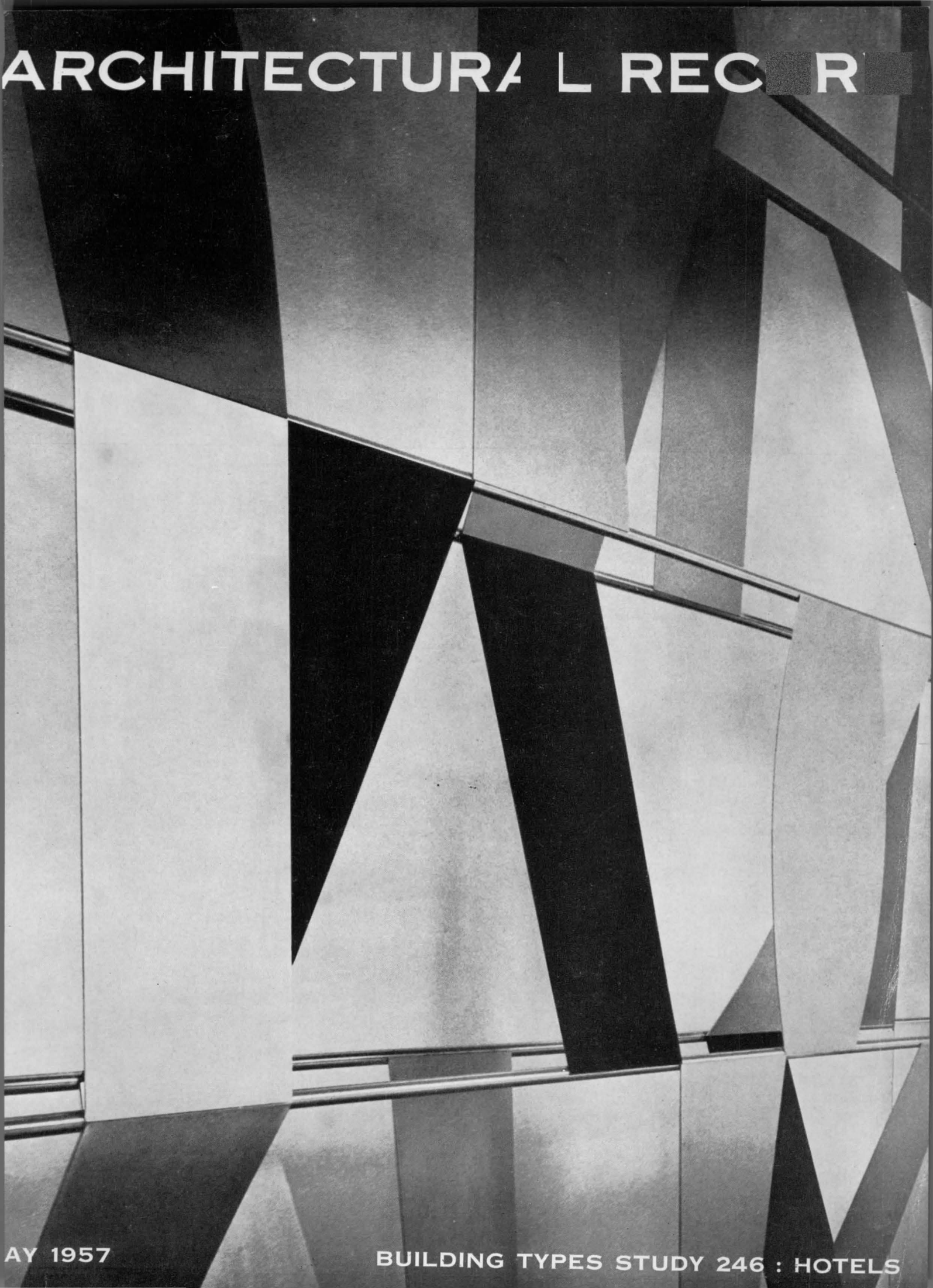
ARCHITECTURAL RECORD

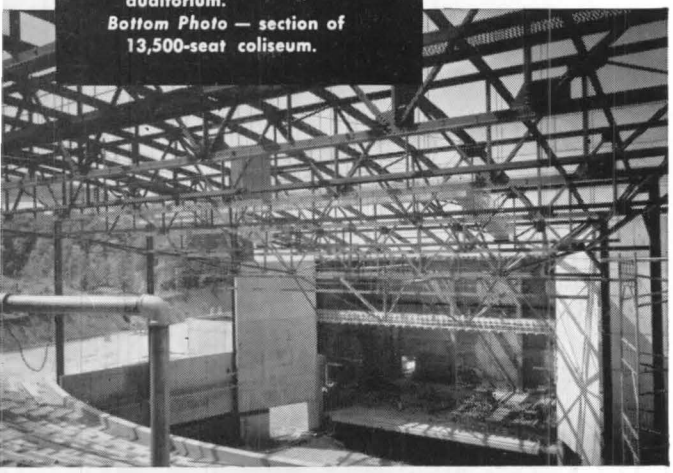


MAY 1957

BUILDING TYPES STUDY 246 : HOTELS

Municipal Auditorium and Coliseum, Charlotte, N. C.
Archt. — A. G. O'Dell, Jr. & Associates, Charlotte, N. C.
Struct. Engr. — Severud, Elstad, Krueger, New York, N. Y.
Contr. — Thompson & Street Co., Charlotte, N. C.
Pozzolith ready-mixed concrete — Concrete Supply Co., Charlotte, N. C.
Below — view of 2500-seat auditorium.
Bottom Photo — section of 13,500-seat coliseum.

Concrete of good appearance and other desired qualities with POZZOLITH*



In the construction of this outstanding municipal auditorium and coliseum — as with many other important projects built since 1932 — Pozzolith proved a valuable aid in improving cohesiveness and plasticity, to enhance the appearance of exposed concrete.

Beauty and utility with architectural concrete is but one of the advantages obtained with Pozzolith . . . key to the control of:

1. water content . . . makes possible lowest water content for a given workability.

2. entrained air . . . provides optimum air content without sacrificing other desired qualities.

3. rate of hardening . . . provides desired handling and finishing time under widely varying job conditions.

Any one of our more than 100 seasoned fieldmen will be glad to demonstrate the full benefits of Pozzolith for *your* project, and to advise of the availability of Pozzolith Ready Mixed Concrete through more than 1000 qualified producers.

* POZZOLITH. . . compounded from exclusive technical components including Master Builders time-tested cement-dispersing agent, modifies the kinetics of the portland cement hydration process thereby improving the quality of concrete and its control.

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THE MASTER BUILDERS CO.

Division of American-Marietta Company

Cleveland 3, Ohio—Toronto 9, Ontario Cable Address, Mastmethod, N. Y.

ARCHITECTURAL RECORD (Vol. 121, No. 5, May 1957) is published monthly, except May 1957 when semi-monthly, by F. W. Dodge Corporation, 10 Ferry Street, Concord, N. H. **Editorial and executive offices: 119 West 40th Street, New York 18, New York.**
(Regular Edition)

ARCHITECTURAL RECORD

May 1957 Vol. 121 No. 5

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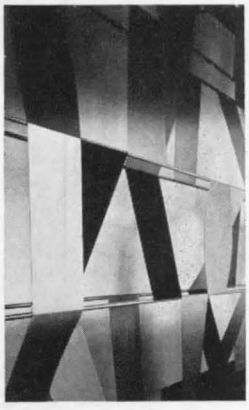

COVER: *Lobby screen, by Ellsworth Kelly, Transportation Building, Penn Center, Philadelphia, Pa.; Lawrence Williams photo*

Continued on next page

Continued from page 5

Members of Audit Bureau of Circulations and Associated Business Publications. ARCHITECTURAL RECORD is indexed in Art Index, Industrial Arts Index and Engineering Index.

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THE RECORD REPORTS

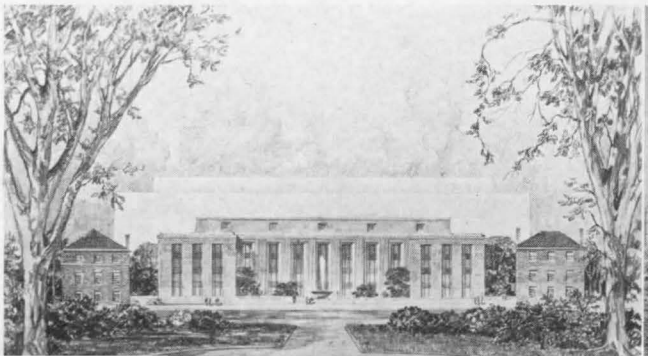
PERSPECTIVES

THE STATE OF ARCHITECTURE in these United States as the American Institute of Architects holds its Centennial Celebration Convention in Washington this month can almost be reported around the two photographs at the bottom of this page — the one, a grotesque and earnest effort at architectural sensitivity by the agency of the United States Government most concerned with public building, in real danger of being built; the other, a triumph of architectural sensitivity to civic aspiration, having waited ten years for realization, alive again only as a Centennial project of the Institute's St. Louis Chapter. These, plus one recent conference on urban design, at any rate provide clues.

JACKSON PLACE, a site on the west side of Lafayette Park in Washington, D. C., just two blocks from the White House, has been designated as the site of a new Federal office building. In a genuine desire to allay the fears of those who foresaw the destruction of a fine old area, the General Services Administration last month released the sketch at left below "showing how the site might be developed with balanced treatment, low façades and preservation of historic houses of true architectural values." The building at right in the sketch is Decatur House, an existing Georgian house which was the first to rise on Jackson Place (1819); the central building — described as "a building that would harmonize with the Decatur House without detracting from the architecture of that historic building — would be the new Federal office building; at left is "a Georgian counterpart" of Decatur House which would be built "to balance Jackson Place, contribute to the preservation of its original character and add a needed annex to Blair and Blair-Lee Houses, the block's remaining pair of historic houses, of outstanding design, which will remain standing on Pennsylvania Avenue." Thus GSA, in response to what it recognizes as "an architectural challenge."

ST. LOUIS has let ten years go by since the high excitement of the national architectural competition sponsored by the Jefferson National Memorial Association; the $40,000 first prize design by Eero Saarinen and Associates (his father submitted a separate scheme, not premiated) still exists only in drawings (rendering at right below). But the great arch was in the news again last month, with the announcement by the St. Louis Chapter of the A.I.A., as their special observance of the Institute's Centennial, that "as our contribution to our community's future, we have decided to concentrate our efforts on helping to gain support for the Jefferson Memorial and to solve the problems that lie between it and its realization." The problems, of course, include both financing and civic inertia; but the hope is that with a great celebration of St. Louis' Bicentennial coming up in 1964 enough enthusiasm may be generated to overcome even these obstacles — at any rate the Chapter intends to try. "The central river-front area," a Chapter statement said, "is the heart of our community. To go forward with its redevelopment now, with the magnificent Saarinen arch, would symbolize throughout the nation and the world the vitality of our metropolitan center on the greatest river in the world. It would inspire and challenge our planners and builders to comparable greatness."

THOUGH THE TOPIC was assigned to Richard Neutra — "Biological Realism" ("we must find a way to measure and prove the cost in human energy of making a left turn") — it was Charles Abrams who supplied the realism. Harvard's Urban Design Conference heard from this old warhorse of housing that eager and well-meaning architects should stop the there-ought-to-be-a-law cry, when they talk about implementing ideals of design. There are already too many laws, he insisted; too many things are now possible, not too few. Somebody can do too much manipulation of our city patterns, and, he said fiercely, that somebody will not be you. Architects do not know how to organize their ideas and make them realizable. They don't know how to be expedient, to play politics, to be devious. You ask us lawyers to help you, he continued, but you don't reduce your wants to anything we can focus and put into a bill. It is always somebody else who gets the laws passed, the regulations drawn, or realizes whatever ambitions may be involved. If his remarks may have chilled the ardor of some of his listeners, others may have recognized a clear challenge to constructive action. It was certainly made clear, throughout the conference, that things are happening in urban scenes, that current years are finally seeing tangible results of somebody's planning. As Abrams said, at the right time you can do almost anything.

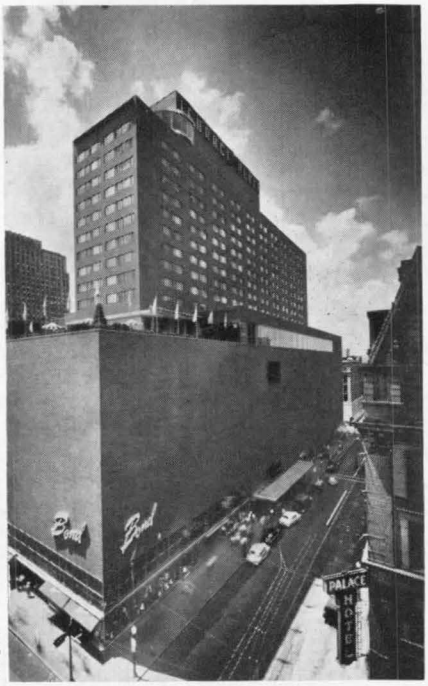


Louis Skidmore, F.A.I.A., will receive the Gold Medal of the American Institute of Architects, the Institute's highest honor, at the Centennial Convention in Washington this month. The work of Skidmore, Owings and Merrill, the firm he (with Nathaniel A. Owings and John O. Merrill) founded 20 years ago, has come since the war to be known around the architectural world, and, for foreign architects, to typify perhaps more than any other the achievements of American technology. Less universally recognized is the greater significance of S-O-M's organization as a context for the encouragement of individual talent, bulwarked but not barricaded by the solid sense of the conference.

1

Richard Garrison

2



Longley

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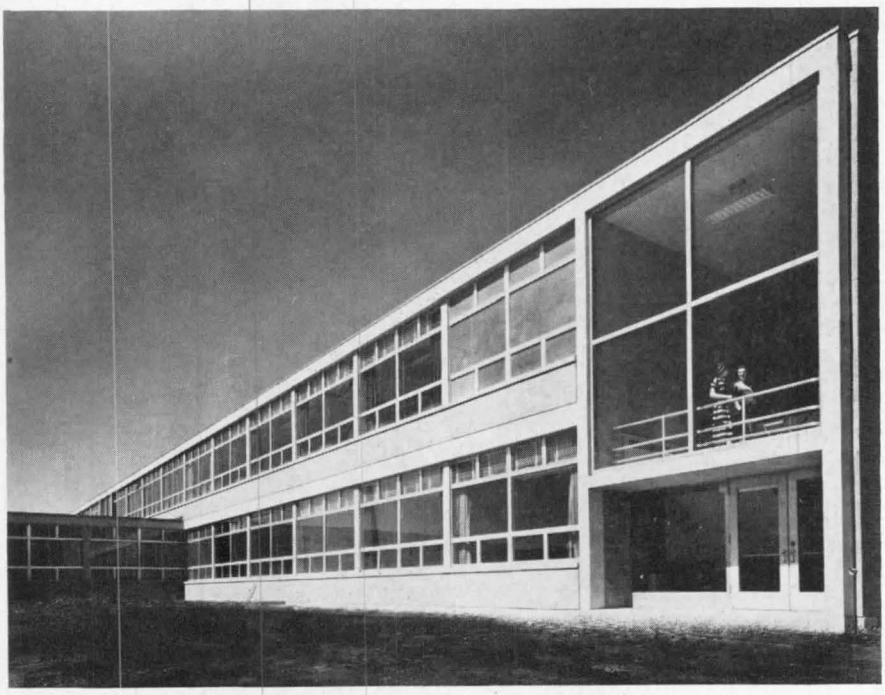

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Hedrich-Blessing

S-O-M: A.I.A. GOLD MEDALIST'S FIRM SELECTS EXAMPLES OF ITS WORK

6

Ezra Stoller

7

Morley Baer

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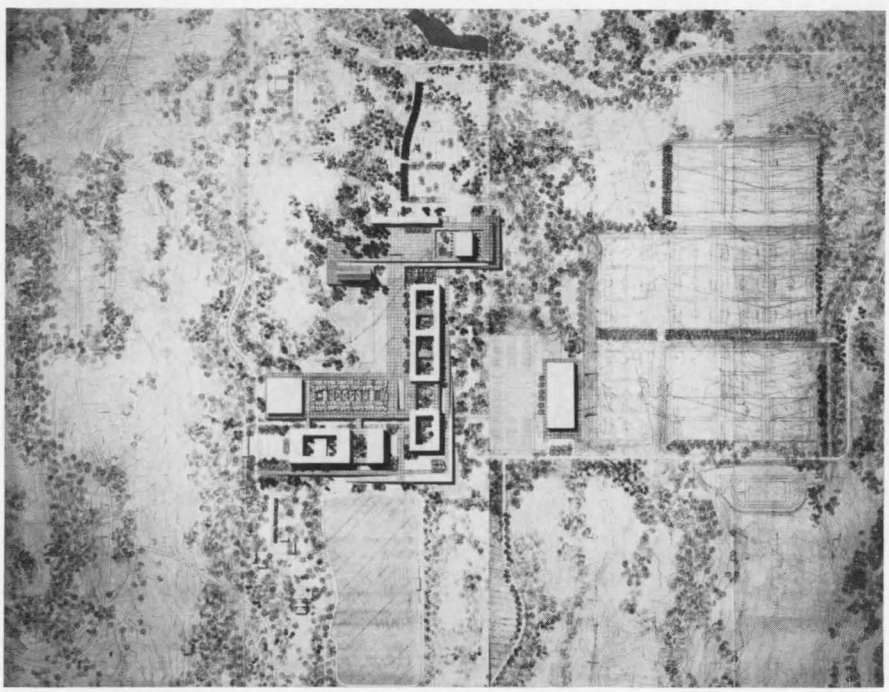
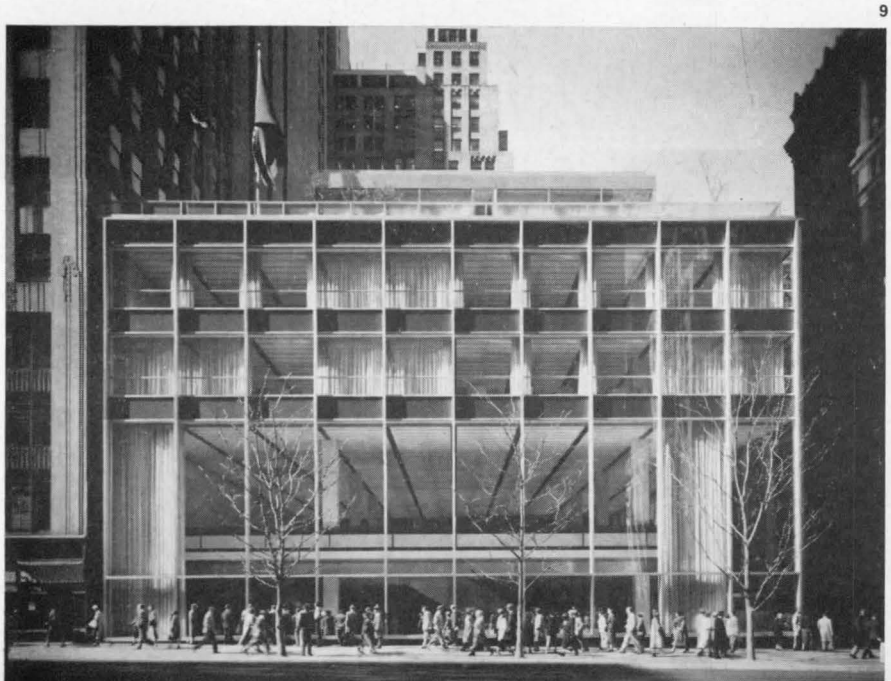


Williams & Meyer

WHEN THE RECORD ASKED Louis Skidmore to select examples of the work of his firm for this convention issue report, he deferred to his colleagues: "I think it more suitable that they do it as any success I achieved was certainly due to my associates." On these pages are the resulting selections. 1. New York World's Fair, Westinghouse Building — 1939. 2. Terrace Plaza Hotel, Cincinnati — 1948. 3. Senior High School, Oak Ridge, Tenn. — 1950. 4. Greenwich, Conn., Hospital — 1951. 5. Hostess Building and Recreation Center, Great Lakes, Ill., Naval Training Center — 1943. 6. Istanbul Hilton Hotel, Istanbul, Turkey (associated with Sedad H. Eldem) — 1955. 7. U. S. Naval Postgraduate School, Monterey, Cal. — 1955. 8. Site plan, U. S. Air Force Academy, Colorado Springs — Completion scheduled 1958. 9. Manufacturers Trust Company, Fifth Avenue Branch, New York — 1954. 10. Lever House, New York — 1952

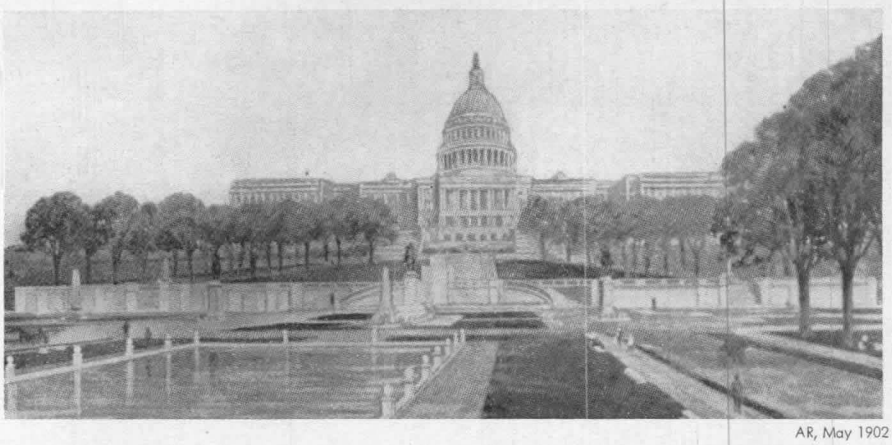
9



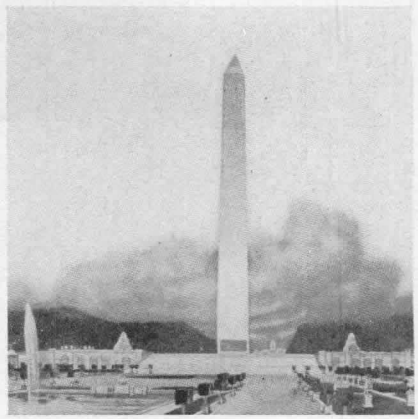
Ezra Stoller

10

J. Alex Langley

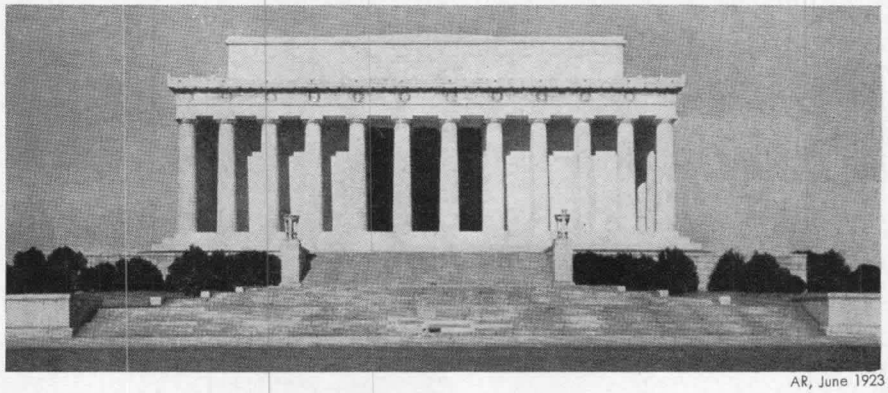


AR, May 1902



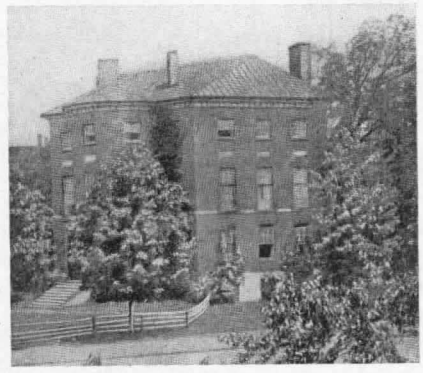
AR, May 1902

1. The Capitol, with the McMillan commission's suggestion for a new approach from the Mall; Benjamin Henry Latrobe, architect. 2. Washington Monument, shown with McKim's scheme for a base; Robert Mills, architect. 3. Lincoln Memorial; Henry Bacon, architect. 4. Front of the White House; James Hoban, architect. 5. The Octagon House, built for John Tayloe, now headquarters of the American Institute of Architects; William Thornton, architect



AR, June 1923

AR, June 1949



AR, July–Sept. 1896

ARCHITECTURE AND GOVERNMENT: THE FITFUL EVOLUTION OF WASHINGTON

Washington, D. C., ever since it was first laid out by L'Enfant, has seemed to be one city, at least, in this country where the requirements of a noble and fitting architecture have been a matter of public concern. Inevitably, also, architecture and politics became curiously involved, with the politicians, starting with Washington, keeping a close eye on the architects, and the architects likewise keeping an eye on politicians.

From the beginning, however, government architecture has for the better part been kept out of any political grab-bag — virtually all of Washington's important buildings resulted from design competitions.

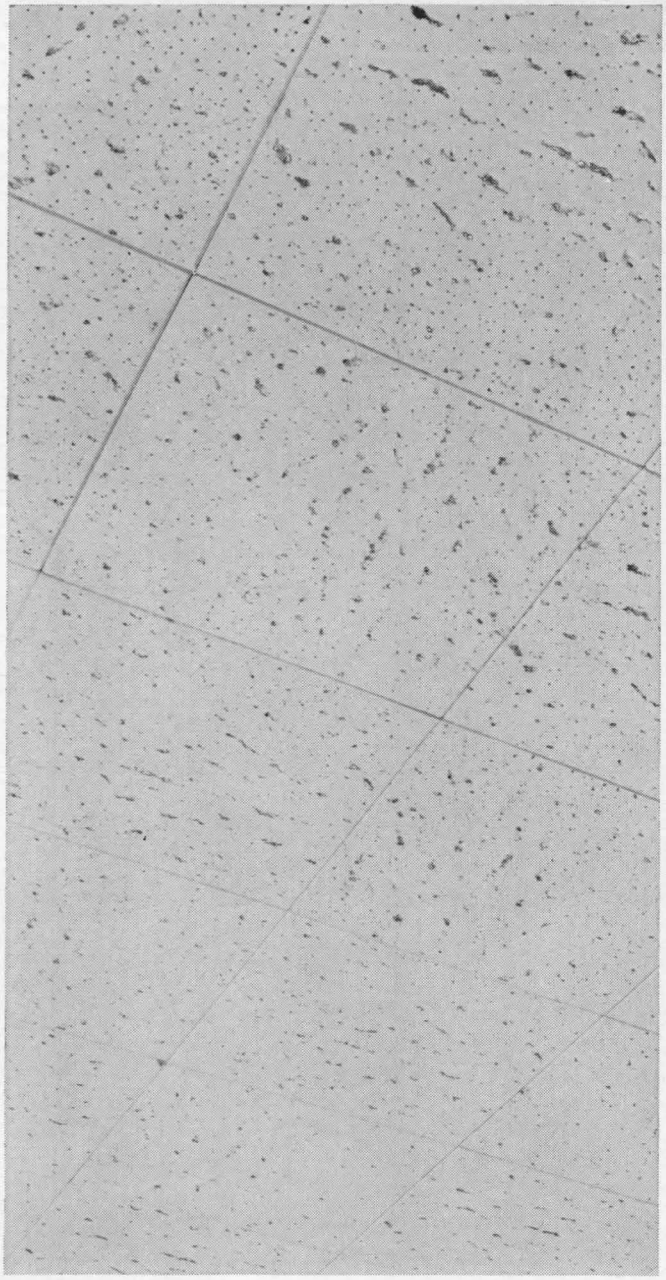
The White House

The first of the city's official buildings was the White House, for which the cornerstone was laid October 13, 1792. James Hoban apparently won the competition handily. "It was a specimen," wrote Montgomery Schuyler in April 1903, "of British Georgian, with some important cis-atlantic modifications. . . ." Cis-atlantic modifications were only the first of a long chain of modifications wrought on the White House, starting with the British fire in 1814. Through the 19th century, the several Presidents and their wives added stained glass screens, decorated the East Room in showboat style, and employed a Pullman Car interior designer to do over the Red Room. President McKinley's plans for renovation (see page 360) were fortunately defeated by the intercession of the American Institute of Architects, and when Theodore Roosevelt succeeded to McKinley's unfinished term, he selected Charles Follin McKim to do a thorough job of redesigning the White House interiors. McKim devoted much of his personal attention to this job, succeeding so well that the public rooms of the White House look much the same now as the pictures published at the time.

The Capitol

The Capitol, architecturally speaking, got off to a confused start. Like the White House, the design was the result of a competition. The first prize, of $500, went to Stephen Hallet, whose design, the jury felt, was not really acceptable; they asked him to revise it, and at the same time asked William Thornton to submit a design, subsequently awarded *him* a $500 first prize,

(Continued on page 360)



The exclusive new surface styling of Armstrong Cushiontone features natural fissuring and over-all texturing. These noise-trapping features soak up as much as 75% of the sound that strikes them.

The luxurious effect of this new Cushiontone ceiling compliments any type of room décor. It brings fresh new beauty as well as comfortable quiet to both commercial and residential interiors.

Here's a brand-new concept in acoustical ceiling design . . . rich, distinctive fissuring on a random, textured background. It's an economical wood fiber tile styled to match the luxurious beauty of costlier materials.

The exclusive textured design now available in Cushiontone offers architects and interior designers an opportunity to specify up-to-date, high-styled ceilings in homes, offices, and commercial areas at moderate cost.

This new material is made in both tongue-and-groove and butt edge joint. It's available in 12″ x 12″ and 12″ x 24″ size and 9/16″ and ¾″ thicknesses. Like the popular full random styling, Cushiontone in the textured design can be installed by cementing, stapling, or mechanical suspension.

The new Cushiontone's flame-resistant finish classifies it as a "Class C" (slow burning) tile. This finish meets the requirements of Federal Specification SS-A-118b. Repainting, when necessary, can be done by either brush or spray gun without affecting the acoustical efficiency of the material.

For more information on this decorative new ceiling material, send for the free booklet, "Armstrong Cushiontone." Write Armstrong Cork Company, 4205 Rock Street, Lancaster, Pennsylvania.

Armstrong ACOUSTICAL CEILINGS

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*TRADE-MARK

(Continued from page 12)

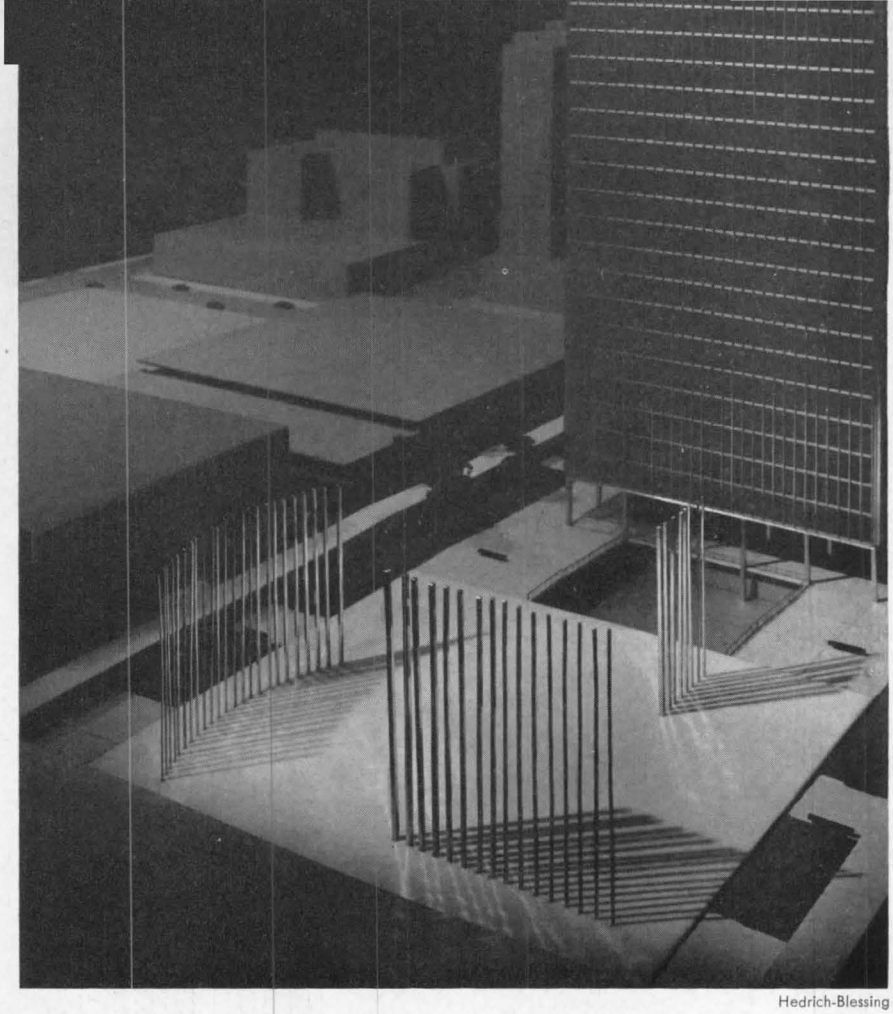
FERMI COMPETITION WON BY REGINALD C. KNIGHT

A 36-year-old American architect, Reginald C. Knight of Coral Gables, Fla., has been selected as the winner of the Enrico Fermi Memorial International Architectural Competition. His proposal — shown in photographs at right, with the text of the jury's comments on it — was chosen for the $5000 First Award from among 355 entries from 25 countries (176 from the U. S.) by an international jury (see below) which met in Chicago late in March. The competition, sponsored by the Chicago Junior Chamber of Commerce and the Chicago Joint Committee of Italian Americans, sought an appropriate structure as a key unit in the Institutional Center of Chicago's Fort Dearborn Project (AR, May 1954, page 170–171), to be a memorial to the late great physicist.

The jury report notes that study of the entries in relation to the site model convinced them that "a relatively open plaza achieved the best general solution to the problem" and that "for this particular type of memorial the primary requirement was a strong imaginative idea rather than detailed architectural plans." Although the jury "could not find any projects sufficiently distinguished to be given the Second and Third Awards," it distributed the prize money available as follows:

Three awards of $1000 each to Peter Roesch of Hamburg, Germany; John Harold Box, James Reece Pratt and Joanne Henderson Pratt of Dallas, jointly; Huson Jackson, Costantino Nivola, Vincent J. Solomita and Joseph Zalewski of Cambridge, Mass., jointly.

Four awards of $500 each to Eberhard Ludwig, Dusseldorf, Germany; Jan Lippert, Degenhard Sommer, Karlsruhe, Germany, and Dr. Eugene Lantzki, jointly; Louis J. Johnson and Arthur S. Takeuchi, of Chicago, jointly; and Igor Z. Sazevich, David H. Larson and Enrique Garcia-Reyes of San Francisco, jointly.

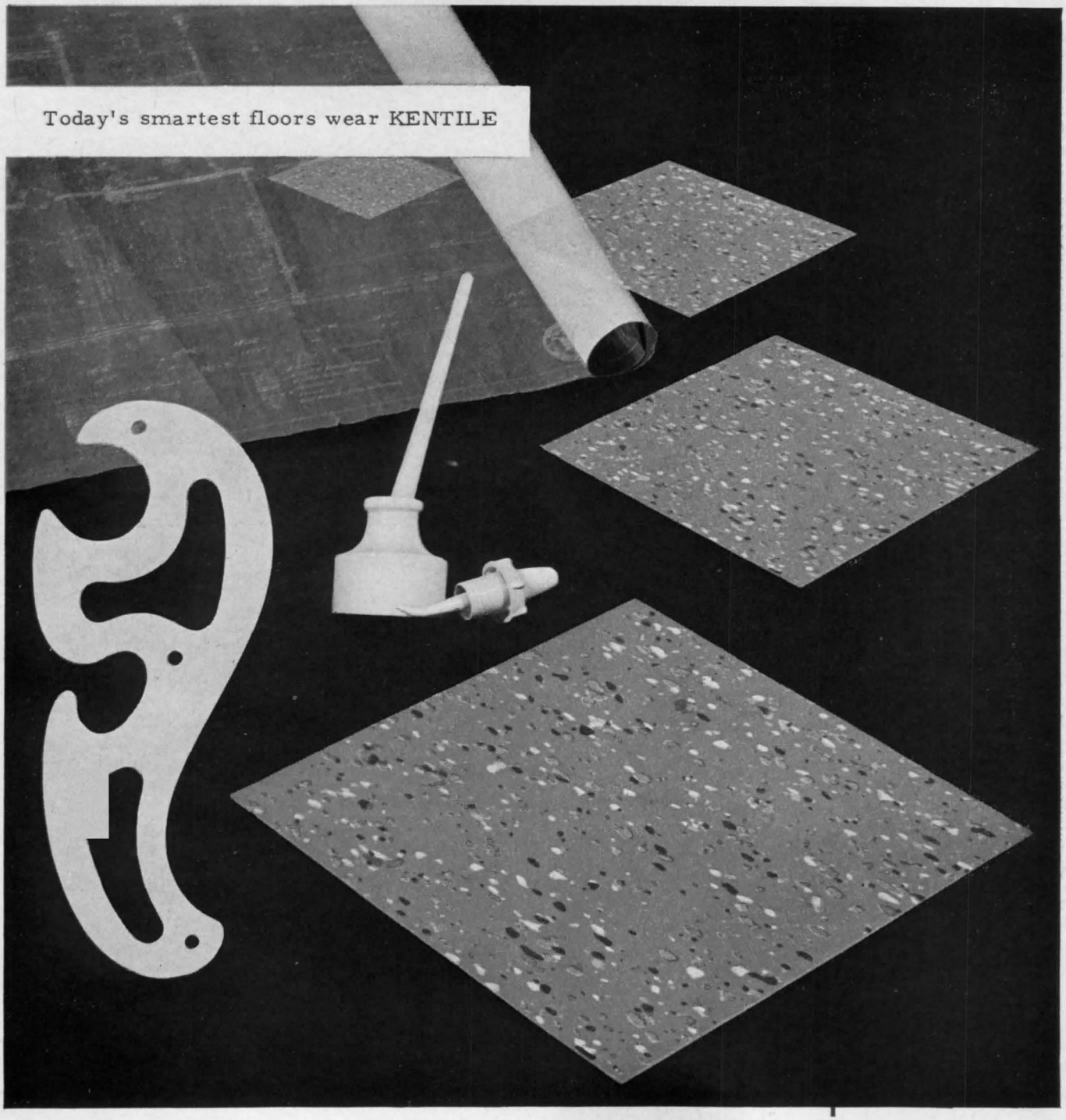


Hedrich-Blessing

FIRST AWARD — "The Jury was enthusiastic and unanimous in selecting this project for the First Award, their reasons being: It provided an integrated solution of the problem in relation to the entire project, in the form of an open plaza appropriately used. Moreover, in this open plaza the designer has created the brilliant conception of using sound as a unifying principle for the entire project. The instrument employed for achieving this result is a system of vertical, tubular bells which are so placed in three rows as to form a satisfactory composition defining a space and relating it to the surrounding area. In the opinion of the Jury, this has produced the most beautiful and dignified Memorial to Enrico Fermi, the scientist, particularly appropriate since it achieves a unification of Art and Science. This submission leaves the allocated site entirely open at the pedestrian level, and plans auditorium and covered exhibition space at the traffic level. The auditorium is square in shape and the exhibition space is distributed around it. The basement provides for equipment, storage and services. The main feature of this project, for which it receives the First Award, is — paraphrasing the words of the winner — that the entire design is based upon the integration of space, structure and acoustics in one total concept which will have meaning not only within the confines of the Memorial site but over the entire area. Through the controlled medium of sound, architecture will be able to reach out and touch the lives of many more people than would be possible through vision alone. The upper pedestrian plaza, surfaced with translucent white material, will glow softly at night"

DISTINGUISHED JURY looks at model of Fort Dearborn Center with First Award entry set in place. At left: Architect Ludwig Mies van der Rohe, U. S.; Engineer Pier Luigi Nervi, Italy; Physicist Lancelot Law Whyte, England; Architect Gordon Bunshaft, U. S. John O. Merrill, F.A.I.A., professional adviser for the competition, is at Mr. Bunshaft's left. Right: Architect José Luis Sert, U. S.

(More news on page 16B)



This is KENTILE® vinyl asbestos tile

So much easier to care for!
So much longer-wearing!
And grease-proof, too!

KENTILE FLOORS

available in Vinyl Asbestos, Solid Vinyl, Cushion-back Vinyl, Rubber, Cork and Asphalt tile...over 150 decorator colors.

SPECIFICATIONS

SIZES AND THICKNESSES:

Marbleized	9"x9"	1/16", 1/8"
Carnival	9"x9"	1/16"
Corktone	9"x9"	1/16", 1/8"

COLORS:

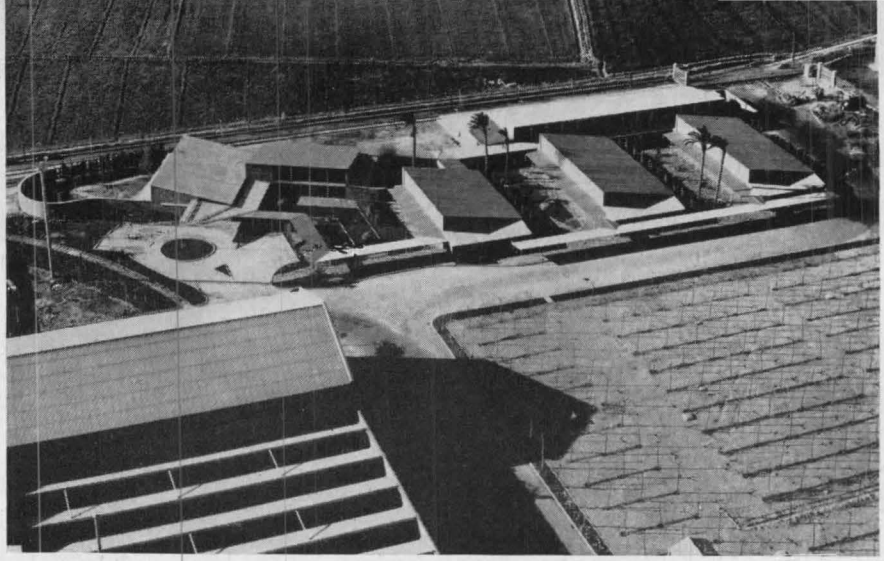
Marbleized	19
Carnival	16
Corktone	3

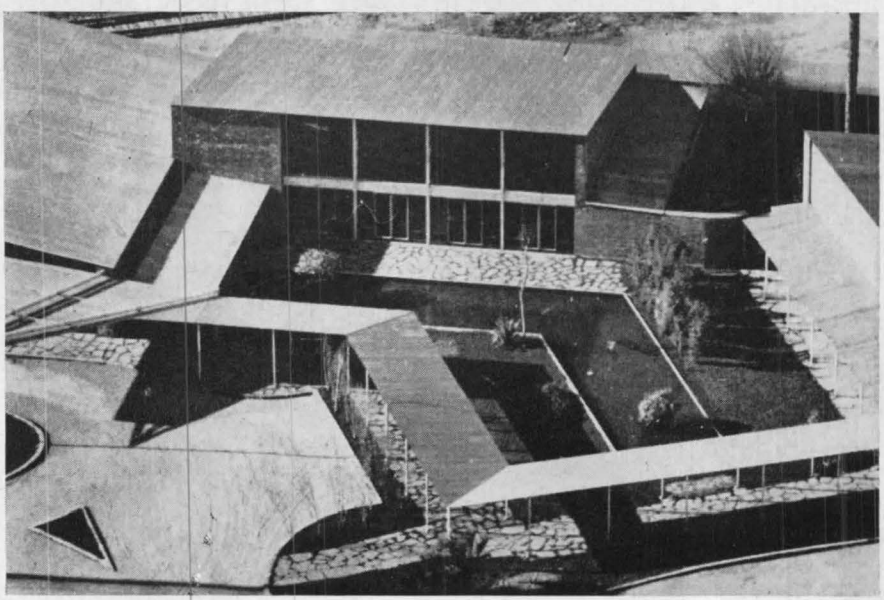
INSTALLATION
Kentile vinyl asbestos tile (KenFlex®) may be installed over any smooth interior surface, including concrete in contact with the earth.

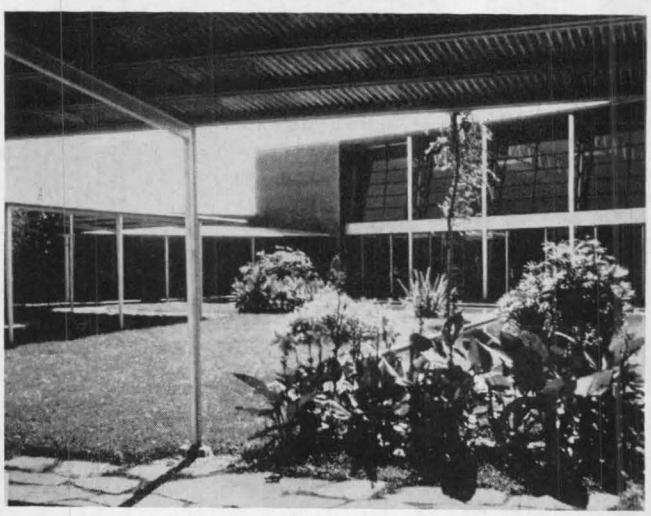
(Continued from page 16)

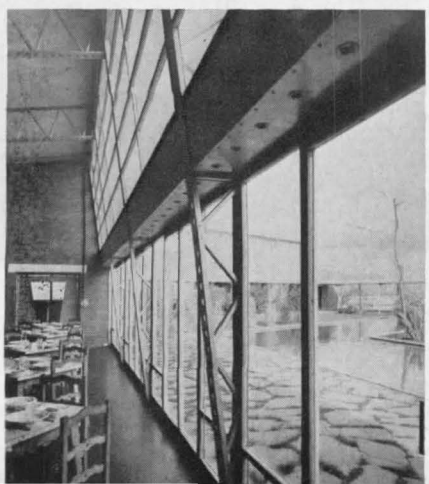
SPANISH ARCHITECTS WIN $25,000 REYNOLDS AWARD

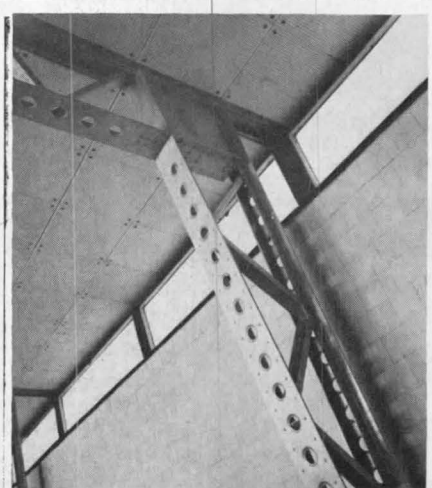
The first winner of the richest annual architectural prize in history, the $25,000 R. S. Reynolds Memorial Award, is the firm of Cesar Ortiz-Echague Manuel Barbero y Rafael de la Joya of Madrid. Their winning entry (shown in photos here) was the Visitors and Factory Lounge Center of the S.E.A.T. automobile plant in Barcelona, completed last July. It was among 86 entries from 19 countries submitted in the annual international architectural competition instituted this year by the Reynolds Metals Company, as a tribute to its late founder, to recognize "the most significant contribution to the use of aluminum, esthetically or structurally, in the building field." In the judging, a jury appointed by the American Institute of Architects, which administers the award, decided the award "should go to a project in which aluminum had been used for structural members as well as for the enclosing and finishing elements"; nine submissions from seven countries met these conditions. Members of the jury were: George Bain Cummings of Binghamton (chairman); Willem M. Dudok of Hilversum, The Netherlands; Ludwig Mies van der Rohe of Chicago; and Edgar I. Williams of New York. George S. Koyl, F.A.I.A. was professional adviser.

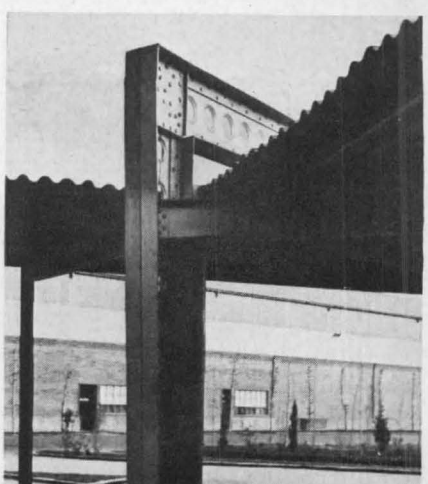








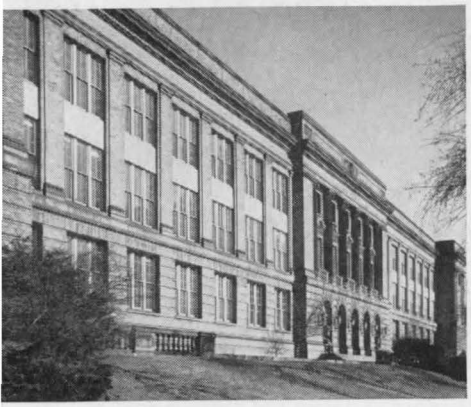




A salute from Alcoa commemorating the AIA's 100th Anniversary

Architecture's aluminum MILESTONES ...all of Alcoa Aluminum

1929 John Hay High School
Cleveland, Ohio
George M. Hopkinson, Architect



This very early use of aluminum spandrels helped insure taxpayers' investment in this school. Educational institutions are now one of the biggest users of aluminum building materials.

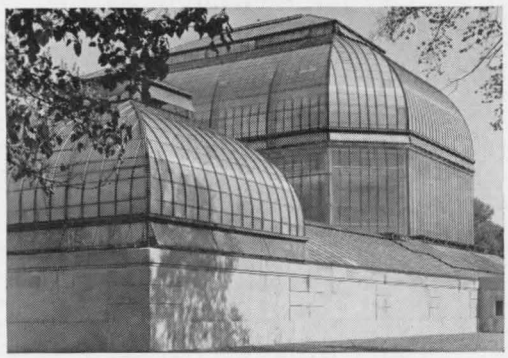
1930 A. O. Smith Building
Milwaukee, Wis.
Holabird and Root, Architects

Still modern looking and attractive after more than twenty-five years, this structure makes fine use of large aluminum window frames and pilasters. The interior applications of aluminum in main lobby are outstanding.

1932 RCA Buildings, New York, N. Y.
Reinhard & Hofmeister, Corbett, Harrison & MacMurray, and Hood & Fouilhoux, Architects

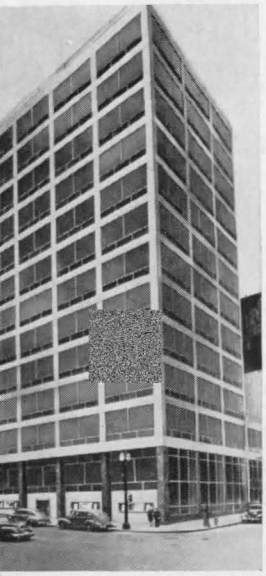
More than 8,000 Alcoa Aluminum Spandrels are installed on the magnificent Radio City buildings in New York. The ball-burnished finish gave a slate-gray effect at the start, and has since toned down to a darker gray, blending harmoniously with the stonework.

1932 Conservatory, U. S. Botanical Gardens
Washington, D. C.
David Lynn and Bennett,
Parsons and Frost, Architects



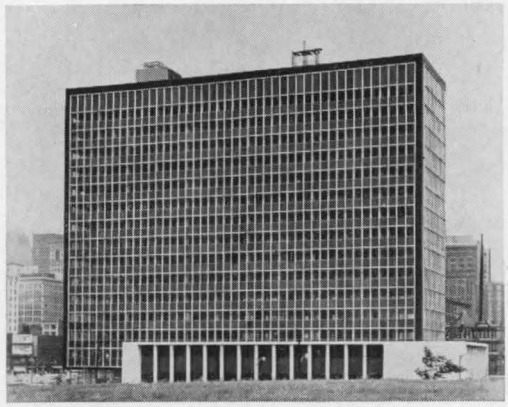
Despite the warm, moist air in the gardens, the all-aluminum superstructure is in excellent condition. Here is one of the earliest structural applications of aluminum. No effort has been made to maintain the surface appearance, yet even in an atmosphere trying to most metals, no corrosion problem has been experienced.

1948 Equitable Savings & Loan Association
Portland, Oregon
Pietro Belluschi, Architect



This building is considered to be the first true application of aluminum in curtain wall construction. There's no masonry surface at all above the first floor. All of the glass and metal panels are held in aluminum frames.

1957 Pennsylvania State Office Building
Pittsburgh, Pa.
Altenhof & Bown, Architects

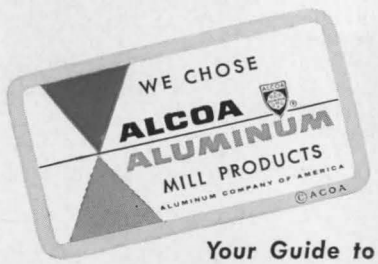


This majestic 16-story government building of Alcoa Architectural Blue-Finish Aluminum is highlighted with satin-finish natural aluminum windows and mullions. It is typical of the "new look" for architecture which is made possible through the use of aluminum in curtain wall construction.

No account of architecture's aluminum milestones would be complete without mentioning three additional buildings not shown here. The first is the Monadnock Building, erected in Chicago in 1891. Architects Burnham and Root were among the pioneers in using aluminum for stair railings, sliding doors and enclosures around elevators. The second building is the Bessemer Building in Pittsburgh. Designed by Architect Grosner Aterbury, it made important use of aluminum. The last building, important because of its use of aluminum column caps, is the Frick Building in Pittsburgh. Architect: Daniel H. Burnham. These buildings with aluminum applications are still in use.

Within the last decade, the use of aluminum in building has spurted forward at a rate that staggers the imagination. It has influenced design in all forms of architecture. This has happened because aluminum offers so many compelling advantages.

Aside from its aesthetic possibilities, which is a subject in itself, practical economics favor aluminum tremendously. It is easy to erect, light in weight and practically maintenance-free. Architects who, as a group, are better able than anyone else to judge a product on its true merits, are behind the movement to more widespread use of aluminum. Every day, more architects capitalize on the inherent advantages of this wonder metal — truly the building material of tomorrow, available today. ALUMINUM COMPANY OF AMERICA, 1888-E Alcoa Building, Pittsburgh 19, Pa.



Your Guide to the Best in Aluminum Value

a WASHINGTON *report by Ernest Mickel*

THE COMING AMERICAN LANDSCAPE: AS ROAD ENGINEERS SEE IT

ANYBODY LISTENING?

True function of everything we build must also include esthetic considerations — proportion, design and appearance. For the buildings and roads we erect are by themselves an expression of our culture. They are, whether we desire it or not, monuments by which future generations will judge us. . . .

— Leon Chatelain, Jr. President
The American Institute of Architects

Last year Congress approved a multi-billion dollar highway improvement program which, when carried to fruition in the next 15 years, can work a profound change in this country's landscape.

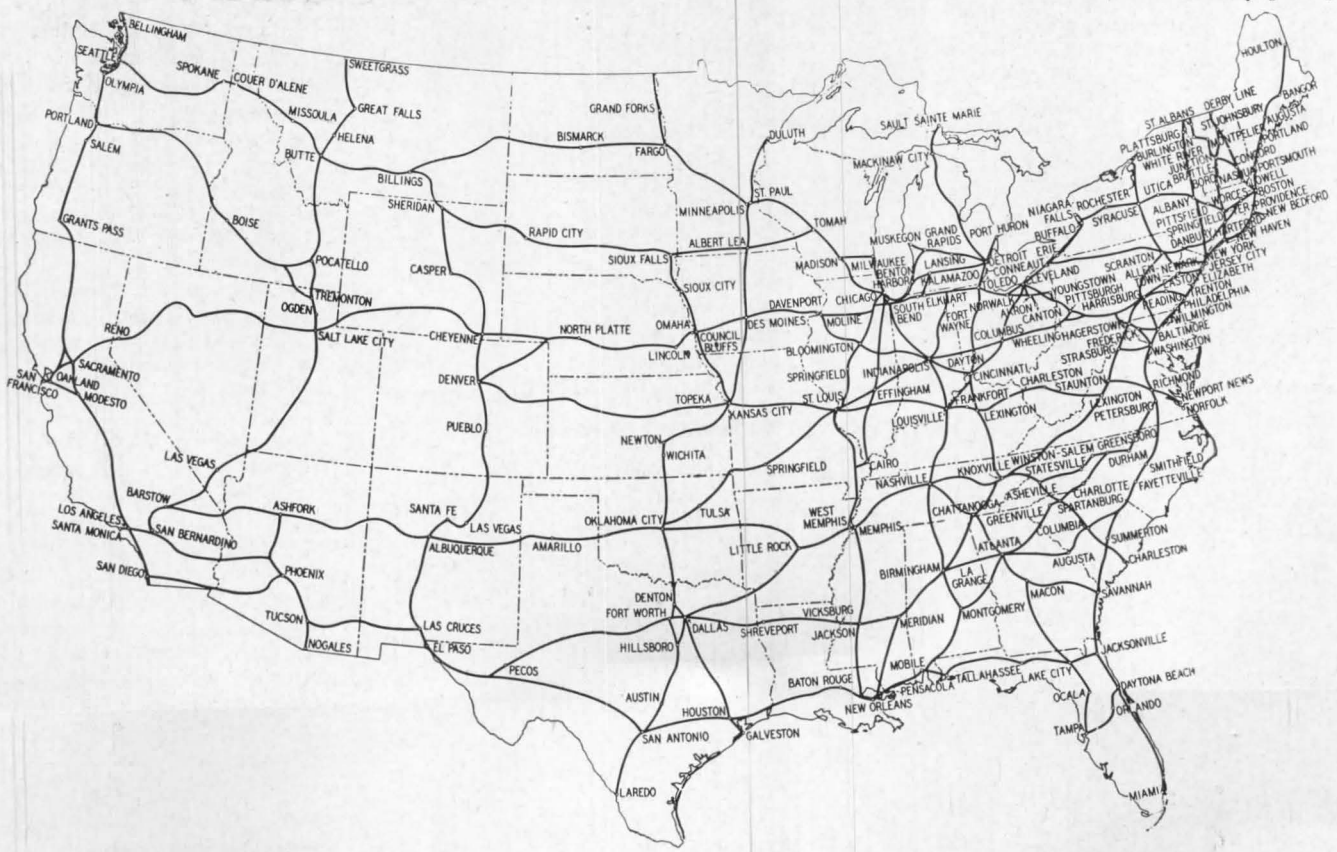
The significance for architects in this greatest public works program of all time will be determined by the extent of the interest they take in it; their opportunities will be affected during its progress by decisions governing location of city and near-city routes, width of rights-of-way, and building code changes that might be prompted by or influence redevelopment programs. These are decisions that will be made at the state level, and are being made today as the vast construction effort moves into its action phase.

Congress decreed that $27.4 billion in Federal money would be used for bearing 90 per cent of the cost of constructing the National System of Interstate and Defense Highways. Add to this an estimated $22.6 billion that Uncle Sam will pay out to the states in the same period for a 50 per cent share of the cost of laying other roads in the overall program — rural, secondary, and urban — and the full impact of the Federal government's financial contributions emerges. If all goes as now planned, this ultimate figure, under the present law, will approximate $50 billion.

To support this largest single public works program expenditure, a taxing structure has been established which is feeding revenues into a trust fund over a specified 13-year period. The new Federal Highway Administrator, Bertram D. Tallamy, has estimated that with the final contracts let running beyond the termination of the financing program, it will take 15 or 16 years in all to construct the roads called for in the legislation.

Very obviously, major questions of city and regional planning are involved; and architects will want to be much

(Continued on page 354)

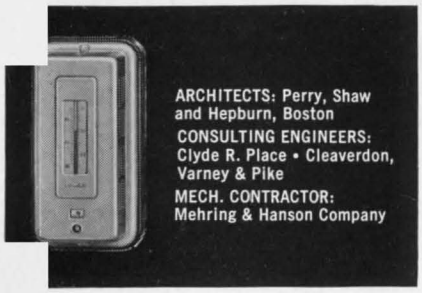


Bureau of Public Roads

ARE ARCHITECTS LOOKING? This is the map of the National System of Interstate and Defense Highways. As a guide for development, the Bureau of Public Roads, the administering agency, has approved "Geometric Design Standards" adopted last year by the American Association of Highway Officials. Goals: safety, permanence, utility, flexibility

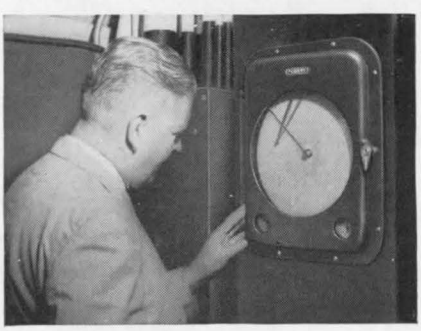
(More news on page 36)

Williamsburg Inn
Williamsburg, Virginia



ARCHITECTS: Perry, Shaw and Hepburn, Boston
CONSULTING ENGINEERS: Clyde R. Place • Cleaverdon, Varney & Pike
MECH. CONTRACTOR: Mehring & Hanson Company

Below: *Powers Recording controller regulates temperature of chilled water used for comfort air conditioning.*



POWERS

CONTROL helps guests enjoy modern air conditioned comfort in this famous hotel

Williamsburg Inn was among the first of our country's outstanding hotels to provide guests with the comfort of modern year 'round air conditioning.

Spacious guest chambers, suites and lounges have individual room thermostats which allow occupants to select the temperature desired. Primary air in ducts to each space is properly conditioned including dehumidification.

In 1907 Powers Pioneered in Hotel Air Conditioning Control in the Gold Room of Chicago's Congress Hotel. Superior performance of this control system was due to an exclusive Powers feature . . . *gradual control* of mixing dampers and valves.

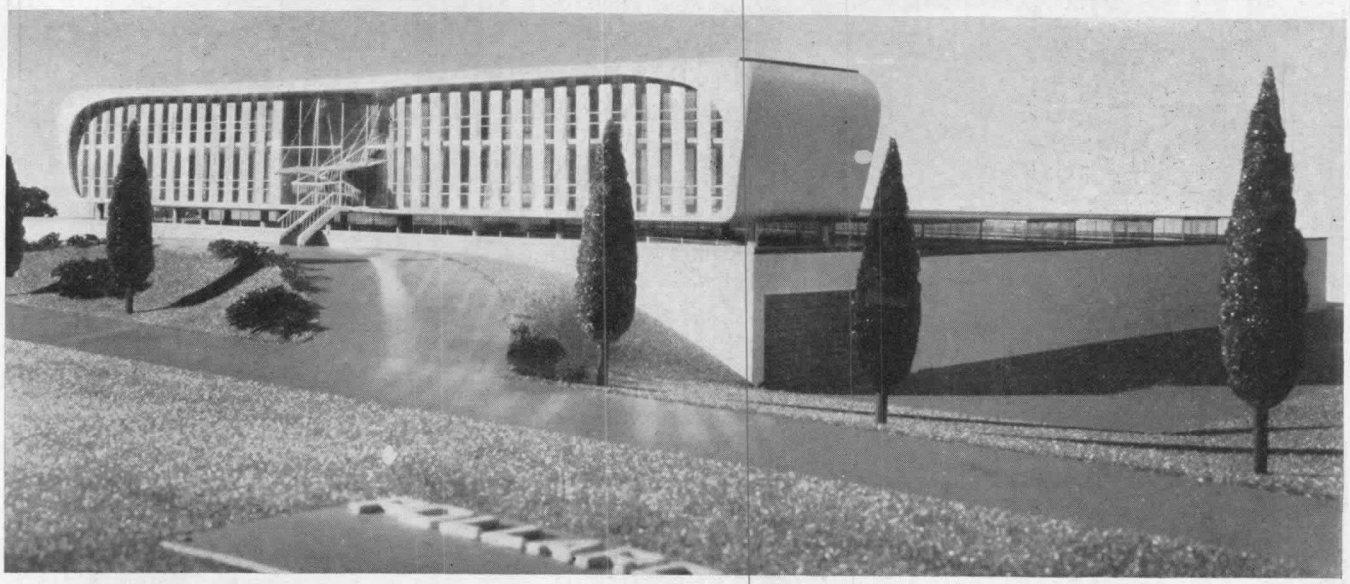
Are You Planning a New Building or modernizing an old one? Ask your architect or engineer to include a Powers Quality system of temperature control. They have been time-proved dependable in thousands of prominent buildings since 1891. (C74)

THE POWERS REGULATOR COMPANY

SKOKIE, ILLINOIS | *Offices in chief cities in U.S.A., Canada and Mexico*
See your phone book

65 Years of Automatic Temperature and Humidity Control

By John Caulfield Smith



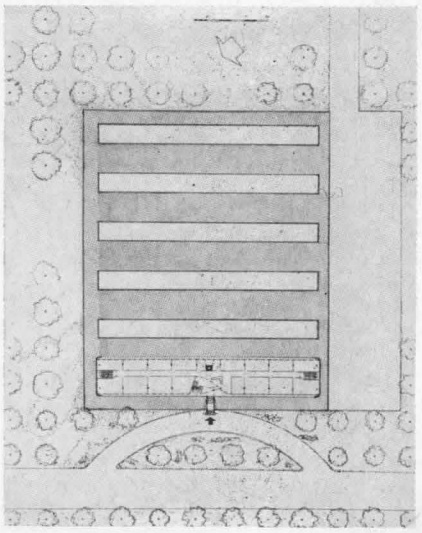
PLANT DESIGNED FOR AUTOMATIC CONTROL, PROTECTION AGAINST BLAST AND FALLOUT

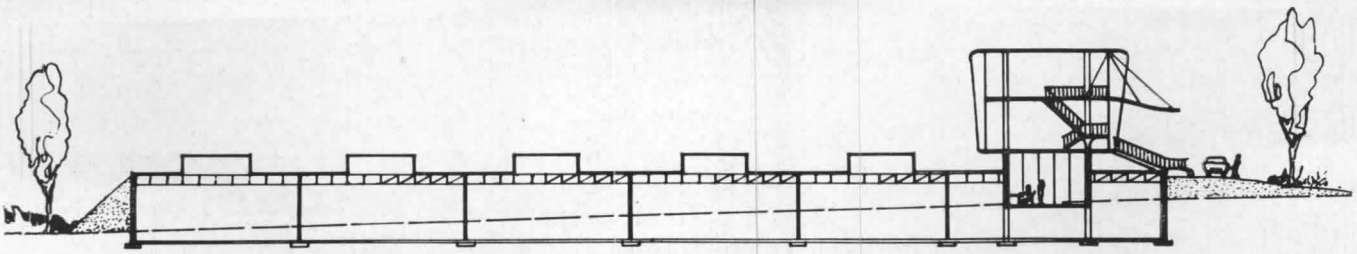
An industrial plant which half buries its manufacturing facilities for protection against blast and puts its office building above them for quick access and control of highly automated processes has been designed for Canadian Pollard Bearings Company Ltd. by A. Bruce Etherington, Architect, of Oakville, Ont. The plant, to be built in stages as production requirements dictate, is already under way on a rural site two and a half miles west of the Toronto suburb of Oakville.

Glass-enclosed offices hung from the bottom of the office building will provide the visual control of production lines essential in highly automated operations. It is hoped in this plant to reduce manual labor by 50 per cent from existing plants in England by achieving a high degree of automation in the lathe, milling and tempering stages of manufacturing.

Security considerations were important because Pollard is a military supplier in wartime. Thus the decision to put the 200x200-ft manufacturing area partly below ground and surround it with concrete-stabilized earth retaining walls from three to 15 ft thick. Thus also a roof structure on the factory area which will permit installation of lead sheeting in multiple layers to a depth of 18 in., insulation estimated to provide sufficient protection from radioactive fallout on the roof until special roof sprays can wash such dust from the roof into specially planned cisterns. All of these precautions are regarded as making the factory safe against anything but a direct bomb hit.

Placement of the office building above the factory helped satisfy another of the owner's requirements — prominent visibility from the highway — and the sculptural shape of the building, a purely esthetic decision, seems likely to advertise it even more widely. Structure is reinforced concrete columns and plate slabs; curved end walls are constructed of reinforcing steel bent to contours, wired with metal lath and sprayed with gunnite to the required curviture.





(News from Canada continued on page 40)

Bruce S. Blietz, V.P. of Irvin A. Blietz Organization, nationally known builders, takes 5 minutes to find out how FIAT Shower Floors make better showers possible at lower cost.

Learn the *money-saving method* for better shower construction

The cross section sample being shown in the photograph above clearly and simply demonstrates why the FIAT PreCast method of shower floor construction is the answer to an age old building design problem. It takes but a few minutes to see how this one-piece floor has many, many advantages over old fashioned, built-on-the-job shower floor construction. It is immediately evident that this solid, monolithic unit does away forever with any problems of leakage. The cut-away view shows how the integral flange forms a watertight seal between the floor and shower wall material (whether tile, plaster, wallboard or structural glass). You can examine how the drain is cast permanently into the floor material and how the inclined floor and raised shoulders deflect water downwards toward the drain. You will appreciate the substantial savings of on-the-job labor and understand why the low installed cost of a PreCast FIAT Floor makes all other shower floor methods obsolete.

See it Now!

It's so much easier to see the advantages than to read about them. That's why we would like just five minutes of your time to show you this cross section sample. You can save real money and do a better job at the same time. Clip coupon to your letterhead and get full information. No obligation of course.

FIAT METAL MANUFACTURING CO.
9319 Belmont Ave., Franklin Park, Ill.

☐ Please have representative contact me.
☐ Send further information on PRECAST SHOWER FLOORS

Name_____

Company_____

Address_____

City_____ State_____

Type of Business_____

FIAT

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Since 1922... First in Showers / *Packaged Showers • Doors • Floors*
Toilet Room Partitions

FOUR COMPLETE PLANTS: Long Island City 1, N. Y.; Franklin Park, Ill.; Los Angeles, Calif.; Orillia, Ontario

THE RECORD REPORTS: CONSTRUCTION COST INDEXES

Labor and Materials — U. S. 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
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
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
1952	278.2	274.8	271.9	274.9	271.8
1953	281.3	277.2	281.0	286.0	282.0
1954	285.0	278.2	293.0	300.6	295.4
1955	293.1	286.0	300.0	308.3	302.4
1956	310.8	302.2	320.1	328.6	324.5
Dec. 1956	316.0	306.6	327.9	338.7	332.0
Jan. 1957	315.7	306.2	327.8	338.7	331.9
Feb. 1957	316.5	306.5	329.5	341.2	335.1
	% increase over 1939				
Feb. 1957	156.3	150.4	152.1	155.8	157.6

ATLANTA

Period	Residential		Apts., Hotels Office Bldgs.	Commercial and Factory Bldgs.	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
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
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
1952	218.8	221.0	212.8	210.1	214.3
1953	223.3	224.6	221.3	221.8	223.0
1954	219.6	219.1	223.5	225.2	225.4
1955	225.3	225.1	229.0	231.5	231.8
1956	237.2	235.7	241.7	244.4	246.4
Dec. 1956	239.8	238.1	245.5	248.1	250.8
Jan. 1957	239.8	238.1	245.5	248.1	250.8
Feb. 1957	239.8	238.1	245.7	248.7	250.8
	% increase over 1939				
Feb. 1957	177.8	186.5	158.4	155.3	164.8

ST. LOUIS

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
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
1952	259.1	253.2	249.7	255.0	249.6
1953	263.4	256.4	259.0	267.6	259.2
1954	266.6	260.2	263.7	273.3	266.2
1955	273.3	266.5	272.2	281.3	276.5
1956	288.7	280.3	287.9	299.2	293.3
Dec. 1956	289.7	281.2	289.9	300.8	297.2
Jan. 1957	289.7	281.1	290.8	302.0	297.2
Feb. 1957	289.7	281.1	291.0	302.6	297.2
	% increase over 1939				
Feb. 1957	162.9	162.7	145.2	152.6	149.7

SAN FRANCISCO

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
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
1952	250.2	245.0	245.6	248.7	249.6
1953	255.2	257.2	256.6	261.0	259.7
1954	257.4	249.2	264.1	272.5	267.2
1955	268.0	259.6	275.0	284.4	279.6
1956	279.0	270.0	288.9	298.6	295.8
Dec. 1956	281.9	271.9	295.6	306.6	302.5
Jan. 1957	283.1	272.7	297.2	307.6	303.5
Feb. 1957	283.1	272.4	296.9	307.4	303.4
	% increase over 1939				
Feb. 1957	168.1	174.3	152.9	152.2	160.4

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.

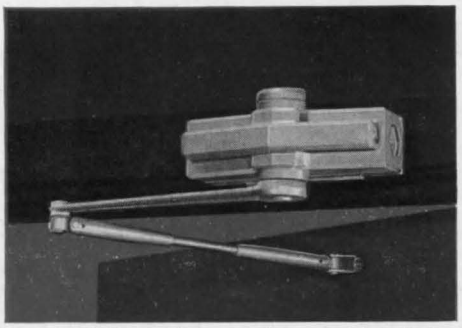
$$\frac{110-95}{95} = 0.158$$

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

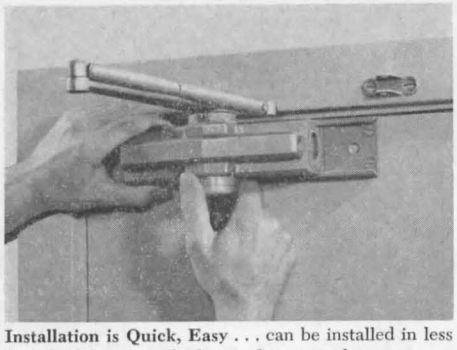
$$\frac{110-95}{110} = 0.136$$

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.

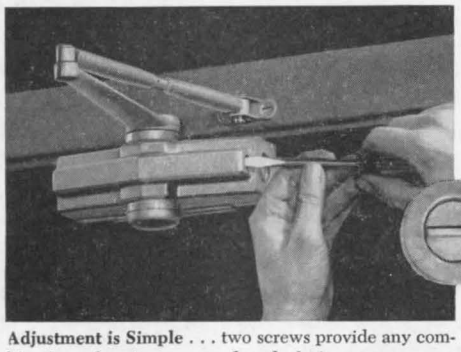
Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.



Completely Reversible . . . can be mounted on the top jamb for maximum headroom on out-swinging doors.



Installation is Quick, Easy . . . can be installed in less than half the time of other surface-type closers.

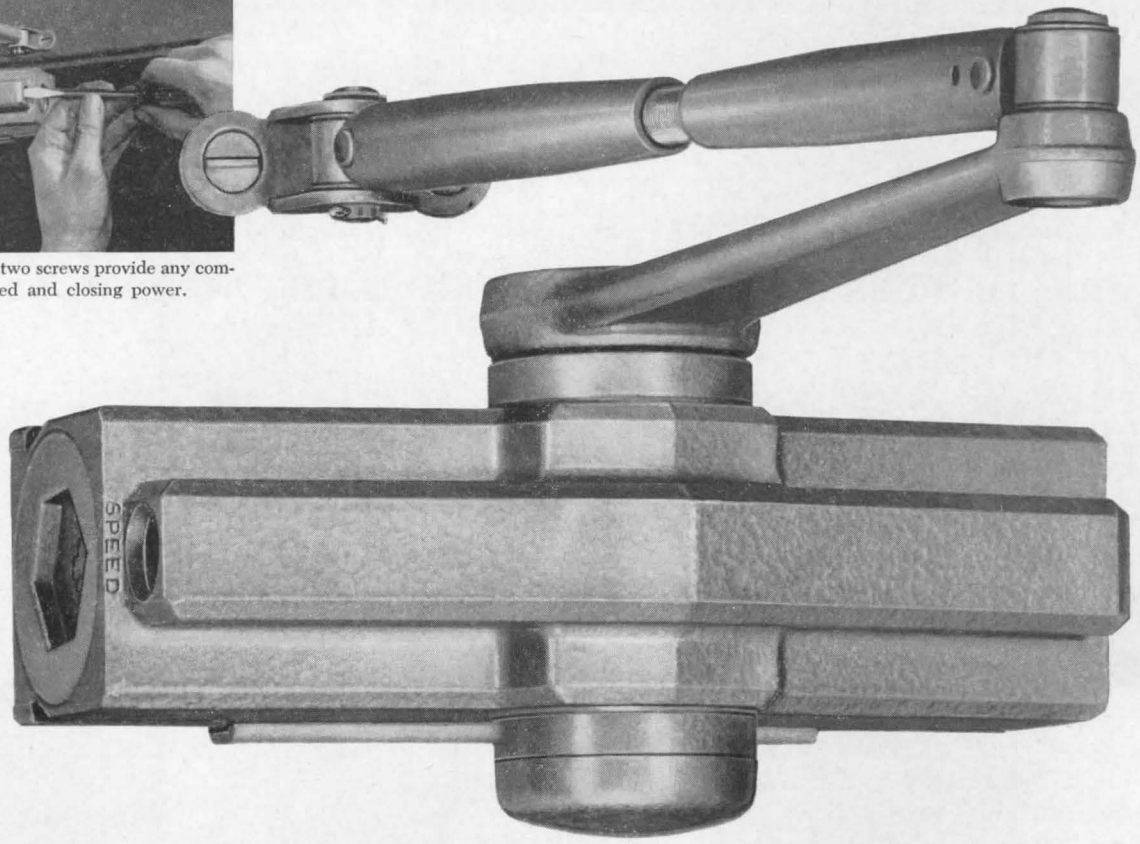


Adjustment is Simple . . . two screws provide any combination of swinging speed and closing power.

modern door closer beauty

Designed and styled to match today's architectural trends, Schlage door closers reflect the clean lines of modern interiors. For the first time, you can furnish your clients with the maintenance convenience and functional superiority of surface-type closers . . . and at the same time be assured that the appearance will complement the building design. As advanced in mechanical precision as it is in external design, the Schlage door closer provides complete control throughout the entire door swing by a full rack and pinion mechanism . . . teeth are pitched for greatest strength and are sufficient to permit 230° shaft rotation. In both appearance and function, Schlage door closers meet the building requirements of contemporary architecture.

For complete information about Schlage's Modern Door Closers, write for Catalog #680-A-5.



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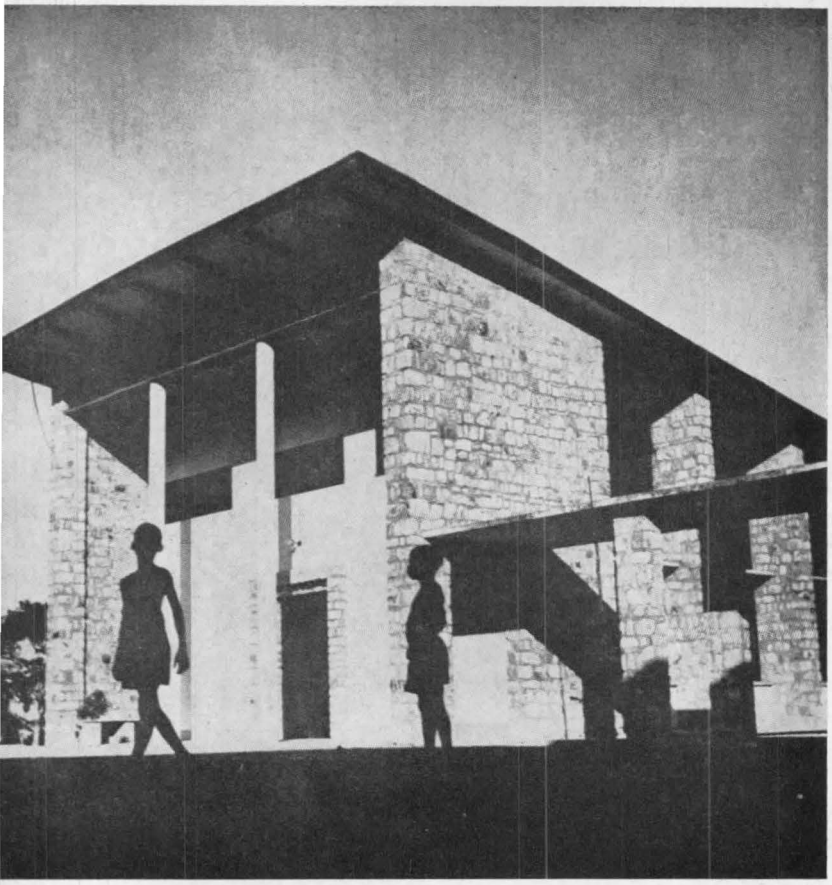
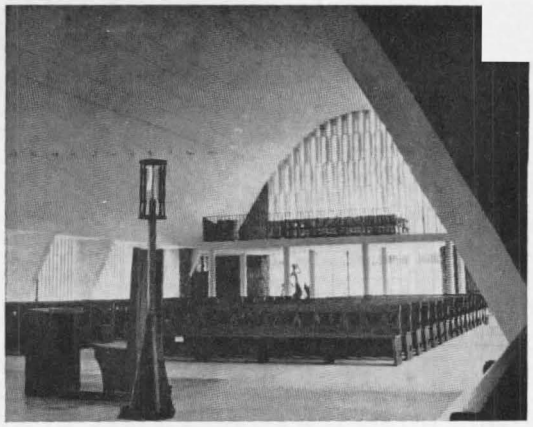




ECONOMIC DEVELOPMENT OF THE TROPICS CREATES A NEW FRONTIER FOR ARCHITECTURAL EXPRESSION, ASPIRATIONS

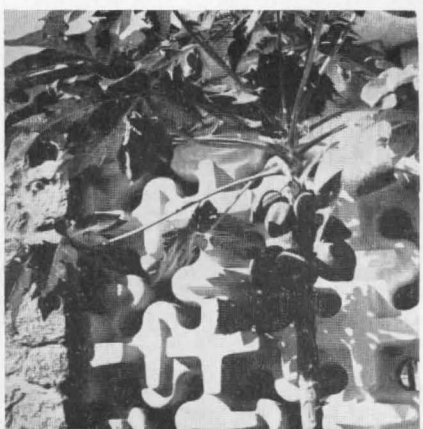
As economic development uproots the ancient and primitive customs of the tropical zone, as latent resources of mind and matter are stirred with the swizzle stick of industrialization, as tribal towns and villages give way to the mass centralization of cities, as mud-and-thatch shacks are abandoned in search of a better means of shelter — then architecture will find a whole new frontier, a whole new source of inspiration, a whole new challenge to its artistic and functional aspirations.

There is much to be learned about this new frontier. There is much to be learned about the requirements, the potentialities and the psyche of this new stage for architectural pioneering if the challenge is to be met — not only met but transcended. What Le Corbusier, Jeanneret, Fry and Drew have done in Chandigarh can be nourished, multiplied (but not necessarily duplicated), and bettered throughout the width and breadth of the tropical zone; and that is a challenge mighty enough to inspire, and require, the most extensive and exhaustive research.

Two of these pioneers, Maxwell Fry and Jane Drew, have broached the total scope of this new frontier in their recently published book, *Tropical Architecture*. They have not stopped

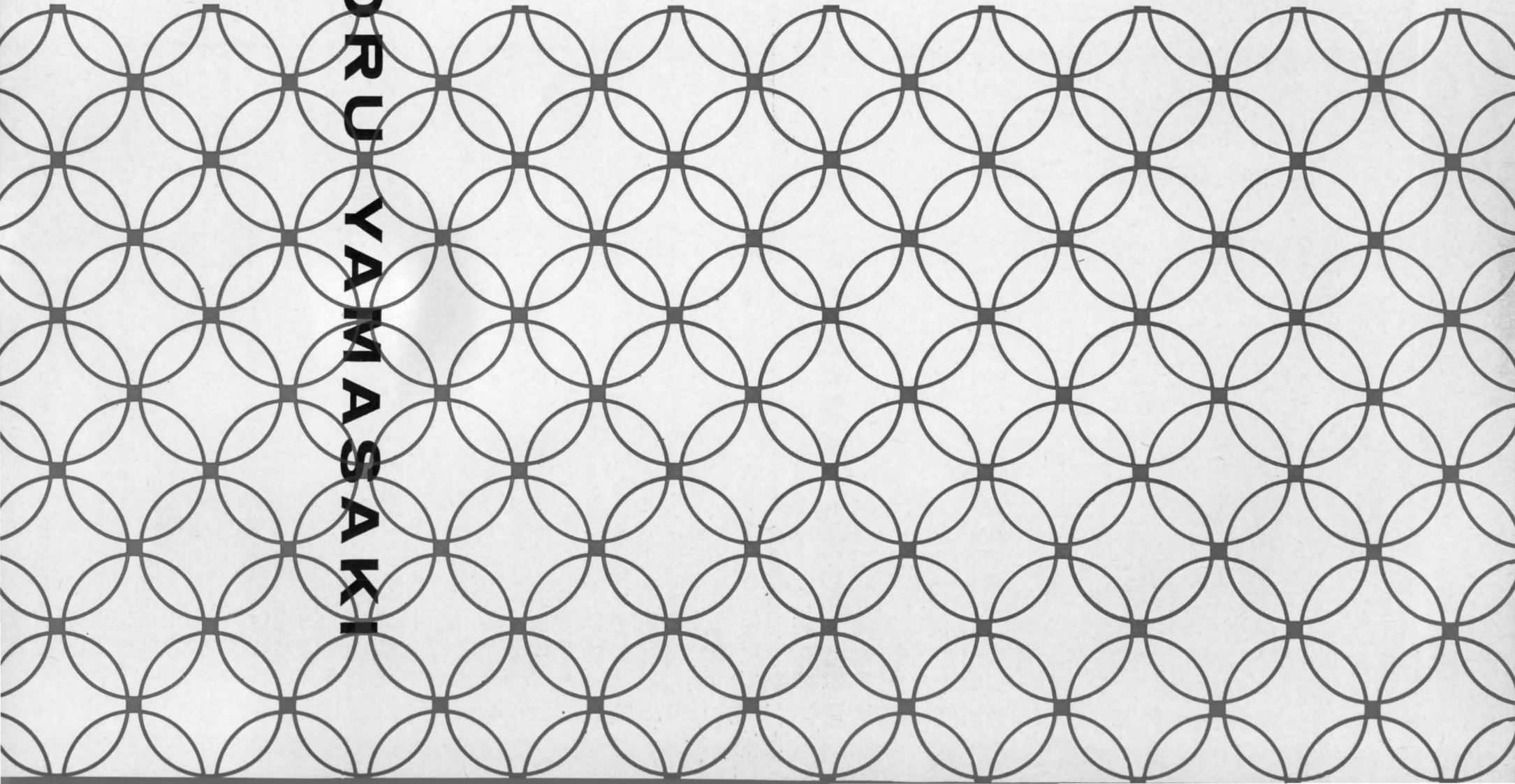
(Continued on page 62)

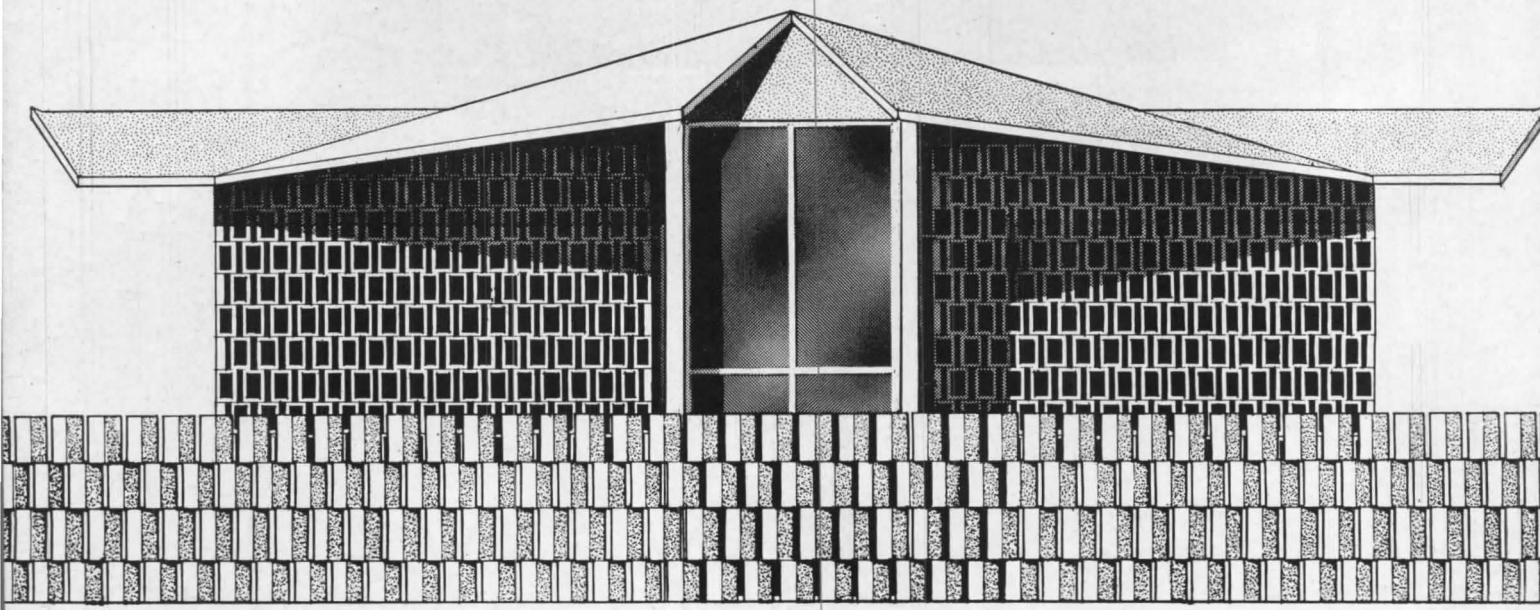
Tropical Architecture in the Humid Zone. By Maxwell Fry, C.B.E., F.R.I.B.A., and Jane Drew, F.R.I.B.A. Reinhold Publishing Co. (N.Y.), 1956. 320 pp. Illus. $10.



MAY 1957 ARCHITECTURAL RECORD

MINORU YAMASAKI





MINORU YAMASAKI *is one of a growing group of American architects whose work is clearly and consistently demonstrating a search for the means of achieving once again a whole architecture; an architecture rooted in the conviction that to afford man both a broad and penetrating experience of space is the ultimate concern of the architect. They seek an architecture satisfying to the man who acts and thinks and* feels; *which any man can enjoy at some level and some men can enjoy at many levels.*

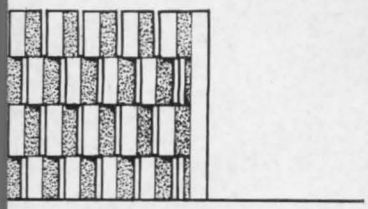
Acknowledging their debt to the rational work of our most influential pioneers they nevertheless have felt its limited sensual appeal and their own efforts have been drawn into that vacuum much as their predecessors had tried to fill the intellectual vacuum with which they had been confronted.

It is understandable that the lessons of history are being reexamined by these men. In the case of Minoru Yamasaki, India, Italy and Japan have furnished particular inspiration, of which he has written with great feeling in "Toward an Architecture for Enjoyment" (ARCHITECTURAL RECORD, *August, 1955), quoted here in the margins.*

In the works undertaken since his travels in those countries there are five buildings which mark especially the impressive distance he has climbed in the direction of achieving "an architecture for enjoyment." In each can be found the principal means employed in his search for a total synthesis of experience in structured space. Of particular interest are the ways in which he employs the ancient tools of silhouette, sunlight, surface and surprise.

SILHOUETTE: *through plastically developed profiles and penetrations*

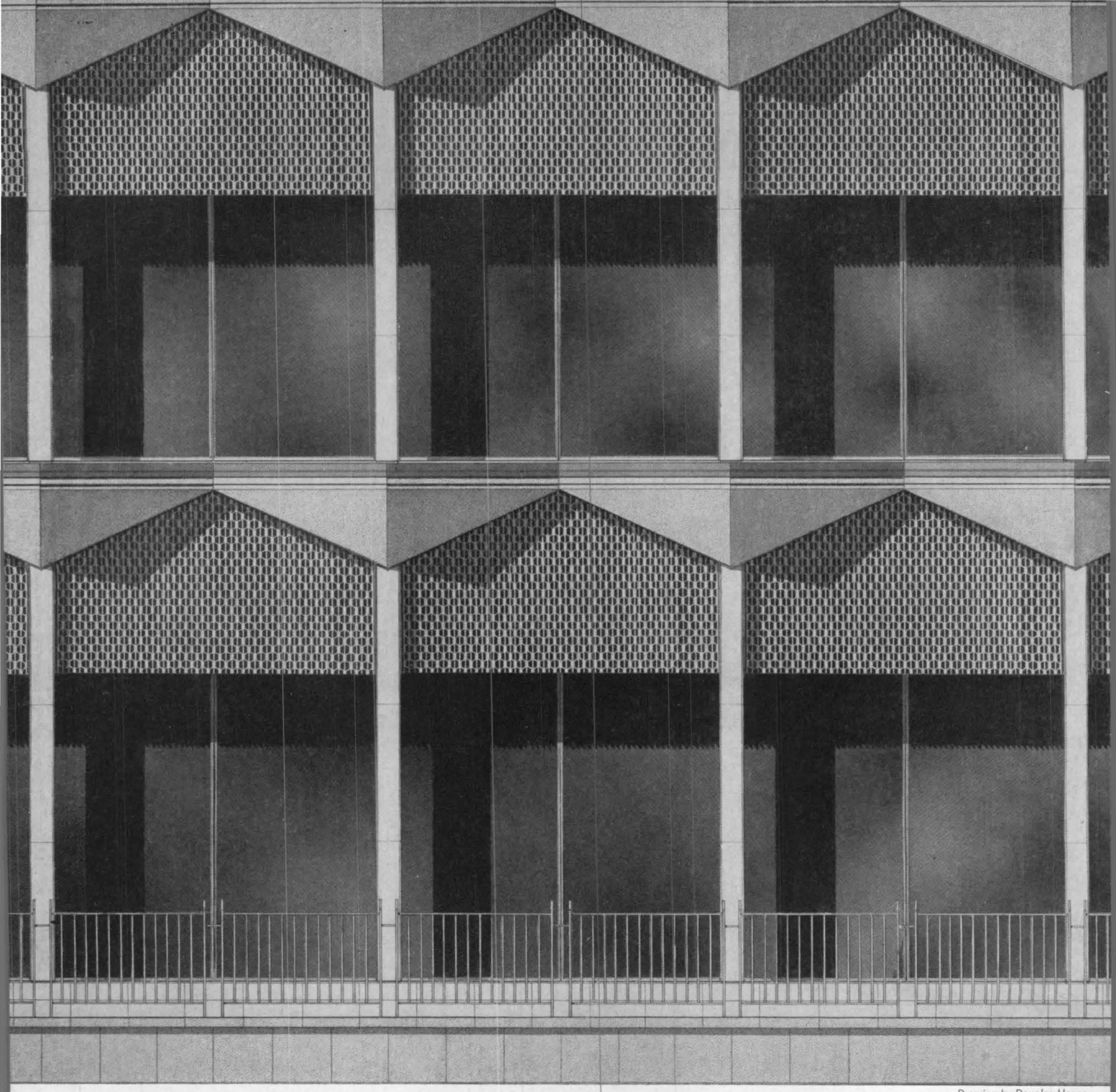
The American Concrete Institute Building (*above*) and the Wayne University Conference Building (*right*) show ways in which from either inside or outside the edges of the building are seen meeting the sky in moving lines whose changes of direction develop from the basic structural organization, just as the peaked and hooded vault silhouettes of the earlier St. Louis Airport. Although these are admirable effects we were moved to ask the architect: **Why is the roof structure so complicated in the small ACI building?** "Normally, this structural system wouldn't be appropriate, but in view of the client's objectives, it seemed basic to show what can be done with concrete" . . . **With your interest in silhouette, why didn't you lead the roof valley water through a row of projecting spouts — like modern gargoyles?** "As a matter of fact we do take the water down through scuppers just back of the fascia and drop it into a coarse gravel strip" . . . **This kind of roof demands a very finished look. What are you applying to the concrete slab?** "We're using a plastic because it's attractive, economical, and in addition has the same quality of continuity that the concrete has."



Drawing by Douglas Haner

Photo above: Hedrich-Blessing
All other photos: Lens-Art

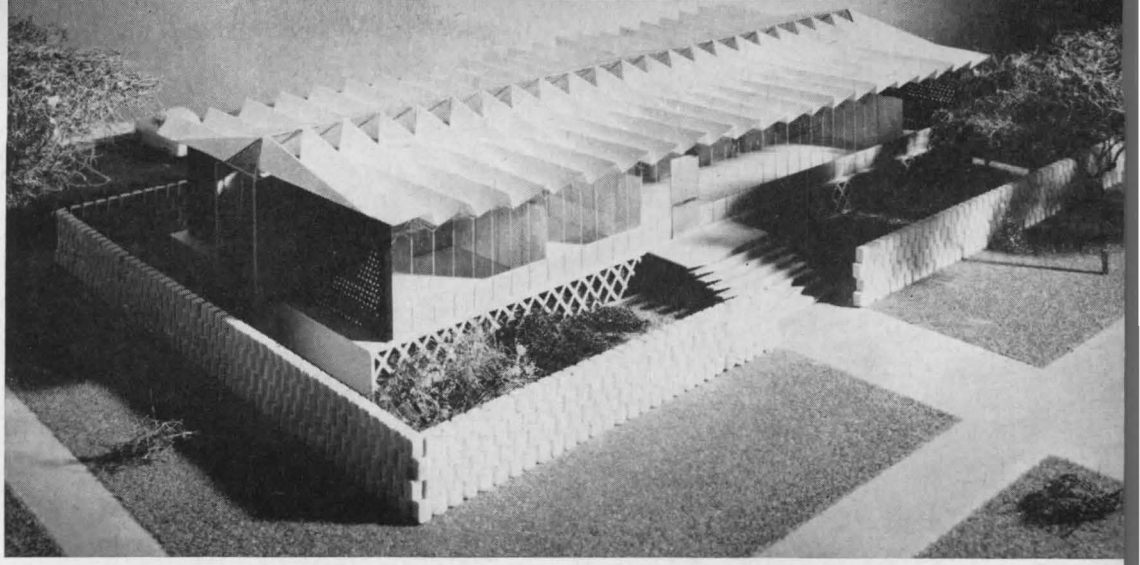
"Our architecture must . . . learn new forms and new dimensions to give richness to our skyline . . . bring back the pleasure and drama of silhouette against the sky"

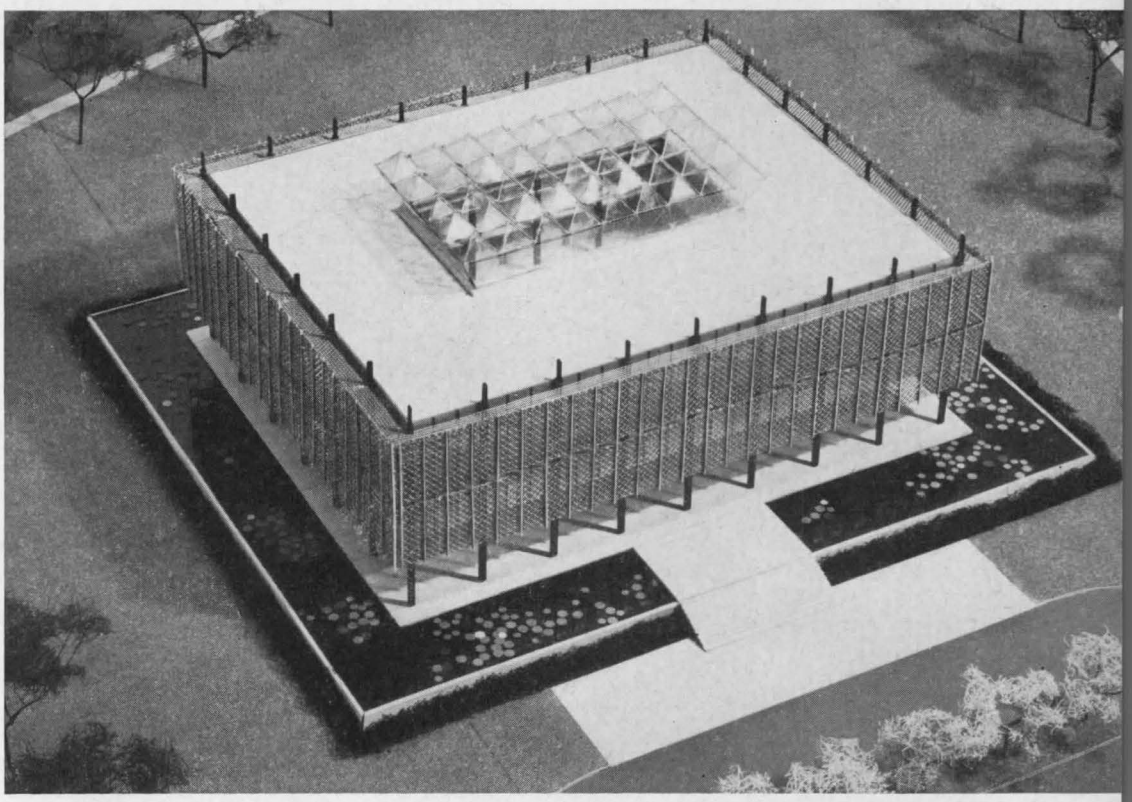


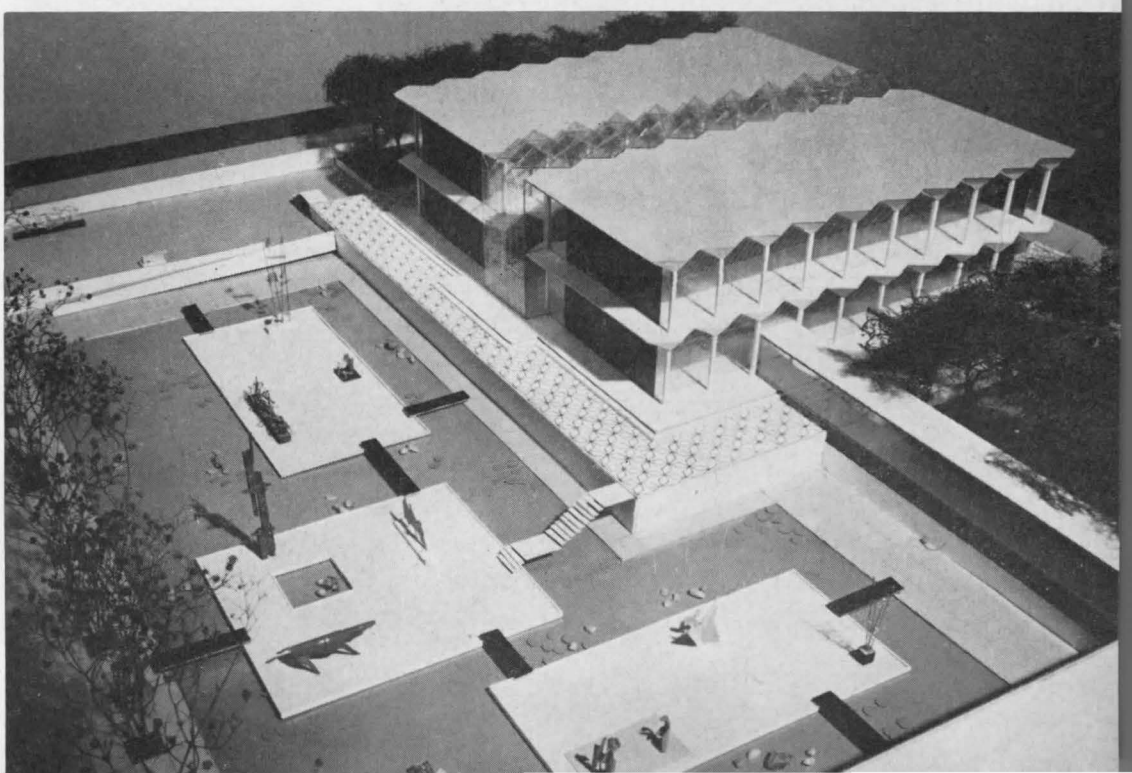
Drawing by Douglas Haner

SUNLIGHT: *and the shadows generated by its intricate interruption*

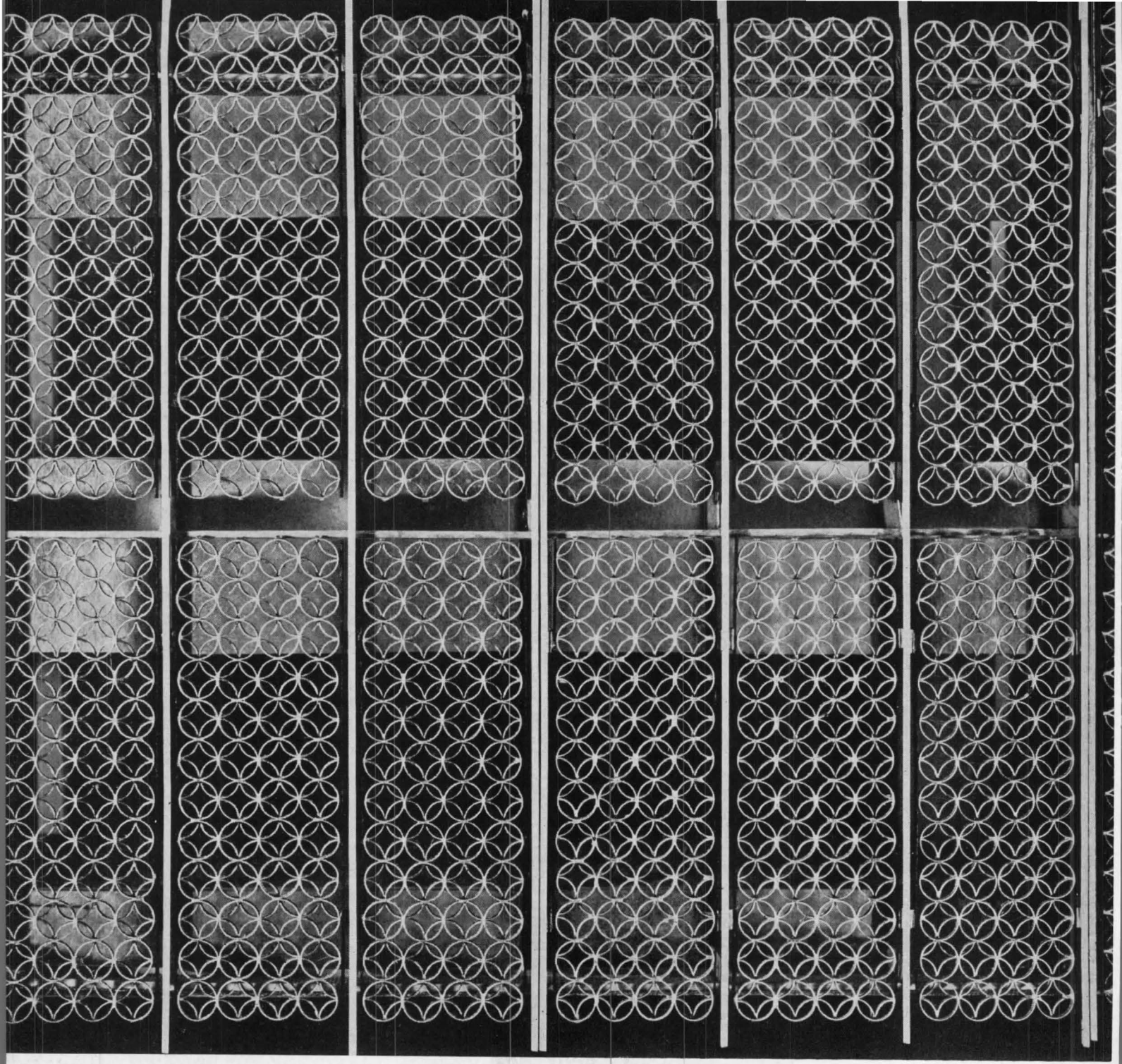
All these buildings have been designed to exist in the sun and their eaves and skylights and walls and screens (*as on the Reynolds Metals Building, right center*) have been calculated to admit and exclude or modulate the light in useful and stimulating ways. Granting the visual excitement of flooding the middle of the buildings with sky light we asked: **Won't these spaces get pretty hot?** "Well . . . we faced that, of course. For Wayne (*above and right, bottom*) we had planned to use blue heat-absorbing glass as in the other three, but changed to clear glass — with client agreement — when we decided it would be more satisfying to have full sunlight and the strong patterns of frame and column shadows though it will be warmer for brief periods . . . at night the whole thing reverses; shadows become light and daylight goes dark" . . . **For us there's strong disharmony in ACI (right, top) between the pattern of the garden wall and the lattice screen at the building's base.** "We have changed that lattice (see p. 173) . . . actually we're trying to express that it has no supporting function . . . and we're trying to echo the diagonals of the roof too."





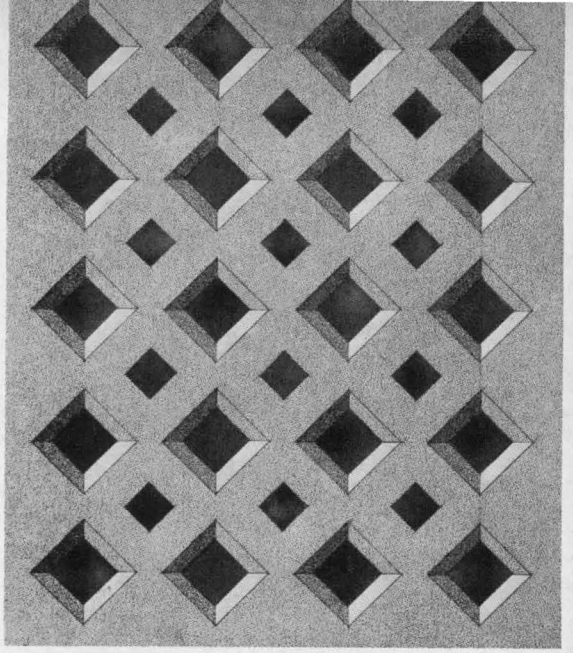


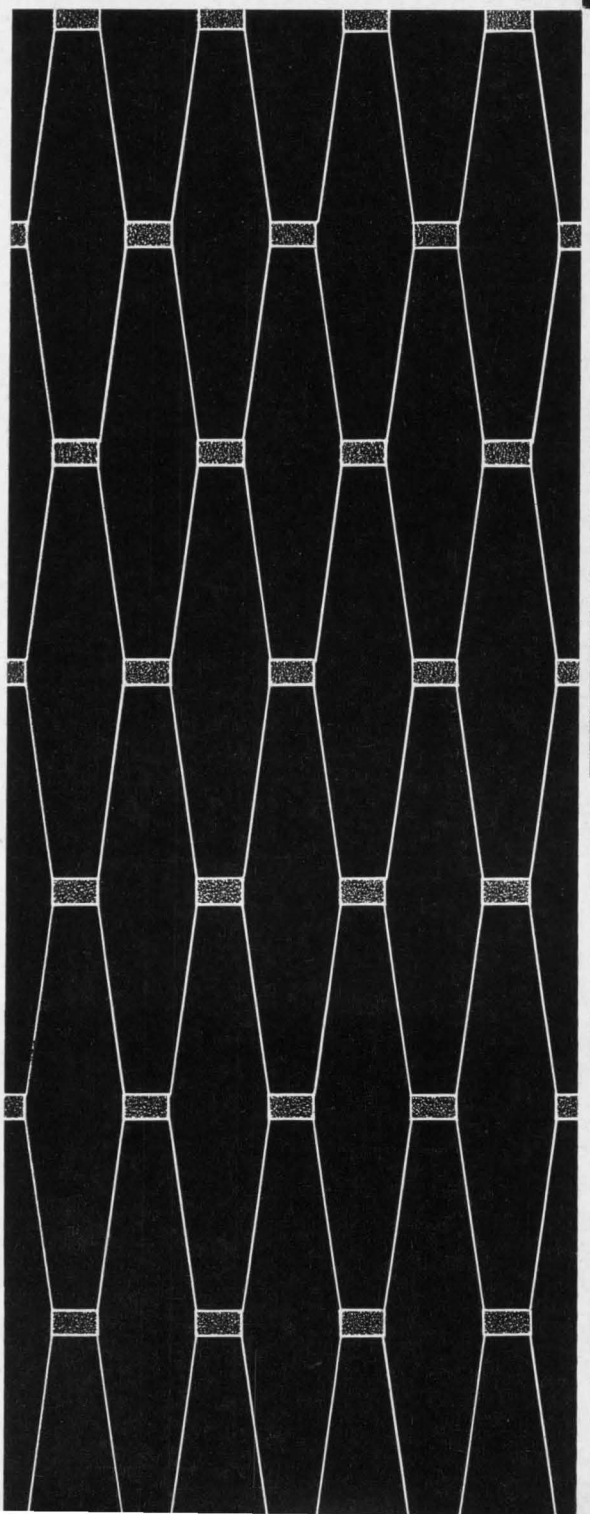
"We need buildings which can be flooded with the joy of bright sunlight in which the impulse is to dance"

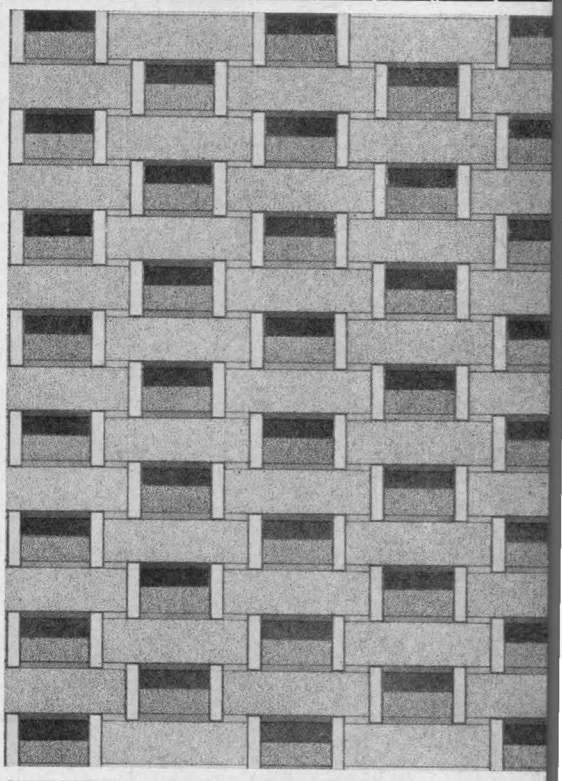


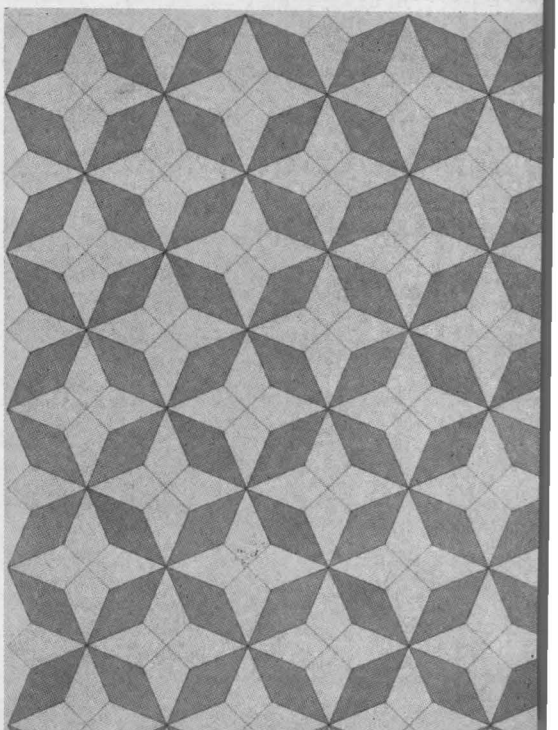
SURFACE: *richly responsive to demands of material, method and motive*

Whether in metal, masonry or glass the patterns in these building surfaces are seldom arbitrary. Typical of the regard for *both* form and function is the screen for the Reynolds Building (*above and p. 167*). "It's metal of course . . . gold anodized aluminum for Reynolds . . . short sections of tubing. But where it passes the upper part of each story we deepen the tubing sections . . . that way we cut down on *direct* light and glare where they're most critical . . . of course many of these surfaces develop from the fact that in me the urge to touch buildings is strong . . . sometimes irresistible . . . I've often developed an arm 50 feet long so I could mentally reach and touch a building beyond a wall. When the desire to touch architecture is not there, something is wrong . . . perhaps it's with me . . . but this is my only reservation about Corbu's work" . . . **Where are the plain surfaces — for relief?** "In Wayne the end walls and floors are plain . . . some of the masonry patterns look stronger on paper than they will in space . . . but in ACI we thought of such a small building in terms of jewelry which need have no plain surfaces."









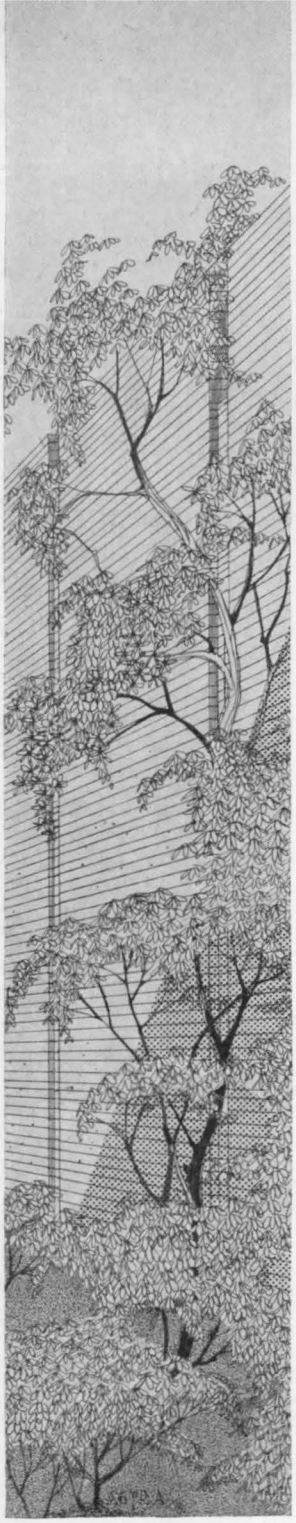
"The simple, strong forms of our architecture can gain richness in detail"

"The pleasure of shadow within shadow"

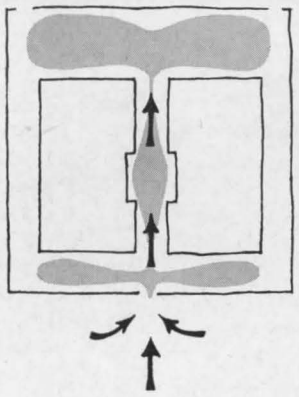
Top left, concrete grille, ACI Building; top right, sun screen, Wayne Conference Building; bottom left, floor pattern, ACI Building; middle right, perforated wall, Art School; bottom right, floor pattern, Wayne Conference Building

SURPRISE: *the calculated sequence of unfolding visual experience*

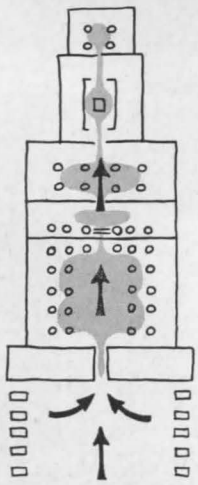
Surprise in any spatial sequence largely develops from unexpected change: going from light to dark to light again; from large to small to large; or high — low — high. To find daylight where it is not expected, a garden or a pool, is to find heightened pleasure. In these buildings, and particularly the Society of Arts and Crafts Building *(above, right, and page 178)* most of these means are employed — and most artfully. However it seemed fair to ask: **All these buildings are essentially symmetrical. Doesn't that limit your ability to surprise?** "Yes . . . a little. But in these instances order superseded surprise . . . it seemed essential to keep the simple order which we felt was demanded and which the central axis provides . . . actually the majority of our work today is not symmetrically arranged. Above all the architect has an obligation to try to create beauty; and order is a great part of this . . . each building asks for its own kind of order. But other elements work to furnish surprise . . . the skylights — especially in the Wayne and Reynolds buildings. You go from dark to sunlight and reach up to the sky . . . you always walk toward daylight."



Perspective drawings by Astra Zarina Haner

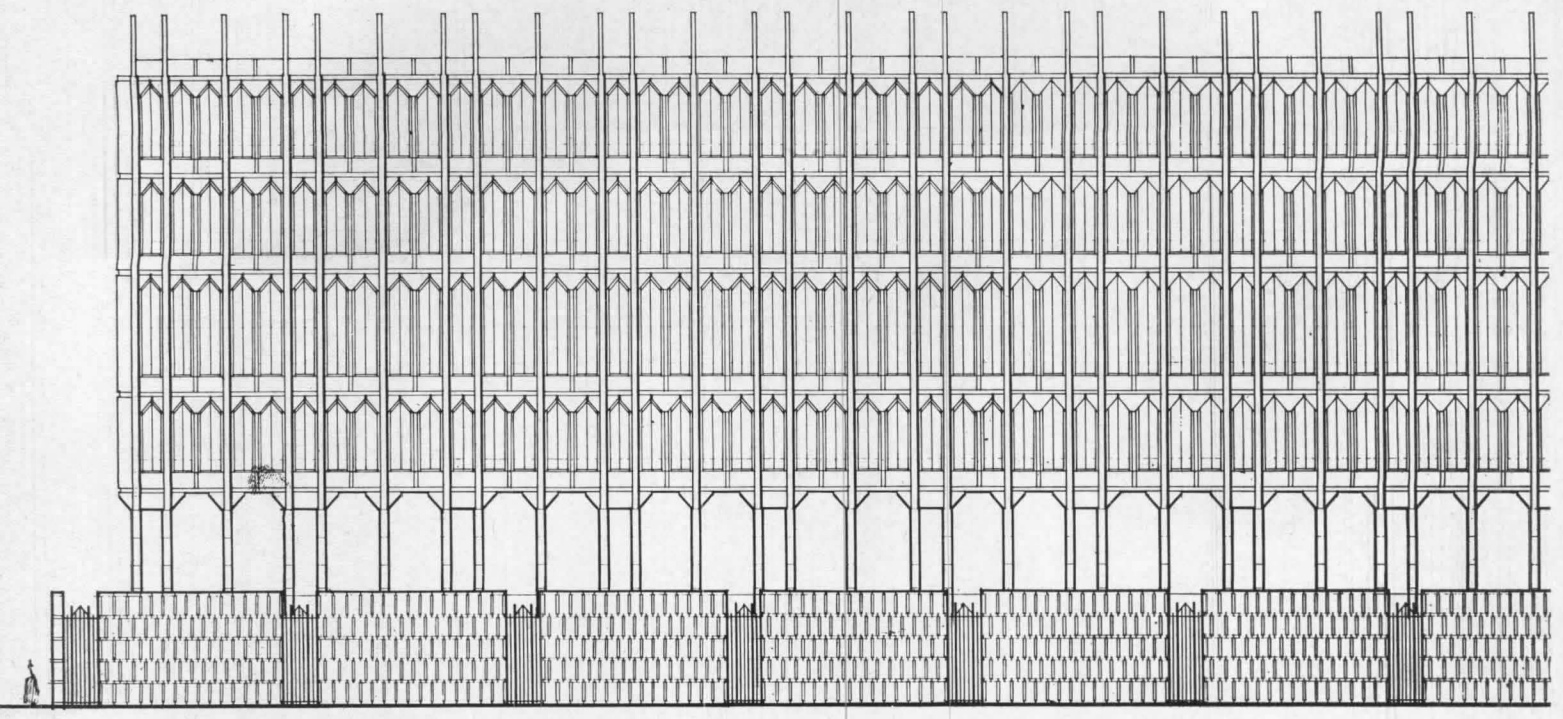


Art School

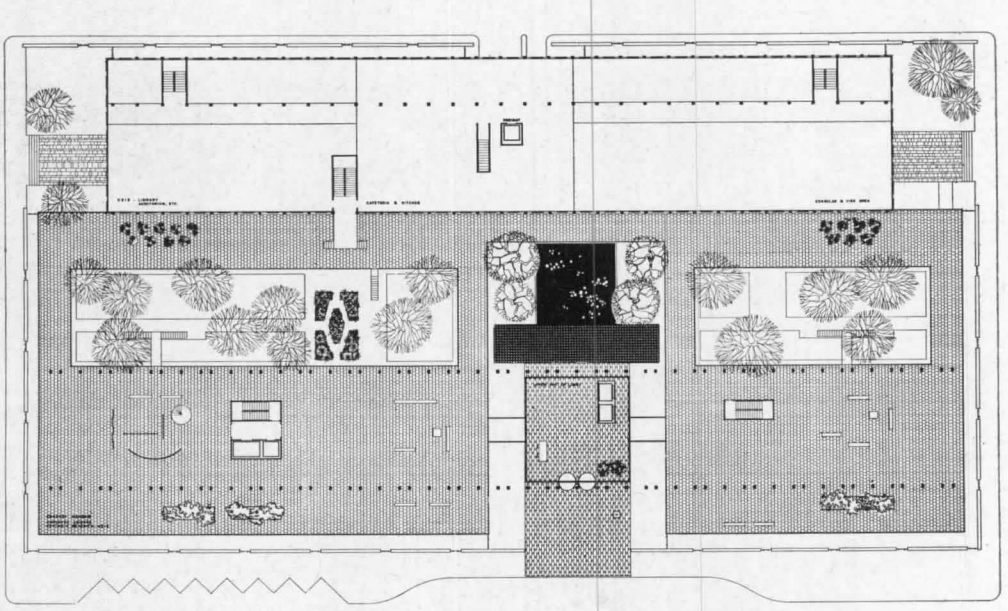


Karnak, 1200 BC

". . . buildings as relaxed, friendly and enjoyable places . . . evidence those qualities . . . which symbolize our democracy"

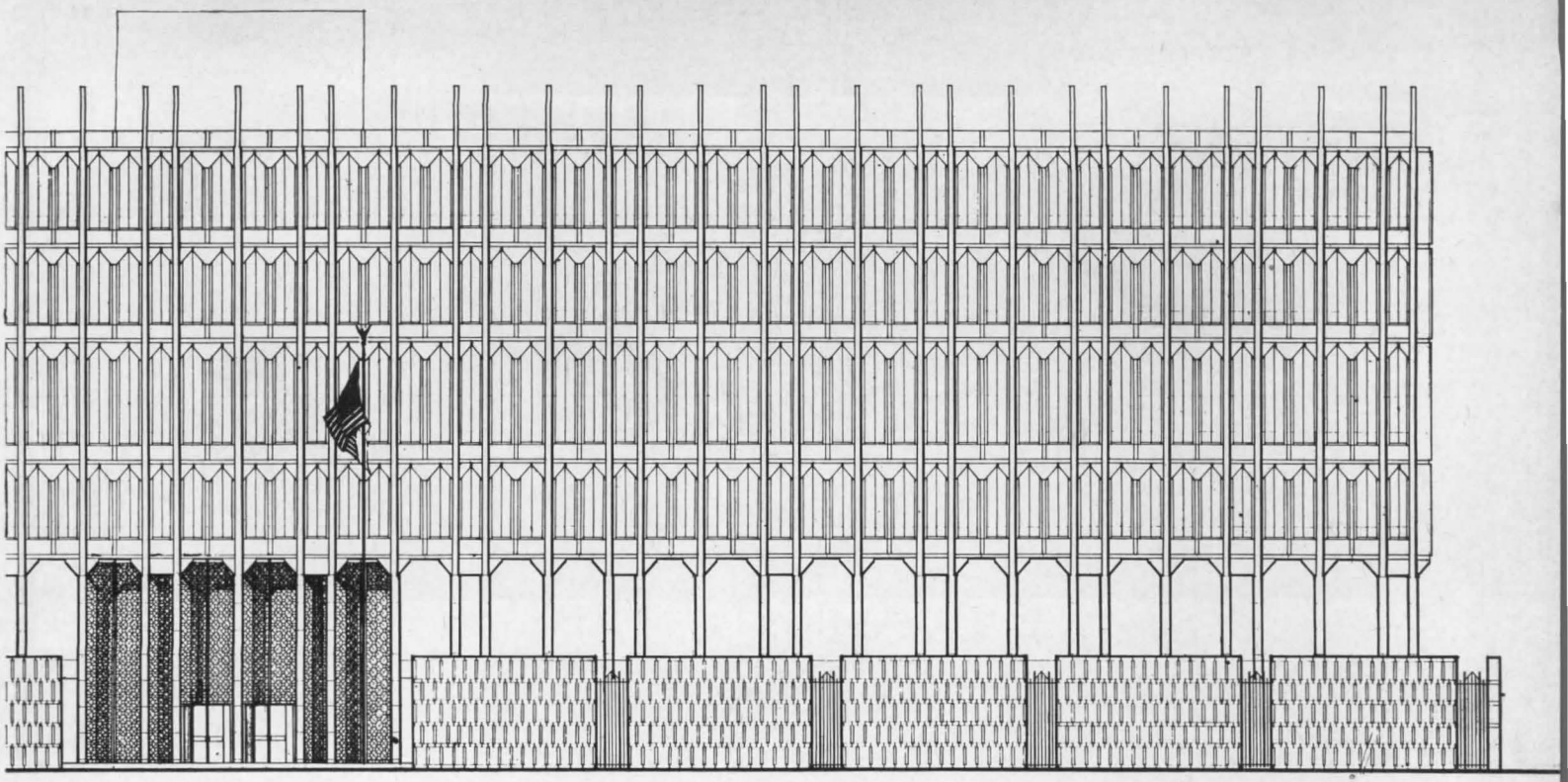


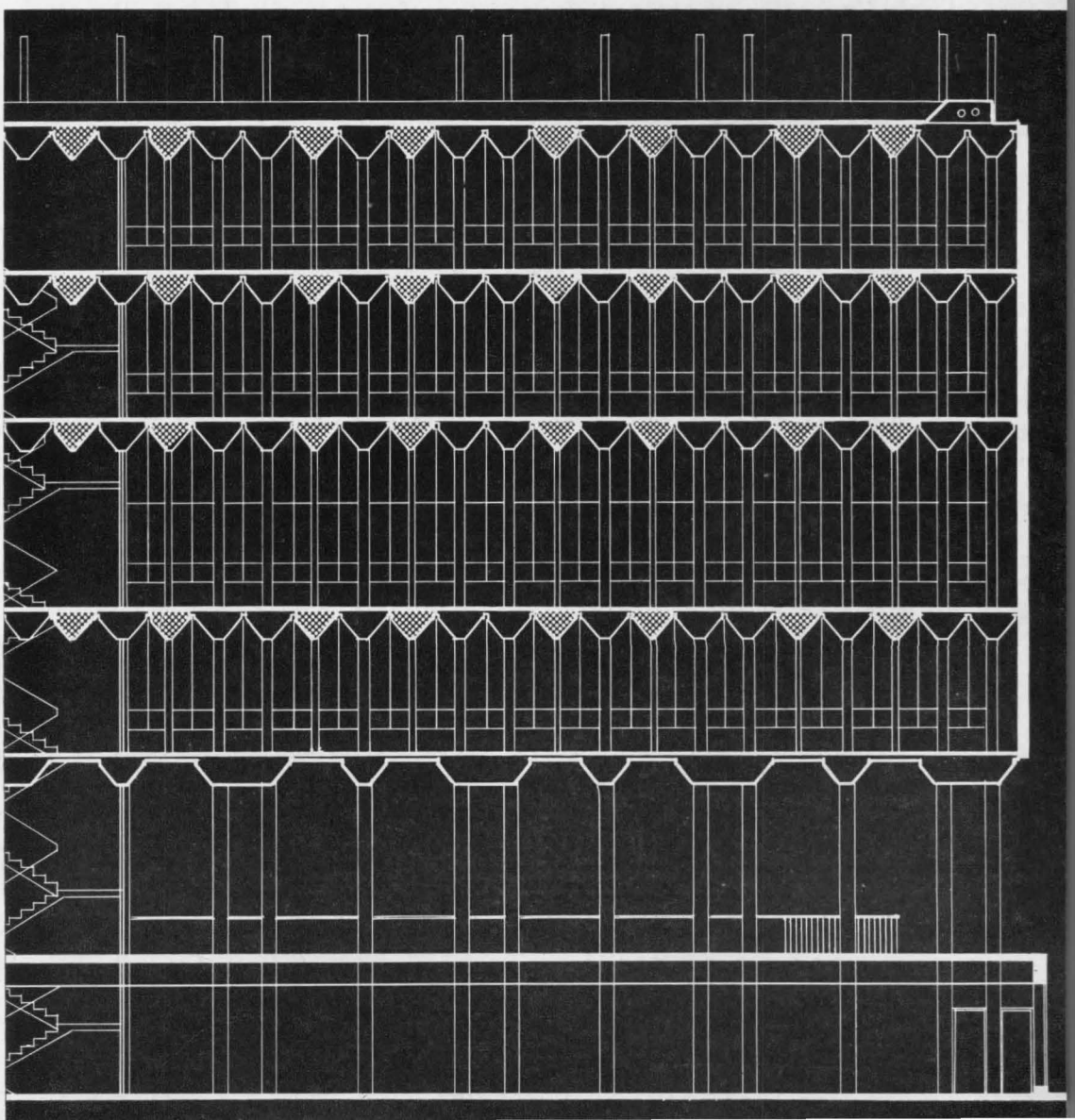
Design for London Embassy Competition



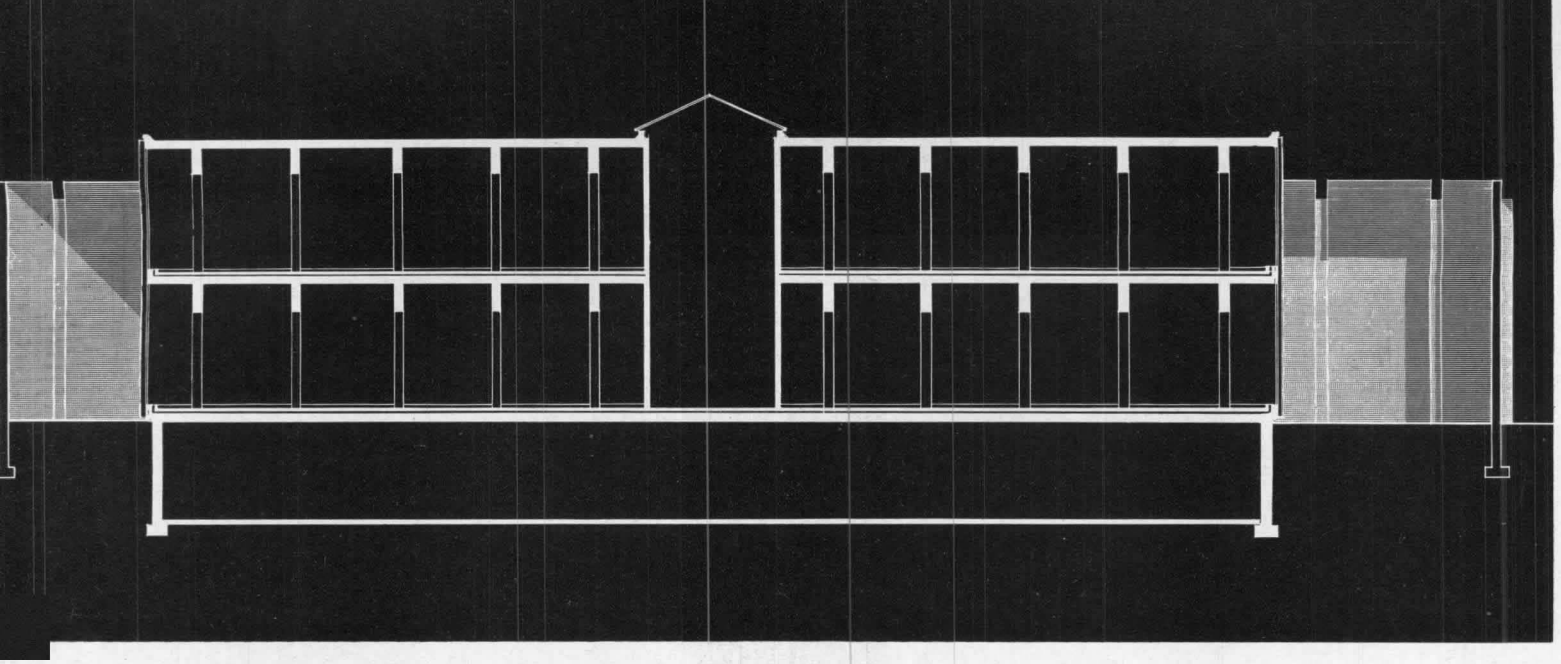
SYNTHESIS: *space structured for experiences of enjoyment*

Underlying the careful organization of silhouette, the handling of sunlight, the surfaces, and the provision for surprise is the primary sense of unity in the spaces of these buildings and in the pattern of structural elements through which it is achieved. The column plays a full role in this architecture; it is constructive *and* decorative. *The London* Embassy proposal on these pages illustrates this approach to the total use of structural elements. But fascination with the decorative potential of structure *can* inhibit structural efficiency and we inquired about the close spacing of the columns. "Of course we liked the looks of the close spacing . . . we felt it recalled a kind of English verticality . . . we really did this because the spaces are so long in the other direction . . . 45 ft in the Embassy . . . the bays in Wayne are 40 by 10 . . . in Reynolds 25 by 15. In each case there was the matter too of the best module for the office partitions." . . . **Is it a coincidence that the Embassy recalls the Doges Palace in Venice?** "Not entirely . . . we wanted to combine the strength and English quality of Westminster Palace with the elegant laciness of the Doges."

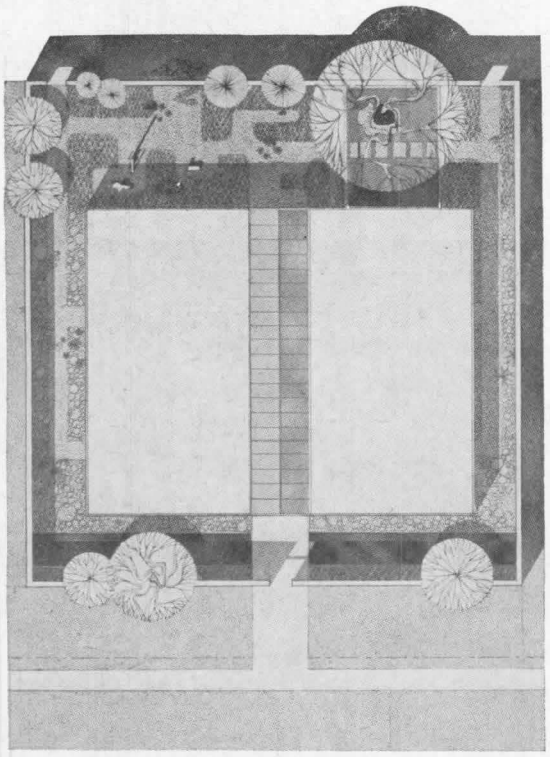


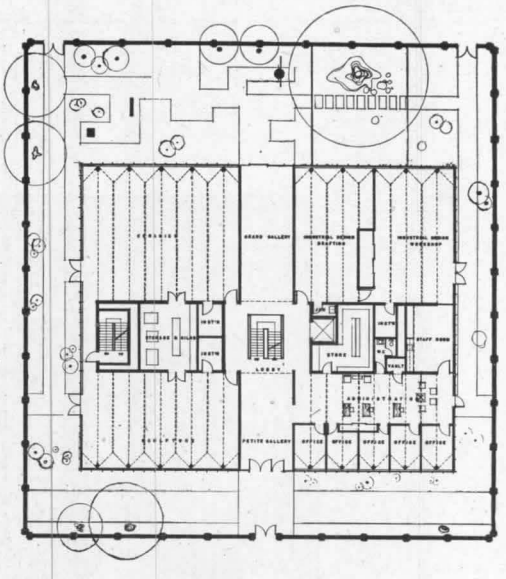


"Enrichment must fit within the framework of our mechanized society"



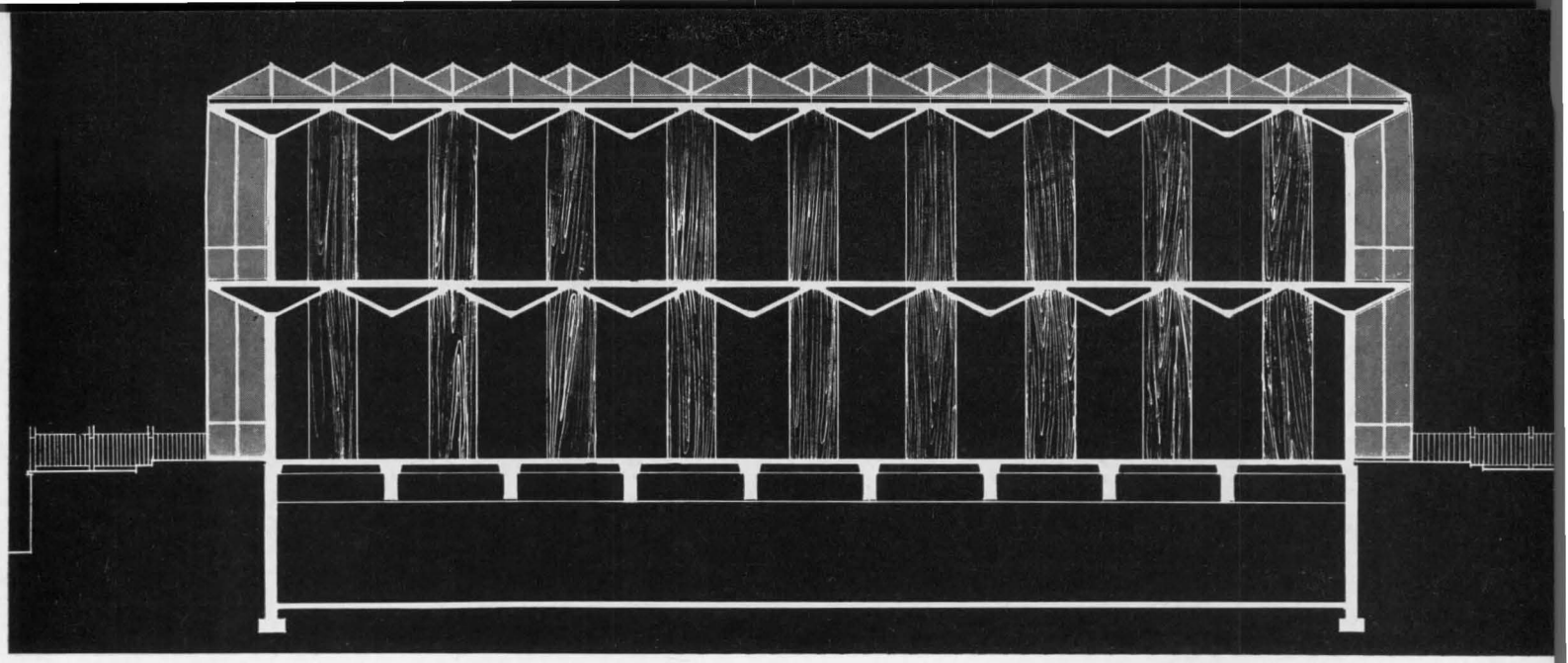
Art School for the Society of Arts & Crafts, Detroit



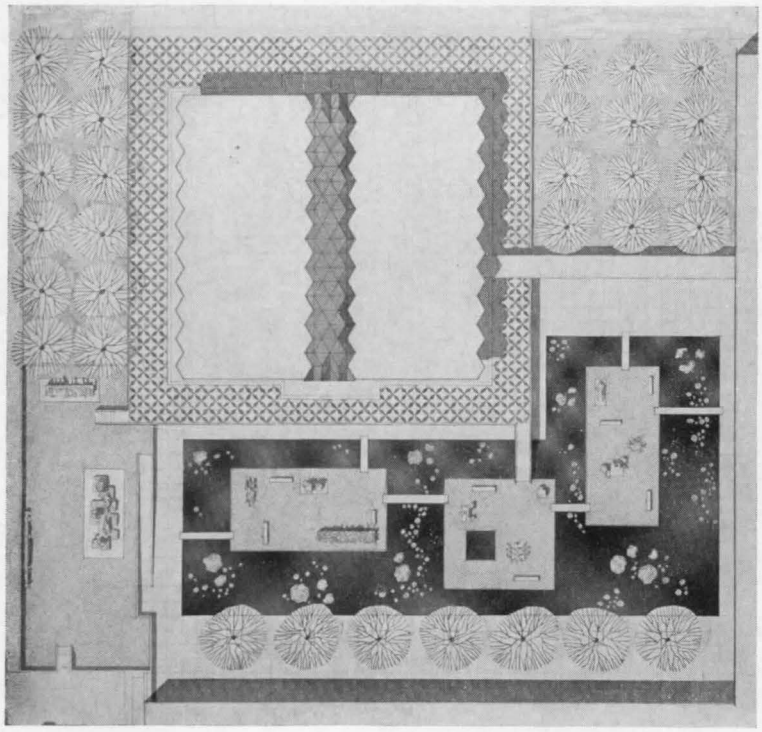


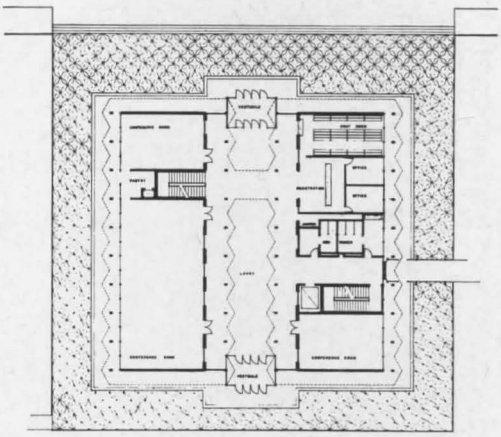
SYNTHESIS

What role does color play in all this? "To us it's enormously important. We think of colored surfaces in terms of how they receive daylight . . . how they contribute to the sequences of surprise . . . how they bring unity to the whole . . . and, of course, in terms of other specific functions certain surfaces may have . . . for example, in the Art School (*above*), light walls serve as the background for many brilliantly colored exhibits, and the dark red brick walls offer striking contrast. There is the same kind of contrast outside, with the white mullions played against the dark brick walls again . . . in Wayne (*right*) we tried for lightness and brightness with travertine end-walls, gray-green slate floors with some cream Mankato stone, white marble columns and corridor floors, also off-white and teakwood interior walls . . . the only strong color inside is the green marble bridge at the second floor level . . . the Reynolds building (*overleaf*) is gold and black and silver, with white floor and elevator shafts. The ceiling for the first floor is black with pinpoint lights; upstairs, the situation reverses, with dark floor and white ceiling."

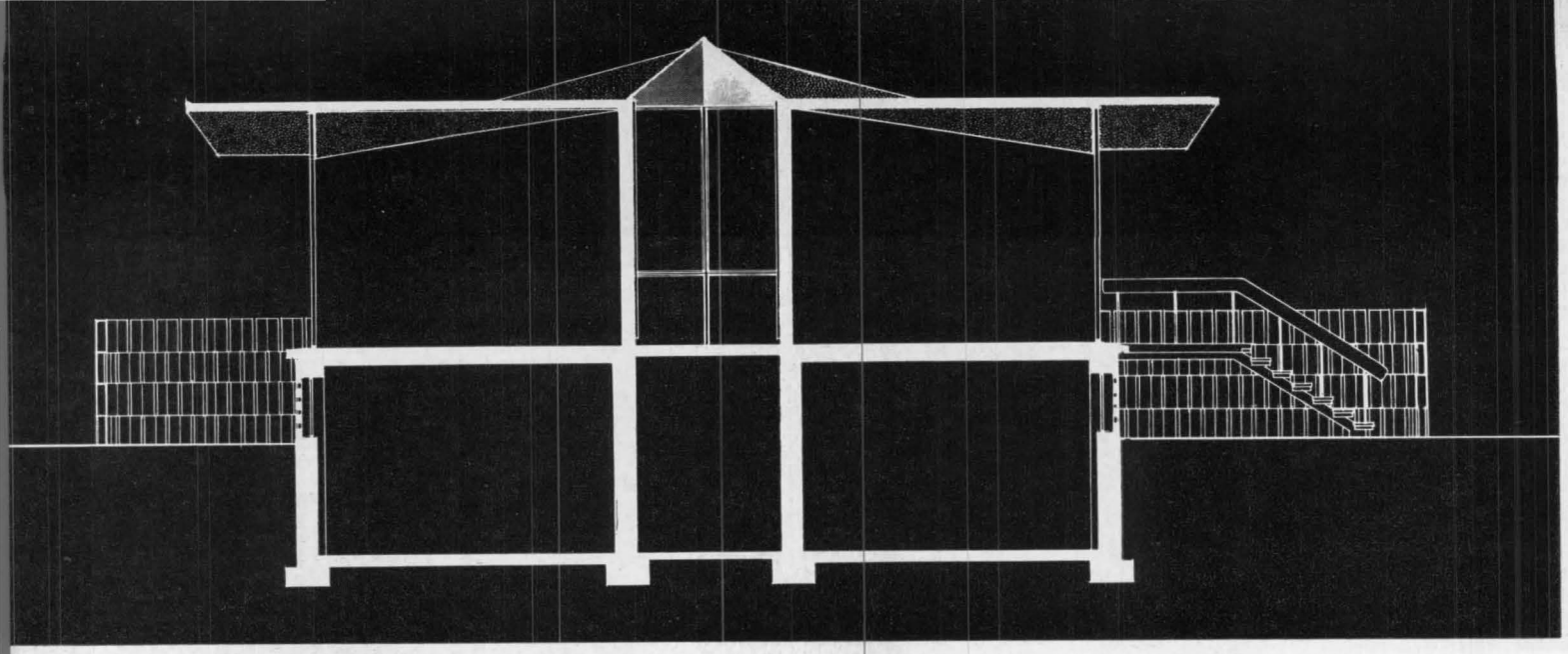


McGregor Memorial Conference Center, Wayne University

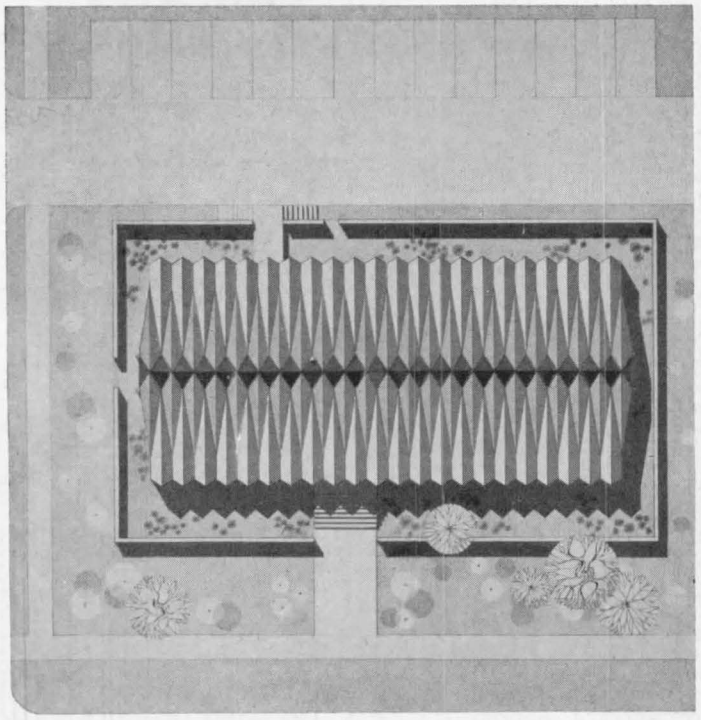


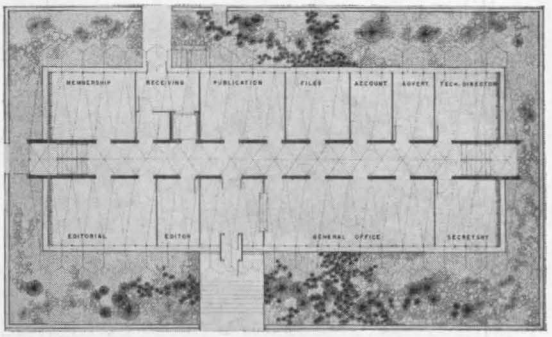


". . . the joyousness of Renaissance architecture . . . the color of stone, the play of water . . . all contrived to make a wonderful and happy place . . ."



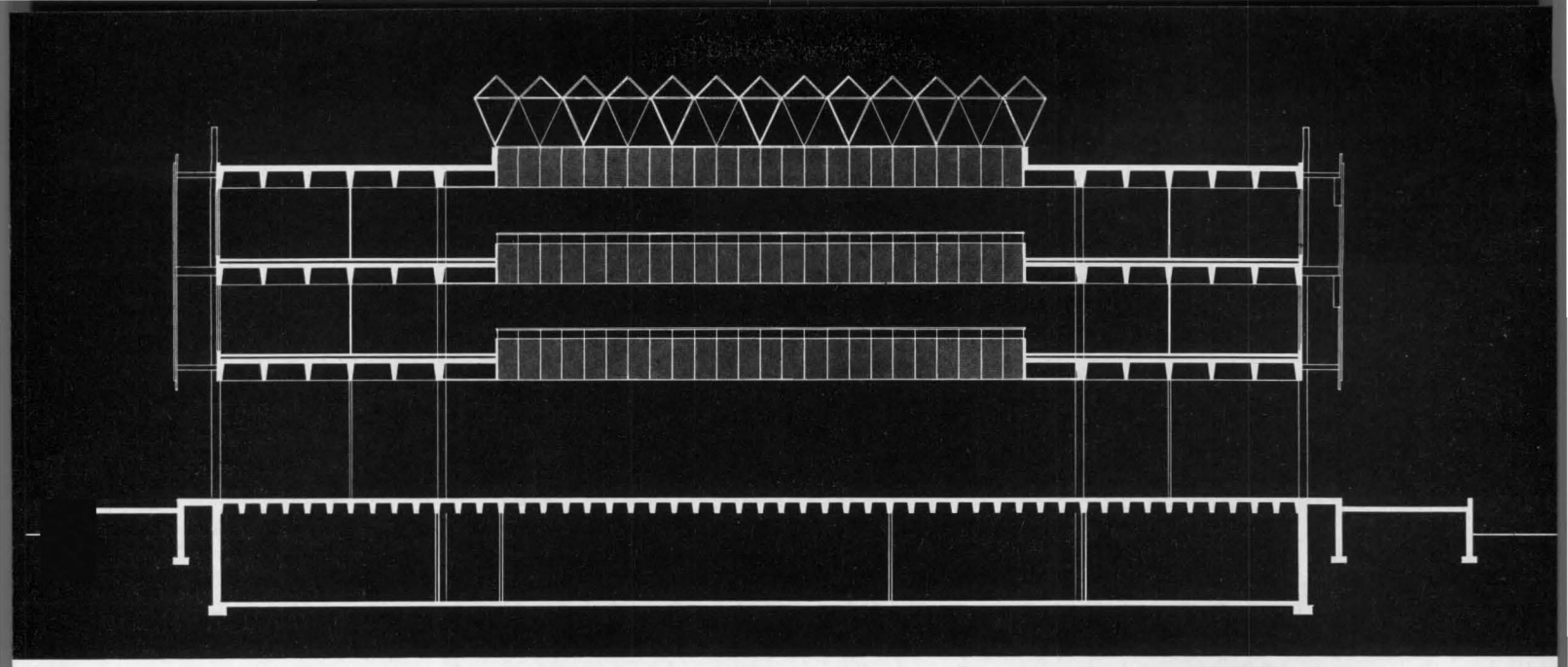
Office Building, American Concrete Institute. Detroit



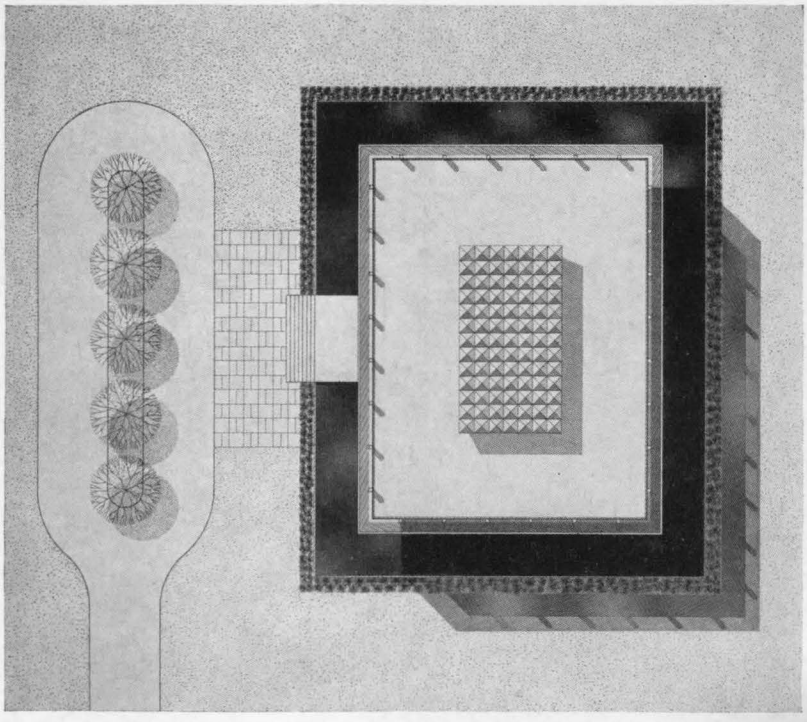


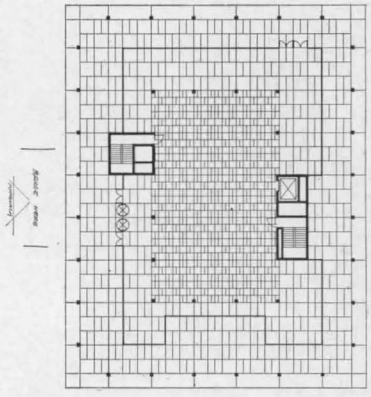
SYNTHESIS

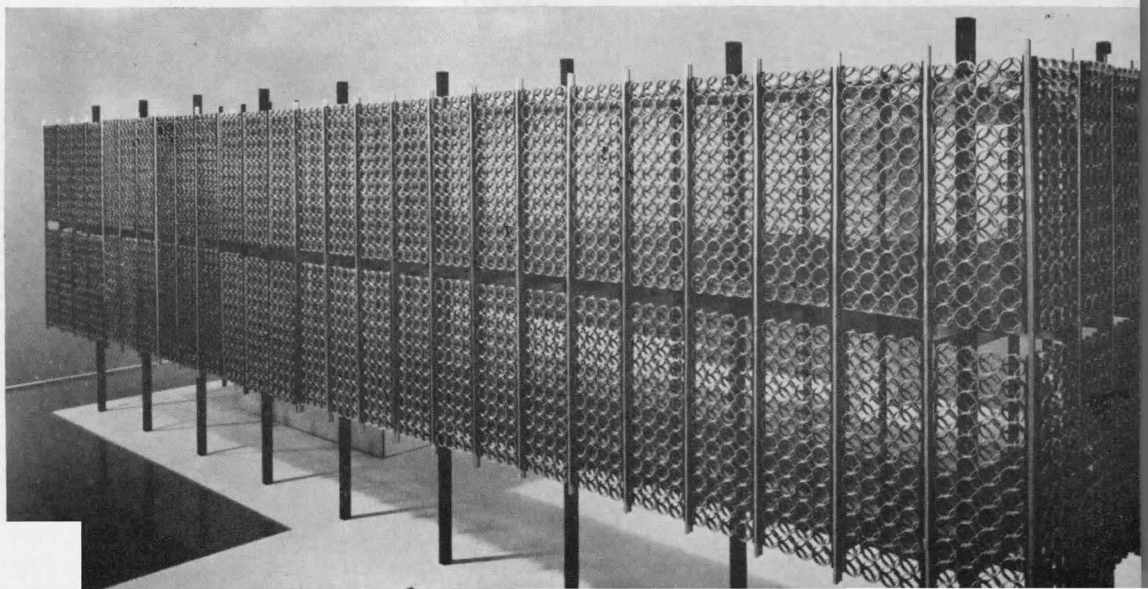
You've said you weren't completely happy with the expression of the mullions for the ACI building (above). "Well . . . they are liable to look as though they're holding up the roof — I wish I had been able to leave them out" . . . **Where you run the columns above the roof in the Reynolds building (right) and the Embassy, why don't you mark their termination . . . they're no longer structural *up there* . . . couldn't they be more interestingly shaped?** "I'm glad you asked that because you're right . . . actually, the concrete columns back of that screen will taper (through three decreasing sections) and become thin at the top — like needles" . . . **Where the screen projects above the roofline, how will it look against the sky?** "You won't see the sky in that perspective — you'll see the inside of the tubing" . . . **Where do you go from here?** "I've got a lot farther to go . . . in what direction . . . and how . . . I don't know . . . certainly since Lionel Pries first got me started on the right track at the University of Washington, these five buildings mark the most important phase in my own development" . . .



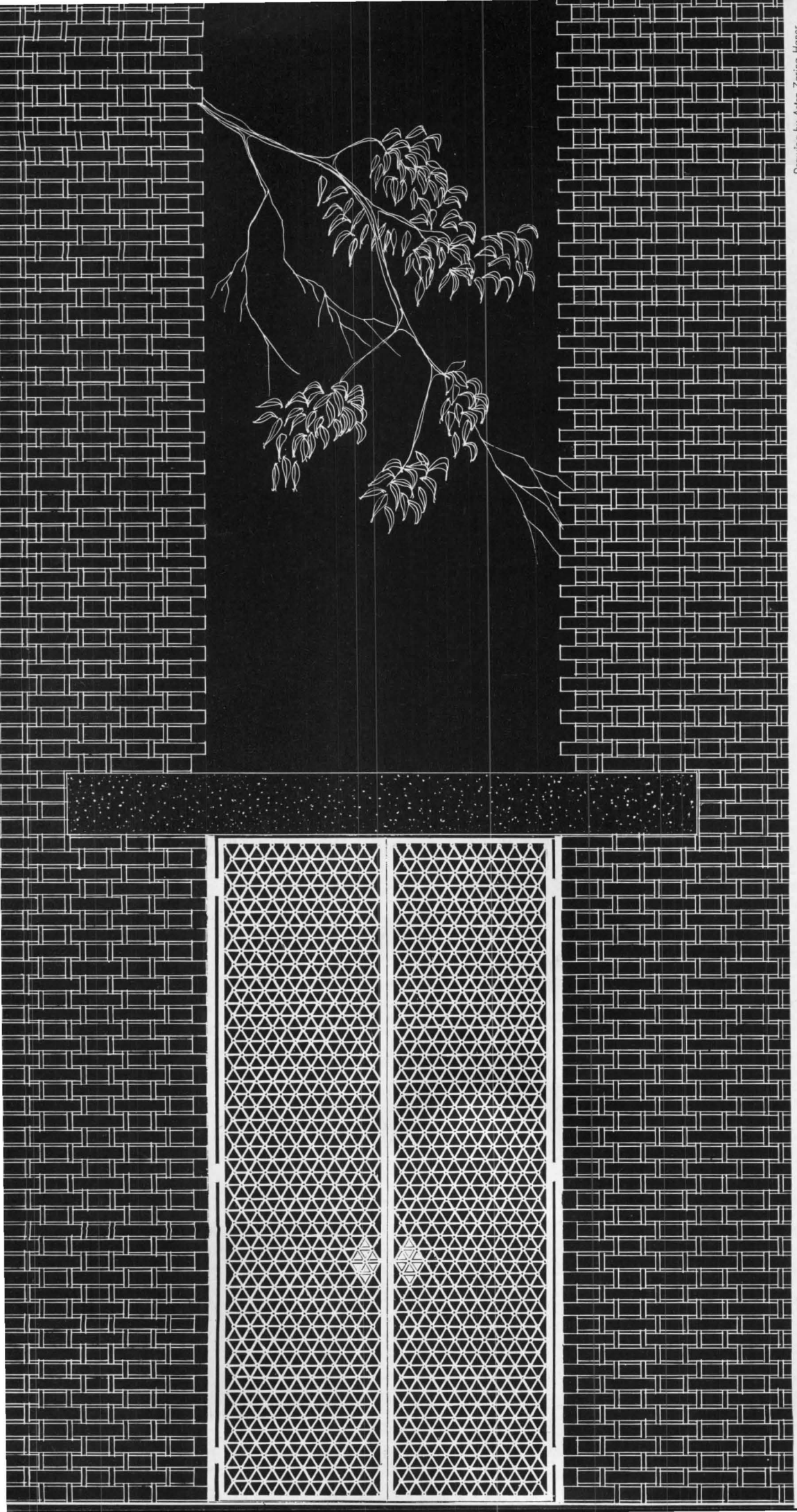
Regional Office, Reynolds Metals Co., Detroit







"The buildings of the future will bring more variety to our surroundings through diversity of forms against the sky, through the excitement of surprise . . . and the richness of ornament"



Drawing by Astra Zarina Haner

Designers in the office of Yamasaki, Leinweber & Associates who should receive credit for their contribution to these buildings: Gunnar Birkerts, Astra Zarina Haner, Hans Busso von Busse, Manfredi Nicholetti, Harold Tsuchiya. Engineers for the buildings: Structural, Amman & Whitney; Mechanical, Cass Wadowski; Electrical, Henry Guthard. Associates in the Y & L firm; Don Hisaka, William Jarrat, Frank Straub, and Wallace Kagawa

"I wondered if the signature of the architect, written boldly on buildings which are the effort of many, is not a kind of arrogance"

THE SHAPE OF AN ARCHITECTURE

by JOHN ELY BURCHARD

John Burchard, Dean of the School of Humanities and Social Studies, and Albert Bush-Brown, Assistant Professor of Architectural History, both at Massachusetts Institute of Technology, have been working more than a year on a social history of American Architecture commissioned by the A.I.A. The following, based on much of the content of the still incomplete manuscript, was delivered as a talk before the recent Centennial Meeting of the Minnesota Society of Architects. Now we are happy to publish it in the month of the Centennial Convention of the A.I.A. — The Editors

WHAT IS ARCHITECTURE? Certainly it does not include every building ever built. It can never really be far away from meeting the three famous old canons of Vitruvius. At least it must try to achieve firmness, commodity and delight. A failure to measure to the canons may mean bad architecture. But a building which ignores one or more of them or has no aspiration to be measured by them falls outside the scope of architectural history and criticism.

The covered wagon was never architecture, nor the sod house, nor the Chinese laundry in a Gold Rush town. The Corn Palace in Mitchell, South Dakota, is not architecture. Not very many log cabins were architecture, perhaps none, though as reconstructed some may seem to have been. We must not mix up nostalgic romance with architecture. It is one thing to play at reliving a past that never was, to trip on dainty high heels over the streets of a Williamsburg which in real life would have trapped the slippers in gluey mud; it is permissible to attend an opera at Central City and sit through a performance sans drunks, sans painted women, sans a conflagration in the opera house or a shooting in the bar or a lynching outside. But these experiences have no relation to any historical reality. If we examine the buildings of ghost towns for example we are not likely to find much architecture among them.

Many barns of Lancaster County, Pennsylvania, some in Minnesota, some in Oregon or Washington, may be architecture. But not all are well built or well planned or well formed or well situated. Not all even try to be. Not all are architecture.

Delight *does* have a part in any acceptable definition. Nor can we be frivolous about what is meant by delight. We must not have it stand for something else. We must not rely on the fading ideology so categorically expressed by Bruno Taut in 1938, "Everything that functions well, looks well," even if we add at once, as he did, "Nothing can look unsightly and function well."

HOW MUCH MORE DIFFICULTY is involved in defining *American* architecture! We can without too much hesitation say that we do not mean pre-Columbian building, or indeed even the architecture of the Indians of the Southwest; we can exclude, too, the architecture of Canada and of Mexico.

We will raise a few hackles if we suggest that the main stream of development was clearly an evolution from the architecture of the English settlers. Yet this is true. The French settlements left few durable remnants and little inspiration or tradition. The Spaniards did somewhat more but not enough to matter. The few baroque cathedrals of the Southwest, such as San Xavier del Bac near Tucson were not in the long run influential even in the Southwest. The late mission building of Father Junipero Serra left some modest buildings in California from San Diego to Sonoma. These offer a pleasant nosegay for the Californian or his visitor. But they have had little effect on the course of American architecture, even in California. The famous adobes owe more to Larkin of Monterey than to any Californio and they stem from Charleston, S. C., not from Mexico. Of course in 1925 and around Santa Barbara there was a romantic and intense but brief moment of trying to create a separate and regional style out of this Spanish-Mexican-Catholic architecture in a society which was neither Spanish nor Mexican nor Catholic. The railroad roundhouse became a bull-ring. But fortunately such extravaganzas peter out.

California, too, was American. Its history after Frémont was the more important part of its history. But even if the effect of Spain had been more durable in California it would still have been but a local effect. The course of empire was from east to west and so was the course of cultural development. Californian culture and architecture, like all the other cultures and architectures of the Far West, owed most to what came over the Rockies from St. Joseph, Missouri, or around the Horn from New England ports.

Each American territory modified and diluted the memories which advanced behind the advancing frontier. Regional variants are therefore interesting, however transient. But if you are to steer a reasonably short and reasonably clear course through history, you have to stay in the channel and keep out of the bayous, enchanting as they may be. If the efforts to maintain regionalism, or to create it, throw dust in your face you will never see the main features of American architec-

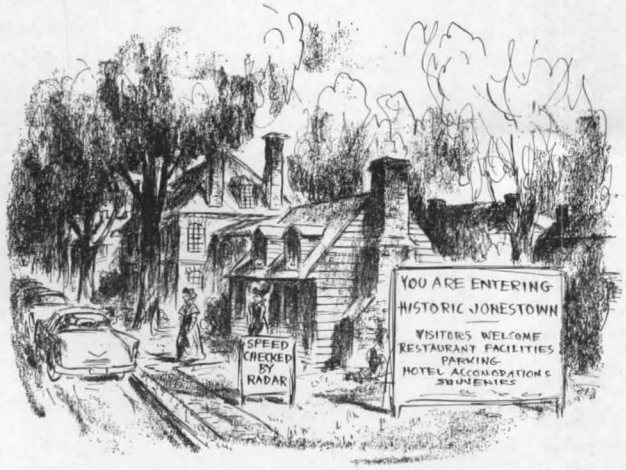
tural development. The efforts have often been charming and there is nothing wrong about nostalgia and sentiment, but they are doomed by the course of American life and can be maintained only by artificial measures. To a sophisticated visitor from abroad, New York is more interesting than Boston, Los Angeles than San Francisco, and of course Chicago more interesting than all four of these ancient and delightful cities put together.

Even After We Have Passed the road-block of a vanishing regionalism we have to decide what we shall call American. We shall not be so foolish as to insist that the architect shall have been American-born. Shall we insist that architecture to be American must by some definition be indigenous? Are we for example to seek out for major attention only those building types which have seemed especially American in that they served needs which in America were premiated and in other countries perhaps given less attention — must we be restricted to American types like public schoolhouses, county courthouses, commercial skyscrapers, even detached dwelling houses reaching far down into the income groups? Are we going to insist that American architecture shall have been invented here, like the balloon frame; or brought to the peak here, like the skyscraper? All of these special restrictions seem to lead to an incomplete idea. The only ultimately satisfactory restriction seems to be that the buildings were built here.

In this sense the American Georgian of the time of Peter Harrison, though less polished than the corresponding Georgian of England, is quite as American as the Greek Revival mansion which had a finer development here than in Europe; and both are as American as the Prairie Style of Frank Lloyd Wright or the Chicago Style which may or may not have been invented in Chicago and revealed there in the second Leiter Building of Major Jenney. Jenney, Sullivan, Wright, are more *native* in their work than Latrobe, Harrison or Bulfinch, but we cannot say more American.

This kind of decision is bound to be repugnant to many people. Ever since Edward Johnson wrote his "Wonder Working Providence," there has been a stirring in the air of America that America was going to be different. This spirit still exists. It is complicated. It has something of the early Puritan view expressed by a New Englander a hundred years after the landing of the Pilgrims: "It's more noble to be employed in serving and supplying the necessities of others, than merely in pleasing the fancy of any. The Plow-Man that raiseth Grain, is more serviceable to Mankind, than the Painter who draws only to please the Eye. The Carpenter who builds a good house to defend us from Wind and Weather, is more serviceable than the curious Carver, who employs his Art to please the Fancy."* It has much of the view that the past is too much with other peoples. The voices of nationalism became more strident after the separation from England. There were cries that we *must* develop a national novel, a national poetry, a national dance, a national music, a national painting, a national architecture. This exhortation was more than mere chauvinism. It rested on the conviction that this boundless land, this country in which the door of opportunity was never closed, this place in which the future was always to be better than the present, this terrain with its great scale, its violent and majestic scenery and weather, must, if expression for it could but be found, produce arts which would be as different from the arts of Europe as the geography and the politics and the economic, social and technological attitudes seemed to be; that this would indeed come if only Americans would stop looking over their shoulders at Europe. However much it might be denied by the facts, the notion that the American was more inventive than the European has never died out. However often the ideas of our architecture have come from elsewhere, the desire that we shall make our own persists. It was one of the tenets of the transcendentalists from Emerson and Thoreau to Whitman and Sullivan and Wright. It was opposed by those who respected rather the genteel tradition, who argued that a frontier could not remain a frontier forever and who thought that for a start anyway America would achieve its civilization faster by noting what Europe had to offer, transferring what was appropriate to our own shores, modifying it as little as possible. Architects in the genteel tradition could be such different men as Hunt and McKim and Richardson. They could be prompted by such different aesthetic, moral and philosophical principles as those of Stanford White and Ralph Adams Cram. All of them in this definition made American architecture. Yet some seem more American than others. Richardson somehow we call more American than Hunt, McKim or Cram. Wright is more American than Pope. Why?

It is not for the simple reason that they were greater geniuses or because their forms were not repeated explicitly in Europe. If we could answer why, we would have some clue to what American architecture is. But



It is one thing to play at reliving a past that never was

* From an anonymous pamphlet of 1719 entitled *An Addition to the Melancholy Circumstances of the Province Considered*, cited by Oliver Larkin, *Life and Art in America*, Rinehart, N. Y. 1949.

we would not want the answer to force us to exclude the work of Cram, Hunt, Walter, Upjohn, Costigan, Shryock, Thornton or Latrobe.

One does not usually speak of "French Architecture." There is, of course, a French spirit in architecture. One can clearly speak of French Gothic or French Renaissance or French Baroque. What this says is that the Gallic spirit took each of the forms and building types as they became important in Europe and on Gallic ground erected them in harmony with generally accepted principles and needs but with a peculiarly Gallic flavor. Sometimes the forms or the needs were found earliest in France, sometimes latest. Sometimes they were original there, as in the Norman or Burgundian Romanesque; sometimes they originated far away, as in the Renaissance forms. Some of them were doubtless more sympathetic to the French character and taste than others. Sometimes the style was carried to its apogee as in the great thirteenth century cathedrals of the Île de France; sometimes, though not often, the French version was the poorest. But no Frenchman would be silly enough to insist that French architecture should include only the Cathedral of Chartres and its nearby contemporaries. In the pantheon of French architecture you can find many deities. There have been several, if not so many, in the pantheon of American architecture.

American architecture had to begin with its own version of an evolving and vestigial though graceful style, the Georgian; had to try to accommodate, and on a frontier, to the intellectually sharp but aesthetically dull notions of the Enlightenment; had to indulge in its own variations of recall of work from Egypt, Greece, Rome, the Île de France, the universities of England and the Victorian experiments. Not much before 1890 could America begin to stretch its muscles to the tune of a new architectural ballet, a ballet with technological instruments, which might offer new opportunities and new problems for architecture; which if grappled with courageously might lead to the first great style since the sixteenth century. Here was perhaps the first chance for America or indeed the Western World to produce another architecture that by the test of time might expect to rank with the Greek or the Gothic in future history books.

But this opportunity was only beginning to be clear at the turn of the twentieth century. To study it is to study a style in development, to try to interpret something contemporary. To complicate the matter, the rest of the Western World was industrial, too; it had technology though it might approach it in a different way; all the inventions and all the power were not yet in America nor likely ever to be. So although America might be a greater force in the architecture that was to come than it had been in the architecture that was past, it would be unrealistic to think of this architecture as uniquely American; foolish to expect that all the best exemplars were certain to be produced in America; insane to protest against an "International Style." In all this it would be appropriate only to ask that the

The difficulty involved in defining American *architecture*

American version of the architecture of the technological century should be a first-class version.

Sometimes the American version would be better than that of other nations, sometimes worse; sometimes it would owe much of its basic philosophy to American invention. Such a version might have an American flavor but this would have to come naturally and not by self-conscious effort.

In shaping the building needs of the twentieth century and in providing the tools to meet those needs many forces were at work. Some were international and could be expected to affect building everywhere even if their development were more aggressive in one country than in another. Some were national and therefore likely to have mostly a local effect. The technological forces were likely to be international; some had obvious impact — the Bessemer process, the elevator, the internal combustion engine, the super highway. Some were less obvious and accepted in some places more than in others — the electric light bulb, the telephone, the typewriter, the loud speaker, the television tube. The political forces often showed up in many places, as the revolutions of 1848 did, but they were more likely to have a clearly national slant. Again, some were easy to relate to architectural developments — for example, the changing concept of America's political relations in foreign lands. Others were not at all easy to connect with palpable effects. If American relations with Japan

became more intense, for example, if young architects visited Japan, there would soon be visible evidence of the changing relation in the new buildings. But where for example was there a Populist Architecture or a Bull Moose architecture or even a radical architecture in the same sense that there was a radical novel, a radical novel which sought less to change the form of the novel than it did the form of society?

America Passed Rapidly From The Status of a colony on the Atlantic Coast to that of a continental nation. The main process took only about 75 years. The colony coincided with the architecture of Peter Harrison and the bland Georgian passed almost imperceptibly into the Classic Revivals of Latrobe, Strickland and Shryock. These civilized buildings got somehow over the Alleghenies and then followed the rivers towards the west, and it is amazing to see how many elegant and reposed exemplars of the Greek Revival are for example to be found in Ohio and Kentucky.

West of the Western Reserve the examples thinned out. The drive to the Pacific had a different kind of momentum, fewer people planned to stop on the way, the terrain became less and less inviting to permanent settlement. Even an important depot such as St. Joseph, the jumping-off place for the Far West, remained a frontier town and did not seek architectural stability until much later, perhaps much too much later. Even a permanent settlement like Salt Lake City was too busy expanding to do much consolidating; and here, where some efforts towards a refined architecture might have begun earlier, the Mormon temperament seemed to prefer beehives to the work of the "curious Carver." Thus when the Civil War finally broke upon the nation almost everything that could seriously be called American architecture could be found east of the Mississippi, most of it east of the Appalachians.

The Great Acceleration of Technological change coincident with and no doubt promoted by the Civil War itself brought us new building materials, notably steel, which called for and received new architectural treatments. The vast transportation networks that were opening up began to prepare the way for the elimination of indigenous necessities which had forced a reliance on local materials, though the final blows to regionalism were to be struck later, after electricity had made climatic control possible. The expansions made great fortunes and the men of these fortunes sought to demonstrate their success through building. The building was personal, not institutional. If the soap-maker of 1957 lived in an unidentified dwelling and praised his soap through the excitement of his urban office building, the railroad entrepreneur of the 80's made his personal palace his corporate advertisement. These personal palaces and the architects who made them would inevitably have to come into conflict with Chicago and its buildings of trade and the architects who made them. The story of this conflict has been told too many times already.

Regional variants are interesting, however transient

Through All This Time the Population was increasing enormously, becoming more homogeneous, its center of gravity moving steadily from Baltimore westward to Central Illinois. Economic circumstances were always leveling off as America moved in the direction of becoming one vast middle class. But long before all these effects had worked their full way, another set of technological stimuli appeared, more subtle, more far-reaching, harder to control. The internal combustion engine, the motor car, the concrete highway made it easier to escape the city and thus made civic design for a time seem less important. They also opened up America to every traveler as the railroads had never done, and this struck another blow at regionalism. The sunset strips that are the American versions of the Appian Way are but one of the most disagreeable byproducts of these potentially benign innovations. The automobile accelerated urban obsolescence and blight as the streetcar and subway could never have done. While the latter remained pinned to their tunnels, wires and elevated rails, the enterprises and residences which clustered near them could entertain some hopes of durability. But the bus line or the private motor vehicle could make a new route tomorrow, and each new highway not only made the old one obsolete but produced new backwaters and new main streams which in turn were doomed from the beginning to become backwaters in their turn. New cities which lacked the stabilizing force of well-developed public transportation were quite unprepared; like Los Angeles they were atomized. However charming, however exciting they might appear to a foreigner as a confirmation of what he believed America to be, they carried less of this conviction to an American. But even the old cities were eroded at their peripheries by the tide of motor cars and strangled at their centers by uncontrolled street parking, while the economics of public transport became shaky. Now great gullies were cut through the metropolis by men like Robert Moses that people might move rapidly through the city if not in it. The speed of movement found architectural design based firmly on the vision of the pedestrian, ill prepared to cope with eyes which passed at 50 or 60 miles an hour, still less well prepared for eyes that viewed it from an airplane even if such

To steer a course through history . . . stay in the channel and keep out of the bayous, enchanting as they may be

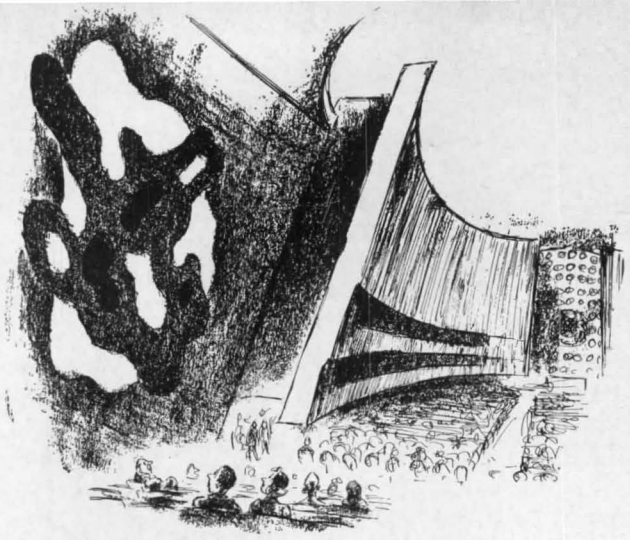
a view was fleeting. No outstanding circulatory or aesthetic solution had by 1957 been achieved, despite the occasional and accidental beauty noted in an approach to an American city by air, especially at night. What a foresighted architect or client might have foreseen would be that the isolated building could have no meaning in the great city of tomorrow, that competition between isolated buildings could produce only self-cancellation or chaos. Even by 1957 there were few examples in America of successful larger groupings. The Detroit waterfront, the Golden Triangle of Pittsburgh, the South Side Housing of Chicago had somehow all seemed to miss the architectural boat while combinations like that of Rockefeller Center in New York were still few and far between. Of the incipient projects like that of the Boston and Albany yards in Boston or the Near North Side in Chicago, many seemed to have lost their stature between the first exciting proposals and what emerged from other and usually different architects' boards. If there were to be success with the city-scape it would have to be tomorrow — and if the tomorrow were to be too far away, there might be no tomorrow for the American city at all.

Elevators, steel, automobiles, electricity were all needed to make the skyscraper possible. But they did not make it inevitable or desirable. That required the vaulting and competitive ambitions of men. Here let us speak, though, of a more subtle technological influence implicit in the invention of the electric light bulb. The bulb ultimately made the city a 24-hour proposition. It changed the time sense of Americans and removed the limitations of a life lived from sunrise to sunset. It also stole away some of the compensations of such a life. It changed the time sense of Americans and the space sense and the color sense. It enlarged their fear of the dark. One way to destroy this fear was to destroy the night. When this happened the visual city became two cities, a city of day and a city of night. The architectural problem was of course not the same but it was seldom even recognized. Buildings continued to be designed for day. Most often the illumination tried to reproduce the sun, missing the shifting shadows implicit in the solar progress across the heavens, and this gave us the artificially floodlighted building, more like the ornament of a wedding cake than like architecture. At odds with this stood internal illumination which when allowed to show through in an otherwise dark street transferred the voids of a building to solids, and vice versa. Here a stairwell might become the main accent of a building at night while absent at day; here internal wall colors might lend accents to the building in the dark which were entirely missed in the light, an interior sculpture assert dominance. Yet it appeared that most such effects were accidental. Again there were the colored signs which provided the blazing and beautifully vulgar stridency of Broadway and 45th Street or the serene and equally accidental repose of a frugally lighted Charles River in Boston.

But the potentials of all this light in dark, of color, even of the possibilities of moving light and moving color had not been exploited with any conscious vigor and had also not met many happy accidents. One could not say of many American buildings of 1957 as one might of the Manufacturers' Trust in New York that their architecture was even well aware of the electric light bulb, much less the neon tube.

With These Technological Pressures at work there was also the move away from isolationism and towards an understanding that, for good or ill, America had to be part of a larger scene. This move was by no means steadily forward, but the trend was clear. This development was almost certainly one of the most significant in American architectural history. She had become an exporter more than an importer of architecture. French students studied architecture in America, not the other way around as had so long been the case.

But One Other Trend Could Not Be Ignored, either, much as it was intuitively rejected. America was becoming more and more collective. Collectivism was not in America a matter merely of a socialistic distribution of economic goods, which was not approved in public by very many people. It meant rather the extent to which a group effort or decision was needed for any accomplishment. Every sign of America for the last 25 years had been that the group effort was steadily becoming more dominant. You might love it or you might hate it, but you could not deny it. You could speak against it and run campaigns against it and be elected on a platform which preached against it, but it went on just the same. The President of the United States was the chairman of a committee, in



Artists felt more secure if misunderstood

point of fact; and so was the president of a corporation.

And as the architectural projects grew larger and more complicated and demanded more and more kinds of knowledge and skill, they reached to the point where it was impossible for any man to know all that needed to be known, to do all that needed to be done. The question was whether the architect too was to become the chairman of a committee. Most architects and critics sensed in that the death knell of architecture. It was even more threatened by the emergence of the committee as client.

Against all this trend stood the most obdurate defenders of the individual, the painters and the sculptors and the poets. The more individualistic they persisted in trying to be, the less the society could understand what they were trying to say; the less importance it might feel that there was in anything they did say. Indeed, at some times it almost seemed that they paraded their individualism to the point where they felt more secure if they were not understood as though that were the only way they could be sure that individuality was secured in a collective and voracious society. The society was not always rejecting them, they were perhaps ejecting themselves. And this too raised some problems for American architecture which could not operate on so isolated a plane of personality or often ignore the fact that the user of the building might also have rights.

There had never been a time in America, really, when sculpture and painting had been fully integrated into architecture as it had been in Greece, Egypt, Persia, India, Romanesque or Gothic Europe. Critics like Herbert Read would have men believe that twentieth century methods of building and demands from buildings forbade such a rich collaboration, which he called "operatic." Some thought that the other arts had fled *from* architecture because the buildings had no symbolic ideas to express which might have been enforced by the allied arts. Others thought that the artists were given no chance because of the arrogance of the architects who made their own sculpture out of a building. It was perhaps true that in this alienation painting and sculpture had been made free and independent arts. Whether or not this had been a good thing was still being weighed in the balance. But there could also be an uneasy feeling that all this was nonsense, that great architecture must somehow effect this combination of all the visual arts, perhaps even mobile visual arts not yet considered appropriate for buildings or for architecture. Yet the road to such a collaboration seemed more tangled in 1957 than it might have when Latrobe substituted the tobacco leaf for the acanthus in the column capitals for the Hall of Representatives in the United States Capitol, or when McKim commissioned the murals for the Boston Public Library by Sargent, Abbey and the more durable Puvis de Chavannes, or when Magonigle and Goodhue worked so hard at the collaboration with Lee Lawrie on an architectonic sculpture such as was so evident on buildings like the Nebraska State Capitol at Lincoln. For as the sculptor or painter had advanced or retreated into personal idiosyncrasy so the architect had retreated or advanced into the state of being a cooperative social animal. You could make your own choice as to which was happier. As to what this might say of the future of American architecture, there could be no such choice. Breakers were ahead.

It is not impossible that what emerged from Chicago as the most important element of American architectural history was not the Transportation Building or the Meyer-Schlesenger store at all but the principle of coordination which began to be understood by Burnham then and more fully later as he moved on to be the planner of large cities, and was intuitively accepted anyway by such men as Adler when they conceived the Chicago Auditorium. These were the men who cast the shadow of things that had to come, Burnham and Adler, not Sullivan and Root, although Burnham and Adler too were incomplete men and their own designs were never gracious once their talented partnerships had been severed.

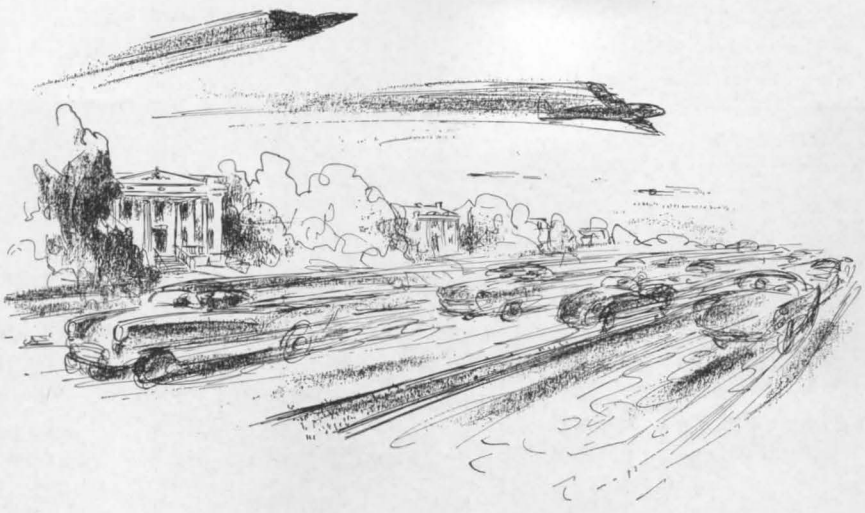
The taste-makers had been guilty too of a kind of indifference to matters of economy and even of use. It was common for librarians to say of architects like McKim that the architect was the librarian's enemy, while forgetting that others said of them that the librarian was the reader's enemy. Again it was the man like Adler who accepted a responsibility to the user of the building; and from his line came other and always larger coordinators, born in America usually, or like Adler and Kahn early comers, trained in America, unoffended by industrial America but not romantic about it either as some unindustrial Europeans of the twentieth century were to be, men in the American stream of Richard Shreve, Albert Kahn, Louis Skidmore.

The single building, the single site, the operation which could all be conceived by one man shrank away but not without pain, and not ever completely. But the momentum of the country was bound to demand more and larger projects and the alternative would be weak and diffused collaborations between many artist-architects controlled by well meaning but not very understanding clients, or the collection of more and more skills and some kind of effective combination, presumably in a mammoth firm whether of a transitory or a

permanent form. The decision would not be an easy one for it was no secret to America that the great coordinating firms had not often achieved great architecture. Kahn's factories which he did not regard as architecture had elegance; his libraries which he did regard as architecture were feeble or worse. Burnham made fine plans but few fine buildings after John Root died. Shreve's Empire State Building was a phenomenon of the steady and remarkably fast flow of materials from all points of the globe to the top of the highest edifice in the world, but though the edifice was the highest it was scarcely one of the finest. In this welter of big projects of the 30's and early 40's only the phantom figure of Raymond Hood seems to have shown a steady artistic progression from the tentative and backward-looking Gothic Chicago Tribune Tower through the ever simpler and more powerful massings of the McGraw-Hill and the Daily News buildings to the triumph of Rockefeller Center. Across this evolutionary road to coordinated architecture stood warning signs to say that more interesting, more imaginative, more varied, more beautiful and probably even more commodious suggestions were being made in some of the side alleys and that one should not wall off from the traveler the lanes where a Wright, a Mies or a Saarinen walked. Out of this was developing though a legend or a myth that the big coordinating office could never accomplish "great" architecture. But this had to be coupled with the warning to the architect who purposefully kept his office small and yet wanted to take on big work that he was kidding himself, that he could be spread too thin between the Gold Coast, Hong Kong, Fargo, North Dakota, and his home town of San Francisco or Boston or Chicago, and that when spread thin the advantages he might have held over the architect coordinator would have been dissipated.

Few if any of the brilliant and small offices were prepared in 1957 to accept minor roles and many of the talented were having perforce to become coordinators themselves. In entering these lists they often found themselves losing the gage not to the coordinators whom they had scolded but to big sales organizations with little aesthetic concern or conscience, the "Madison Avenue boys" of architecture. Meanwhile some of the large offices such as that of Skidmore were trying all the experiments they could to divide the tasks into parts of human scale, to let the individually talented man in their employ design a building that would have some of his character and not merely be the reflection of a Skidmore, Owings and Merrill style, wherever that style might have originated. Whether they were succeeding as well in this as they thought was a verdict that could not be rendered in 1957. It had to wait for more buildings. Whether the small office could survive while doing big building, whether the large office could encourage genius and innovation in its organization, whether both would lose the game to the advertising world with all that would signify, could not be foreseen in 1957. But it too would have a great deal to say about the future of American architecture in the second half of the twentieth century.

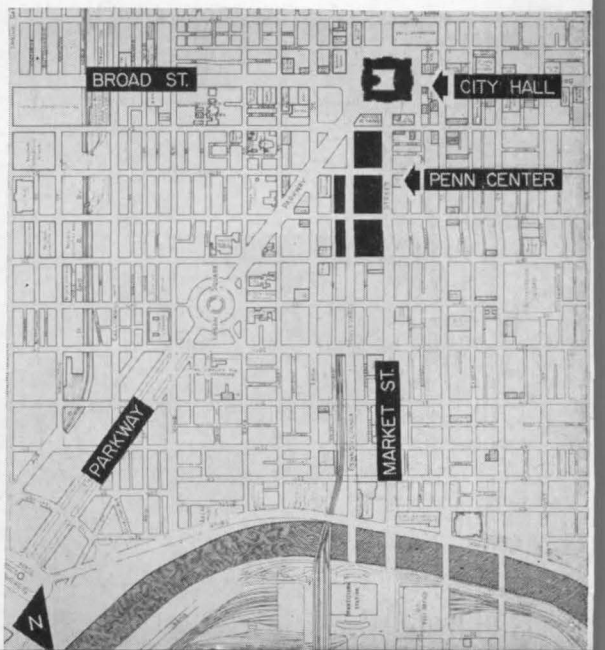
Whether Americans could forego the self-conscious seeking for a national architecture and achieve it by the simple process of making good architecture in their own place and for their own time; whether they could accommodate their cities and their architecture to the automobile and the airplane; whether they could learn to exploit the aesthetic potentials of the electric light; whether they could accomplish an "operatic" architecture which would at once and in a unified way use the talents of architect, painter, sculptor and even some newer kinds of artists and craftsmen; whether they could solve the problem of collectivism as it bore on the organization and the practice of architecture — these were questions which architects might think about as they went their way in the spring to the celebration of the hundredth anniversary of the founding of their professional organization. If they were resolved in the right way there might yet be an American architecture, or an American version of a world architecture, which could stand in the great halls of architectural history as a peer with the architecture of Athens or Byzantium or the heart of Europe; if they were not, the palm that seemed inevitably to be awaiting the architecture of the automatic age would be awarded elsewhere. To the question of which, an American watching the contemporary scene might express a tentative but hopeful, "Yes, it will be made in America."

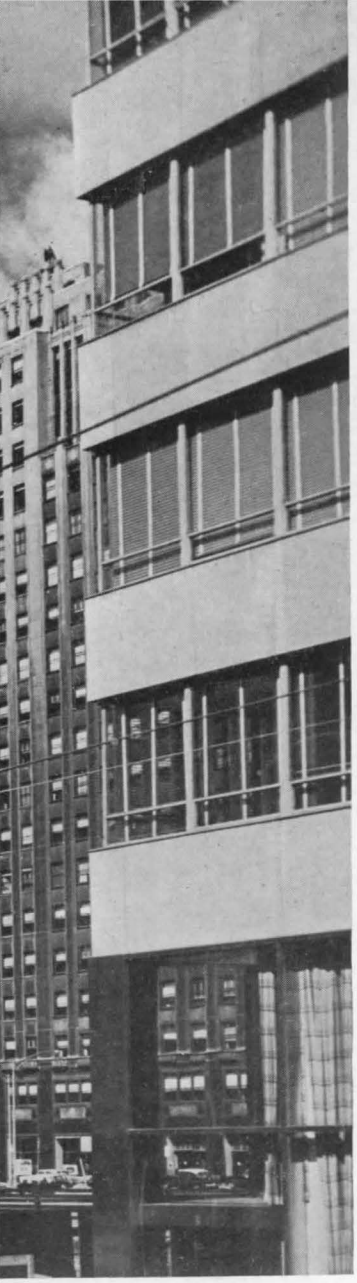


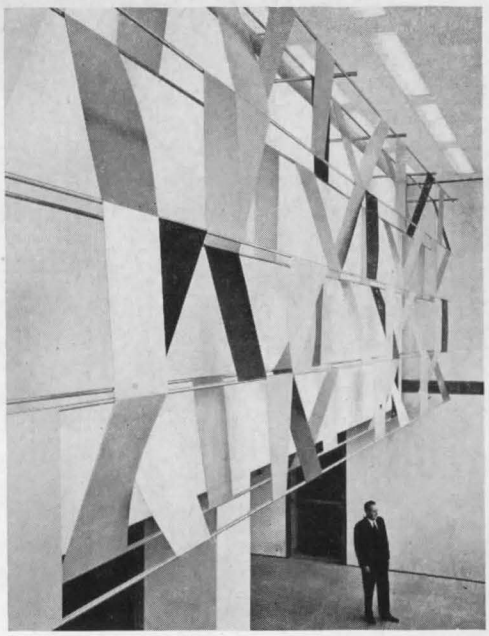
Architecture was ill-prepared to cope with eyes that passed at 50–60 miles per hour

Above, left to right: Transportation Building; Sheraton Hotel; Suburban Station, P.R.R.; No. 2 Penn Center. Below, Penn Center area in relation to established Philadelphia landmarks

PENN CENTER



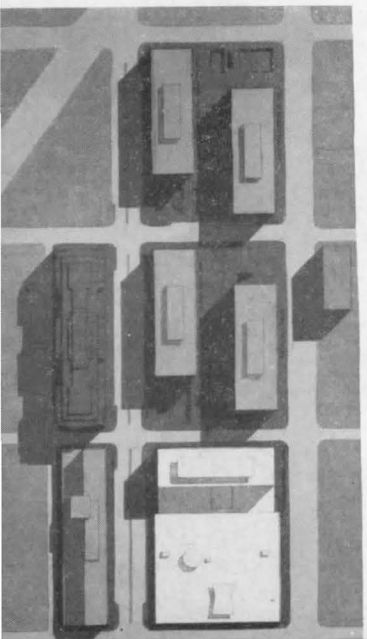




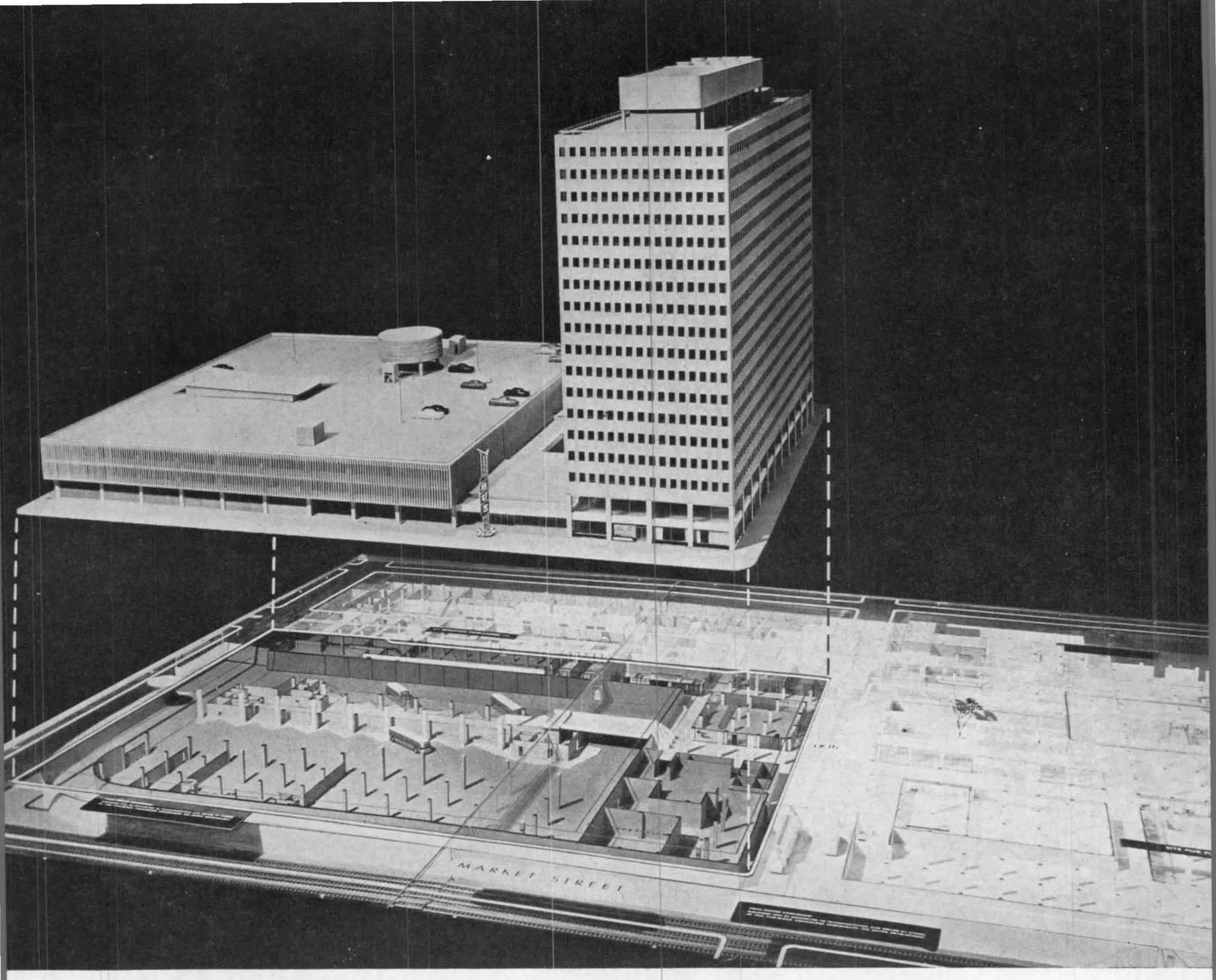
All photos by Lawrence Williams

Penn Center, Philadelphia, Pa. Consulting Architect, City Planning Commission and Architect, Transportation Center and Concourse, Vincent G. Kling. Consulting Architect, Pennsylvania Railroad, Vincent G. Kling. Consulting Architects, Greyhound Corporation, Arrasmith & Tyler. Architects, No. 2 Penn Center, Emery Roth & Sons. Architects, Sheraton Hotel, Perry, Shaw, Hepburn, Kehoe & Deane. Structural Engineers, Transportation Center, McCormick & Taylor Associates; Mechanical & Electrical Engineer, Robert J. Sigel, Inc.

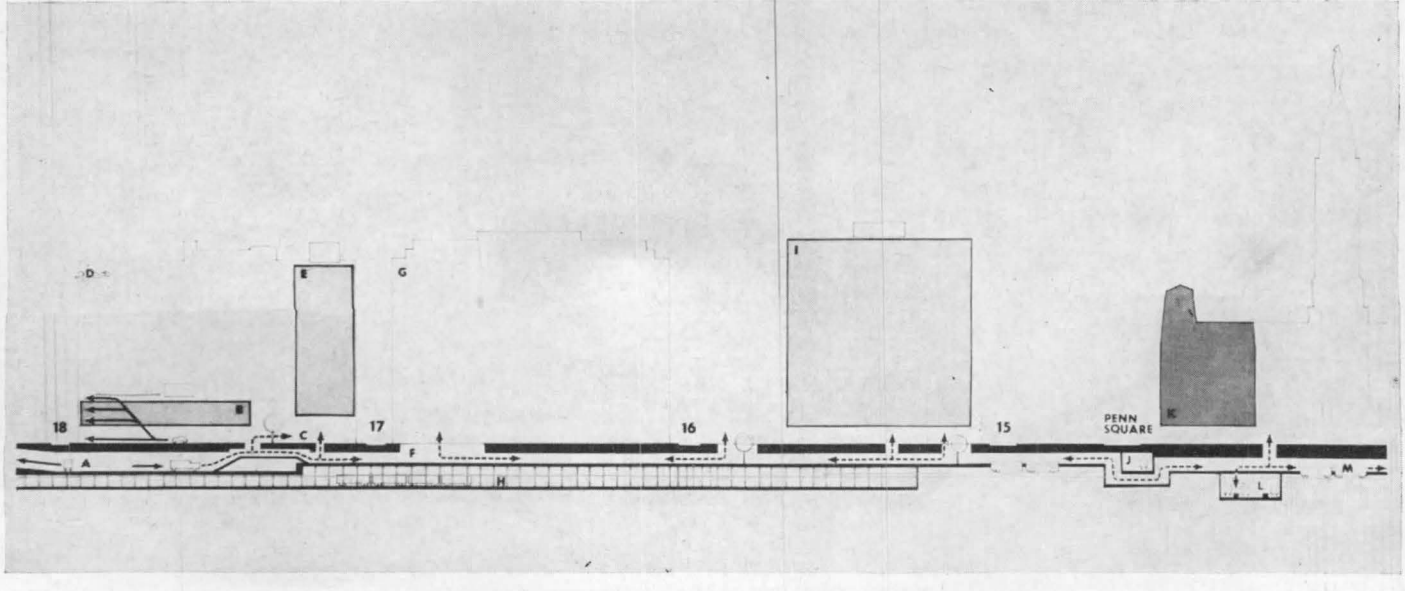
TRANSPORTATION BUILDING AND CONCOURSE

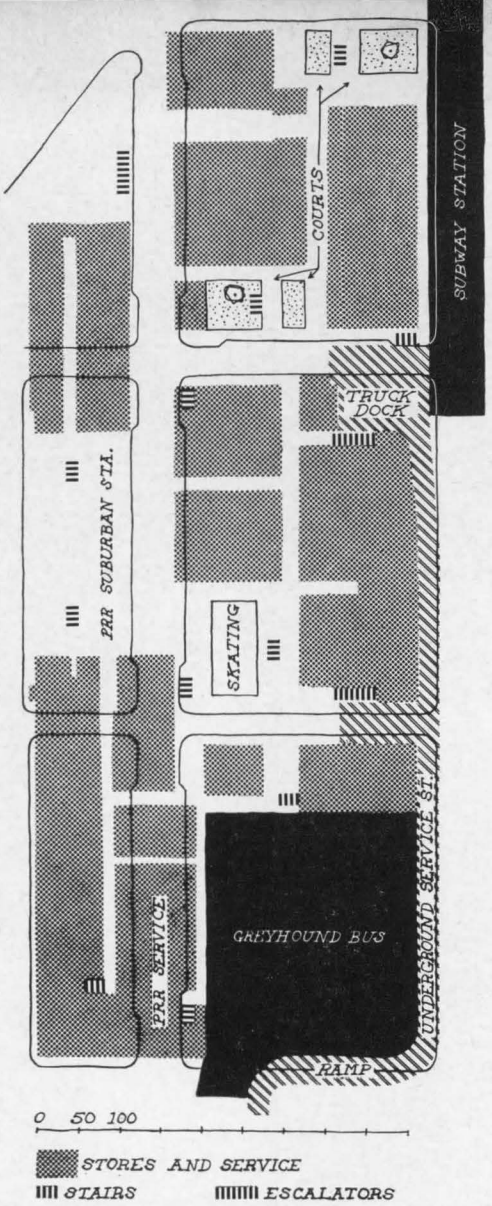


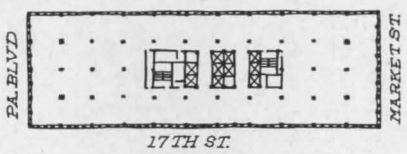
Penn Center has been in truth a joint undertaking requiring many talents: the businessman's, the politician's; the realtor's, the building operator's; the bureaucrat's and the technician's; the financier's, the builder's, the owner's; the man-of-vision's, the specialist's and, key to all, the architect's. To the Pennsylvania Railroad acting through its president, James M. Symes and other officers, goes credit for making the huge undertaking possible. The City Planning Commission has been involved, and so has the Advisory Board consisting of Architect George Howe (succeeded upon his death by Vincent Kling), Robert Dowling and Edmund Bacon (executive director, Philadelphia City Planning Commission). Eight Philadelphia banks, the Penn Mutual Life Insurance Co. and 25 lawyers participated in the 45 separate transactions required before McCloskey & Co., owner-builder, could erect the Transportation Building. One architect's vision, design enthusiasm and continued devotion are evident at every stage of the Center's history, though many architects contributed.

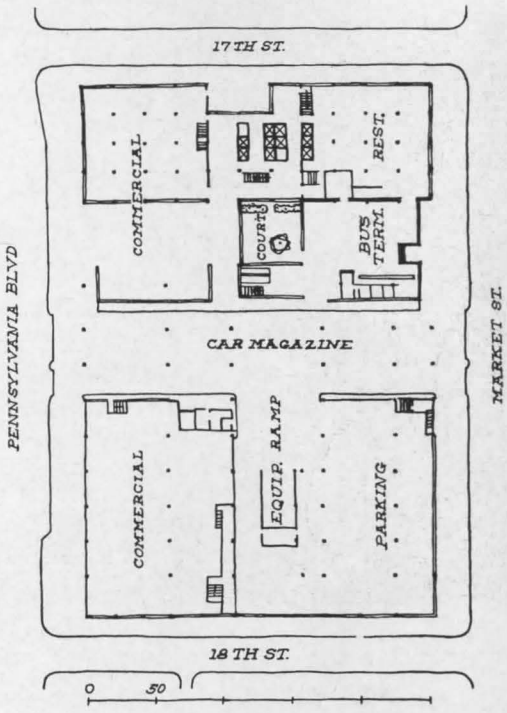


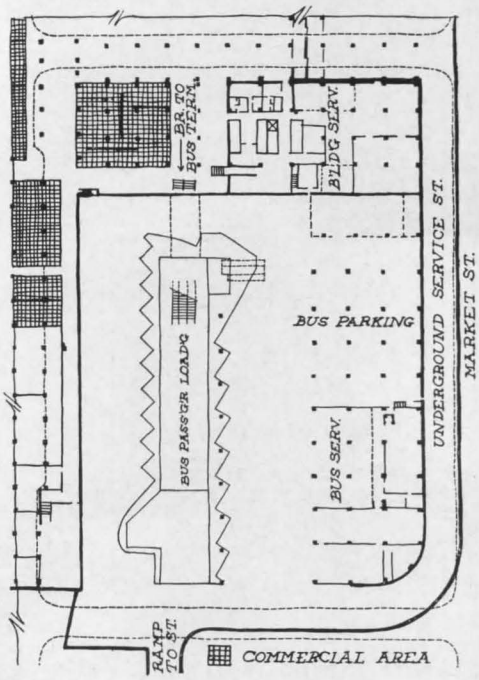
TRANSPORTATION BUILDING AND CONCOURSE, PENN CENTER











PENN CENTER IS AN IDEA, born in the decision of the Pennsylvania Railroad to remove its "Chinese Wall," which had for so long hindered mid-Philadelphia development, and the Broad St. Station. The underlying motive was economic. The decision offered many possibilities. There was at one time fear that the land thus freed might become a patchwork of small, speculatively developed parcels. This might have been a means to great immediate profit, but the railroad — quite frankly after prodding by many of those named on the preceding page; yet this second momentous decision was in truth the railroad's and so the credit is theirs — decided to make it an open, unified commercial development, to limit ground coverage to 50 per cent, and to construct the underground concourse as a shopping esplanade, open to the sky at frequent intervals, and connecting the above-ground buildings, Pennsylvania Suburban Station, two subways and eventually the Greyhound Bus Terminal and a parking garage. The first building, 2 Penn Center, was built for Uris Brothers who hardly believed the Concourse dream would come true and so declined at first to consider worthwhile the extra cost of full connection to it. The most recent, the Transportation Building (plans at right), ties Penn Center together and gives it reality.

TRANSPORTATION BUILDING, PENN CENTER

Early in 1950 the architect who was later to design the Transportation Building was invited to serve as consulting architect for Penn Center development by the Philadelphia City Planning Commission; his association with the entire Center since has been continuous. Although the buildings now rising in the Center do not conform exactly to concepts then initiated, the main theses (minimum ground coverage, pleasant pedestrian circulation, separate underground vehicular access, penetration of the ground plane by courtyards open to the lower concourse level) have been realized. Among the important services rendered by Kling were:

1) Preparation of a master plan for Penn Center.

2) Coordination of the re-routing of utilities in order to accommodate the underground pedestrian concourse (a new 60 in. sanitary sewer in the middle of the area, rehandling of the telephone lines, relocation of the city's major steam company line, the usual problems with water, electricity, and clearances for the Market Street Subway and underground track system of the Pennsylvania Railroad.

3) Coordination of the relationships with concurrent building projects.

4) Exploration of the financial and functional feasibility of the areas composing the four-block lower-level commercial concourse, and the complex coordination of accesses to street level and public transportation system.

5) Design of the concourse and planning of construction in such a manner that presently undetermined superstructures might rise in harmony with the master plan.

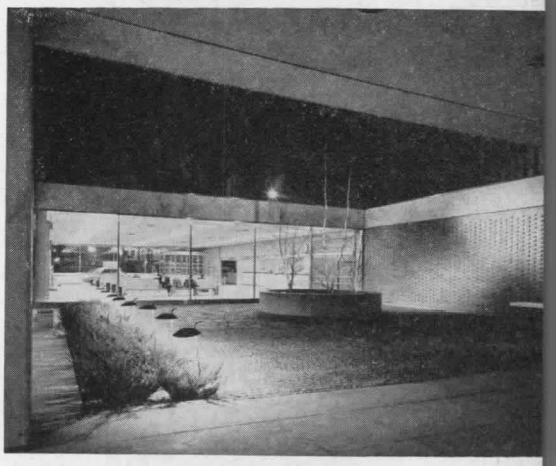
6) Assistance in the preparation of the cost-income studies for the Transportation Center itself (including a 1000-car parking garage, Greyhound bus terminal, commercial space and an 18-story office building served by underground truck loop). Studies of construction costs and rental income had to be concluded before a client, The Pennsylvania Tower Building Corporation, and the proprietary construction company could arrange financing with the various Philadelphia banks.

7) Preparation of plans and models in greater detail for specific tenants in the Transportation Center in order to assist in renting space.

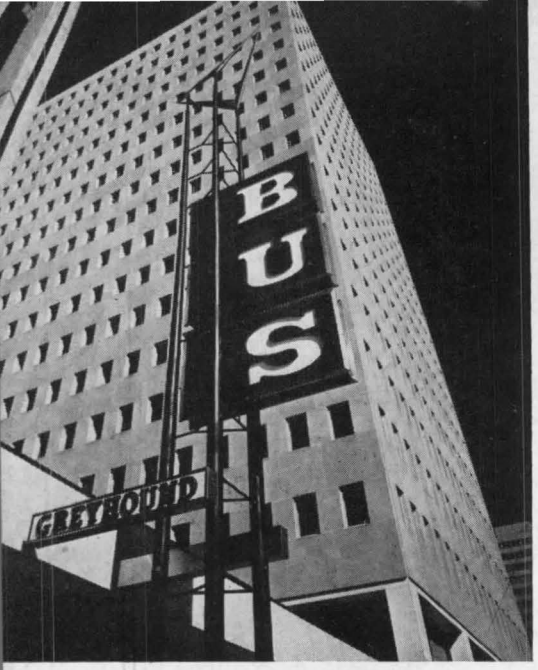
8) Coordination and review of commercial areas designed by other architects for tenants in Transportation Center.

9) Detailing tenant changes, including division of space, interior finishes, furniture and decorating scheme.

10) Developing, with various city departments, the complex underground fueling and maintenance section for the Greyhound



Facing page: tree-planted court from Greyhound waiting room, Sheraton Hotel at rear, parking garage at left, Transportation Building tower at right. This page, top to bottom: typical large office, first floor elevator lobby, court, bus waiting room, bus loading concourse



TRANSPORTATION BUILDING, PENN CENTER

Bus Terminal, where for the first time buses can be fueled, repaired, washed and serviced in the same area with passenger loading facilities. This required an automatic-fire-fighting system as well as two 30,000-gallon gasoline tanks and a 10,000-gallon tank of oil buried below the floor.

11) Commissioning design of a 10 ft by 70 ft sculptured screen in the main lobby of the Transportation Building designed by Ellsworth Kelly.

12) Design and supervision of paving of reflecting pool, tree-wells, stairways and several courtyards which compose the esplanade and knit the entire Penn Center project together.

13) Design of all commercial signs throughout the Transportation Center Project. This was done with the approval of the Art Jury headed by Roy Larsen, Architect, which is charged with esthetic control of structures planned for the Parkway area.

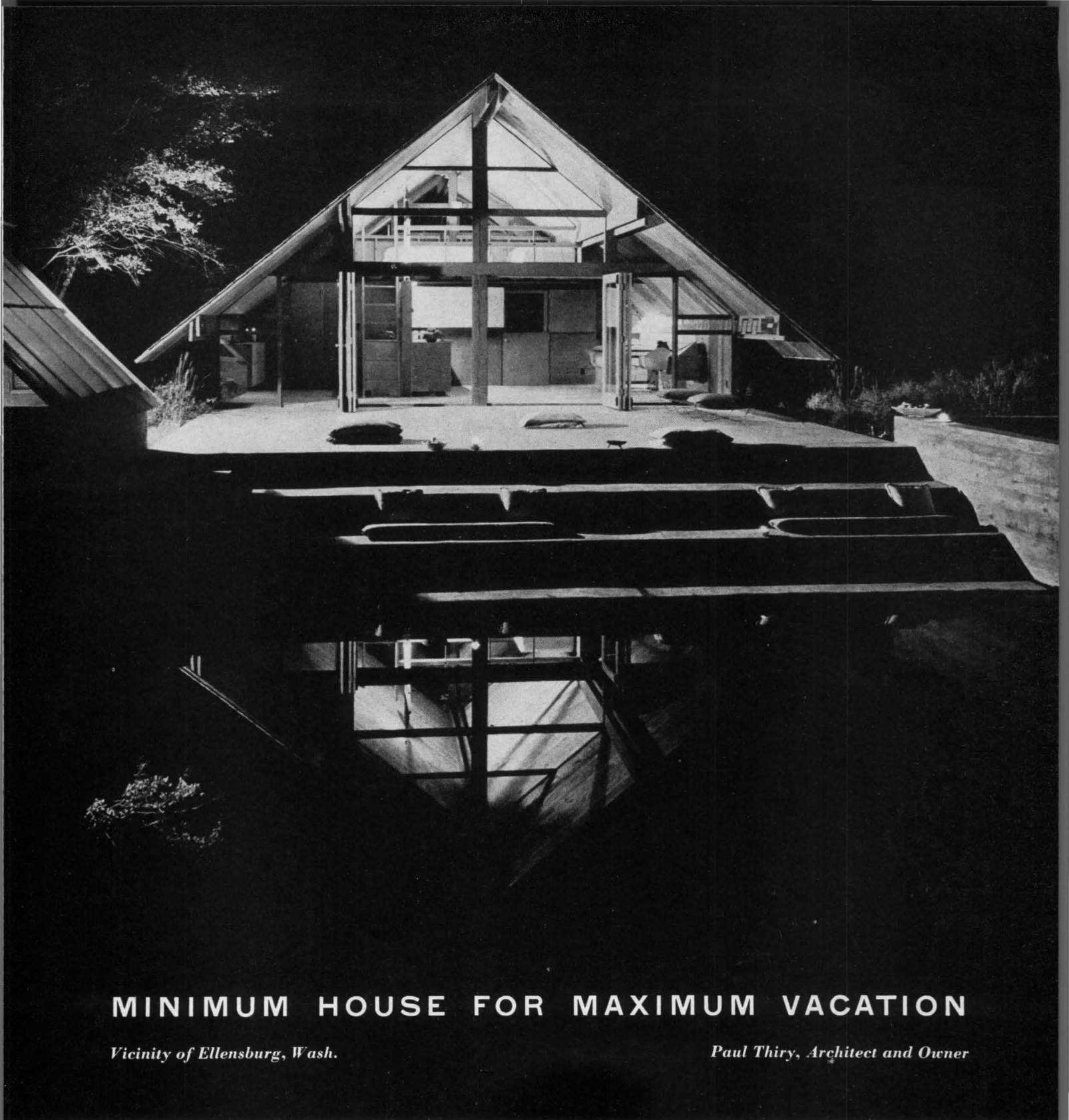
14) Service, with Robert Dowling (City Investment Trust Company, New York) and Edmund Bacon (Executive Director, City Planning Commission), on the Penn Center Advisory Committee, created to advise the Pennsylvania Railroad on projects proposed for Penn Center.

15) Design of the access stairways, ventilating system and physical structures that comprise the underground street system used by trucks in the east-west loop and by pedestrians below north-south streets.

16) Schooling of building maintenance personnel, engineering staff and real estate managerial staff in the operation of complex mechanical and electrical systems in the Transportation Center.

Amid today's thin-skinned office towers, the Transportation Building's solid limestone may seem old-fashioned. Many remarks have already been passed, probably with some justification; and this is an instance of design for acceptance by a large, diversified group, which always entails compromise. But consider: the Transportation Tower deliberately straddles the axis of the Center to permit vision through and thus create an openness exactly opposite to the character of the "Chinese Wall" which the Center replaces. In Philadelphia, curtain walls still require masonry backing; what should one think of the apparent thin skin of the Uris Building? The Transportation Building's exposures to sun made heating and cooling costs heavy whereas pierced masonry walls lowered air conditioning costs; and against its conservative concentration on the juxtaposition of solid building masses — somehow in keeping with the multi-level, three-dimensional design of the whole Center — the gayety of the Sheraton almost verges on the gaudy. There may have been pressures on the architect, but he has managed to preserve his original theme.

Greyhound Bus Terminal: top bus sign indicates character of signs throughout Penn Center, all designed by Kling's office; waiting room from office building lobby; bus passenger concourse; loading docks



MINIMUM HOUSE FOR MAXIMUM VACATION

Vicinity of Ellensburg, Wash.

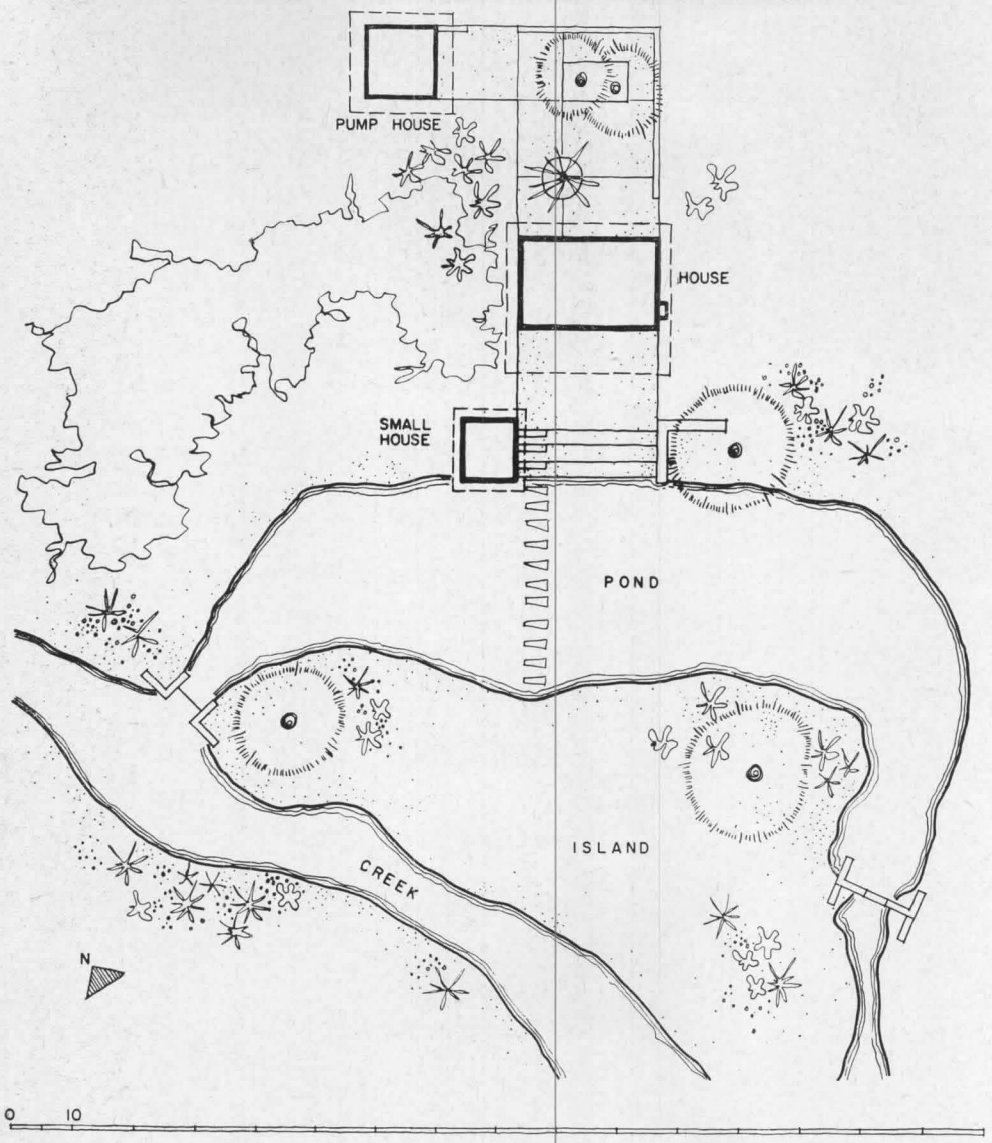
Paul Thiry, Architect and Owner

Art Hupy

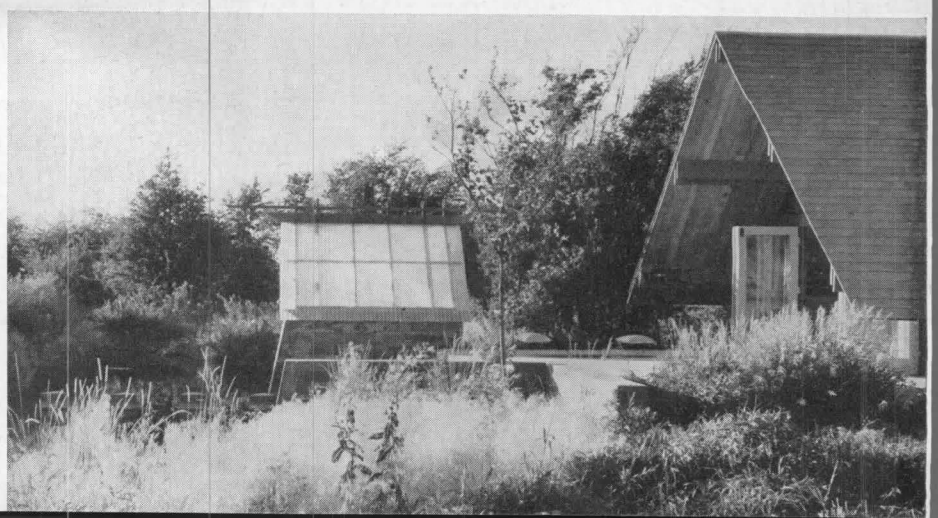
Imaginatively conceived and skillfully executed, this small weekend cabin expresses its function with a directness not often achieved. Its roofline, openness and simplicity of plan are all reminiscent of the familiar camp tent — deliberately so, no doubt, since the design goal was an easily maintained base for hunting, fishing and hiking trips. Everything possible was done to minimize housework: floor area was cut to the bone, materials and colors were selected for durability and quick cleaning, and a special "clean-up room" was built adjacent to terrace and swimming area.

WEEKEND HOUSE

Paul Thiry, Architect



Site is in Kittitas Valley, a flat grazing land, hot and dry in summer and cold (20 to 30 degrees below zero) in winter. A mountain stream nearby was diverted and damned to create a pond large enough for swimming; stepping stones connect house with island and the narrow creek beyond it

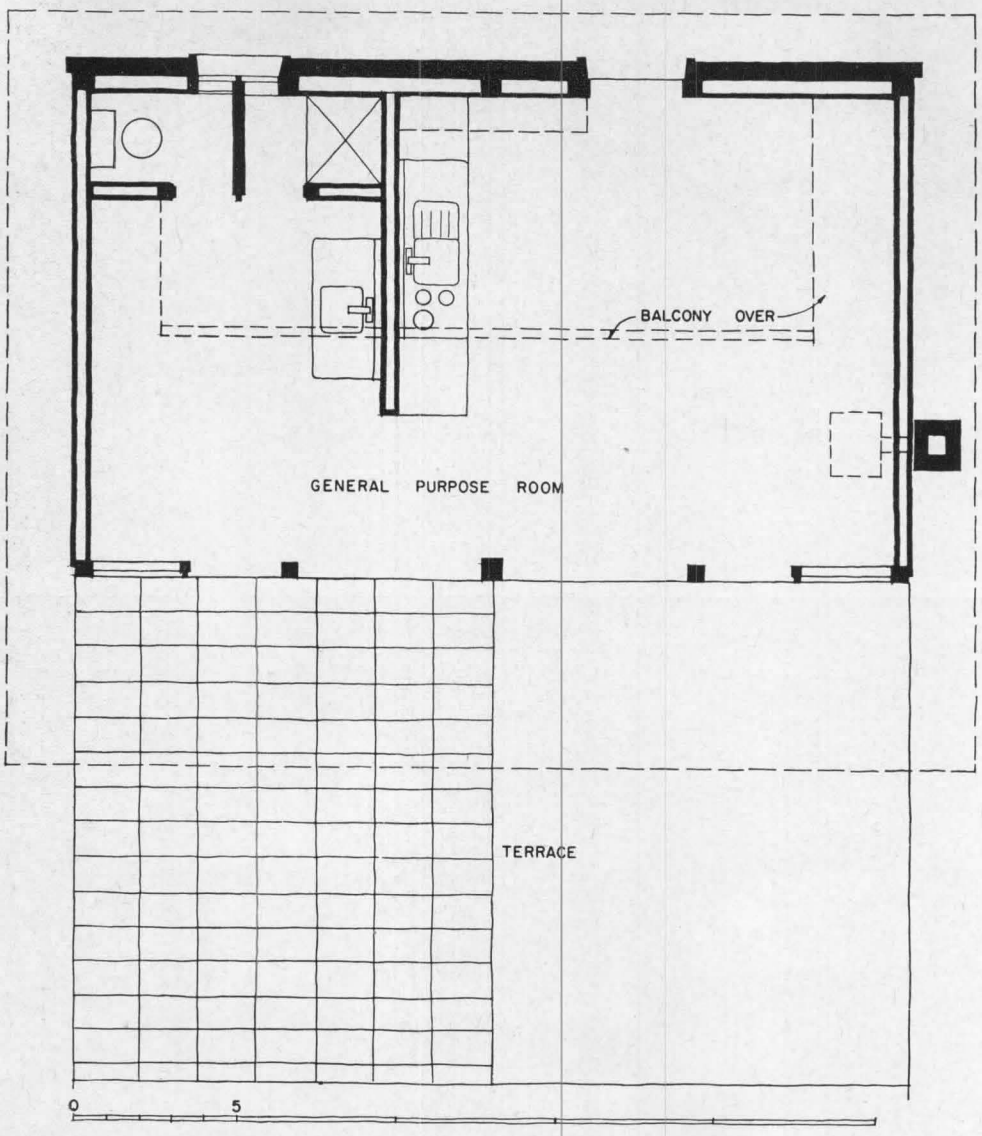


Art Hupy

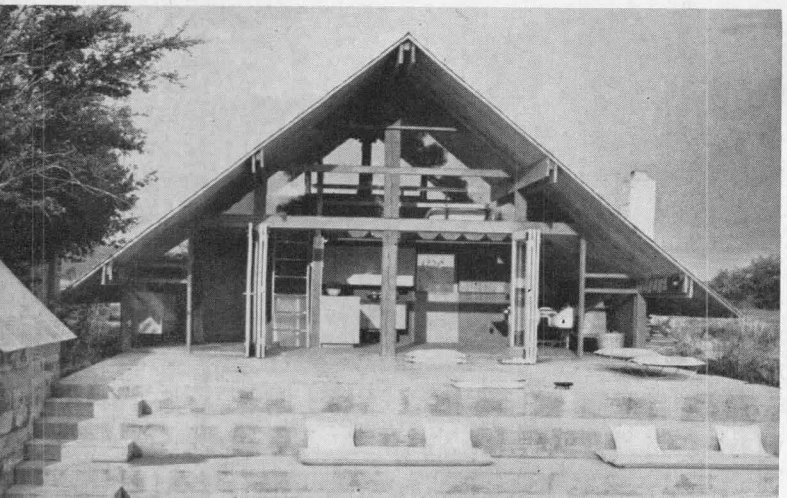
THE THIRY "CABIN" is actually three separate structures: a tiny 16- by 24-ft main house consisting of a central living-kitchen area with adjacent shower and dressing alcove and a balcony bedroom for the parents; a much smaller bunk-house for the two sons; and a pumphouse which contains, in addition to the water tank, a work bench and storage space for tools and foods. The main house is so placed on the site that it is open to the breeze on the sunny side and closed in on the shady side; it overlooks a fine view of fields and distant snow-capped mountains.

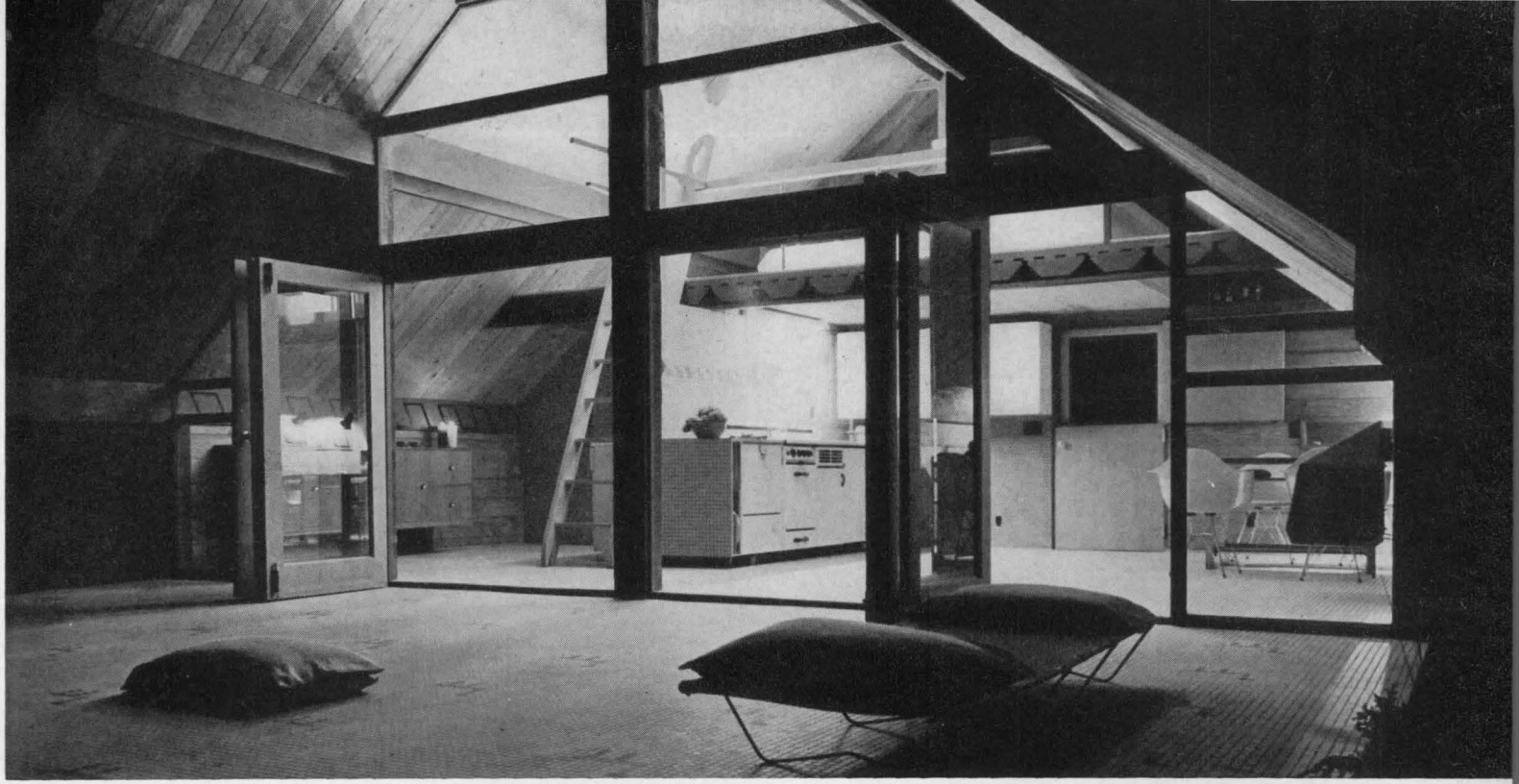
WEEKEND HOUSE

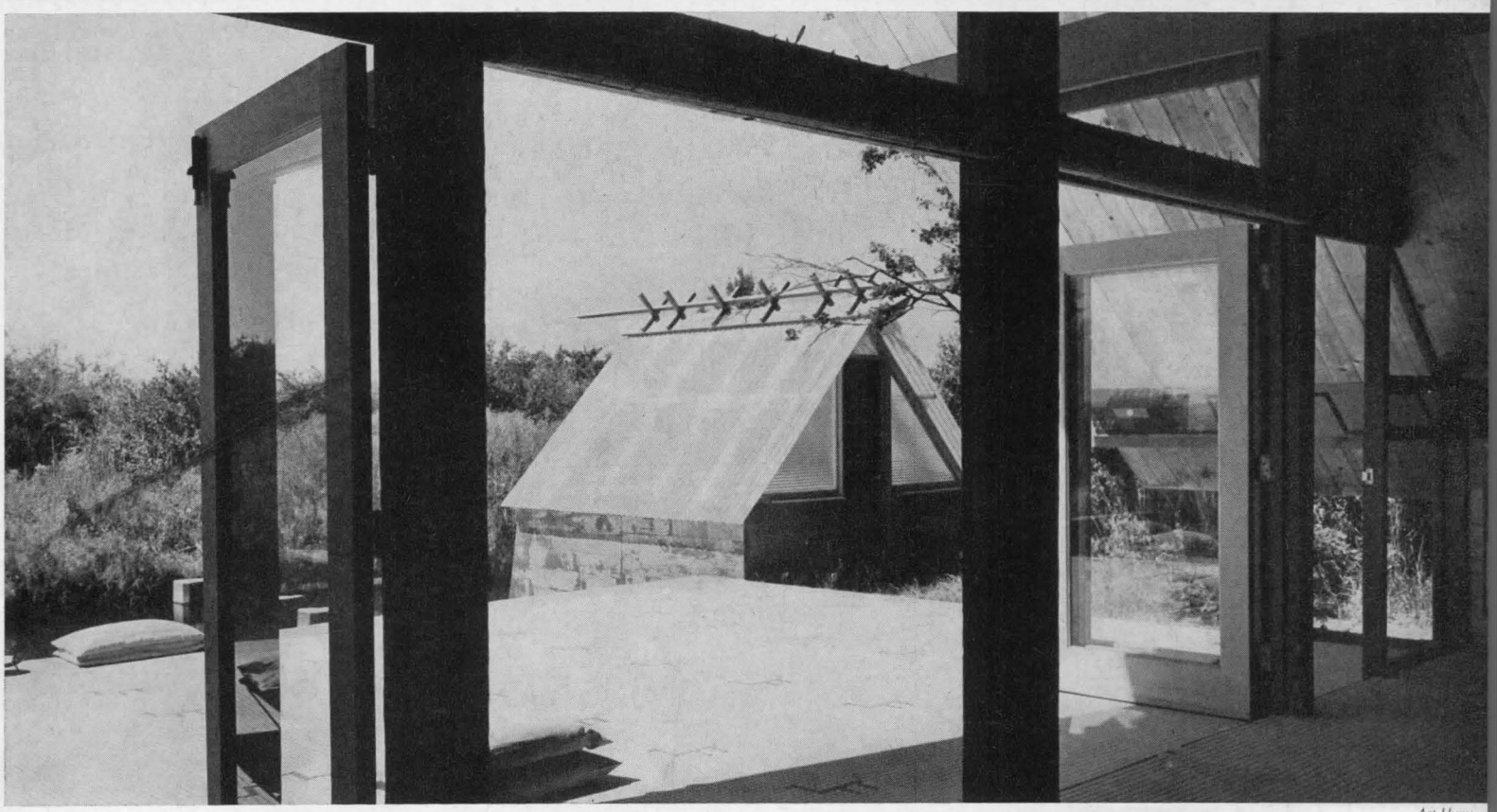
Paul Thiry, Architect



Small dimensions of main house are extended visually by all-glass wall on view side and actually by flush terrace which more than doubles living area. Partitioning is limited to the essentials: enclosures for shower and toilet, and a dressing room which is only partly enclosed

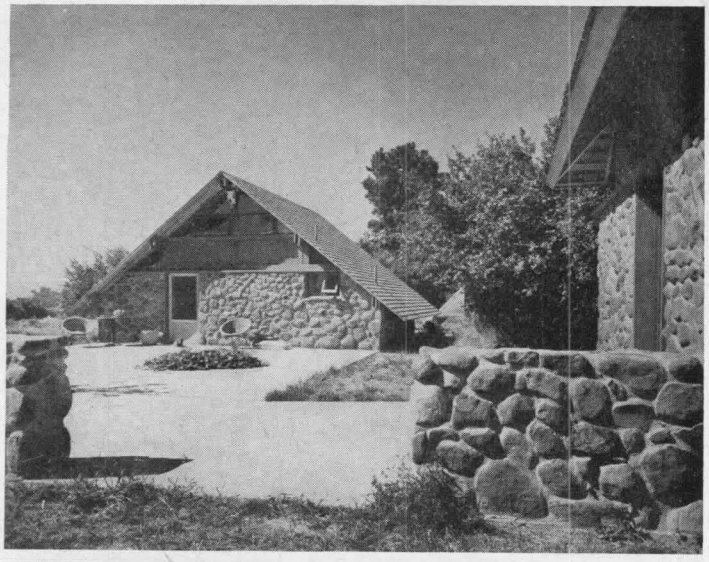


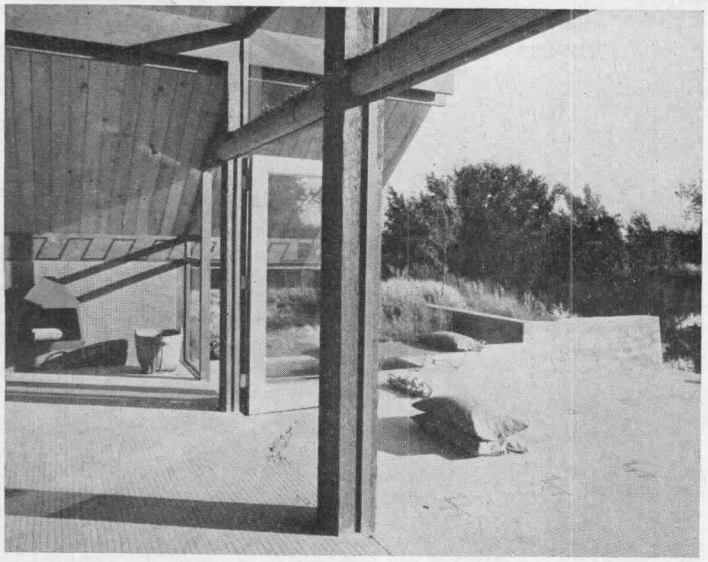




Art Hupy

The emphasis on minimum housework has one interesting sidelight: there are no closets in the house "to hold dirt, spiders or bugs, or to get musty when the house is vacant," as the architect puts it; the family dresses at home. Flooring is easily washed ceramic tile in yellowish color which is slow to show dirt; cabinets are all wall-hung to simplify sweeping. Walls are wood or tile, ceilings are wood. The boys' cabin has a plastic roof (it is in shadow until after eight o'clock in the morning).





Construction is wood frame on concrete slab; exterior walls are wood and fieldstone, roofing is asbestos shingles. Kitchen is fully equipped, even to an electric dishwasher. Heating is electric radiant

Ari Hupy

WAINWRIGHT BUILDING, St. Louis
Louis Sullivan

CARSON PIRIE SCOTT STORE, Chicago
Louis Sullivan

ROCKEFELLER CENTER BUILDINGS, New York
Reinhard & Hofmeister; Corbett, Harrison & MacMurray; Hood & Fouilhoux

LEVER HOUSE, New York
Skidmore, Owings & Merrill

TRINITY CHURCH, Boston
H. H. Richardson

PHILADELPHIA SAVINGS FUND SOCIETY BUILDING, Philadelphia
Howe & Lescaze

GENERAL MOTORS TECHNICAL CENTER, Detroit
Saarinen & Saarinen

LAKE SHORE DRIVE APARTMENTS, Chicago
Mies van der Rohe

S. C. JOHNSON & SON, INC., ADMIN. BLDG., Racine
Frank Lloyd Wright

MONADNOCK BLOCK, Chicago
Burnham & Root

DAILY NEWS BUILDING, New York
Hood & Howells

TVA NORRIS DAM & POWER HOUSE, Tennessee
Roland Wank, Architect-in-charge

BOSTON PUBLIC LIBRARY, Boston
McKim, Mead & White

STOCK PAVILION, Raleigh
Nowicki & Deitrick

CHRISTIAN SCIENCE CHURCH, Berkeley
Bernard Maybeck

WOOLWORTH BUILDING, New York
Cass Gilbert

CROW ISLAND SCHOOL, Illinois
Saarinen & Saarinen, with Perkins, Wheeler & Will

MANUFACTURERS TRUST BUILDING, New York
Skidmore, Owings & Merrill

UNITY CHURCH, Oak Park
Frank Lloyd Wright

NEBRASKA STATE CAPITOL, Lincoln
Bertram G. Goodhue

S. C. JOHNSON & SON, INC.; LABORATORY, Racine
Frank Lloyd Wright

UNITED NATIONS SECRETARIAT, New York
Wallace K. Harrison & Consultants

LINCOLN MEMORIAL, Washington
Henry Bacon

M.I.T. AUDITORIUM, Cambridge
Eero Saarinen

EQUITABLE BUILDING, Portland
Pietro Belluschi

ALLEGHENY COUNTY BUILDINGS, Pittsburgh
H. H. Richardson

UNIVERSITY CLUB, New York
McKim, Mead & White

CRANBROOK SCHOOLS, Michigan
Eliel Saarinen

MINERALS & METALS RESEARCH BLDG., I.I.T., Chicago
Mies van der Rohe

ALCOA BUILDING, Pittsburgh
Harrison & Abramovitz

MUSEUM OF MODERN ART, New York
Goodwin & Stone

PENNSYLVANIA STATION, New York
McKim, Mead & White

EXPERIMENTAL SCHOOL, Los Angeles
Richard Neutra

DODGE TRUCK PLANT, Detroit
Albert Kahn

100 MEMORIAL DRIVE APARTMENTS, Cambridge
Kennedy, Koch, DeMars, Rapson & Brown

CENTRAL LUTHERAN CHURCH, Portland
Pietro Belluschi

HOUSES

F. C. ROBIE, Chicago
Frank Lloyd Wright

E. J. KAUFMANN, Pennsylvania
Frank Lloyd Wright

TALIESIN WEST, Arizona
Frank Lloyd Wright

HENRY VILLARD, New York
McKim, Mead & White

WATTS SHERMAN, Newport
H. H. Richardson

AVERY COONLEY, Illinois
Frank Lloyd Wright

W. W. WILLITTS, Illinois
Frank Lloyd Wright

D. R. GAMBLE, Pasadena
Greene and Greene

PHILIP JOHNSON, New Canaan
Philip Johnson

WALKER GUEST HOUSE, Florida
Paul Rudolph

ELLEN SCRIPPS, La Jolla
Irving Gill

WESTON HAVENS, Berkeley
Harwell Hamilton Harris

LOVELL "HEALTH HOUSE", Los Angeles
Richard Neutra

EDITH FARNSWORTH, Chicago
Mies van der Rohe

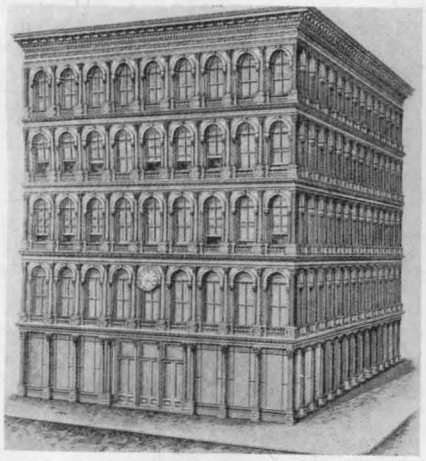
12. IN SUMMARY

by EDGAR KAUFMANN

WHEN THE AMERICAN INSTITUTE OF ARCHITECTS was founded one hundred years ago, what significant buildings were in construction? Three examples can be cited. At Broadway and Broome Street in New York City rises the Haughwout Building (*Figure 1*) built in 1857 by J. P. Gaynor, using standardized elements from the American Iron Works. It has long been recognized as a classic of its kind and an early instance of the use of passenger elevators. Its daring, practical structure is clearly expressed in forms borrowed from the Venetian Renaissance, yet its function, structure, and forms are knit into an impressive unity. The Haughwout lifted a novel, modular building technique to brilliant accomplishment. Just as rational and eloquent is the Hamilton Hoppin house (*Figure 2*) at Newport, by Richard Upjohn, a founder of the A.I.A. Its wood forms speak for themselves; its influence on American home design can be seen in much work of subsequent decades, as Vincent Scully demonstrated. Even so late as the 'nineties a family resemblance can be traced between the Hoppin house and Frank Lloyd Wright's Harlan house (the very building that caused the break between Wright and Sullivan). The year 1857 also produced, in contrast to these progressive works, the last, most monumental and dreamlike of all classicizing Southern mansions, Belle Grove (*Figure 3*), built in stucco by Henry Howard at White Castle, Louisiana.

These three buildings stand at the beginning of American professional architecture, promising an inheritance of artistic talent, nostalgia, inventiveness, and common sense. Here at the start are indicated two great areas of activity — homes and business buildings — that have come to include much of our best architecture; here are the two structural materials we have developed most fully, metal and wood; and here is the building germ that promises to dominate the next hundred years — prefabricated standardized architectural components. Neither the present nor the future of American architecture can be well understood without appreciating these roots in the past.

In this sense the panel's choices, published over the last eleven months in ARCHITECTURAL RECORD, highlight disturbingly spotty aspects of our understanding of the past. If the original buildings that have given form to



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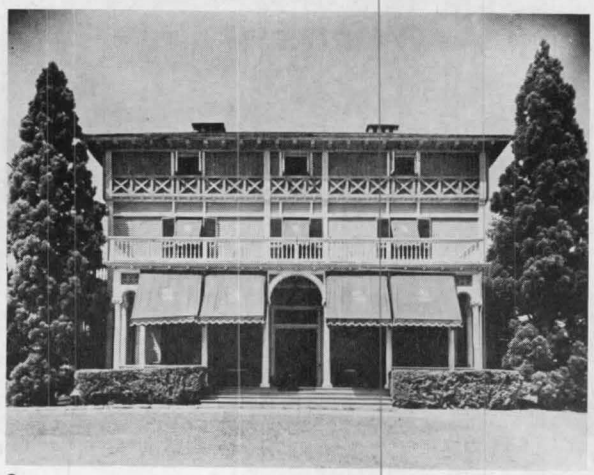

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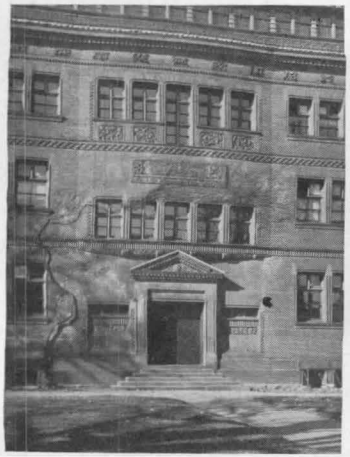

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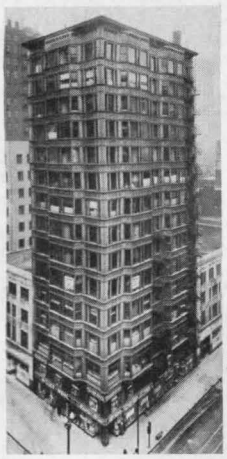
our world are not to vanish, all of them, into legend — as many too many have already — the architectural profession will need to alert the rest of the community and many of its own members to the values of these structures, values that have enabled our country's worldwide acceptance as a center of cultural achievement. The RECORD, searching for fifty buildings, asked fifty panel members to name "about twenty buildings in existence today." Now that the results have been published, this panel member for one believes a century of American architecture is inadequately outlined in fifty examples. The editor has generously allotted these closing pages to some amplification and certain general remarks. For example, are those buildings we have torn down *ipse facto* of minor interest? Is Richardson's Marshall Field Wholesale Store, 1887–1930 (*Figure 4*), insignificant? Indeed, what building has exerted more influence on our architecture, what one can we look at with more certainty that ours is not only a vital architecture but one that has achieved its perfections along the way? Is Wright's Larkin Building, 1904–1950 (*Figure 5*), that compendium of well-documented "firsts," to be forgot now, when only a generation since it was one of the chief works of modern architecture anywhere in the world? Destroyed by fire, not by the hand of man, isn't Maybeck's Hearst Hall at Berkeley, 1900–1922 (*Figure 6*), more curiously prophetic than his extant buildings? And if Sullivan is to be praised for the architecture of Carson, Pirie, Scott's store (*Figure 7*), that end is properly served by showing its original top, a termination as beautiful and inventive as any other part of this uniquely integrated, sensitive design. If American architecture is to have a living tradition, we must not only study the past, we must cherish it openly. But we must acknowledge that the publication of buildings gone and done for, and of buildings in their pristine state, will stir students and leave city fathers utterly uninterested. The task of preserving what is still extant has been eased notably by the publication of this series of articles: in city after city the local press has drawn attention to the acclaim some familiar landmark has won in the ARCHITECTURAL RECORD poll, weaving the building more securely into the fabric of local pride — the only protection available against cupidity and decay. What extant buildings of the past hundred years, then, may be distinguished as significant architectural accomplishments, beyond those already published in the series?

H. H. Richardson was one of the first Americans to receive the flattery of imitation in Europe, even as he was one of the first American students at the Beaux-Arts. Richardson is represented in the panel's choices by Trinity Church, a prominently located but less than creative work, and by the Allegheny County Buildings, where his best efforts, in the courtyard, are rarely photographed. But Richardson gave us both the Stoughton house in Cambridge, 1882 (*Figure 8*), which H.-R. Hitchcock understandably



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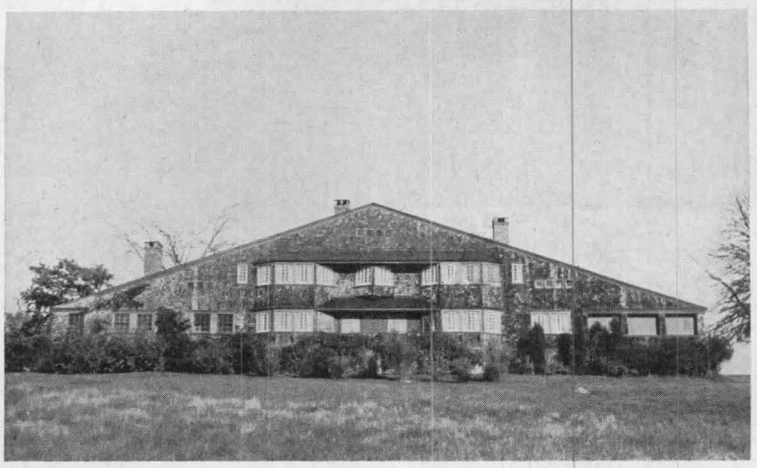

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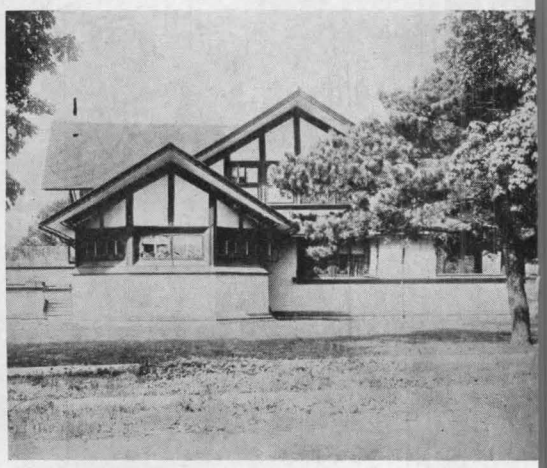

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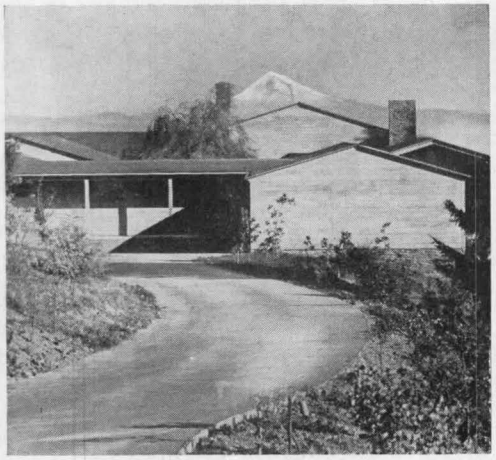

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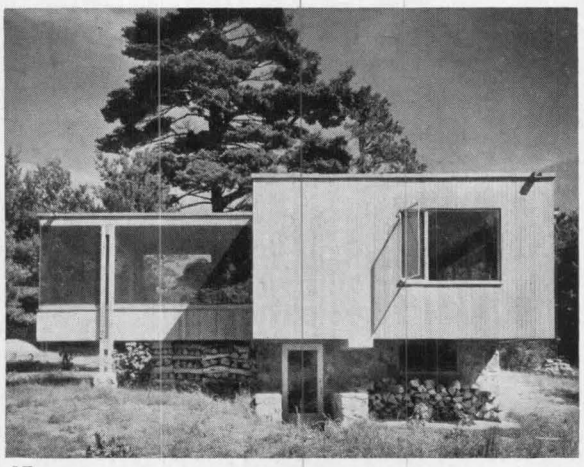

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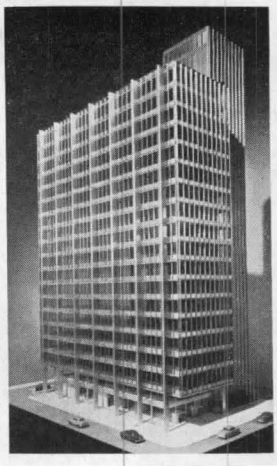

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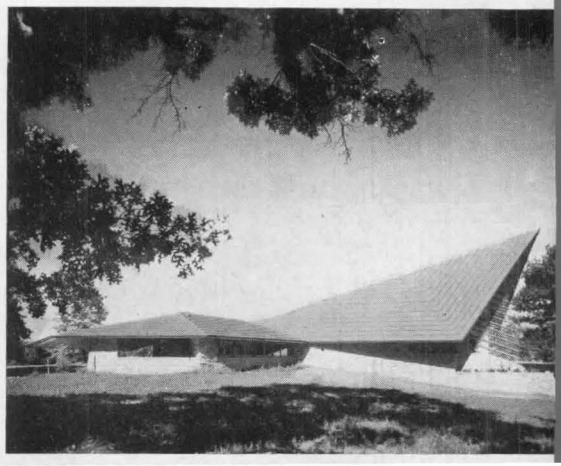


has called "perhaps, the best suburban wooden house in America," and Sever Hall at Harvard, 1878 (*Figure 9*), which the same biographer has called "an almost unique masterpiece of the incredibly difficult art of building in harmony with fine work of the past and yet creating a new style for a new day" — a problem tackled recently by several younger U. S. architects. Sever Hall is also one of the rare American buildings where brick is architecturally mastered.

15

From Richardson it is natural to turn to Sullivan, for the Field Building is often given as the stylistic parent of Adler and Sullivan's much-imitated Auditorium Building, 1887 (*Figure 10*), Chicago's bid to outdo the Metropolitan Opera in New York. But inspection of both illustrations will convince a candid eye that here a younger architect has adopted the scheme of an earlier building with the same relationship maintained as between, say, a sonnet by Milton and one by Meredith: the common scheme yields basically different results for each man. And indeed it was not until late in his career, long after worldly success had left him, that Sullivan produced those now unappreciated masterpieces that really challenge Richardson's greatness, like the National Farmers' Bank of 1907 at Owatonna, Minnesota (*Figure 11*), currently being remodelled inside by H. H. Harris.

Chicago after the Fire had more to its credit than buildings by Richardson and Sullivan; it resumed the general search for proper structure and form of business buildings on narrow, downtown lots which had been begun a generation earlier in Philadelphia and New York, as Winston Weisman of Pennsylvania State University has shown. If the frames of modern building are eloquently displayed in those Sullivan designs that give him fame today (ARCHITECTURAL RECORD, June, 1956), a curtain wall largely of glass, hanging free of the building's vertical supports, was displayed with parallel virtuosity on Burnham and Root's Reliance Building, 1890, 1895 (*Figure 12*), a real victory of Chicago construction and ingenuity, pointing to much done since and still today.

19

In the Midwest also, the Richardsonian excursion into a native form of domestic architecture was to find its best successors after the turn of the century. But earlier, back East in 1887, only two years after their Villard houses (ARCHITECTURAL RECORD, October, 1956), McKim, Mead and White were working on the Low residence (*Figure 13*) at Bristol, Rhode Island, where Richardson's direction was maintained and given new form. By 1900 Frank Lloyd Wright was erecting his classic Hickox house (*Figure 14*), as perfect in its way as the now more famous Willitts (ARCHITECTURAL RECORD, October, 1956). It stands at the beginning of Wright's marvelously fertile and masterly out-pouring of modest, individual homes leading to the Goetsch-Winckler house (*Figure 15*) of 1939 at Okemos, Michigan. I cannot help feeling that these small homes have contributed as much or

more to our way of life as the spectacular and beautiful architecture of Taliesin West or Fallingwater.

And in the Northwest has not this American domestic architectural tradition flowered again, as in the enduringly satisfactory forms of the Watzek house (*Figure 16*) designed by John Yeon in 1937 at Portland, Oregon?

A blend of this domestic tradition with forms of space and structure not native but readily assimilable is found in the East in our own times; witness the friendliness of Marcel Breuer's Chamberlain cottage (*Figure 17*), Wayland, Massachusetts, 1940, and Eliot Noyes' calm, symmetrical home (*Figure 18*) which he designed in 1956 for his family in New Canaan, Connecticut.

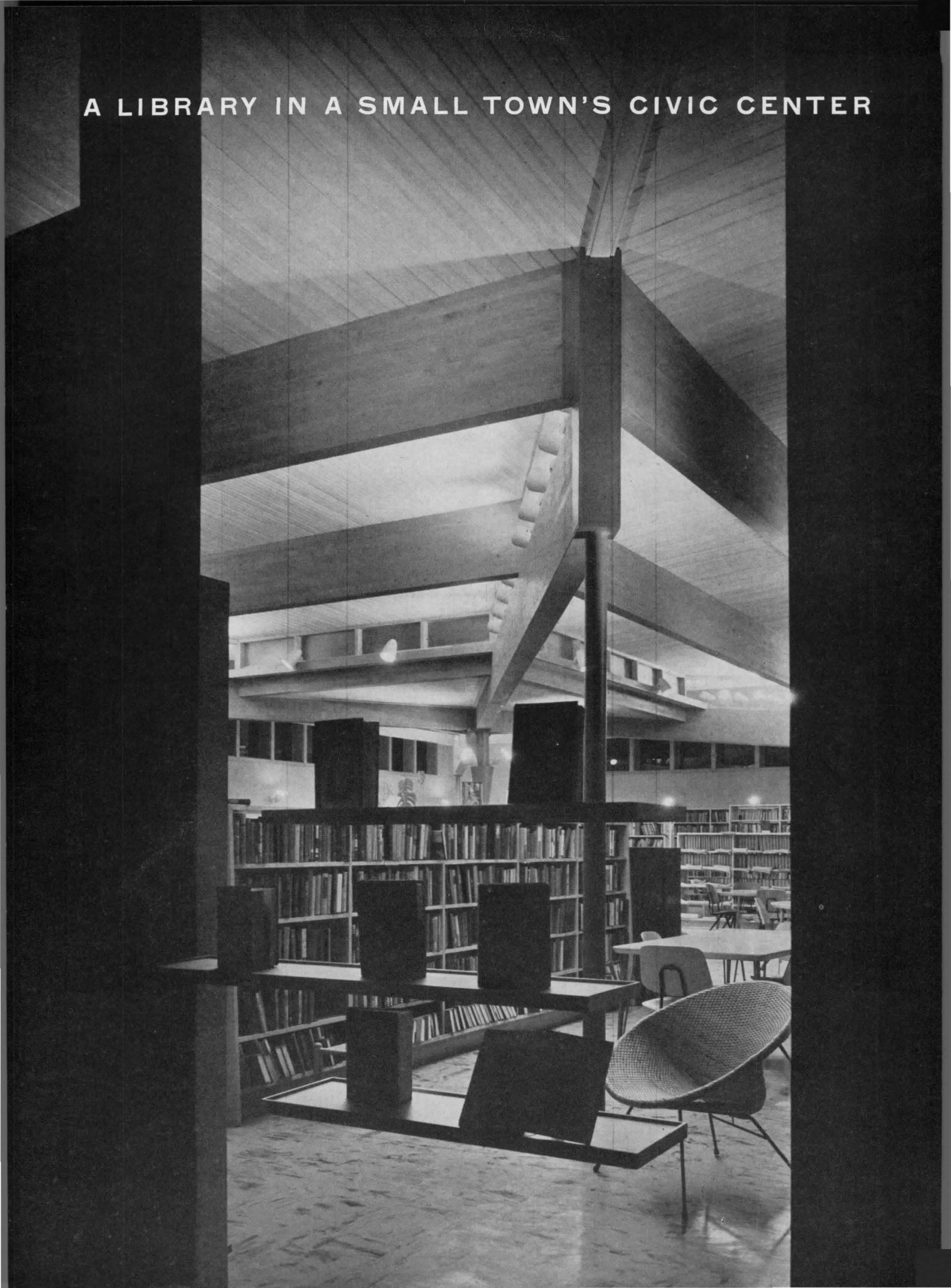
Mass housing has rarely received as much architectural attention in the United States as individual homes, yet during the last war at least two big projects of real value were carried out — Breuer and Gropius collaborated on Aluminum City (*Figure 19*) at New Kensington, Pennsylvania, 1942, while in the next year Neutra's Channel Heights (*Figure 20*), L. E. Wilson consulting, went up at San Pedro, California, near Los Angeles.

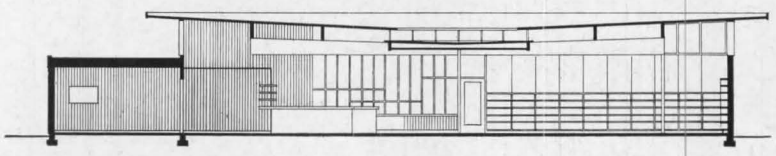
What promises to be a significant feature of office-building design appears in published photographs of the model of a work scheduled for completion in 1957, the Inland Steel Building (*Figure 21*) in Chicago by Skidmore, Owings and Merrill. The appearance of columns as louvers on the exterior of a glass facade is the only intrinsic modification of such building yet seen that gives scale and movement to a city street. I find it hard to understand that only three schools were called significant, especially after the most recent efforts in this field. And finally, in a list of American churches of the last hundred years should there not be a place for Wright's quiet, moving meeting house (*Figure 22*) for the Unitarians at Madison, Wisconsin, 1951, its rafters ingeniously joined in warped planes?

Here, then, are a score out of the hundreds of examples of good architecture, not chosen for the fifty of this series. Few of these added designs will arouse much opposition, I dare say, and most were listed by some panel members in the original naming. Were they omitted because little known or little remembered — it doesn't matter. They were not omitted from American architecture. Together with the fifty chosen by acclaim they trace an outline of the wonderfully varied accomplishments of American architects in the last hundred years; it is no record to be ignored, and it augurs well for the future. If only the evidence can be preserved!

Photo credits (pages 038–041): 1. Courtesy "The Art Bulletin"; 2. Preservation Society of Newport County; 3. Wayne Andrews; 4, 12. Chicago Architectural Publishing Company; 6. Architectural Library, University of California, Berkeley; 8. Bernice Abbott; 9. Beaumont Newhall, 10, 11. Fuermann, 13. Wayne Andrews, 15. Leavenworths, 16. Boychuk Studio, 19. Gottscho Schleisner, 20. Julius Shulman and 14. — all courtesy Museum of Modern Art; 17, 18, 22. © Ezra Stoller; 21. Hedrich-Blessing

A LIBRARY IN A SMALL TOWN'S CIVIC CENTER





SECTION: NORTH-SOUTH

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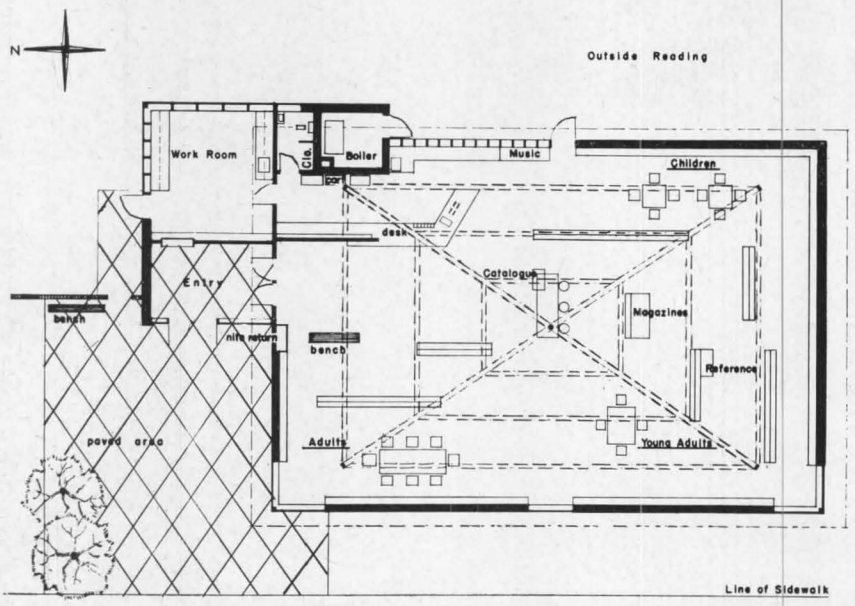

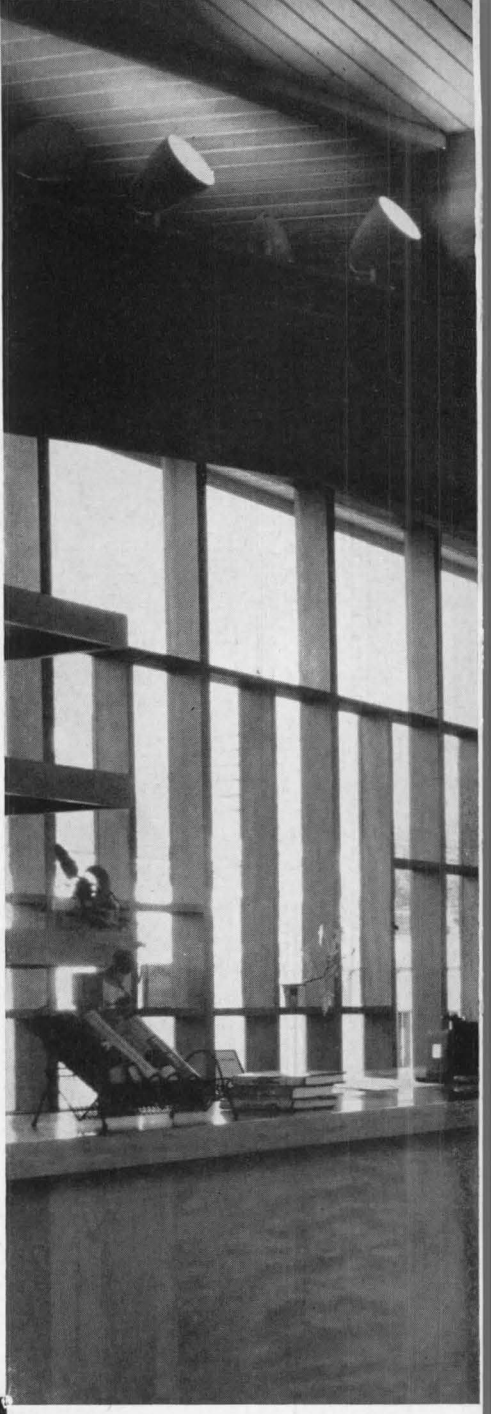

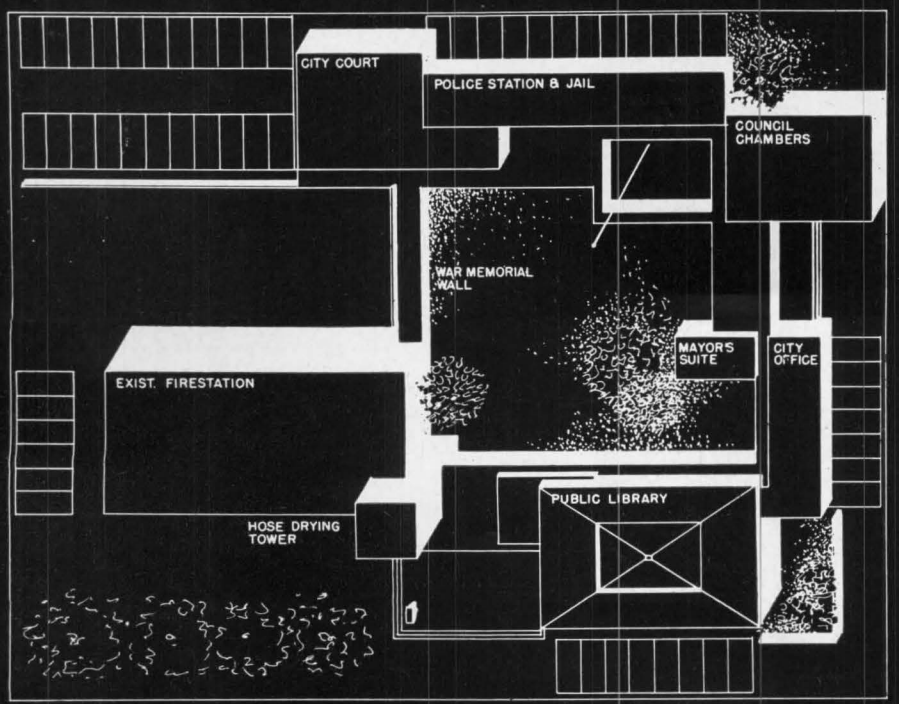

The reading room is one large open space, 50 by 70 ft, divided by movable bookcases into reading areas for adults, teenagers, children. An unusual framing system provides height at outer walls (where balcony may be added later), and daylight at center; the roof is supported by four diagonally laid, laminated wood beams deeper at each supporting column than at center column where they join. No acoustical material was used, despite openness of room; so far, none has been needed, due to character of room

All photos Dearborn-Massar, including page 209

MOUNT VERNON, WASHINGTON, PUBLIC LIBRARY

Henry Klein, Architect

In the small library two factors — in addition to the primary ones of sheltering books and making possible their use — especially influence the design: easy supervision and flexibility of space use. The high-ceilinged, continuous space in the reading room of this library in Mount Vernon, Wash., admirably meets these needs, but, in the kind of environment which it creates, it answers other less tangible requirements. It is informal and yet dignified, inviting and still conducive to the essential quiet and reposeful atmosphere of a library.

THE LIBRARY is the first completed building in the new civic center on the fringe of the town's main business section, accessible to shoppers who combine shopping expeditions with library visits. Since the library's circulation has more than tripled in the 18 months of the building's use, there is an obvious two way advantage — to the businesses of this area and to the library — in such a location. When fully developed, the civic center will provide an open, almost park-like setting for all of its buildings, with the library as the dominant element of the group. *Peter Hostmark, Structural Engineer; Norman L. Omodt, Mechanical Engineer.*

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William F. Howland

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hood of $16,000, motor hotels in the last few years have shown costs per room anywhere from $6,000 to $18,000. In size they range from 40 to 366 units, the largest being the $5-million Marriott Motor Hotel near the Pentagon in Washington.

Almost without exception, these motor hotels have complete hotel service, and their average room rates are in the $8 to $10 general range. There are those who predict an ever-growing number of this type of highway hotels.

According to a recent study by C. Vernon Kane, partner of Horwath & Horwath, hotel accountants and consultants, the modern motor hotel is more expensive to operate than the oldtime "motel." The cost per unit of operation is usually in the neighborhood of $1500, and payroll per unit between $600 and $750. Housekeeping expense, exclusive of payroll, is about the same as in other hotels of the same size, but administrative expenses are usually higher than most investors anticipate. Their operating profit before fixed charges varies from about $1000 to $2400 per unit, but probably none would earn more than $7–900 had they not food and beverage income. The resort-type motor hotels usually show the highest profits, but usually they cost more to build, and sometimes get as much as one quarter of their net profit from food and bar operations. A first class resort motor hotel, operating the year round, accountants say, must gross at least $3000 per unit in room sales — or about a $12–14 annual average daily rate at 65–70 per cent occupancy.

Already there are strong indications — and several examples — of decentralizing group and function business which heretofore was monopolized by downtown hotels. Many of the newer motor hotels are making a strong bid for group business with function and convention facilities. To be sure, it's only the beginning and may never reach the proportions of large city operations. But more and more established motor hotels are plan-

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7

Eddie Hoff

The big downtown hotels of the last few years: 1. Hotel Statler, Hartford, Conn., William B. Tabler, architect. 2. Terrace Plaza, Cincinnati, Skidmore, Owings & Merrill, architects. 3. Hotel Statler, Los Angeles, Holabird and Root and Burgee, architects, William B. Tabler, associated. 4. Statler Hilton, Dallas, William B. Tabler, architect. 5. Sheraton Hotel, Philadelphia, Perry, Shaw, Hepburn & Dean, architects. 6. Shamrock Hilton, Houston, Wyatt C. Hedrick, architect. 7. Beverly Hilton, Los Angeles, Welton Becket & Associates, architects.

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The Sheraton chain is venturing into the highway hotel field with two projects: 8. a 300-room for Portland, Ore., and 9. a 200-room hotel for Binghamton, N. Y., Samuel Glasser, architect. The Pick Hotels Corporation is moving into the field with two motels: 10. The Edge-O'-Town Motel, Rockford, Ill., E. P. Lewin, architect; and 11. Holiday Inn Hotel, Chattanooga, Tenn., William Bond, architect. 12. The "world's largest" motel is going up near the Pentagon Building, Marriott's Motor Hotel, by Hot Shoppes, Inc., Joseph Morgan, architect. 13. Chicago's famous Drake Hotel is building the Drake North, a $2,000,000 highway hotel in the northwest suburban area of Chicago, Walton and Walton, architects. 14. One of the Jack Tar chain, this one in Orange, Texas, Goleman & Rolfe, architects.

ning function room additions. And as more downtown hotels and hotel chains gain a foothold in the highway field they will, no doubt, introduce features which will force the older hotels into the competitive race.

The two- and three-story motor hotel is no longer an isolated case. Those who pour millions into their projects are convinced they have the ideal solution by going vertically as well as horizontally in construction. Others try to compromise with a split level, from the parking level up and down. It's a good solution where the terrain lends itself. The guest has his car outside his room, whether he lives on the lower or upper floor.

It's safe to say that highway hotels will get larger and more luxurious. With money getting harder to borrow, money will probably come from real estate syndicates. The sale leaseback method is already attracting investment money to the motor hotel field. Some motor hotel operators with older properties are trying to ward off new competition by upgrading or enlarging their establishments.

Existing downtown hotels continue to add garage and parking facilities and create drive-in entrances wherever possible. Group facilities are also enlarged wherever there is some waste space to recover.

There are definitely new trends in the hotel eating facilities. It is no secret that Americans prefer to eat in restaurants rather than hotels. And food operations in many hotels are not profitable. But it cannot be blamed entirely on customer refusal to patronize hotel dining rooms. In many existing hotels, food preparation and service areas are poorly laid out and oriented. It takes too many employes to prepare and serve the meals speedily and economically under today's high labor wages.

In the older hotels the kitchens are not on the same floor with the eating facilities. Some still have two and three separate kitchens. Even the newer ones with one oversized central kitchen now go in for specialty food rooms with a specialized limited menu in each

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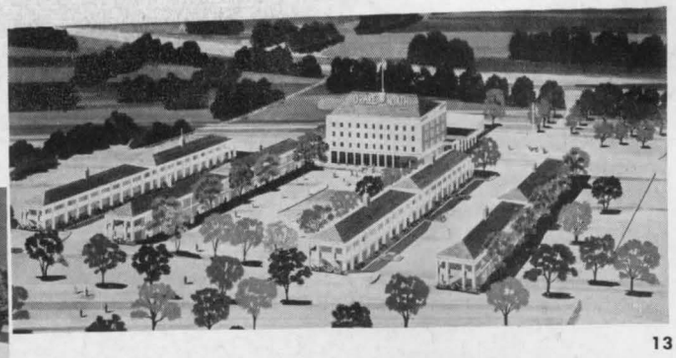


13

14 T. L. Gunn's Studio

room. This allows the guest the choice of a number of different eating places at various prices.

This has several other advantages: the eating places are tailor-made for a variety of people with different tastes, different money and different times to spend it.

A typical example is the Hotel New Yorker in New York City. It had four public restaurants occupying 20,000 square feet of space. The kitchen and bakery alone occupied 31,000 square feet. With $3\frac{1}{2}$ million food and beverage volume, it was making a departmental profit of about 10 per cent, *before* light, heat, power, rent depreciation, insurance, and taxes. On a comparative restaurant basis, the hotel had been losing because it couldn't cover those expenses with 10 per cent.

To remedy this situation, first a survey was made to determine the income per square foot and turnover per seat. (Both were entirely out of line with commercial restaurants. Income was too low, and the turnover too slow.)

The character and design of one of the four eating places were completely changed. A 2700 square foot dining room was changed to be an eating and drinking restaurant equally conducive to breakfast, lunch, cocktail, dinner and supper business. The restaurant was to stay open from 7 o'clock in the morning until 3 o'clock the next morning. The cost of the change-over, including equipment and decor, was about $175,000. Immediately, the annual income increased 90 per cent, to $1 million.

In another dining facility at the same hotel, the income doubled from $500,000 to $1 million when it was converted. Then, a 5400 square-foot formal dining room was closed and diverted to banquet business. Within six months, the income was up 60 per cent.

While creating commercial rental areas is still in vogue, here and there low income producing shops are being turned into cocktail lounges or eating facilities. In one case a shop area which brought in $9000 rent a year now nets $60,000 in a newly created cocktail-cafe lounge in the same area.

With exception of the luxury hotels in Miami Beach and Las Vegas, and some of the better motor hotels on the highways, guestrooms in the new commercial hotels are considerably smaller than what was formerly considered a required minimum. In the 455-room Hartford Statler, the single rooms are only 96 square feet; doubles are 138 sq ft; small twins 150 sq ft; large twins 191 sq ft; parlors 410 sq ft; sample rooms from 140 to 313 sq ft.

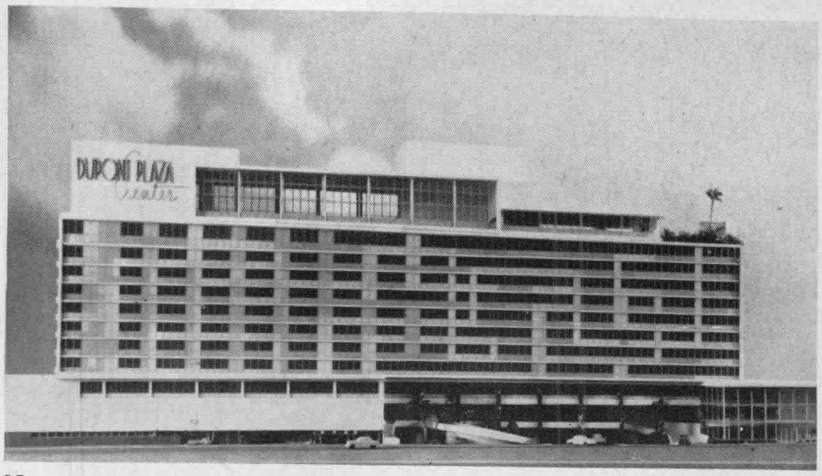
In the newer Dallas Statler Hilton they are only slightly larger, but in the newest hotel, the Philadelphia Sheraton, guestrooms are again smaller. There seems to be no guest resistance to small hotel rooms, provided the furniture is not over-scaled. Air conditioning and television, on the other hand, are something every traveler expects in a new hotel.

Most recently-built hotels have an equal number of studio-type and conventional bedrooms with alternating connecting doors. Room clerks, however, say they could do with fewer studio-type rooms. The demand for conventional beds is increasing. A 40–60 ratio, with the larger portion of rooms having conventional beds, might be a safer bet.

It's usually best to survey a locality for hotel room requirements. In certain cities, there is still a great demand for single rooms, while in others twin-bedded rooms throughout the house are more economical. Some recent surveys have shown an increasing demand for double beds in certain areas. Furniture can be changed to suit the demand, but permanent construction cannot. To make the smaller rooms large enough for a double bed, if needed, would seem a good solution.

The new hotel lobby is just large enough to handle the traffic. A minimum of seats discourages lobby sitters. The public writing room so popular in the 20's and 30's is a thing of the past.

Elevator control is important. With more operatorless elevators being used in hotels, the front office staff or bell captains should have an unobstructed view of the elevators.



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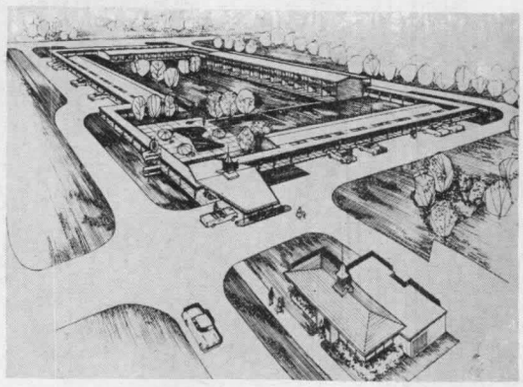

16

TODAY'S TRENDS IN HOTEL DESIGN

After World War II the open front desk with everything built into the counter, made its first appearance. Guests could lean over the counter to see whether the house was full or empty. Room clerks and assistant managers had no way of discussing anything without being overheard by the guest. While the old conventional hotel desk, where clerks spent most of their time concealed behind brass fronts was bad, the completely open desk is not much better. The ideal solution is a compromise between the two, where room clerks and assistant managers can step out of guest's hearing. The pivoting room rack in all of the new Statler hotels is one way to do it.

Function rooms are receiving more design attention than in former years. Group business constitutes a major portion of the food and room income in city hotels. Flexibility and accessibility are major factors. Assembly areas which can be closed off and used separately should be included. Hotels in large cities and state capitals usually require larger function space because of a greater number of conventions. Storage space for banquet tables and chairs should be included. Some of the larger hotels have also located a public bar or cocktail lounge on the function room floor.

If sample rooms are specified, it will be wise to proceed with caution. Demand for sample rooms blows hot and cold. In most hotels sample rooms are used for small conferences. The newer hotels design them with that double purpose in mind. At the Philadelphia Sheraton a partition between two regular guest rooms has been eliminated, but bathroom plumbing connections in bathrooms are left intact. If it proves the hotel does not need as many sample rooms, the partition can be put back and bathroom fixtures installed for regular guest room use.

Almost without exception, hotels have insufficient storage space. Employe feeding facilities and adequate locker space are receiving more attention today than formerly. Usually it's best to have only one employe entrance and exit, preferably in connection with the delivery entrance, where the timekeeper can watch the traffic.

While 30 years ago the architect could make a guestroom or guestroom floor corridor any width, today he'll be picked up quickly by the alert hotel man if the floor measurements for wall-to-wall carpeting are not in multiples of the standard 9-in. carpet width.

The hotelman may also have definite ideas about bathrooms. He wants more shelf space for shaving and make-up kits, and larger mirrors with better bathroom lights. In the luxury type hotels, he demands larger bathrooms, possibly with two basins in twin rooms. And a glass shower door rather than curtains. (He doesn't have to buy them outright, but can write them off over a period of years and then own them.) In some of the newer motor hotels even the toilet is separately enclosed. Where costs must be trimmed, partial tiling in bathrooms might be a solution. Several hotels have switched to moisture-proof wall covering above the tiles. Some luxury hotels use both fluorescent and incandescent lighting in bathrooms.

Hotelmen stress preventive maintenance features in guestrooms. A great variety of color schemes is no longer necessary. Two or three color schemes are more economical to maintain than eight or twelve. A guest occupies only one room at a time and no hotel guest has ever refused accommodations because a hotel room wasn't in his favorite color.

Radio, hotelmen have learned, isn't entirely out of style. Many who have replaced radio with television get increasing demands for radios. Latest trend is to have a radio-clock combination, either built into the night stand or on top of the dresser-desk combination. But there are distinct disadvantages in this latest trend. If the house current is interrupted it delays the clock and makes guests miss trains and appointments. Also, in certain steel structures poor radio reception may make the investment wasteful. The better solution would be

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Phil Fein

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19

McLaughlin & Co.

21

Associated Photographers

a centrally-controlled clock, and a radio-television combination working off a master antenna.

Some of the newer hotels anchor new-type picture hooks permanently in the wall between two rooms where furniture is placed back to back in connecting rooms. Sooner or later a colorful, pictorial map of the area, and perhaps another of the immediate vicinity, pointing out places of interest, might replace the old picture print.

Savings in electrical wiring can also be achieved if furniture placement is shown in the plans. Some hotelmen prefer outlets just slightly below desk top height rather than at baseboard level. It saves on cords, prevents tripping. Lamps to be placed against mirrors need only half shades. The mirror reflects the other half.

Ceiling lights for over-all illumination have long been discarded. The new trend is to make the closet light serve as foyer illumination by undercutting the wall on the closet so the closet light will shine out into the foyer.

Fewer desk or dresser drawers are another trend. Functional baggage racks take their place. Slanted fronts on drawers, with undercut fingertip grooves at the bottom make hardware unnecessary. Laminated plastics for furniture tops and fronts are standard today.

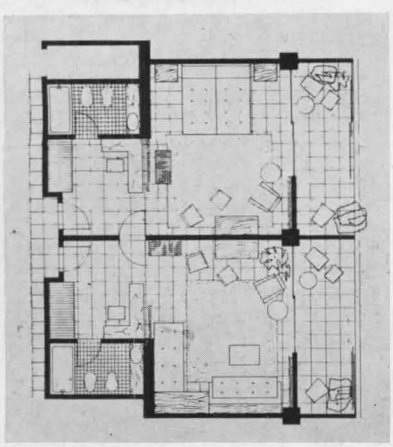
If preliminary surveys show the hotel will have a good portion of businessmen patronage, it's advisable to provide some rooms with larger-than-average hotel desk surfaces. Most recently-built hotels have a goodly number of executive suites. But it's more important to have more regular rooms with greater desk areas, even if it's accomplished with a raised drop-leaf.

Whatever the survey shows as to proportion of business men and vacation travellers, it is safe to predict for the future some interesting changes in clientele trends, as the downtown hotels go out for the highway business, and the motor hotels move ever closer to downtown to reach for the business man business.

More and more, motels are becoming part of other developments: 15. hotel with office building with architects bureau of building products, the DuPont Plaza Center, Miami, Frank H. Shuflin, John Edwin Peterson, architects. 16. a prototype design for Howard Johnson's southern restaurant-motels, this one for Portsmouth, Va., Rufus Nims, architect, with Carl Koch Associates; and 17, a similar prototype for northern areas, this one for Wilmington, Del., Carl Koch and Associates, architects, with Rufus Nims. 18. One of the important motels crowding into downtown territory, 1200 Beacon Street, Boston, Sturgis Associates, architects. 19. Many hotels are adding drive-in entrances, this one the Adams Hotel, Tucson, Ariz. 20. San Francisco seems a city where motels get downtown easily, this Holiday Lodge, by Hertzka & Knowles, architects. 21. A representative Miami Beach Motel, this one the Pan American, Carlos Schoeppl, designer.

NILE HILTON APPROACHES PLAN IDEAL

HILTON HOTELS INTERNATIONAL, *the branch of the Hilton empire that operates foreign hotels, also takes a hand in planning them for best and most profitable operation; if not in fact the client they are at least the client's American representative in dealing with architects. Curt Strand, vice-president in charge of construction, assisted by Emmanuel Gran, head of the architectural unit, is the focus of the functional know-how here; he has been known to work a hotel scheme up to twice its original earning capacity. Comments about the plans of this hotel and the next two shown are typical of the concerns of hotel design for profitable operation. This hotel, planned as a luxury operation catering largely to American tourists, represents a particularly satisfactory planning effort, and an especially good example of the desiderata of this operation.*



□ Kitchen is "best of all."

□ Ideal service arrangements from central kitchen to various dining areas — a matter of many man-hours — and to service elevators, for room service, and delivery to roof kitchen.

□ Ballroom and private dining room divisible by folding partitions. Each section accessible via service corridor.

□ Cocktail bar near dining rooms. Bar (not on these plans) near street.

□ Coffee shop in prominent location with respect of lobby and street frontage.

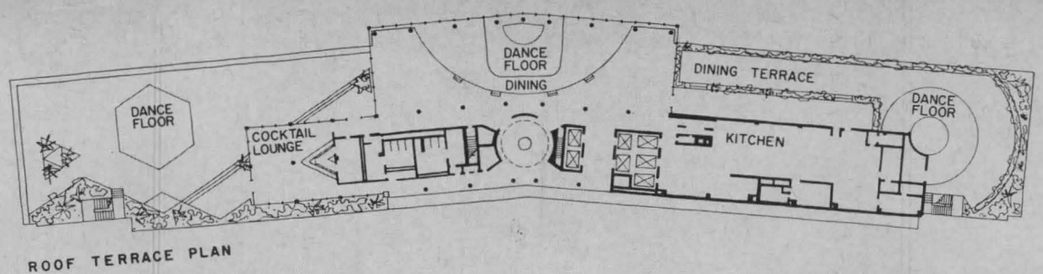
□ Especially good for this particular operation is plenty of rentable area for shops.

□ In a city where outdoor living is an age-old custom, intensive development of the site is plainly indicated. This scheme develops its income potentials, with shops, refreshment spots, roof gardens.

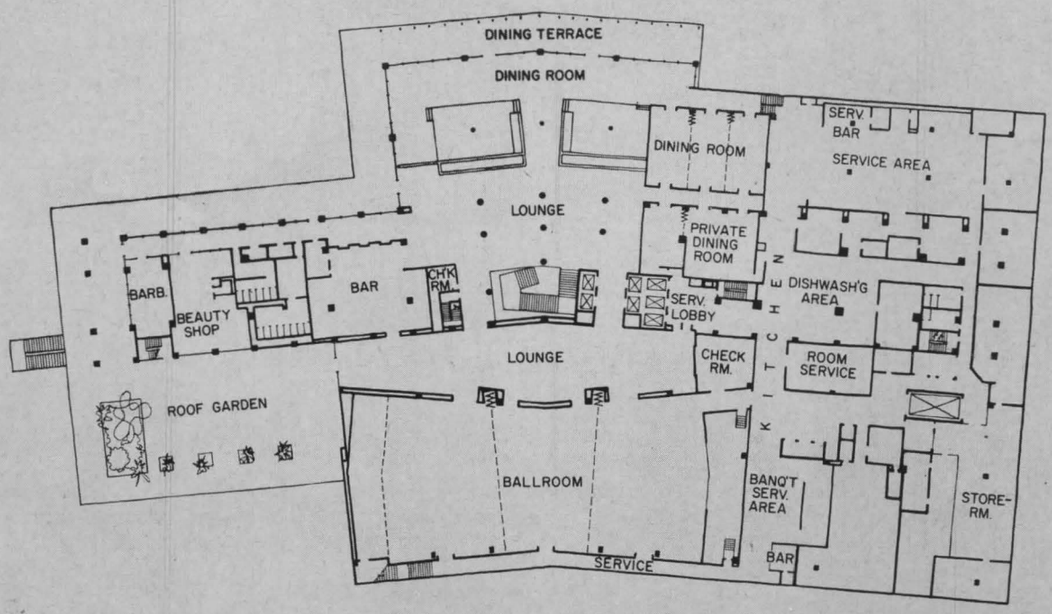
□ Good handling of double entrance problem. Good front office control. Executive offices well related to operations.

□ Like plan of guest room ("This is what you sell"). Like especially curtained dressing area. Bathroom is good — has lavatory shelf, also bidet. Balcony five feet wide, full room width, is usable.

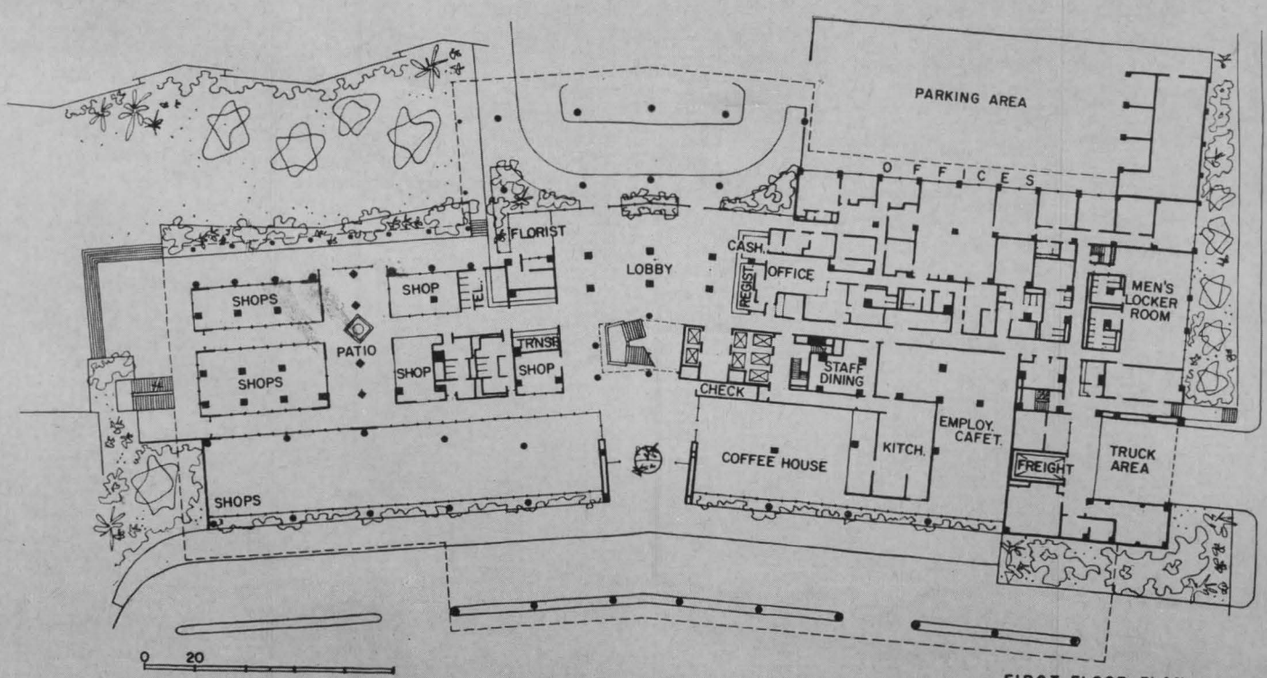
Nile Hilton, Cairo, Egypt; Misr Hotels Co.; Welton Becket and Associates, Architects and Engineers.



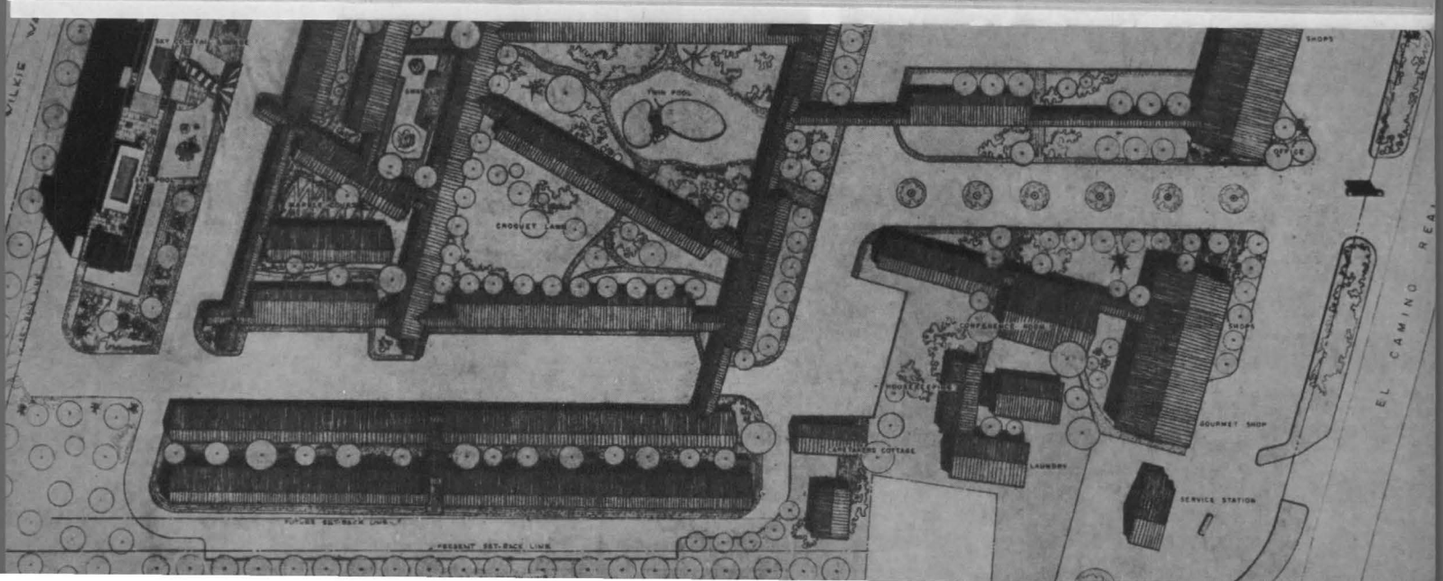
ROOF TERRACE PLAN

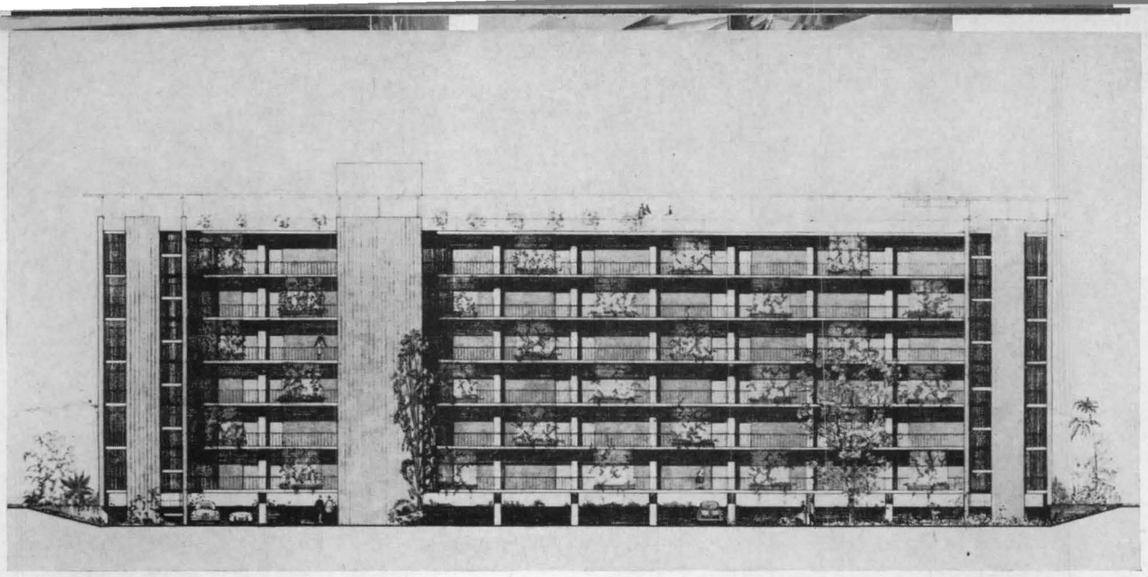


SECOND FLOOR PLAN



FIRST FLOOR PLAN



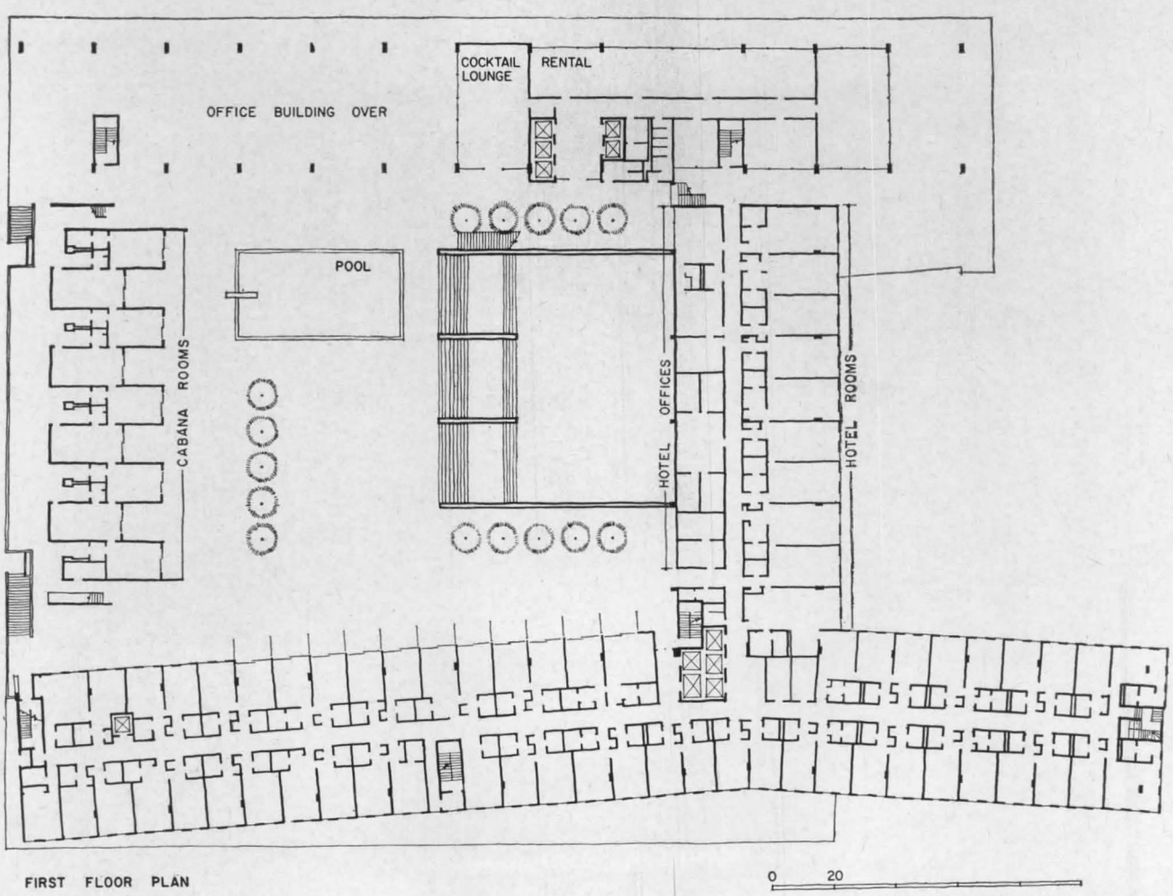


SIX-STORY ADDITION TO GARDEN TYPE HOTEL

IT SEEMS CHARACTERISTIC *of the times that as the small, intimate, horizontal*

□ The new building, measuring 36 by 190 feet, will rise from a depressed

□ Individual rooms, eleven to the floor, will be commodious, to cater to



FIRST FLOOR PLAN

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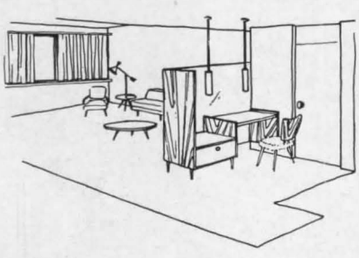
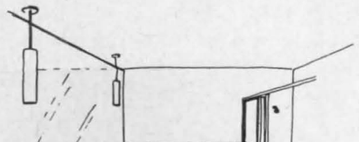
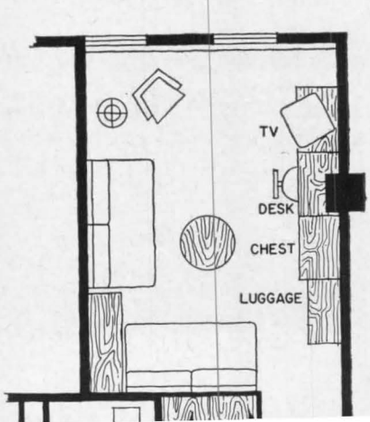
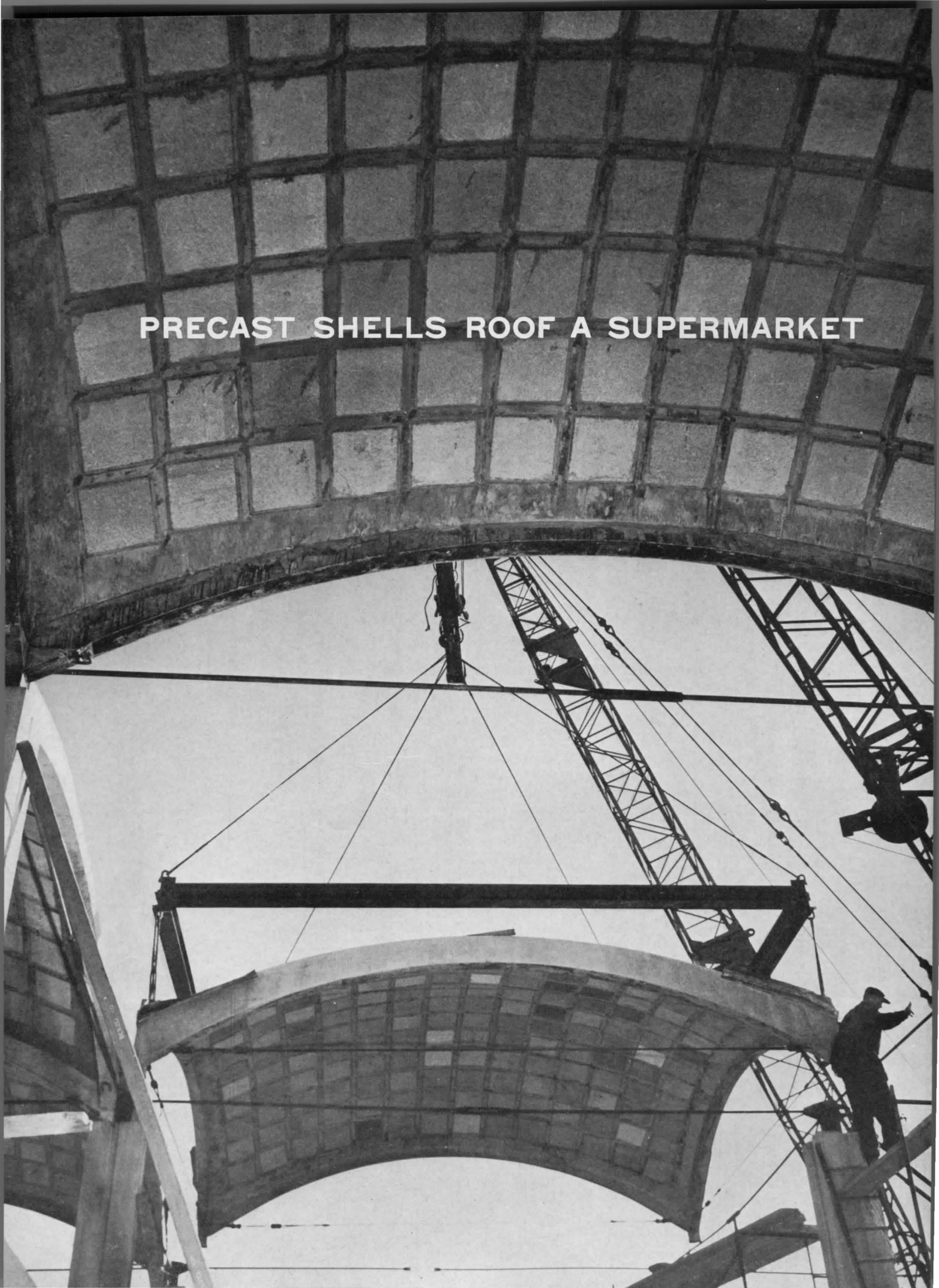
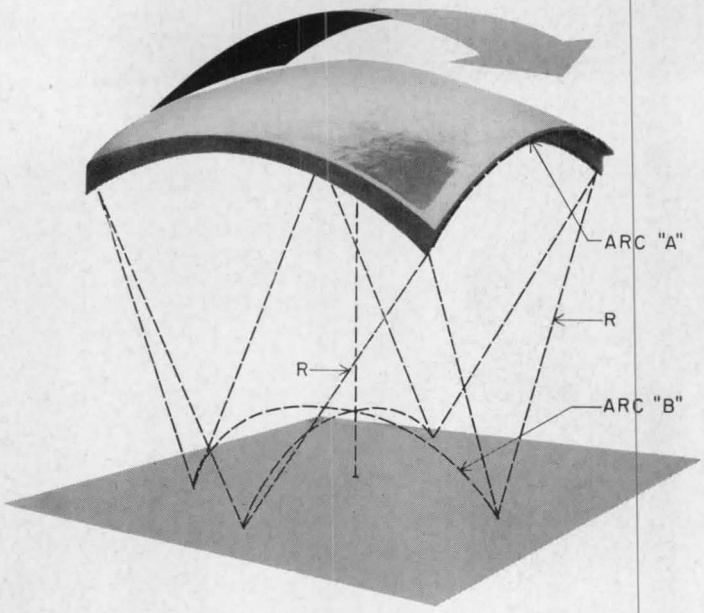
HIGHWAY HOTEL

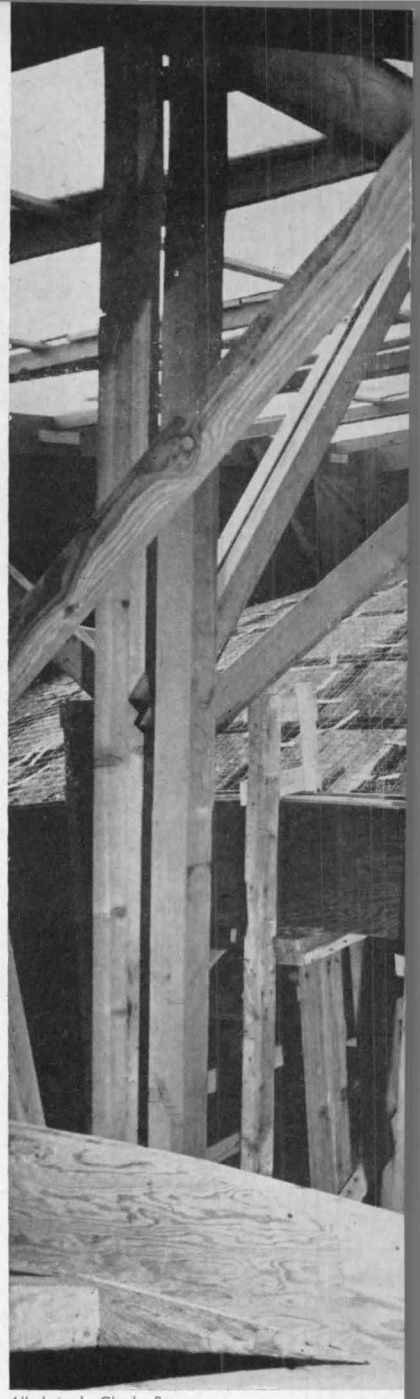







PRECAST SHELLS ROOF A SUPERMARKET





All photos by Charles Payne

PRECAST SHELLS ROOF A SUPERMARKET

Here is a new approach to precasting — that is, taking real advantage of the structural and architectural potentialities. Twelve circular translational shells with a 24-ft span in each direction were cast at ground level and then hoisted by two small cranes. Costs were low, visual interest high

Architect: Victor Christ-Janer and Associates. Structural Engineer: Paul Weidlinger, Consulting Engineer, Mario Salvadori, Associate; Matthys Levy, engineer in charge. Contractor: The Wenzel Company. Owner: Walter Stewart, New Canaan, Conn.

AN UNUSUAL COMBINATION of architectural concept, engineering design and construction technique has produced a structure which may set a new trend in the use of precast concrete. While precasting has gained greatly in volume in the last few years, generally only a few of the advantages have been exploited — such as reducing formwork and providing closer quality control. Most precast concrete structures have been quite conventional, differing little in shape from steel framing.

The roof structure shown here stems from a much more imaginative approach by relying on the shape of a thin shell to get an efficient structural component, while retaining the other advantages of precast concrete.

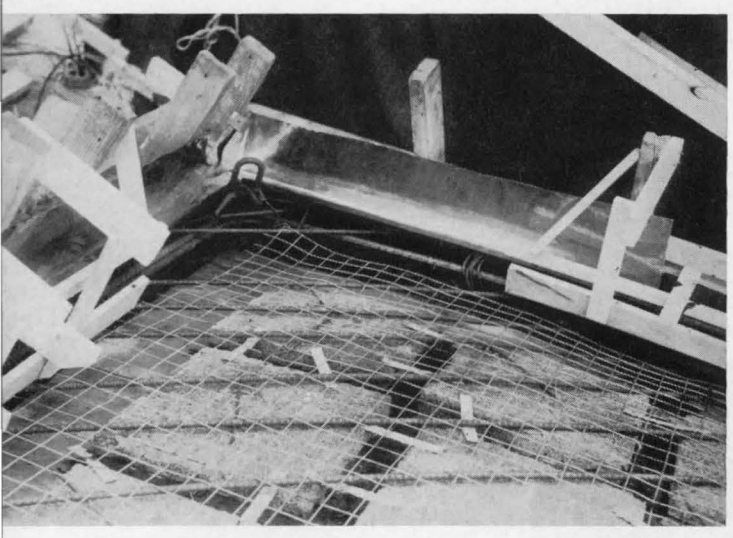
The architect envisioned a series of shells of such size as could be precast at ground level and lifted to roof height by a small crane. With this as a premise, a little figuring showed that a shell covering a 24-ft bay could be handled without trouble. This spacing caused no problem in terms of layout for shelving, food cases and other equipment.

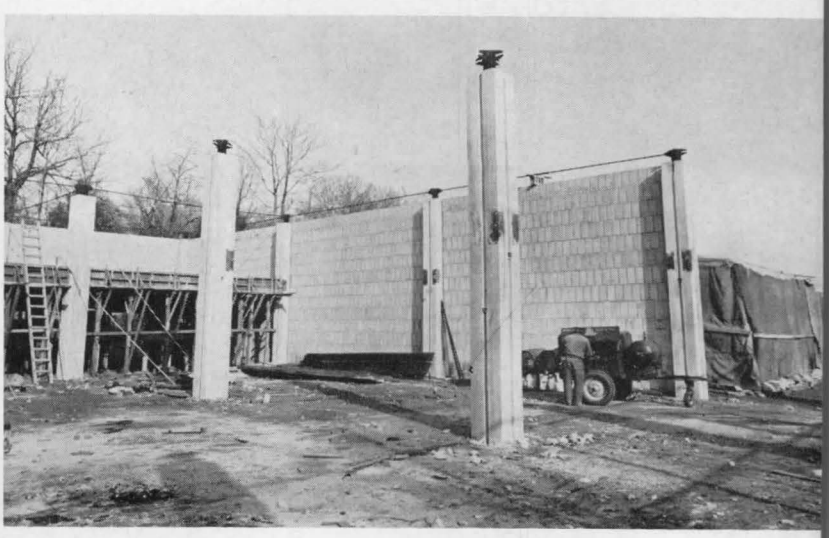
There's no doubt that with a 24-ft column spacing there are a number of standard structural roof systems that could have given a minimum depth at low cost, but in this case the architect has also managed to achieve a high degree of structural interest while keeping the cost down to a respectable $13.25 per sq ft, including air conditioning.

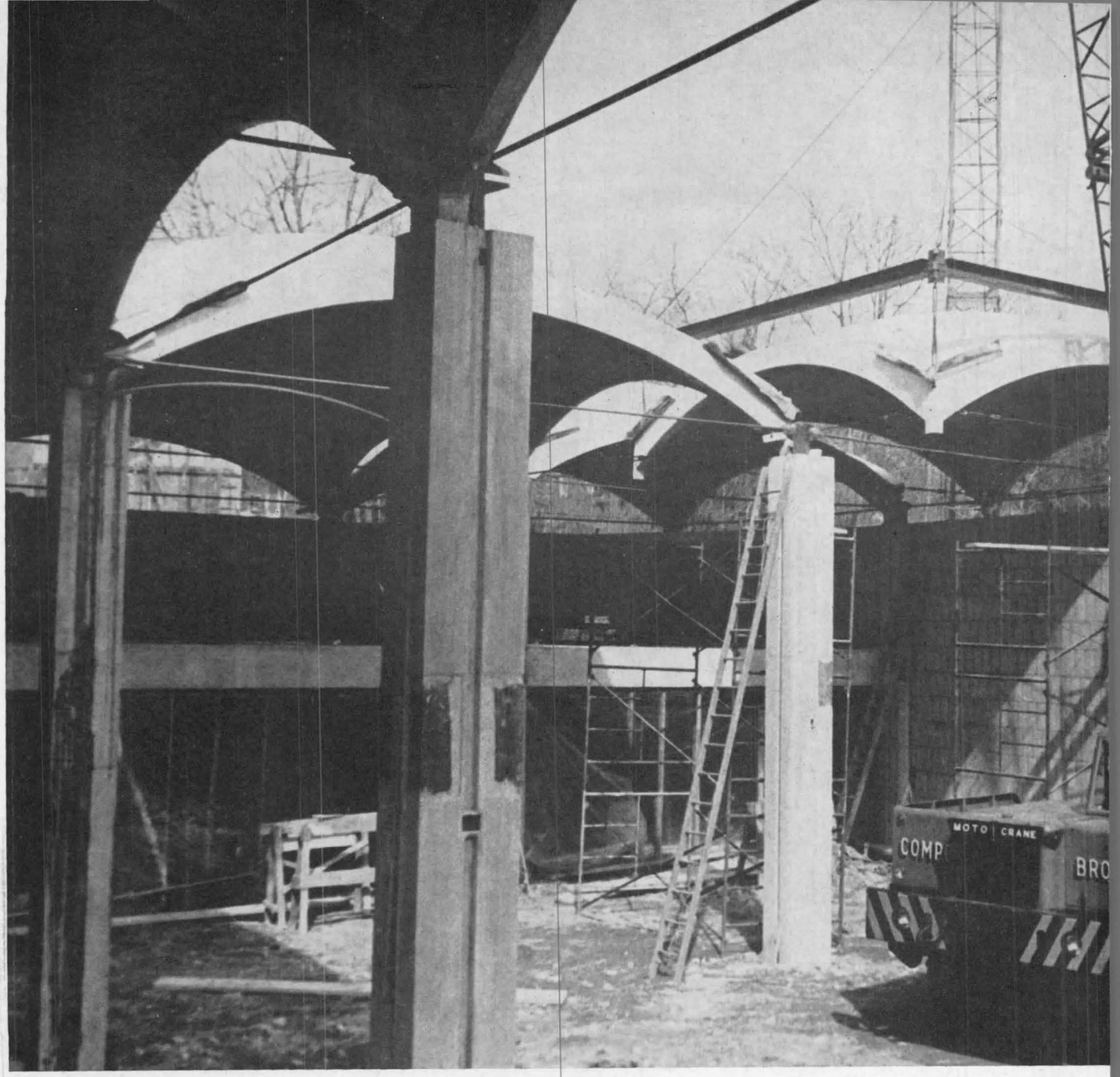
Once this idea had been decided upon, it was thin shell designer Mario Salvadori who suggested that an appropriate shape for repeated use in the roof would be a circular translational shell. The resulting solution was 12 shells each covering a 24-ft square bay.

Geometrically the shell is formed by

At top left, diagram illustrates the generation of a circular translational shell, the type used in the supermarket. Arc "A" follows arc "B," at right angles to it. In the large photo a form is shown ready to be poured. Reinforcement pattern tells the nature of stresses. At near right, close-up of reinforcing and insulation; note flashing and lifting lug in corner. At far right, columns have fittings on top to which tie rods are welded



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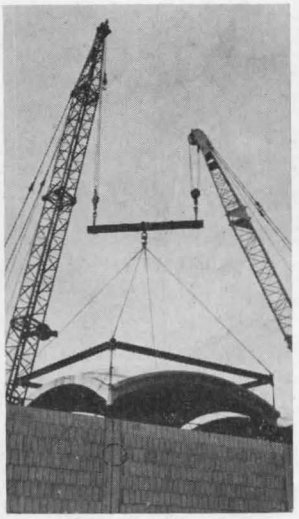
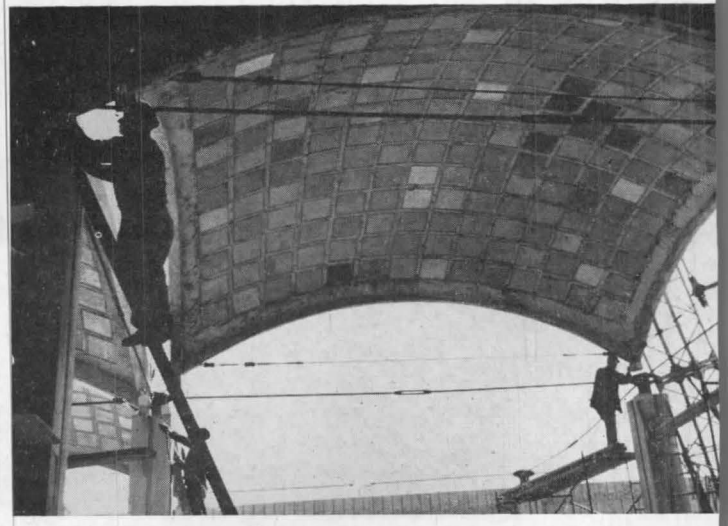
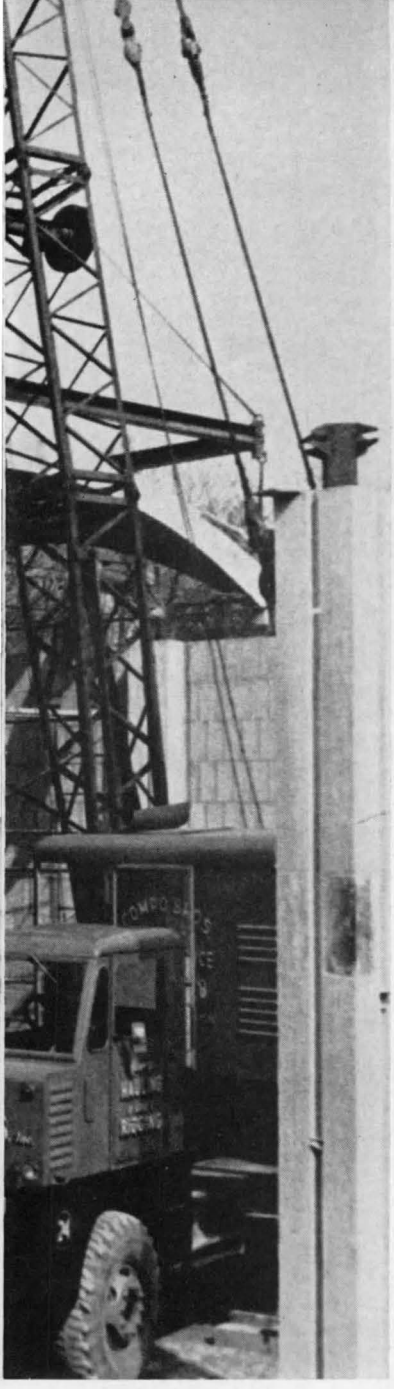
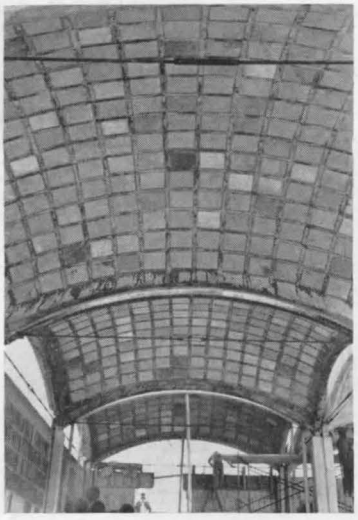
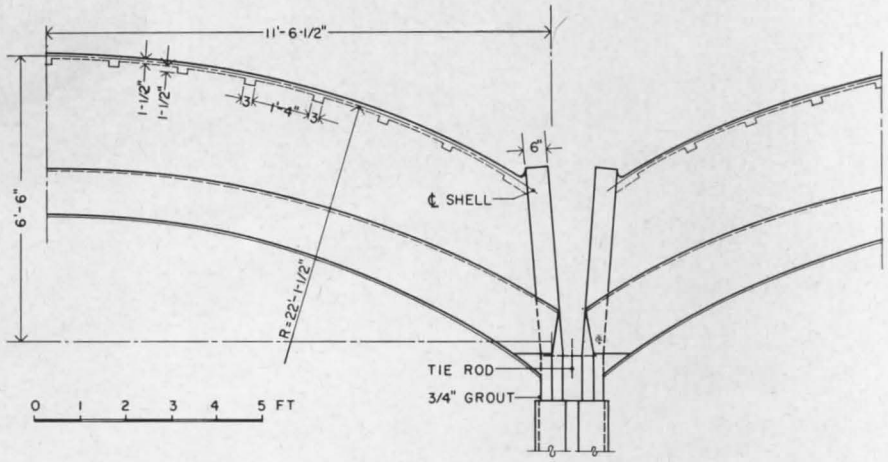










The shell ribs are tipped back to leave space for plastic skylights. The ribs do not come clear down to the columns but merge into short stubs. Both are architectural features to emphasize the structural "separateness" of the shells. Space between shells at columns is filled with sufficient concrete to cover the steel tie rod fittings; rods then take rib thrusts

translating a circular arch 24 ft in span and 3 ft 3 in. in rise over an identical circular arch at right angles to it. (A translational shell is geometrically different from a spherical dome cut on four sides. The membrane stresses in it are quite different too.)

Although the first thin shell built in Europe in 1910 was actually a translational shell of this type, circular translational shells have only become popular again in recent times. (Salvadori has designed four of them in Italy made out of tile and concrete, the largest of which is 61 by 93 ft.)

The translational shells in New Canaan are the first of their kind to be cast integrally with their boundary arches on the ground, and then to be raised in place by means of a crane. (Actually two cranes were required at $150 apiece per day. With only one crane, there would have been a tendency for the shell to "drift" during lifting, possibly upsetting it.)

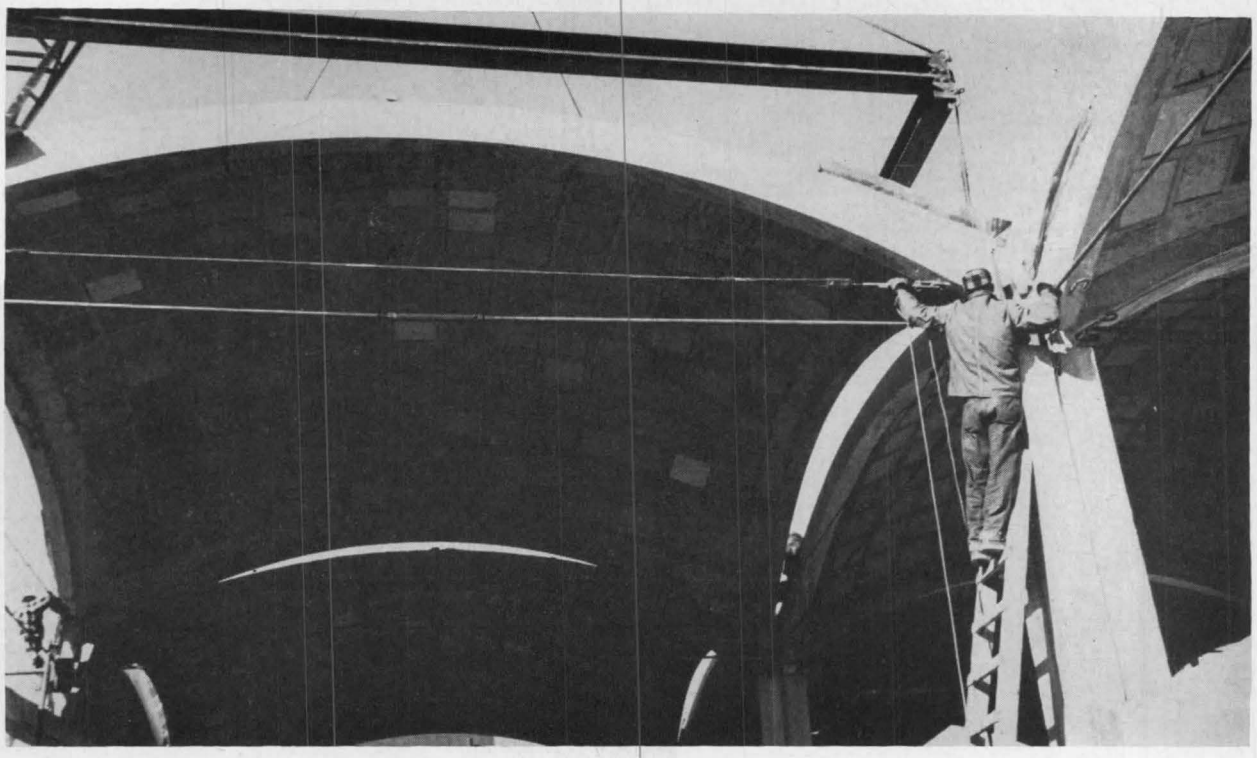
The repetitious use of individual forms on the ground together with a shell reinforced with only 0.37 psf of steel, makes this type of construction especially economical.

In addition to the 2- by 2- in. welded wire reinforcement, the shell is reinforced at the corner in order to prevent cracks due to tension in the diagonal direction.

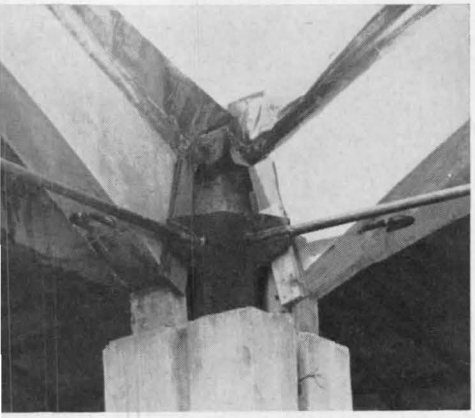
Number 4 bars on 6 in. centers constitute shell reinforcement between the boundary arches and the shell. The thrust of the arches is resisted by means of 1¼-in. tie rods welded to specially designed jaws set in the top of the columns.

The circular arches are 6-in. wide and vary from 1 ft at top to 1½ ft at haunches. The arches lie in a plane inclined towards the center of the shell so as to offer four bands of light around the shell, and to emphasize that from a statical viewpoint each shell is an independent element and gets no support from the adjacent shells.

The forms built on the ground were constructed of thin ribs 19 in. apart, on top of which were laid insulation



Shell being guided into position atop columns. Note temporary tie rod above, permanent tie rod below (with turnbuckle). Tie rods across interior shells are required because of the possibility of unbalanced load conditions; otherwise thrusts from shells would cancel



Permanent 1¼-in. tie rods were welded to special fittings set in the columns. The jaws are ½-in. plate welded to a "box" section formed by two 6- by 6- by ⅝-in. angles

blocks of cement coated fibers, 2½-in. thick, approximately 16-in. square.

The contractor originally built two forms which were deemed adequate for the schedule, but unforeseen delays caused him to build two more. Since casting was done in freezing weather, the form was protected by a movable temporary shelter.

The concrete was poured directly over the insulation in a thickness of 1½ in. while the insulation blocks created a grid of ribs 3-in. wide and 3-in. deep. (Because of the shell's curvature it was impossible for the insulation blocks to butt on the edges.) The ribs themselves are not necessary for structural strength, and could have been a lightweight insulating concrete.

While the underside of the shell will remain untouched, the outside will be painted with three coats of acrylic plastic paint which will weatherproof the roof, but will not be affected by shell movement. The skylight created by the incline of the boundary arches will be covered by strips of white corrugated reinforced plastic material, nailed through rubber gaskets to special wooden inserts in the shell.

The shells weigh 13½ tons and were lifted by means of a special frame which grabbed ¾-in. bent rods cast into each corner of the shell.

The lifting schedule was two shells per day, but the contractor feels that on another job this could be increased to three.

Temporary tie rods were attached to the boundary arches during the lifting operations to provide stiffness, and were removed by burning them off once the shells were in place.

Drainage is accomplished through pipes set in center of interior columns and through scuppers at the fluting of exterior columns. Flashing was placed in the corner of the shells around the pipe insert.

This type of design can be easily adapted to shells 30 to 40 ft on a side, the only limitations on the dimensions of the shell being the cost and availability of crane service.

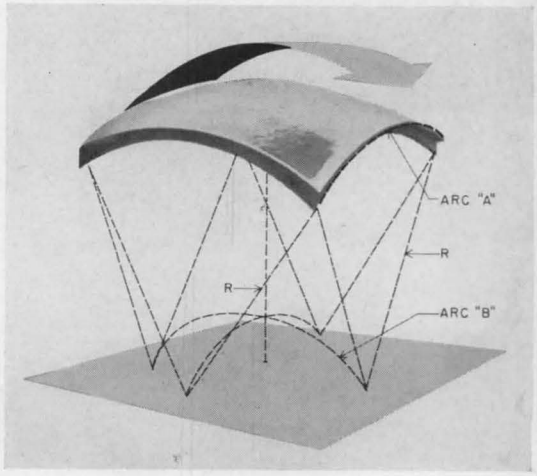
How the shell acts, and the nature of its stresses

In designing a thin shell, the engineer aims at having a shape and means of support such that most stresses in the shell are membrane stresses — direct tensions, compressions and shears in the plane of the membrane. It is desirable to avoid bending stresses as much as possible because this both complicates the analysis and increases the amount of reinforcement needed.

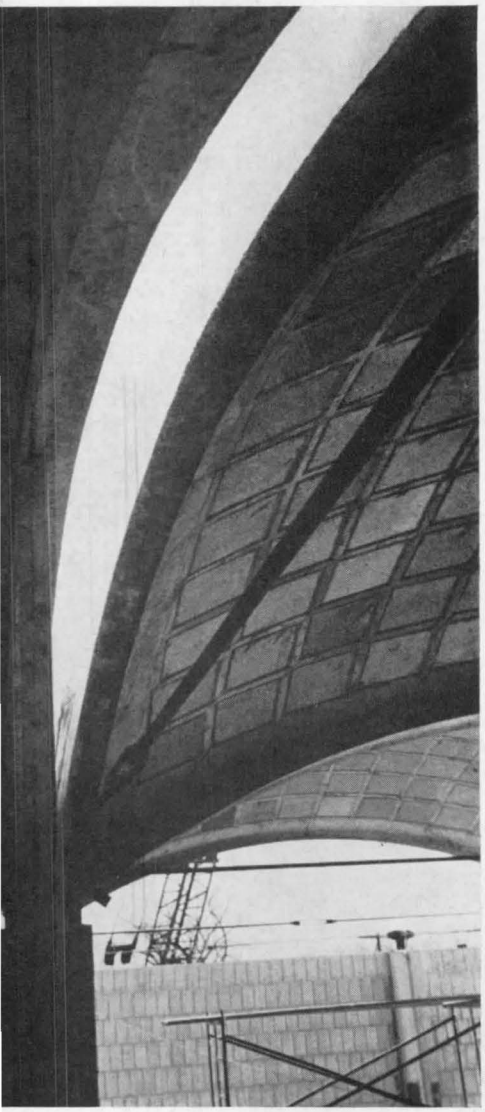
One might think that a membrane is practically self-supporting, that it can almost exist free in space with a minimum of support at the edges.

This is not so because at the edge of the membrane (or shell) there are forces that must be resisted so that the membrane will be in equilibrium. The ideal solution is a very thin, deep rib (a diaphragm) infinitely rigid in the vertical plane, but with no resistance in the horizontal plane.

Under this condition, forces parallel to the rib will be resisted by the shearing



Exterior shells have a cast-in-place "awning," provided with a reglet for window installation. Concrete blocks are set on end for a vertical wall pattern (difference in color is caused by variation in block moisture). Columns have a fluting to provide additional interest



Opening between shells gives a strong sense that shells are independent units. Corrugated, white reinforced plastic is attached through gaskets to wooden insert in the shell

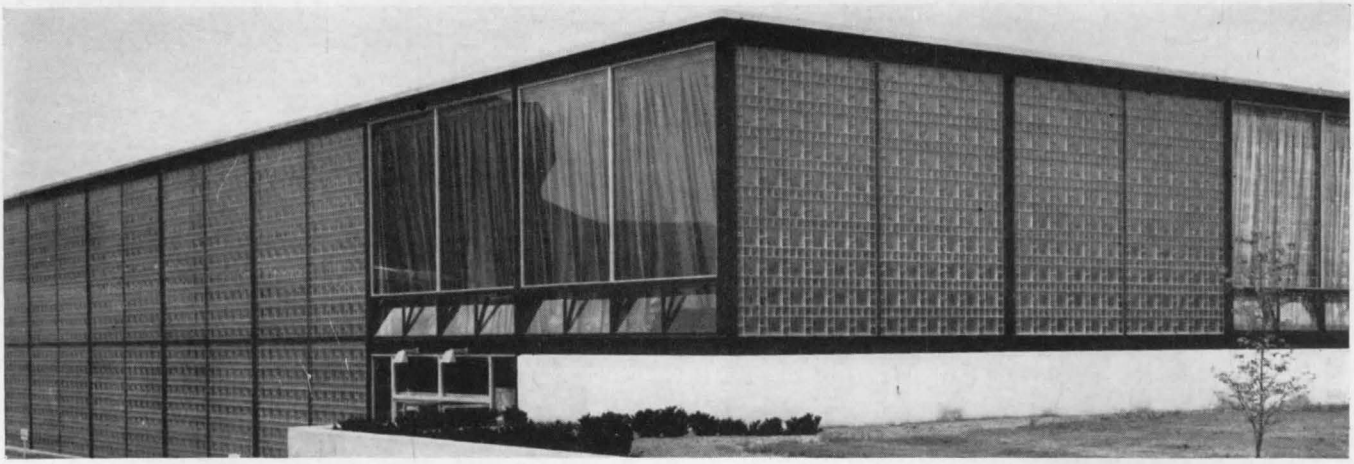
strength of the rib. Forces normal to the rib will tend to displace the rib. Since it is actually impossible for the rib to be entirely free to move, bending forces (called boundary disturbances) are set up at the edge of the membrane, penetrating some distance into it depending on the shell thickness and the rib.

In the case of the translational shell shown in this article, arches tied to the shell are the elements which take the shear forces of the shell. These forces cause thrusts in the arches which are resisted at the ends by tie rods.

In the circular translational shell, the computed shear forces at the corner of the shell are infinite. In practice this does not happen, because the ribs have a certain lateral rigidity. But they are high enough to require special diagonal reinforcement at the corner.

At the junction of the rib to the shell transverse shears are developed which produce bending stresses in the shell.

For most of the shell, 2- by 2- in. welded wire reinforcement can be used to take the direct stresses, but rods are used next to the ribs to take the bending stresses. These bending stresses vanish rapidly away from the rib due to the curvature of the shell and its small thickness.



CURTAIN WALLS, COLOR ADD GLAMOUR TO GLASS BLOCK

TWO RECENT DEVELOPMENTS — the use of glass block as a curtain wall material, and a new color-finished block — promise to give the Cinderella of the glass industry a leading role in building design.

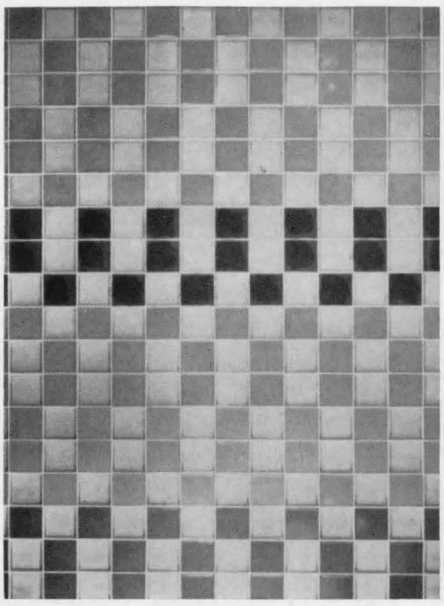
Until recently, glass block has been relegated to playing a practical and utilitarian — but not very glamorous — supporting part. And, while architects have recognized and used its unique properties as a building material since glass block arrived on the American scene over twenty years ago, a survey conducted for the Pittsburgh Corning Corporation showed that many of them had tired of it. This may have been due, at least in part, to miscasting. Although glass block is both glass and masonry, it has inevitably been used most often for its most obvious advantages — those of a sort of "super-glass" which provides controlled natural lighting without glare, insulates against heat gain or loss accompanying large window areas, and eliminates expensive sash. Its potential use in walls (as masonry) rather than in window spaces (as glass) has been largely neglected.

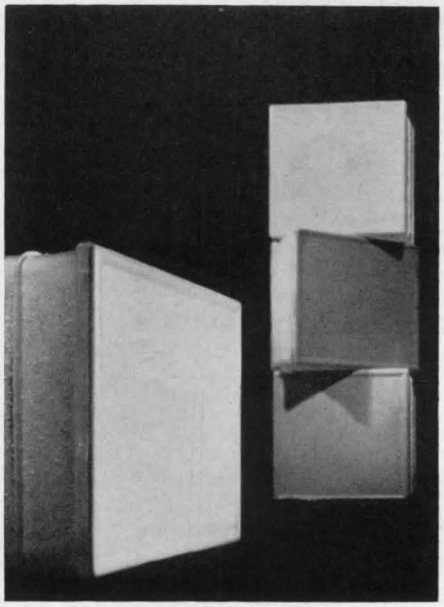
Now, such pioneer projects as Milwaukee's seven-year-old Layton School of Art, designed by John B. Waldheim Associates, have proved the practicality of glass block as a wall material, and the technique has gained increasing acceptance, spearheading what may prove to be a revolution in the glass block industry. What are the advantages of a glass block curtain wall? Add to its light-transmitting properties, its insulating value (glass block has a U-factor equivalent to that of an eight-inch masonry wall), its corrosion-resistance and easy maintenance, another factor — economy. Because one trade installs the entire wall, a glass block curtain wall can be erected at a lower cost than most conventional curtain walls. And once up, it is a finished wall inside and out.

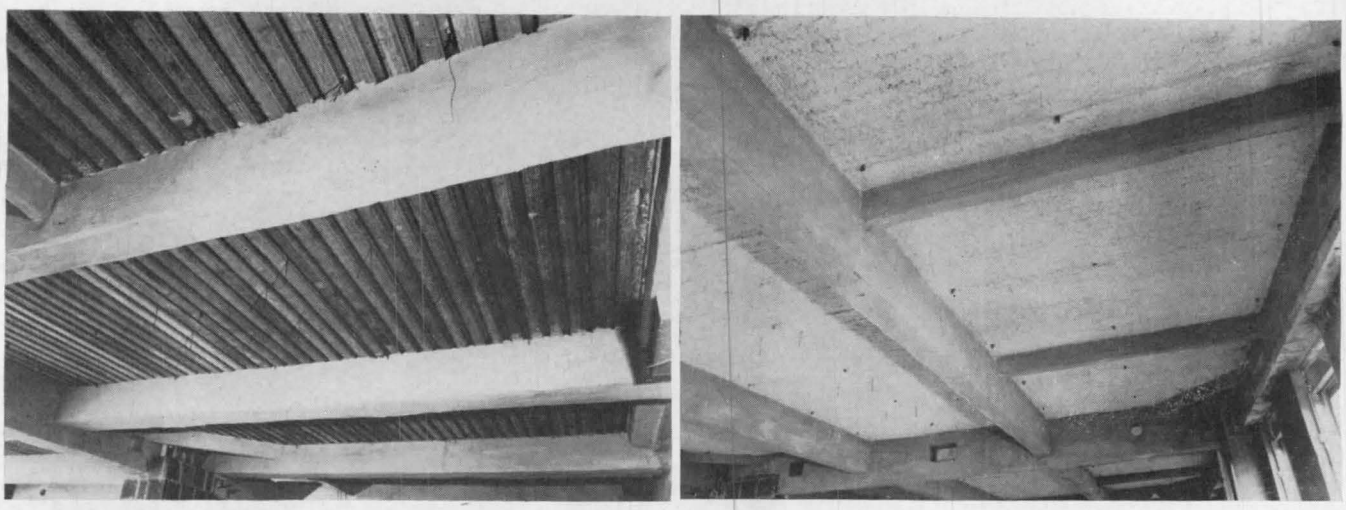
To add impetus to the curtain wall technique, Pittsburgh Corning Corporation has developed a method of giving glass blocks a fired-on translucent ceramic finish which makes it possible for the architect to use color on the exterior of a building without sacrificing any of the inherent qualities of the glass block wall. The colors — turquoise, green, yellow and coral — have a median light transmission range of about 20 per cent, which allows the entry of diffused natural light while cutting down glare and heat gain. To produce the permanent finish, the blocks are sprayed with a water based ceramic enamel and sent through a long continuous lehr, where they are preheated, fired for 10 minutes at 1040 degrees F., and annealed for about 1½ hours.

The new colored blocks, which are expected to find their greatest application in combination with PC *Suntrol* and standard functional blocks, come in the eight inch square size. *Pittsburgh Corning Corp., One Gateway Center, Pittsburgh 12, Pa.*

A new ceramic-finished block available in four colors promises to add impetus to the use of glass block in curtain walls such as that designed by architects Harrison and Abramovitz for the Corning Glass Works shown above.







Sprayed fiber was blown on 100,000 sq ft of cellular steel flooring, giving 3-hr rating, in the Baltimore Commercial Credit Building

DIRECT-SPRAY FIREPROOFING CUTS WEIGHT AND COSTS

TWO MARKED TRENDS have emerged from efforts to combat rising material and labor costs for structure, and, along with this, critical manpower shortages in certain trades: (1) the continuing search to lighten construction, and (2) the attempt to take greater advantage of mechanization.

Fitting neatly into this picture is sprayed fiber fireproofing for direct application to cellular steel flooring. The beams can be either direct-sprayed with fiber, or enclosed first in a metal lath cage and sprayed with fiber or lightweight plaster. The fibers are asbestos or asbestos combined with manufactured mineral fibers. A fiber spray can also consist of asbestos combined with vermiculite.

The significant development here is the first large scale application of direct spray fireproofing in a big building.

This current example of extensive usage of sprayed fiber fireproofing is in the Baltimore Commercial Credit Building designed by Harrison & Abramovitz. Eleven of the 18 floors, each with approximately 9900 sq ft, are fireproofed in this manner. The other seven floors have gypsum plaster with vermiculite or perlite aggregate. Beams of the top 11 floors have perlite plaster on metal lath. The fiber on the cellular steel flooring is tamped to a thickness of ¾ in. below the lower cell, providing a three-hour fire rating approved by Underwriters' Laboratories. The steel beams, plastered with a 1-in. coat of perlite plaster, provide a 4-hr rating. The plastering contractor was John H. Hampshire, Inc. of Baltimore, Md.

The sprayed fiber process, itself, is not new, the spray having been pretty well developed by manufacturers, and the construction assemblies tested by standard fire rating authorities. There is some news in the fact that machinery is being further improved to speed up the rate of application, which is now typically 1500 sq ft per day. Some equipment is said to be capable of handling 5500 sq ft per day. With hand plastering the rate is usually 300 to 400 sq ft per day, per man.

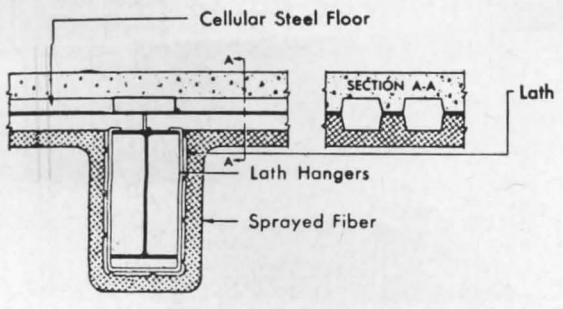
This is not difficult to appreciate when one considers the claims that costs can be cut from 10 to 33 per cent and weight up to 80 per cent as compared with suspended fireproofing treatment, including the metal lath, hangars, channels, etc.

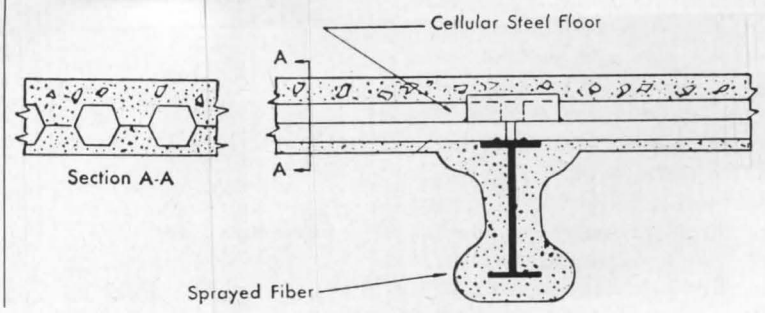
Manpower can be reduced since in the spraying operation only two men are required for each machine, and another man moves the rolling scaffolding.

With proper operation and equipment, the application of spray fiber can be both free of dust and splattering residue. Since sprayed fiber coatings also give efficient sound reduction, it is possible that additional acoustical material may not be needed.

Description	Thickness	Rating
Spray applied directly to the floor and to metal lath around the beam	1¼″ on floor 1½″ on beam	4 hr

Description	Thickness	Rating
Spray applied directly to the floor and to metal lath around the beam	¾″ on floor; 2½″ on beam	3 hr
	1″ on floor; 3″ on beam	4 hr
	⅜″ on floor; 1⅝″ on beam	2 hr
	⅞″ on beam	1 hr





ON-GRADE FLOOR SLABS FOR RESIDENCES-1

BASIC DESIGN CONSIDERATIONS

The physical characteristics of the site and the nature of the soil are the controlling factors. The type of soil, its load-bearing and capillary characteristics must be known in order to have an efficient and effective slab-on-ground design. Surface drainage in every direction is essential, and, if necessary, a positive underground drainage system must be provided. Proper elevation of the slab above the finished grade is critical. Many moisture problems will not occur if elevation of the slab and drainage are properly handled. A moisture condition may cause a failure of the flooring surface material, and increase thermal problems.

Moisture control involves controlling the water transfer by capillarity and by vapor phase migration. The capillary rise of water can be broken by using a layer of granular base material under the slab. A vapor barrier separating the slab from the ground will limit vapor transmission and may also serve as a water stop. Under certain conditions, it is desirable to use either one or the other of these slab protections; at other times, both are needed. Likewise, there are sites where neither would be required. The important thing is to know what is required in order to overcome any moisture difficulties that may exist for the specific site.

The major thermal consideration is to provide comfort. A less important consideration is to achieve some economy from heat loss through the slab. Two essentials are required: first, a suitable insulation material, correctly placed around the perimeter of the slab; and second, a properly designed heating system.

SITE PREPARATION AND GRADING

Fills Outside Foundation

(1) Grading fill should be clean soil, from which all roots or foreign material have been removed. Grading fill should be mechanically compacted in not more than 4-in. layers.

(2) Backfill used against the outside of foundation walls or grade beams should be thoroughly compacted by tamping.

Site Grading and Drainage

(1) Finish grades should slope downward away from structures having slab-on-ground construction, a minimum of 12 in. for a distance of 25 ft in all directions (4 per cent slope). Where property lines, retaining walls, etc., limit the distance from the structure to less than 25 ft, no less than 4 per cent slope should be provided.

(2) Wherever less than a 4 per cent slope is used adjacent to the structure, such as for a terrace, a positive means of drainage should be provided.

(3) In side-hill locations, the site should be so graded that surface water will be diverted around the structure. In addition, a positive system of underground drainage may be required for certain conditions.

Height of Floor Above Finish Grade

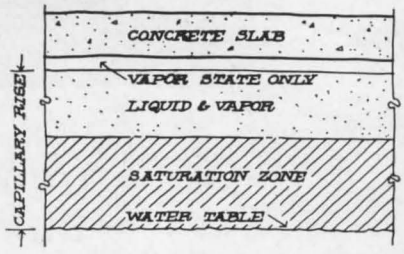
(1) For an unheated slab or where heating coils are embedded in the slab, the finish grade at the outside wall should be not less than 8 in. below the top of the concrete slab.

(2) Where warm air ducts are used in or under the slab, the finish grade at the outside wall should be not less than 2 in. below the bottom of ductwork adjacent to the foundation wall.

SLAB BED

Soil Capillarity

The underside of a concrete slab should not be in contact with liquid water. Capillary water rises through soil from the water-level or water-table to various heights depending on the type of soil. (See sketch.) A base material of limited capillarity of sufficient thickness will break the capillary rise of water. Effective drainage will prevent the base from being a reservoir of water.



Moisture and vapor in covered soil

Limits of Capillary Rise

(1) The capillary rise of liquid water in a material used in a slab bed should not exceed 2 in. under a recognized test for capillarity for the material to be considered of limited capillarity:

Material of Limited Capillarity

Gravel or crushed rock, ¼ in. and larger in size or other material which will qualify by recognized test. The permanence of limited capillarity is necessary in such a test.

Capillary Material

Clay, silt, sands, bank-run gravel, or other solids unless shown to be otherwise by a recognized test for capillarity. This classification applies to both undisturbed soil and foundation fill.

Foundation Fill

(1) Areas within foundation walls should have vegetation, topsoil, roots or foreign materials removed. The desired height should be established with clean foundation fill.

(2) Foundation fill and backfill should be thoroughly compacted in not more than 4 in. layers to assure uniform support for the slab. Compaction should be obtained by either mechanical means or by tamping.

Base

(1) A base for a concrete slab-on-ground when required by design conditions must be at least 4 in. in thickness.

(2) To qualify as a base of limited capillarity, the material should be a selected and clean material, ¼ in. or larger in size, or other material as described above.

(3) The base should be thoroughly compacted by rolling or tamping to assure uniform support for the slab.

Waterproof Membrane

A building site having either hydrostatic pressure in the soil or a liquid water condition, less than 6 in. below the natural surface of the ground, should not be used for a house incorporating slab-on-ground construction. With such condition a waterproof membrane under the slab would be required.

Vapor Barrier

(1) The permeance of vapor barriers should not exceed 0.20 perms when tested by the ASTM methods.

(2) Vapor barrier joints should be lapped a minimum of 6 in. Sealing is not required.

(3) Vapor barriers should be capable of withstanding handling and construction traffic without puncture or displacement.

(4) Vapor varriers should be required under design conditions 1 and 2, as shown in Table 1.

Separator

(1) When a vapor barrier is used it also serves as a structural separator between the concrete and the slab bed.

(2) A separator should withstand handling or construction traffic, but qualities of durability or low permeance are not required.

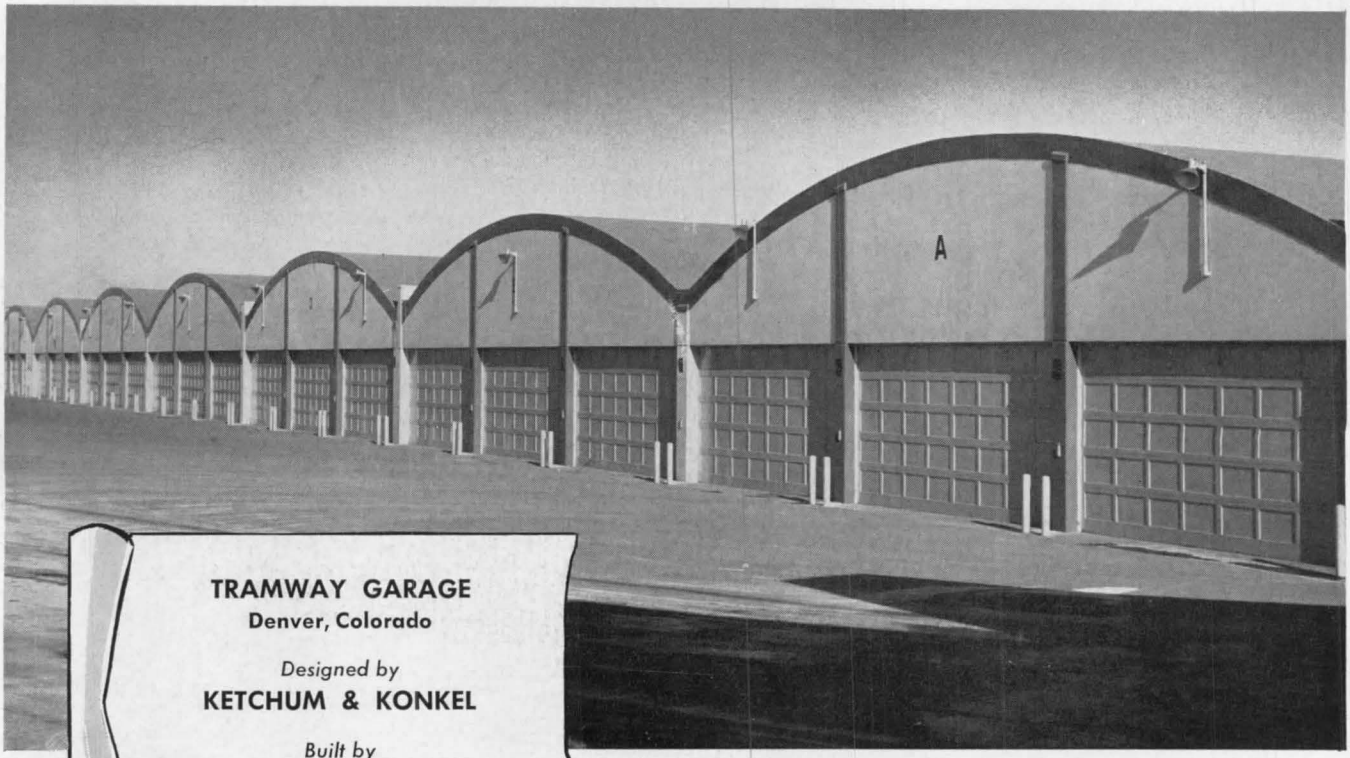
(3) A separator should be used under the following conditions:

(a) When a slump test of a concrete mix is more than 4 in. by standard test.

(b) When water heating coils or warm-air ducts are embedded in the slab.

Adapted from "A Study of Slab-on-Ground Construction of Residences," conducted by the Building Research Advisory Board for FHA

12,500 SQUARE FEET OF RAYNOR OVERHEAD DOORS PROVED BEST BY ACTUAL TEST!



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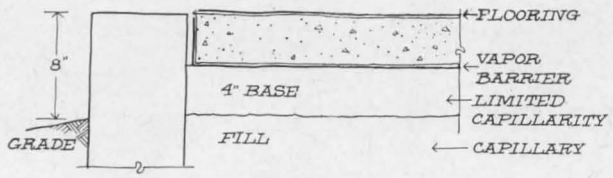
ON-GRADE FLOOR SLABS FOR RESIDENCES–2



SLAB ON GROUND DESIGN CONDITIONS RELATIVE TO MOISTURE

Design No. 1 (shown above)
Design No. 2 (both base and fill capillary)
Design No. 3 (no vapor barrier)
Design No. 4 (no vapor barrier, base capillary)

TABLE I

Construction Item	Design No. 1	Design No. 2	Design No. 3	Design No. 4
Vapor Barrier	Provide	Provide	No vapor barrier. Separator as noted [1]	No vapor barrier. Separator as noted [1]
Base of Limited Capillarity Material	Provide [2]	None	Provide [2]	None
Fill or Base	Capillary	Capillary	Capillary	Capillary
Flooring Material	Group A or B	Group A Group B only as noted [3]	Group A Group B not allowed	Group A only as noted [4] Group B not allowed

[1] Provide as listed under the subhead, "Separator" sheet 1.
[2] A duct or plenum system should have a 4 in. base material of limited capillarity under the entire system.
[3] To determine if Group B flooring may be used with Design No. 2:
(a) determine type of soil.
(b) from table for capillary rise of water in various soils, determine figure which applies to this soil.
(c) if the water table for the site is at a distance below the ground surface greater than this figure, Group B floorings may be used.
[4] To determine if Group A flooring may be used with Design No. 4:
(a) and (b) same as in Note 3.
(c) if the water-table for the site is at a distance below the ground surface greater than this figure, Group A flooring may be used.

Four slab-on-ground designs are described in Table 1 which covers the conditions which may be created by various combinations of soil, fill, base, vapor barriers and floorings. These four designs apply for both heated and unheated slabs. Slabs are to be a nominal 4 in. in thickness. The design requirements are recommended as a guide for specific cases and for decisions on allowable floorings.

If more than 20 per cent of a slab is planned as a cement finish and not covered by a flooring material, only design conditions No. 1 and No. 2 will be satisfactory.

CAPILLARITY FIGURES

Capillary water does not rise above the water table more than the following height in these soils	
Gravel	0.0 Ft.
Coarse Sand	2.6 Ft.
Fine Sand	7.5 Ft.
Silt	11.5 Ft.
Clay	11.5 Ft.

FLOORING TYPES

Group A: Asphalt tile, rubber tile, vinyl-asbestos tile, flexible vinyl tile (unbacked).
Group B: Cork tile, linoleum, felt or fabric backed flooring compositions, wood block.

INSULATION

Properties

(1) Insulation should be required to be non-capillary, not permanently harmed by wetting, or harmed by contact with wet concrete mix, and not subject to damage by termites or fungi.

(2) Insulation must have a compressive strength equal to or more than that required to pass the following test:

(a) Preload insulation to a loading of 50 lb per sq ft. Measure the thickness of the insulation under this preload.

(b) Add an additional loading of 40 lb per sq ft for live load equivalent.

(c) Measure the thickness of the insulation under the second loading. The compression of the insulation under the second loading must not be more than 6 per cent of the thickness measured after the preload specified under (a).

Location

(1) The slab perimeter must be insulated in its entirety.

(2) If the highest known water-table of a site is 2 ft. or more below outside grade, perimeter insulation may be placed in either a vertical or horizontal position. If the highest known water-table is 4 ft or more below the outside grade, it is generally recommended that perimeter insulation be placed in a vertical position.

(3) If the highest known water-table is less than 2 ft below the outside grade, perimeter insulation must be placed in a horizontal or L-shaped position. An exception should be made if a special drainage system is provided to prevent moisture from reaching the insulation.

Thermal Resistances

It is recommended that the method of establishing thermal resistances for the selection of insulation be determined by using the outdoor design temperatures for the region.

Summer Cooling

(1) The frequent or continuous use of embedded coils for the purpose of cooling the house in summer is not recommended with slabs-on-ground as they are presently designed.

(2) For unheated slabs where summer air conditioning is contemplated, see perimeter insulation recommendation, Table 2.

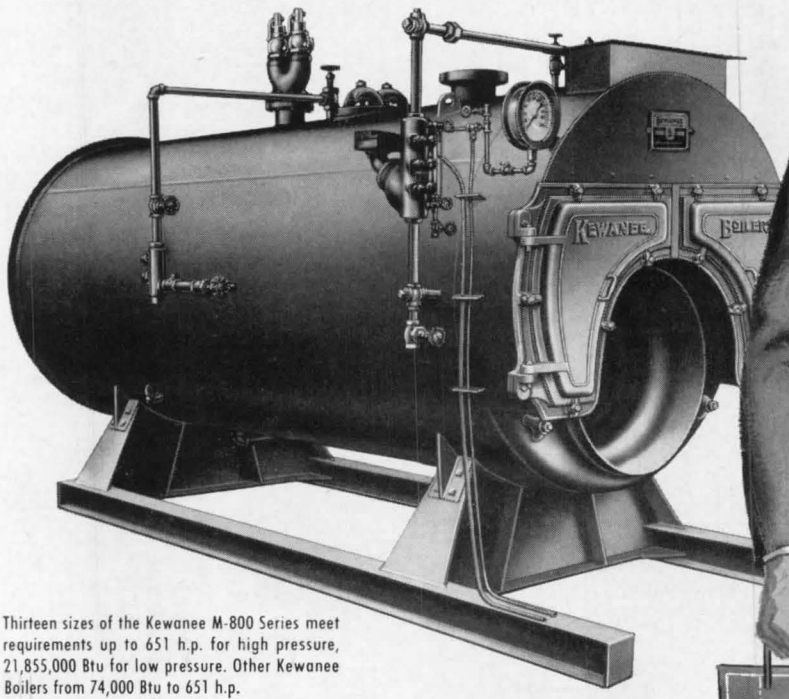
Comfort

The achieving of comfort should not be dependent upon the provision of carpeting by the home owner. Therefore, the thermal conductivity, density, and specific heat of the flooring surface material or uncovered concrete floor surface should be taken into account in any consideration of comfort.

Adapted from "A Study of Slab-on-Ground Construction of Residences," conducted by the Building Research Advisory Board for FHA

the men behind the **KEWANEE** *boiler . . .*

and the man **before** it!



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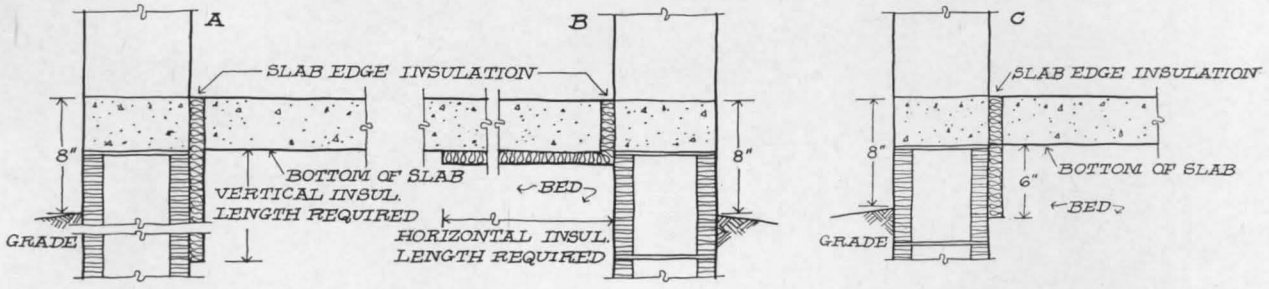
ON-GRADE FLOOR SLABS FOR RESIDENCES–3



Note: If foundation wall is more than 8 in. above finish grade, vertical insulation should be increased a like amount.

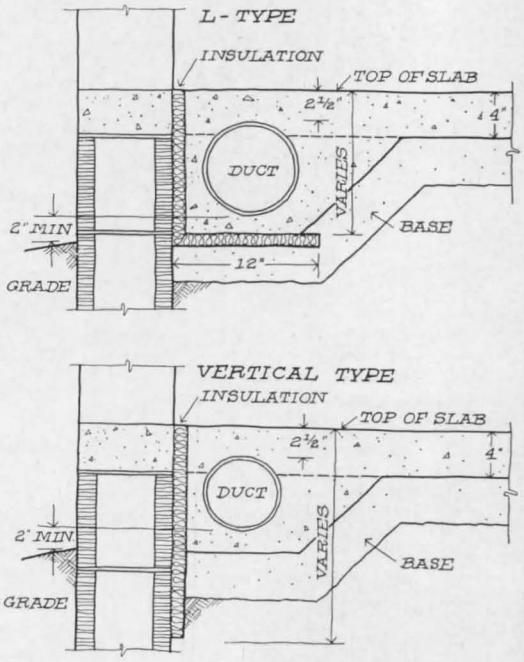
Note: Either A or B for design temperatures below 30 F.

Note: Use for design temp. of 30 F and above. Additional 6 in. if air conditioning is contemplated.

TABLE 2
RECOMMENDED MINIMUM INSULATION REQUIREMENTS FOR CONCRETE FLOOR SLABS

OUTSIDE DESIGN TEMP.	INSULATION CONDUCTIVITY	INDIRECTLY HEATED	PANEL HEATED	WARM-AIR PERIMETER
	(Nominal) Btu Inch / (hr)(sq ft)(F)	VERTICAL 18-in. or L-Type 24-in. length of Insulation [1]	VERTICAL 18-in. or L-Type 24-in. length of Insulation [1]	VERTICAL 18-in. or L-Type 12-in. vertical 12-in. horizontal length of Insulation [2]
F	K	Insulation thickness, in.	Insulation thickness, in.	Insulation thickness, in.
−30	0.2	1½	1	1
−30	0.3	2	1½	1½
−30	0.4	2½	2	2
−20	0.2	1	¾	¾
−20	0.3	1½	1	1
−20	0.4	2	1½	1½
−10	0.2	1	¾	¾
−10	0.3	1½	¾	¾
−10	0.4	2	1	1
			VERTICAL 12-in. or L-Type 18-in.	
0	0.3	1	¾	¾
0	0.4	1½	1	1
		VERTICAL 12-in. or L-Type 18-in.		
10	0.3	1	¾	¾
10	0.4	1½	1	1
20	0.3	¾	¾	¾
20	0.4	1	1	1
30	0.4	1-in. thick VERTICAL 6-in.[3]	1-in. thick VERTICAL 6-in.[3]	1-in. thick VERTICAL 12-in.[3]

[1] Length measured from bottom of slab, and is in addition to edge insulation which is equal to thickness of slab.
[2] Length measured from top of slab.
[3] For Summer Air Conditioning, where design temperature exceeds 30F (See Fig. C).



Note: Ducts encased in concrete unless of crush-resistant, non-corrosive non-absorbent materials.

Adapted from "A Study of Slab-on-Ground Construction of Residences," conducted by the Building Research Advisory Board for FHA

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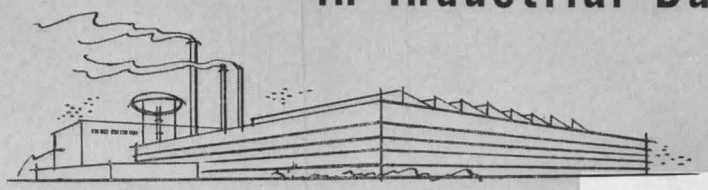
in Industrial Buildings . . . . .



These ALLENCO *Fieldmen helped on these recent installations*

Where	What	Specifier	Installer	Allenco Fieldman
Los Angeles, Cal.	Ramo-Wooldridge Corp.	Albert C. Martin & Assoc.	Rockwood Sprinkler Co.	Lang Pratt
Glendale, Ariz.	Salt River Power Co.	Bechtel Corp.	Bechtel Corp.	Lang Pratt
Boron, Calif.	Pacific Coast Borax Company	Southwestern Engr. Company	Forgeron Plumbing Company	Lang Pratt
Wilmington, Cal.	Vegetable Oil Products	Engineering Dept.	Rigoli Company	Lang Pratt
Anaheim, Cal.	Moore Business Forms	Albert C. Martin & Assoc.	Curtis Automatic Sprinkler Co.	Lang Pratt
Los Angeles, Cal.	Pepsi-Cola Bottling Company	Albert C. Martin & Assoc.	California Viking Sprinkler Co.	Lang Pratt
Campbells, Ind.	Indianapolis Power & Light Company—Generating Plant	Themselves	Themselves	Don Davisson
Tulsa, Okla.	Jones & Laughlin Steel Corp.	H. Lyman Cauvel	W. F. Glenn Plumbing Company	Floyd Merryman
Bartlesville, Okla.	Phillips "66" Proving Station Project	Phillips Engr. Dept.	Carl Moore Co.	Floyd Merryman
Riverdale, Ill.	Acme Steel Company	Schmidt, Garden & Erikson	La Salle Construction Company	M. Jepsen
Indianapolis, Ind.	General Motors Corp. —Allison Division	Argonaut Realty Div., Gen. Motors Corp.	Daniel J. Keating Company	George Fee
Athens, Texas	Olive Myers Plant	Giffels & Vallet, Inc., Arch.—C. Cleasman, Engineer	Wm. H. LaDew	Hugh Cunningham
Dallas, Texas	Goodyear Rubber Plant	Harold A. Berry, Arch. and Engr.	Wm. H. LaDew	Hugh Cunningham
Ransonville, Mich.	Ford Motor Company	Giffels & Vallet, Inc. L. Rossetti	John E. Green P & H Company	Russ Collins
Middletown, Conn.	Canal Project, United Aircraft Corp. Atomic Eng. Plant	Chas. T. Main, Inc.	Fred Raff, Inc.	Harold Jope
Wethersfield, Conn.	State of Connecticut, Highway Office Bldg. & Garage	Hubbard, Lawless & Blakeley	Buckingham-Routh	Harold Jope

Lang Pratt

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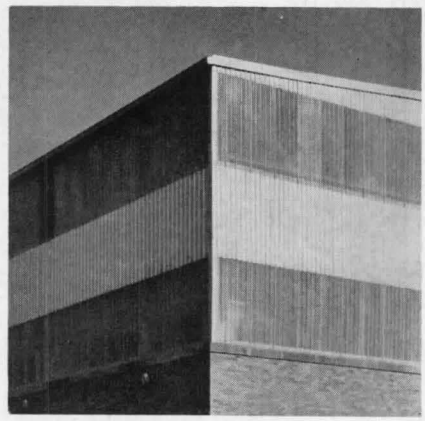
TECHNICAL ROUNDUP

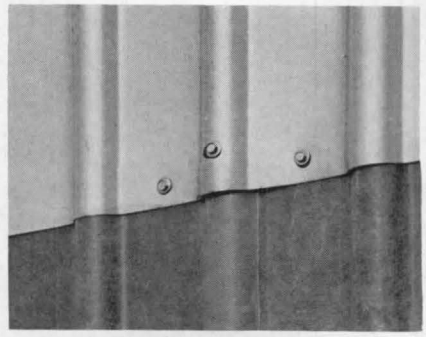
(Continued from page 250)

WAREHOUSE PANELED IN STAINLESS STEEL AND PLASTIC



By combining type 302 stainless steel mansard panels with translucent plastic panels of the same design, the A. M. Castle Company was able to clothe its new Chicago warehouse in stainless steel at a cost comparable to that of other curtain wall materials. From the exterior, the warehouse presents a colorful appearance with its bands of green plastic and stainless steel marching in orderly rows above an orange brick wall. And, as an extra bonus, the plastic panels used in walls and skylights allow natural illumination of the building interior even on overcast days. A 2B finish was chosen for the stainless panels to cut specular glare and blend with the other materials.

The unbacked 22 gage stainless mansard panels used for the warehouse itself were fastened directly to girts or purlins with self-tapping screws. Stainless bolts and neoprene washers were used for side lap fastening. The translucent mansard panels were installed in essentially the same way, except that rubber grommets were used to compensate for the differences in expansion and contraction between the plastic and steel.



For the two-story office wing of the warehouse the stainless steel panels

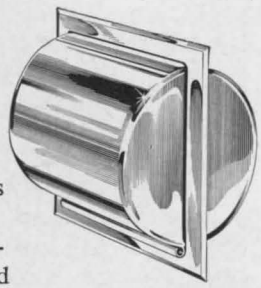
(Continued on page 266)

Here's a *glamorous practical* Hall-Mack bathroom

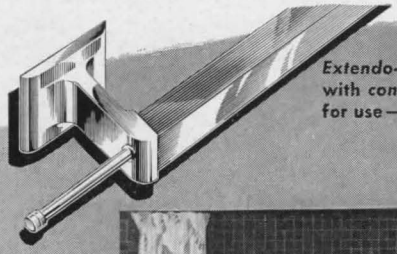
Bathrooms are one of the most important rooms in any house. With Hall-Mack bathroom accessories you can design and build bathrooms of which you can be truly proud. Hall-Mack's beautifully chrome-plated accessories make any bathroom more attractive, more livable and enjoyable.

Shown here are but a few of the many beautiful and original Hall-Mack accessories that have earned the reputation as the world's finest. They all share Hall-Mack quality—and are all designed with the smart classic styling that blends with any bathroom style or budget. There are several complete lines of Hall-Mack accessories—in several price ranges. You're sure to *always* find a style and idea which best suits your taste and needs.

Always...*specify and install*...Hall-Mack, the world's finest bathroom accessories!



Beautiful chrome plated *concealed* paper holder.



Extendo-bar*—is a chromium plated towel bar with *concealed* rods that can be pulled out for use—*when needed!

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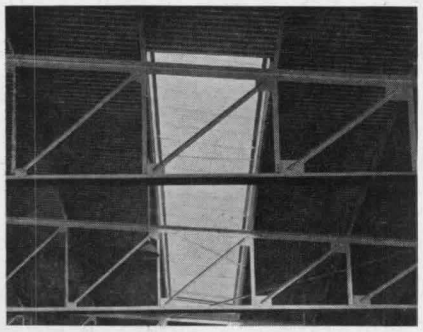
were backed with 1½ inches of glass fiber insulation and a back-up sheet of 18 gage galvanized steel, giving a U-factor of 0.17. After the back-up sheets had been fastened to the girts, subgirts consisting of 3/16 and 1½ in. steel bars were welded to the standing seams in front of the sheets, and the insulation placed between them. The stainless steel face panel was then placed over the insulation and fastened to the subgirts with self-tapping screws.

A third type of metal panel with a face sheet of mica and asphalt protected steel was used instead of brick for the lower portion of the west wall of the warehouse. This wall, which is considered expendable, will be dismantled and reassembled elsewhere when it becomes necessary to add to the warehouse space.

At present, the structure provides nearly ten acres of floor area for A. M. Castle's steel warehousing and distributing operations. Total width is 512 ft; total length is 700 ft. Steel columns spanned by trusses divide the space into five lengthwise bays, of which four are 100 ft wide, and one — the center bay — 110 ft wide to accommodate longer steel sections.

Each bay has a pitched roof of 20 gage galvanized corrugated steel decking over which bagasse and either an asphalt membrane or tar and gravel have been spread for insulation. Skylights supplement the light from the side panels.

Architect for the project was John Cromelin, F.A.I.A.; structural engineer was Fred Marshall. All panels — plastic, stainless steel and protected metal — were supplied by the Plasteel Products Corporation of Washington, Pa.



HOUSES BUILT FOR LESS — WITH MORE INSULATION

Air-conditioned houses can be built at less cost by using adequate insulation, according to a recent study conducted by John R. Watt, associate professor of mechanical engineering at the University of Texas. In an effort to determine whether home building costs could be cut by raising the FHA minimum allowable heat transfer coefficients for residences, Professor Watt compared figures on construction cost, fuel consumption and operating costs for eight well-insulated houses in the Austin Air Conditioned Village, built by members of the NAHB in 1954, with what those figures would have been had the houses been insulated according to current FHA minimum requirements. The eight houses studied were chosen to give a representative cross section of air conditioned residences as to construction, exposure, and type of cooling system used. All were insulated entirely with mineral wool.

The results of the study showed that use of adequate insulation had resulted in a saving of $139.60 in building costs, and an annual operating cost savings of $107.90, computed on "country-wide average" rates for fuel and water. Or, as Professor Watt simplifies it, "Each dollar spent on adequate insulation for air conditioning above current MPR requirements saves $1.82 in otherwise required equipment, and reduces average operating cost by 63 cents." In southern states, the latter saving averages as much as 57 per cent of the cost of added insulation installed.

(More Roundup on page 270)

Eero Saarinen and Associates, *Architects*

Anderson Beckwith and Haible, *Associate Architects*

MODERN DOOR CONTROL BY *LCN* · CLOSERS CONCEALED IN HEAD FRAME

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Construction Details on Opposite Page

one of a series

Ebony, background for elegance...a spirited graciousness

■ Jim Crotzer is a photographer whose list of clients reads like a "Who's Who" of the art and design world. Here he highlights the ageless richness and strikingly decorative character of Macassar Ebony veneer, by Stem, in this self-portrait. "Ebony, veneered to a panel in this way, radiates a peaceful kind of strength and a timeless charm that makes it an ideal background for elegance." When he calls for Macassar Ebony, the architect, like the photographer, borrows for today and tomorrow one of the riches of the ages—a treasure that came by caravan with spices and silks from the East—and yet remains a stalwart pillar for the boldest contemporary design. Through the catalytic artistry of the architect, rare wood paneling and graceful living strike up a happy match. Wherever a background of fine wood is used, its noble presence is felt by all, welding substance and a spirit into exciting unity. When rare woods from the forests of the world are used, there is a spirited graciousness—a strength and beauty that dwell in every ripple of its meticulously finished grain. And yet, beautiful wood is the essence of peace; it brings serenity to a room in a way that is all its own. Now, Stem brings you, through the magic of modern factory methods, all the nobility, splendor and lifetime permanence of the finest veneer that tradition knows. And you can afford to be generous with this wood, for the cost is low.

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TECHNICAL ROUNDUP

IMPROVED HOTEL SERVICE CHARTED FOR 1958

Although incoming and room-to-room calls will continue to be routed through the switchboard, installation of a dial telephone system in New York's Waldorf-Astoria Hotel is expected to greatly improve service by eliminating the outgoing load. Guests will be able to place both local and long-distance calls directly, as well as to dial all the hotel service departments. The exact number of calls made from each room will be recorded on an automatic registering system located in the cashier's office, and long distance charges will be teletyped to the hotel by the telephone company operators. Developed jointly by the Waldorf management and the New York Telephone Company, the system is scheduled for completion early in 1958.

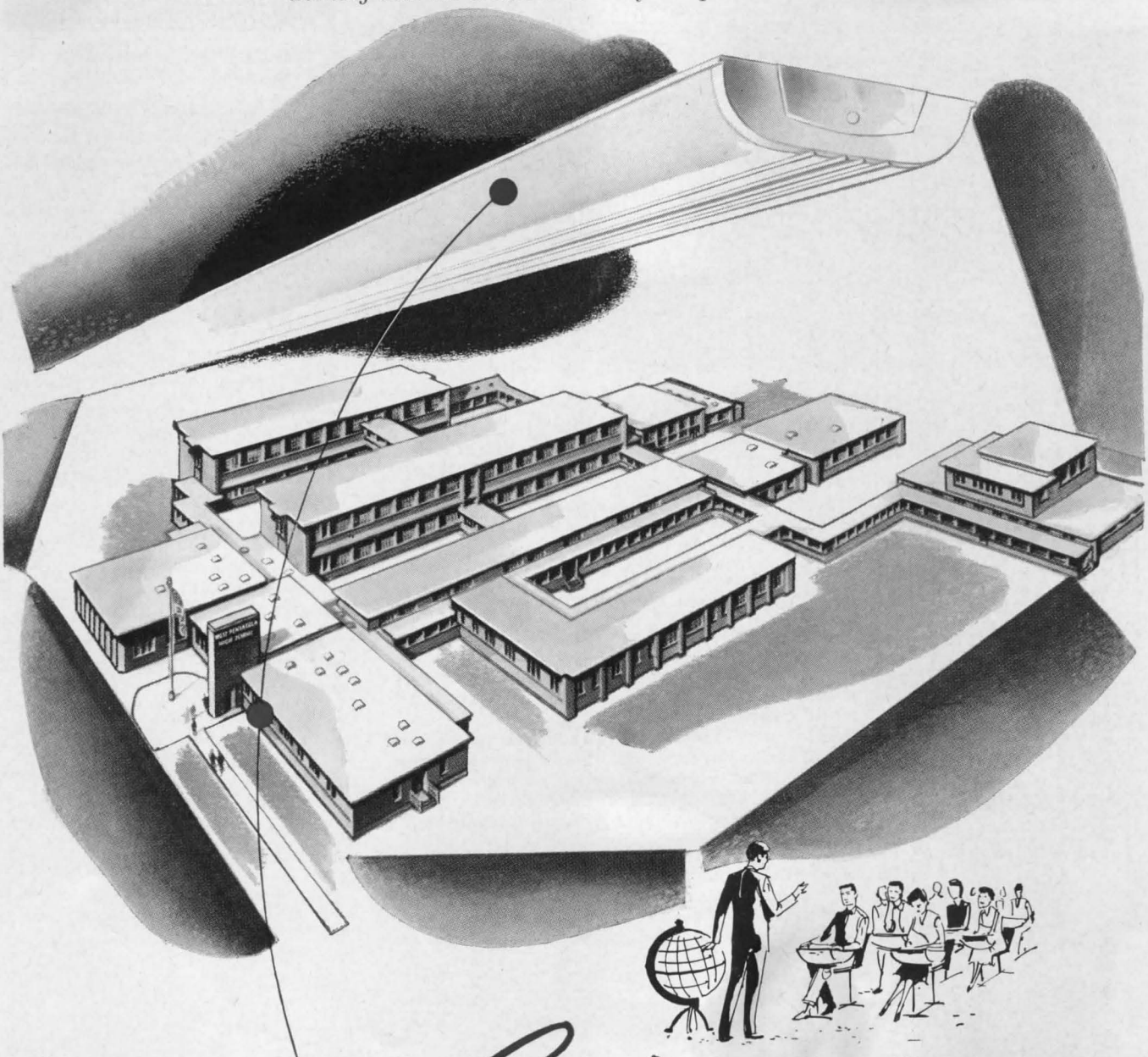
Farther south, a Miami Beach inventor is also turning his attention to electronic gadgets calculated to improve hotel service in 1958. Among the devices created by Eli M. Lurie, president of the American Communications Corp. of New York and the American Antennae Corp., is a wake-up system that will make the morning call more pleasant for guests, and less burdensome for telephone operators. As Mr. Lurie sees it, the jangle of the telephone bell will be replaced. At the specified time, room lights will automatically be switched on, followed by musical chimes and a weather forecast rendered in a pleasant (feminine) voice. Only if the guest fails to respond by pressing a bedside switch within five minutes will his sleep be broken by a personal call.

Outside Heating System Melts Ice

An unusual de-icing system buried in the half-acre plaza at the site of New York's Seagram Building will melt ice and snow at the rate of one inch per hour and even keep the walks dry in the rain. By heating almost the entire plaza, including the stairways leading into the park from the street, it will allow the granite floor to sustain a lustrous *sheen all year long.* Prepared under the supervision of mechanical engineering consultants Jaros, Baum and Bolles, the snow melting device will utilize a network of 21,300 feet of galvanized pipe conduit containing a light, quick-heating oil that will transfer heat to the pipes, keeping the ground warmed to any desired temperature.

(More Roundup on page 274)

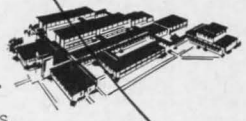
working with the architect on today's important school lighting projects . . .



4/5 mile of *Capri* lighting units

. . . every inch designed to make an architect's dream come true!

Here is lighting that takes the architect's thinking into consideration . . . expressed in the clean-cut lines and diminutive contour of the Benjamin Capri. In addition to its flair for making architectural dreams come true, the Capri's unique low-brightness illumination meets the high classroom lighting recommendations of the Illuminating Engineering Society . . . and even anticipates future increases and improvements in these practices. Benjamin Electric Mfg. Co., Des Plaines, Ill.



WEST PENSACOLA HIGH SCHOOL
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Architect: FRANK J. SINDELAR, A. I. A.
Pensacola, Fla.

Consulting Engineers: EVANS & PHILLIPS,
Birmingham, Ala.

Contractor: DYSON & CO., Pensacola, Fla.

Electrical Contractor: BAROCO ELECTRIC CONSTRUCTION CO., Pensacola, Fla.

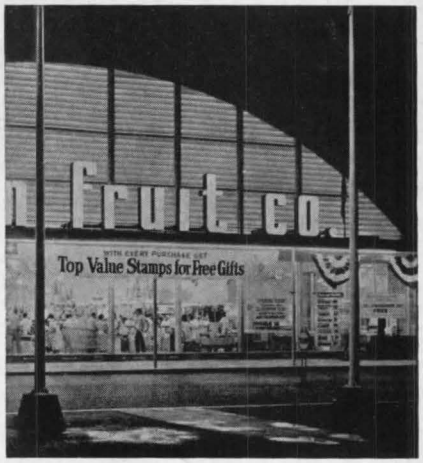
R-113

BENJAMIN

. . . always the source of good lighting

TECHNICAL ROUNDUP

STORE LICKS GLARE, HEAT WITH LOUVER-PANELED FRONT



The pleasant openness of a broad glass store front loses much of its charm for owners of supermarkets and grocery stores who must contemplate the spoiled perishables, melted candy and soaring costs of air conditioning and refrigeration which often result from solar heat introduced through that inviting expanse of glass. Equally undesirable is the accompanying glare which makes it difficult for customers to see signs and displays — and each other.

In the Penn Fruit Company's Brandywine Supermarket, Wilmington, Del., the glare-heat problem was made particularly acute by a 100 ft frontage on the west. Realizing that an all-glass front would direct the afternoon sun onto check-out counters, displays of perishables, and baked-goods and freezer cabinets at the front of the store, architect Angelo R. Aquaro of Penn Fruit enclosed the semi-circular facade above the window wall with daylight-control louver panels formed from *Plexiglas* acrylic plastic. The 6 by 8 ft panels consist of a series of molded horizontal saw-toothed corrugations, their upper surfaces angled to intercept sunlight and coated with a translucent ivory paint that admits light but blocks heat and glare. The transparent lower part of the saw-tooth allows customers outside the store to see through the louvered facade from some approach angles. The clear area also admits light reflected from the ground, providing additional natural illumination. According to the architect, the plastic louver panels, as designed and installed by the Amplex Manufacturing Company of Philadelphia, Pa., were competitive in cost with a plate glass and metal louver system also considered for the installation.