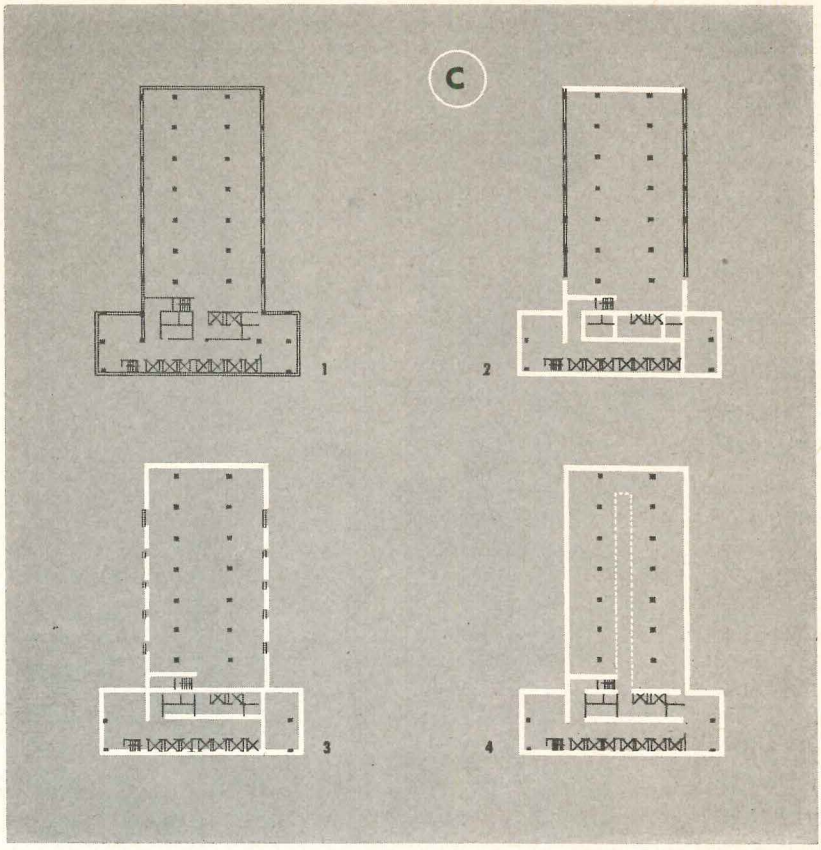
(3) Differing partition layouts on various floors also may delay the passage of the shock wave on certain floors resulting in a temporary but sufficient unbalance in the pressures acting above and below the floors to cause damage to the floors throughout the building.

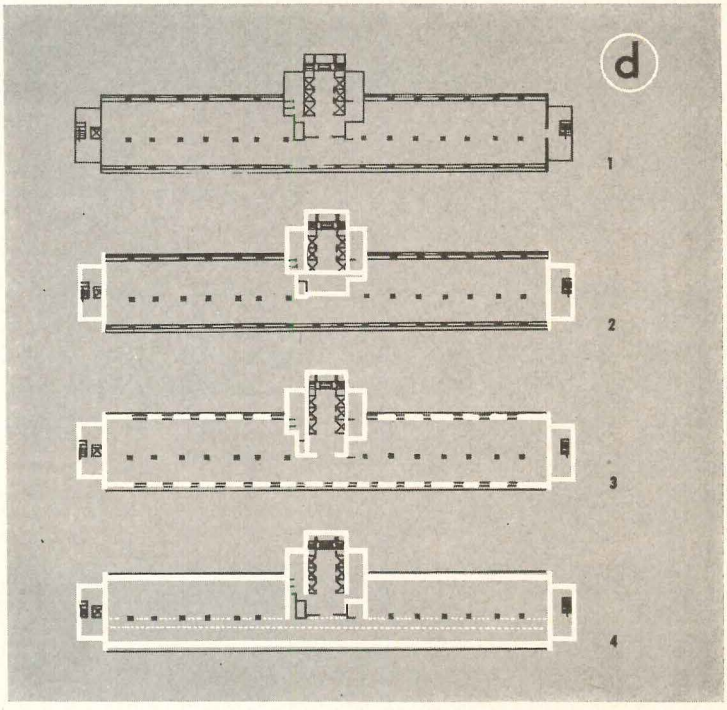
(4) Furthermore, the exterior walls are the most economical part of the building to use as blast resisting members because of their excellent geometrical position and because more money would be saved if conventional curtain walls were replaced by blast resistant walls than if conventional interior partitions were replaced instead.

The acceptability of windowless buildings by the prospective user is of course a prime factor. However, the pyschological factor is better considered later along with the cost and degree of blast protection.

In the series of sketches on pp. 174–176 are a number of examples of the most promising types of blast resistant construction applied to plans of existing multi-story structures selected at random. Though this substitution would result in strong and tough structures compared to present construction, straight substitution of windowless membrane construction in present plans probably would be unlikely for several reasons.

In the first place many lending agencies and particularly the Government are already concerned with protection of investment in view of the possible large scale losses in the event of an atomic explosion. Their typical statisti-





Figs ***c, d:*** *blast resistant construction, in order of increasing resistance, applied to existing multi-story buildings. The same procedure for substituting structural walls for nonstructural has been used as with Figs* ***a, b.*** *The dashes on Nos. 4 indicate possible structural partitions at corridors*

cal approach to the problem would specify that average investment concentration over widespread areas be maintained at reasonably low levels both to discourage attack and to minimize losses. Such dispersement, involuntary to the architect and client, may be closer to actuality than commonly realized and this may eventually nullify to some extent the usefulness of skyscraper-type buildings.

Furthermore, with artificial lighting and air conditioning dictated by the windowless exterior walls, the buildings might be logically expected to decrease in verticality and expand in floor area. Given a constant total floor area, an increase in area per floor will increase the depth, and hence strength of the building; while decreasing the height will reduce the exposed areas subject to the blast force and loads on the wall.

As a result, the total cost for a given degree of blast protection might be expected to increase only slightly with floor area but at a much higher rate for the same floor area distributed in a vertical direction. While this increase in cost will vary widely with the size and arrangement of buildings, the cost may easily be as much as several dollars per sq ft higher for a tower building as compared to a low building having a square plan.

Buildings with Windows

If windowless buildings are considered unacceptable for any reason, appreciable, though more expensive and far less effective resistance, also can be provided in windowed buildings. This protection can be developed by use of an exterior membrane pierced by windows and/or by substitution of structural walls for conventional partitions at stair and elevator wells and at utility passages where they will not interfere with functional use of the floor area. Structural walls also may be used for firewalls and partitions which are fixed in position. The structural interior walls, in this case, would serve the multi-purpose of supporting the building and acting as a closure screen and personnel shelter for the occupants.

In apartment and finger-type buildings such as schools, hospitals and buildings housing small offices, where the interior membrane walls are closely spaced, the framing would be similar to the "box-frame" construction used in Denmark, England and elsewhere. Box frame construction was selected in existing construction for sound control, construction standardization and absence of projections into the usable areas rather than for blast resistance, but it will provide a high degree lateral resistance and is easily adaptable to blast resistant construction. The no. 2 floor plan in illustrations **a-d** indicates possible arrangements providing a light structure which would cause little interference with the flexibility of the planning while still affording a much greater lateral strength than is possible in skeleton construction, unless these structural frames have excessively heavy members.

Special Structures

Factory-type buildings and auditoriums may be more difficult to strengthen due to the necessary clearances for cranes and for proper sight lines. Ordinarily these buildings consist of structural frames or arches spaced 16 to 30 ft on centers with subframing supporting a light curtain wall which encloses the structure and carries wind and snow loads to the heavier structural members. As the loads on the walls increase in intensity, the local and main framing becomes increasingly more massive and the advantage of dispersing the frames is largely lost.

In this case a more efficient arrangement might be achieved by combining the local and frame members into a single unit which will act as a continuous frame along the length of the wall as shown at the bottom of page 178 rather than by the usual manner of widely spaced frames supporting local wall areas.

The heavy wall framing needed to carry local loads to the spaced frames is thus used to carry both the local wall load and the over-all frame loads. However, factory buildings are frequently flanked by lean-tos or side bays containing offices and shops, and the high bay may be given greatest protection at least cost if cellular construction is used to frame the side bays and to support the main structure as well. This would be the reverse of the conventional procedure of using the heavy main frames to provide lateral support for light lean-to framing.

Costs

The cost of blast protection will of course depend on the degree of protection desired and on the freedom of planning permitted. However, building costs with and without special blast resistant capacity may be compared by considering methods of construction now in use. Replacement of conventional curtain walls and the structural framing supporting these walls by architectural reinforced concrete walls without windows would add the highest type protection at costs little if any above the costs of existing construction.

Substitution of structural walls for typical plastered block interior walls would be more expensive and might add up to 50 cents psf to the costs of the building. Strengthening of building frames to a point of utilizing available members at full efficiency might add a similar cost of 50 cents psf, while providing a much smaller amount of blast protection for the building and without providing a shelter area for the occupants.

Degree of Protection

The degree of protection furnished by the above means also will depend to a great extent on the structural freedom permitted in the design and on the configuration of the building; however, certain general estimates of resistance capacity may be made using more or less typical composite structures. It might be expected, for instance, that the strength of windowless membrane construction will be three or four times as great as frame buildings and the over-all effect of the disaster in turn might eventually be reduced to 30 or 40 per cent of that which might be expected at the present time.

The introduction of windows and restriction of allowable structural areas would reduce this resistance, though in most cases it would be considerably greater than the resistance obtained by a nominal increase in the cost of framed buildings.

By considering the nature of the blast forces in the design of frame buildings, the added frame strength achieved at nominal costs might double the effectiveness of the frames and reduce the critical damage on an over-all area to 65 per cent of that which may be expected using conventional frames. It should be realized that all comparisons are made against conventional frame buildings which are much more resistant to blast than most normal buildings found in an average city.

General Consideration Of Blast Resistant Design

It is apparent that the blast resistance of buildings can be improved in numerous ways. However, the greatest amount of protection at least cost would utilize the concept of windowless building which may not be readly acceptable

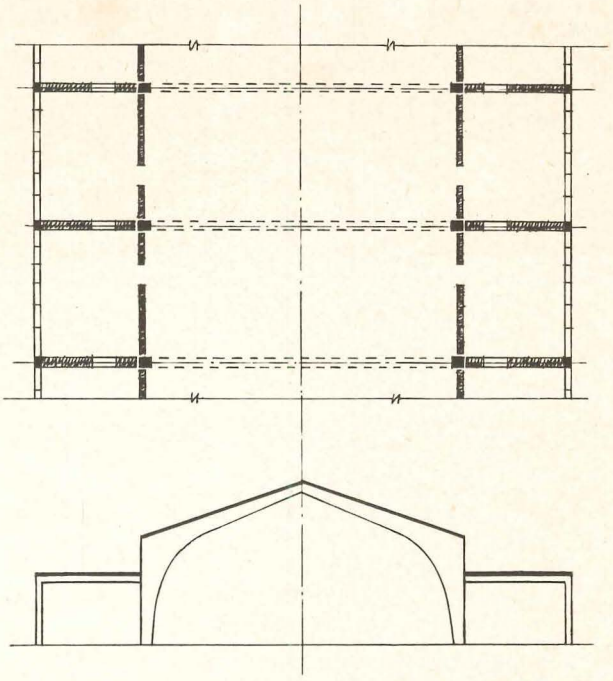
to either architects or clients. In view of the importance of eliminating windows, if possible, for blast resistance, the factors determining the necessity of windows should be given a healthy review.

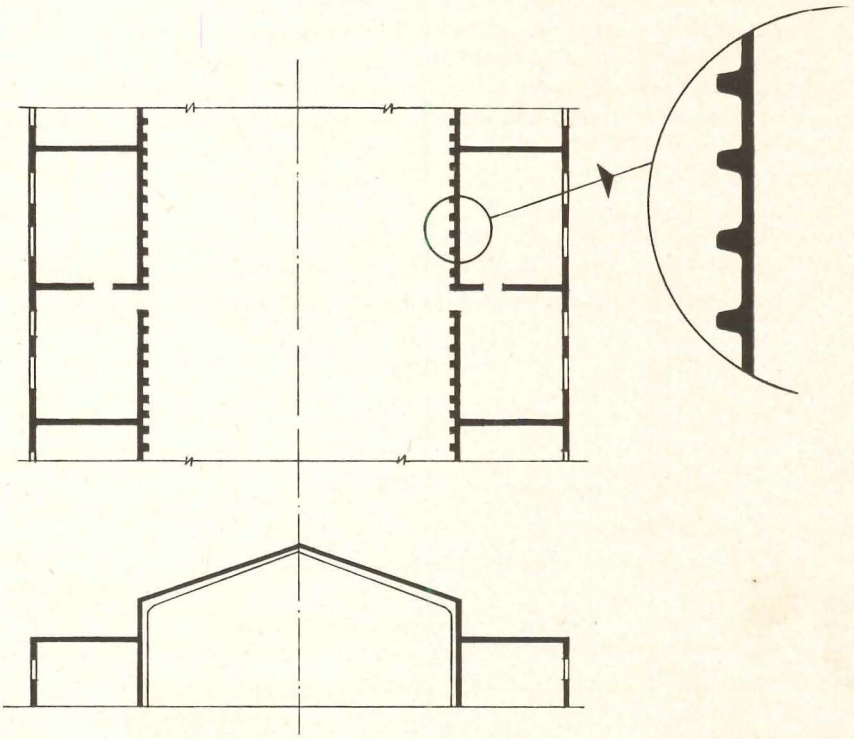
The approach to the protection problem thus requires more than a comparison of costs between different wall and framing systems which might be used in present plans and buildings. As an economic problem, any added costs, unless subsidized by the Government, will reflect in added rental costs.

As shown by experience in the Japanese incidents, extensive or complete damage occurred to the contents of practically all buildings. This is illustrated by the damage of such relatively sturdy contents as machines housed in shops which were estimated as over 50 per cent destroyed or irreparably damaged by debris, fire and later exposure. This factor may influence the architectural planning, for while prospective tenants of a building might be adverse to paying added rental costs for a windowed building which would protect the structure and not the contents or occupants, they might consent to somewhat higher rental rates if better personnel relations could be obtained by offering security to the workers, and if added safety were furnished for the tenant's possessions.

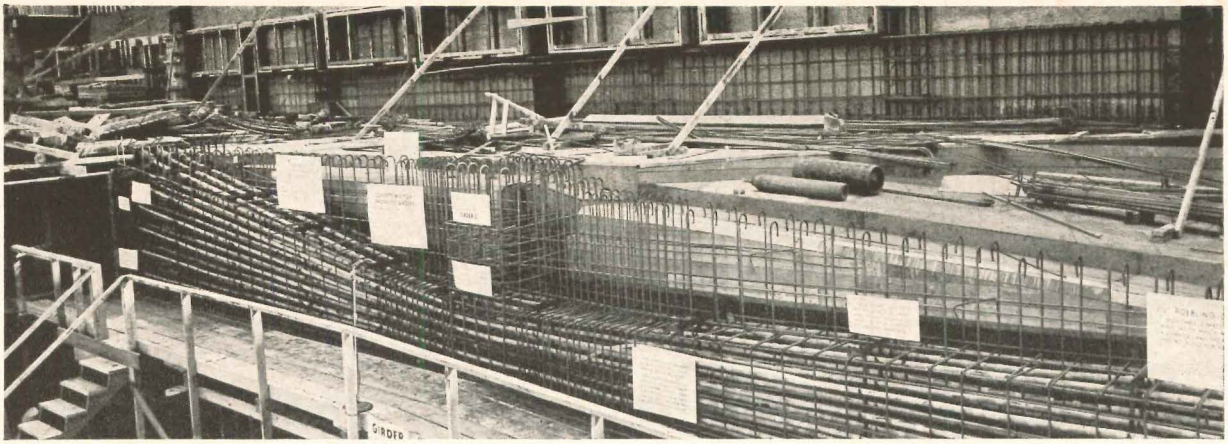
Protection of the tenant's investment and personnel necessitates the consideration of windowless buildings. If windows are left out and air conditioning is provided, the efficiency of the floor plan may change sufficiently to effect savings which would offset the added cost of the air conditioning. It is obvious that if air conditioning is contemplated, regardless of windows, the total costs would be reduced by the improved plan and better thermal insulation of the windowless construction. Heating, air conditioning, sound control and flexibility of light sources as a criteria for room arrangement hence offer particular sources for further study.

Considering the seemingly happy operation of existing windowless buildings such as department stores, even the extremes in blast resistant buildings can hardly be considered severe criteria until it is shown that such buildings would be less functional, less acceptable and more expensive than our present methods of construction.





Quite often industrial buildings consist of structural frames spaced 16 to 30 ft on centers with subframing supporting a light curtain wall (above). For blast resistant buildings, it would be better to combine local and frame members into a more efficient single unit which will act as a continuous frame (below), and to frame side bays in cellular concrete construction which also will support the main structure



Ready for pouring is the 62-ft long girder C, which is prestressed by means of 28 cables, shown in place. Cables will be prestressed to 125,000 psi

PRESTRESSED GIRDERS ELIMINATE COLUMNS TO FREE PARKING GARAGE ENTRANCE AREA

Barrett-Lick Garage, San Francisco, California

Ellison and King, Consulting Structural Engineers

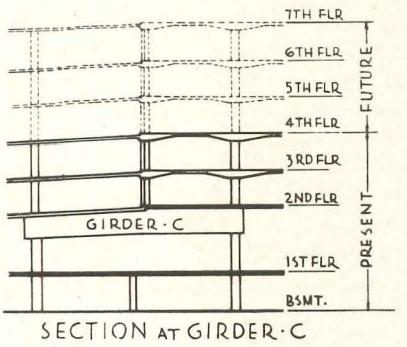
Barrett and Hilp, General Contractors — Owners

IN DOWNTOWN SAN FRANCISCO, construction is now under way on a three-story and basement parking garage, designed for the addition of three more stories later, in which heavy prestressed concrete girders make possible an open, unrestricted space in the entrance area to accommodate cars before they are taken up the ramp.

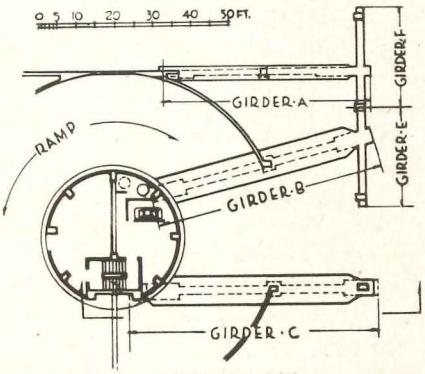
These girders, the engineers say, will be the heaviest prestressed concrete building girders in the world, as well as the heaviest prestressed girders in the United States, including bridge girders. In charge of the structural design was S. C. King, who died shortly after its completion, and collaborating with him was T. Y. Lin, both of Ellison & King.

In order to provide an open marshalling space on the first floor in the entrance area, four columns from upper stories terminate at the second floor and are carried by prestressed girders spanning 51 to 62 ft. Because of the irregular shape of the site and the location of the center circular ramp, columns are staggered in alignment on the northern and southern halves of the building. Hence, two of the column-carrying girders, A and B, are supported by two continuous girders, E and F, at the northern ends.

Because of the heavy loads on the girders, the original plan was to use steel. However, when construction started on the building in August 1951,

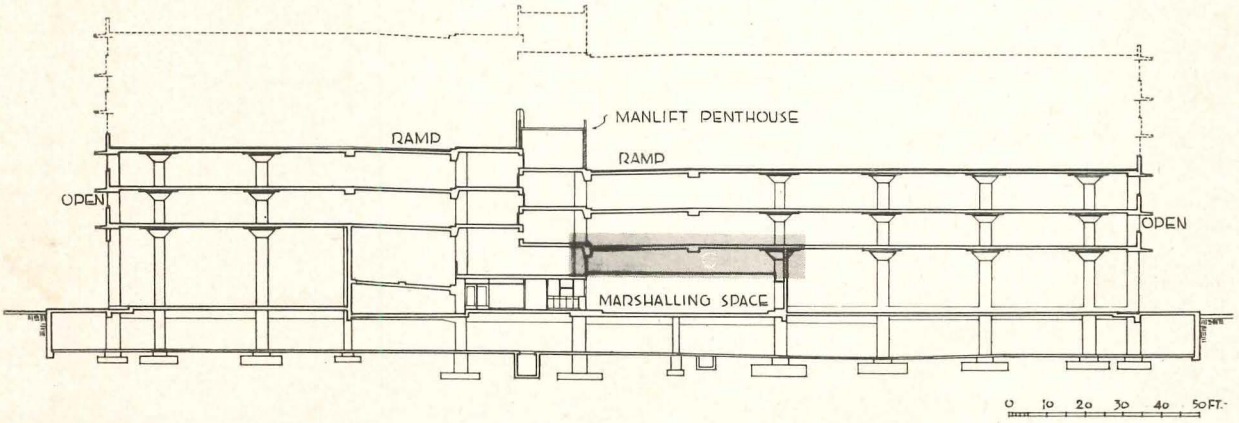


SECTION AT GIRDER·C



GIRDER PLAN

Prestressed girders, at shaded area below, carry row of four columns of above floors to provide open area within the entrance. This section shows flat slabs, but analysis of haunched slabs (section at right) proved them better



use of steel was denied by NPA.

Ordinary reinforced concrete was considered next but preliminary calculations indicated members of such size and cost as to prohibit their use.

Ability to maintain adequate headroom without increasing the story height, together with savings in cost and critical materials, were the deciding factors in the choice of prestressed concrete.

The cost estimate below indicates a saving of $6000 (more than 10 per cent) over the original structural steel design:

Total for prestressed concrete girders	**$48,000**
Alternate design, using structural steel girders	**$50,400**
Fireproofing	**3,600**
Total for structural steel	**$54,000**
Saving	**$ 6,000**

The incorporation of two unusual features in the girders has resulted in considerable cost reductions: (1) The tops of the girders are integrated with the floor slabs, utilizing the floor slabs as top flanges and obtaining maximum possible depths for the girders. (2) Tensioning of the girders is postponed until all upper floors in the present scheme have been poured. This makes it possible to carry the present dead loads without compression in the top fibers, thus leaving the maximum load-carrying capacity for any live or future loads.

Prestressing Design

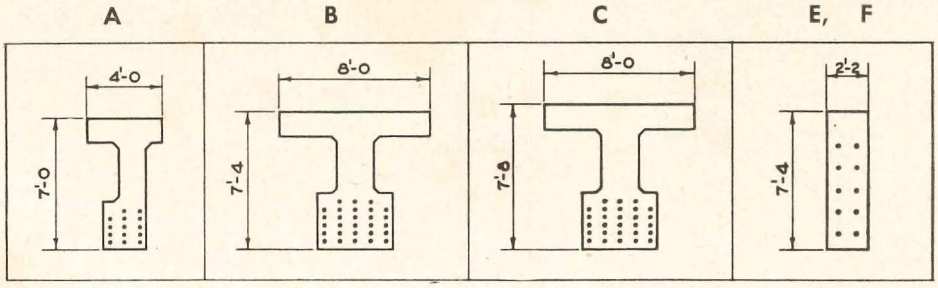
Three long girders (A, B and C) are designed as simple spans, each carrying a heavy concentrated load approximately at midspan, together with additional uniform load along the length. For the design of the midspan section, two critical conditions were investigated.

The first critical condition occurs immediately after completion of the prestressing. At this stage the top fiber is under zero stress while the bottom fiber has a maximum compressive stress of 2200 psi. This maximum compressive stress will be gradually reduced as loss of prestress takes place, and also as additional dead and live loads are applied. The top fibers, although under zero stress immediately after prestressing, will be under some compression as soon as loss of prestress takes place.

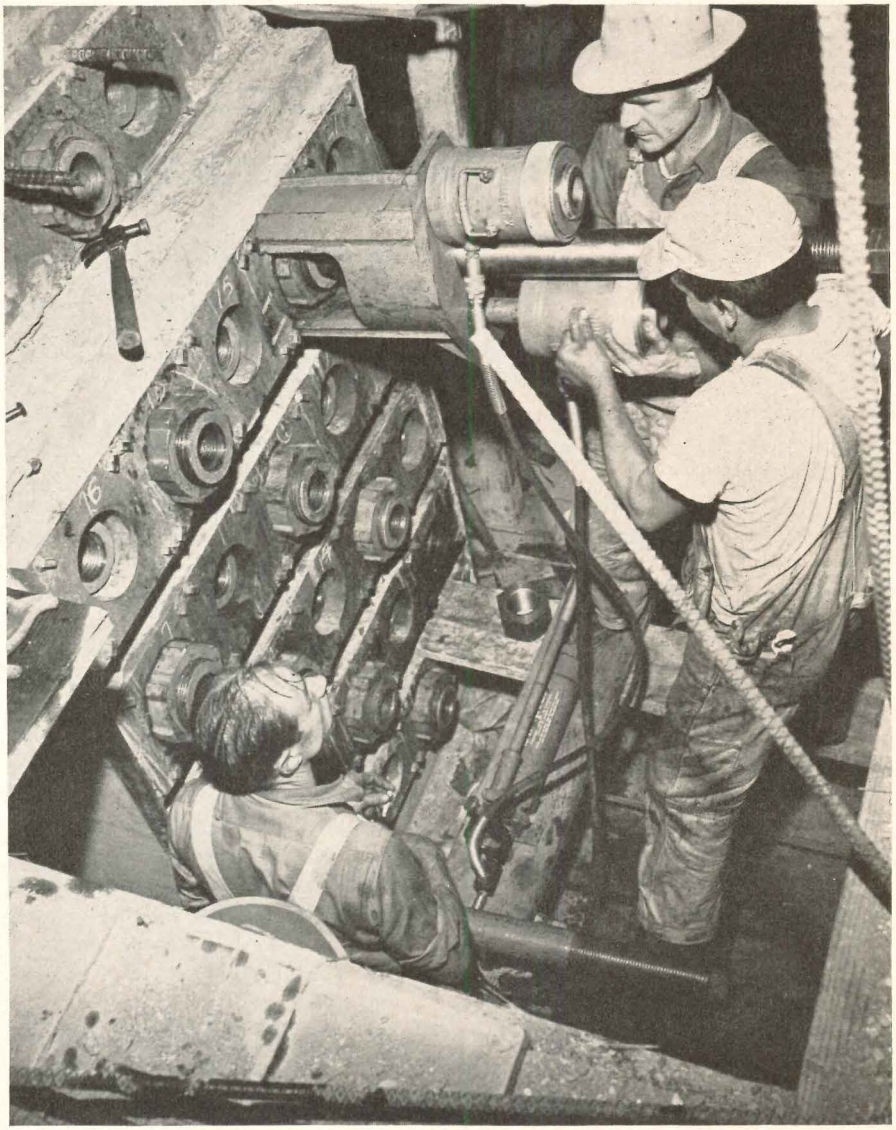
The second critical loading condition will occur when the future three stories are added and the full live load is on the structure. Prestress in the cables would then be reduced from 125,000 psi to 105,000 psi. Under such conditions the maximum compressive stress will occur at the top fibers and will have a maximum of only 1800 psi.

The two continuous spans, girders E and F, could have been designed of ordinary reinforced concrete if it were not for the heavy shear in them.

One of the unique problems encountered in prestressed concrete, especially in this building, is the design for strains induced by prestressing. In order to avoid dissipation of prestress and overstraining of adjoining members under prestressing, all the slabs and walls surrounding the girders are severed from the girders. Thus the girder concrete will be poured as a distinct unit, separated almost completely from the rest of the building with the separating strips doweled and concreted after prestressing has taken place.



Above: sections at midspan of prestressed girders. Below: mounting two 60-ton jacks to apply a pull of 85 tons on one of the 1½-in. cables in the girder. Total pressure on girder will be 2380 tons. Hand pump operates jacks



Don Bosco

RADIOISOTOPE FACILITIES FOR THE GENERAL HOSPITAL

By Samuel C. Ingraham, M. D.[1]*, U. S. Public Health Service*

Editor's Note: The planning and engineering data presented here cover requirements for the type of radioisotope facility that is likely to find widest application in general hospitals. The planning of special facilities for medical research, teaching and possible new developments in medical uses of radioisotopes is an individual design problem, and beyond the scope of this paper

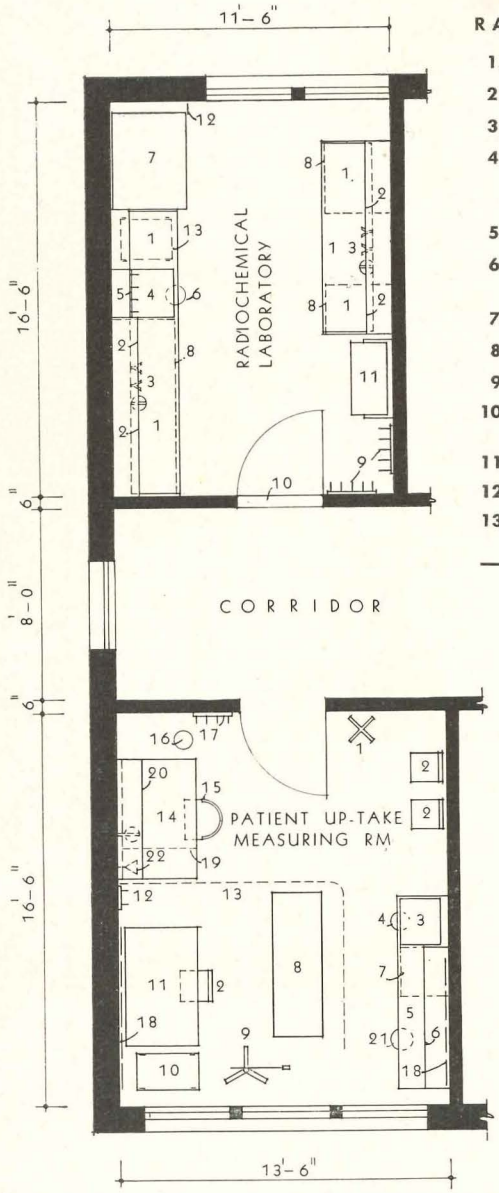
NOW THAT RADIOACTIVE MATERIALS are being used regularly in a number of hospitals for certain clinical tests and for treatment of selected patients, there is a need for a new special area in hospital design — the radioisotope facility.

Location

It is operationally more convenient to locate the radioisotope facility in or near the department which assumes responsibility for it. This will facilitate sharing of staff duties and permit common use of patient waiting, examination and dressing spaces.

Most radioisotope patients are ambulatory and many of them can be handled as out-patients. For this reason, there should be convenient access from the street and elevators. Traffic is most easily controlled and the hazard of personnel exposure is kept to a minimum at an exterior corner or end of a corridor. At the present time, there appears to be no need to require special bed areas for routine, radioisotope in-patients.

Patient and staff toilet facilities should be convenient to the radioisotope area, but special toilet facilities for routine radioisotope patients are not necessary. Installation of a special, emergency shower bath is not believed to be obligatory, but reasonable access to a shower stall is desirable to provide for the unlikely but possible contingency of a radioisotope spill involving personnel contamination.



RADIOISOTOPE FACILITIES IN THE GENERAL HOSPITAL

0 4 FEET

Plan by W. R. Taylor

RADIOCHEMICAL LABORATORY

1. Work top with splash back
2. Wall cabinets
3. Air, gas and electric outlets
4. Sink, foot, knee or elbow controls for hot and cold water, plus one cold water outlet hand controlled
5. Peg board
6. Contaminated waste receptacle under sink
7. Fume hood
8. Cabinets below
9. Hook strip
10. Bright yellow flush threshold, to indicate radiation hazard zone
11. Paper roll holder 48 in. above floor
12. Metal closure plate
13. Isotope storage below work top, on dolly

PATIENT UP-TAKE MEASURING ROOM

1. Costumer
2. Straight chair
3. Sink, foot, knee or elbow controls
4. Contaminated waste receptacle
5. Work top
6. Wall cabinets
7. Cabinet below work top 24 in. wide
8. Examination table
9. Tube stand, on casters
10. Dolly
11. Table
12. Hook strip for patients' clothes
13. Curtain rod and curtain
14. Steno desk
15. Steno chair
16. Waste paper receptacle
17. Hook strip for staff
18. Constant voltage plug-in strip
19. Record file
20. Book shelf above desk
21. Stool
22. Telephone outlet

[1] *Assistant Chief, Radiological Health Branch, Division of Engineering Resources. Prepared under the direction of John W. Cronin, M.D., Chief, Division of Hospital Facilities, Bureau of Medical Services, and Otis L. Anderson, M.C., Chief, Bureau of State Services, Public Health Service, in cooperation with Isotope Division, Atomic Energy Commission, Oak Ridge, Tenn.*

The relative cost and ease of running services to the radioisotope facility must be considered in selecting its location.

The Basic Facility

Design and construction of the radioisotope area must provide for necessary radiation shielding to maintain personnel exposures below 0.3 roentgen per week,* for preparation of patient doses of isotopes, for ease of clean-up in case of accidental spill of radioactive material, and for measurement of absorption of the isotopes by the patient. The minimum, basic, adequate facility for use of radioisotopes in the hospital consists of two rooms: a ***radiochemistry laboratory*** and a ***patient uptake-measuring room.***

In the radiochemistry laboratory, the shipments of radioisotopes are received and stored, the proper dilutions for patient dosage are prepared, clinical specimens are prepared for examination, the doses of radioisotopes are given to the patients, and glassware, linens, clinical specimens and other items contaminated with radioisotopes are cleaned, held for decay of the radioactivity or stored prior to disposition.

In the patient uptake-measuring room, the patient uptake of radioactive substance is measured and the radioactive content of clinical specimens is determined.

As the use of radioisotopes will probably increase, the hospital should plan for economical expansion of the radioisotope facility. By adding a second patient uptake-measuring room, the hospital can double the patient capacity of the basic radioisotope facility. (At this stage of expansion of the basic facility, consideration should be given also to the possible addition of an electronics and low-level assay room.)

Radiochemistry Laboratory

Plan. The radiochemistry laboratory plan incorporates such elementary principles as: equipment located on the side walls, permitting window space with heating outlets below; separate work tops for patient dose and clinical specimen preparation; high level radiation area (hood (7) on the drawing) and isotope storage (13) on an outside wall, far removed from radiation measurement area; separation from patient uptake-measurement room by a corridor to minimize disturbance of radiation measurements due to stock solutions of radioisotopes stored in the laboratory.

Radioisotopes may be stored in shipping pots and shielded containers on the dolly (13) or behind lead bricks inside the hood.** The dolly can be parked under the work-top near the hood, or the hood base can be designed to receive the dolly. The suggested dolly is a method of storing which permits the radioisotopes technician to use the entire work surface freely rather than cluttering it with bulky storage pots.

Contaminated dry wastes may be collected in the waste container (6) and stored temporarily under the sink (4) or in the hood base behind lead bricks. The wall and base cabinets (2) and (8) are provided to store equipment and miscellaneous supplies. The aisle space indicated is wider than usual for a laboratory. The additional space is to provide a work area large enough for a patient's litter and the medical treatment team needed to inject patients with radiogold-198.

Easy access to a roll of diaper paper † is provided by holder (11) mounted on the wall so as to allow space for occasional truck parking below. Separate hook strips are provided for staff gowns and street clothes.

The need for extensive built-in shielding is avoided by judicious use of shielded storage pots, movable shields of lead bricks within the exhaust hood as needed, and location of the hood on an outside wall. If the hood location is changed so the area on the far side of the partition behind it is an occupied area, concrete, lead or other shielding material should be added to the partition to assure protection of the occupants of that area.

Heating and Ventilating. Although room temperature is not critical, some ventilation is necessary for human comfort. The exhaust fan being connected to the hood and the fact that air from this room should not be recirculated because of possible radioisotope contamination indicates that the room should be maintained under a lower pressure than adjoining areas. Negative pressures in this room must be avoided to prevent possible back-drafts down the hood exhaust stack. If climatic conditions warrant, consideration might be given to installation of a separate, outside air intake or make-up to avoid exhausting excessive amounts of air from the other parts of the building.

Patient Uptake-Measuring Room

The patient uptake-measuring room is divided into three main areas — waiting, clerical and clinical.

The small patient load of this facility cannot justify a separate waiting room. The waiting area, to the right of the door, is not intended for the waiting patient, but rather for a person accompanying an out-patient.

Records can be kept in a file drawer of the stenographer's desk (14) or a file may be installed in the vacant space at the right of the desk.

The table (11) provides work space for the clerical duties of the radioisotopes technician so he need not remain unnecessarily in the radiochemistry laboratory near the stored radioactive substances. Some physicians like to have X-ray film illuminators located on or above the table for viewing films related to the patient's treatment. Work-top (5) provides a space to assemble equipment; and storage cabinets (6), above, furnish space to keep spare parts.

One radiation measurement instrument (scaler) and lead-shielded Geiger-Mueller tube or scintillation detector for assaying low activity samples could be mounted on this work-top near the window. The second radiation measurement instrument (scaler), for mobile use, can be mounted on the dolly (10). The tube stand (9) provides a simple means of supporting the second, shielded Geiger-Mueller tube or scintillation detector and may be eliminated if an alternative method of support is provided. The plug-in strips (18) on both walls make possible the use of short leads and facilitate the operation of equipment. The suggested curtain arrangement (13) permits use of the work-top (5) without disturbing the privacy of the patient, and shields preparations or treatment techniques from unauthorized observers. A cabinet for linen storage (7) is desirable.

Because of the sensitivity of the radiation measuring instruments housed in this room, it should not be immediately adjacent to X-ray machines or radium storage areas. In existing hospitals, the suitability of an area can be assayed by prolonged background measurements made under full operating conditions.

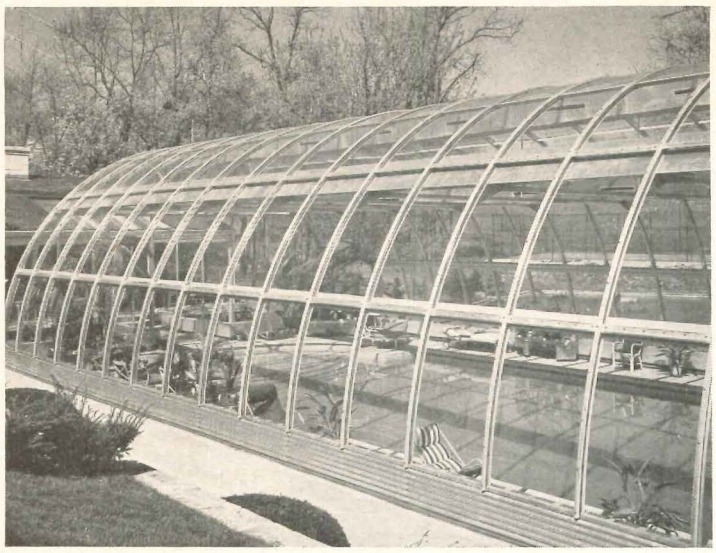
Heating and Air Conditioning. The heating system may be any of the

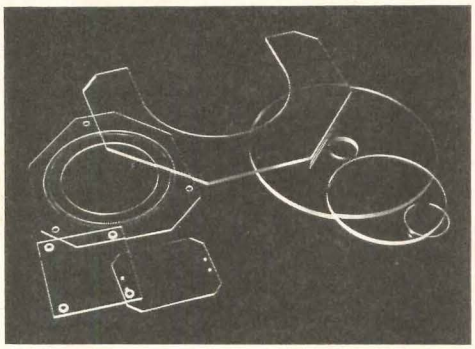
(*Continued on page 196*)

** The roentgen is the unit of measure for gamma and X-radiation. 0.3 roentgen per week of the whole body exposure is the recommended maximum permissible dose.*

*** Shielding provided by the containers must be sufficient to maintain personnel exposures below the maximum permissible dose of 0.3 roentgen per week.*

† Diaper paper is a type of absorbent paper with one side treated to be impervious to moisture. This paper is used for easily replaceable protection of the work-tops and the working surface inside the exhaust hood.





Transparent plastic sheet used as glazing material in swimming pool canopy, exterior at left, interior below. Can also be cut to special shapes, as above and at bottom, in several thicknesses

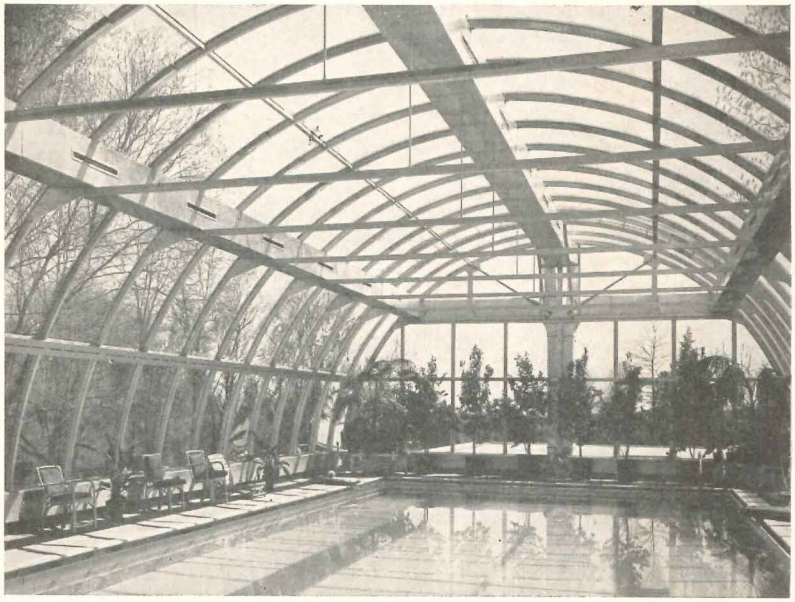
Cast Transparent Plastic Sheet

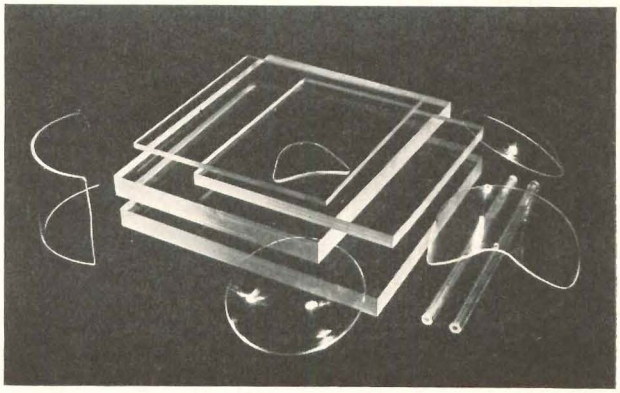
Employing a thermosetting liquid monomer plastic developed by the Pittsburgh Plate Glass Co. and known as *CR-39*, the Cast Optics Corp. is now producing *CR-39* transparent plastic sheet, an optically clear rigid sheet reported to feature unusual resistance to abrasion, heat and chemical solvents. A similar product is manufactured by the Homalite Corp. and is being marketed as *Homalite CR-39*.

The sheet is said to possess extremely high clarity and to have surfaces comparable to polished plate glass in their smoothness, luster and chemical resistance. It is reported to be intermediate between polished plate glass and the better grades of thermoplastics in its resistance to abrasion, wear and weathering. Its molecular structure eliminates cracking, crazing and checking. In all, the sheet is said to offer important advantages over many transparent plastics, except for applications requiring severely curved surface contours.

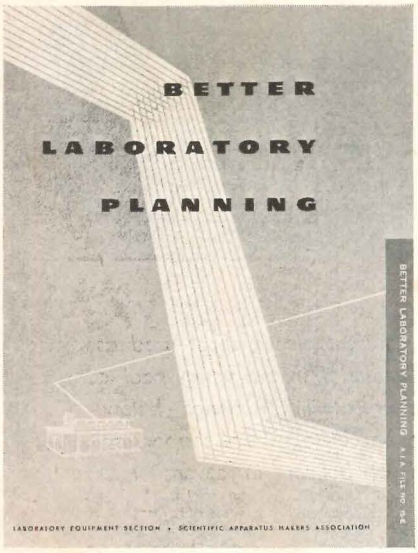
Applications for the product cover a wide range, since it can be used in flat panel sheets or cut and formed in shapes suitable for windshields, instrument panels, covers, enclosures, lenses, plaques and other products. Architecturally, it may be employed as a glazing material or in applications such as the swimming pool canopy illustrated above. Cast Optics Corp., 1 Post Rd., Riverside, Conn.; Homalite Corp., 11-13 Brookside Dr., Wilmington, Del.

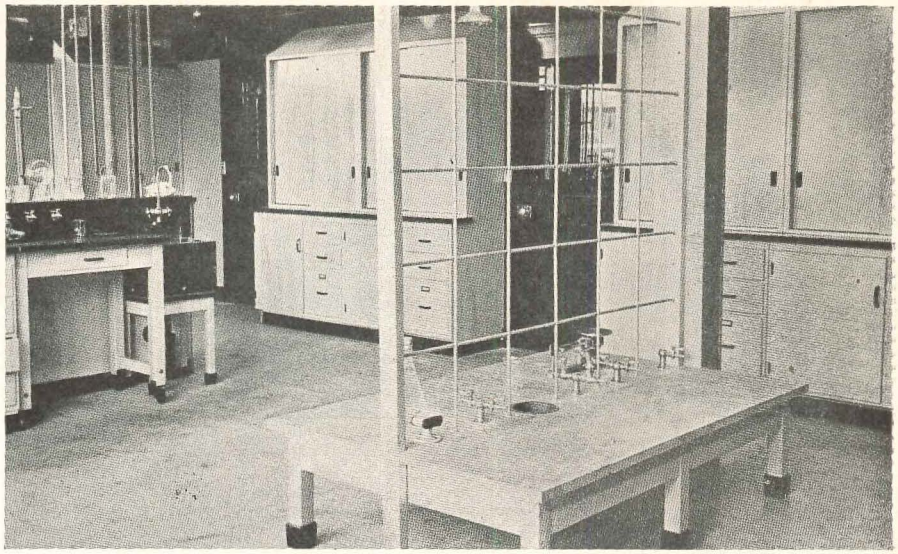
(*Continued on page 200*)





LITERATURE FOR THE OFFICE





Among layouts illustrated in planning guide, left, is the laboratory shown at right

Laboratory Planning Guide

Better Laboratory Planning. Prepared especially to aid architects in planning laboratory facilities in schools, hospitals and industrial laboratories, this booklet is a collaborative effort embodying the experience of a number of leading companies in the laboratory equipment field. Factors underlying good laboratory planning are discussed and illustrated with photographs of typical installations for a variety of requirements. 28 pp., illus. Laboratory Equipment Section, Scientific Apparatus Makers Assn., 20 N. Wacker Dr., Chicago 6, Ill.

Face Brick and Tile

Finest in Face Brick and Tile. Booklet presents illustrations of many patterns available, showing color differences along with the varied textural effects and giving a description of each. Details of interlocking tile are also included for 6- and 8-in. tile, and photographs of installations in several types of construction are given. Specifications are included along with weights and dimensions and the number of units required per sq ft of wall. 12 pp., illus. Hebron Brick Co., Hebron, N. D.

* *Other product information in Sweet's File, 1952.*

Bar System Steel For Prestressed Concrete

Stressteel Manual. One of the best examples of technical product literature design in a long time is this manual which discusses the Stressteel tensioning unit for prestressed concrete — a steel bar of extremely high strength, threaded on the ends for an anchorage assembly, consisting of a nut, a washer and a small steel plate.

The Stressteel bar was developed in England specifically for prestressed concrete construction and for strengthening and repairing existing steel and concrete structures. The bar is said to be the only large-diameter steel which approximates the high tensile strength of small-diameter high carbon wire.

A series of easily understood sketches brightens up the section on advantages and applications of the unit. The design section takes the basic principles of prestressing and gives an outline of 11 steps to follow, demonstrated by an example of using the bars in the design of a concrete "I" section girder.

Components are described and listed, and test results given in the section on materials. Specifications and construction procedures round out the booklet. 60 pp., illus. Stressteel Corp., 207 E. 37th St., New York 16, N. Y.

Insulation Material for Low Temperature Applications

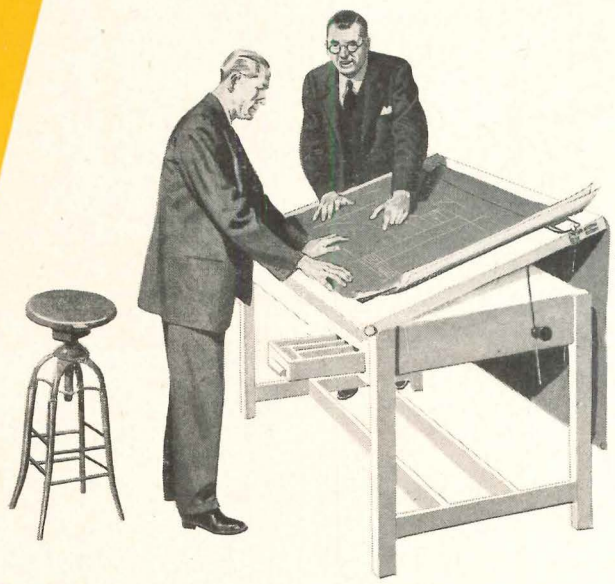
Styrofoam. Booklet describes the properties of this insulation material, giving principles of proper installation on masonry walls, wood wall construction, self-supporting partitions, concrete floors and ceilings, wood floors and ceilings, suspended ceilings and insulated roofs. Information on how to apply adhesives and finishes to the material is also included. Chapters on the insulating of vehicles such as trucks, refrigerated cars, ship holds, tanks, etc. is given, and booklet is illustrated with photographs and drawings. Engineering data includes thermal and physical properties, water absorption and water vapor transmission. 24 pp., illus. The Dow Chemical Co., Midland, Mich.

Pipe Fittings

Fabricated Fittings by Naylor, Bulletin No. 525. Brochure contains data on standard and special fabricated fittings for lightweight pipe. Illustrations of special fabrications designed to save time and labor and reduce material costs in modernizing piping systems are also included. 4 pp., illus. Naylor Pipe Co., 1230 E. 92nd St., Chicago 19, Ill.

(*Continued on page 246*)

Anemostat offers more latitude in Design



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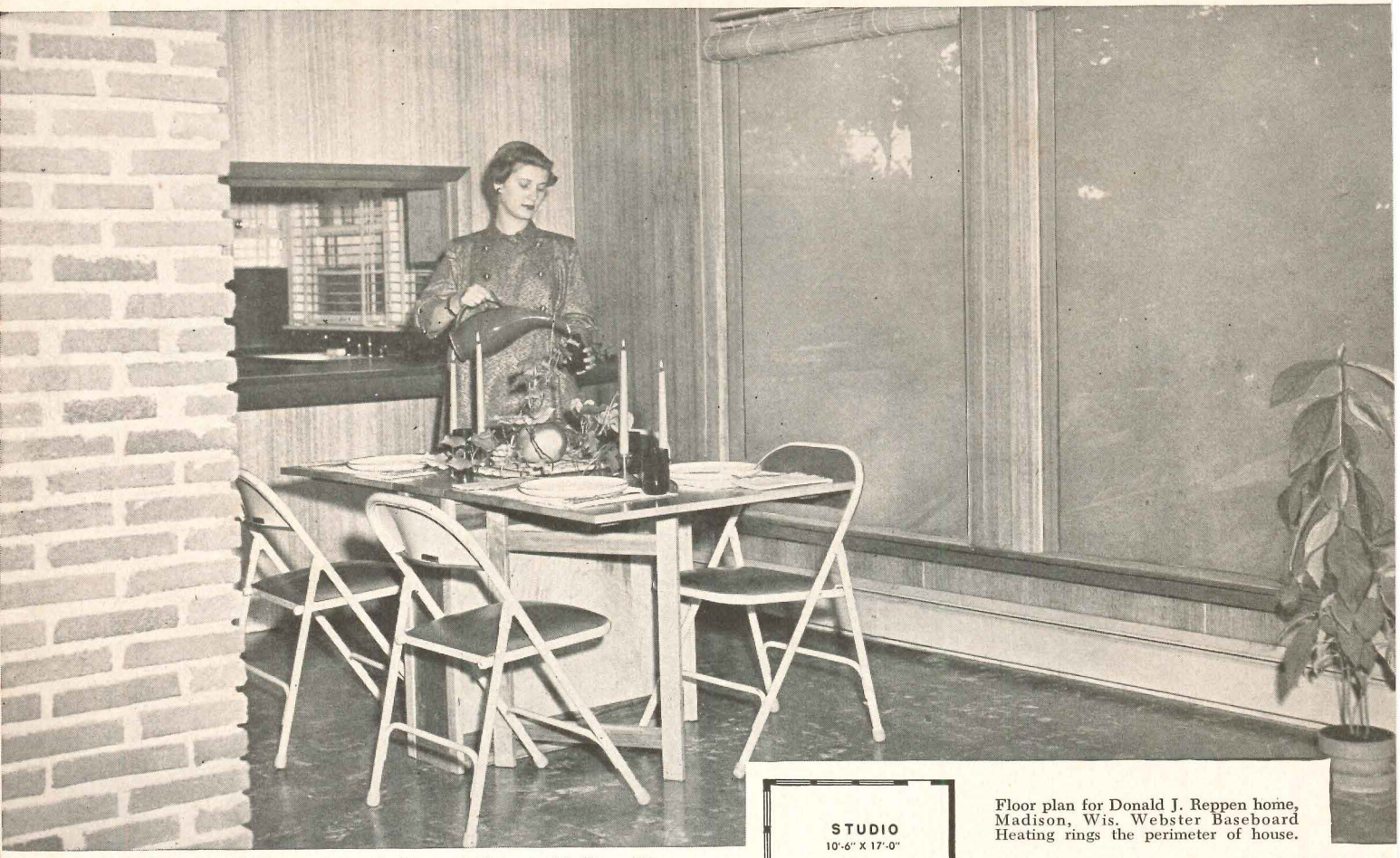
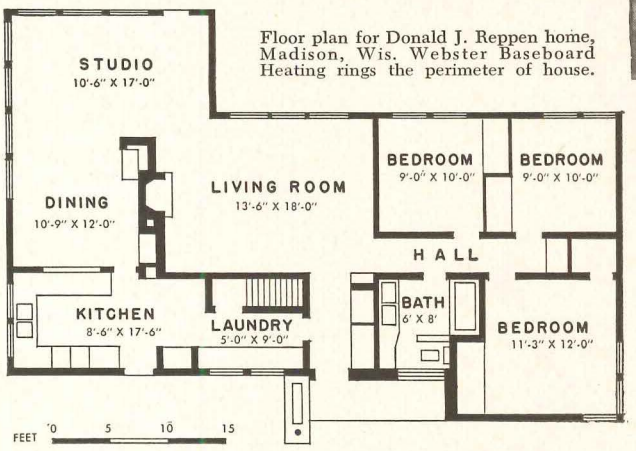


Webster Baseboard Heating beneath picture windows in Madison, Wis., artist's home. Heating Contractor: Power, Long and Fenske, Madison.



Floor plan for Donald J. Reppen home, Madison, Wis. Webster Baseboard Heating rings the perimeter of house.

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METAL LATH MEMBRANE FIREPROOFING—4

Presented through the cooperation of Metal Lath Manufacturers' Association

"Double Hung" Ceilings

Costs can often be reduced with "double hung" ceilings by selecting the right combination that will also perform necessary functions like sound-conditioning, fireproofing, thermal insulation and air distribution. The price of these features installed separately can be more than the cost of two ceilings.

The first ceiling is placed below the floor and structural steel. It consists of a combination fireproofing, sound-absorbing and thermal insulating material like sprayed fiber applied on metal lath. A second ceiling of perforated metal acoustic pans is suspended below the air-conditioning ducts and other utilities.

By having the fireproofing material double as the sound-absorbing element, the usual mineral wool batts behind the metal pans may be eliminated. The air-conditioning ducts open directly into the plenum chamber formed by the two ceilings and the whole perforated pan system acts as a giant air diffuser. Anemostats are eliminated.

Cellular steel floors and steel beams have a four-hour fire rating when protected with sprayed fiber 1⅛ in. thick on metal lath. An official noise reduction coefficient rating of .80 has been awarded sprayed-on ceilings when applied ½ in. thick on metal lath. Asbestos and mineral wool are well known for their insulating qualities, and one manufacturer of sprayed fiber advertises a "K" Factor of .27 for his product.

Vermiculite acoustic plastic is another sound-absorbing material which has a fireproofing rating of 4 hrs for cellular steel floors and beams. Tests at the National Bureau of Standards show a noise reduction coefficient of .65 for this construction.

Design data for air flow through a perforated metal pan ceiling is usually available from the manufacturer.

Fireproofing for Steel Joists

In addition to protecting the structural steel framing, membrane fireproofing can make possible the use of modern lightweight floors in fire-resistive buildings. Many of the popular types of floors, including steel joists, precast concrete or cellular steel panels and steel plate floors, require an insulating, protective ceiling to qualify for a fire rating.

Under ASTM testing, a floor must meet the following requirements for the period of its fire rating when exposed to fire from beneath: it cannot collapse under design loading; it must prevent the passage of heat, flame or gases hot enough to ignite cotton; and the average temperature on the unexposed side cannot rise more than 250 F.

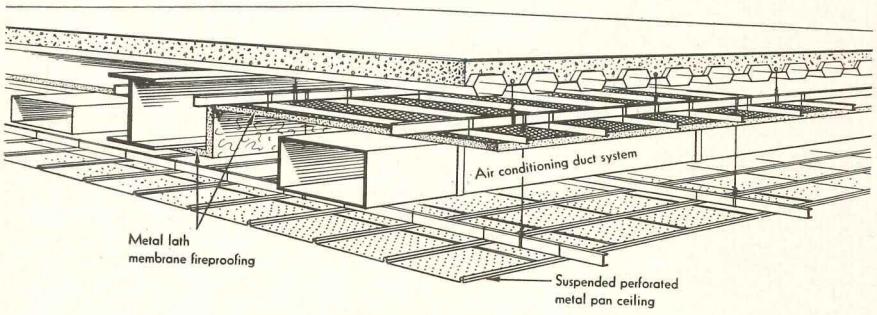
Ratings shown here (TABLE C) for steel joists are based on fire tests conducted at the National Bureau of Standards and listed in "Technical Report on Building Materials 44." They apply to floors supported on open-web, pressed steel or light rolled steel joists and American standard or heavier rolled beams which are designed in accordance with the recommendations of the American Institute of Steel Construction.

These ratings are applicable whether the metal lath ceilings are attached, furred or suspended below the joists. Lath must be of the appropriate type and weight for the spacing of the joists or furring channels.

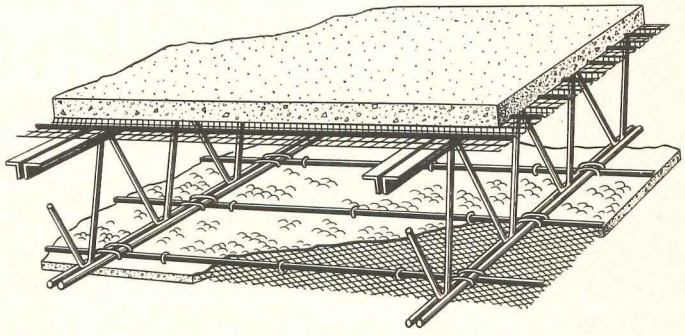
Wood Nailers

Wood sleepers or nailers for a wood floor may be embedded in a top slab provided they are separated from the top of the steel joists by the minimum thickness of concrete or gypsum specified in TABLE D.

TYPICAL "DOUBLE HUNG" CEILING DETAIL



TYPICAL STEEL JOIST FIREPROOFING



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METAL LATH MEMBRANE FIREPROOFING—5

Presented through the cooperation of Metal Lath Manufacturers' Association

Metal Lath Centering

Metal lath is a good centering for concrete slabs over steel joists; no supplementary bridging is necessary with such centering as it requires no stretching, does not twist or deform joists when loaded with wet concrete.

Sheets are readily clipped or tied to supporting members. Besides serving as a rigid form, metal lath reinforces the concrete slab to give allowable floor loads which usually exceed the structural limits of supporting steel members. (TABLE E.)

TABLE C

	Fire Resistance Rating	Floor Slab Construction	Metal Lath Membrane Fireproofing
STEEL JOISTS	4 hours	2½″ concrete on metal lath or 2″ precast gypsum slabs with ½″ mortar finish	1″ gypsum-vermiculite plaster 100:2, 100:3
	3 hours	Same as above	1″ neat wood-fibered gypsum plaster ¾″ gypsum-vermiculite plaster 100:2, 100:3
	2½ hours	2″ concrete on metal lath or 2″ precast gypsum slabs with ¼″ mortar finish	1″ neat wood-fibered gypsum plaster ¾″ gypsum-vermiculite plaster 100:2, 100:3
Note: Any type of ceiling may be used with any floor slab construction if both are listed under the same fire rating.	2½ hours	2½″ concrete on metal lath	1″ sprayed fiber
	2 hours	Same as above	¾″ sprayed fiber
	2 hours	2¼″ concrete on metal lath or 2″ precast gypsum slabs with ¼″ mortar finish	¾″ gypsum-sanded plaster 1:2, 1:3
	1½ hours	2″ concrete on metal lath	⅝″ sprayed fiber
	1½ hours	2″ concrete on metal lath or 2″ precast gypsum tile	¾″ gypsum-sanded plaster 1:2, 1:3 ¾″ Portland cement plaster 1:2, 1:3 with 15 lbs hydrated lime and 3 lbs asbestos fiber per bag of cement

TABLE D

With wood nailers embedded in top slab, for fire rating of:	Separate from steel joists by min. concrete thickness of:
4 hours	1⅝″
3 hours	1⅝″
2½ hours	1⅜″
2 hours	1⅛″
1½ hours	1″

TABLE E

Type and Weight of Metal Lath Centering	Thickness of Slab	Safe Superimposed Loads (lbs per sq ft) Span		
		19″	24″	36″
⅜″ Rib lath weighing 3.4 lbs per sq yd	2″	380	238	
	2½″	479	300	
	3″	578	362	
⅜″ Rib lath weighing 4.0 lbs per sq yd	2″	433	271	
	2½″	544	340	
	3″	625	412	
¾″ Rib lath weighing .60 lbs per sq ft	2″			325
	2½″			422
	3″			518

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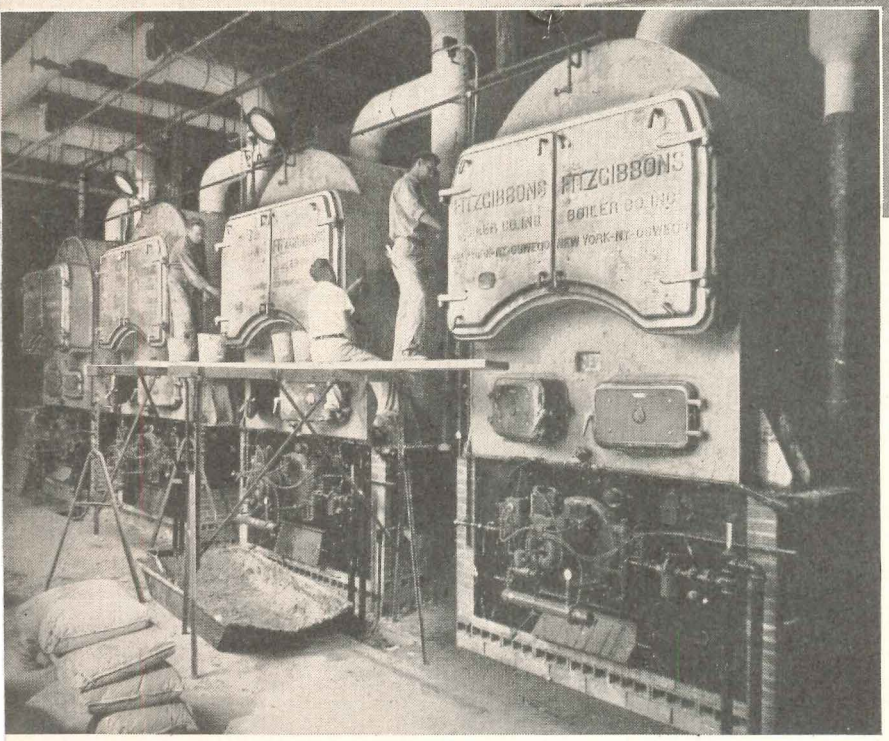

Here are the four Fitzgibbons "D" Type boilers, each one rated for 30,360 sq. ft. steam, in the East Providence High School. The photo shows lagging being applied. "D" Type boilers are available in sizes from 3650 sq. ft. steam, to 42,500 sq. ft. E.D.R. rating (S.B.I.) Types for oil, gas, stoker and hand fired coal. Full specifications and data in the "D" Type Bulletin, on request.

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STAINLESS STEEL–1

Presented through the courtesy of the Committee of Stainless Steel Producers, American Iron and Steel Institute

Use of Stainless Steel In Design

Its characteristics put stainless steel into a separate category of sheet metal work; properties are sufficiently different from other architectural metals to influence design techniques.

Briefly, stainless steel is stronger, stiffer, harder, and has a higher melting temperature than any of the nonferrous metals. It is more weather-resistant than galvanized steel. Stainless is most often left unpainted and uncoated. It costs more per pound than many of the other metals.

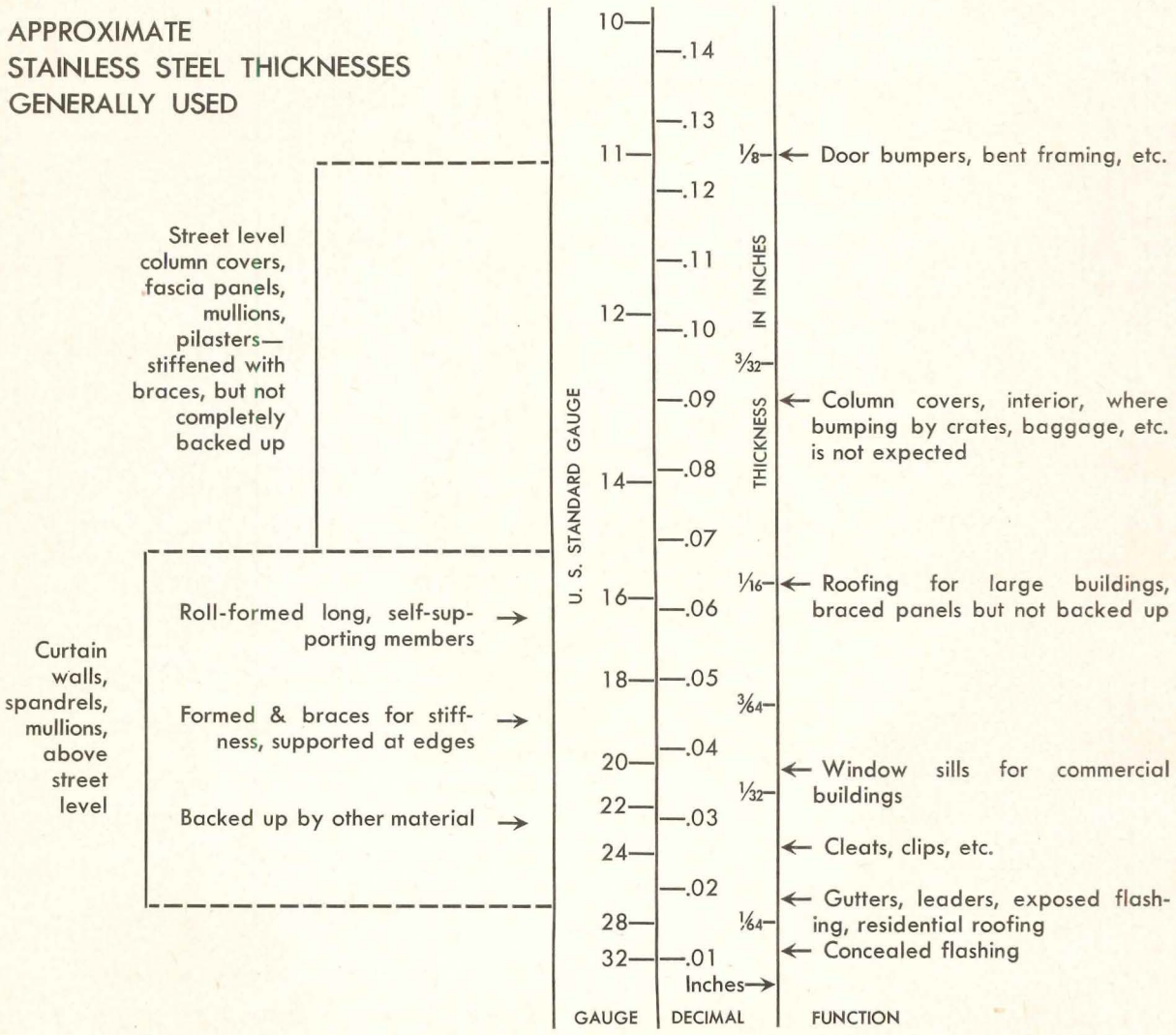
All these factors affect the way stainless steel is employed in architectural designs. Here are some of the results:

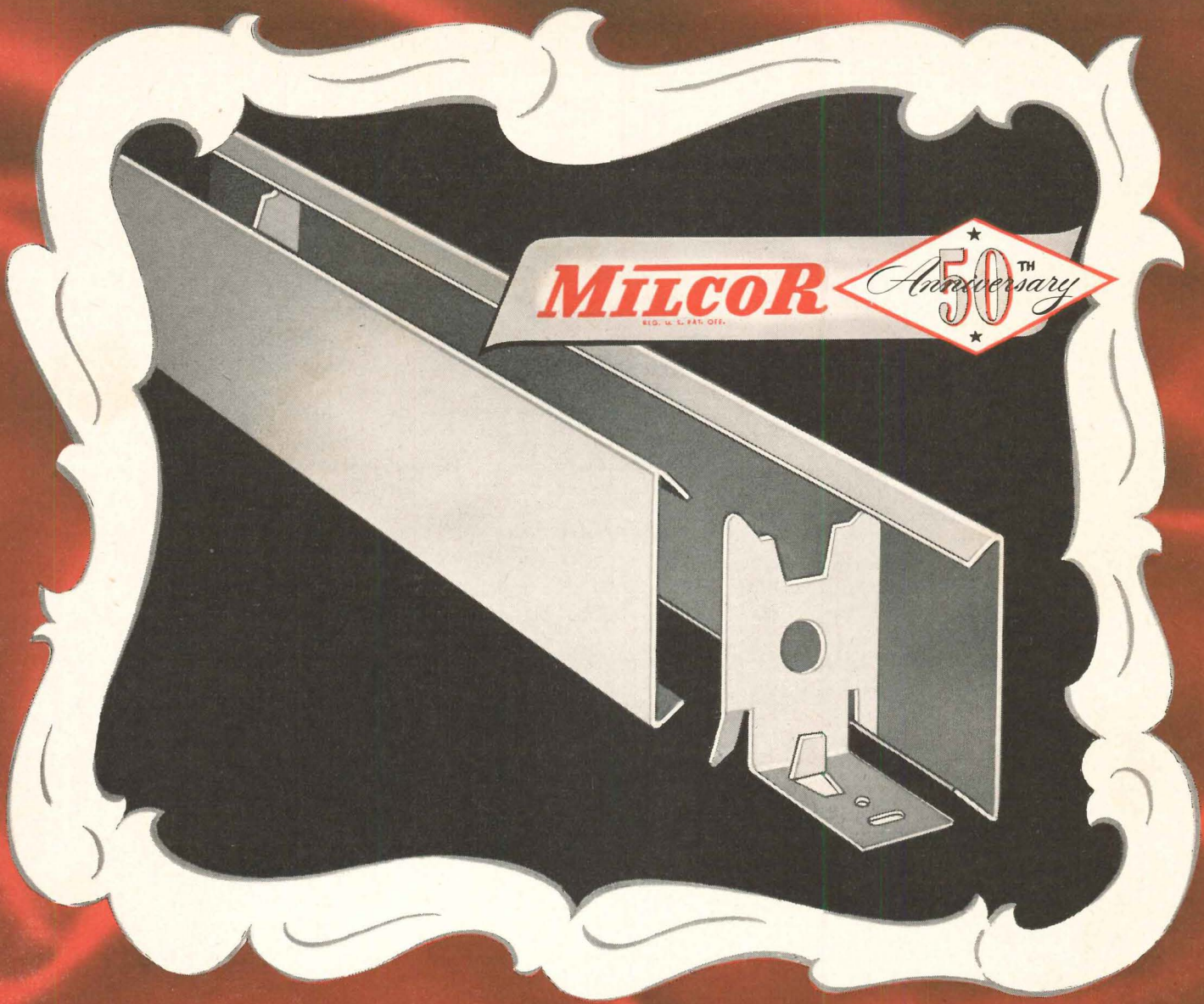
- Thin sheets and strip are most used.
- Rigid members are produced by forming, not by using thick sections.
- Most joints are welded, screwed or seamed.
- Stainless often covers and protects other materials.

Use of Chromium or Chromium-Nickel

There has been a vast increase in use of Type 430, 17 per cent chromium stainless. Before, Type 302, 18–8 chromium-nickel stainless had been employed almost universally because of its easy fabrication and general availability. Although Type 430 was used in the automotive field and was recommended to architects for interior work, it had gained relatively little recognition in the building fields.

Today, great military and industrial demands for nickel have forced architects and designers to become familiar with the qualities of Type 430. Its corrosion resistance, slightly less than that of Type 302, has been studied carefully. Conclusions are that, while some extra precautions may be entailed, Type 430 stainless steel can be used for practically all kinds of architectural metal work.





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STAINLESS STEEL—2

Presented through the courtesy of the Committee of Stainless Steel Producers, American Iron and Steel Institute

Stainless Exteriors

Stainless steel does not absorb moisture. It weathers well. It is light for its strength, and it stays strong through fire-test temperatures.

Stainless steel is used in exterior walls for different purposes:

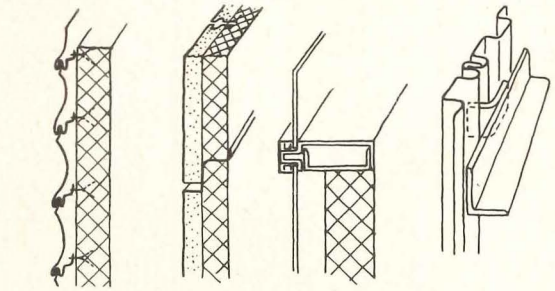
1. Stock, roll-formed sections suitable for walls, roofs or decks are available in stainless. They have been used extensively for industrial buildings. With some insulation they have also served on office structures, but only (to date) in structures not subject to code fire-testing.

2. As external veneer over conventional construction, stainless steel plays many roles. It has been used as stamped spandrels, formed mullions, trim, fascia strips, bulkheads, etc., exposed to the weather. Advantages are gained in appearance and design, in economy of maintenance, but not usually in weight or space-saving because structural and fire-resistance requirements are met with ordinary materials.

3. Sandwich units that embody all wall functions in composite panels have been made. They have met conventional fire tests, and they have justified their existence economically. From the outside inward, a typical sandwich would use stainless steel for appearance and imperviousness, some porous material or an air space for condensate drain, a vapor barrier, then a plastic or concrete insulator structural member. Because the stainless skin is not expected to resist wind loads, extremely thin gauge metal can be specified and corresponding economies are gained. Stainless doesn't need extra material for a "corrosion allowance."

4. Buildings made from glass windows and glass spandrels require trim of another material. The easy cleaning quality of glass, which prompts this type of exterior, points to stainless steel as another easily cleaned material for exterior work made of metal.

STAINLESS STEEL WALL TECHNIQUES



Use of Bent Shapes to Prevent "Oilcanning"

The problem of avoiding a wavy surface arises whenever a highly finished material is involved. Although used in thin sections, stainless is often formed into finished members that are designed to look massive and solid. As stainless is almost invariably found at a focal, eye-catching spot in the design, imperfections are seldom overlooked.

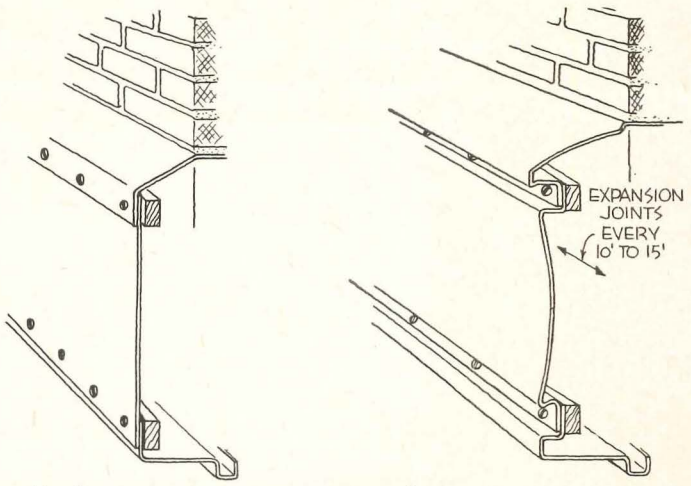
Wavy, "oilcan" appearance may result when a thin, flat surface is distorted by fasteners, welding (thermal strains), or very minor inaccuracies in fabrication. There are many things to do to prevent it.

First, break large flat areas into panels or strips. Second, bend the stainless pieces to form relatively rigid shapes — at least along one axis. Third, keep fasteners off the flat surfaces; put them beyond stiffening bends or returns.

Finally, if any of these general rules must be violated, it can probably be done without ill effect if considerably thicker metal or embossed, textured stainless stock is used.

It might also be added that a large area of bright metal, like the side of a stainless-steel covered skyscraper, might best have walls with many angled facets or curves to prevent development of a single concentrated glare from reflected sunlight.

TO AVOID "OILCAN" WAVINESS,



Don't
Use large, flat areas
Put fasteners on an unbroken surface

Do
Use bent sections where fasteners will go. "Spring" the metal to form radii instead of flats where practical

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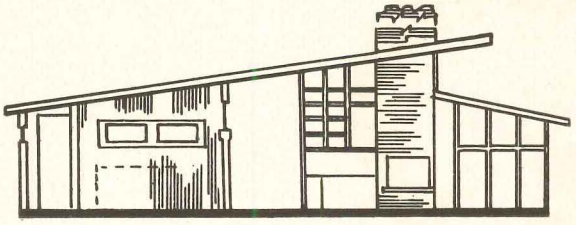

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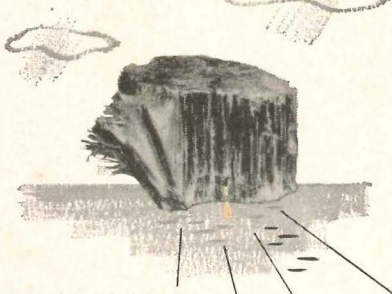

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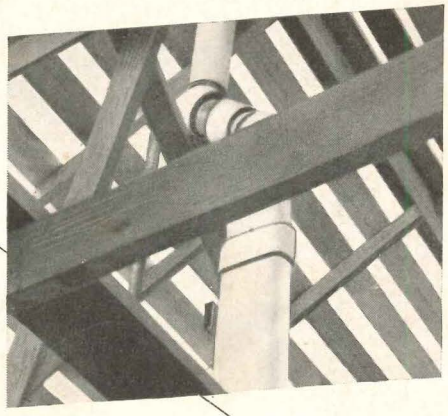

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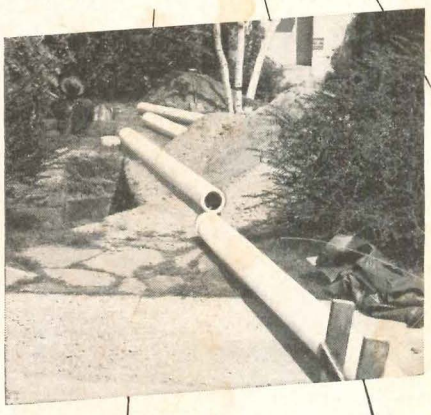

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