



*Glass medalion by  
Sidney B. Waugh*

**GLASS** is today's most exciting architectural prophecy. **THE ARCHITECTURAL FORUM** offers in evidence the winning entries and other examples selected from over six hundred and fifty photographs submitted in the

**PITTSBURGH GLASS INSTITUTE COMPETITION**

To the Competitors, to the Jury and to the Sponsor, a salute for making possible this stimulating collection of material displaying the infinite uses of glass in contemporary architecture and decoration.

**The Editors**

**GRAND PRIZE**

ABEL FAIDY, CHICAGO

**HOUSES** Costing under \$12,000

**PRIZE**

HARWELL HAMILTON HARRIS, LOS ANGELES

**MENTIONS**

Richard J. Neutra, Los Angeles, Two Citations

**HOUSES** Costing over \$12,000

**PRIZE**

MORRIS B. SANDERS, NEW YORK CITY

**MENTIONS**

John P. Gerald, New York City  
Harrison & Foulhoux, New York City

**SHOPS** Not more than two stories in height

**PRIZE**

J. A. HARDESTY, LOS ANGELES

**MENTIONS**

Reinhard & Hofmeister, New York City  
Erle Webster & Adrian Wilson, Los Angeles

**STORES** Three stories or more in height

**PRIZE**

PISO & PETERSON, CHICAGO

**MENTIONS**

Earl Giberson, San Diego  
Barney Sumner Gruzen, Newark

**THEATERS**

**PRIZE**

ROBERT LAW WEED, MIAMI

**MENTIONS**

Michael Meredith Hare, New York City  
Mark D. Kalischer, Chicago

**HOTELS, APARTMENTS**

**PRIZE**

HARRISON & FOULHOUX, NEW YORK CITY

**MENTIONS**

Richard J. Neutra, Los Angeles  
Leslie Stuart Geisert, Philadelphia

**MANUFACTURING PLANTS**

**PRIZE**

ALBERT KAHN, INC., DETROIT

**MENTIONS**

Abbott, Merkt and Co., New York City  
Childs & Smith and Frank D. Chase, Chicago

**SCHOOLS, COLLEGES, ETC.**

**PRIZE**

LYNDON & SMITH, DETROIT

**MENTIONS**

Lyndon & Smith, Detroit  
Richard J. Neutra, Los Angeles

**INSTITUTIONAL BUILDINGS**

**PRIZE**

GEORGIUS Y. CANNON, PASADENA

**MENTIONS**

Chester Lindsay Churchill, Boston  
Smith, Carroll and Johanson, Seattle

**PUBLIC BUILDINGS**

**PRIZE**

JOHN MATTHEWS HATTON, NEW YORK CITY

**MENTIONS**

Wm. C. E. Becker, St. Louis  
Alfred Kastner, Washington

**DOMESTIC INTERIORS**

**PRIZE**

DONALD DESKEY, NEW YORK CITY

**MENTIONS**

Joseph Aronson, New York City  
Donald Deskey, New York City

**OFFICE INTERIORS**

**PRIZE**

ABEL FAIDY, CHICAGO

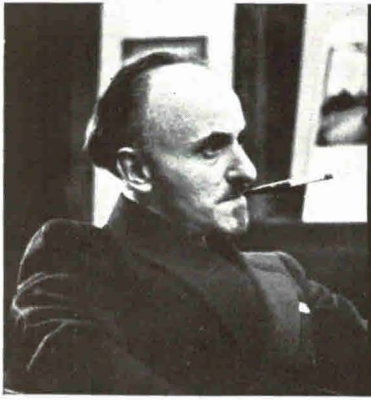
**ACCESSORIES**

**PRIZE**

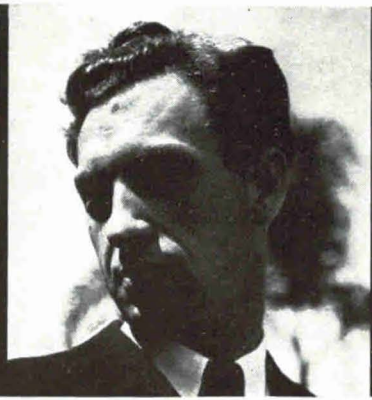
FRANCIS VICOVARI, NEW YORK CITY

**MENTIONS**

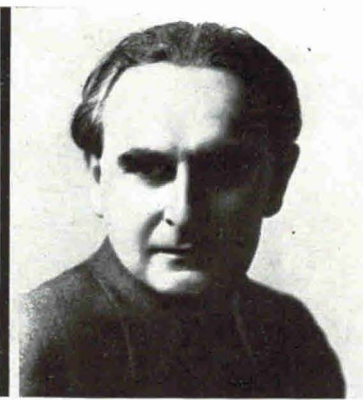
Gustav Jensen, New York City  
Dorothy C. Thorpe, Glendale



**Abel Faigy**, Chicago architectural designer, teacher, lecturer, writer. Born and educated abroad.



*Insa Stern*  
**Harwell Hamilton Harris**, Los Angeles architectural and industrial designer. Has worked with Richard Neutra.



*Luckhaus*  
**Richard J. Neutra**, Los Angeles architect, born in Austria, practiced abroad. Peter Pfisterer his chief collaborator.



*Blank & Stoller*  
**Morris B. Sanders**, New York architect, interior and industrial designer. Currently engaged on N. Y. Fair projects.



**Wallace K. Harrison and J. Andre Foulhoux** (right to left), New York architects, best known for Rockefeller Center, done in association with other New York firms, and the Theme building for the coming New York Fair.



*D'Arlevo*  
**John P. Gerald**, Director of Interior Decorations, B. Altman and Co., New York. Formerly with W. G. J. Sloane.



**Jean A. Hardesty**, chief designer for Luminous Structures, Los Angeles. Specialist in illuminated architecture.



*MacRae Photos*  
**L. Andrew Reinhard and Henry Hofmeister**, New York architects, designers of commercial structures chiefly. Best known for Rockefeller Center, done in association with other New York firms.



**Erle Webster and Adrian Wilson**, Los Angeles architects. Residential, commercial, and school work.



**Robert L. Pioso and Karl E. Peterson**, Chicago designers of interiors, special fixtures, and store fronts.



**B. Sumner Gruzen**, Jersey City architect, chiefly commercial, specialist in design of automobile shopping centers.



**Earl F. Giberson**, San Diego architect, practice chiefly commercial. Has done church and exposition work.



*De Greene*  
**Robert Law Weed**, Miami architect, practice includes residences, apartments, commercial work, clubs.



*Bohrach*  
**Michael M. Hare**, New York designer, associated with Corbett and MacMurray, work interiors and theaters.



**Mark D. Kalischer**, Chicago architect, work mainly commercial, including stores, shops, and theaters.



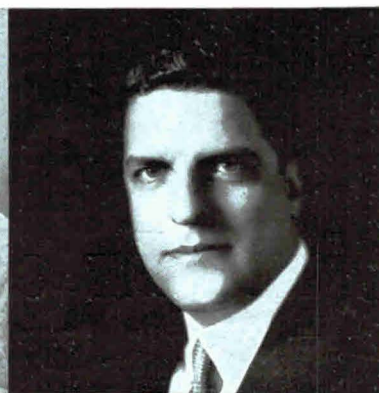
**Leslie S. Geisert**, designer for Strawbridge and Clothier, Philadelphia. Designer of night clubs, other interiors.



**Albert Kahn**, Detroit architect, chiefly industrial buildings. Consultant to U.S.S.R. on industrial plants.



**Georgius Young Cannon**, Pasadena architect, practice mainly residential, also churches and chapels.



**Maynard Lyndon and Eberle M. Smith**, Detroit architects, firm established 1935. Work principally schools. Both graduates University of Michigan, office experience in Seattle, Washington, D. C., and Detroit.

**Smith, Carroll, and Johanson**, Seattle architects, work residential, institutional. Firm established as Smith and Carroll in 1931; Perry B. Johanson entered 1936.

**Chester Lindsay Churchill**, Boston architect. Work chiefly commercial. Educated Harvard and abroad.



**John Matthews Hatton**, New York architect. Residential and commercial work. Lecturer at New York University.



**Alfred Kastner**, architect on U.S. housing projects, currently with Department of Agriculture, Washington.



**William C. E. Becker**, City Engineer of Bridges and Buildings, St. Louis. Former Chief Engineer and Building Commissioner, St. Louis.



**Donald Deskey**, New York interior architect and industrial designer. Pioneered metal furniture in America.



**Joseph Aronson**, New York designer, chiefly known for furniture and interiors. Author of books on furniture.



**Francis J. Vicovari**, New York interior architect and designer. Specialist in glass work and residential interiors.



**Dorothy C. Thorpe**, Glendale, California designer and manufacturer of table and bar glassware.



**Gustav Jensen**, New York industrial design pioneer. Lecturer, work represented in Museum of Modern Art.

Not obtainable were photographs of **Abbott and Merkt**, New York engineers, **Childs and Smith**, Chicago architects, and their collaborating engineer, **Frank D. Chase**.



## REPORT OF THE JURY

THE steadily increasing force of the modern trend has led to a parallel growth in the importance of glass as an element in building. Not only has this tendency been marked in structures in the modern style, but it is also visible in traditional work. Larger glass areas, the development of outdoor and semi-exposed living spaces, and similar features clearly indicate the reflection of contemporary demands.

If it is true that we are confronted with a major trend in architectural development, the designer's appreciation of the fundamental possibilities and limitations of glass becomes a factor of importance. New uses of glass present new problems, not only as far as the glass itself is concerned, but throughout a building. It is this interaction of influences which gives glass design an increasingly significant role in building.

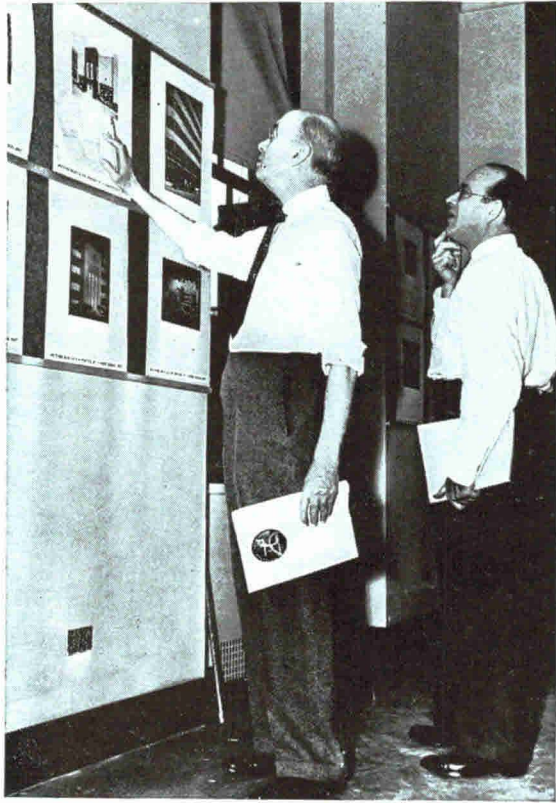
The material submitted in the competition, covering as it did every conceivable phase of glass use in architecture and decoration, provided a most encouraging indication of the ability of American designers to develop new forms as they need them. There was no lack of ingenious and original work. While the Jury, in making its awards, seriously considered this factor, it laid greater stress on soundness of conception. Glass used merely to be sensational is interesting, but of little immediate importance. There is ample scope for a designer's inventiveness within the practical limitations of any given problem.

The Jury noted that while flat glass was well handled in the majority of instances, and brilliantly in some, the same could not always be said of the use of glass block. That this novel and excellent material has characteristics peculiarly its own is a fact frequently ignored. Glass block is essentially a masonry material, and should be treated as such; while it does let in light, its resemblance to the conventional window ceases at this point. In the best examples, glass block was treated frankly as a translucent wall. Few succeeded in resolving the difficulties that arise when this material is combined with clear glass.

As block becomes more familiar to designers its correct uses will undoubtedly be more widely appreciated. Flat glass, naturally used in most cases for fixed or movable windows, was also represented by a number of unusual uses. Several examples showed plate glass as a transparent windbreak, sheltering loggias, roof decks and gardens. Outstanding among the entries submitted, in the opinion of the Jury, was the photographic studio designed by Abel Faigy, awarded the grand prize. It was felt that this attractive office interior was sound in conception and spirited in quality of design, and that it presented a logical and interesting combination of translucent glass, mirrors, and glass block that was highly successful.

In the domestic category work of particular excellence was submitted; especially notable was the small house designed by Harwell Harris in which light glazed wood screens serve as both wall and window. In the industrial group the prize was awarded to a magnificently direct and powerfully designed factory by Albert Kahn. An unusual church in California, designed by Georgius Y. Cannon, demonstrated the effectiveness of clear glass used in a simple, clean-cut ecclesiastical structure. Perhaps the most consistently successful use of glass block was that in the swimming pool pavilion designed by John Matthews Hatton. An excellent domestic interior was submitted by Donald Deskey, who converted a roof terrace into an attractive solarium by the use of a greenhouse section. Examples might be multiplied indefinitely. Not the least important result of the competition should be an immediate, significant rise in general design standards as applied to the use of glass, a rise which should have an appreciable effect on the quality of work in architecture and the allied arts.

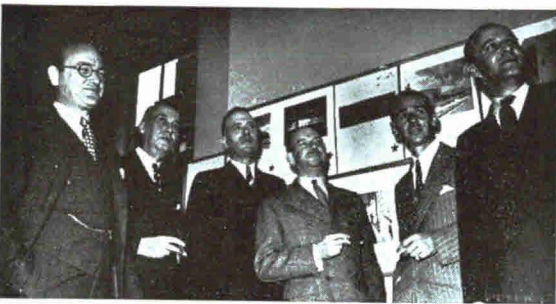
PHILIP B. MAHER, Chairman  
 MAURICE FATIO  
 FRANCIS H. LENYNGON  
 WILLIAM R. MOORE  
 EDWARD D. STONE  
 WALTER DORWIN TEAGUE  
 WILLIAM WILSON WURSTER



Decorator William Moore finds a likely candidate but Chairman Philip Maher seems doubtful.



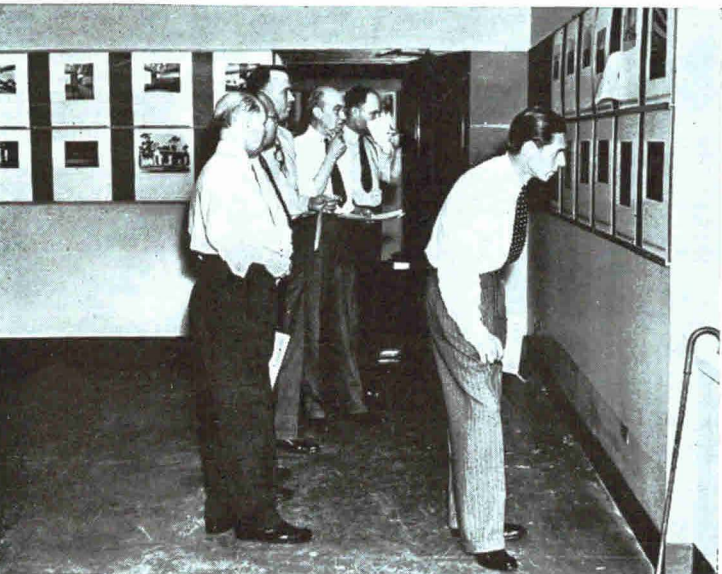
"How about this?" asks Designer Walter Dorwin Teague of Maurice Fatio, Philip Maher, and William Wilson Wurster.



Edward Stone lobbies for a favorite. Left to right, Maher, Moore, Wurster, Teague, Fatio, and Stone.



Two days plus overtime were required to pick the thirty-five awards from the 650 entries. Here Chairman Maher takes the vote of Maurice Fatio.

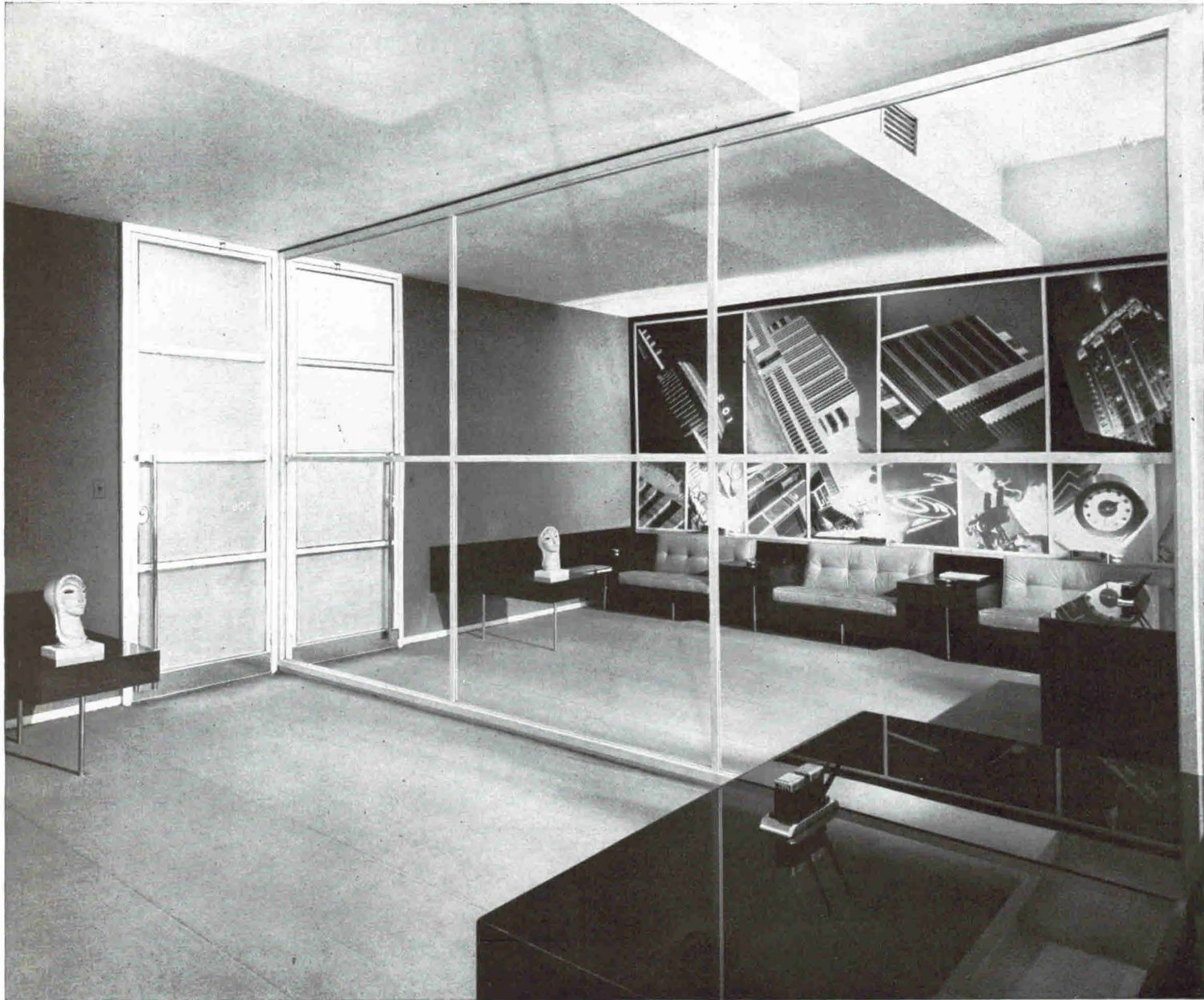


Before casting its final vote, the jury re-examines all submissions. Taking a last look, left to right, Lenygon, Maher, Wurster, Moore, Stone, and Fatio.



Architects Fatio and Stone and Decorator Moore apparently have not yet convinced Architects Maher and Wurster.

# GRAND PRIZE

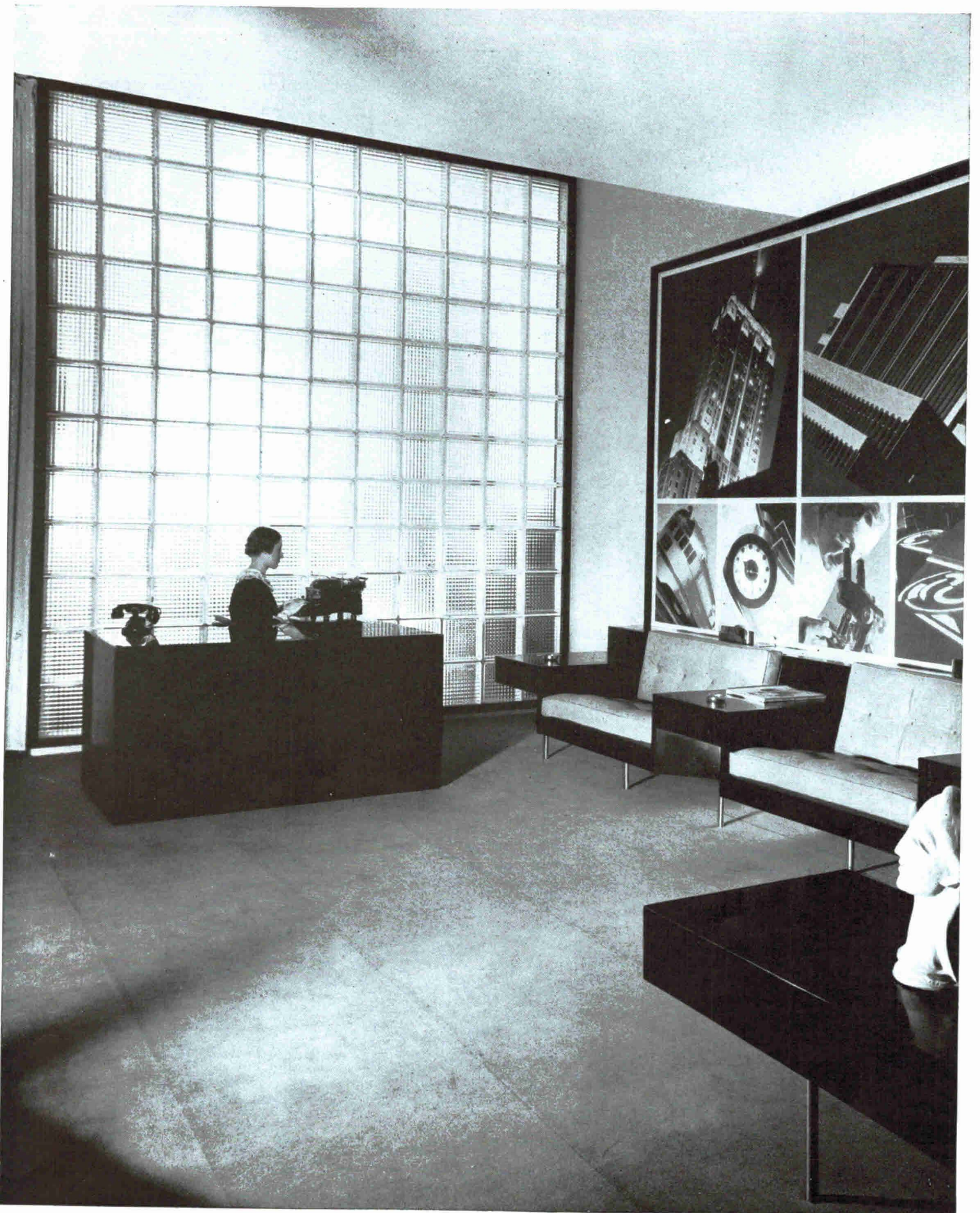


*Hedrich-Blessing Photos*

## HEDRICH-BLESSING STUDIO,\* CHICAGO, ILLINOIS ABEL FAIDY, DESIGNER

It is gratifying and not at all surprising that this able synthesis of the several decorative and utilitarian interior uses of glass should have been selected from among the prize-winners in the various classifications for the award of the Grand Prize. Significant, too, is the singling out of the Office Interior classification from the various groups; indicative of the new approach to work of this kind. Designer Faidy and the Jurors are therefore doubly to be congratulated: once for pointing the way to a fuller utilization of glass in architecture and again for indicating a new and fertile field of enlarged opportunities for the architectural profession.

\*For complete presentation see ARCH. FORUM, July 1936, page 21.



# RESIDENTIAL

PRIZE

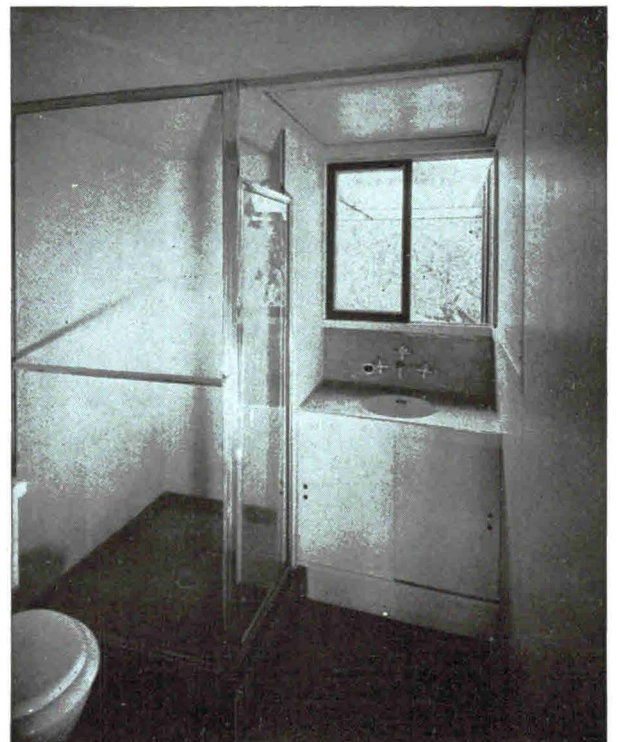


HOUSE IN FELLOWSHIP PARK,\* LOS ANGELES, CALIF.

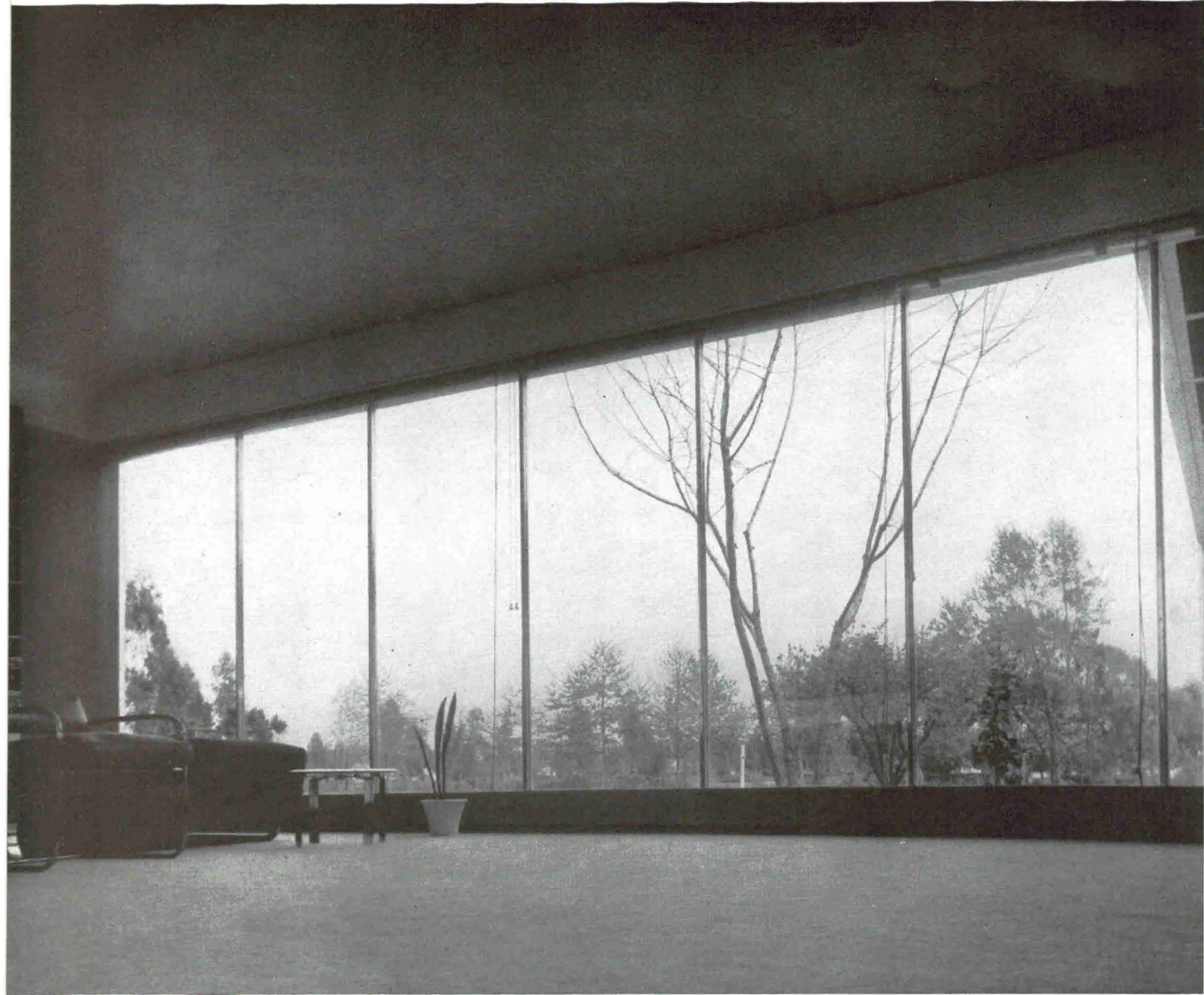
HARWELL HAMILTON HARRIS, DESIGNER

\*For complete presentation see ARCH. FORUM, Apr. 1937, page 278.

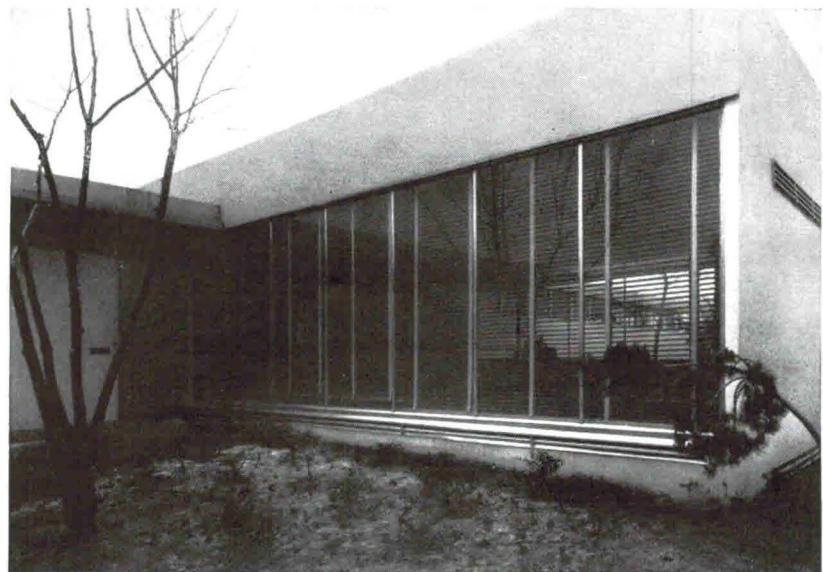
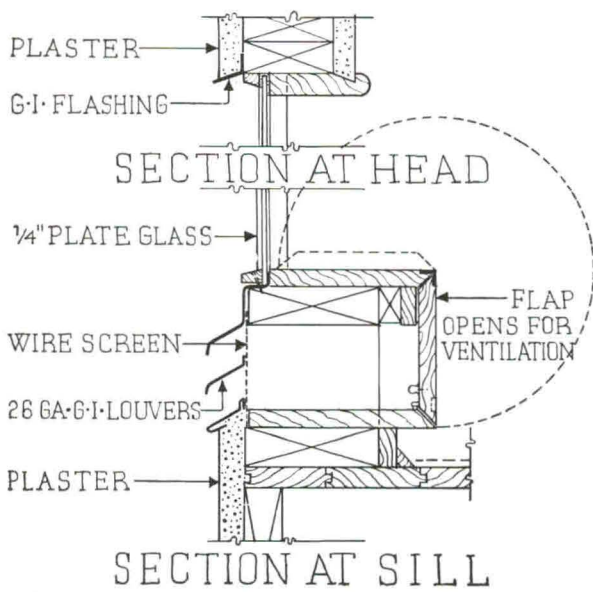


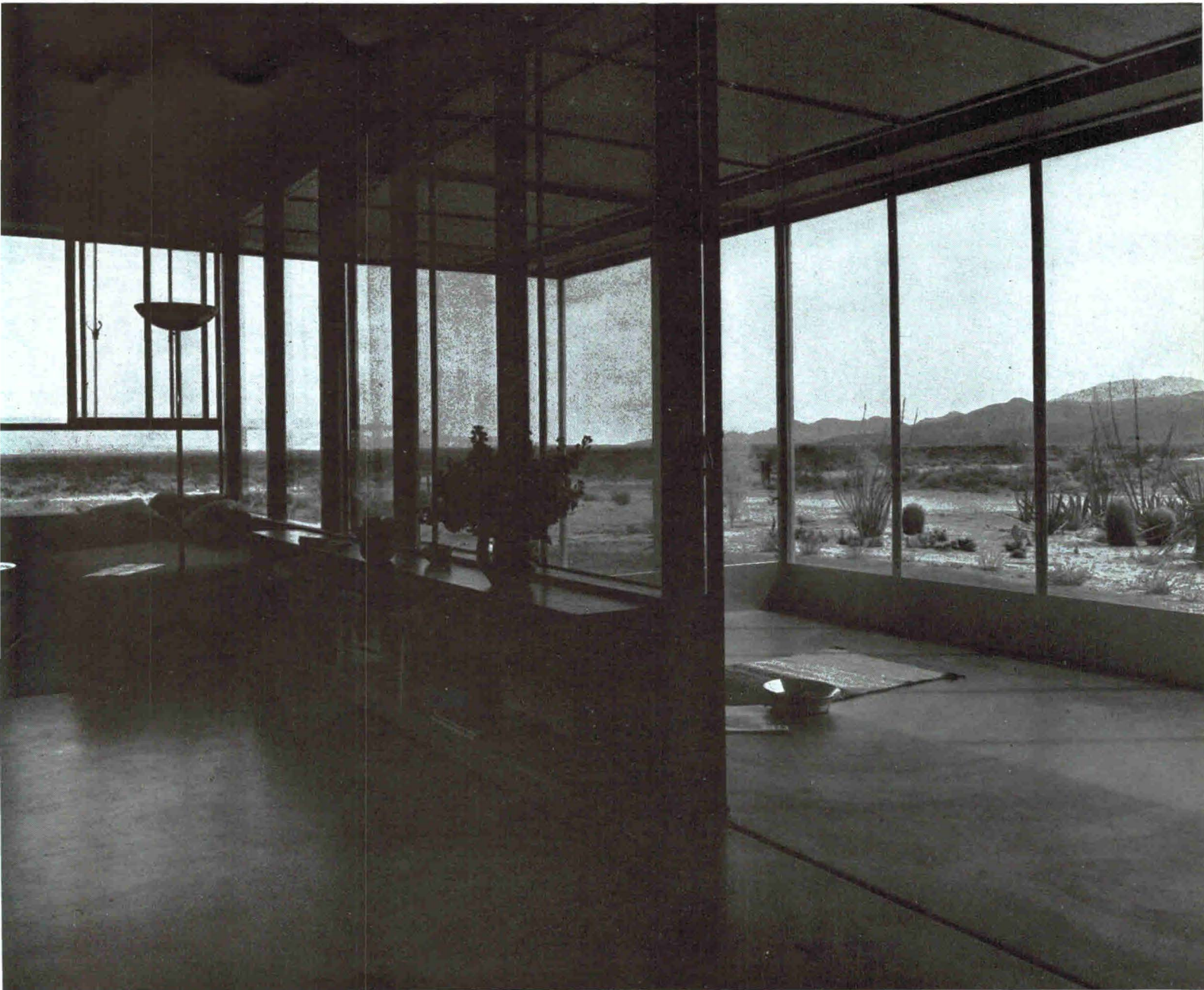


Outstanding precisely because of the unique and original use of glass in its construction, the living room walls of this interesting residence consist almost entirely of sliding and removable doors alternately glazed with clear and frosted glass. First published in the April, 1937, issue of *THE FORUM*, it attracted wide-spread comment. Its selection as the prize-winner from the abundance of excellent residential work submitted underlines the fact that extensive use of glass in buildings of this type is not prohibitively expensive.



**MENTION**





Zuckhaus

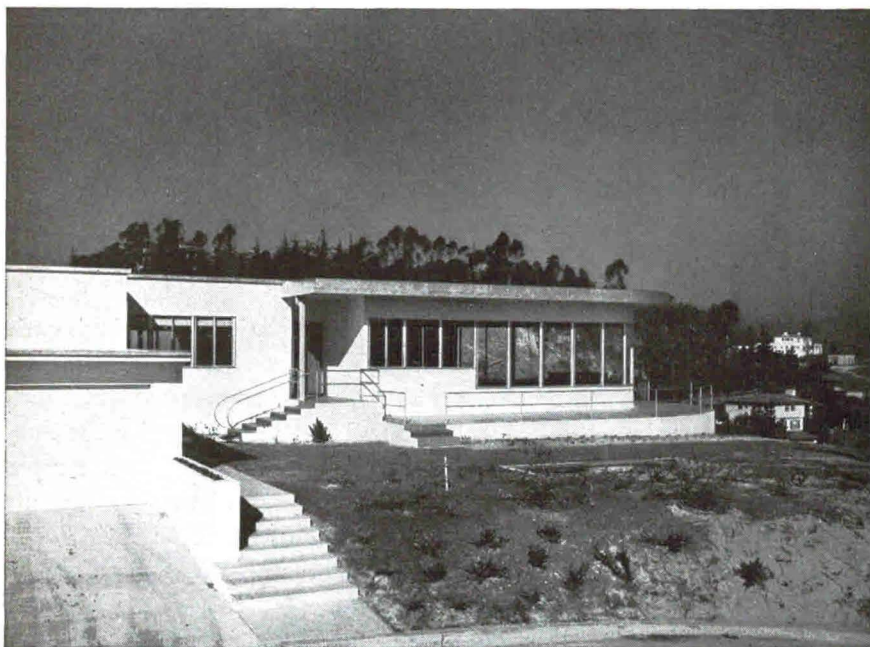
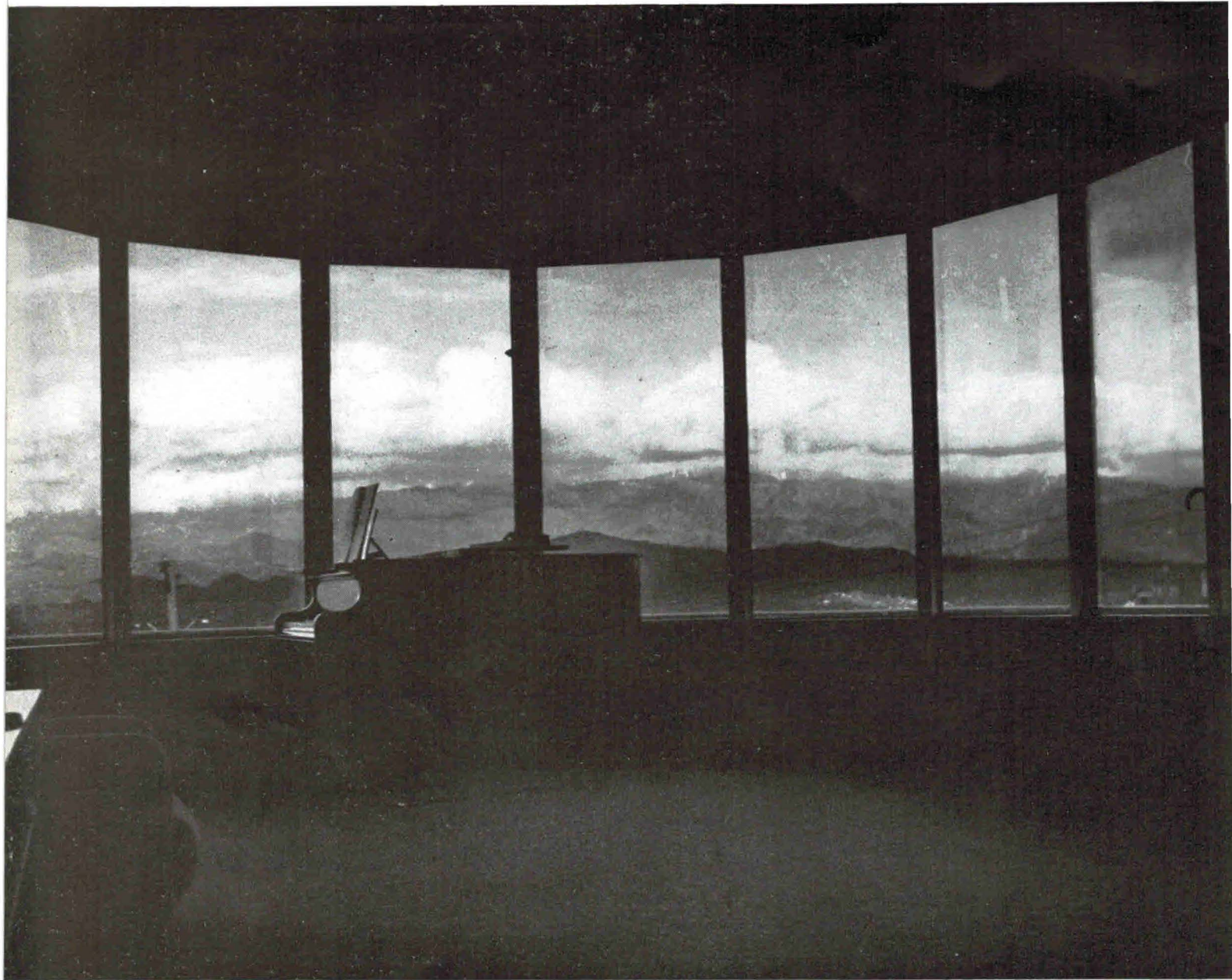
## MENTION



Old masters of the technique of bringing the outside in through the use of large areas of glass, it was inevitable that the excellent work of these collaborators should be recognized by the Jury. The two examples thus singled out are representative of the best work of these prolific designers. An interesting feature of the window on the left hand page is the use of fixed sash with a ventilating louver located in the sill; shown in the detail drawing below the picture.

# HOUSE

FOR MR. AND MRS. E. M. LIPETZ, LOS ANGELES, CALIF., RAPHAEL S. SORIANO, ARCHT.



Valuable because it serves to emphasize that the most important quality of glass: its transparency, and the great decorative possibilities of the "picture window," this example is interesting also because of the frank and utilitarian way in which the problem of fenestration has been handled.

PRIZE

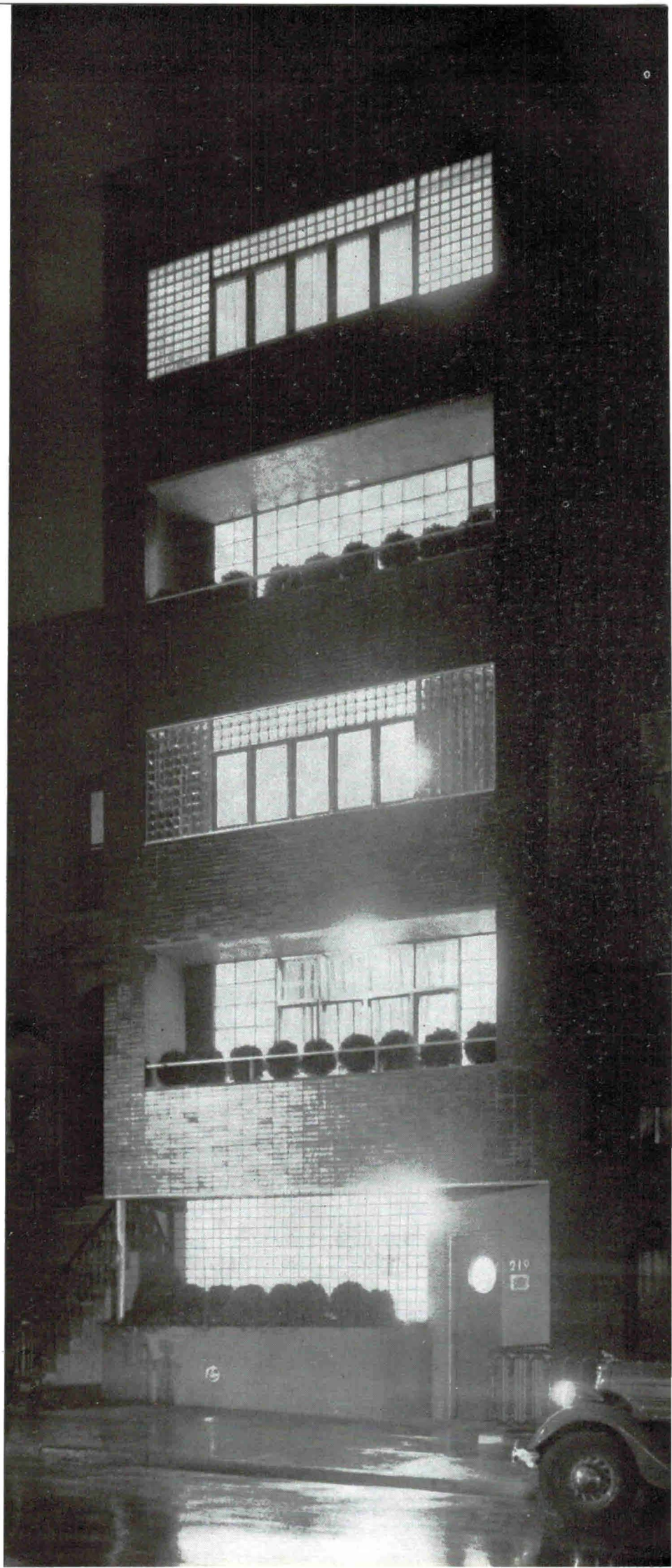
CITY HOUSE,\* NEW YORK, N. Y.

MORRIS B. SANDERS, ARCHITECT

\*For complete presentation see  
ARCH. FORUM, Mar. 1936, page 157.

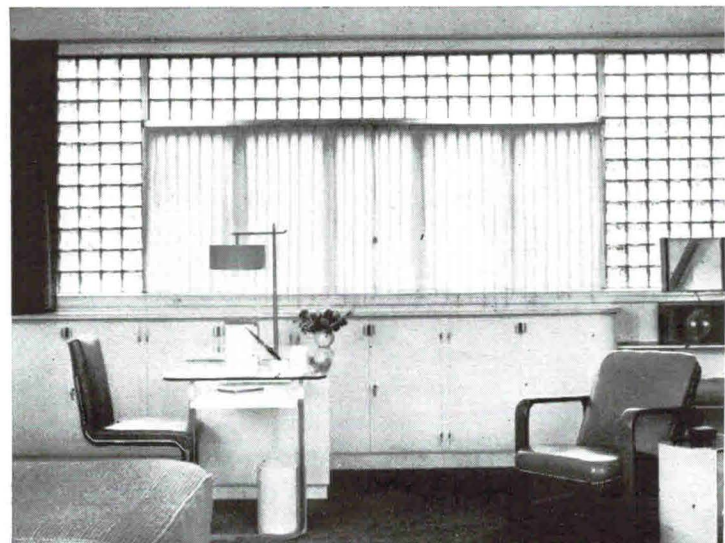
AUGUST · 1937

Garrison





Perhaps nowhere else is the use of glass masonry so definitely indicated as in the city residence, where its valuable functions of excluding noise and providing privacy are especially appreciated. Here the use of glass contributes much to an extremely successful solution of a difficult problem. Worthy of special attention is the way in which glass masonry units of various sizes have been employed in the various rooms, in order to preserve the general scale of the decorations in each.



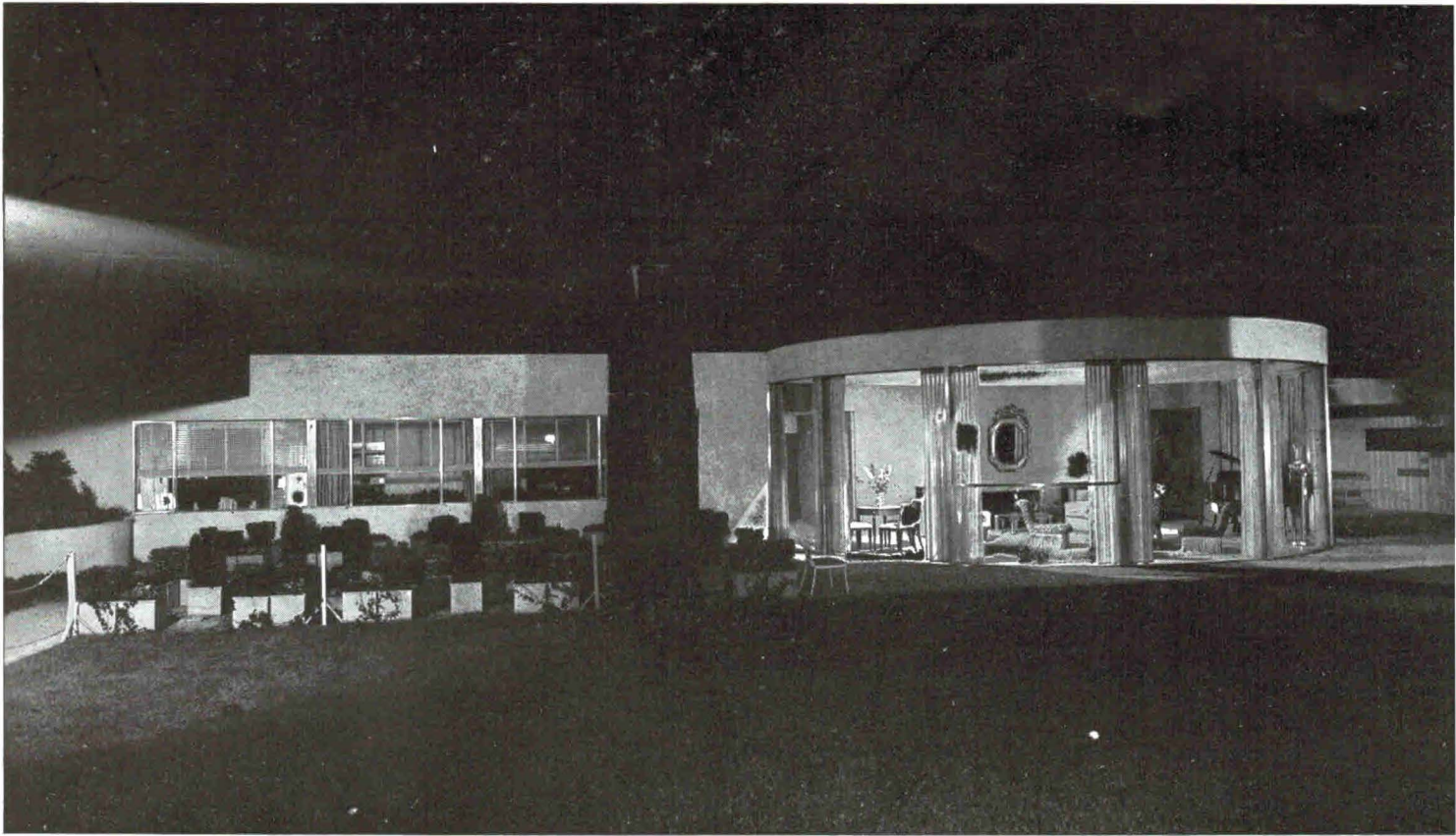


Frank Randt Photos

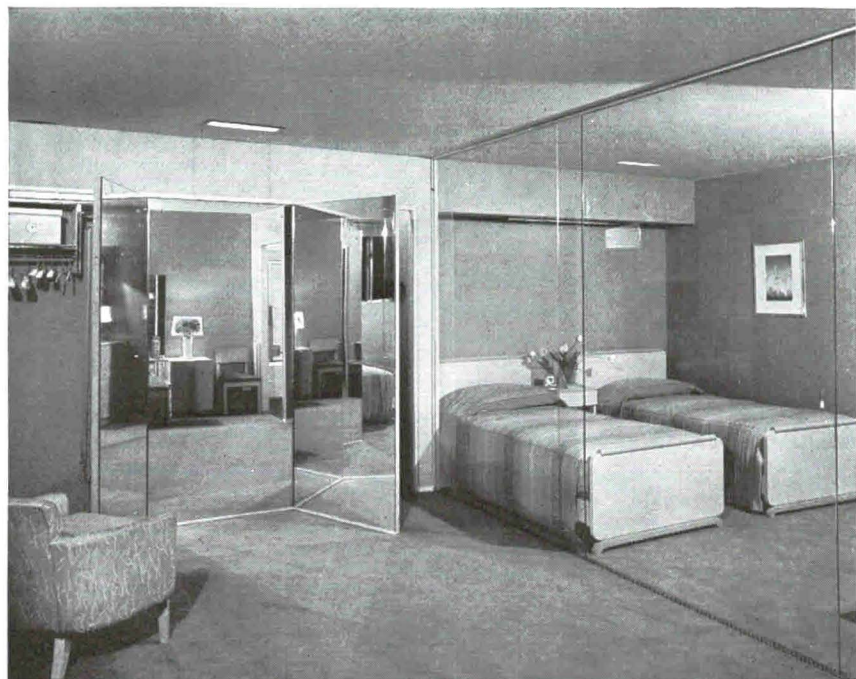
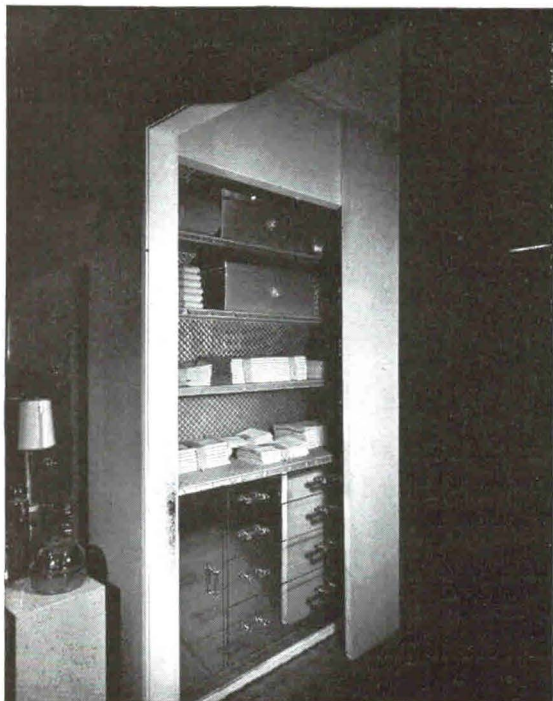
MENTION

WALLACE K. HARRISON & J. ANDRÉ FOUILHOX, ARCHITECTS

When the average citizen visits a home show he goes, presumably, to be instructed. What must be remembered in designing a house for exhibition, however, is that he would also like some excitement. It is natural, therefore, that the new uses for glass suggested by this example should be somewhat spectacular; the remarkable thing is that they are likewise practical although costly. Curved glass living room walls which disappear into underground pockets, a transparent glass screen to shut off the dressing portion of the bedroom at night, and frameless glass and mirror doors are certainly suitable to the house of "tomorrow"; for architects to ponder is their applicability to the house of today.



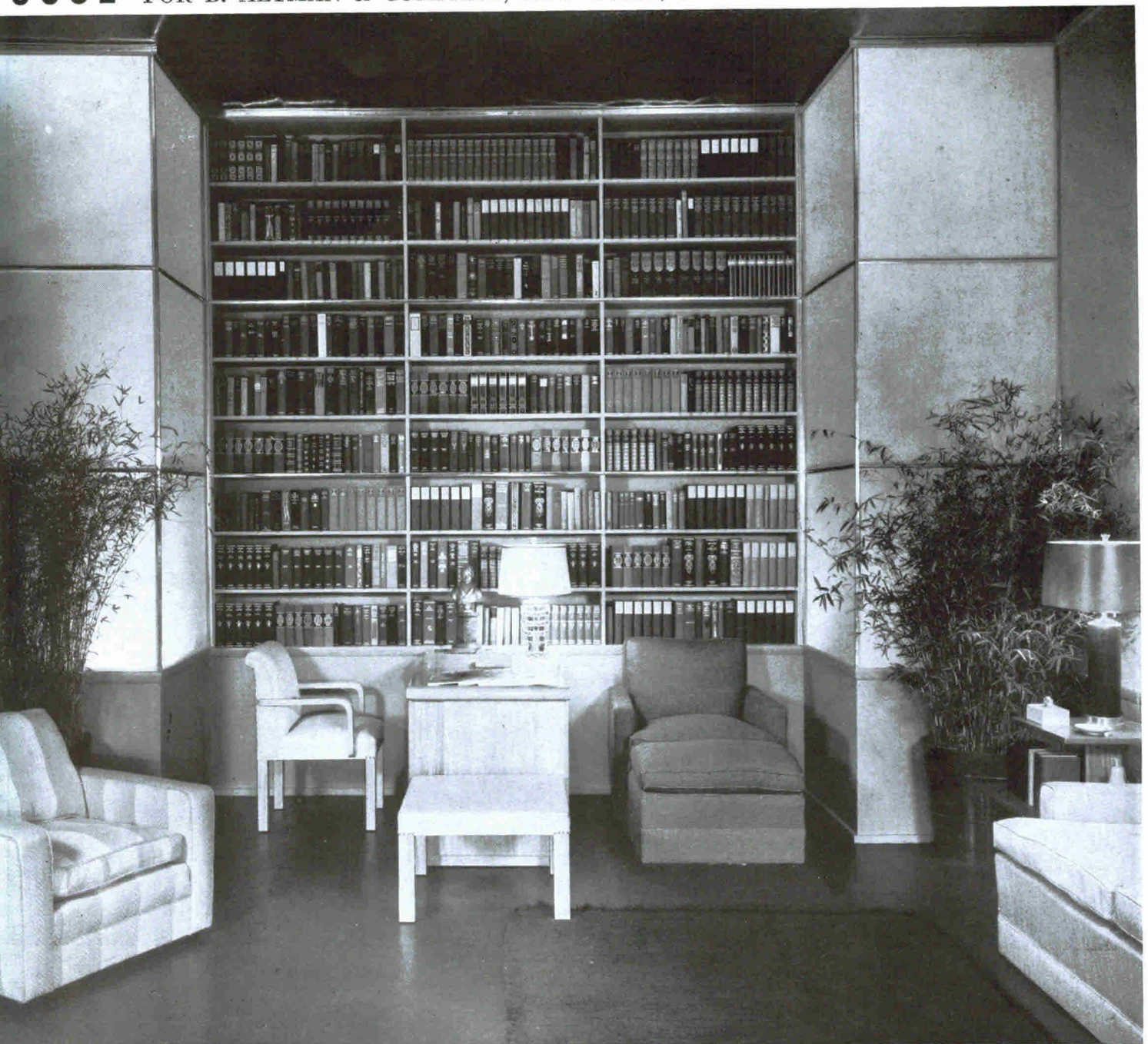
CLOSET DETAIL



BEDROOM

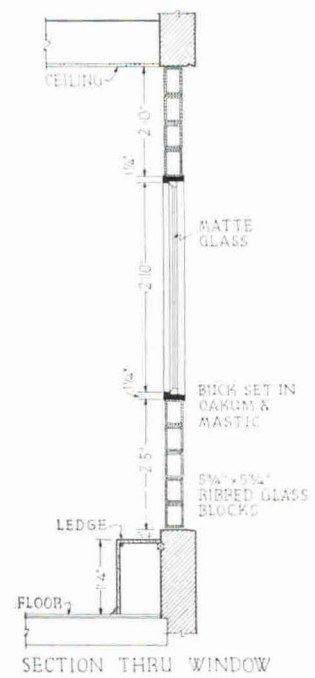
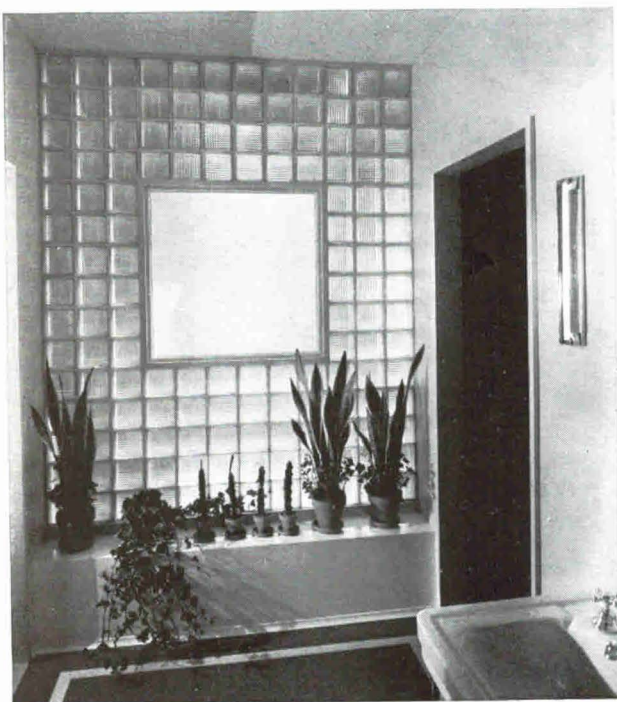
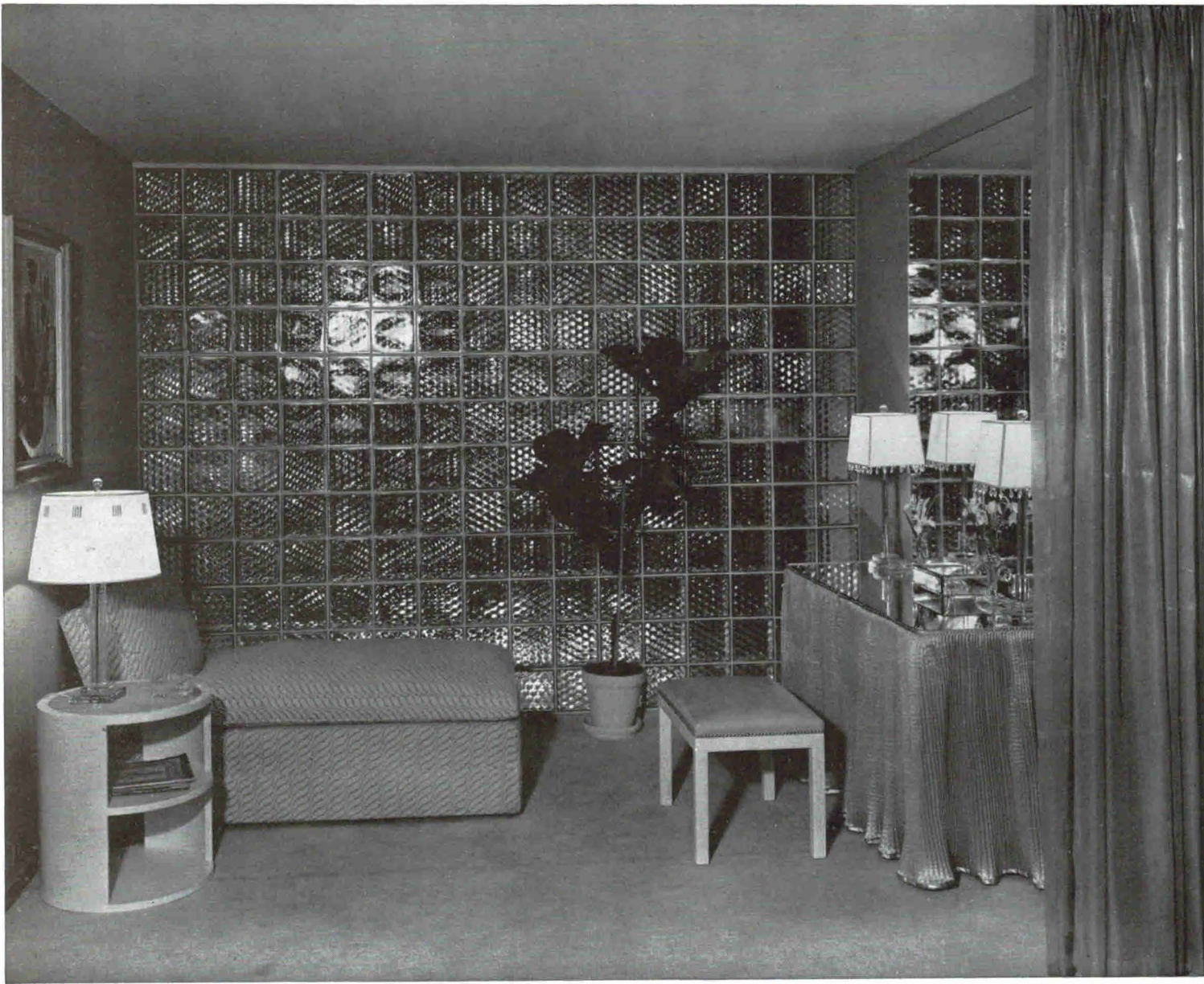
The plate glass sliding bedroom partition shown above, while a startling piece of swank, is nevertheless an extremely sensible arrangement which permits the bedroom to be used for a dressing as well as sleeping room; its advantages in cold weather are obvious.

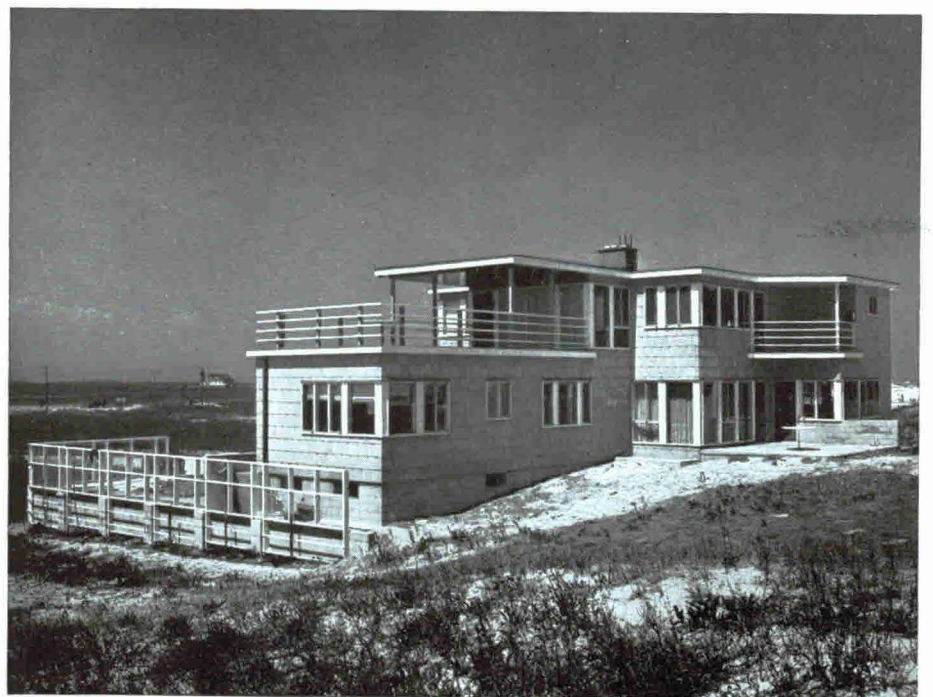
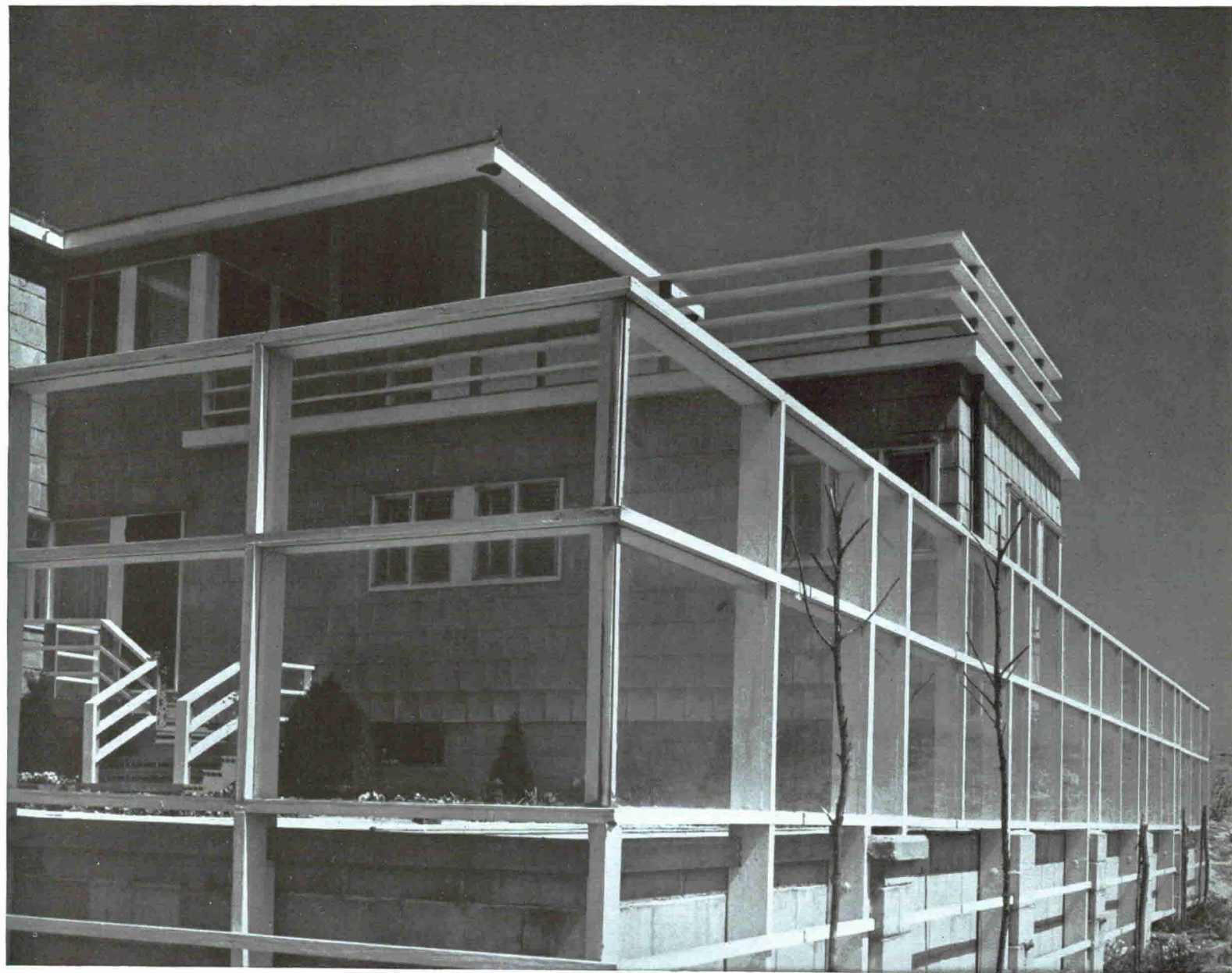




MENTION

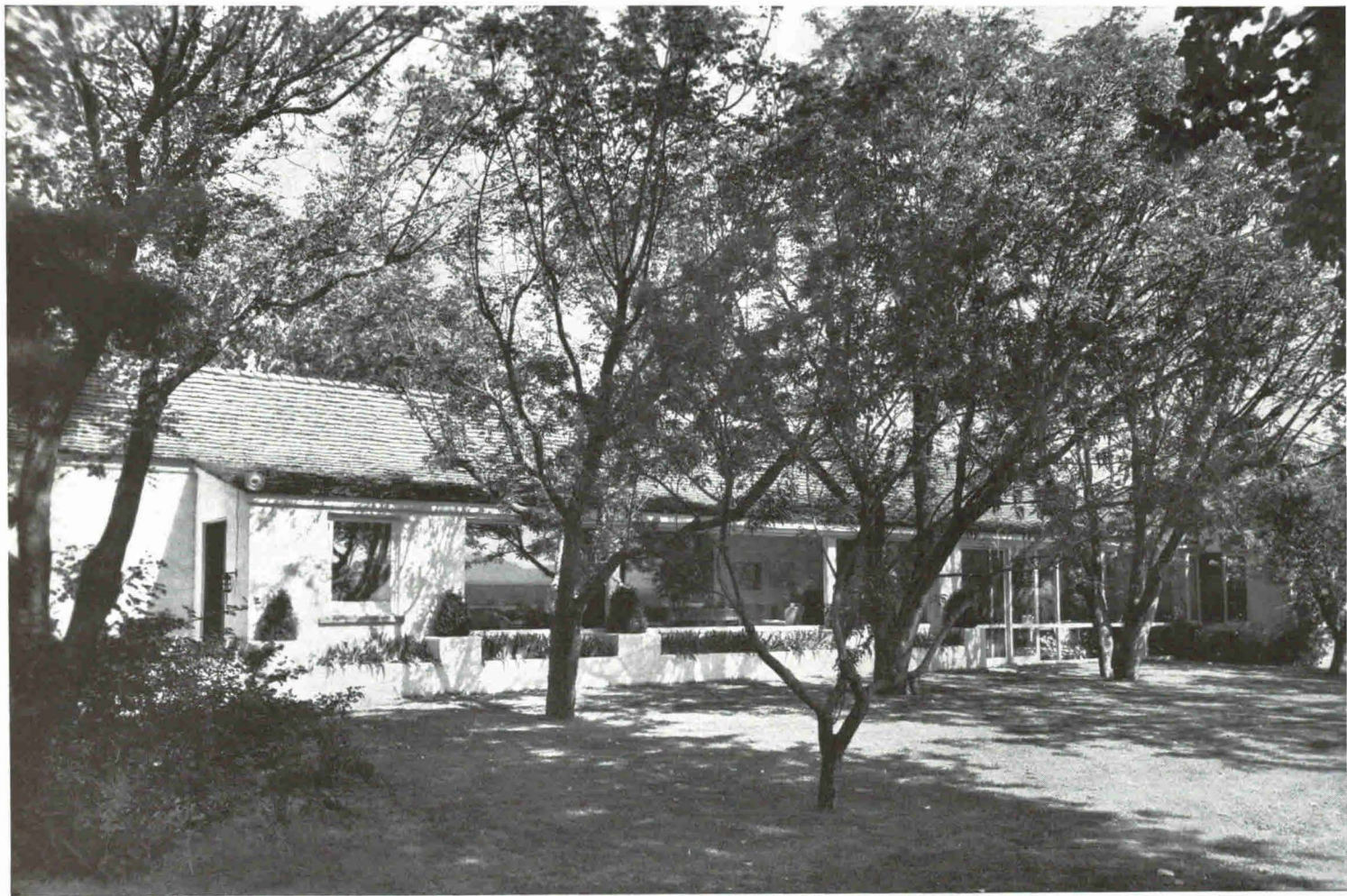
Here full advantage is taken of the decorative possibilities of frosted glass, used in conjunction with built-in lighting equipment. Handled with fine restraint the final effect is in no way garish. Other rooms, illustrated on the following page, show that glass brick and decorative mirrors have been used by this designer with equal facility. It is unfortunate that the grouping of the furniture, particularly that shown in the room above, has not been more completely integrated with the architectural treatment of the room.



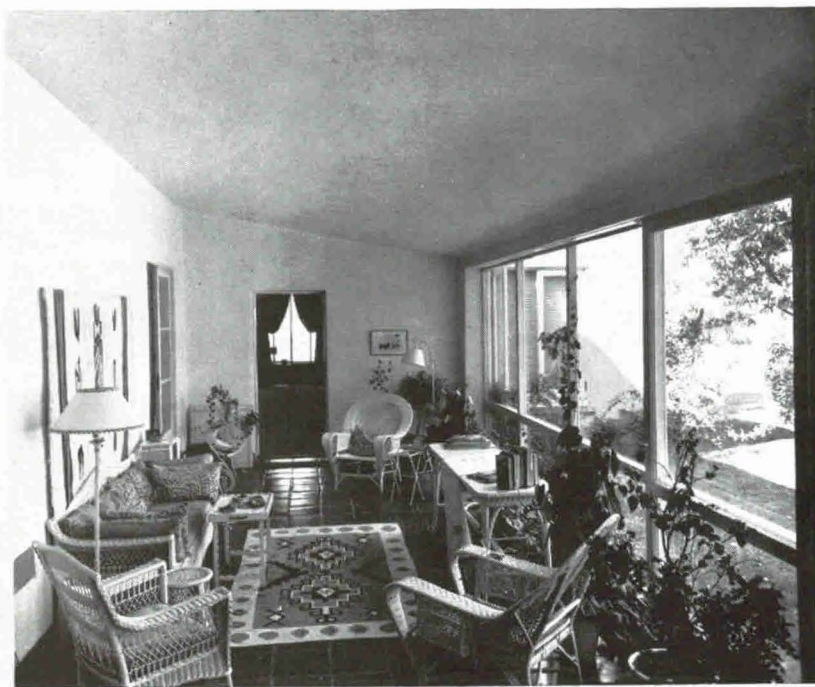


Filling a long felt need in seaside architecture, the glass windscreen shown above is an ingenious solution of a difficult problem. Provision of an additional and unscreened upper terrace makes it possible for owners and guests to take the wind or leave it alone.

# HOUSE FOR MR. & MRS. HOWELL MANNING, TUCSON, ARIZONA



JOHN W. SMITH, ARCHITECT

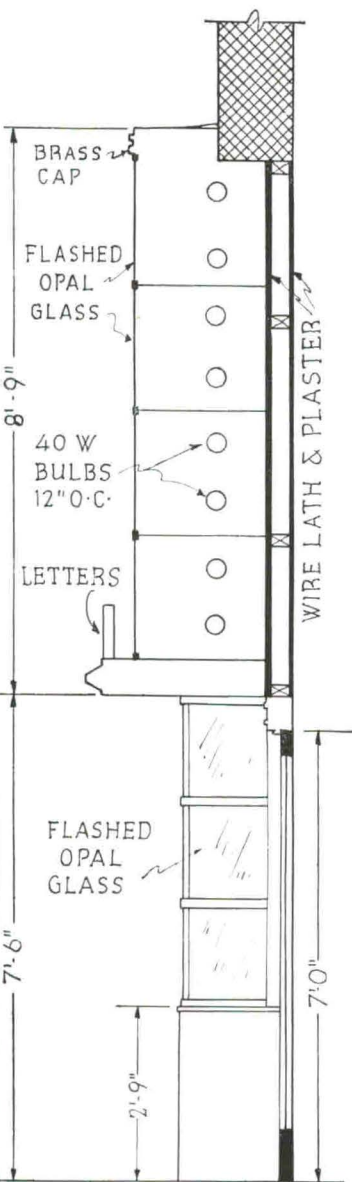


Valuable because it shows how much can be done with a narrow space if it is sufficiently open. The glazed terrace of this Arizona residence also indicates that the need for this type of room knows no geographical restriction.

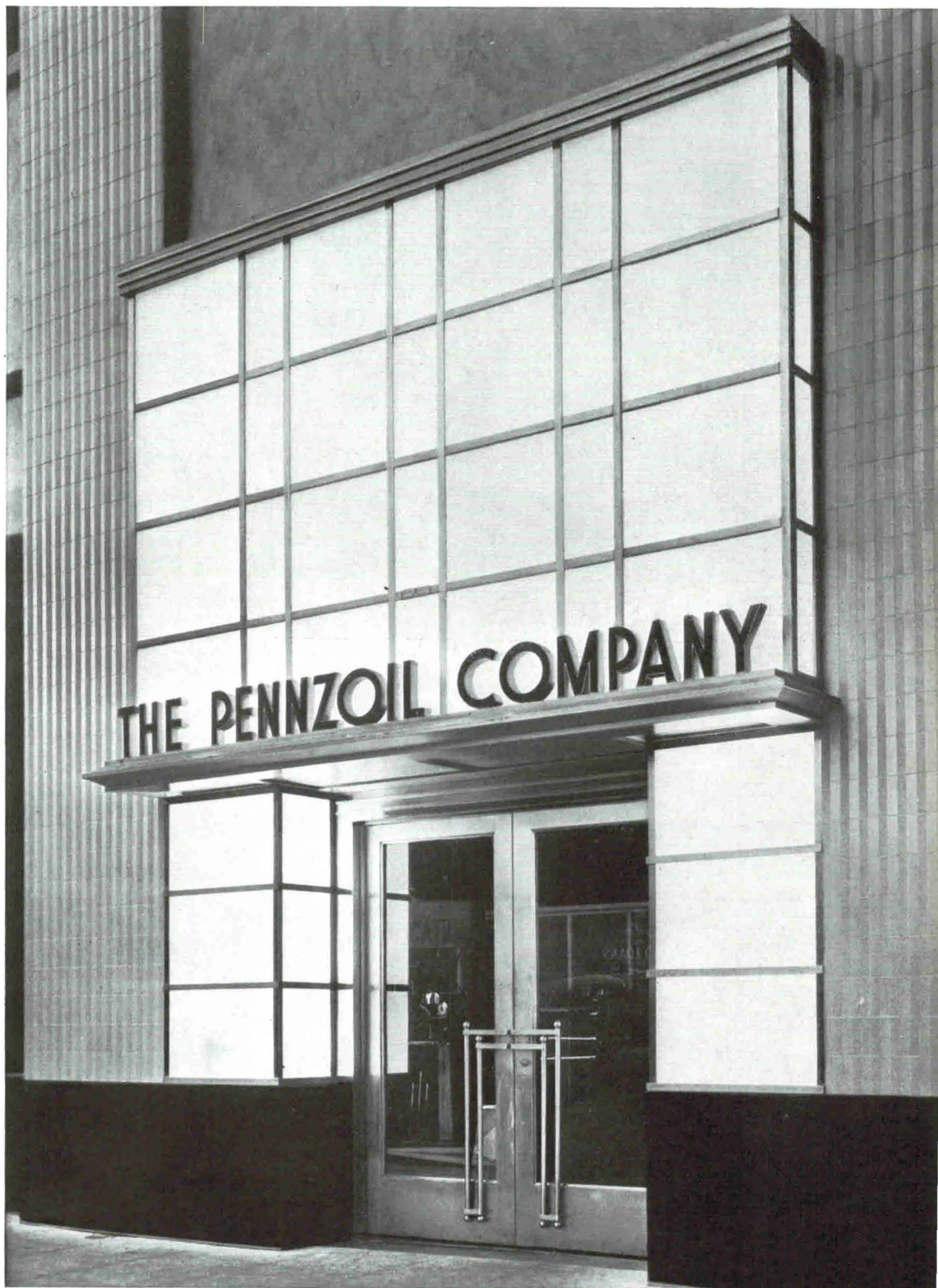
# COMMERCIAL

J. A. HARDESTY,  
DESIGNER

PRIZE



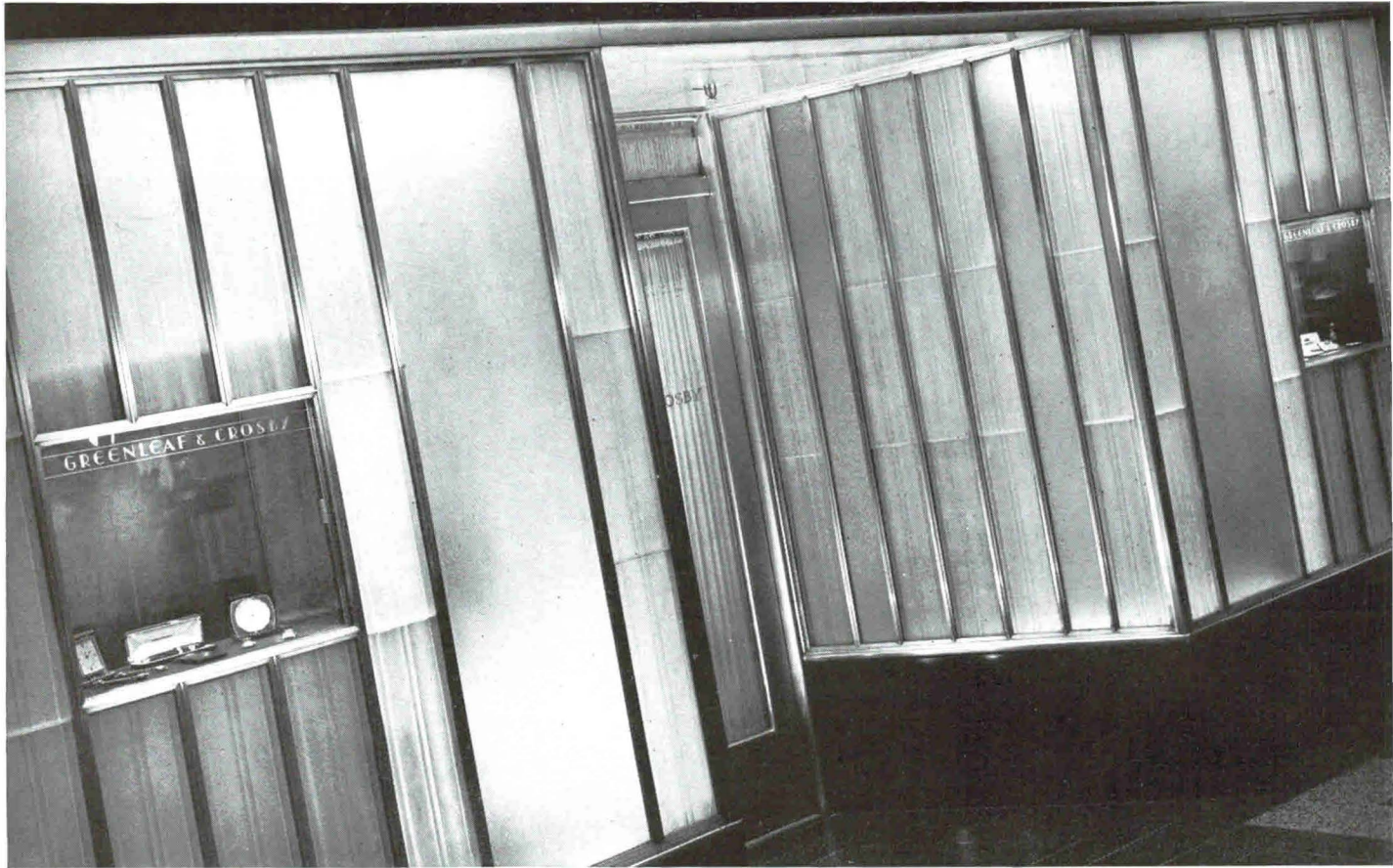
SECTION THRU  
ENTRANCE



**OFFICE** PENNZOIL COMPANY, LOS ANGELES, CALIF.

**F**astest growing use for frosted glass is that shown above: as a decorative background for store front signs, illuminated from behind. Here this construction has been used particularly well.

**STORE** GREENLEAF & CROSBY, NEW YORK CITY, REINHARD & HOFMEISTER, ARCHITECTS



*Robert M. Damore*

MENTION

**STORE** BUILDING FOR MR. C. U. WHIFFIN, GLENDALE, CALIF.

ERLE WEBSTER &  
ADRIAN WILSON,  
ARCHITECTS



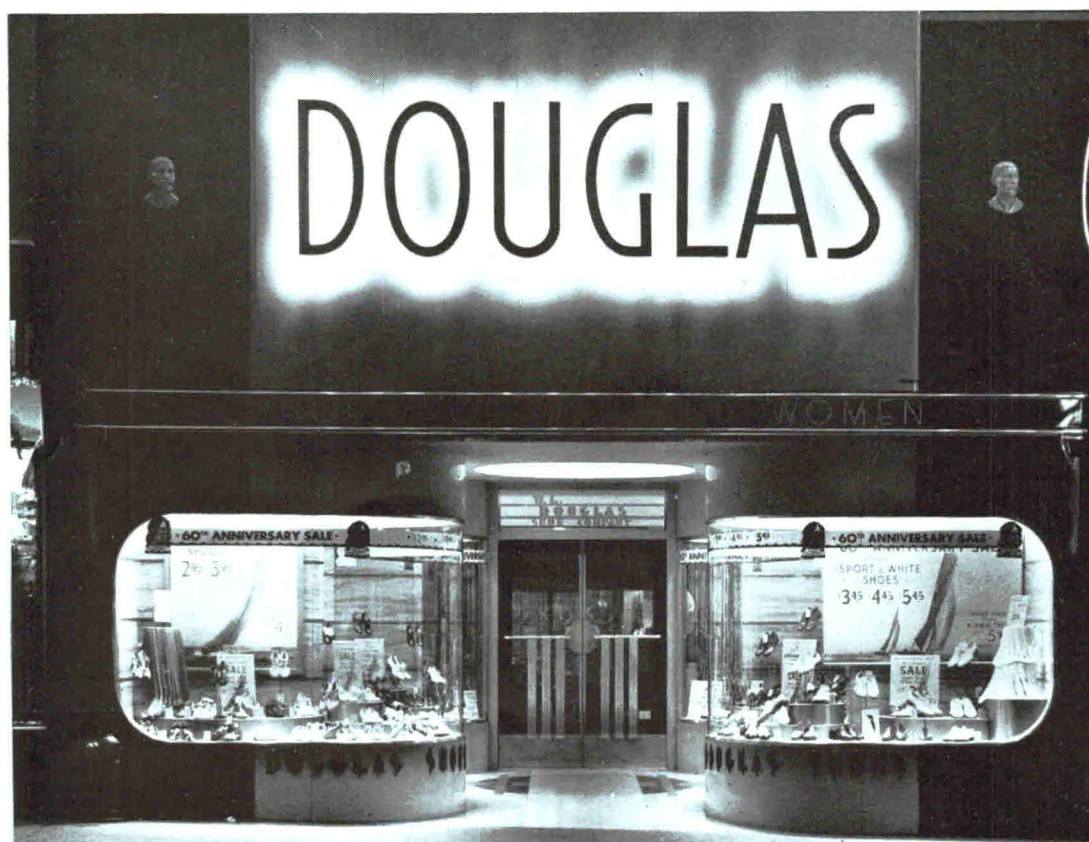
MENTION

Small show windows (called "shadow boxes"), so effective for the display of jewelry, present a problem which is architecturally difficult, but nicely solved in the store at the top of the page. Treatment of the small shops shown below is commendably restrained.

**STORE** BROWNING KING, NEW YORK CITY, MORRIS LAPIDUS, ARCHITECT



**STORE** DOUGLAS, NEW YORK CITY, MORRIS LAPIDUS, ARCHITECT



In the type of sign shown on this page, lights are located within the letters themselves, throwing light on the background and the letters into sharp silhouette; reversing the old-fashioned way of lighting the letters and leaving the background dark.

# SHOWROOM

STANDARD SANITARY MFG. CO., HARRISON AND FOUILHOX, ARCHITECTS

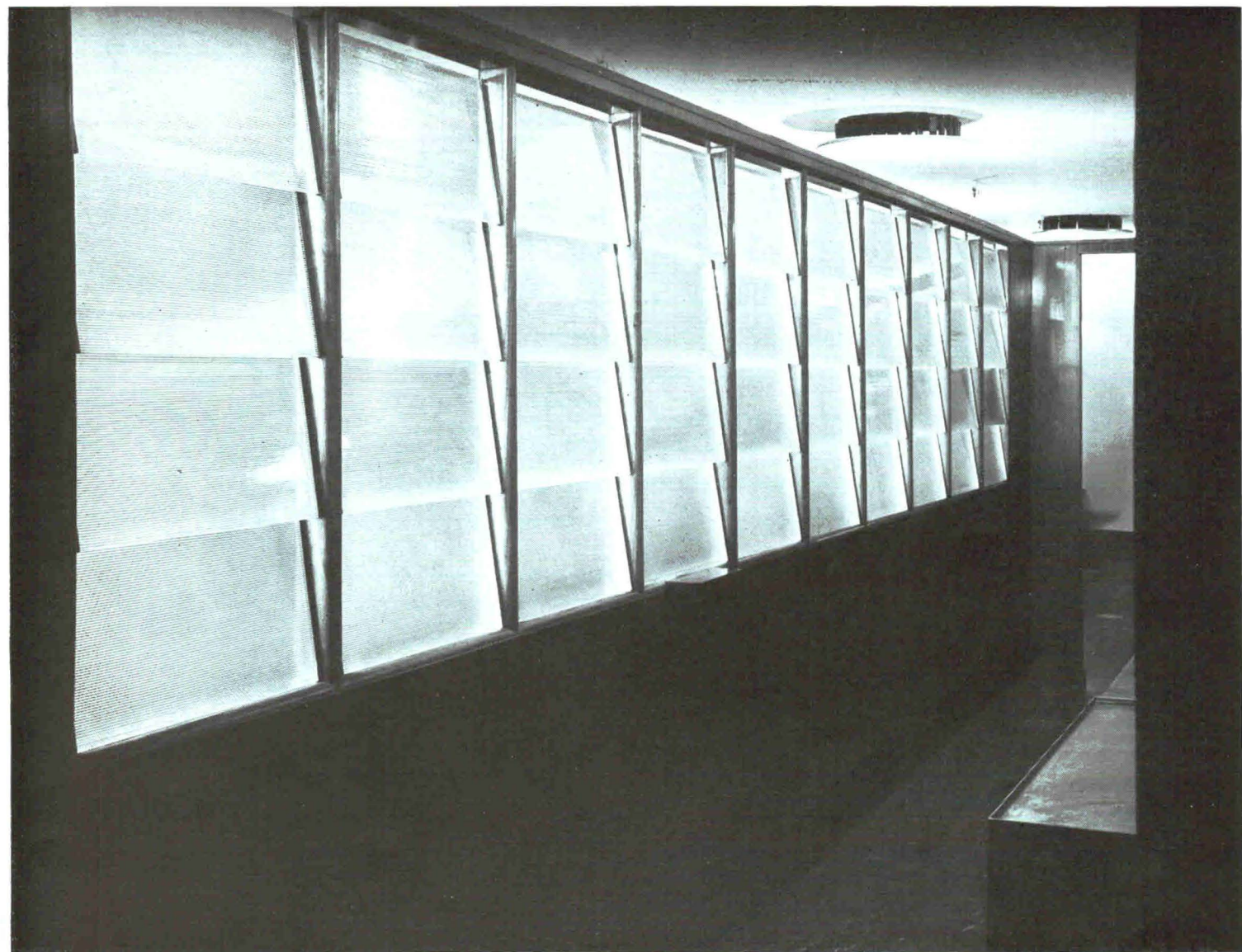


F. S. Lincoln Photos



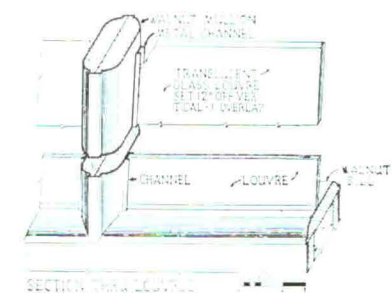
Photographs fail to suggest the scale of this spacious room, its most interesting feature. Fifty feet wide in the clear, 100 feet deep and 25 feet in height, simplicity of form together with effective use of color combine to make this an extremely successful solution of a difficult problem. In this showroom, wholly indirect lighting and the extremely effective show window play an important part.



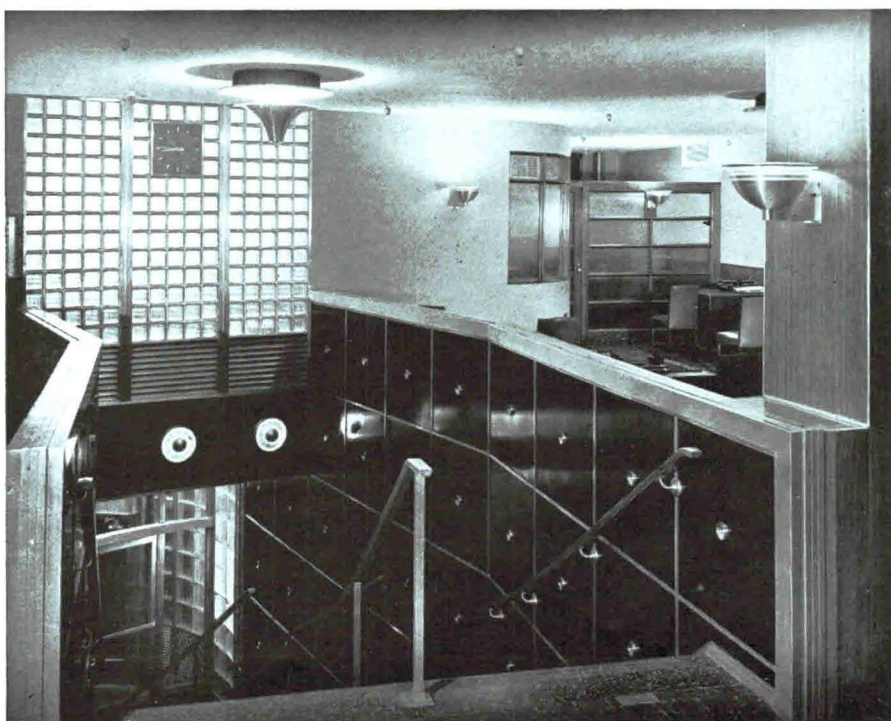


*Robert M. Damora*

**EUGENE SCHOEN & SONS,  
DESIGNERS**



**H**ere glass proves equal to the unusual task of admitting light and air while maintaining privacy; its decorative possibilities are utilized in the wall facing of the stairway shown at the right.



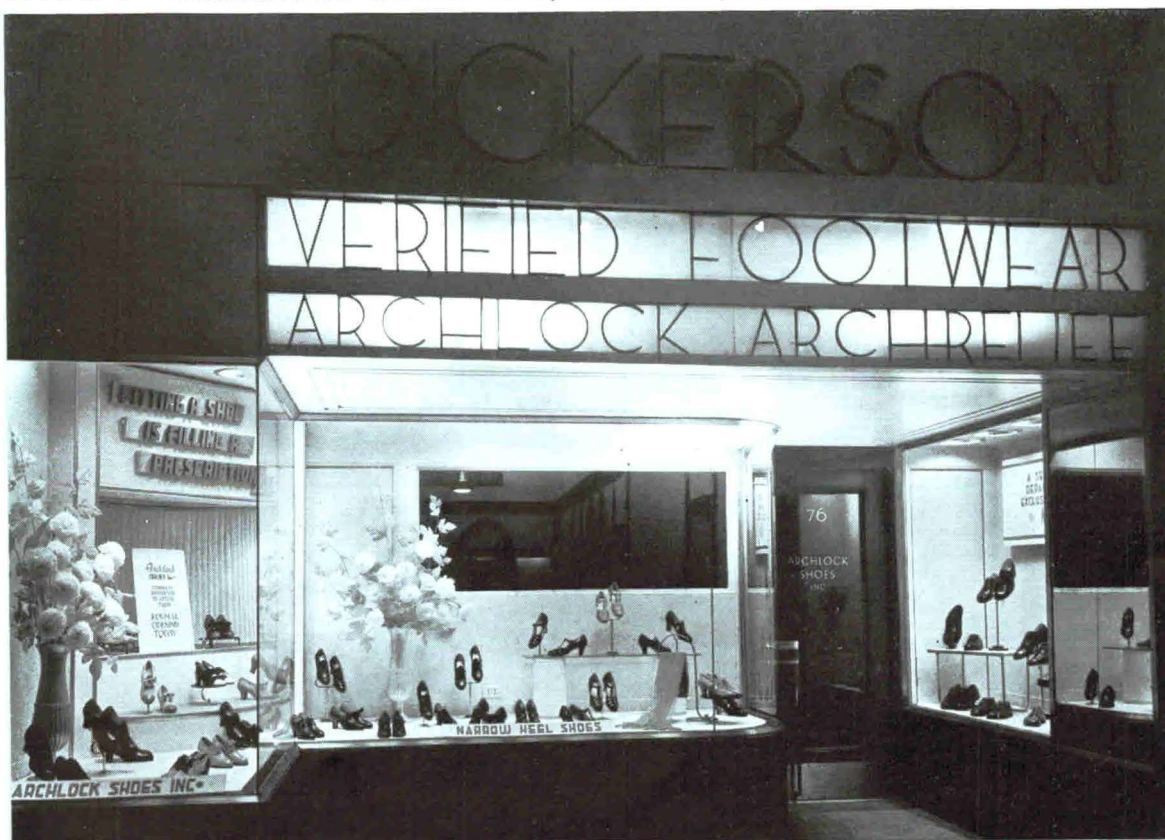


*Luckhaus*



RICHARD NEUTRA,  
ARCHITECT  
PETER PFISTERER,  
COLLABORATOR

Something of the dramatic possibilities of large sheets of glass are illustrated in the building above, where the glass areas are expertly contrasted with the solid elements of the construction.



*Kaufmann & Fabry*

Strikingly employed in the example at the top of the page, structural glass is increasingly popular as an exterior facing for shop fronts. Latest practice in show window layout is shown in the example below.



*F. S. Lincoln*

**PRIZE**

Simple, effective and dignified, this store depends upon a large, pleasingly illuminated window, rather than garish signs, to attract the attention of shoppers.



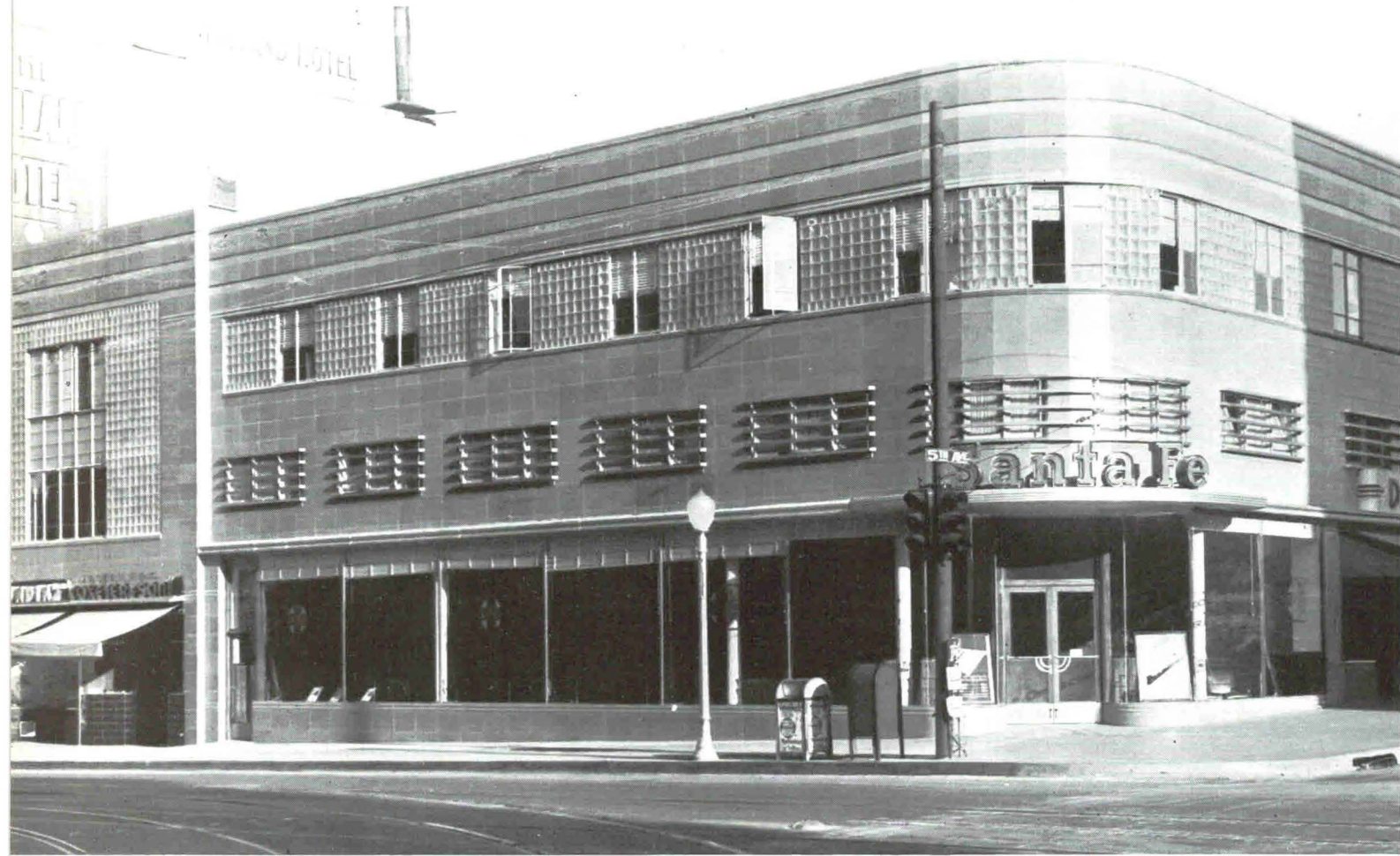
**MENTION**

Frankly designed as a billboard, the entire building serves as an effective display and advertisement for its merchandise. Well integrated with the design, both by day and by night, are the large show windows on the ground floor and the glass block walls above.

\*For complete presentation see ARCH. FORUM, May 1936, page 426.



**BUILDING** INGLE-TRIPPET BLDG., RAILWAY OFFICE AND SHOPS, SAN DIEGO, CALIF.



EARL F. GIBERSON,  
ARCHITECT



MENTION

The combination of clear glass and glass block, never easy to handle, has here been successfully carried out by carefully proportioning the areas of these materials. The use of a ceramic wall finish completes a harmonious and unusual exterior.

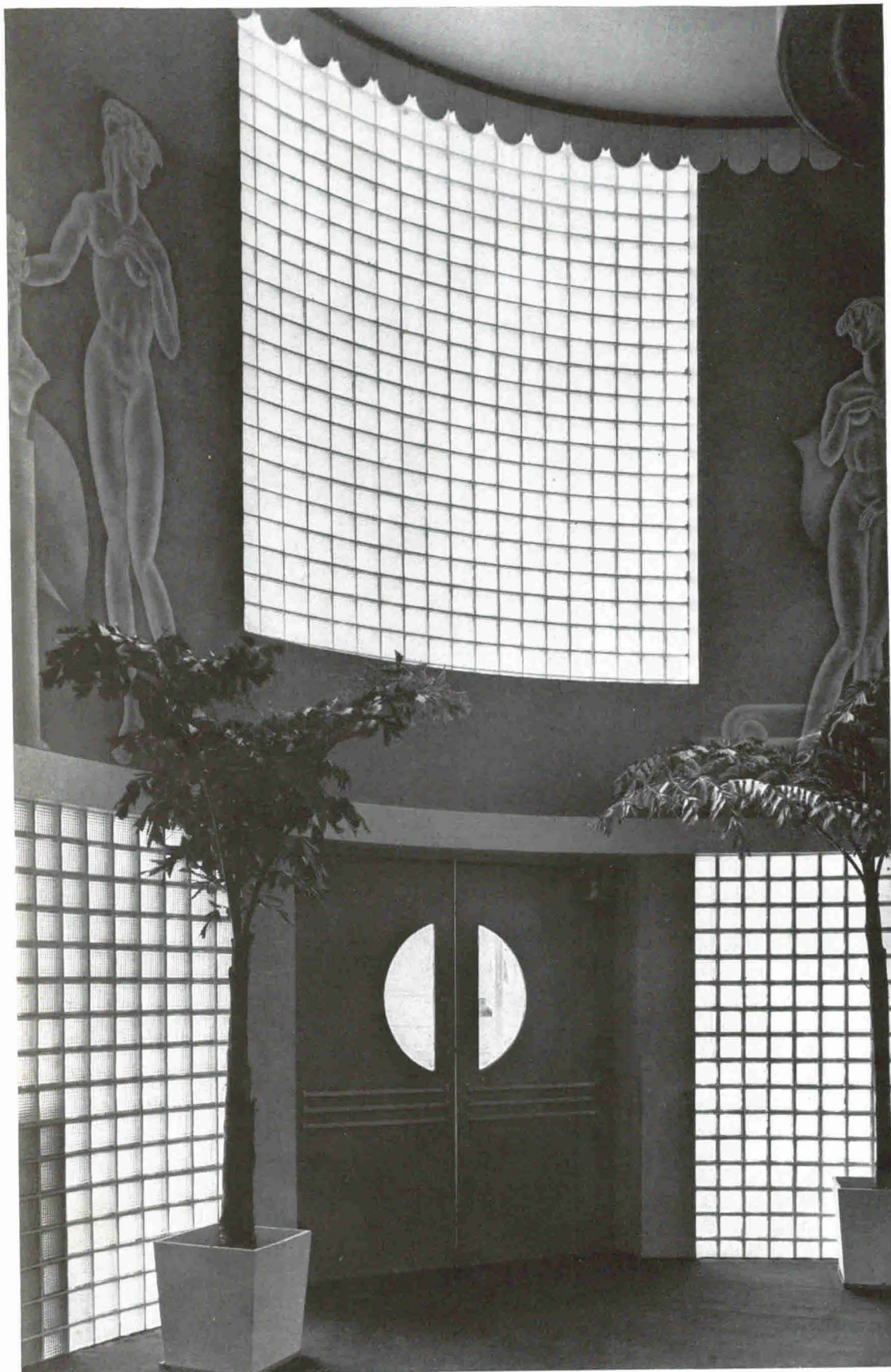
**ROYAL PALM CLUB** MIAMI, FLORIDA



PRIZE

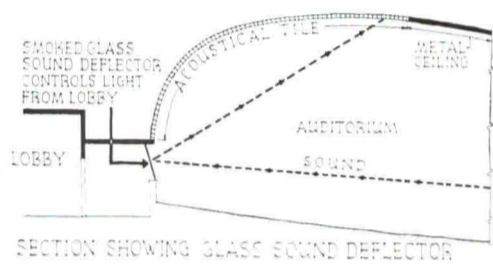
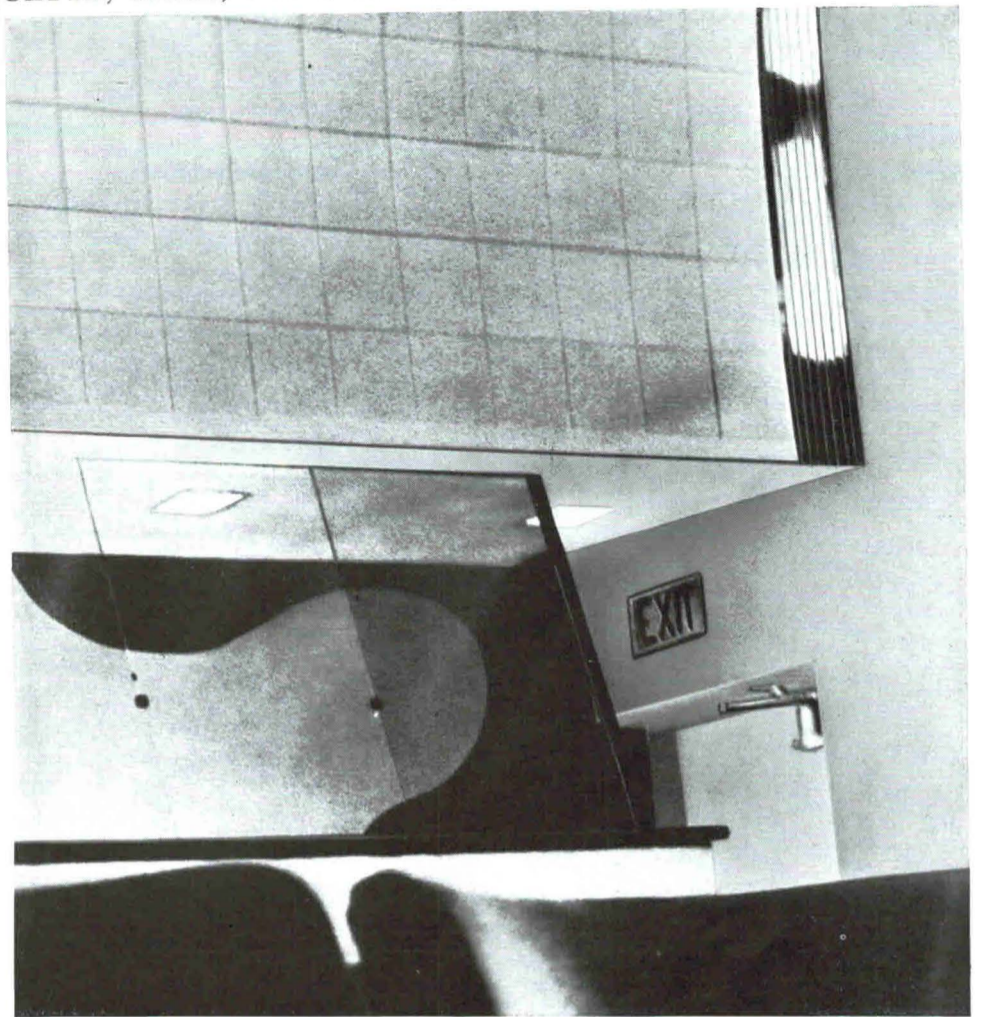
*Samuel H. Gottscho Photos*

**ROBERT LAW WEED, ARCHITECT**



Designed to include the usual resort club facilities, this interesting building provides an excellent demonstration of the proper use of glass block. As can be seen from the exterior photograph, the block is treated as an integral, important element of the design, and is laid flush with the wall. This manner of handling emphasizes the characteristics of the material, and reinforces the appearance of solidity of the mass.





**MENTION**

The sloping glass panel shown in the upper picture is located at the back of the auditorium. It was installed to permit a view of the screen outside the auditorium. The panel was tilted to reflect sound waves up against the acoustically treated ceiling where they are absorbed.

\*For complete presentation see ARCH. FORUM, Sept., 1936, page 214.

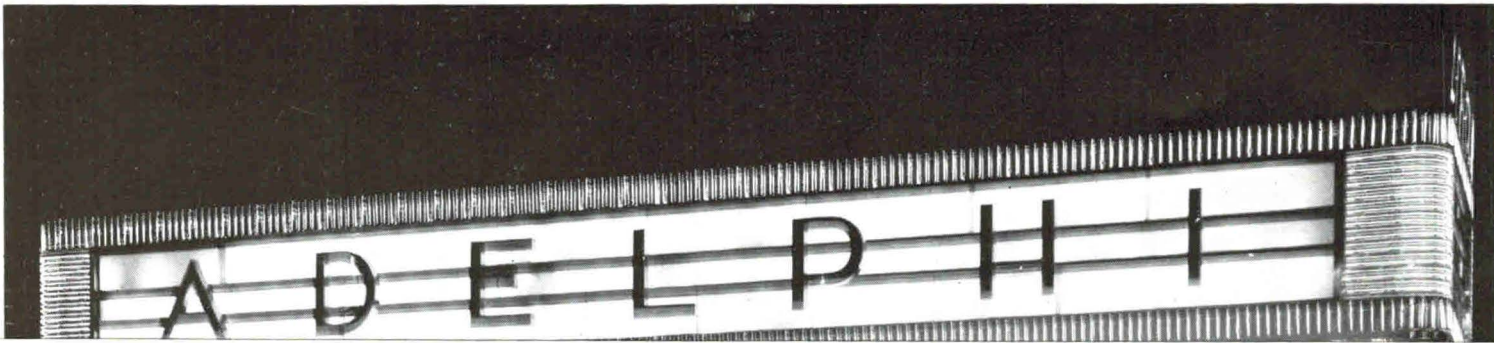


**PRIZE**

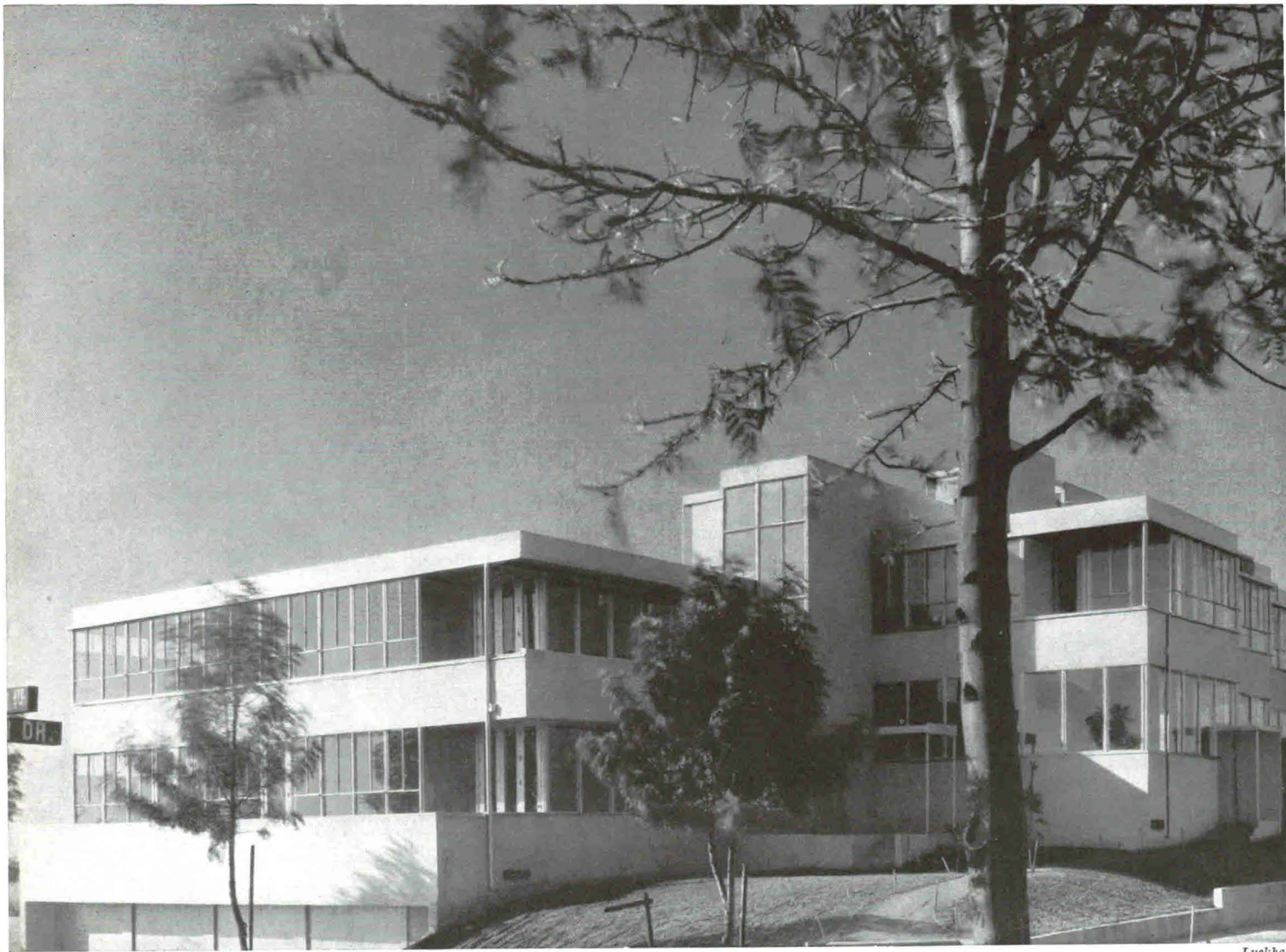
Penetration has been designed to give complete privacy to apartments in adjoining bays. The circular glass extensions of the drapets provide a novel and practical windbreak.

For complete presentation see ARCH. FORUM, Jan., 1937, page 5.

**THEATER** ADELPHI,\* CHICAGO, ILLINOIS, MARK D. KALISCHER, ARCHITECT

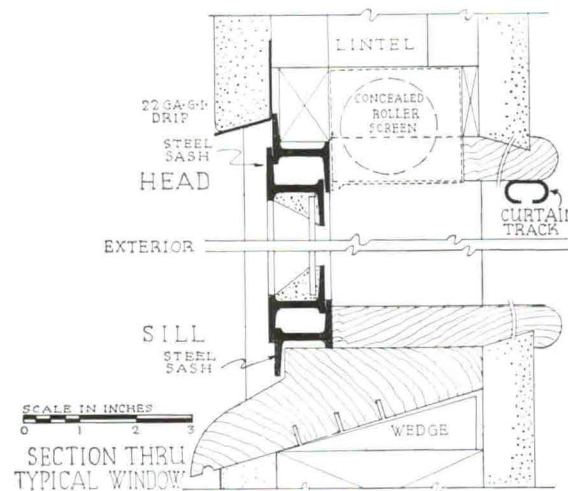
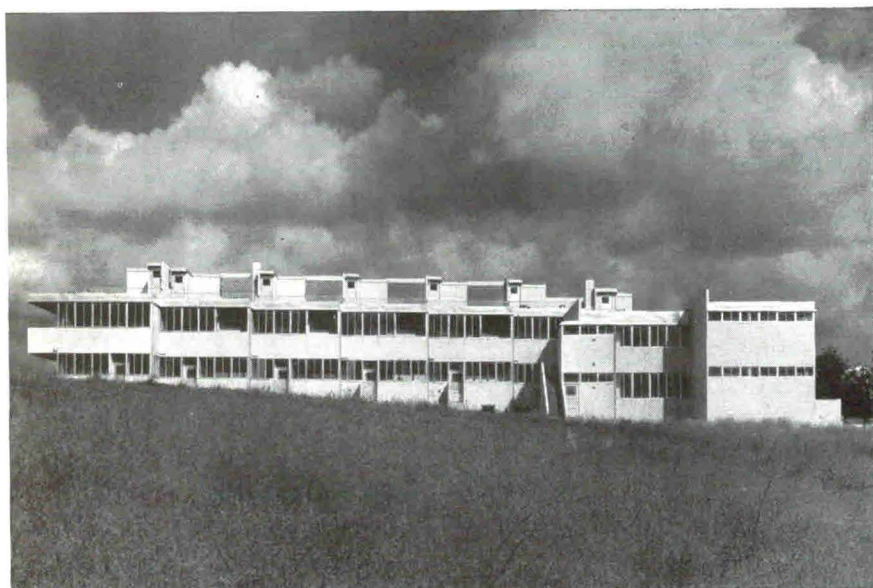


**APARTMENTS** LANDFAIR DWELLINGS,\* WESTWOOD, CALIF.



RICHARD J. NEUTRA, ARCHITECT  
PETER PFISTERER, COLLABORATOR

MENTION



This imaginative conception of the multiple dwelling owes much to the architects' expert and carefully considered use of glass. An unusual feature is the location of living room lights outside the windows in the balcony ceilings, a device which renders the window glass invisible at night.

\*For complete presentation see ARCH. FORUM, May 1937, page 399.



**MENTION**

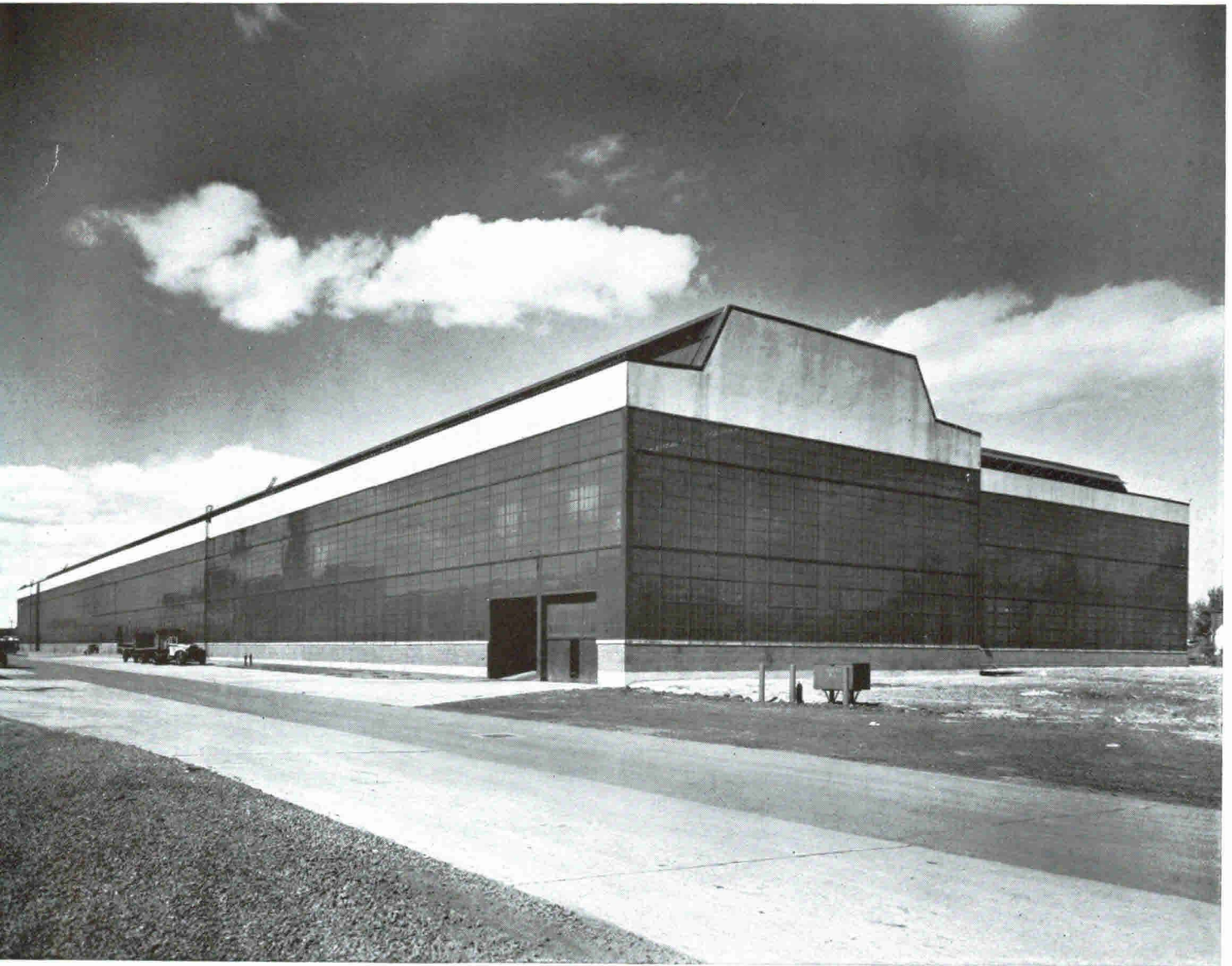
Besides the traditional glassware and mirrors, so characteristic of the old-fashioned bar, the decorative use of glass in this modern interior has been gaily extended to the furnishings as well.





Invitingly open and carefully shielded from the rays of the too hot sun, comfort within this attractive beach pavilion is further assured by the use of a continuous glass windscreen.

# INDUSTRIAL

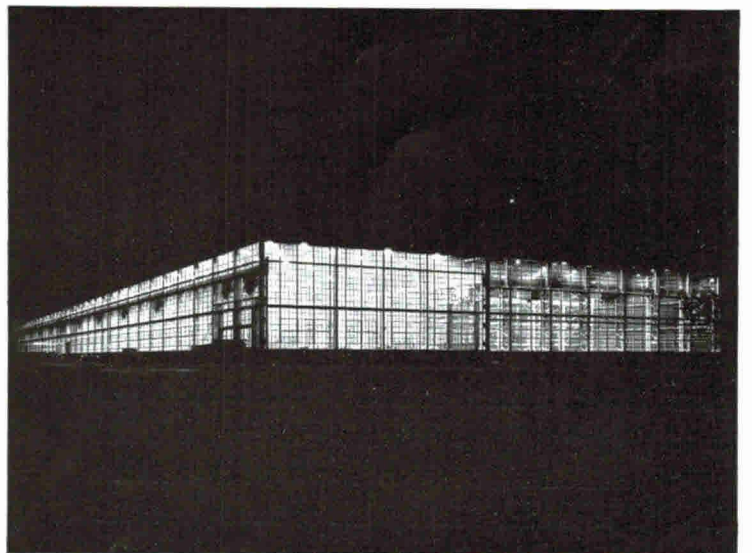


PRIZE

PRESS SHOP, DESOTO PLANT,  
CHRYSLER CORPORATION,  
DETROIT, MICHIGAN

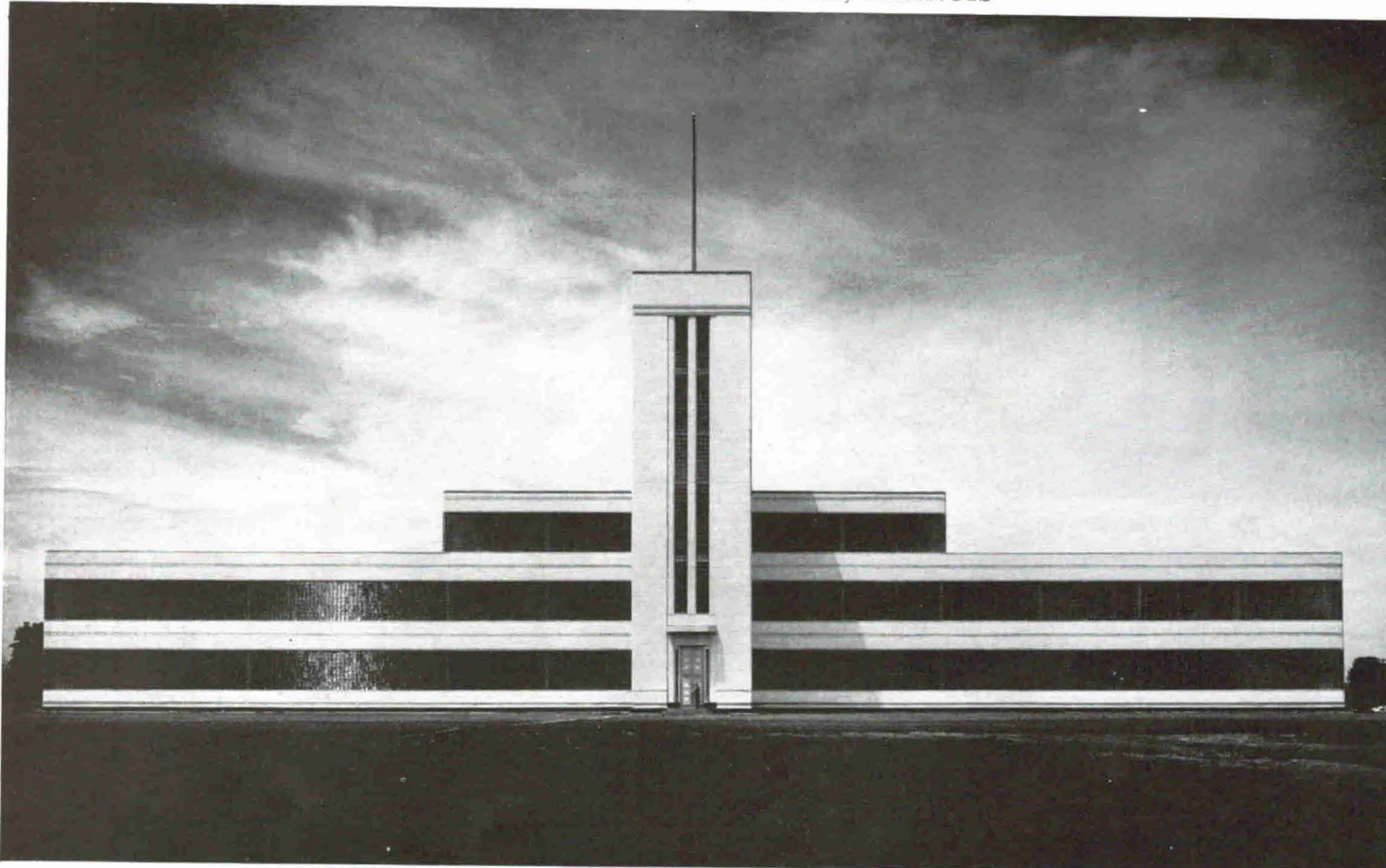
ALBERT KAHN, INC., ARCHITECTS

For better simplicity and directness in the solution of a clearly defined problem has produced a superlative factory. Rarely has a building depended more completely on the use of glass for its function and effect.



# FACTORY

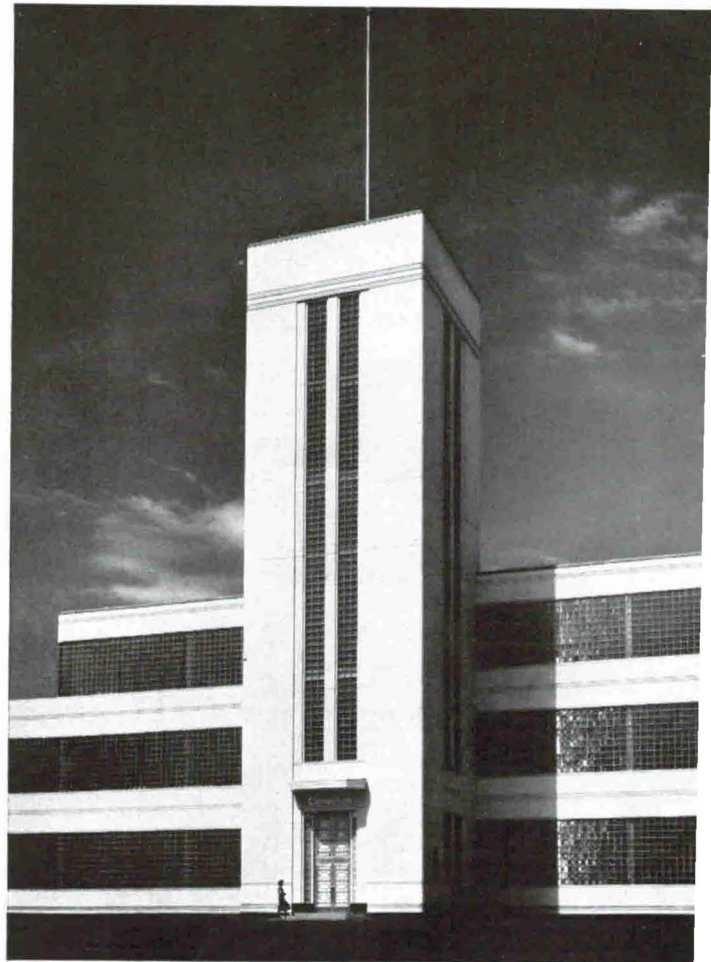
CAMPANA SALES COMPANY, BATAVIA, ILLINOIS



MENTION

CHILDS & SMITH - FRANK D. CHASE,  
ASSOCIATED ARCHITECTS AND  
ENGINEER

This new factory shows admirable handling of glass block, which combines with the terra cotta facing to form a consistent exterior. The only question that might be raised is whether the composition gains by the centrally located tower which interrupts the strong horizontals.



# WAREHOUSE

THE HECHT COMPANY, WASHINGTON, D. C.

MENTION

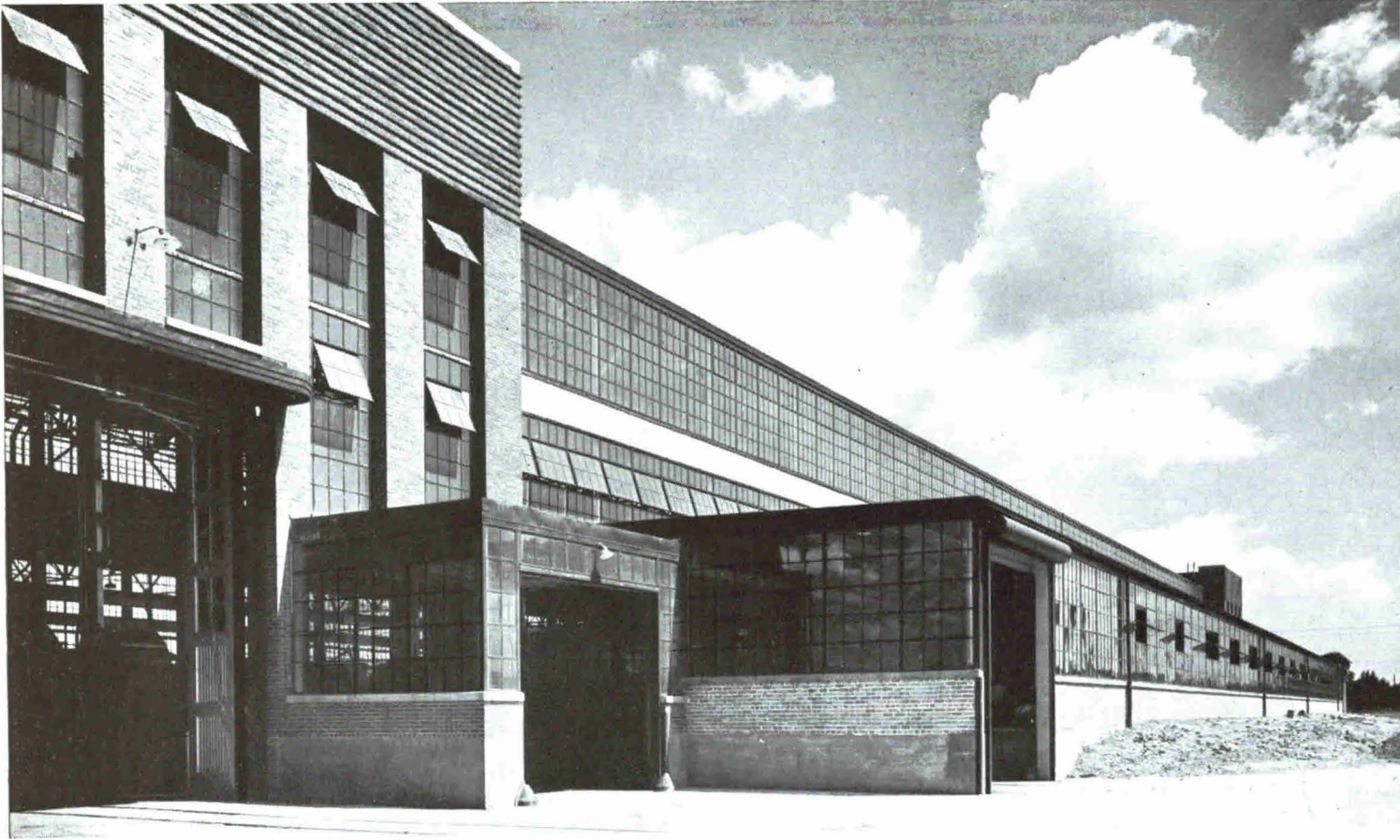


ABBOTT, MERKT & COMPANY, ARCHITECTS AND ENGINEERS

Another vigorous demonstration of the potentialities of glass block is this warehouse for the Washington department store. The block functions as wall and window, running the entire length of the building, is interrupted at intervals by standard windows. An interesting extension of the building's use is the series of show windows on the street level.

# FACTORY

AMERICAN BLOWER CO., DEARBORN, MICH., ALBERT KAHN, INC., ARCHITECTS



# FACTORY

FRIDEN CALCULATING MACHINE CO., SAN LEANDRO, CALIF., FREDERICK H. REIMERS, ARCHITECT



Two excellent examples of the present salutary trend in factory design. Simplicity, achieved by extensive use of glass in standardized sash, accurately reflects the character of the buildings themselves.



# PUBLIC

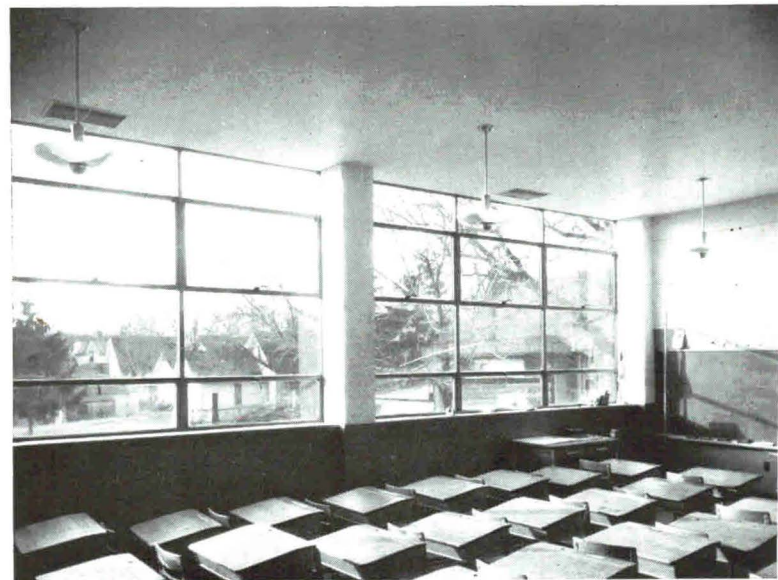
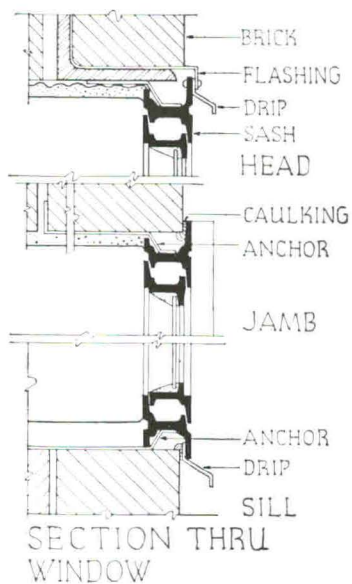
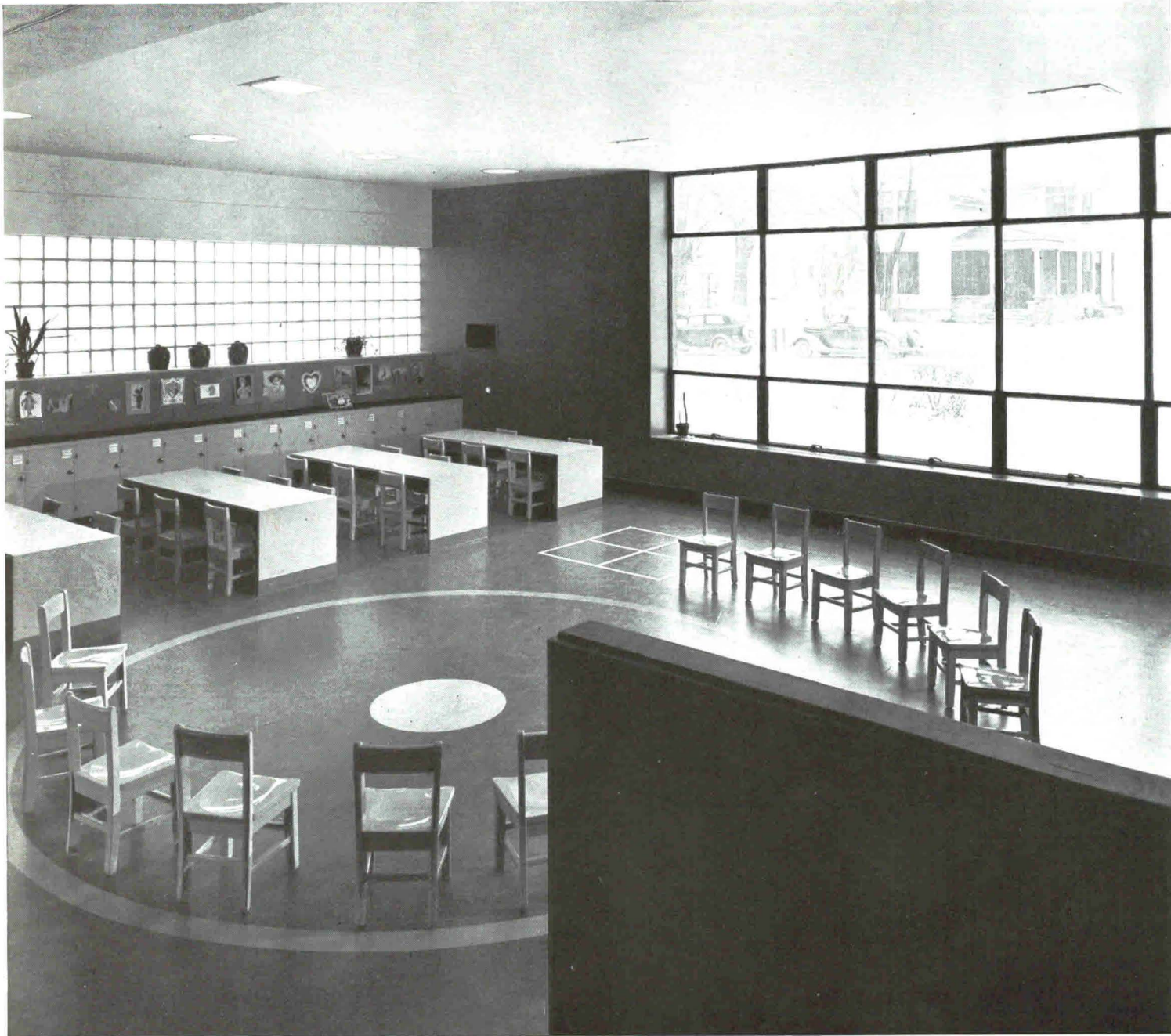


GRADE SCHOOL, NORTHVILLE, MICHIGAN  
LYNDON AND SMITH, ARCHITECTS

*F. S. Lincoln Photos*

**PRIZE**

Nowhere is the problem of natural illumination more exacting than in the public school building; nowhere, therefore, is the primary, utilitarian function of glass more important. This building bears witness to the extent to which Modern's pretensions to utility and functionalism are justified. As this excellent example shows, such claims are not exaggerated; the schoolroom window is here frankly treated for what it is—a medium for admitting the maximum possible amount of daylight—with admirable results.

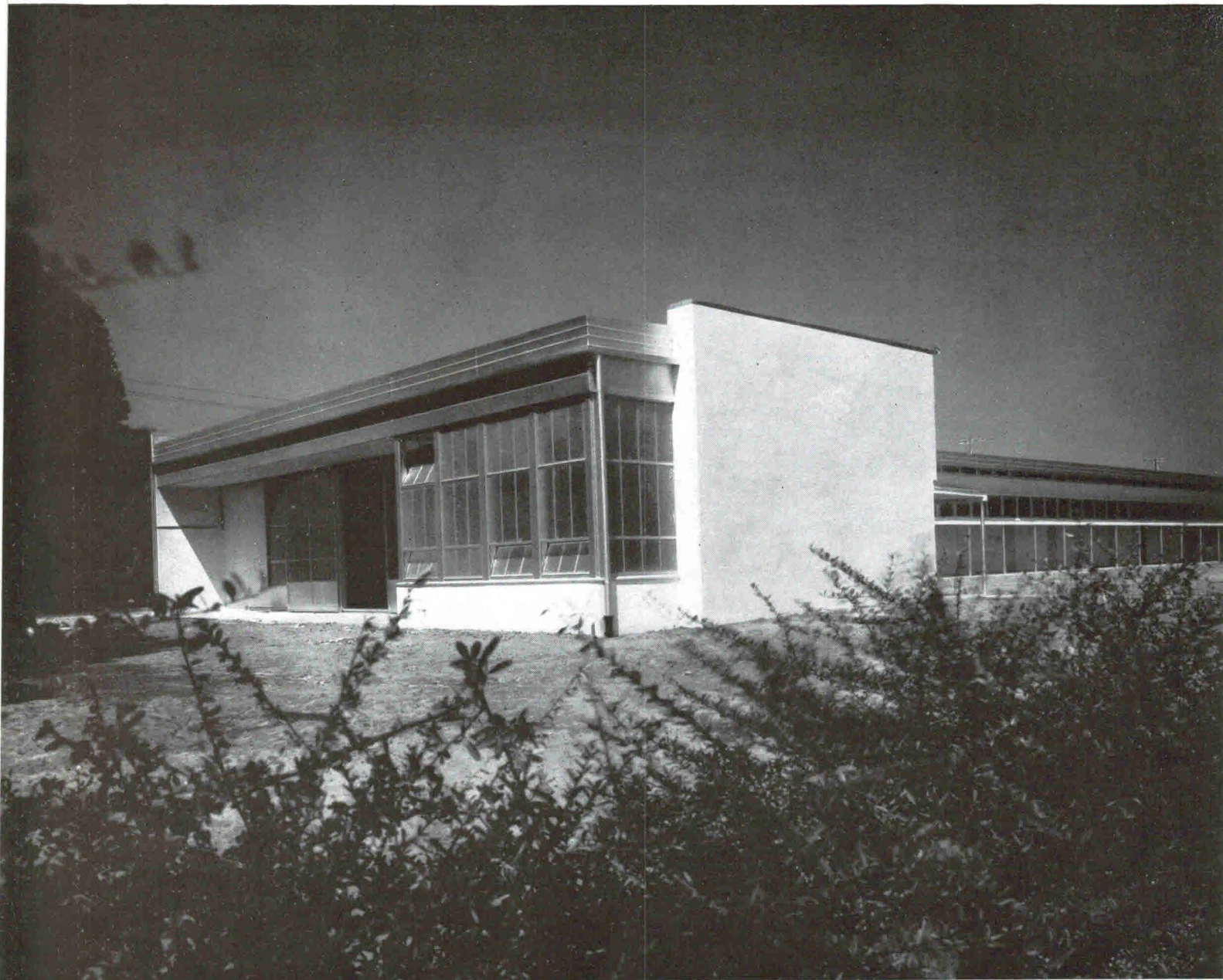


# SCHOOL BEECHER HIGH SCHOOL, FLINT, MICHIGAN, LYNDON AND SMITH, ARCHITECTS



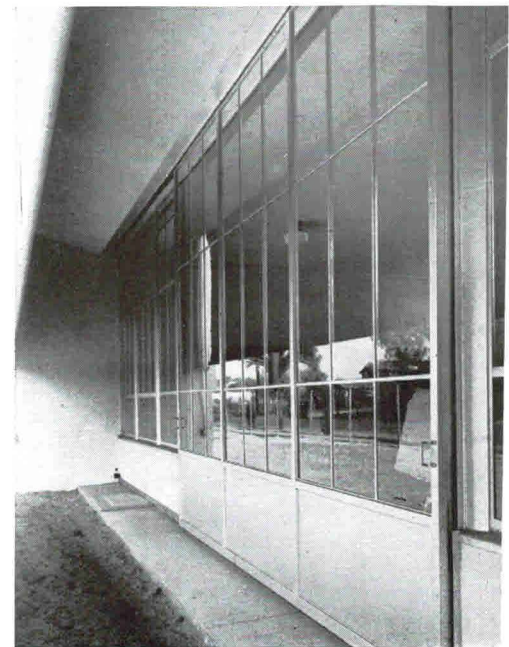
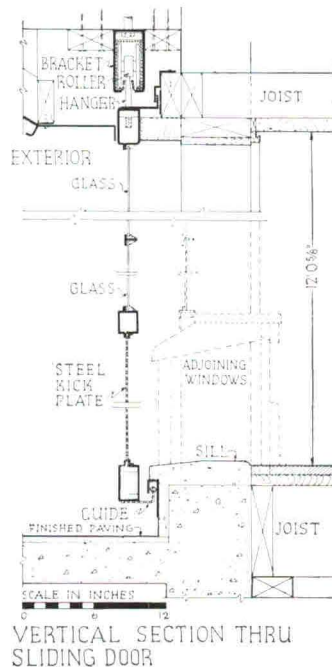
MENTION

Still another convincing example of the modern trend in school design, this Midwest high school by the same architects as the Northville School is an equally successful, if somewhat more formal, solution of the problem of fenestration.



**MENTION**

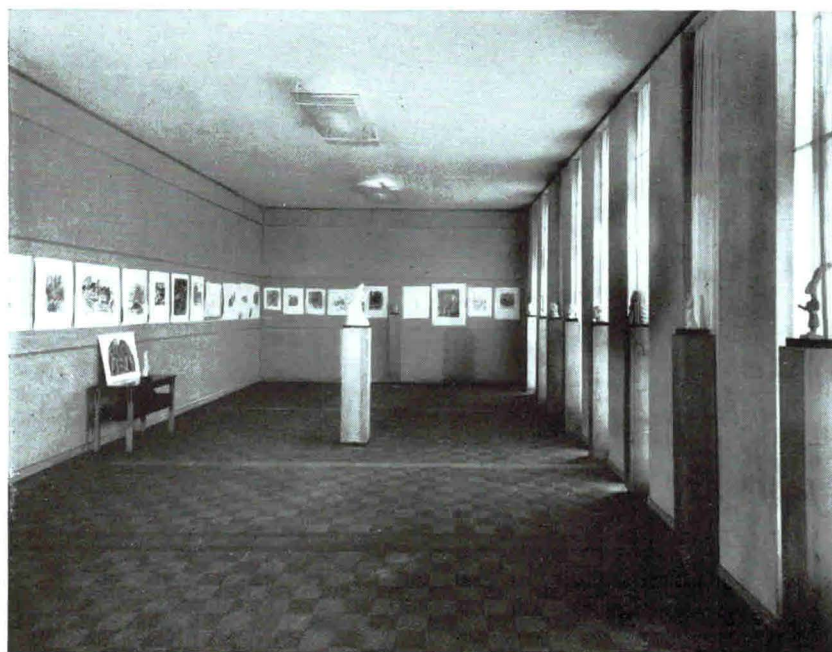
When THE FORUM in its School Reference Number of January, 1935 first published designs by Architect Neutra for elementary school buildings these designs were criticized by one group of readers as "fantastic dreams," "horse stalls" and "Nudist architecture," defended by another group as "able and well studied." California school authorities since have endorsed the latter point of view, and examples of Neutra's executed work in this field promise to be as numerous as they are stimulating. Like all of this work, the school shown above is notable for its liberal use of glass and a close connection between the classrooms and the out-of-doors.

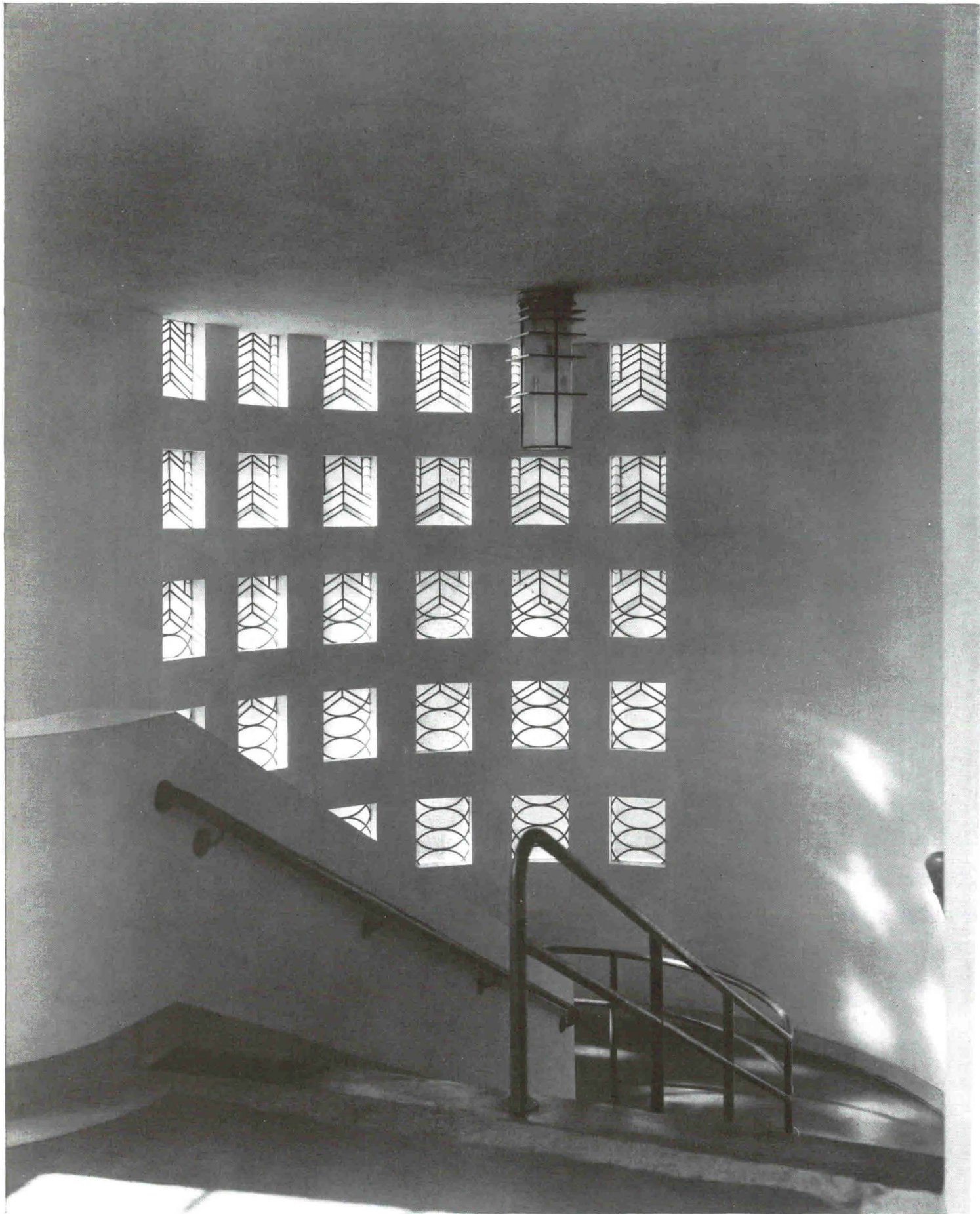




**STEN W. J. JACOBSSON**  
ARCHITECT

The problem of proper natural lighting for exhibition halls is a difficult one, solved in this instance by generous use of glass in one de-wall, concentration of paintings and drawings on the wall opposite. Windows are curtained to prevent glare, and sculptured pieces set against the curtained windows as background.

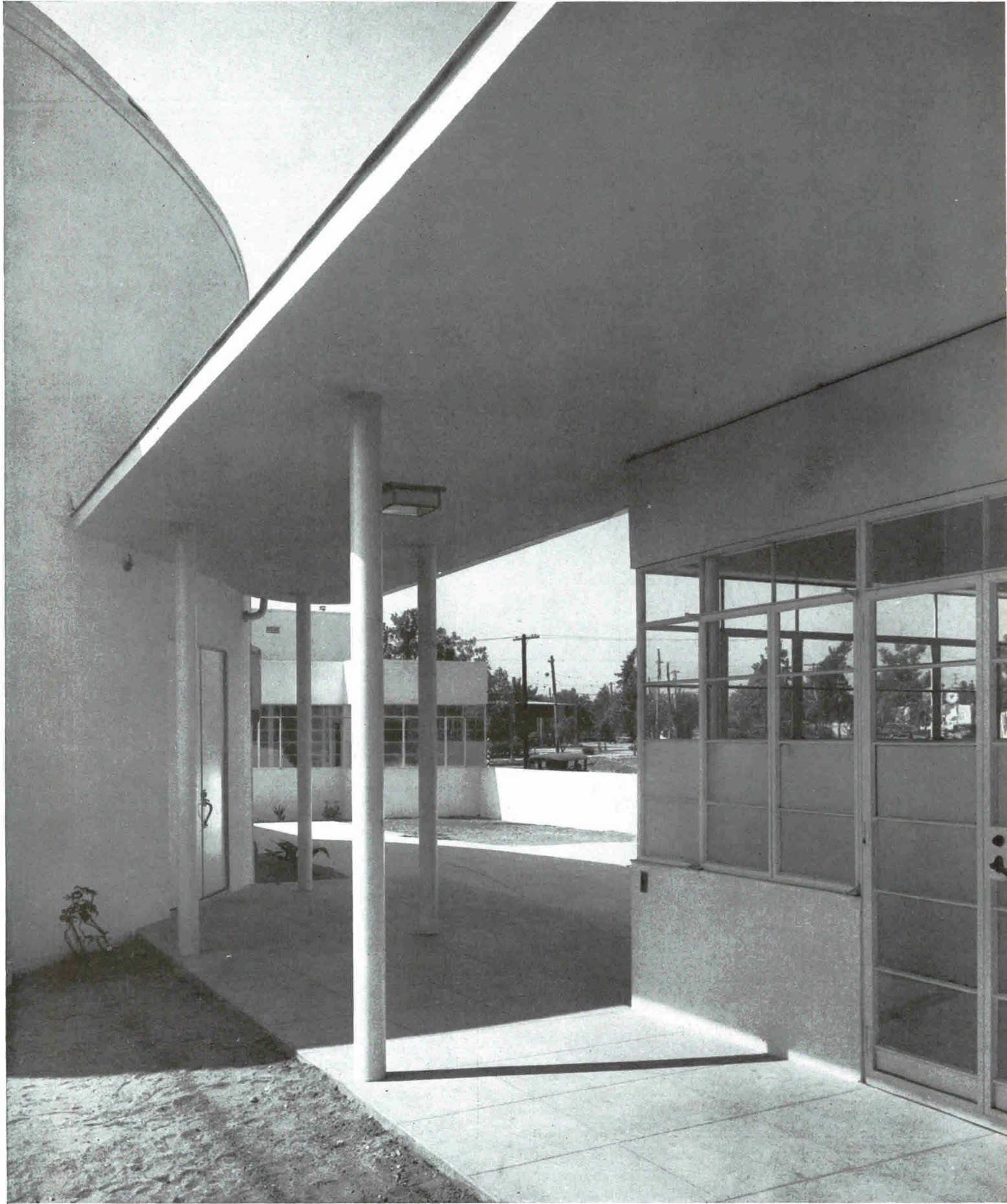




Indicating that the decorative use of leaded glass has a proper place in modern, as well as medieval architecture, this attractive stairhall window suggests the form such use may take.

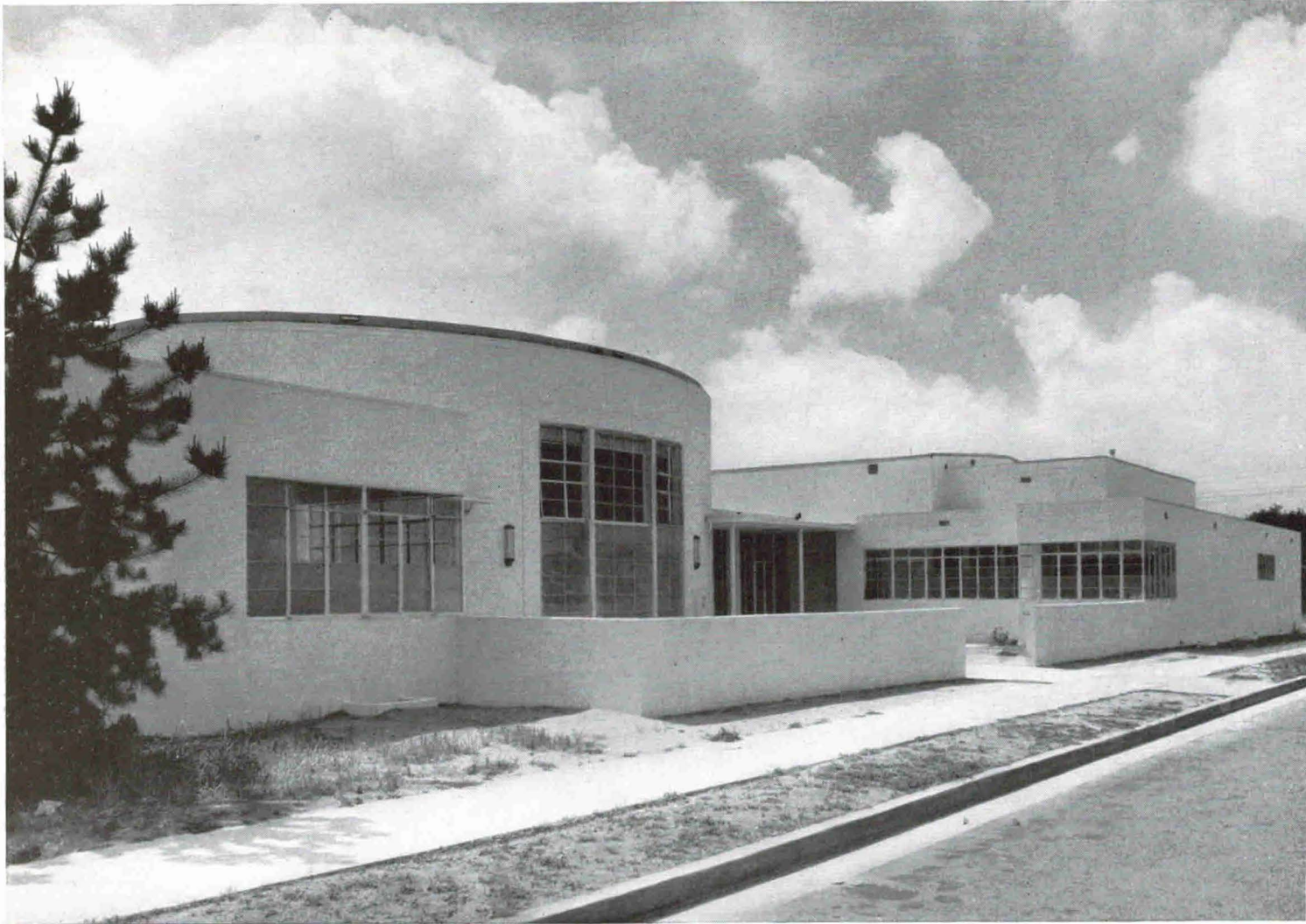
# CHURCH

OF JESUS CHRIST OF THE LATTER-DAY-SAINTS, GLENDALE, CALIF.

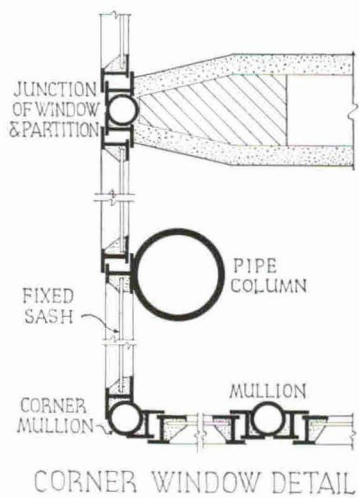


PRIZE

GEORGIUS Y. CANNON, ARCHITECT



Woodco

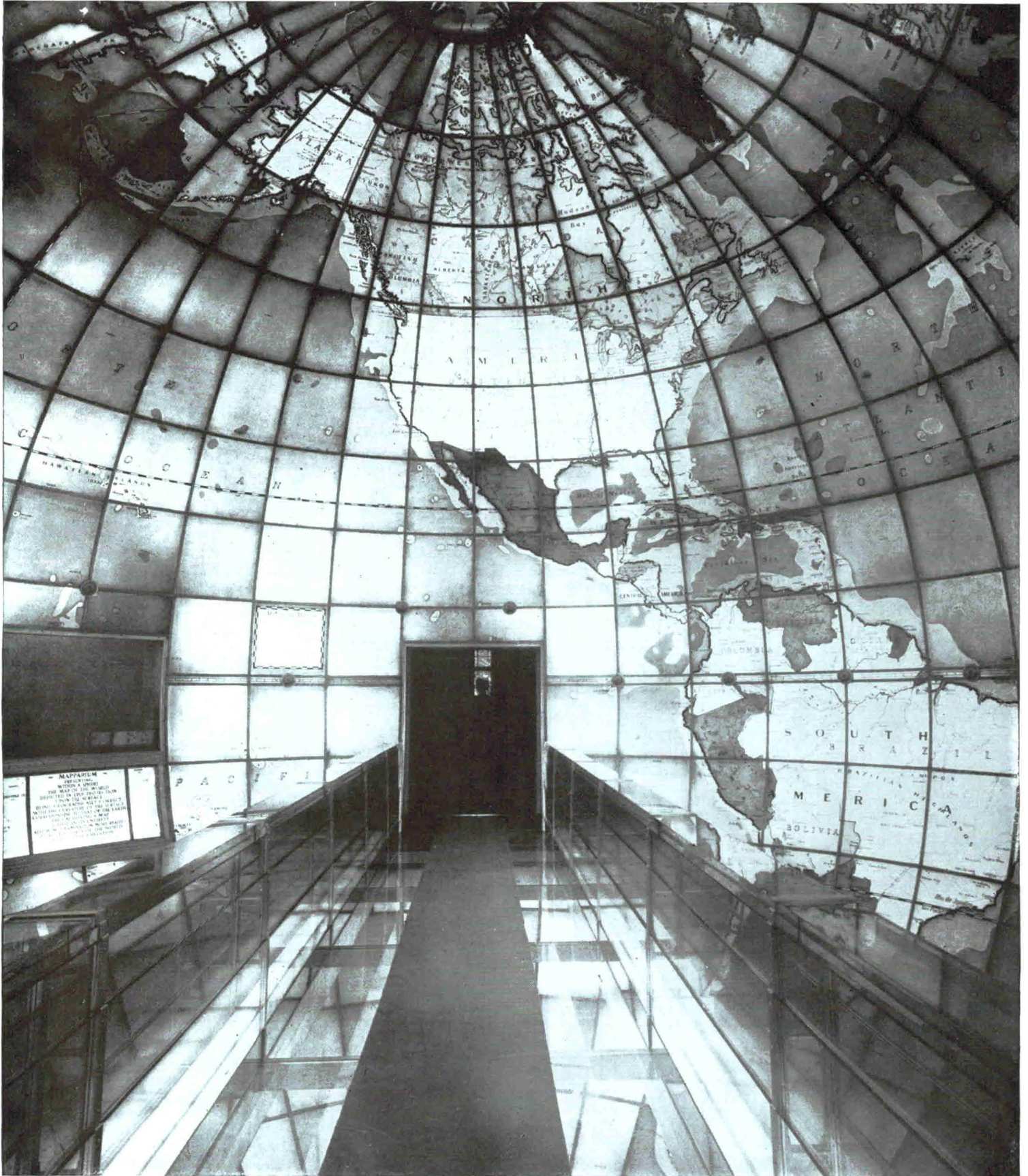


CORNER WINDOW DETAIL

One of the first American examples of the application of the modern style to church building, this example is a worthy successor to the best of its European progenitors. Significant is the fact that, however great the changes in architectural style involved, glass continues to play its extremely important traditional rôle in ecclesiastical buildings.





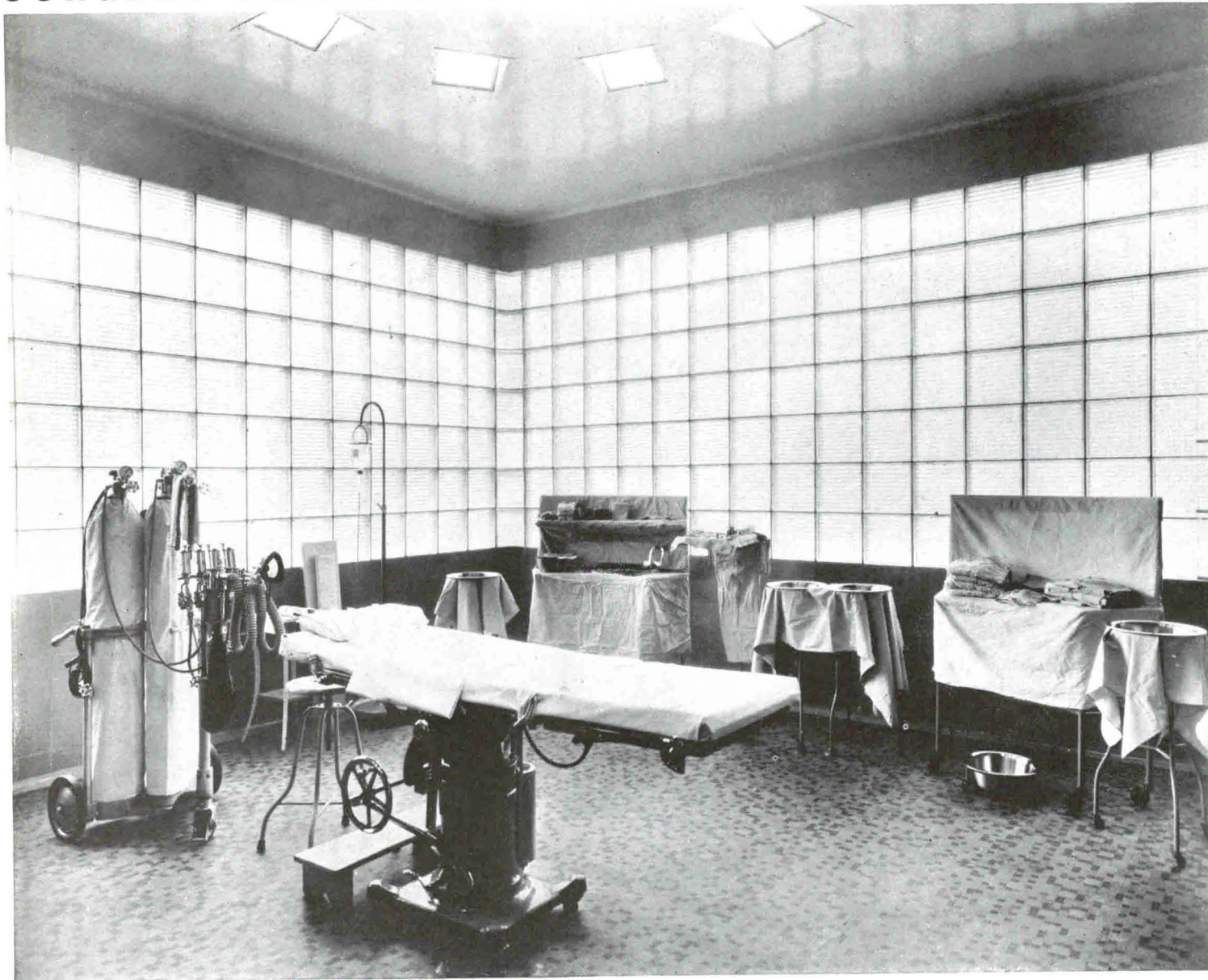


MENTION

CHESTER LINDSAY CHURCHILL, ARCHITECT

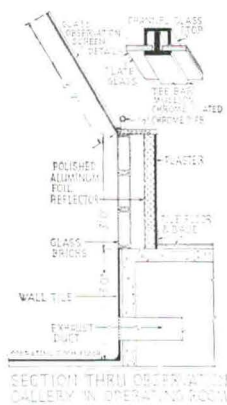
Turning the globe inside out is a rather startling idea. Competently executed, the successful realization of this original concept owes much to the use of glass, both for the transparent bridge from which the map is viewed, and for the map itself, which is illuminated from behind.

# SURGERY SWEDISH HOSPITAL, SEATTLE, WASHINGTON



MENTION

SMITH, CARROLL & JOHANSON, ARCHITECT

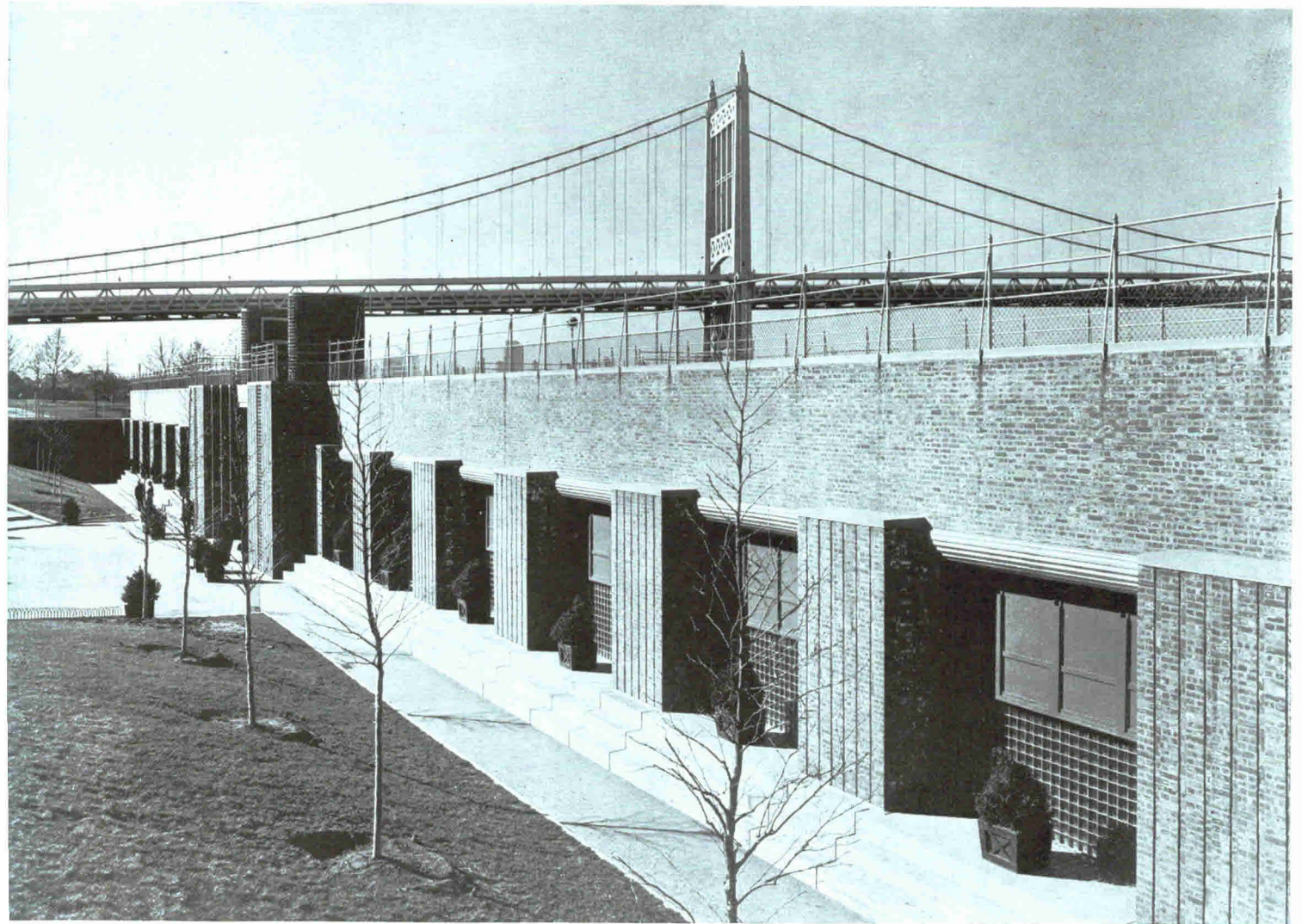


Glass block finds a most appropriate use in this operating room, where a maximum of glareless illumination is required. Of particular interest is the treatment of the observers' balcony, shielded from the operating floor by a tilted plate glass screen.



# PAVILION

ASTORIA SWIMMING POOL, NEW YORK



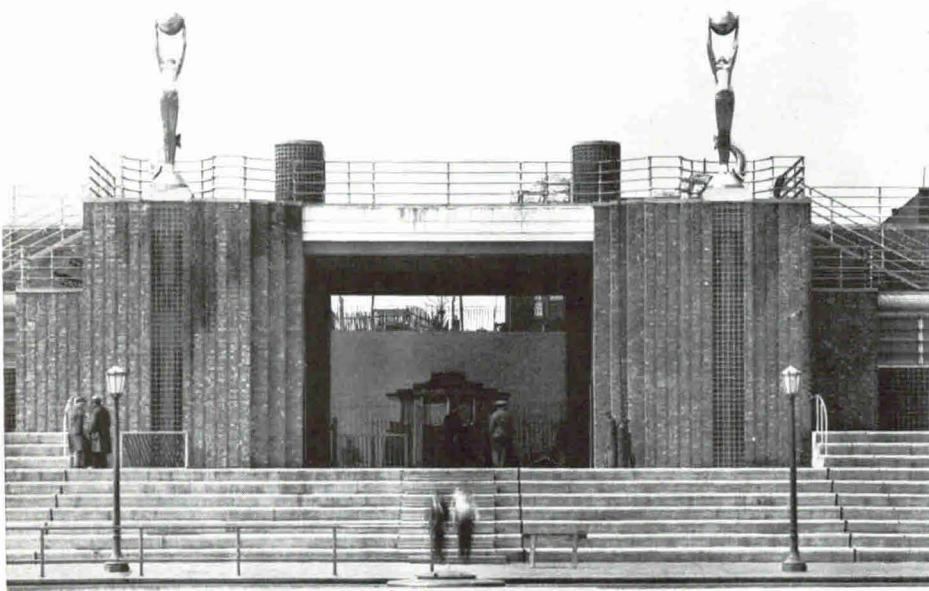
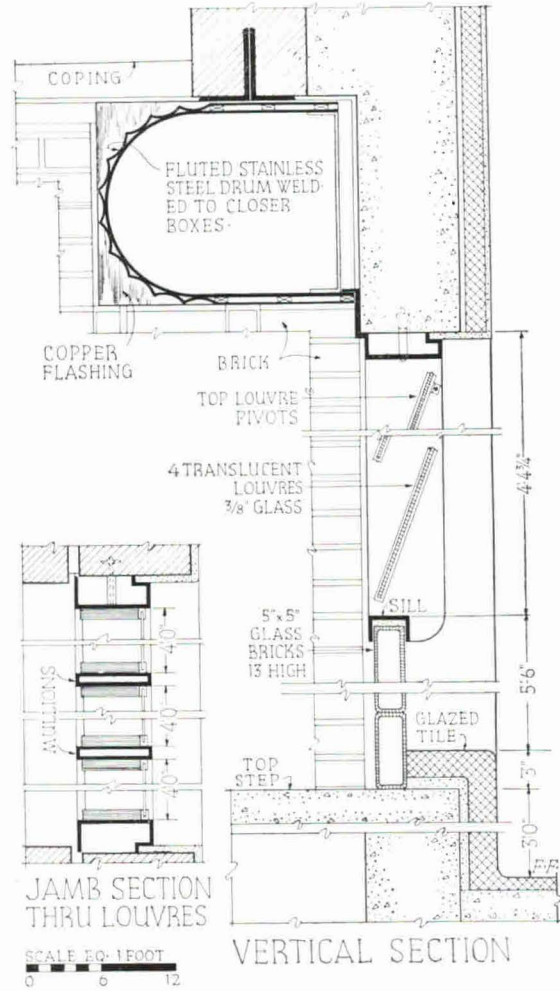
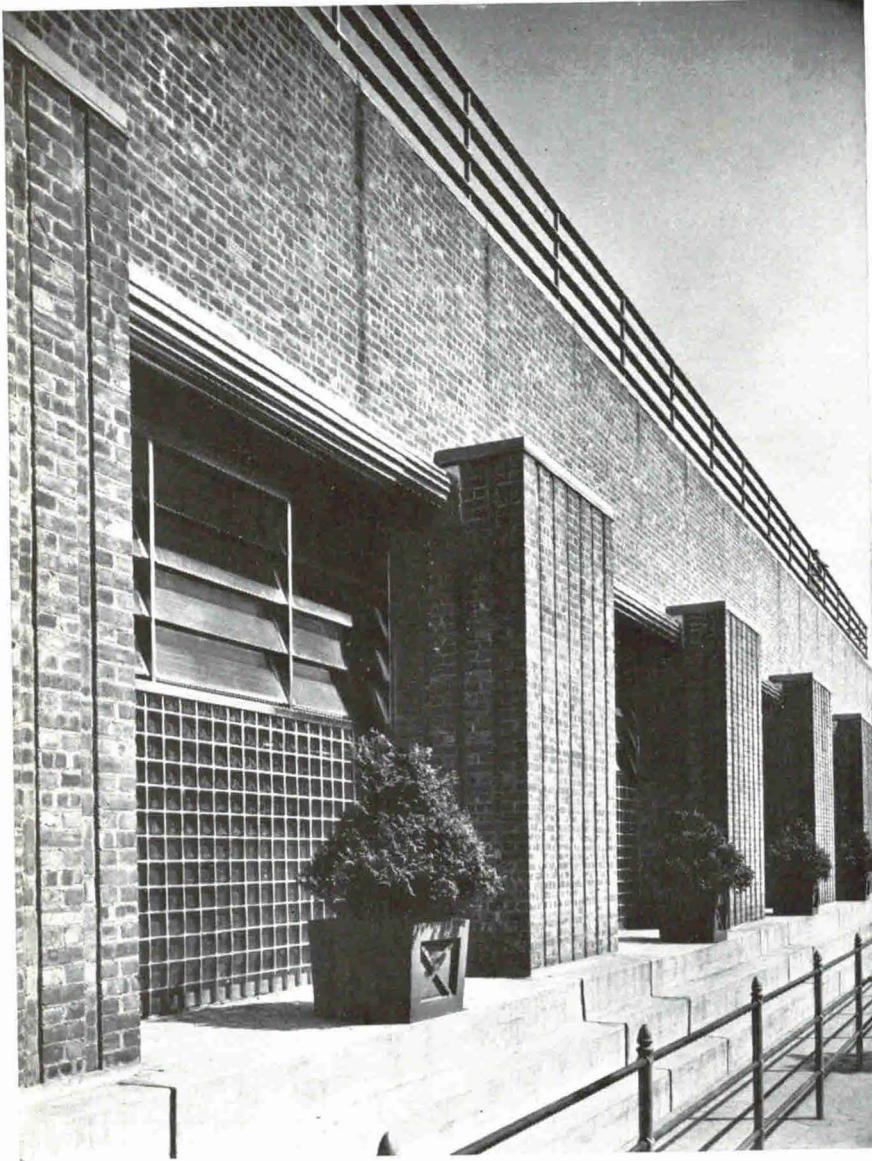
*Samuel H. Gottscho*

JOHN MATTHEWS HATTON, ARCHITECT

PRIZE



Typical of the excellent work being done by New York City's progressive Department of Parks, this pavilion is notable for its excellent use of glass. The building consists chiefly of dressing rooms for men and women, located on each side of the central entrance. Glass block was used extensively for privacy and ease of maintenance. Of particular interest is the detail shown on the following page, a combination of glass block and glass ventilating louvers.



# SEWAGE DISPOSAL PLANT

JERSEY HOMESTEADS, NEAR HIGHTSTOWN, N. J.



MENTION

ALFRED KASTNER, ARCHITECT

Located in the new Resettlement development near Hightstown, this sewage disposal plant shows clearly how a small service building may, with proper handling, acquire dignity and fine architectural character. Notable is the consistent relationship of the various elements in the group and the unforced but effective use of glass block.

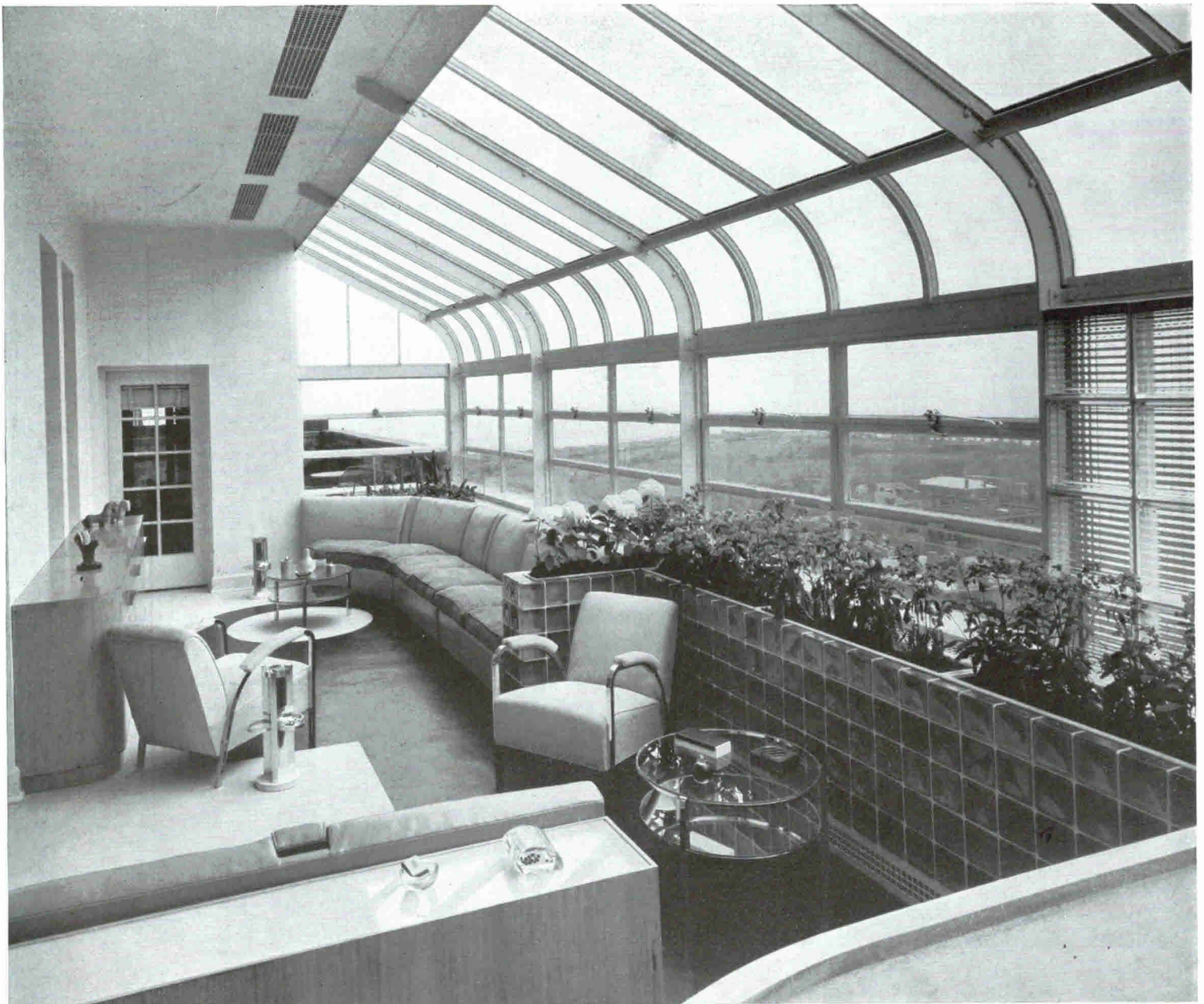
# CONSERVATORY

SAINT LOUIS, MISSOURI, WILLIAM E. C. BECKERT, DESIGNER & ENGINEER



A simple structural scheme involving the use of parabolic arches of steel and stepped-back walls of glass has produced an unconventional and highly successful conservatory. The building is located in one of the city's public parks.

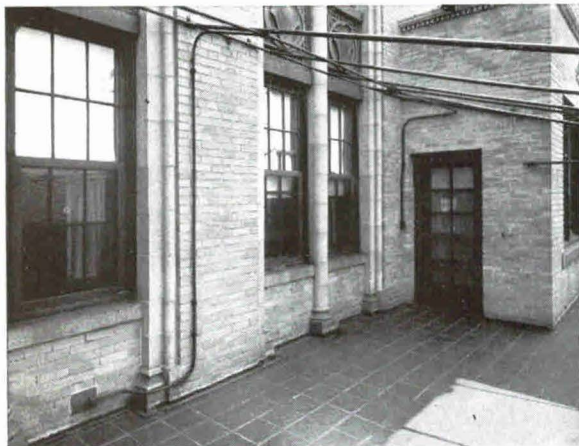
MENTION



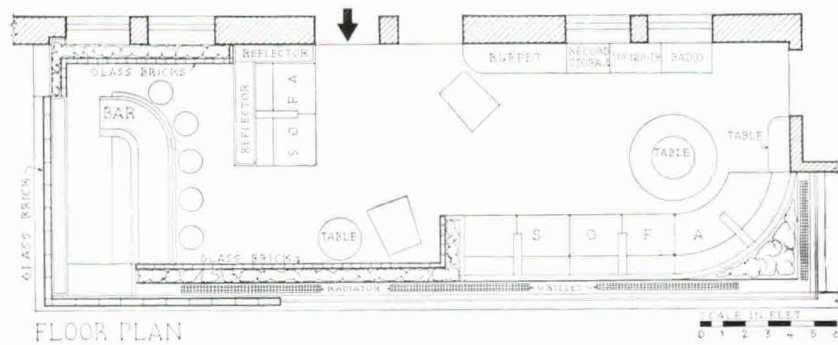
*Hedrich-Blessing Photos*

**PRIZE**

Originally an unattractive roof terrace, this solarium was created by the use of a greenhouse section, comfortable furniture, and glass block. The room has been designed for year-round use, to serve as both enclosed porch and bar. The night view shown on the following page is of unusual interest for the lighting, which, concentrated below the eye level, is not only restful and unobtrusive, but minimizes glare, permitting a clear view out of the windows. The manner in which glass has been used is not only particularly commendable when considered in relation to the solarium, but it should also be noted that the design permits the adequate illumination of the interior rooms which adjoin it.

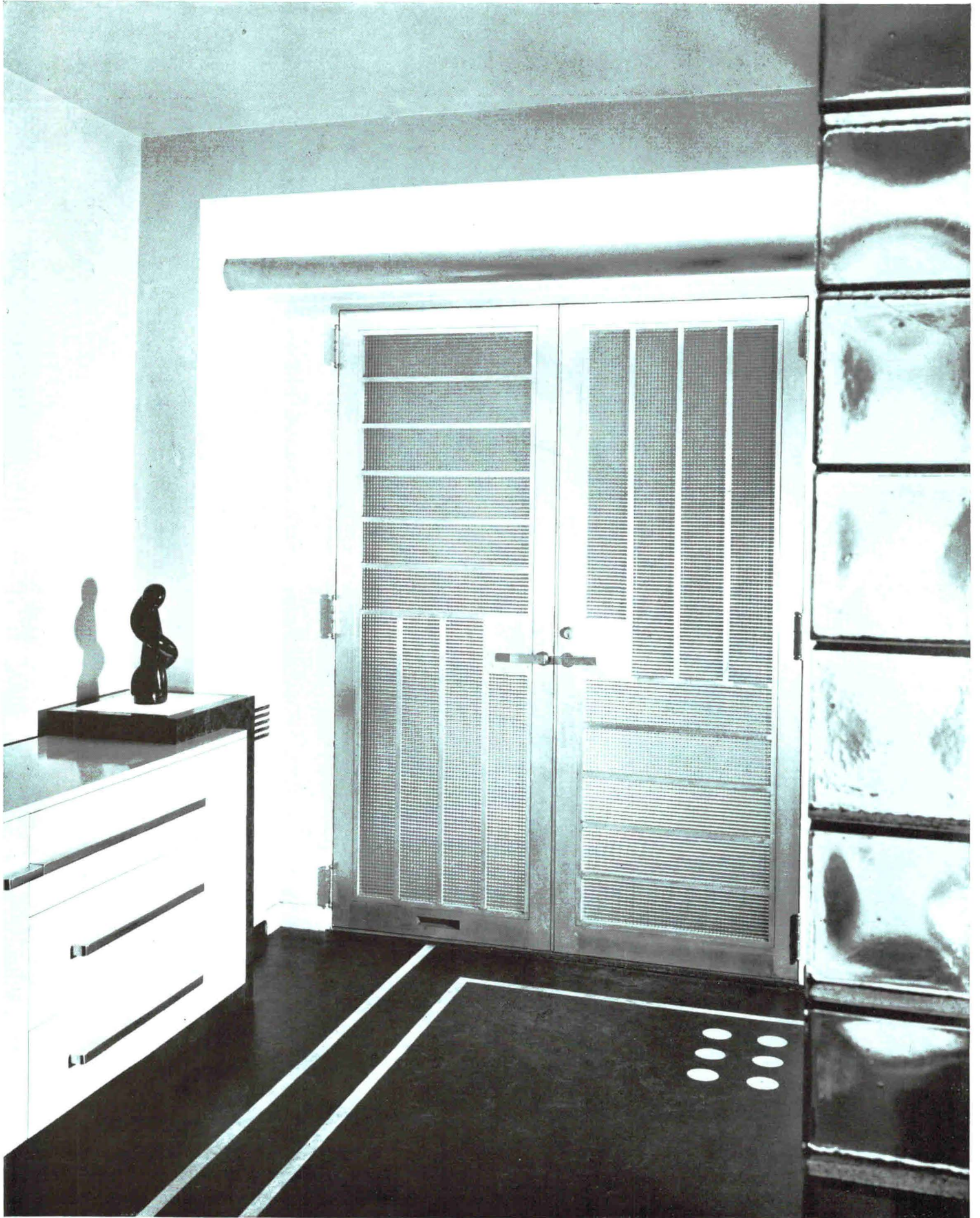


BEFORE



FLOOR PLAN





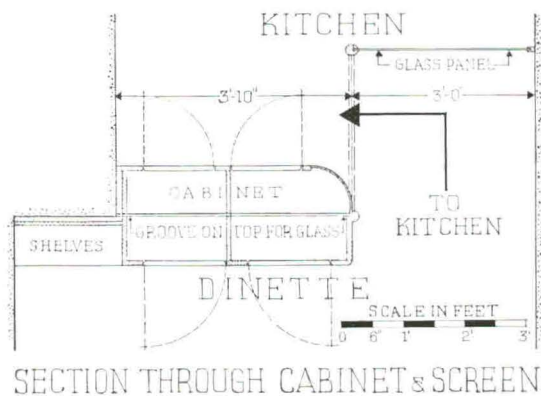
A delightful and ingenious handling of an element too often disregarded, this apartment door achieves its effect by the simple use of white metal and stock ribbed glass.

MENTION



MENTION

JOSEPH ARONSON, DESIGNER



An interior of uncommon freshness and charm, created by the simple addition of two glass screens and a cabinet which divide the small dining room from the kitchen. The screens are made of a stock ribbed glass, held in place by light wood members; it was possible to simplify the detail of the frames since no door is used between the two rooms.

**GLASS DINING TABLE** HAMPTON SHOPS, N. Y., FRANCIS VICOVARI, DESIGNER

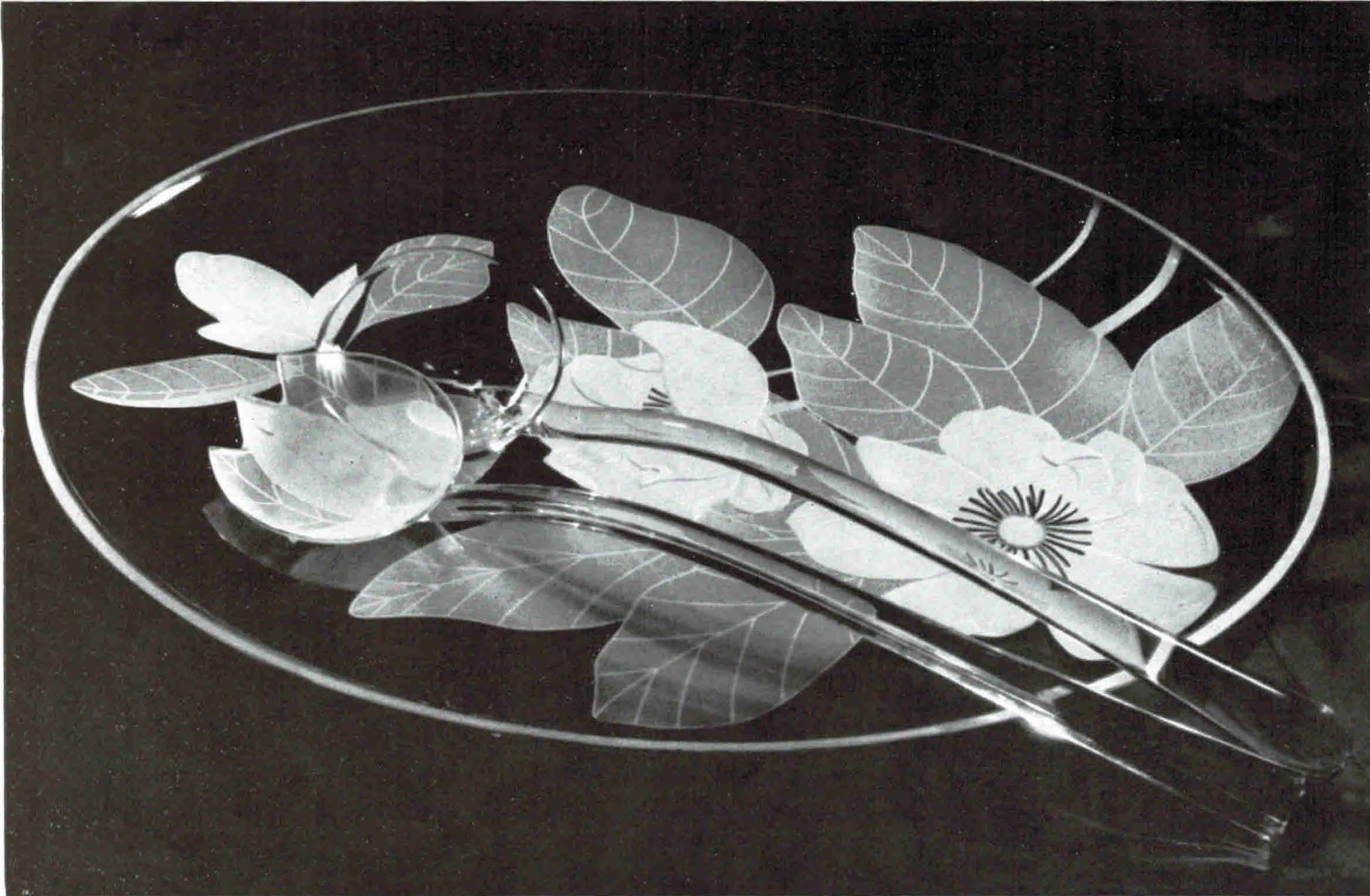


**PRIZE**

# GLASS BUFFET PLATTER

DOROTHY THORPE, DESIGNER

MENTION



# GLASS COUNTER SIGN

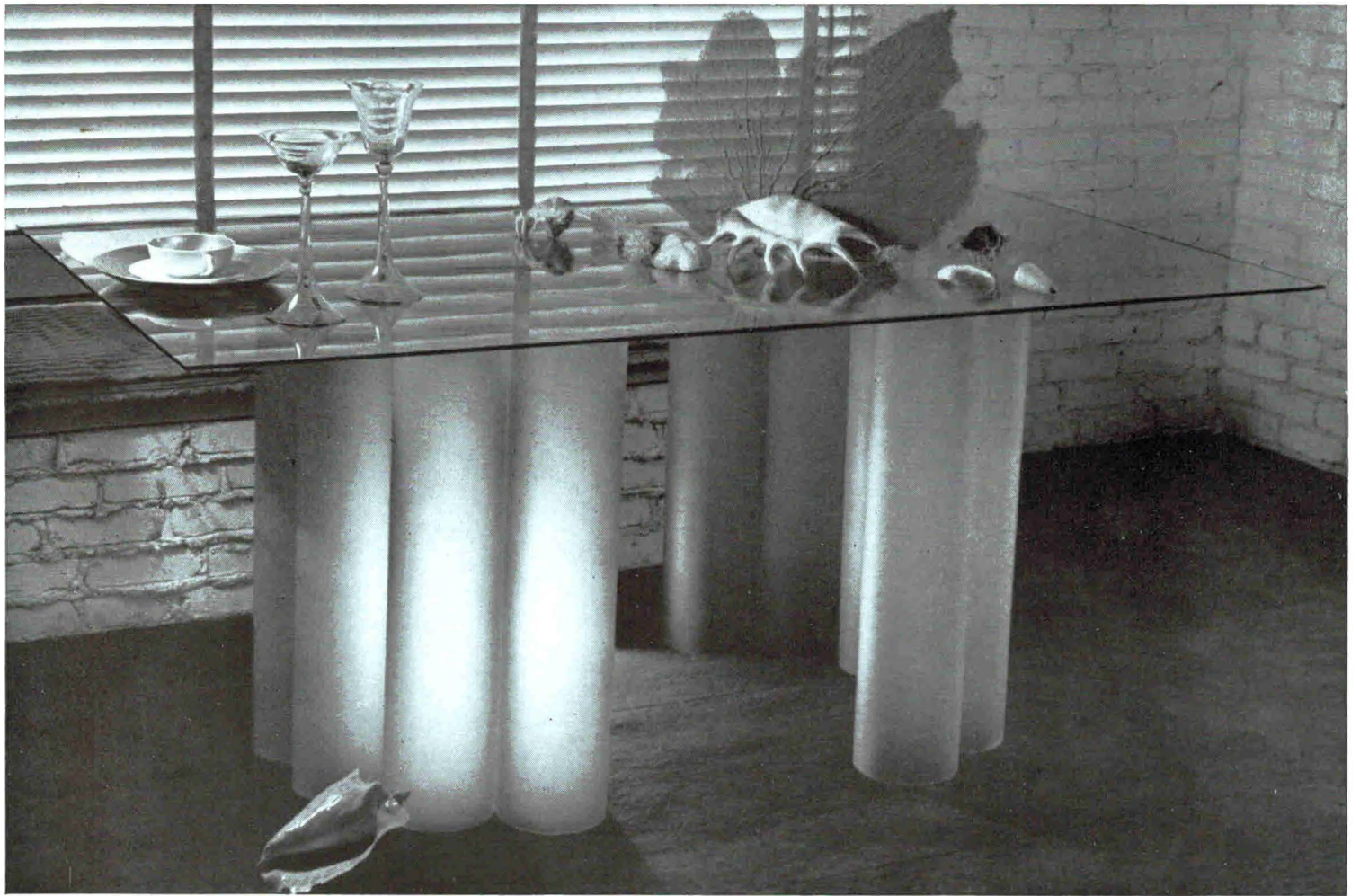
GUSTAV JENSEN, DESIGNER



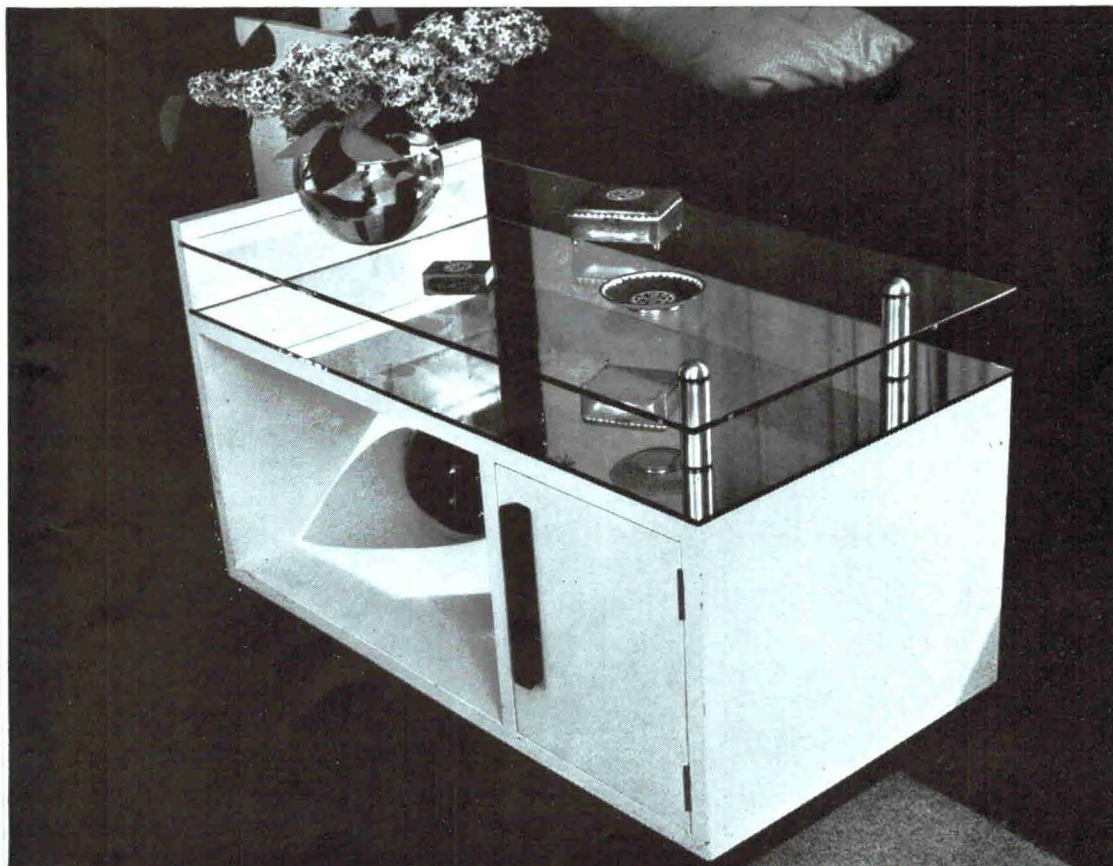
## MENTION

The illustration at the left shows etched glass used as a counter display for hosiery; the lighting fixture concealed in the base illuminates only the etched portion of the glass, producing a striking and dignified sign. Above is a platter with a glass fork and spoon, decorated with a floral pattern which echoes the simply curved form of the platter. Glass used for table tops finds an interestingly varied expression in the tables on the opposite page. The lower table has a mirrored shelf under the plate glass top.

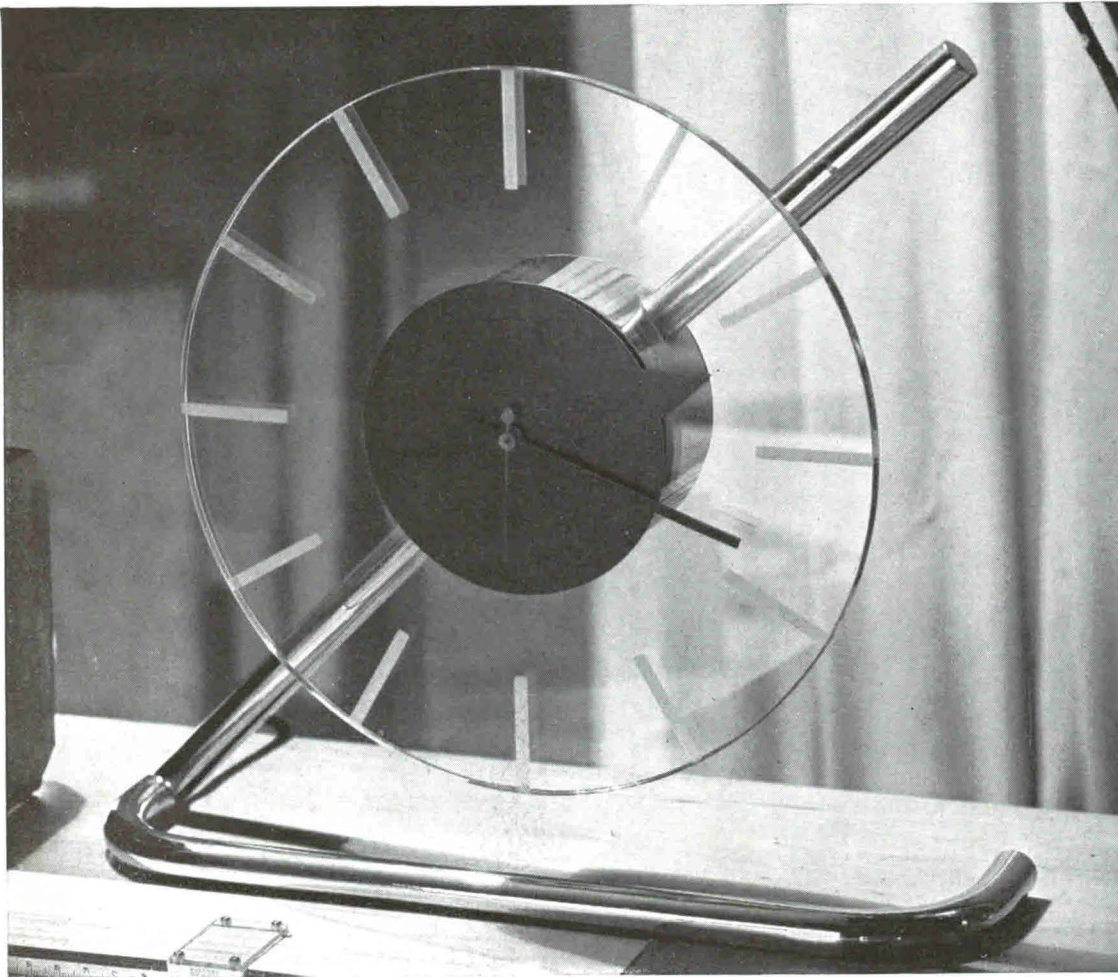
**GLASS DINING TABLE** DOROTHY THORPE, DESIGNER



**COFFEE TABLE** CARL F. GUENTHER, DESIGNER

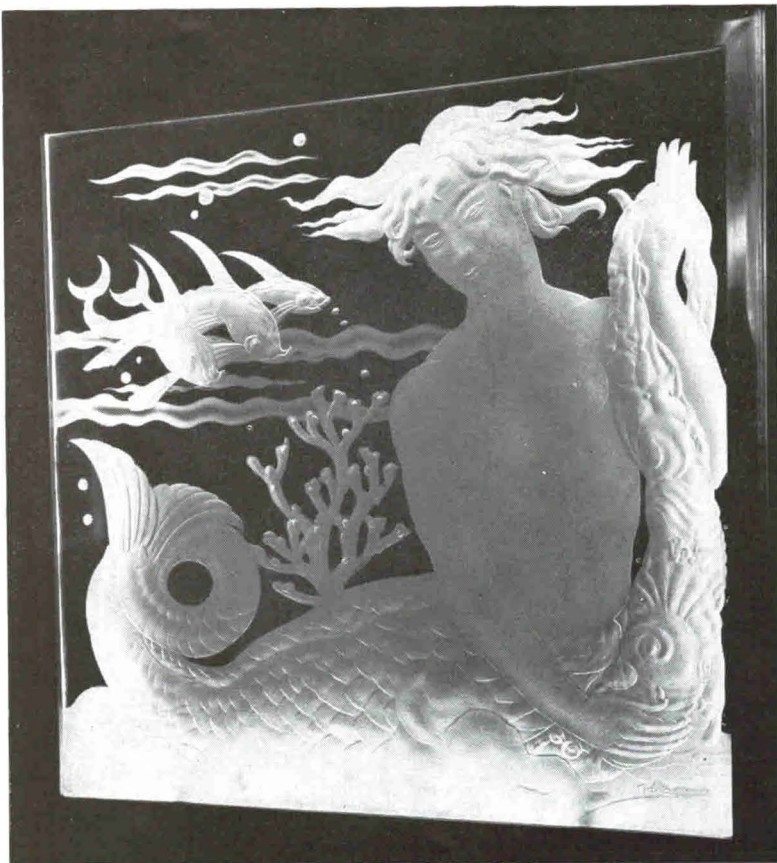


# ELECTRIC CLOCK GILBERT ROHDE, DESIGNER



DESIGNED FOR  
HERMAN MILLER  
CLOCK COMPANY

# ILLUMINATED GLASS PANEL

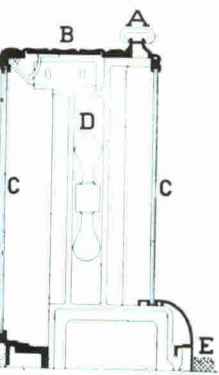


ADA ROSARIO CECERE,  
DESIGNER

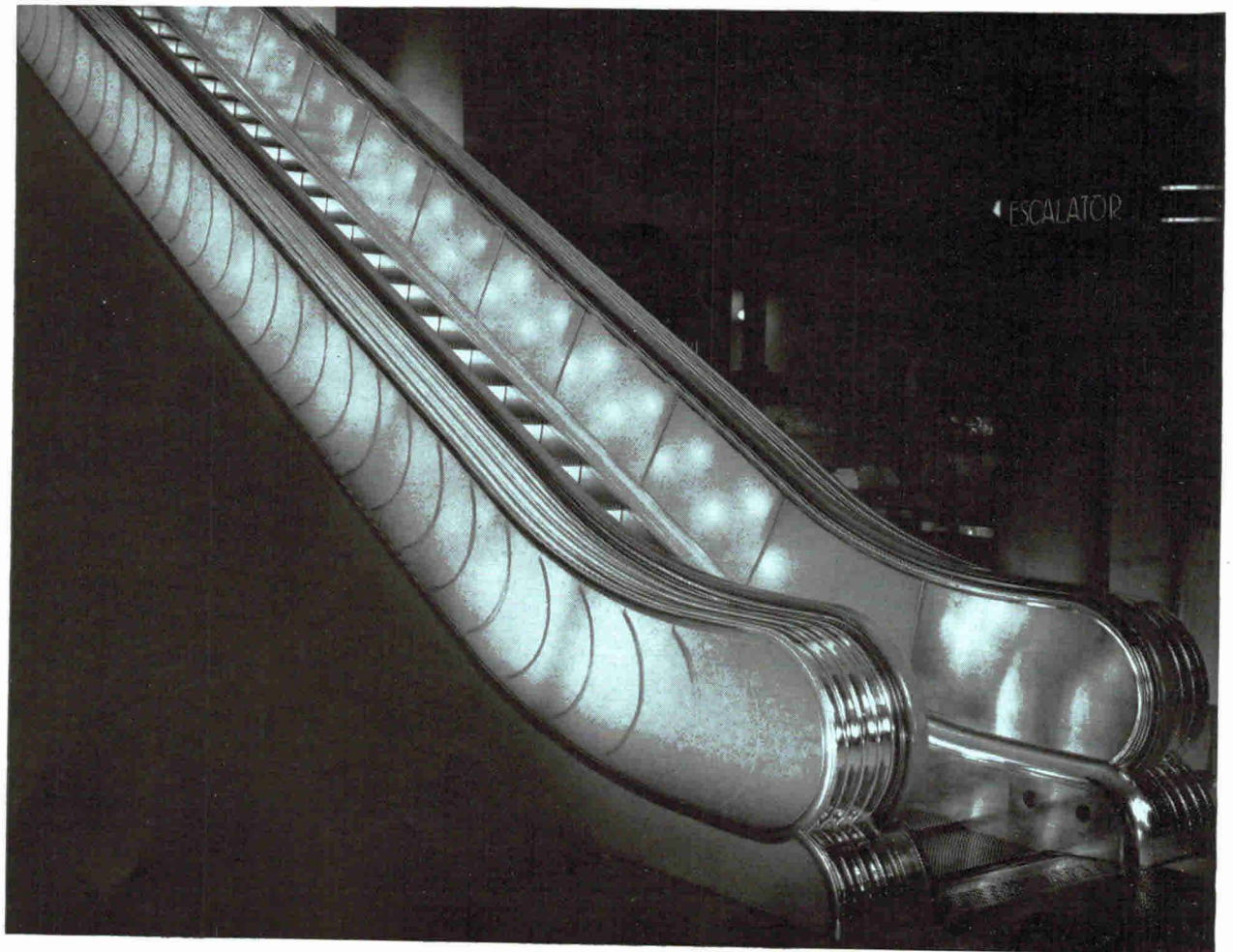
The simplicity of electric clock mechanism made possible the design shown above. Numerals are etched on the surface, and the chromium tube serves not only as a support, but as container for the wiring. At the left is a glass panel well designed for illumination.

# ESCALATOR

EMPORIUM DEPARTMENT STORE, SAN FRANCISCO, CALIF.



A MOVING HANDRAIL  
 B HINGED COVERS  
 C ETCHED GLASS  
 D LIGHTS  
 E MOVING TREAD  
 F VERTICAL SECTION



*Irving Moulton*

# CURVED GLASS SCREEN

ELEANOR LE MAIRE, DESIGNER  
JOHN R. WEBER, ARCHITECT



CHRYSLER INTERNATIONAL  
AUTOMOBILE SALON, NEW YORK

REINHARD & HOFMEISTER, ARCHITECTS

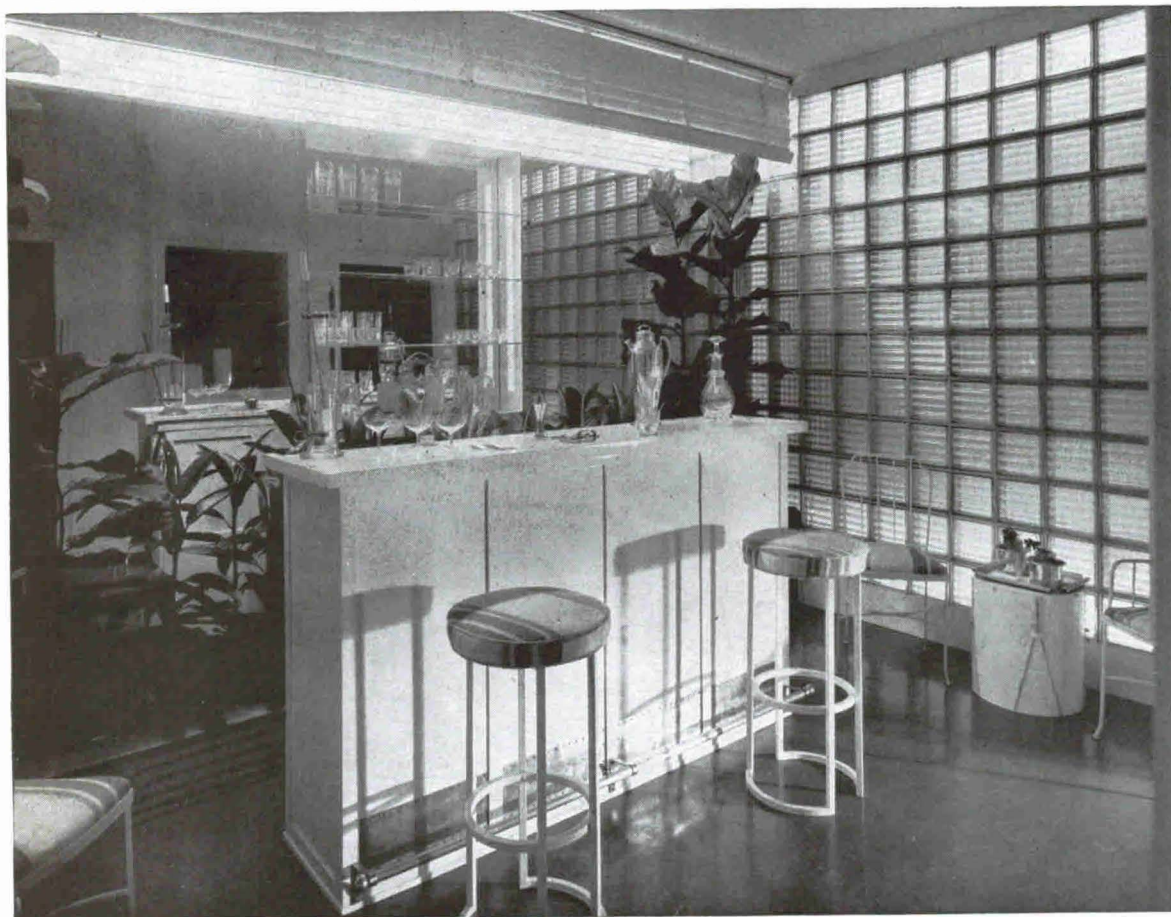
For complete presentation see ARCH. FORUM, Jan., 1937,  
page 13.

Above is an unusual use of glass for the side walls of an escalator, providing an excellent means of accentuating the vertical circulation. At the left is an extremely effective screen which uses semi-transparent glass tile, held in place by a metal framework.

**BAR** "HOUSE OF YEARS," 1937, W. & J. SLOANE, NEW YORK



**BAR** "HOUSE OF YEARS," 1937, W. & J. SLOANE, NEW YORK





**BAR** NEW HAVEN LAWN CLUB, NEW HAVEN, CONN., JAMES OWEN MAHONEY, ARTIST

DOUGLAS ORR,  
ARCHITECT



**BAR** WITH COLORED GLASS ROD CEILING

MRS. ROBERT FALCONER MASSA,  
DECORATOR



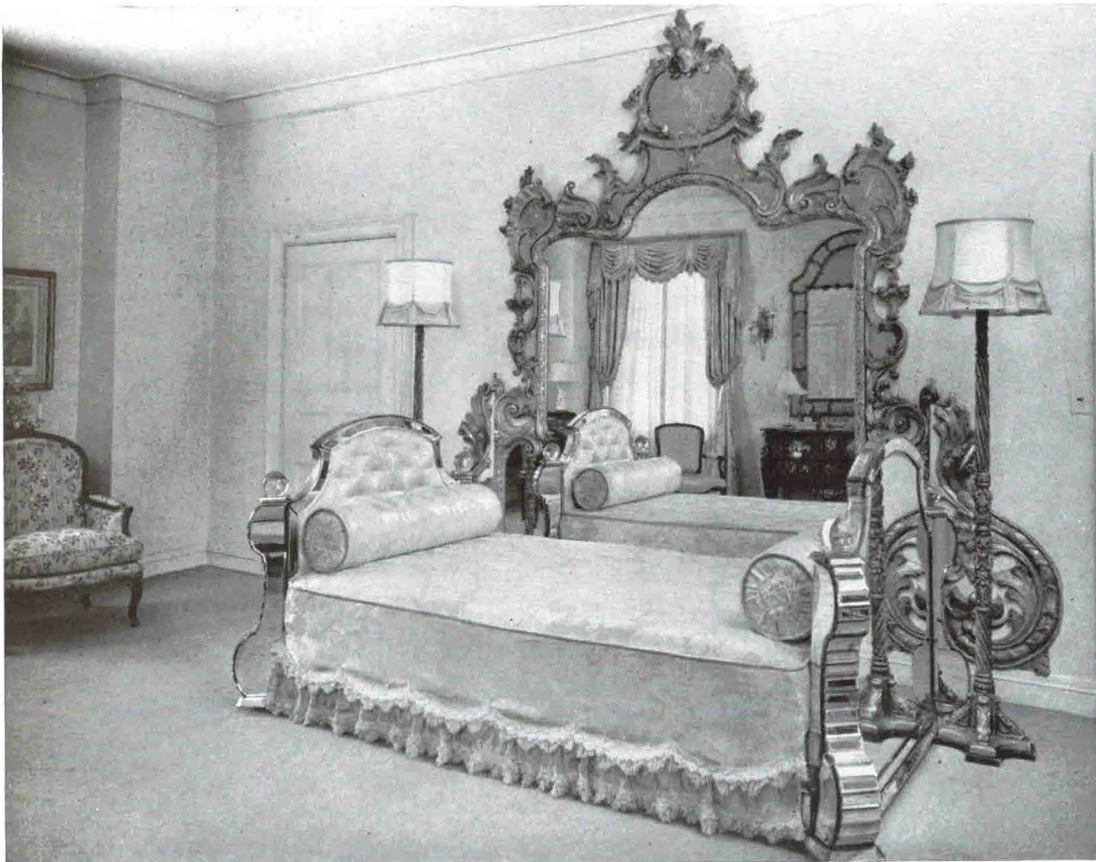
Glass plays an important part in the design of the modern bar as is shown by these four interiors. Glass block partitions, plate glass shelves, and mirrors, both plain and painted, are the characteristic forms in which the material is used.

# INTERIOR DETAIL APARTMENT IN NEW YORK, THEDLOW, DECORATORS



In glass design as in architecture, the same contrast is to be found between traditional and modern. While these two robust examples may be a bit rich for some tastes, they have considerable interest in showing the limitless flexibility and adaptability of the material.

# MIRRORED BED APARTMENT IN RIVER HOUSE, NEW YORK CITY



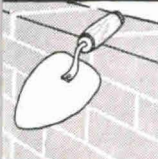
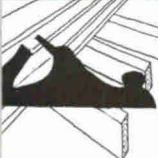
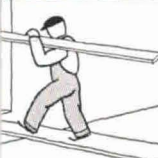
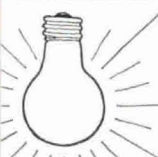
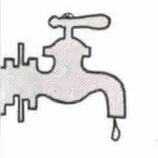
WILLIAM C. PAHLMANN,  
DESIGNER

# BUILDING MONEY

**A monthly section devoted to reporting the news and activities of building finance, real estate, management and construction**

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 <b>BRICKLAYERS</b>	1.25 1.03	1.45 .94	1.34 1.03	1.33 1.02	1.29 .95	1.21 1.01	1.21 .89	1.41 .93	1.32 .92	
 <b>CARPENTERS</b>	1.07 .80	1.24 .85	1.22 .80	1.10 .77	1.15 .76	.90 .71	.98 .75	1.09 .92	1.19 .80	
 <b>LABORERS</b>	.67 .49	.57 .48	.70 .49	.74 .44	.56 .37	.36 .34	.37 .36	.65 .57	.51 .44	
 <b>ELECTRICIANS</b>	1.17 .90	1.52 .89	1.35 1.02	1.26 .83	1.36 .79	1.04 .78	1.12 .87	1.24 .83	1.21 .92	
 <b>PLUMBERS</b>	1.21 .93	1.36 .99	1.31 1.00	1.28 .92	1.25 .87	1.15 .93	1.25 .99	1.21 1.05	1.28 1.00	

THE WAGES OF LABOR (See Page 144).

# ONE OF BUILDING'S SECRETS

is answered by an exhaustive Department of Labor survey. How much Labor in Building really gets—union and non-union.

THE darkest secret of U. S. industry is the dimensions of Building. Nobody knows, within 50,000 units, how many houses are built each year. Nobody knows, within \$10,000,000, how much money is spent annually in construction. Nobody knows how many people it employs. And until last month, nobody even knew how much building labor cost its employers. These facts are secrets only because the Government has not yet chosen to investigate them, as it has many another phase of the building industry.

To Isador Lubin, Commissioner of Labor Statistics, U.S. Dept. of Labor, and to Herman B. Byer, his hardworking assistant, this state of affairs seemed as intolerable as it was to most thoughtful building men, and last fall they set out to make a thoroughgoing survey of the most accessible of Building's many secrets—its building wage rates. THE FORUM presents herewith the first summary of that survey, the first authentic examination of actual building rates ever to be made.

**Scope.** The actual survey was conducted during September, October, and November, 1936. It covered 5,450 contractors employing 186,000 workers in 105 cities in 48 States and the District of Columbia. The aggregate value of the work done by these contractors in the first six months of 1936 was \$338,829,331. The Department of Labor estimates that its survey included approximately one-fourth of all workers in the Building industry. Finally, the data used were drawn directly from the records of the contractors, ignoring the dubious accuracy of published union rates.

**Average Rates.** In computing average rates of the 186,000 workers surveyed, the figures were weighted to take into account the following facts:

- A. 67.7 per cent were union members
- B. 56.8 per cent were skilled workers
- C. 23.0 per cent were semi-skilled
- D. 20.2 per cent were unskilled

On this basis, the average hourly wage rate of all building workers was 91.8 cents. Highest average rates went to hoisting engineers, who received \$1.343 per hour. Second highest were structural iron workers, with \$1.332. Also above the \$1.30 mark were bricklayers, electricians, and metal lathers. Lowest average rate was the 51.1 cents which went to sheet-metal

workers' helpers. Average wage rates of 46.9 per cent of the workers stood above \$1 an hour, while better than 65 per cent made more than 75 cents. Also noteworthy is the fact that 16 of the 31 categories of workers listed by the survey received an average wage of better than \$1 an hour.

**Geographic Variations.** As in all industries, wage rates in the Building industry exhibit sharp regional variations. Highest in 1936 was \$1.062 an hour in the Middle Atlantic States; lowest was 64.5 cents an hour in the East South Central States. Others:

East North Central	98.2 cents
Pacific	92.1 cents
Mountain	90.1 cents
New England	89.9 cents
West North Central	88.0 cents
South Atlantic	78.8 cents
West South Central	67.5 cents

Bricklayers got by far the highest pay in the East South Central, Mountain and Pacific States. Metal lathers were best paid in New England; hoisting engineers in the Middle Atlantic States; structural iron workers in the East North Central and South Atlantic States; steamfitters in the West North Central and the West South Central States.

**Actual Wages.** Dealt with so far have been average rates, weighted according to the factors outlined above. Actual rates tell a much more detailed story:

46.9 per cent made more than 99 cents
65.5 per cent made more than 74 cents
12.3 per cent made less than 50 cents
22 per cent made between 50 and 74 cents

While the overall average hour rate for the Building industry is 91.8 cents—among the highest in all industry—nearly 50 per cent of the employees received less than this average.

**Union Rates.** As was to be expected, the survey revealed union wages to be universally and substantially above non-union wages. The Department's report remarks, "The differential is partly accounted for by the fact that a greater proportion of the union workers were in the skilled categories." Of all skilled workers, 76.2 per cent were union members. Widest spread reported was between union and non-union electricians in New York City—

a difference of 81.7 cents an hour. Unions flourish best in the Northern States. About three-fourths of all workers in the Middle Atlantic, North Central, and Pacific States were unionists, whereas less than half those in the Southern States belonged.

Wage rates for union and non-union labor declined in direct ratio to the size of the cities studied. Thus the average in cities with populations between 500,000 and 1,000,000 was 6.9 per cent lower than that in cities of over 1,000,000; and so on down to cities between 50,000 and 100,000 where the overall average wage rate was 23.4 per cent less than in cities of over 1,000,000. However, non-union rates declined much more sharply than union rates as the cities grew smaller. For example, in towns of from 50,000 to 100,000, while the non-union rate was 28.2 per cent below that of cities of over \$1,000,000, the union rate was only 18.6 less.

Since the Department's wage rates were compiled last Fall, union wage rates have staged spectacular advances in many cities with the negotiation of the new Spring contracts. In an effort to measure the change, THE FORUM has segregated from the Department's survey a limited schedule of data for 20 selected cities, showing the union and non-union rates for five crafts. To this data have been added the results of an independent FORUM survey conducted in these same 20 cities showing the current union scale, as of June, 1937. In comparing the differences between the Department's union rates for Fall, 1936 and THE FORUM's union rates for June, 1937, it must be remembered that the Department has listed actual union rates while THE FORUM data show only rates asked (but not necessarily received) by the union. On a rising market, union demands tend to approach nearer to actual union contract rates, but they are still nevertheless somewhat higher than actual.

**Work Hours.** In a supplementary study whose data are not presented here, the Department of Labor also investigated working hours in the building industry. It found that:

70.7 per cent worked a 40-hour week
9.3 per cent worked a 30-hour week
1.6 per cent worked over 30 and under 40 hours a week
10.4 per cent worked a 44-hour week
7.5 per cent worked 48 hours or more a week.

**VERAGE HOURLY UNION AND NON-UNION WAGE RATES PAID TO BUILDING TRADES WORKERS IN THE UNITED STATES AND EACH OF THE GEOGRAPHIC DIVISIONS IN SELECTED OCCUPATIONS—1936**

OCCUPATION	UNITED STATES		NEW ENGLAND		MIDDLE ATLANTIC		EAST NORTH CENTRAL		WEST NORTH CENTRAL		SOUTH ATLANTIC		EAST SOUTH CENTRAL		WEST SOUTH CENTRAL		MOUNTAIN		PACIFIC	
	Average Wage Rates		Average Wage Rates		Average Wage Rates		Average Wage Rates		Average Wage Rates		Average Wage Rates		Average Wage Rates		Average Wage Rates		Average Wage Rates		Average Wage Rates	
	Union	Non Union	Union	Non Union	Union	Non Union	Union	Non Union	Union	Non Union	Union	Non Union	Union	Non Union	Union	Non Union	Union	Non Union	Union	Non Union
ALL OCCUPATIONS	1.064	.612	1.019	.657	1.139	.705	1.093	.653	1.038	.593	1.034	.565	.925	.434	.919	.507	1.006	.662	.981	.758
BLAZERS	1.351	.972	1.248	1.034	1.447	.939	1.335	1.030	1.328	1.022	1.287	.950	1.211	1.005	1.208	.894	1.320	.915	1.410	.928
BENTERS	1.150	.805	1.066	.803	1.241	.845	1.224	.802	1.103	.765	1.149	.756	.896	.708	.983	.753	1.187	.801	1.088	.924
ENT FINISHERS	1.222	.783	1.249	.898	1.295	.798	1.212	.791	1.178	.828	1.242	.643	1.005	.648	1.008	.808	1.174	.925	1.163	1.012
ENT FINISHERS' HELPERS	.922	.519	.703	.563	.937	.579	.883	.540	.573	.469	.582	.332	...	.450	.538	.366	.788	.624	.780	.697
TRICIANS (INSIDE CREMEN)	1.361	.862	1.172	.896	1.521	.889	1.341	1.024	1.258	.832	1.355	.791	1.043	.779	1.118	.874	1.207	.919	1.244	.828
TRICIANS' HELPERS	.720	.502	.723	.531	.811	.593	.771	.545	.765	.551	.589	.452	.500	.438	.599	.482	.692	.532	.744	.471
NEERS, HOISTING OR MORE DRUMS)	1.419	.942	1.352	.979	1.618	1.305	1.382	1.072	1.418	.718	1.531	.873	1.070	.836	1.008	1.000	1.224	.833	1.167	1.038
ERS, N. E. C.	.781	.489	.719	.513	.802	.570	.868	.516	.746	.456	.585	.440	.468	.409	.461	.429	.665	.512	.700	.553
CARRIERS	.850	.577	.759	.561	.897	.602	.801	.653	.859	.557	.604	.463	.575	.425	.551	.401	.859	.606	1.042	.606
DRERS, COMMON	.629	.420	.671	.485	.572	.483	.704	.494	.735	.435	.560	.374	.352	.337	.363	.359	.512	.444	.650	.570
HERS, WOOD	1.277	.704	1.309	.900	1.367	.671	1.330	.678	1.167	.681	1.071	.699	1.030	.850	...	.601	1.338	.688	1.321	1.018
HERS, METAL	1.342	.949	1.418	.881	1.387	.962	1.365	.908	1.281	.983	1.263	1.018	1.073	.788	1.148	.914	1.148	1.000	1.343	1.211
ER OPERATORS	1.038	.667	1.210	.829	1.193	.964	1.160	.682	.781	.597	1.107	.499	.683	.563	.848	.685	.901	.617	1.001	.765
NTERS	1.092	.702	1.001	.686	1.139	.749	1.246	.731	1.110	.704	1.047	.668	.923	.650	.960	.637	1.164	.771	.982	.800
STERERS	1.354	.938	1.303	1.011	1.467	.953	1.372	.961	1.255	.960	1.248	.897	1.108	1.010	1.161	.857	1.347	.838	1.351	1.141
MBERS	1.284	.954	1.208	.925	1.363	.992	1.310	1.001	1.275	.921	1.253	.867	1.152	.930	1.249	.991	1.284	1.000	1.209	1.054
MBERS' HELPERS	.699	.482	.585	.494	.763	.556	.761	.523	.598	.470	.509	.392	.491	.416	.609	.408	.733	.532	.709	.565
NFORCING STEEL WORKERS (RODMEN)	1.155	.876	1.284	1.018	1.099	.640	1.143	.677	1.296	.835	1.274	.870	.893	.665	.936	.993	1.136	.917	1.171	1.086
PFERS, COMPOSITION	1.123	.716	1.193	.684	1.184	.862	1.200	.740	1.157	.770	1.019	.675	.607	.526	.611	.602	1.045	.847	1.093	.774
PFERS, SLATE OR TILE	1.213	.907	1.154	.965	1.219	1.099	1.247	.805	1.394	.850	1.192	.857	.940	.675	1.100	.768	1.042	.725	1.119	.785
ET METAL WORKERS	1.202	.819	1.245	.803	1.295	1.011	1.192	.823	1.201	.851	1.245	.772	.936	.772	1.245	.828	1.142	.711	1.102	.799
ET METAL WORKERS' HELPERS	.607	.457	.687	.462	.618	.446	.668	.504	.578	.476	.594	.404	.444	.431	.460	.419	.633	.426	.606	.500
AMFITTERS	1.302	.950	1.291	.902	1.324	1.083	1.329	.997	1.309	1.004	1.260	.898	1.165	.921	1.195	1.125	1.228	.967	1.296	1.065
AMFITTERS' HELPERS	.786	.548	.754	.540	.872	.550	.693	.636	.778	.533	.685	.455	.521	.571	.642	.430	.708	.514	.716	.651
NE MASONS	1.354	.870	1.258	.931	1.428	.888	1.383	.825	1.196	.562	1.384	1.097	1.182	.922	1.205	.748	1.201	1.000	1.317	1.250
UCTURAL IRON WORKERS	1.396	1.111	1.244	.759	1.505	1.388	1.348	1.090	1.345	.883	1.565	.818	1.123	.912	1.013	.974	1.224	1.007	1.290	1.069
E LAYERS	1.248	.927	1.261	1.016	1.344	.825	1.282	.923	1.135	.929	1.339	.922	1.044	.839	1.187	1.013	1.218	1.045	1.110	.857
E LAYERS' HELPERS	.792	.477	.800	.695	.935	.472	.816	.527	.757	.517	.707	.408	.533	.434	.490	.471	.756	.558	.723	...
CK DRIVERS (UNDER 1/2 TONS)	.580	.471	...	.483	...	.470	.623	.558	.534	.466	...	.344	...	.354	.446	.391	...	...	.637	.504
CK DRIVERS (1/2 TO 5 TONS)	.718	.535	.646	.511	.667	.600	.773	.598	.737	.541	.659	.471	.612	.415	...	.448	.738	.577	.744	.638
CK DRIVERS (OVER 5 TONS)	.876	.648	.702	.624	.895	...	1.027	...	.752	.730	...	...	.668	...	...	.532	.850	...	.875	...

**AVERAGE UNION AND NON-UNION WAGE RATES PAID IN THE BUILDING  
TRADES IN SELECTED CITIES AND OCCUPATIONS—1936**  
(Average wages arrived at by weighted arithmetic mean)

CITY AND OCCUPATION	Average Wages Paid to:	Average Wages Paid to:	June Union Rates	CITY AND OCCUPATION	Average Wages Paid to:	Average Wages Paid to:	June Union Rates
	Union	Non Union	FORUM Survey *		Union	Non Union	FORUM Survey
UNITED STATES	\$1.064	\$0.612		KANSAS CITY, MO.			
ATLANTA, GEORGIA				ALL OCCUPATIONS	\$0.992	\$0.547	
ALL OCCUPATIONS	.912	.535		BRICKLAYERS	1.326	...	\$1.5
BRICKLAYERS	1.126	.775	\$1.25	CARPENTERS	1.114	.889	1.2
CARPENTERS	1.034	.673	1.00	LABORERS, COMMON	.685	.427	.8
LABORERS, COMMON	.400	.246	.40	PLASTERERS	1.262	...	1.4
PLASTERERS	1.001	.682	1.25	STRUCTURAL IRON WORKERS	1.181	...	1.3
STRUCTURAL IRON WORKERS	1.250	...	1.25	LOS ANGELES, CALIF.			
BALTIMORE, MD.				ALL OCCUPATIONS	.904	.740	
ALL OCCUPATIONS	.957	.555		BRICKLAYERS	1.048	.913	\$1.2
BRICKLAYERS	1.218	1.050	\$1.25	CARPENTERS	1.082	.889	1.1
CARPENTERS	1.095	.705	1.25	LABORERS, COMMON	.629	.555	.6
LABORERS, COMMON	.450	.402	.50	PLASTERERS	1.248	1.173	1.4
PLASTERERS	1.188	.779	1.25	STRUCTURAL IRON WORKERS	1.113	1.069	1.3
STRUCTURAL IRON WORKERS	1.288	...	1.50	MINNEAPOLIS, MINN.			
BIRMINGHAM, ALA.				ALL OCCUPATIONS	.950	.760	
ALL OCCUPATIONS	.894	.394		BRICKLAYERS	1.250	1.232	\$1.3
BRICKLAYERS	1.042	...	\$1.50	CARPENTERS	1.086	.913	1.2
CARPENTERS	.947	.636	1.25	LABORERS, COMMON	.731	.527	.8
LABORERS, COMMON	.394	.303	1.25	PLASTERERS	1.316	...	1.5
PLASTERERS	...	...	...	STRUCTURAL IRON WORKERS	1.250	1.250	1.5
STRUCTURAL IRON WORKERS	1.227	.964	...	NEW ORLEANS, LA.			
BOSTON, MASS.				ALL OCCUPATIONS	.886	.535	
ALL OCCUPATIONS	1.076	.833		BRICKLAYERS	...	.981	\$1.2
BRICKLAYERS	1.308	1.239	\$1.50	CARPENTERS	.750	.672	1.0
CARPENTERS	1.183	1.029	1.37½	LABORERS, COMMON	...	.326	.4
LABORERS, COMMON	.714	.609	.85	PLASTERERS	1.000	.750	1.0
PLASTERERS	1.366	.817	1.62½	STRUCTURAL IRON WORKERS	...	1.175	1.2
STRUCTURAL IRON WORKERS	1.231	.833	1.50	NEW YORK CITY, N. Y.			
CHICAGO, ILL.				ALL OCCUPATIONS	1.257	.814	
ALL OCCUPATIONS	1.246	.991		BRICKLAYERS	1.501	.926	\$1.8
BRICKLAYERS	1.487	...	\$1.70	CARPENTERS	1.390	.907	1.7
CARPENTERS	1.495	1.000	1.62½	LABORERS, COMMON	.576	.526	.5
LABORERS, COMMON	.932	.603	1.02½	PLASTERERS	1.499	.963	2.0
PLASTERERS	1.506	...	1.70	STRUCTURAL IRON WORKERS	1.609	1.562	1.5
STRUCTURAL IRON WORKERS	1.481	1.124	1.62½	PHILADELPHIA, PA.			
CINCINNATI, OHIO				ALL OCCUPATIONS	.846	.620	
ALL OCCUPATIONS	.993	.652		BRICKLAYERS	1.501	1.250	\$1.6
BRICKLAYERS	1.375	1.244	\$1.62½	CARPENTERS	.997	.803	1.1
CARPENTERS	1.279	1.064	1.42½	LABORERS, COMMON	.500	.419	.5
LABORERS, COMMON	.603	.604	.75	PLASTERERS	1.375	...	1.4
PLASTERERS	1.375	1.278	1.62½	STRUCTURAL IRON WORKERS	1.375	1.250	1.6
STRUCTURAL IRON WORKERS	1.288	...	1.50	PITTSBURGH, PA.			
CLEVELAND, OHIO				ALL OCCUPATIONS	1.132	.716	
ALL OCCUPATIONS	1.137	.660		BRICKLAYERS	1.500	.984	\$1.7
BRICKLAYERS	1.375	...	\$1.62½	CARPENTERS	1.247	.816	1.5
CARPENTERS	1.252	.703	1.37½	LABORERS, COMMON	.688	.476	.8
LABORERS, COMMON	.816	.507	.90	PLASTERERS	1.500	.909	1.7
PLASTERERS	1.500	...	1.62½	STRUCTURAL IRON WORKERS	1.375	1.264	1.5
STRUCTURAL IRON WORKERS	1.375	...	1.62½	ST. LOUIS, MO.			
DALLAS, TEX.				ALL OCCUPATIONS	1.140	.594	
ALL OCCUPATIONS	1.070	.521		BRICKLAYERS	1.464	.971	\$1.5
BRICKLAYERS	1.117	.996	\$1.50	CARPENTERS	1.235	.730	1.5
CARPENTERS	1.006	.852	1.00	LABORERS, COMMON	.787	.448	.8
LABORERS, COMMON	...	.379	.40	PLASTERERS	1.475	.792	1.5
PLASTERERS	1.253	1.069	1.50	STRUCTURAL IRON WORKERS	1.476	...	1.7
STRUCTURAL IRON WORKERS	1.040	.910	1.00	SAN FRANCISCO, CALIF.			
DENVER, COLO.				ALL OCCUPATIONS	1.028	.883	
ALL OCCUPATIONS	.982	.637		BRICKLAYERS	1.491	...	\$1.7
BRICKLAYERS	1.234	.831	\$1.50	CARPENTERS	1.108	1.053	1.7
CARPENTERS	1.217	.761	1.43	LABORERS, COMMON	.668	.657	.7
LABORERS, COMMON	.551	.401	.71½	PLASTERERS	1.401	...	1.2
PLASTERERS	1.179	.701	1.50	STRUCTURAL IRON WORKERS	1.387	...	1.5
STRUCTURAL IRON WORKERS	1.247	...	1.43	SEATTLE, WASH.			
DETROIT, MICH.				ALL OCCUPATIONS	1.074	.742	
ALL OCCUPATIONS	.968	.692		BRICKLAYERS	1.500	...	\$1.6
BRICKLAYERS	1.249	1.082	\$1.50	CARPENTERS	1.138	.919	1.2
CARPENTERS	1.003	.845	1.25	LABORERS, COMMON	.703	.465	.9
LABORERS, COMMON	.503	.488	.75	PLASTERERS	1.497	...	1.6
PLASTERERS	1.232	.922	1.55	STRUCTURAL IRON WORKERS	1.375	...	1.5
STRUCTURAL IRON WORKERS	1.246	1.043	1.50				

\* These rates represent union demands as determined by a FORUM survey last month, are not to be confused with actual union wages as determined by the Department of Labor last Fall.

# 253 NEW HOME OWNERS

**tell why and how they bought, why they preferred building to buying.**

To find out something concrete about the market of potential home buyers is the understandable ambition of every realtor, builder, developer and mortgagee. Why people buy houses, why they buy speculative houses rather than on order, why they rent, how it was that they met the salesmen—these are black question marks or at best just close guesses to those who should know. Such ignorance of the customers' market served only to underline the significance of a survey published last month: the results of a questionnaire prepared by the research bureau of *The Milwaukee Journal* which detailed some important findings from 253 families who had recently purchased homes in or near Milwaukee.

*The Journal's* research bureau is nationally famed for its consumer surveys. Using much the same statistical method as does FORTUNE's Quarterly Survey (a scientific testing, weighted geographically, by age, by sex, by financial position), the research bureau has been in operation for nearly two decades.

As a supplement to this year's consumer analysis, 253 home owners were examined. The bureau used a list of families who had recently purchased homes from the Milwaukee Real Estate Board and the Milwaukee County Building and Loan League, sent out a carefully worded questionnaire to 1,500 families. From their 253 replies they learned that:

75 per cent had owned no home previous to their present home.

14.18 per cent had owned one home previous to their present home.

6.59 per cent had owned two homes previous to their present home.

4.23 per cent had owned three homes previous to their present home.

From their other findings, real estate men could learn some valuable lessons. For example, they could learn that the model house ranks low in the public's mind as a merchandising agent. For, of the methods by which buyers came into contact with the salesman of the home purchased:

33.09 per cent talked with a real estate agent.

32.33 per cent saw newspaper advertising.

16.58 per cent talked with a friend.

9.45 per cent signed on the property.

5.41 per cent had direct contact with the former owner.

.78 per cent heard radio advertising, and a meagre 2.36 per cent met the salesmen at a demonstration house.

To be noted, however, is the fact that in all the above cases the model house must at least have figured as an indispensable aid to the salesman, the advertisement. And the 253 home buyers were out to buy a home. Only 15.73 per cent of them would rather have rented, but were not able to find the kind of rental home they wanted.

Seeking to discover the reasons which had caused the new home owners to buy, the research bureau asked why they had bought rather than rented. They were asked to check the two factors which most conditioned their choice. Results:

	Reason No. 1	Reason No. 2
Belief in home ownership.....	23.80%	7.21%
Belief that a home is a good investment .....	15.88	12.92
Tired of renting .....	14.85	5.66
Advantages for children.....	11.38	11.38
Cheaper to buy than to rent... 7.42	7.73	
Safeguard against the future... 4.95	11.89	
Previous home too small..... 4.95	2.57	
Belief real estate prices are going up .....	3.96	15.50
Could afford a better place.... 2.47	1.54	
To get into a better neighborhood .....	1.98	2.57
Fear of inflation .....	1.98	1.02
Could not find a suitable place to rent .....	1.48	5.66
Miscellaneous reasons (each less than 1%).... 4.90	6.12	
To get greater privacy.....		7.21
Advantageous interest rates... ..		1.02
	100.0%	100.0%

Of the 254 home buyers, 56.88 per cent bought houses already built. Three reasons for this choice were requested, the percentage rating for each reason being based on the total number of home owners who bought homes already constructed. Their reasons for buying rather than building:

Price .....	55.84%
Favorable terms of payment .....	21.01
Room arrangement .....	20.83
Nearness to schools.....	19.16
Neighborhood characteristics .....	15.67
Away from downtown traffic and congestion .....	13.28
Airy, sunlit rooms .....	12.49
Large lot .....	12.49

Size of rooms .....	11.66
Construction .....	11.66
Modern conveniences .....	11.12
Quiet street .....	11.12
Long term mortgage .....	11.12
Transportation .....	8.30
Nearness to church.....	6.64
Opportunity to practice hobbies..	6.64
Splendid schools .....	5.00
Well arranged bedrooms.....	5.00
Ample closet space.....	4.16
Playground for children.....	4.16
Nearness to work.....	4.16
Suitability for furniture owned....	3.32
Close friends nearby.....	3.32
Away from downtown.....	3.32
Good income property.....	2.19
Style of architecture.....	2.19
Better neighbors .....	2.19
Best suited for requirements.....	1.66
Location in general.....	1.66
Fine bathroom .....	1.66
Convenient kitchen .....	1.66
Insulation .....	1.66
Nearness to recreation.....	1.66
Miscellaneous reasons (each less than 1%) .....	2.00

Those who had homes built for them were also questioned as to causes. Of the 253 buyers, 43.12 per cent ordered their house under contract. Their reasons:

Wanted house built after own ideas .....	32.57%
Owned own lot.....	16.88
Could not find desired house in suitable location .....	10.84
Better construction and higher quality materials .....	10.84
Wanted latest, most modern equipment and materials... 9.63	
Cheaper .....	9.63
Wanted satisfaction and pleasure of building own home..... 4.81	
More desirable location.....	1.20
Tax exemption .....	1.20
Stimulate purchase of subdivision lots .....	1.20
Better financing terms.....	1.20
	100.00%

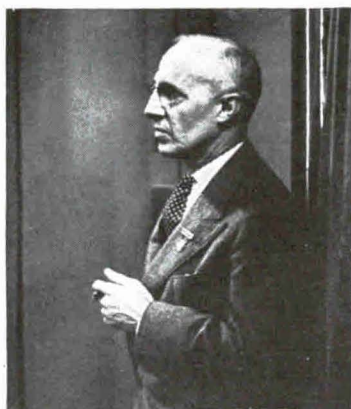
*The Journal's* 1937 Consumer Analysis, published earlier this year, eyed the prospective market, discovered that 3.1 per cent of Milwaukee's families, 5,883 strong, intended to buy homes during 1937, as opposed to 3,921 families which had signified a similar intention in 1936 and 2,218 in 1935. Indications were that 32,926 families would make home improvements. Of that number, 64.4 per cent planned interior painting, 43.2 per cent exterior painting, 12.4 per cent exterior repairs, 11.6 per cent roofing, 10.1 per cent plumbing.

# BUILDING OWNERS AND MANAGERS



Handsome, affable Clarence M. Turley (above) of St. Louis, the retiring president, guided the three-day meeting in Buffalo with a firm hand, gave a succinct and sparkling annual report. His particular brain-child—the Progress Committee to dramatize the industry—retired with him, but he expressed hopes that it would be revived.

Delegates put in better attendance at luncheons than at general sessions. Hard-driving Graham Aldis (above, right), of Chicago, was lifted the first vice-presidency, is already being mentioned as the next president. President-elect is serious, heavy-set Everett B. Murray (left page), who heads his own Kansas City building management



Over the shoulder of J. W. Bottenger (above, left), retiring regional vice president from Cincinnati, leans R. P. Beach, the executive secretary, in whose care are the Chicago headquarters. Above, center, Past President Paul Robertson of Indianapolis. W. J. McLaughlin (above, right) is the Association's assistant executive secretary, long-time editor of the official magazine, *Skyscraper Management*. His monthly articles are oracular to the nation's building managers. Harry J. Gerrity (right) is the Association's smart, smooth counsel and Washington lobbyist.



En route to convention sessions, L. E. Anderson of Dallas, Tex., stops to shoot a meagre 4 out of 10 with General Electric's Light Ray Rifle (below, left), while the Committee on Floor Coverings makes a pass at research (below, center). Below, right, the New York delegation: from left to right, A. H. Morgan, Western Union Co.; E. W. Ten Eyck, Federal Reserve Bank Building; E. K. Van Winkle, the E. K. Van Winkle Co.; Lee T. Smith, Joseph P. Day Management Co.; B. H. Belknap, Brown, Wheelock, Harris, and Stevens, Inc.; Jeremiah K. Cronin, Real Estate Board; W. N. Jacquish, New York Central Building; Charles E. Merritt, Real Estate Board; Joseph W. Degan, Equitable Life Building; Edward W. Everett, New York Central Building.



J. Wint





## BUILDING MANAGERS

Examine their industry, give it a passing mark.

ONE day last month Buffalo, N. Y., was soaked to the foundations by its worst cloudburst in a generation. In the boiler room of the Hotel Statler water surged to within four inches of the building's power generators, and a fire department pump alone saved the hotel's power supply. Meanwhile, unaware that beneath them a prime problem in building management was making many hands move fast, 259 delegates to the National Association of Building Owners and Managers were holding their 30th annual convention on the seventeenth floor.

The BOAM are the people who run the nation's skyscrapers, and they call their industry "America's biggest," pointing to total capital investment in U. S. skyscrapers in excess of \$25,000,000,000, one-twelfth of the nation's pre-depression wealth. After surveying their industry and its progress in the past twelve months, the Stabilization Committee reported to the convention that "the past year was not spectacular." Salient points: occupancy is now 80.94 per cent, a gain of 3.65 per cent; of the 206,843,402 sq. ft. in the 2,379 buildings located in the 123 cities reporting, 167,412,941 sq. ft. are occupied. But, commented the committee, "it is doubtful whether this space has been rented at sufficient rental rates."

Office and apartment buildings are not yet paying propositions. Vivid testimony of the fact that balance sheets are still glum propositions to the majority of owners and managers was afforded by the results of a questionnaire passed around on the first day of the convention (see chart below). Rents have not risen hand-in-hand with costs, nor do owners expect to raise them considerably during the next year. Meantime, costs, especially of labor, have gone up in handsprings. Many a manager at Buffalo last month announced that he had brought labor representatives into board meetings, so that they might see clearly why their demands could not be met. And observant Real Estate Editor

Michael Victor Casey of the New York *Herald Tribune* reported that a number of Middlewestern managers and owners kept airplanes on reservation for instant dashes to their cities in case the trouble which threatened should materialize.

Some answers displayed a somewhat timorous optimism for the future. Key to complaints could be found in the fact that 119 out of 138 responses to the BOAM questionnaire\* noted a marked increase in operating costs. Indicative of the caution with which owners and managers are feeling their way ahead came in the responses to the questions on future renting policy. Few and small have been the general rent advances. Not so numerous as might be expected are the plans for future raises.

For the rest, the delegates snapped their convention canes, tripped to near-by Niagara Falls, slipped into Canada and back, listened to a set of papers on the technical aspects of their jobs, and elected a new slate of officers. To the presidency,

(Continued on page 150)

\*For the sake of simplicity, the results of the survey were combined into the most compact form possible. The questionnaire did not limit the nature of answers. Thus, such answers as "gaining slightly," "not much change," "slowing down," "standstill," "stationary," "slight increase," "gaining" were all turned in as answers to the first question. In every case, THE FORUM has grouped the various types of answers under the most appropriate generic heading.

REPORTS	East	South	Midwest & Northern	North Central	Pacific N.W.	Pacific S.W.	Total
Office Occupancy: Gaining?	10	16	12	27	3	7	75
Static?	17	1	7	8	2	2	37
Slowing down?	11	3	11	16	5	7	53
General Rent Advances: Yes?	7	5	1	10	7	4	34
No?	26	13	24	33	4	12	115
Rent Advances for Particular Situations: Yes?	27	23	27	56	11	23	167
and New Tenants: No?	35	13	20	23	5	8	104
Rent Level Thus Raised: None?	10	—	10	2	1	4	27
1-5%	10	7	10	14	2	8	51
5-10%	6	7	4	16	5	3	41
Further Rent Advances: Yes?	11	9	19	35	6	12	92
No?	19	9	8	12	3	3	54
Of more than 5%: Yes?	5	5	—	—	6	6	22
No?	3	1	—	—	—	1	5
Before 1938: Yes?	4	6	6	15	5	3	39
No?	2	—	—	2	—	2	6
Marked Increase in Operating Costs Experienced: Yes?	24	14	22	40	10	9	119
No?	9	3	8	4	1	4	29
Employes Wages Increased: Yes?	27	6	16	47	11	14	121
No?	7	12	8	3	—	2	32
Contemplate Doing So: Yes?	6	4	6	8	—	3	27
No?	4	6	3	1	—	2	16
Increase in Costs Exceeds Increase in Income: Yes?	19	9	13	21	5	5	72
No?	7	6	6	12	4	3	38
Outlook on Rental Conditions: Promising?	22	18	22	38	8	12	120
Slow?	11	2	8	12	3	4	40
Oper. Return: Promising?	6	18	16	28	9	9	86
Slow?	11	2	14	12	2	6	47
Return on Investment: Promising?	18	19	15	26	8	6	92
Slow?	8	1	15	22	3	7	56

replacing Clarence M. Turley of St. Louis, went Everett B. Murray, of Kansas City. President-elect Murray took a degree from the University of Illinois in civil engineering in 1908. From a wide experience in the construction and maintenance of power plants, waterworks, sewage disposal plants, drainage works, river and harbor engineering throughout the South Central district, he has earned a reputation as a detail-loving authority on operating costs. His respectful associates credit his success to his application of engineering science to building management.

The papers presented at the meeting dwelt on cleaning, air conditioning, lighting, operating costs, sound proofing, and labor. In the majority of cases, they were signalized by careful thought and expert authority. A layman wandering about the Buffalo Convention Hall would have learned, sometimes to his surprise, that:

¶ At the average rate of 17½ cents per sq. ft., there is annually expended in member buildings of the association more than \$50,000,000, on cleaning service alone.

¶ Building managers consider that "good enough is best" in cleaning; if 10 per cent effort removes 95 per cent dirt, it is economical to save 90 per cent effort and leave 5 per cent dirt.

¶ It is more economical for a cleaning woman to do one thing to all offices before doing the next duty rather than doing all duties to each office in turn.

¶ The use of a circular motion in dusting takes 161 seconds for a given number of desks, a time cut to 122 seconds by the use of a back and forth motion.

¶ The cost of cleaning is the largest single item of expense in the average office building, and at least 90 per cent of that cost is for labor.

¶ The area assigned to a cleaning woman ranges from 5,000 sq. ft. to 18,000 sq. ft. with an average of 9,000 sq. ft. for seven hours, or approximately 1,300 sq. ft. per hour.

¶ The largest mops that can be handled are best, and they should be made of high-grade small strand cotton. After wearing down about one-third they are labor wasters and should be discarded.

¶ Linseed has a disagreeable fishy odor, corn develops a laundry odor, soya is practically odorless.

¶ A good window cleaner will clean, when working for an owner, between 50 and 60 average office windows in one day, between 60 and 70 windows when working under contract.

¶ Leather safety belts dry up with age, and small cuts are difficult to observe; fabric belts are better, since defects can be readily observed in the fray of the weave.

¶ The ratio of the cost of cleaning labor to cleaning supplies varies from 24 to 1 in New England to 8.2 to 1 in the Southwest; the average of all cities is 15 to 1.

## NINE ARGUMENTS

to sell more homes to the City of Homes.

At the turn of the year Philadelphia made a bid for its share of prosperity with "Forward Philadelphia," a booster campaign headed by its most solid citizens, and featuring full-page advertisements, banquets, mailing pieces, meetings. With a particularly bad realty depression behind it and a reputation as the "City of Homes" to maintain, Philadelphia devoted the biggest slice of its efforts to a straight-away home ownership campaign, called in Philadelphia's famed advertising firm, Erwin, Wasey & Co., to supervise the copy and layout. Thus last month were realty men and builders afforded the chance to see a top-flight advertising firm handle an old and troublesome promotion problem.

Most interesting to realty was the listing of arguments for home ownership run in the series of Erwin, Wasey advertisements which forthwith appeared in Philadelphia papers. Representing the combined cerebration of the Forward Philadelphia Committee and Erwin, Wasey, they immediately commended themselves as realistic sales talks embracing every angle of home salesmanship that Philadelphia could think of. Run five or six per advertisement and occasionally rephrased, they were:

1. Since 1929 more than 12,000 Philadelphia houses have been demolished. New building has not kept pace. A home shortage is inevitable. NOW is the time to buy.

2. Cost of building is on the upswing . . . labor rates, scarcity of skilled labor, cost of materials, increased demand for houses. Ask any builder.

### Born Lucky!



**READ WHY**  
it is so easy and wise  
to buy a home  
in Philadelphia  
right now!

1. Little square—about 1000 sq. ft.—costs less than 1000 sq. ft. of any other type of house. It is the most economical type of house to buy.
2. Most 1000 sq. ft. houses cost \$12,000. Philadelphia houses cost \$10,000. You can buy a house for \$10,000 in Philadelphia.
3. Cost of building is on the upswing. Labor rates, scarcity of skilled labor, cost of materials, increased demand for houses. Ask any builder.
4. It is so easy and wise to buy a home in Philadelphia right now.
5. It is so easy and wise to buy a home in Philadelphia right now.
6. It is so easy and wise to buy a home in Philadelphia right now.
7. It is so easy and wise to buy a home in Philadelphia right now.
8. It is so easy and wise to buy a home in Philadelphia right now.
9. It is so easy and wise to buy a home in Philadelphia right now.

**FORWARD PHILADELPHIA**

1000 Market Street, Philadelphia, Pa.

3. Under the Federal Housing Administration, a down payment as low as 20 per cent will enable you to buy or build a Government-appraised and inspected home. Also, mortgage money is obtainable by responsible home buyers, on advantageous terms from financial institutions, insurance companies, saving fund societies, and building and loan associations.

4. Philadelphia is known throughout the nation as The City of Homes. There is no finer city anywhere in which to own a house. Good government, excellent schools and the best city transportation system in the country are here. There is no doubt of it—Philadelphia is a fine place to live and finer still if you live in a house of your own.

5. Rents are bound to go up, too. Own your own home. Be your own landlord. A home is not merely a piece of real property. It represents a form of security having social and moral as well as financial and physical attributes.

6. With living costs and rents on the way up, owning your own home is insurance against rent increases. You're the landlord—you're the tenant.

7. The more people who own their own homes the healthier, more prosperous a city Philadelphia will be. And that's better for us all. There is always a likelihood in times like this for investors and speculators to acquire an unhealthy amount of home property. Then they, rather than you, profit from the upswing.

8. As marriages increase, so the demand for homes increases and the records show there has been an average yearly increase of 3,108 marriages for the past three years.

9. Federal housing survey figures show that during the depression, 23,775 Philadelphia families doubled up. These families are now unscrambling—looking for homes of their own.

There's a song  
in her heart



**READ WHY**  
it is so easy and wise  
to buy a home in Philadelphia  
right now!

1. Little square—about 1000 sq. ft.—costs less than 1000 sq. ft. of any other type of house. It is the most economical type of house to buy.
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9. It is so easy and wise to buy a home in Philadelphia right now.

**FORWARD PHILADELPHIA**

1000 Market Street, Philadelphia, Pa.

Two of the Erwin, Wasey series of advertisements run in Philadelphia papers. "There's a song in her heart" pulled more inquiries than any other.

# BOYLE'S 125 ACRES

**in Springfield, Mass. get developed. FHA houses with an acre of land for \$3,990.**

WHEN, in April, 1936, the FHA released a set of plans for model low-cost houses, it touched off a minor flurry of building. Demonstration FHA houses went up all over the country, climaxing last month in the double-barrelled campaigns of the National Lumber Manufacturers Association and the Structural Clay Products Association (see pages 4 and 56).

By and large, the FHA demonstration houses of the past year have been no world-beaters. Too often they have been able to boast only a low cost. But last month, near Springfield, Mass., the finishing touches were being put on a group of houses which are not only attractive, but cheap, and are also sold with an acre of land.

Subdivider John Victor Boyle calls his development Colonial Village. Thus far he has completed nine houses, sold eight, and has started construction on three more. For \$3,990 his clients buy a four-room house with an acre of land; for \$5,250 they get a five-room house with attached garage. In any case they get an acre of land.

There was no time lost between the start

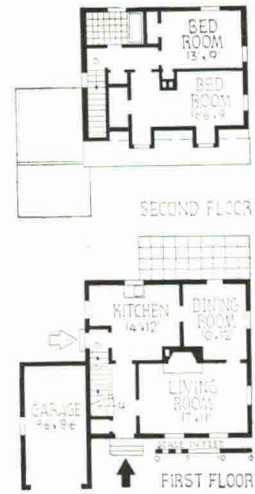
of operations and the start of sales. In fourteen working days Subdivider Boyle had foundations and cellar walls laid for two houses, side walls shingled, boilers installed and piped, all plumbing completed, and wiring and plastering finished. One hour after the first house was opened to the public it was sold.

Subdivider Boyle has a long career of building around New England back of him. Fresh out of Purdue University, he took over as transit man in the famed Hoosic Tunnel job for Fred T. Ley. He has been in Springfield real estate for a quarter of a century, latterly doing a deal of appraisal work for the HOLC, the FHA, and the RFC. His sales record in subdividing: more than 4,700 building lots.

Colonial Village architect is James J. Fitzsimmons, who graduated from Pratt Institute as recently as 1933. Now in business for himself, his work for Subdivider Boyle has won him enough measure of acclaim for him to turn down last month an offer for a three-year contract with Standard Oil in South America.

## CONSTRUCTION OUTLINE

**FOUNDATION:** Walls—cement blocks. Cellar floor—4 in. cinders under 3 in. concrete.  
**STRUCTURE:** Exterior walls—No. 1 red cedar shingles, Weyerhaeuser Sales Co., building paper, 2 x 4 in. studs, U. S. Gypsum Co.'s rock lath, aluminum base, plaster.  
**ROOF:** Construction—2 x 5 in. rafters, 18 in. o. c., 1 x 3 in. roof strips, 18 in. Perfection cedar shingles.  
**SHEET METAL:** Flashing and gutters—18 oz. Anaconda copper, American Brass Co.  
**INSULATION:** U. S. Gypsum Co.'s rock lath, aluminum foil base.  
**WINDOWS:** Sash—double hung, Glass—Libbey-Owens-Ford Glass Co. Copper wood frames—C. H. Cushing.  
**FLOOR COVERINGS:** Bathrooms—Sealex linoleum, Congoleum-Nairn, Inc.  
**WOODWORK:** Trim—white pine. Interior doors—white pine. Exterior doors—Colonial 4-panel white pine. Shelving and cabinets—Curtis Companies, Inc.  
**HARDWARE:** Interior and exterior—Schlage Lock Co.  
**ELECTRICAL INSTALLATION:** Wiring—BX cables. Switches—tumbler. Fixtures—direct, Lightolier Co. and Chase Brass & Copper Co.  
**KITCHEN EQUIPMENT:** All fixtures by Standard Sanitary Mfg. Co.  
**BATHROOM EQUIPMENT:** All fixtures by Standard Sanitary Mfg. Co., except metal Lawco cabinet, The G. H. Lawson Co.  
**PLUMBING:** Pipes: Soil, waste and vent—cast iron extra heavy Krapp-Hajoca Corp. Water supply—brass, Anaconda, American Brass Co.  
**HEATING AND AIR CONDITIONING:** Steam. Boiler—coal fired, H. B. Smith Mfg. Co. Radiators—Arco, American Rolling Mills Co. Valves—Dole Valve Co.



The plan above functions for both the one-story cottages, sole difference being the position of the door. In both the small houses, provision has been made for future bedrooms on the upper floor.



# \$4 PER ROOM PER MONTH

**is the average rental which private initiative has supplied by a mass remodeling.**

NEARLY a century ago a group of row houses was built by an enlightened mill management for the housing of its workers in Chicopee Falls, Mass. Equipped with generous garden spaces, soundly constructed with brick party walls, slate roofs, stone rubble foundations, well-proportioned and well-designed, the houses were built as dwellings, not as land developments. The project, known locally as "The Village," continued through the years in the capacity for which it was intended. Some 150 family units rented for from \$6 to \$15 per month per family. The buildings were entirely free from financial encumbrances.

Therefore when President Norton L. Smith of the Chicopee Manufacturing Corp. decided to do some low cost housing on his own hook without waiting for Government subsidy, he turned, on the advice of the State Board of Housing, to the Village. His millhands were then getting, on the average, \$16.50 in their pay envelopes each week. New buildings were out of the question if these men were to be housed without subsidy. President Smith submitted a project to the Large-scale Housing Division of the FHA calling for the remodeling of the Village, 36 more units to be included than in the old set-up, each

unit to have a complete modern bath in place of the old toilet and cast-iron kitchen sink with which the old units had been provided. Costs of rehabilitation totaled only one-third of the cost of new construction.

As a result, private initiative, without any subsidy, has accomplished the first rehousing of a wage-earning class on a large scale in the North. With the help of an FHA-insured loan from the RFC Mortgage Co., the Chicopee Falls Housing Corp. has supplied clean, modern, airy apartments which rent for an average of \$4 per room per month. Rents run from \$3 per room per month for three rooms and \$3.70 per room per month for four rooms, to \$4.60 per room per month for five rooms. These are minimum rents, the maximums being only ten to fifteen cents higher.

The planning of the plot permitted two important features: play areas and garden areas. Tenants in the Village pride themselves on the grounds about their homes, most of them cultivating a small garden plot, while in and about each kitchen ell there are flower and garden patches. Between the various houses are grassed areas where small plots have been given over to flowers and grape arbors. A systematic and convenient arrangement of clotheslines

was provided, as well as definite areas for the collection of ashes and garbage.

In the Village there are two groups of row houses and 21 four-family houses. Majority are two-story and attic, three are three-story and attic. Architects Charles P. Norton and James H. MacNaughton effected few exterior changes, confining themselves to the elimination of heavy porches and entrances (see cuts below) and to trimming the millwork. Inside, besides supplying each unit with a bath and modern kitchen, they rearranged the floor plans so that there are:

- 1 two-room unit
- 50 three-room units
- 69 four-room units
- 42 five-room units
- 8 six-room units
- 16 seven-room units.

The buildings, which had already served more than useful existence, have excellent exposures. The fire hazard is considerably less than what might be ordinarily expected in second-class construction because of brick party walls as well as brick exterior walls. The row houses also have cross ventilation and plenty of light.

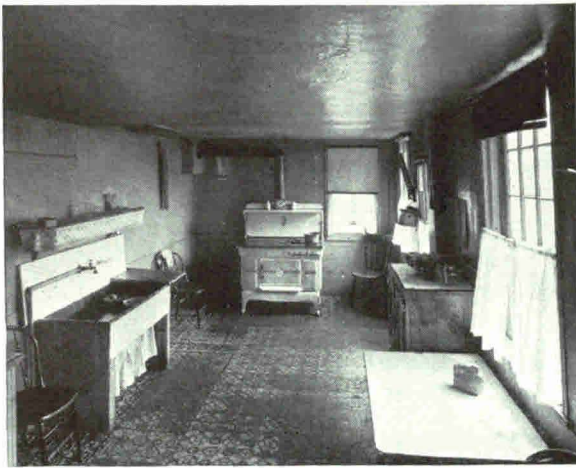
Floors throughout are of hardwood and many of the tenants have already bought linoleum as covering. Plugs have been provided in most cases, reducing, as far as possible, the number of electric fixtures, always a replacement cost nuisance.

Rehabilitation did not include heating the houses. Sidney Strickland, of the State Board of Housing, points out that it would have cost an additional \$50,000 to heat the buildings, and would therefore have increased the rents by about \$1.50 per room



Repeating motifs of dormers and chimneys, sensible depth, and good proportions made handsome buildings of the old Village. The new Village is neater, cleaner, simpler. Thanks to the sound construction of a century ago, there was little need for reconstruction.

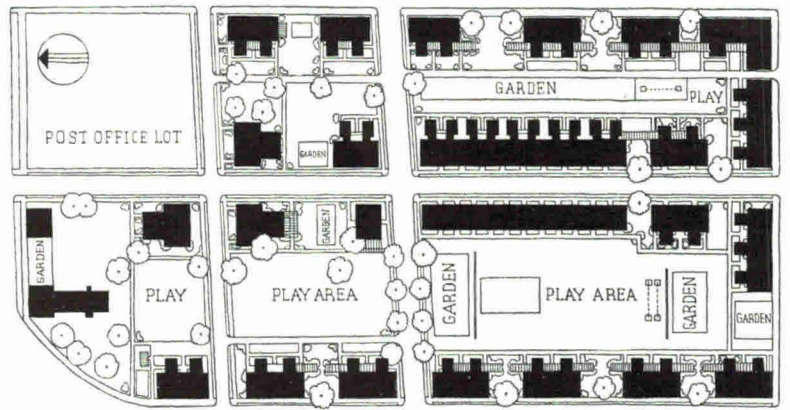




**BEFORE**



**AFTER**



**PLOT PLAN**

"The Village" (above) now has a population of 186 families instead of 150. In the main, remodeling inside consisted in making modern bathrooms and kitchens out of archaic kitchens, and in supplying closets. Units were added by putting two families in a house where one had been, as below.



per month. A careful study of local habits gleaned the information that the millworkers are in the habit of heating their own rooms with stoves. Rather than restrict the field of possible tenants to the smaller number of higher paid, the Chicopee Housing Corp. chose to eliminate heating. Such economies have helped keep operating costs down to \$15.50 per room per year.

Since the first survey was made, the average wage has been advanced to more than \$18 per week. Further, 1.6 persons per family are wage earners. Thus there is no doubt that the tenants can pay their surprisingly low rental. While many of those who were living in the Village before the rehabilitation started were uncertain as to just what was being planned, the process of vacating the buildings for reconstruction was carried on in an orderly and helpful way. Once the trend of the return to the new units was under way, the workers cooperated with interest and apparent satisfaction. They are assuming the new rent schedule on a weekly basis and making prompt payments.

A look at the cost and income statement (right) is illuminating. The amount set aside for surplus and dividend is nearly two and one-half times the vacancy reserve, equaling 17½ per cent vacancies, far less than the corporation expects ever to experience.

**COST AND INCOME STATEMENT FOR CHICOPEE FALLS**

Land 273,003 sq. ft. @ 10c	\$27,000.	
Other Equity (Bldgs.)	60,000.	
<b>Total Equity</b>	<b>\$87,000.</b>	
Proceeds of Mortgage	190,000.	
	<u>277,000.</u>	
<b>Cost of Land &amp; Bldgs.</b>	<b>87,000.</b>	
Construction Cost	155,401.	
Contingency Allowance	3,899.50	
Completion Bond	2,441.22	
Architect's Commission	9,257.	
Builder's "	7,347.	
<b>Total Cost of Building</b>	<b>\$178,345.72</b>	
<b>Carrying Charges during Construction:</b>		
Interest 6 mos. @ 2¼%	2,138.	
Taxes 6 mos.	2,333.	
Insurance	707.78	
F.H.A. Mortgage Insurance ½% on \$190,000.	1,425.50	
Cost of arranging financing	1,900.	
Organization & Legal Expenses	350.	
<b>Total Carrying Charges</b>	<b>\$8,854.28</b>	
Cash Working Capital	2,800.	11,654.
	<u>\$277,000.</u>	

Income & Expense	
No. of Rooms 785 @ \$4 per room per month	\$37,680. per yr.
Other income	1,200.
Income from water	1,000.
	<u>39,880.</u>
Less 7% vacancies	2,792.
	<u>37,088.</u>
<b>Operating Costs</b> 785 rooms @ \$15.58 per annum	12,234.
Taxes	4,666.
	<u>16,900.</u>
Available for Debt Services	20,188.
Interest on 1st Mortgage of \$190,000 @ 4½%	8,550.
Mortgage Insurance ½%	950.
Amortization 2%	3,800.
	<u>13,300.</u>
<b>Total Annual Fixed Charges</b>	<b>13,300.</b>
Available for Dividend & Surplus	\$ 6,888.

# LABOR, MATERIAL COSTS INDEXED

**show new highs and no declines for the small house market. Chicago touches a price peak.**

THE monthly small house cost index of the Federal Home Loan Bank Board continued last month to show sharp increases in construction costs from 29 cities for the month of June. With material costs beginning to level off somewhat after their hectic Spring splurge, the preponderant cause for the increases registered by the FHLBB for June must be attributed to labor wages (see p. 144). Since wage increases are almost universally the result of union contracts, their inflationary effect cannot be logically expected to diminish considerably during the remainder of this year.

Below are shown the cost data from the 29 cities reporting for June, together with similar data for the past five quarters. Another 41 cities report in the intervening months. Similarly collected data are given on the cubic foot cost in the 29 cities reporting this month. Beside the table is given a detailed description of the standard house upon which the bids have been made. The value of such a compilation lies obviously in the relative trends revealed rather than in the absolute values quoted.

Every one of the 29 cities in both June and last December showed an increase in construction costs. Largest percentage in-

crease was registered in Portland, Me. (12.6 per cent), Boston (12.5 per cent), and in Washington, Milwaukee, and Wichita (all 12 per cent). Smallest percentage increases came from Baltimore (.01 per cent), Oshkosh, Wis. (3.9 per cent), Cumberland, Md., Tampa, Fla. (4 per cent). Highest absolute cost was in Chicago where the FHLBB house ran to \$7,260 as contrasted to the lowest price of \$4,746 in Salisbury, N. C. The Chicago price is the highest ever to be registered by the FHLBB during its 18 months of recording, topping the record set in Great Falls, Mont., last April by \$135.

**The House on Which Costs Are Reported** is a detached 6-room home of 24,000 cubic feet volume. The living room, dining room, kitchen, and lavatory are on the first floor; three bedrooms and a bathroom are on the second floor. Exterior is wide-board siding with brick and stucco as features of the design. Best quality of both materials and workmanship is used throughout.

The house is *not* completed ready for occupancy. It includes all fundamental structural elements, an attached 1-car garage, an unfinished cellar, an unfinished attic, a fireplace, essential heating, plumbing, and electric wiring equipment, and complete insulation. It does *not* include wallpaper or other wall or ceiling finish on interior plastered surfaces, lighting fixtures, refrigerators, water heaters, ranges, screens, weather stripping, or window shades.

Reported costs include, in addition to material and labor costs, compensation insurance, an allowance for contractor's overhead and transportation of materials, plus 10 per cent for builder's profit.

Reported costs do *not* include the cost of land or of surveying the land, the cost of planting the lot, or of providing walks and driveways; they do not include architect's fee, cost of building permit, financing charges, or sales costs.

In figuring costs, current prices on the same building materials list are obtained every three months from the same dealers, and current wage rates are obtained from the same reputable contractors and operative builders.

FEDERAL HOME LOAN BANK DISTRICTS, STATES, AND CITIES	CUBIC FOOT COST		TOTAL BUILDING COST						
	JUNE 1937	JUNE 1936	JUNE 1937	MAR. 1937	DEC. 1936	SEPT. 1936	JUNE 1936	MAR. 1936	DEC. 1936
<b>NO. 1—BOSTON:</b>									
CONNECTICUT:									
HARTFORD	\$0.265	\$0.236	\$6,365	\$6,131	\$5,768	\$5,589	\$5,657	\$5,647	\$5,655
NEW HAVEN	.247	.231	5,933	5,753	5,636	5,468	5,544	5,509	5,509
MAINE:									
PORTLAND	.247	.214	5,916	5,252	5,252	5,245	5,132	5,124	5,103
MASSACHUSETTS:									
BOSTON	.270	.241	6,487	6,275	5,781	5,876	5,773	5,780	5,699
NEW HAMPSHIRE:									
BOSTON	.245	.228	5,888	5,641	5,545	5,467	5,462	5,416	5,467
RHODE ISLAND:									
PROVIDENCE	.247	.229	5,932	5,768	5,633	5,577	5,496	5,531	5,574
VERMONT:									
RUTLAND	.241	.222	5,792	5,696	5,305	5,305	5,329	5,329	5,337
<b>NO. 4—WINSTON-SALEM:</b>									
ALABAMA:									
BIRMINGHAM	.253	.209	6,077	.....	.....	5,073	5,013	5,059	5,002
DISTRICT OF COLUMBIA:									
WASHINGTON	.260	.207	6,234	5,906	5,569	5,150	4,973	4,918	4,850
FLORIDA:									
TAMPA	.238	.223	5,716	5,619	5,500	5,483	5,360	5,379	5,358
WEST PALM BEACH	.267	.246	6,411	6,367	6,038	5,974	5,911	5,889	5,894
GEORGIA:									
ATLANTA	.225	.204	5,410	5,228	5,150	4,897	4,889	4,854	4,849
MARYLAND:									
BALTIMORE	.225	.205	5,402	5,388	5,401	4,899	4,909	4,427	4,543
CUMBERLAND	.238	.226	5,711	5,659	5,491	5,482	5,424	5,419	5,358
NORTH CAROLINA:									
ASHEVILLE	.207	.199	4,968	.....	4,762	.....	4,768	4,778	4,791
RALEIGH	.232	.211	5,580	5,443	5,197	5,148	5,060	5,070	4,967
SALISBURY	.198	.....	4,746	.....	.....	.....	.....	.....	.....
SOUTH CAROLINA:									
COLUMBIA	.204	.196	4,886	4,674	4,804	4,697	4,712	4,634	4,505
VIRGINIA:									
RICHMOND	.219	.209	5,248	5,207	4,870	5,026	5,026	4,964	5,062
ROANOKE	.225	.202	5,391	5,331	5,014	4,760	4,843	4,544	4,491
<b>NO. 7—CHICAGO:</b>									
ILLINOIS:									
CHICAGO	.302	.277	7,260	7,081	6,825	6,745	6,639	6,608	6,498
PEORIA	.285	.267	6,833	6,585	6,312	6,331	6,420	6,212	6,212
SPRINGFIELD	.291	.269	6,980	6,908	6,625	6,459	6,459	6,459	6,451
WISCONSIN:									
MILWAUKEE	.282	.231	6,780	6,701	6,081	5,838	5,540	5,386	5,386
OSHKOSH	.240	.234	5,760	5,576	5,555	5,658	5,612	5,502	5,357
<b>NO. 10—TOPEKA:</b>									
COLORADO:									
DENVER	.275	.252	6,606	6,250	6,105	6,133	6,047	6,098	.....
KANSAS:									
WICHITA	.247	.215	5,927	5,794	5,290	5,192	5,164	5,164	5,200
NEBRASKA:									
OMAHA	.249	.233	5,969	6,008	5,601	5,578	5,582	5,582	5,554
OKLAHOMA:									
OKLAHOMA CITY	.243	.232	5,823	5,816	5,486	5,449	5,561	5,282	5,210

## A house uses wood for:

1. Framing
2. Sheathing
3. Siding
4. Millwork
5. Roofing
6. Flooring



## BEHIND THE PRICE

### of lumber, Building's biggest material. Why the rise.

EIGHT out of every ten homes have lumber frames; and a majority have lumber sheathing, lumber siding, lumber shingles, lumber floors. Building is thus, not unnaturally, the lumber industry's No. 1 customer.

Three months ago the Southern Pine Association made a study of 30 selected wood houses, announced that lumber (excluding millwork and flooring) amounted to 20 per cent of the cost of the house. Proceeding on the basis that the cost of the lumber alone amounts to but 8 per cent of the total cost, Southern Pine argues with some point that the cost of lumber can rise as much as \$10 per thousand board ft. without causing any appreciable rise in the total cost of the house. Nevertheless, it is noteworthy that lumber has lately staged the most spectacular price rally of any material in the building field with the exception of steel, rising to 102.1 of the 1926 level.

Main factors governing the price of lumber are demand, labor prices, and transportation costs. With most of the large lumber producers already owning their stands of timber, supply cannot be counted in any sense as a short-term factor of importance.

Largest production center of lumber is the West Coast, whence comes 62 per cent of all U. S. saw timber. Here within the past four months lumbermen's wages have reached an all-time high of 77 cents an hour following the organization of a lumbermen's union. Possibility that they may go even higher before the year is out springs from the fact that the CIO has

lately staked out the lumbermen for an intensive organization drive which may well result in a defensive increase by the employers or a contract increase by the union.

Transportation is a vital problem in lumber for the reason that while the greatest supply of lumber lies on the West Coast, the greatest demand comes from the East Coast and the Middle West. Except for short hauls, rail rates on lumber are uneconomically high, and as a result the bulk of lumber is moved by boat through the Panama canal, a method which takes longer but costs about half of the rail freight. During the past year, however, this dependence on shipping has proved expensive: maritime strikes centering around Seattle and extending sporadically up and down the coast have caused a general price increase in shipping of between \$12 and \$14 per thousand board ft. Currently, these labor difficulties have died down and the shipping lines are for the first time in months able once again to maintain regular shipping schedules. Bonuses and premiums on freight charges are likewise disappearing.

The relation between the demand for lumber in the building industry and its price is always an intimate one, one that has more effect than any other of the factors involved. If the volume of residential construction is plotted against the price of lumber over a period of years, it

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*Rising construction costs are hard to explain to the prospective home buyer who sees \$1,000 added on to last year's \$5,000 house. Smart merchandising calls for an explanation packed with facts. To the architect and the builder THE FORUM presents herewith a battery of simple, accurate facts about another of Building's basic materials.*

will be seen that the price curve follows the construction curve with some fidelity, at the same time rising higher at the peaks and dipping lower at the depressions than the construction curve. In other words, the price of lumber tends to exaggerate both building booms and building recessions. Latterly it has risen sharply to reflect the New Year boom in residential construction.

Operation of these three factors of wages, transportation, and demand on price of lumber has caused severe gyrations over the last six months to push the price of lumber to a new post-depression high in June. From last November to this June, Douglas Fir jumped from \$29.25 to \$37.35 per 1,000 ft.; red cedar shingles from \$4.39 to \$4.55; Southern pine from \$40 to \$45.

However, at about the time these increases went through, two of the factors which had caused the rise were adjusting themselves. The maritime strike was settled and home building was registering its fourth consecutive contra-seasonal decline in the face of a general increase in labor and material prices. With transportation more fluent and the curve of residential building on the downswing, the prices of lumber immediately showed a recession. For July Douglas Fir dropped back to \$34.75, red cedar shingles to \$4.25; Southern pine to \$41.

The basic factors, however, all point to an early increase in lumber prices. This Fall should show a marked revival in the residential building market. The increased demand thus generated will be at once the occasion for the producers' regular price increase; for the shippers to put into effect the higher rate they have long been threatening; for labor unions to enlarge their membership, thereupon up lumbermen's wages still further. Late Fall should see the June high in lumber prices topped yet again.

# MATERIAL COSTS LEVEL OFF

as rents continue to mount, presaging a healthy future for the industry. Foreclosures decline.

