ARCHITECTURAL RECORD

COMBINED WITH AMERICAN ARCHITECT AND ARCHITECTURE

NEXT MONTH

THE YEAR of 1941 marks our 50th anniversary, and your January RECORD will be the first of 12 Golden Jubilee issues to celebrate the event.

Progress is a startling thing when old and new are compared, and for proof the January issue will present such comparisons. We've combed the country for the newest examples in a long list of building types, have rifled our files for outstanding examples of 1891 design, and have developed a "flash-back" method of publishing them side-by-side. The resulting portfolio makes a pretty thrilling package. Contemporary subjects range from a new classical museum group in Massachusetts to a Tennessee laundry where customers drive in, give their orders through a loud-speaker, and receive deliveries from uniformed attendants on roller-skates!

Technical progress will also be charted, in the form of a symposium article. Developed by Professors John E. Burchard and Frederick Fassett of M. I. T., it will embody progress reports by eight M. I. T. experts in such fields as Sound, Illumination, Heating, Cooling and Ventilation, Biology and Sanitation, Metallurgy, Chemical Advances, Structural Theories, and Building Requirements.

President Edwin Bergstrom has taken time from his AIA administrative job to send a message to all architects relative to the profession's future. No man is better qualified to discuss the subject; and President Bergstrom's article will constitute a thoughtful analysis of current professional problems and a realistic survey of those possibilities and limitations that seem to lie ahead.

Industrial buildings—of pressing interest the country over—will be the subject of the January Building Types study. In characteristic fashion Time-Saver Standards, crisp text, diagrams, and drawings, will record progress in factory design, construction, and equipment, particularly significant to the needs of current defense activities.

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Manuscripts, photographs, and drawings which conform to RECORD'S editorial aims are welcomed. Every effort will be made to return material (if accompanied by stamped, addressed envelopes); but the editors will not be responsible for losses.

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Concreting on the DOUBLE-QUICK··· MARCH!

. . . Army Barracks at Camp Edwards, Mass., completed quicker with Atlas High-Early Cement!

EACH DAY 600 barrels of Atlas High-Early are being used for the concrete foundations to speed up construction at Camp Edwards. 1200 separate buildings, requiring 30,000 cu. yds. of concrete, will be completed by December, 1940.

On this project, like many others all over the country, engineers and contractors know they can depend on Atlas High-Early—the cement that gains working strength rapidly. It cuts time for protection and curing as much as 60—70%, often permitting earlier stripping and reuse of forms. But most important, it produces serviceable concrete in much less than the usual time.

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AR-H-23

● Atlas High-Early cement speeds up construction of Camp Edwards, United States Army Cantonment at Falmouth, Mass. General Contractors, Walsh Construction Co., Davenport, Iowa. Below: Newly stripped concrete foundation walls of one of the 1200 separate buildings making up the camp.

ATLAS HIGH-EARLY CEMENT

A UNIVERSAL ATLAS PRODUCT

BEHIND THE RECORD

What to do about air raids may become the subject of a new and hysterical parlor game unless we all hold on to ourselves. The latest query we've received about ARP—air-raid precautions to you—comes from Tucson, Arizona:

"I am anxious to persuade the local town planning organization to put up municipal air-raid shelters and also in having some private shelters for schools, hotels, and individuals. Architects and engineers haven't the necessary information to go about it.

"Would you please send me what technical information you have and could you also have articles about air-raid shelters in your magazine, as it is a problem that should be taken up all over the country before it is too late?

"Do you think it would be possible to deflect Federal grants from road building to this much more important war defense measure? This would mean that funds would be available for it practically at once."

We answered in what we hope was a reassuring manner. Of course, no one is blind to the *possibility* of alien wings over America. But we've been checking on the *probabilities* of air raids—with military technicians and other kinds of engineers who ought to know—and we've gotten the impression that development of ARP on any nationwide scale would not only be economically prohibitive right now but technically premature and therefore unnecessarily alarmist.

The question's being diligently studied, of course. A committee of the National Research Council on "Passive Protection Against Bombing" is doing a lot of quiet fact-finding. Some schools—notably Pratt Institute in New York—are now offering courses on ARP technicalities; at least one architectural organization—the Boston chapter of the AIA—is preparing plans for air-raid shelters; and the USHA is now studying—with the usual fanfare of publicity—the suitability of concrete "pill boxes" for protection of public housing tenants. Yes, and in East Orange, N. J., Odd Albert, assistant professor of structural engineering at Newark College of Engineering, has designed what he calls "bompus-rumpus rooms" for basements of private homes—a set-up, he says, that would permit American family life to flow on beneath the ruins.

Technically, nobody seems to know quite how ARP ought to be, or realistically *could* be, handled in this country. Measures in Europe, it appears, haven't been uniformly satisfactory. One part of our own research job seems to be to devise stronger protection from heavier missiles—and that's got to be done before anybody can decide where ARP shelters should be located or how many of them ought to be provided.

What are *your* thoughts on ARP for America?

* * *

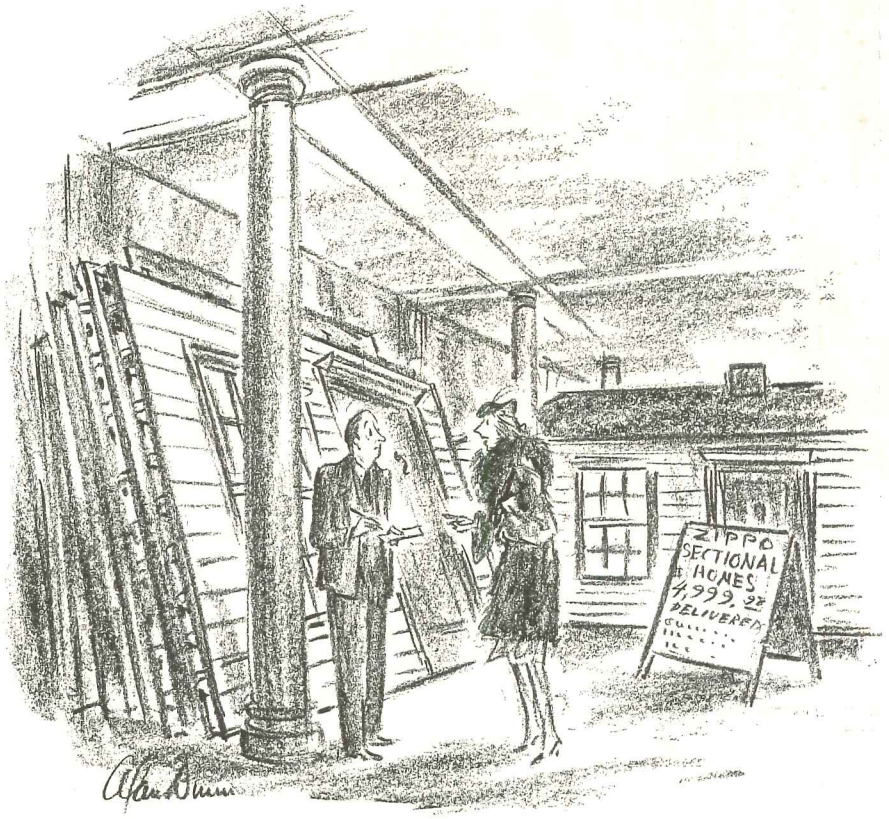
Look for the 1940 index in the January RECORD. We had cooked up a scheme to get it in December but it seems we were all wrong. In libraries all over the country they're used to see indexes for *this* volume in the *next* volume—don't ask us why! And we were also wrong about compiling it on a yearly basis. Apparently it doesn't make things simpler, as we thought it would, but in some obscure way just mixes everybody up. So we've reformed. For 1941 there'll be *two* indexes: For the first six months we'll put one in the July 1941 issue; and you can turn to the January 1942 issue for the index of 1941's last six months.

The architects of the Brazilian Press Assocation (ABI) Building in Rio de Janeiro—see page 74 et seq.—are young, and are as remarkable professionally as their building is architecturally. Marcelo Roberto is 32. He graduated from Rio's School of Fine Arts in 1930, and now holds the chair of "Urbanisme" at the Brazilian Federal District University in Rio de Janeiro.

Milton Roberto is 26 and graduated from the same School of Fine Arts in 1934. It was Milton who won first prize in ABI's competition for the design of its new office building. A year after this award, the brothers Roberto won another: first in the competition for the main building at Rio's Santos Dumont Airport. Two years ago they won two more: the Brazilian Industrial Retirement Pension Mutual, and the Brazilian Anti-Tuberculosis Society's new buildings.

Their atelier is a family affair. In addition to a staff of 17 assistants, the youngest Roberto—Mauricio, 19, now an architectural student — collaborates

(*Continued on page* 10)



"And I want it wrapped as a gift."

—Drawn for the RECORD by Alan Dunn

Model of New York City's new Criminal Courts and Prison Building.
Harvey Wiley Corbett and Charles B. Meyers, Architects.

"The true Administration of Justice is the firmest pillar of good Government"

. . George Washington

RAPIDLY nearing completion, New York City's Criminal Courts and Prison Building (designed and constructed under the supervision of the Dept. of Public Works, Irving V. A. Huie, Commissioner) promises to be one of the city's most interesting and impressive structures. Designed to give the utmost in utility, its beauty is noteworthy in every detail.

Typical of the materials employed here are the 3,200 Aluminum windows in the Criminal Courts Building. There for a lifetime of service, they are unexcelled in appearance, provide a maximum of glass area, remarkably easy to open and close, permanently weather-tight.

And, in this and the adjoining Prison Building, Aluminum window subframes, mullions and louvres are used. 2,115 cast Aluminum spandrels grace the exterior. Aluminum handrails, stair treads and nosings, ornamental trim, lighting fixtures and many Aluminum doors dress up the interior.

ALUMINUM COMPANY OF AMERICA,
2167 Gulf Building, Pittsburgh, Pennsylvania.

Architect's drawing superimposed on street scen
to show how finished building will actually appe

Showing how construction had progressed
September 13, 1940.

ALCOA ALUMINUM

(Continued from page 7)

with his brothers; and their sister, Marguerite — permanently intrigued, perhaps, by the shop talk of her brothers —acts as their secretary.

Perhaps their youth gave Marcelo and Milton courage to startle ultra-conservative Rio—a city of lush gardens, avenues of palms, mosaic sidewalks, and colonnaded, corniced, Renaissance-palatial architecture—with the ABI Building. Whatever may have influenced the design of this building, our Brazilian correspondent, Frank Arnau, writes that ". . . its originality of conception . . . caused, during construction, a wave of debate. . . ." He adds that the building has since met with "unrestricted approval, and has been taken as model for several recent buildings."

* * *

Here's a real chance for you thumbnail sketchers! We answered the telephone the other day to hear a sweet young voice from *PM*, New York's newest newspaper, ask if any comprehensive plan for rebuilding London had been completed. We gasped a bit and said we didn't know of any. "Well," the voice said, "I suppose it *is* a bit early. But I just thought I'd find out for sure!"

* * *

F. V. Altvater of Duke University, Durham, N. C., advises that he has "a quantity of heart pine boards from 9 to 22 in. in width which came from a house approximately 200 years old." Mr. Altvater invites correspondence from any readers who may be interested in their disposal.

* * *

The design of the Oregon garden which was published on p. 84 of the October issue should have been credited to John Yeon, Designer, of Portland.

* * *

Building-outlook flash! Increased volumes in all classifications of construction, except religious buildings, are forecast for 1941, according to estimate figures released by the F. W. Dodge Statistical and Research Division. Gains forecast range from 6 to 112% or an average of 14% for total construction over the estimate made for the 1940 construction volume.

On that basis is looks as if architects would be busier than ever next year. We'll give you more detailed dope in the January issue; and this statistical morsel was squeezed under our December issue deadline merely to provide an extra, anticipatory glow to your Christmas holidays. So, Merry Christmas from all of us.—The Editors.

WITH RECORD READERS

Owners and Architects Get Certificates of Merit for Small-House Design

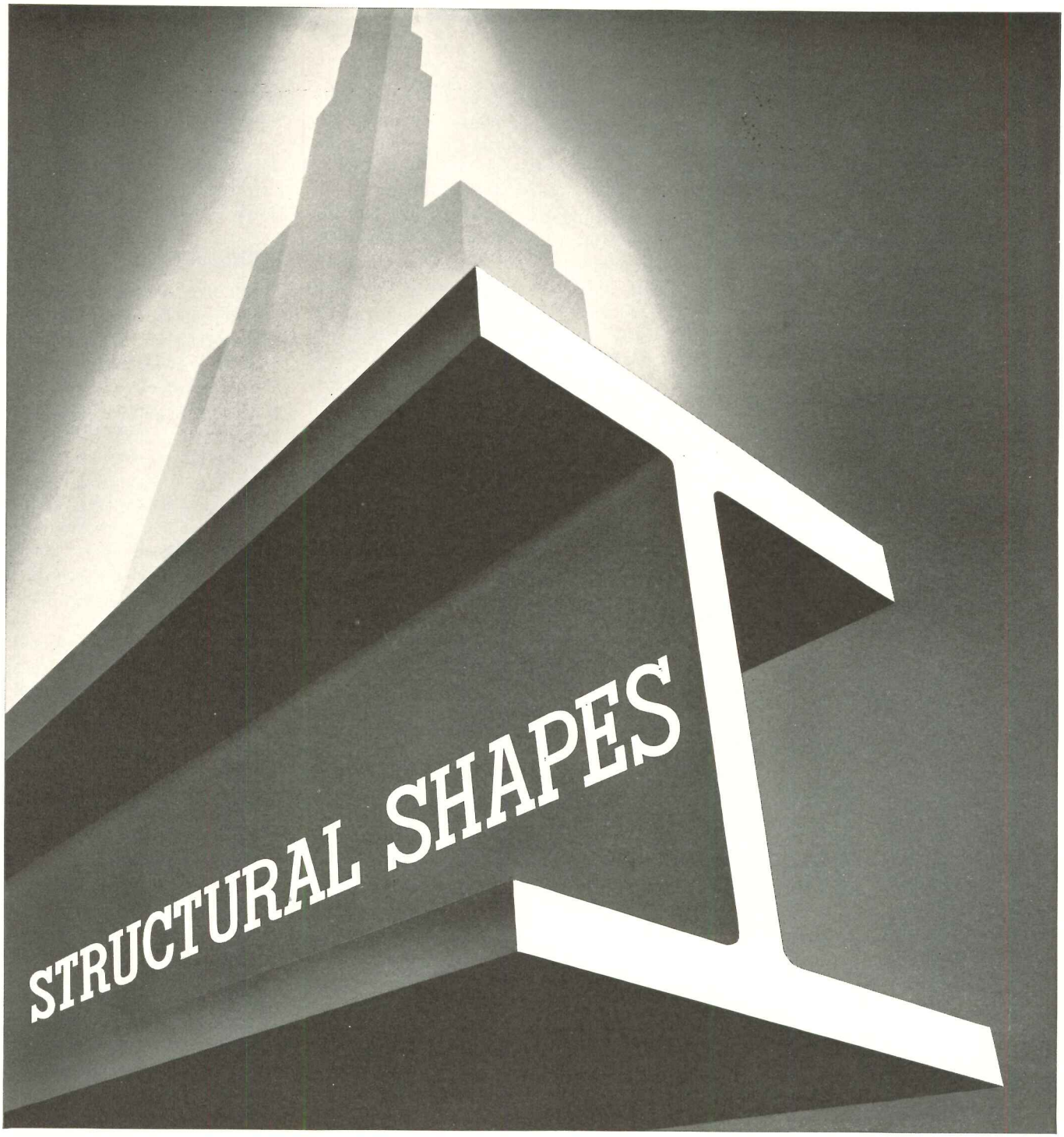
WITH PUBLIC RELATIONS a major element in their purpose, ten architectural societies in and about New York City joined last month in awarding certificates of merit to the designers and owners of eleven small houses recently erected in the metropolitan area. Houses to be eligible for this recognition must have cost the first occupant less than $7,000, comprised no more than six rooms, and been completed between January 1, 1938 and September 30, 1940.

The New York Chapter AIA—heading the participating societies—lists the following objectives in making the awards, planned for continuance as an annual event: "to establish a yardstick of excellence among low-cost individual houses designed by registered architects; to spotlight the architect in this field in order to expand his authority and increase his opportunities—the architects' advice should compete forcefully with that of builders, realtors, and supply companies in establishing 'what the people want'; to provide another effective means of co-operation among the local societies . . .; to appeal to pride of ownership of the certified houses (hence, the duplicate certificates awarded to owners) and, thus, encourage architecture and finer communities."

As a further step in this direct address to the small-house problem, an ex-

(Continued on page 12)

THREE SMALL HOUSES from the group of eleven awarded certificates of merit for excellent design. Above: the R. Lincoln Hedlander residence (special mention), Greenwich, Conn.; architects were Coggins & Hedlander, Greenwich. Right, top: the George Laubendorfer residence, Harmon-on-Hudson, N. Y.; designed by Evans, Moore & Woodbridge, New York City. Right, bottom: the Saul Neivert residence, Elizabeth, N. J., for which Harry Maslow, Elizabeth, was the architect.



from 3-in. Standard to 36-in. Wide-Flange

Bethlehem's range of structural shapes includes every size used in construction work.

Wide-flange beams from 8-in. to 36-in.; standard beams from 3-in. to 24-in., light beam sections from 6-in. to 12-in., including intermediate depths. Bethlehem rolls these shapes regularly and has complete facilities for producing and servicing.

In addition to beam shapes Bethlehem rolls all angles, tees, zees, channels, car-building and shipbuilding shapes—a range of structural materials that makes Bethlehem a dependable and convenient source of supply for all structural steel.

BETHLEHEM STEEL COMPANY

BETHLEHEM STEEL

(Continued from page 10)

hibit was prepared from the photographs and blueprints of houses submitted for award, and opened to the public at the Architectural League, New York City—"excellent newspaper publicity . . . brought many a potential client into the League to see the display." The exhibit, developed by New York Chapter members *M. W. Bacon*, *Harvey Clarkson*, *C. P. Donnelly*, *S. M. Shelov*, and *S. R. Smith*, under the direction of *Nicol Bissell*, is scheduled to go on tour among the other participating society precincts.

Since, with the exception of one special mention, the Jury made no distinctions among the certificate winners, the three houses pictured on page 10 were chosen as illustrative of the over all character of the group. Architects for one or more of the small houses not pictured were: *R. G. Belcher*, New York City; *Wesley S. Bessell*, New York City; *Evans, Moore & Woodbridge*, New York City; *Richard J. Heidelberger*, Seaford Manor; *Ralph M. Karger*, Forest Hills, and *Charles F. Mink*, Larchmont.

The Jury of Award included *Piers Brookfield*, Brooklyn Chapter AIA; *William Cain*, Bronx Society of Architects; *Benson Eschenbach*, Westchester Chapter AIA; *Randolph Evans*, New York Chapter AIA; *Herbert Gibson*, Connecticut Chapter AIA; *Matthew Leizer*, Staten Island Society of Architects; *Samuel L. Malkind*, Brooklyn Society of Architects, and *Joseph Unger*, Queens Society of Architects.

The New York Society of Architects and the Westchester County Society were the two other participating organizations.

Edward Langley Scholarships for 1941

FROM JANUARY 1 to March 1, 1941, the American Institute of Architects, will receive proposals of candidates for Edward Langley Scholarships.

Awards may be made to any persons engaged in the practice of architecture, either in the United States or Canada—architects in active practice; architectural draftsmen; teachers in schools of architecture; students about to be graduated from such schools; and architectural graduate students.

Any architect in the United States or Canada may propose any other architect or draftsman residing in the same country; the faculty or head of any accredited architectural school in the U. S. or Canada may propose any teacher, student about to be graduated, or graduate student in such school.

Further information and proposal forms may be obtained from the American Institute of Architects, 1741 New York Avenue, Washington, D. C.

Organization Notes

WITH ITS REGULAR monthly business meeting on November 6, the San Francisco Architectural Club entered into its fortieth year of existence.

In respect of this anniversary, *Clyde F. Trudell*, elected president for the coming year, says: "By training young architectural draftsmen through its classes of instruction in design, engineering, specifications, and estimating, the San Francisco Architectural Club has contributed more throughout the last 40 years to the growth and architectural beauty of our city than any other similar medium."

Other Club officers elected for 1941 were: *Edmund Rybicki*, Vice-president; *Edward Isola*, Secretary; and *Raymond Carpenter*, Treasurer.

* * *

SIXTY ARCHITECTS from various parts of Massachusetts met recently at the Boston Architectural Club and organized the Massachusetts Association of Architects. Stated objectives, according to *Raphael A. Elcock*, were: "to provide a body wherein all qualified architects, architectural draftsmen, teachers, and students may act together for the benefit of the profession; to offer support of state-wide policies; to formulate and enforce principles of fair practice in professional relations, and to represent and act for the profession within the state."

Necrology

EDWARD JOSEPH HARDING, Managing Director of Associated General Contractors of America, died recently in Washington, D. C., at the age of 51.

During the years since 1906, which marked his first association with the construction industry, Mr. Harding worked on the New York City Hudson Tunnels and the Hudson Terminal Building, and from 1917 to 1921 was manager of the James Stewart Co., general contractors. Construction projects under his management included: Camp Pike, Little Rock, Ark.; Camp Bragg, Fayetteville, N. C.; The Coast Air Station,

(Continued on page 14)

Vinylite veneer on Transite Walls forms an attractive finish in this executive office.

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JM JOHNS-MANVILLE TRANSITE WALLS Member of

WITH RECORD READERS

(*Continued from page 12*)

Long Island; Camp Barges, Baldwinville, N. Y.; and the Naval Base and Arsenal at Norfolk, Va. He had been Managing Director of the Associated General Contractors since 1930.

At the time of his death, in addition to his regular duties, Mr. Harding was serving as a member of the Construction Advisory Committee to the Army and Navy Munitions Board, assisting in the defense construction program, and was a member of the Federal Advisory Council for Employment Security.

* * *

ALBERT G. BERGER, New York City architect, died last month at the age of 61.

During the past 17 years, as a partner in the firm of Sugarman and Berger, he designed buildings valued at over $150,000,000, among which were: the Hotel New Yorker, Roerich Museum, and the Navarre Garment Center, New York City.

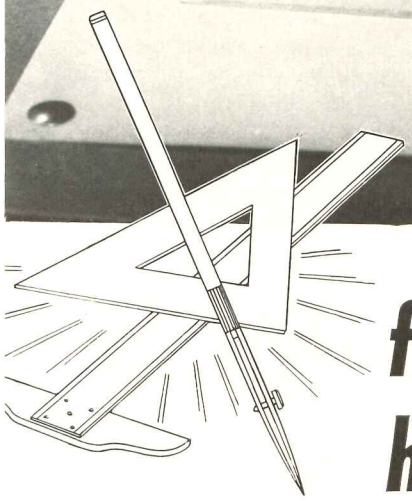
Mr. Berger, a graduate of the University of Budapest, came to the United States in 1904 and started his career as a bricklayer. At the time of his death he had come to be regarded as a pioneer in the architectural profession; the plans for the last project on which he worked, Rockcliffe Apartments in Montclair, N. J., specified, for the first time, a new type of hollow wall designed to solve the waterproofing problem.

Soap Sculpture Competition

HAVING RECENTLY distributed $2,200 in total awards for winning soap sculptures, the National Soap Sculpture Committee announces the opening of a new competition, seventeenth in the annual series, to close on May 15, 1941. Designers, craftsmen, or students with ability to fashion creditable statuary from standard-sized cakes of white soap may secure fuller details on this competition from *Henry Bern*, Committee Secretary, 80 E. 11th St., N. Y. C.

CALENDAR OF EVENTS

- **December 10, 17**—Lectures on "Design In Interiors" by Grace Cornell. Tuesdays, 3 p. m., Metropolitan Museum of Art, New York City.
- **January 27–29**—47th Annual meeting, American Society of Heating and Ventilating Engineers. Hotel Muehlebach, Kansas City, Mo.



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Architects are going to be busy men the next few years, judging by all indications. You will find it helpful to have factual information at your very fingertips. For your assistance, we have just prepared such material. To receive it, simply mail the coupon below.

See the 24-page Mesker catalog in Sweet's 1940 Architectural Files, section 15-15

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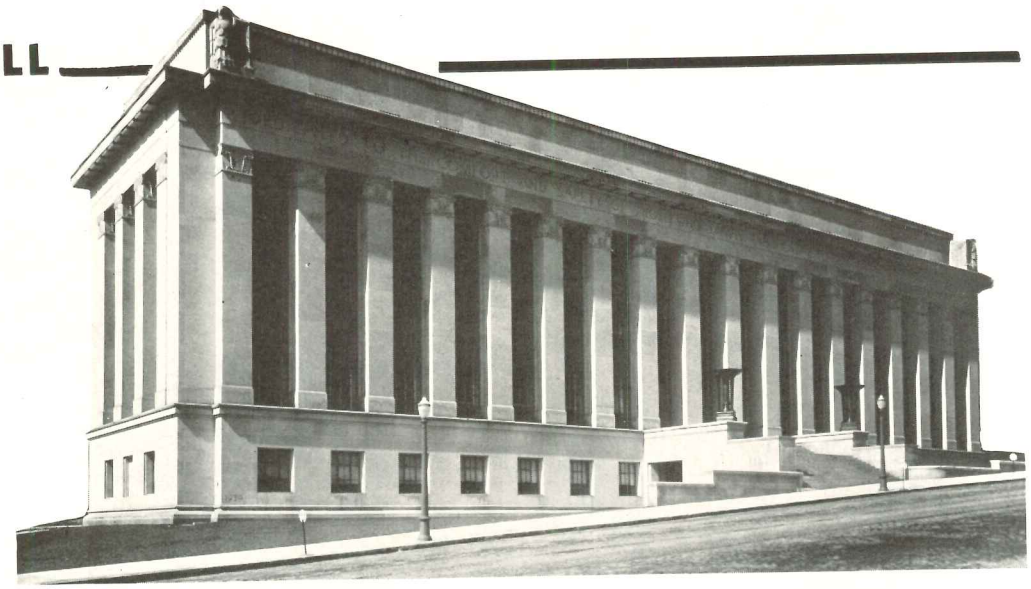
THE RECORD POLL



EIGHTEEN NOMINATIONS: State Highway Commission Building, designed by Carneal, Johnston & Wright, Architects and Engineers

RICHMOND CITIZENS FAVOR TRADITIONAL STYLES

FOURTEEN NOMINATIONS: State Library Building; Carneal, Johnston & Wright, Baskervill & Son, Associated Architects; Alfred Githens and Francis Keally were Consulting Architects.

TWELVE NOMINATIONS: new Hospital at the Medical College of Virginia; Baskervill & Son were the architects.

Photos by Dementi, from Sickles

HAVING LAST MONTH yielded up these pages to the *lebensraum* demands of a dynamically expanded Building Types section, the Record Poll settles back into its own with the returns from Richmond, Va., originally scheduled for publication in the November issue.

Although the response from Richmond citizens, asked to nominate outstanding examples of recent architecture in their city, suggests a local preference in general for the architectural styles of tradition, it is interesting to note the popular endorsement of up-to-the-minute modern for such particular structures as the tobacco factory and radio station pictured on page 18.

Nominations were submitted by the following: *Theodore F. Adams*, pastor; *Dr. Wyndham B. Blanton*, physician; *Dr. F. W. Boatwright*, university president; *Gamble Rogers*, Director, Department of Public Works; *Dr. John Stewart Bryan*, college president; *Thomas C. Colt*, museum director; *Virginius Dabney*, editor; *Willard F. Day*, County Manager; *H. E. Doyle*, builder; *Eppa Hunton, IV*, lawyer; *Robert M. Jeffress*, manufacturer; *O. M. Lafoon*, realtor; *Dr. B. H. Martin*, physician; *Dr. Stuart McGuire*, surgeon; *Rev. George Ossman; Raymond B. Pinchbeck*, university dean; *W. T. Sanger*, medical college president; *John Slavin*, artist; *W. H. Schwarzschild*, bank president; *Morton G. Thalhimer*, realtor; *Dr. W. T Vaughan*, physician; *Dr. Emanuel U. Wallerstein*, physician; *Dr. Frank L. Wells*, pastor; *Lewis C. Williams*, lawyer.

Buildings receiving several nominations but less than those pictured: Central National Bank Bldg. (John Eberson, Architect; Carneal, Johnston & Wright, Associate Architects); Crozet House (restoration by Edward F. Sinnott, Architect); Henrico Theater (Edward F.

(*Continued on page* 18)

CURRENT TRENDS OF BUILDING COSTS

Compiled by Clyde Shute, Manager, Statistical and Research Division, F. W. Dodge Corporation, from data collected by E. H. Boeckh & Associates, Inc.

CURVES INDICATE trend of the combined material and labor costs in the field of residential frame construction. The base line, 100, represents the U. S. average for 1926-1929 for residential frame construction.

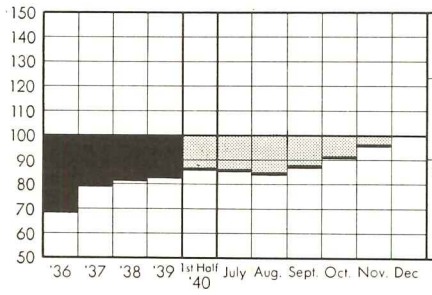
Tabular information gives cost index numbers for the nine common classes of construction. The base, 100, in each of the nine classes represents the U. S. average for 1926-1929 for each particular group. The tables show the index numbers for the month for both this year and last.

Cost comparisons, as percentage differences for any particular class of construction, are possible between localities or periods within the same city by a simple process of dividing the difference between the two index numbers by one of them. For example: if index for city A is 110 and index for city B is 95 (both indexes for A and B must be for the same class of construction), then costs in A are approximately 16% higher than in B $\left(\frac{110-95}{95} = 0.158.\right)$ Conversely it may be said that costs in B are approximately 14% lower than in A $\left(\frac{100-95}{110} = 0.136.\right)$

Similar cost comparisons, however, cannot be made between different classes of construction since the index numbers for each class of construction relate to a different U. S. average for 1926-1929.

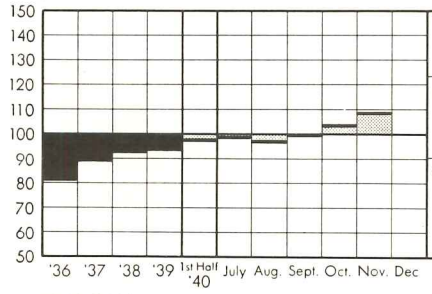
CONSTRUCTION COST INDEX U. S. average, including materials and labor, for 1926 - 1929 equals 100.

ATLANTA



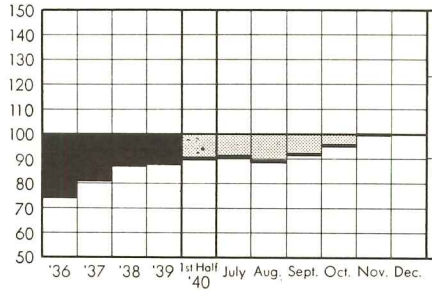
	Nov.'39	Nov.'40
Residences		
Frame	82.8	95.6
Brick	86.0	96.2
Apartments		
Br. & Wood	86.1	96.5
Br. & Conc.	95.1	98.0
Br. & Steel	95.0	99.3
Comm. & Fact.		
Frame	81.6	95.0
Br. & Wood	88.6	95.4
Br. & Conc.	97.4	99.1
Br. & Steel	94.6	98.7

BALTIMORE



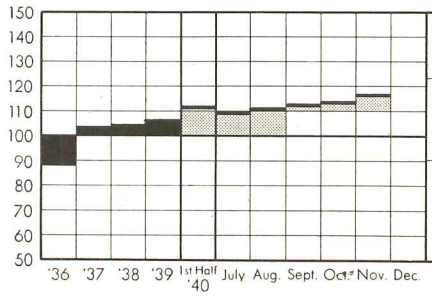
	Nov.'39	Nov.'40
Residences		
Frame	93.5	108.3
Brick	95.5	108.4
Apartments		
Br. & Wood	95.6	109.1
Br. & Conc.	99.3	105.1
Br. & Steel	99.2	106.0
Comm. & Fact.		
Frame	96.2	110.2
Br. & Wood	96.6	108.4
Br. & Conc.	100.2	106.0
Br. & Steel	101.4	109.4

BIRMINGHAM



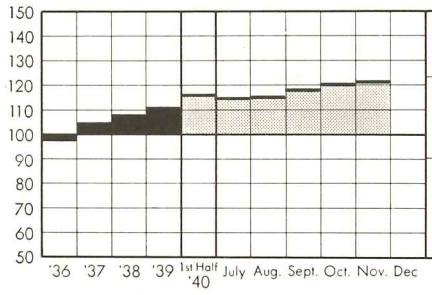
	Nov.'39	Nov.'40
Residences		
Frame	87.8	99.9
Brick	90.9	99.7
Apartments		
Br. & Wood	91.5	100.3
Br. & Conc.	96.1	96.4
Br. & Steel	96.2	98.2
Comm. & Fact.		
Frame	85.9	100.2
Br. & Wood	95.1	101.5
Br. & Conc.	96.3	97.5
Br. & Steel	95.6	98.5

BOSTON



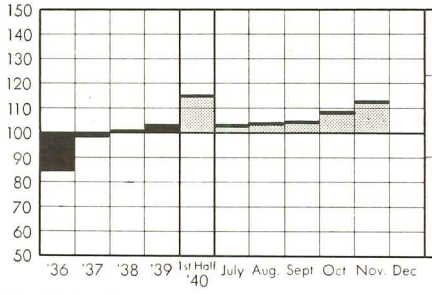
	Nov.'39	Nov.'40
Residences		
Frame	106.2	116.0
Brick	110.4	118.0
Apartments		
Br. & Wood	110.1	117.7
Br. & Conc.	116.3	117.7
Br. & Steel	113.7	116.4
Comm. & Fact.		
Frame	106.6	117.3
Br. & Wood	111.5	116.9
Br. & Conc.	118.5	119.7
Br. & Steel	118.2	120.5

CHICAGO



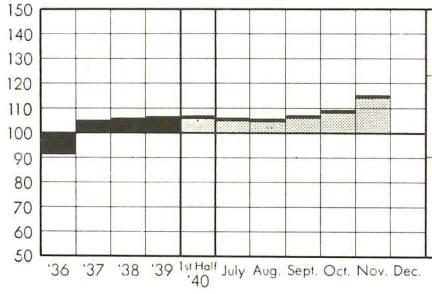
	Nov.'39	Nov.'40
Residences		
Frame	110.6	120.8
Brick	112.5	120.8
Apartments		
Br. & Wood	111.1	119.5
Br. & Conc.	123.6	126.7
Br. & Steel	118.7	123.0
Comm. & Fact.		
Frame	115.9	125.9
Br. & Wood	109.3	115.6
Br. & Conc.	127.6	129.3
Br. & Steel	122.6	125.6

CINCINNATI



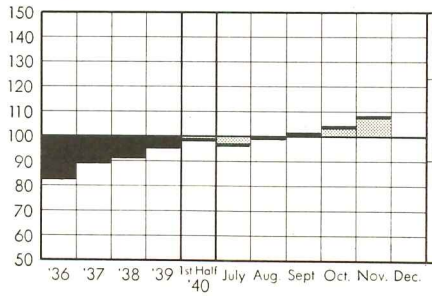
	Nov.'39	Nov.'40
Residences		
Frame	103.3	112.0
Brick	106.2	113.3
Apartments		
Br. & Wood	105.9	112.7
Br. & Conc.	113.9	116.7
Br. & Steel	110.4	113.9
Comm. & Fact.		
Frame	106.0	113.1
Br & Wood	107.1	112.1
Br. & Conc.	116.5	119.4
Br. & Steel	113.7	115.7

CLEVELAND



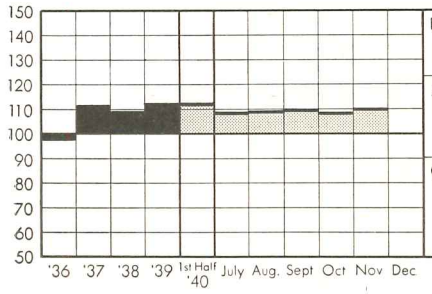
	Nov.'39	Nov.'40
Residences		
Frame	106.2	115.0
Brick	109.6	116.8
Apartments		
Br. & Wood	109.5	116.6
Br. & Conc.	115.3	117.1
Br. & Steel	112.8	115.3
Comm. & Fact.		
Frame	108.2	117.7
Br. & Wood	109.5	114.6
Br. & Conc.	118.0	119.9
Br. & Steel	117.7	119.4

DALLAS



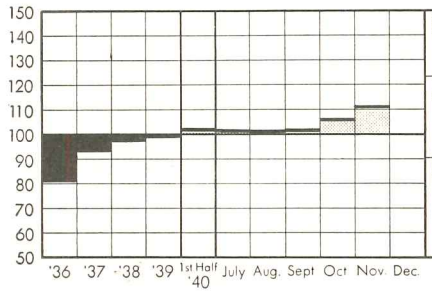
	Nov.'39	Nov.'40
Residences		
Frame	95.1	107.6
Brick	95.8	106.6
Apartments		
Br. & Wood	96.7	107.7
Br. & Conc.	98.8	102.1
Br. & Steel	100.2	105.2
Comm. & Fact.		
Frame	93.5	108.7
Br. & Wood	96.0	105.0
Br. & Conc.	98.9	101.3
Br. & Steel	101.9	108.1

DENVER



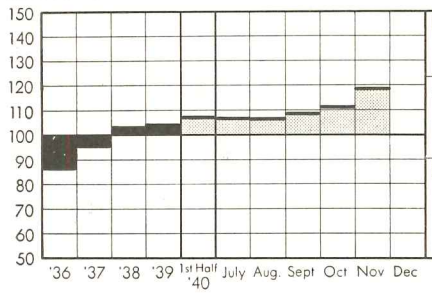
	Nov.'39	Nov.'40
Residences		
Frame	112.1	109.8
Brick	112.0	111.3
Apartments		
Br. & Wood	111.2	110.8
Br. & Conc.	116.1	116.9
Br. & Steel	114.4	114.9
Comm. & Fact.		
Frame	115.4	110.8
Br. & Wood	109.5	111.0
Br. & Conc.	117.8	119.8
Br. & Steel	117.0	118.2

DETROIT



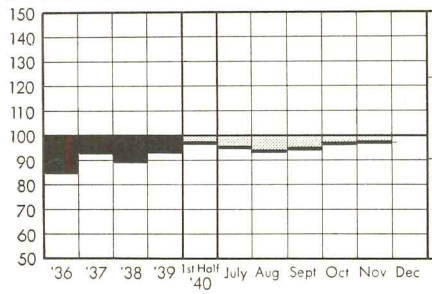
	Nov.'39	Nov.'40
Residences		
Frame	98.8	110.7
Brick	102.7	111.8
Apartments		
Br. & Wood	102.9	112.2
Br. & Conc.	108.6	110.5
Br. & Steel	107.5	111.1
Comm. & Fact.		
Frame	101.6	112.2
Br. & Wood	104.2	110.4
Br. & Conc.	110.1	111.6
Br. & Steel	111.4	113.7

KANSAS CITY



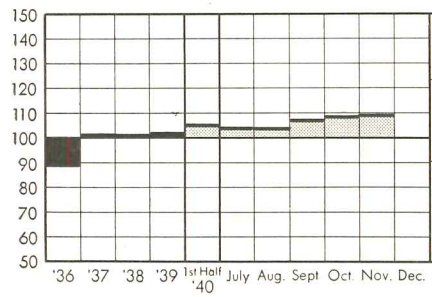
	Nov.'39	Nov.'40
Residences		
Frame	104.4	118.2
Brick	109.9	120.6
Apartments		
Br. & Wood	109.8	120.4
Br. & Conc.	118.3	120.3
Br. & Steel	115.4	118.9
Comm. & Fact.		
Frame	107.2	119.5
Br. & Wood	113.0	120.2
Br. & Conc.	121.6	122.8
Br. & Steel	120.0	122.7

LOS ANGELES



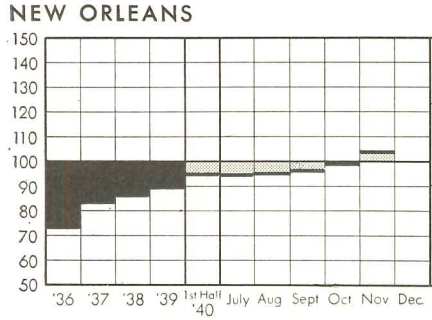
	Nov.'39	Nov.'40
Residences		
Frame	93.6	97.1
Brick	97.2	98.2
Apartments		
Br. & Wood	97.5	98.9
Br. & Conc.	103.7	102.1
Br. & Steel	105.0	104.7
Comm. & Fact.		
Frame	96.4	97.2
Br. & Wood	96.8	97.6
Br. & Conc.	104.9	101.2
Br. & Steel	106.2	106.0

MINNEAPOLIS



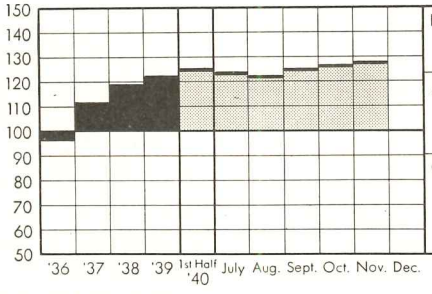
	Nov.'39	Nov.'40
Residences		
Frame	101.9	108.9
Brick	105.0	110.3
Apartments		
Br. & Wood	104.2	109.6
Br. & Conc.	113.5	113.6
Br. & Steel	110.7	112.2
Comm. & Fact.		
Frame	104.2	111.0
Br. & Wood	103.6	107.2
Br. & Conc.	117.2	116.9
Br. & Steel	114.5	115.7

NEW ORLEANS



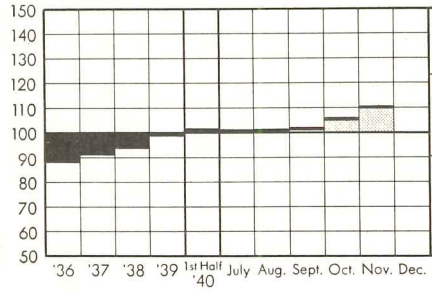
	Nov.'39	Nov.'40
Residences		
Frame	89.0	103.6
Brick	90.3	102.8
Apartments		
Br. & Wood	91.3	103.2
Br. & Conc.	95.4	102.4
Br. & Steel	98.3	104.1
Comm. & Fact.		
Frame	89.5	104.8
Br. & Wood	91.7	101.7
Br. & Conc.	94.9	101.5
Br. & Steel	98.5	103.7

NEW YORK



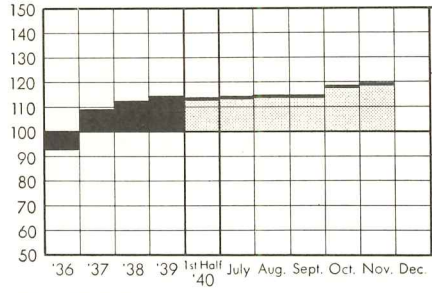
	Nov.'39	Nov.'40
Residences		
Frame	122.1	126.7
Brick	123.3	127.8
Apartments		
Br. & Wood	122.5	127.2
Br. & Conc.	130.6	132.9
Br. & Steel	125.9	128.4
Comm. & Fact.		
Frame	126.9	130.0
Br. & Wood	119.6	124.3
Br. & Conc.	133.3	135.8
Br. & Steel	130.0	132.2

PHILADELPHIA



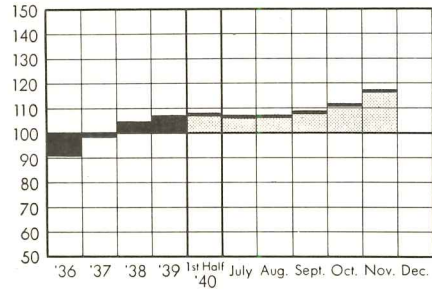
	Nov.'39	Nov.'40
Residences		
Frame	99.2	110.1
Brick	102.6	110.9
Apartments		
Br. & Wood	102.9	111.5
Br. & Conc.	105.7	107.6
Br. & Steel	104.1	107.8
Comm. & Fact.		
Frame	101.4	110.4
Br. & Wood	105.0	111.1
Br. & Conc.	106.7	108.1
Br. & Steel	105.5	109.2

PITTSBURGH



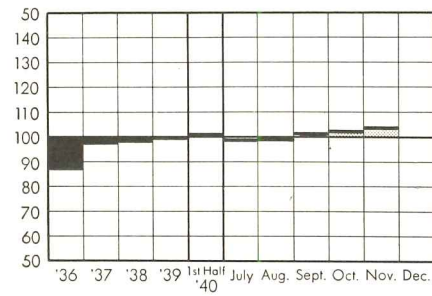
	Nov.'39	Nov.'40
Residences		
Frame	113.8	118.4
Brick	117.0	119.9
Apartments		
Br. & Wood	115.7	119.3
Br. & Conc.	117.5	118.1
Br. & Steel	114.2	115.2
Comm. & Fact.		
Frame	114.9	119.5
Br. & Wood	116.5	119.2
Br. & Conc.	119.1	119.6
Br. & Steel	116.9	116.8

ST. LOUIS



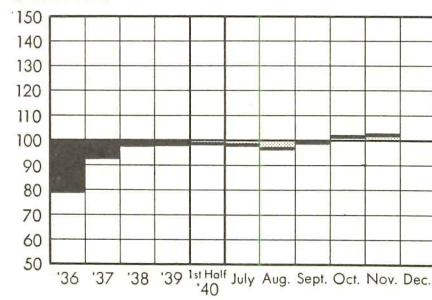
	Nov.'39	Nov.'40
Residences		
Frame	107.0	116.6
Brick	110.2	117.6
Apartments		
Br. & Wood	109.9	117.3
Br. & Conc.	118.7	120.2
Br. & Steel	116.4	118.9
Comm. & Fact.		
Frame	108.8	118.5
Br. & Wood	110.3	115.4
Br. & Conc.	119.8	120.7
Br. & Steel	119.2	120.5

SAN FRANCISCO



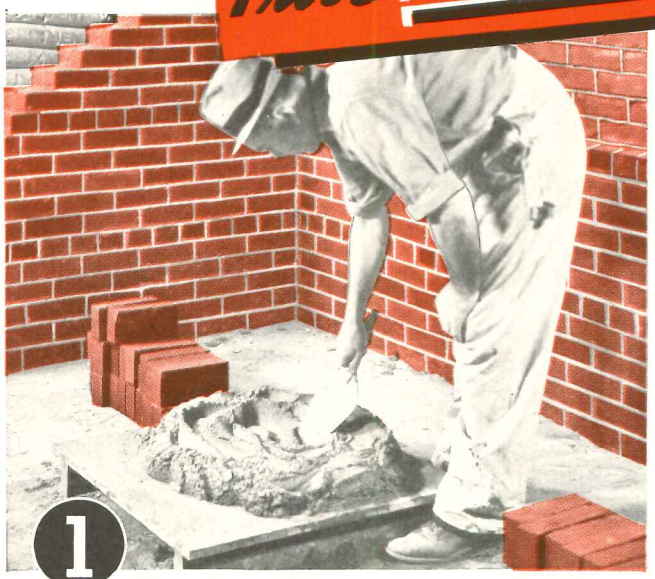
	Nov.'39	Nov.'40
Residences		
Frame	99.2	103.1
Brick	105.7	107.8
Apartments		
Br. & Wood	104.5	107.9
Br. & Conc.	117.4	115.5
Br. & Steel	114.4	114.0
Comm. & Fact.		
Frame	99.2	102.7
Br. & Wood	107.4	109.2
Br. & Conc.	121.9	118.6
Br. & Steel	116.5	114.8

SEATTLE



	Nov.'39	Nov.'40
Residences		
Frame	96.7	101.8
Brick	104.4	108.3
Apartments		
Br. & Wood	103.8	107.6
Br. & Conc.	119.2	119.5
Br. & Steel	114.9	115.8
Comm. & Fact.		
Frame	96.4	100.4
Br. & Wood	108.3	110.9
Br. & Conc.	125.3	125.1
Br. & Steel	118.7	118.3

MAKE THIS TEST — *Prove* BRIXMENT is BEST!



Mix a batch of 1-3 Brixment mortar (left) and a batch of 50-50 cement-lime mortar made with the same proportion of sand (right). Get any competent bricklayer to test them

on the board—to spread them on the wall—to lay up a few brick with each of the two mortars. Then ask him *which* has the best workability!

BRIXMENT *Assures More Economical Brickwork*

Aside from the cost of the brick itself, the most expensive item in masonry construction is the bricklayer's time.

Therefore the most economical mortar you can buy is the one that enables the bricklayer to lay the most brick per day. You cannot afford to give your bricklayer any mortar which causes unnecessary work, such as constant retempering, stooping to the board to replace mortar that failed to stick when he threw up the head-joint, etc. . . To secure economical brickwork, the mortar must have excellent workability.

The plasticity of Brixment mortar is *ideal.* It approaches that of straight lime putty. It enables the bricklayer to do faster, neater brickwork, with the brick well bedded and the joints well filled.

This is the principal reason why Brixment reduces the cost of brickwork. But in addition, less labor and supervision are required in mixing. It can be mixed as needed, to come out even at the end of the day—no mortar is wasted. And it makes a neater job that costs less to clean down.

Louisville Cement Co., *Incorporated*
Louisville, Kentucky

BRIXMENT

For Mortar and Stucco

REVIEWS OF CURRENT LITERATURE

Compiled by Elisabeth Coit, AIA

MONEY IN MOTION (The Social Functions of Banking). By Arthur C. Holden, AIA. Harper & Brothers, New York City. 242 pp., 5½ by 8½ in. $2.50

PUBLIC WORKS programs and housing discussions of recent years have shown in strong relief certain deficiencies in our financial concepts and our financial machinery. Members of the building industry, observing important public improvement programs being carried through on an emergency basis with deficit financing, could scarcely fail to note a highly paradoxical situation. Here were needed projects, employing otherwise idle planning talent, construction techniques, manpower, and materials, to produce substantial community assets which would become additions to our national wealth. From the point of view of needs, we could not afford *not* to do these things; according to accepted banking concepts, we could not afford to do them.

This dilemma prompted the writing of this book by a New York architect, whose numerous magazine articles on housing finance, city-plan, and land-utilization problems, have given him a national reputation within and without his profession.

For the present task, Mr. Holden has brought to bear on the problem years of study of economics, money, and banking, as indicated by his bibliography, numbering 276 titles, of books and documents collected by him for his private library and used in developing the philosophy of long-term credit here expounded.

For it is a philosophy of long-term credit, an interpretation of current evolutionary trends toward central banking in the capital investment field, and of the need for a flexible system of financing durable goods production that is here presented; not a detailed program of banking reform. Mr. Holden traces the evolution of monetary concepts from prehistoric barter to installment credit and FHA-insured mortgages, for the purpose of pointing the direction toward a future system under which a better balanced economy, with less severe cyclical fluctuations, may be obtained. To maintain a progressive economy and an expanding civilization, a full modernized financial system must keep the construction industry continuously at work.

The author points out that current needs and demands for durable goods do not necessarily have any relationship to current accumulations of savings available for investment, although conventional banking concepts tend arbitrarily and inflexibly to tie the two together. We manage these things better in the consumer-goods field, for which an elastic central-reserve credit system is in full operation

Mr. Holden distinguishes clearly between the kind of central-reserve capital credit system he visualizes as the future result of current trends and the kind of bank nationalization demanded by the Marxists. He draws a clear distinction between the responsibilities of government and of the banking profession, and emphasizes the necessity of banking judgment in the functioning of the credit system.

He sees in modernization and liberalization of our credit concepts an opportunity for the capitalist system to function more efficiently than ever before. His views are well summarized in the following quotation:

"Capital credits may be extended on an equitable basis with predictable surety when advanced to liberate work to be done and required to be liquidated according to the savings and loan method so that the payments made indicate an approximation of the enjoyment derived. Could we but grasp the simple truth behind this statement and put it into words so crystal clear that they would not be subject to misinterpretation, we would recognize that 'capitalism' is not a mere vested right of exploitation as many have feared, but an as-yet-undeveloped institution whose true function is to facilitate the interchange of services when there is a time disparity between production and consumption."

The language and thought-sequence of this book are very simple and clear, an unusual quality in a treatise on finance. Here is a highly significant contribution to the economic thought of our times, which should be required reading for all those who desire an understanding of the evolutionary changes that are taking place in our society.

—Thomas S. Holden

DESIGN OF CONCRETE STRUCTURES. By Leonard Urquhart and Charles Edward O'Rourke. New York, McGraw-Hill Book Company, 1940. IX, 564 pp., 6¼ by 9 in. Illustrated. $4.50

CONCRETE DESIGN AND CONSTRUCTION. By W. Herbert Gibson. Chicago, American Technical Society, 1940. 500 pp., 5¾ by 8½ in. Illustrated

A.S.T.M. STANDARDS ON CEMENT. Prepared by Committee C-1 on Cement. Philadelphia, American Society for Testing Materials, 1940. IV, 103 pp., 6 by 9 in. Illustrated. $1.00

THESE THREE PUBLICATIONS together bring up to date the record of current thought and practice in concrete: design, specifications, placing, chemical analysis, physical tests.

Design of Concrete Structures, the fourth edition of a standard handbook by two Cornell professors of structural engineering, first published in 1923, is a thorough revision in accordance with the recent recommendations of the American Concrete Institute Standard Building Code. Mr. Gibson's book, a revision of his 1931 work written in collaboration with Professor W. L. Webb of the University of Pennsylvania, covers much the same ground. Both books are intended for the student; both include the theory and practice of concrete design.

The Gibson work leans in the direction of the practicing engineer. It includes recommended specifications and many photographs of structures and of tools and machines used in the manufacture and placing of concrete, even to the pneumatic-tired wheelbarrow, as well as time- and labor-saving hints. Some 200 questions, with answer references, form a useful analysis of the work and a test of the reader's knowledge.

The Urquhart and O'Rourke work has in mind the somewhat more advanced student and the professional engineer. It goes more fully, for example, into the advantages of flat-slab construction; includes useful appendices on recommendations of the A.C.I. Joint Code and 31 pages of tables and diagrams for convenient reference, in addition to those supplied in the text.

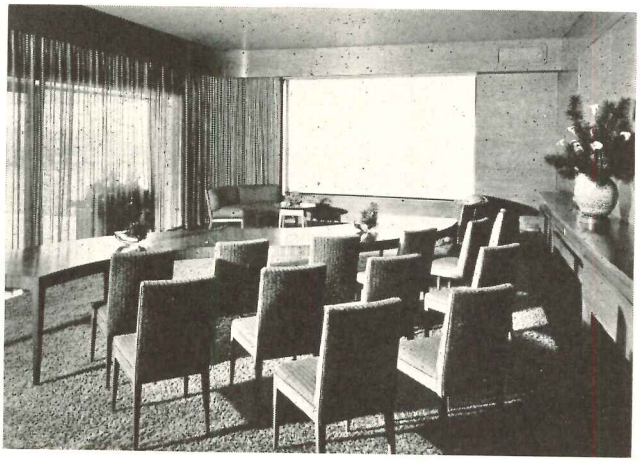
All of the specifications and test methods issued by the A.S.T.M. are included in the 1940 compilation. Changes made in the standards during the year

(Continued on page 26)

FOR CONVENIENT PROJECTION OF

Motion Pictures and Other Visual Material

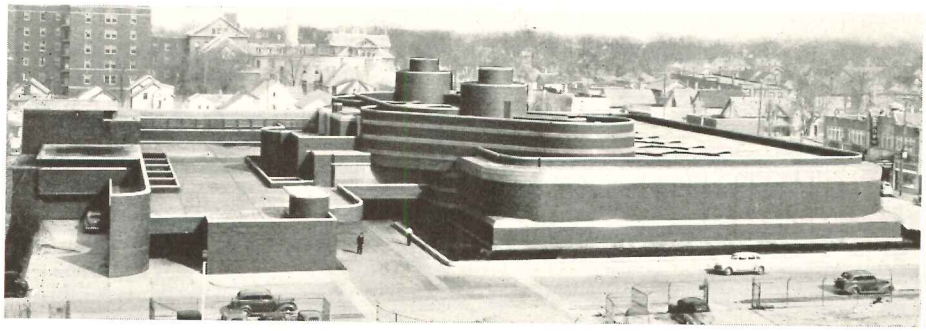
TO LARGE GROUPS



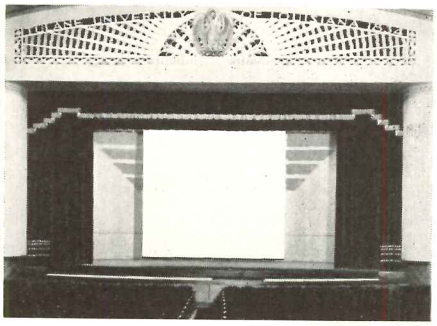
In the home of **David A. Smart,** Publisher of Esquire, the Da-Lite Electrol Screen, placed above a window is out of sight when not in use.

Specify DA-LITE ELECTROL SCREENS

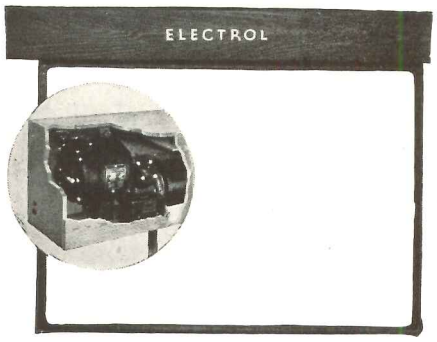
(Reg. U. S. Pat. Off.)



Frank Lloyd Wright specified the Da-Lite Electrol for the auditorium of this modern plant of **S. C. Johnson & Sons** at Racine, Wisconsin.



At **Tulane University,** New Orleans, in the new McAlister Auditorium, a Da-Lite Electrol helps to assure perfect projection.



The screen, motor drive, and case form one complete unit, that can be easily installed in recesses in the ceiling, to form an integral part of the building construction. The unit may also be hung from wall or ceiling brackets which are furnished. **The Electrol** is one of many styles of screens in the Da-Lite line. A line famous for quality for 31 years.

In homes, schools, clubs, industrial plants and other buildings where screens larger than 6 x 8 feet are needed for showing pictures to large groups, the Da-Lite Electrol Screen offers many advantages.

The Electrol Screen is electrically operated, by a remote control switch placed at any desired location. By merely pushing a button, the screen can be raised or lowered automatically. Because the speed is constant, there is no strain on the fabric, and no danger of an accidental flip up, as is the case with spring-operated screens.

The Da-Lite Electrol Screen was built to meet the architect's requirements for a screen that would fit neatly into his construction plans. Its compact proportions, with the motor and gear drive enclosed in the case, permit easy installation in a recess in the ceiling. Out of sight, except when used, the Da-Lite Electrol does not interfere with the decorative effect of any room. The Electrol is available with either Mat White or Glass-Beaded surfaces in sizes up to 20 by 20 feet. Write for 48 page Da-Lite catalog, containing helpful suggestions on screen selection and full details on the Electrol Screen.

THE DA-LITE SCREEN COMPANY, INC.

2723 NORTH CRAWFORD AVENUE · · CHICAGO, ILLINOIS

REVIEWS OF CURRENT LITERATURE

(Continued from page 24)

are incorporated, as are the new tentative specifications covering five types of Portland cement and the newly standardized test for autoclave expansion. Testing procedures are given for chemical analysis, for sampling and physical testing, and an illustrated "Manual of Cement Testing" is included.

THE LAW OF PUBLIC HOUSING. By William Ebenstein. Madison, University of Wisconsin Press, 1940. IX, 150 pp., 7¾ by 5¾ in. $1.75

ESSENTIALS of Federal and State housing law of the past six years are outlined by a member of the University of Wisconsin Law School faculty. Brief introductory chapters present "Elements of the Housing Problem" and the role of the government in housing in this country; while a concluding chapter enumerates experiences and problems of some European countries. In addition to a detailed table of cases, the volume includes the amended form of the 1937 U.S. Housing Act and somewhat detailed accounts of two leading cases: New York City Housing Authority v. Miller (on condemnation) and Rutherford v. City of Great Falls (on the constitutionality of two housing laws).

AN INTRODUCTION TO MODERN ARCHITECTURE. By J. M. Richards. New York, Penguin Books, 1940. 126 pp., 4¼ by 7⅛ in. Plans, diagrams, 32 plates (photos). Paper cover. $0.25

A VEST POCKET BOOK this, combining a businesslike summary of the development of modern architecture with sympathetic exposition of the social and industrial period which produced it. Clear, simple, precise, and at times sparkling, the little manual will excite the new reader's interest, and for the not-so-new reader may lay such ghosts as: "functionalism;" LeCorbusier's "machine for living," which did not exclude the "personal and impulsive;" and "nationalism," which may well yield to "regionalism."

CURRENT PERIODICAL LITERATURE

How Have Architects Succeeded? National Association of Housing Officials. Selected Proceedings, Eighth Annual Meeting, Chicago, 1940, pp. 32-3

"OF THE architects who have been given this problem . . . 40% have proved capable of coping with the situation and were able to resolve its demands into acceptable economic and esthetic terms." A representative of the USHA "advised that the experience of the USHA confirmed the over-all statement that not all architects have been able to rise to the opportunity . . . USHA experience has been that too often architects are either unwilling to fight for new ideas or unable to justify them."

Housing as Architecture. By Dorothy Lefferts Moore. Magazine of Art, Washington, Oct., 1940, pp. 562-7. Illustrated

SPIRITED if somewhat arbitrary judgments by the wife of a well-known architect on the esthetics of housing as exemplified or failing of exemplification in materials, layout, purity of line and mass, and fenestration used mainly in recent public housing projects.

Savings from Insulation in Low-Cost Housing. By W. H. Purnell. Heating and Ventilating, New York, Oct., 1940, pp. 31-3

AN ARCHITECT of the Department of Regional Planning of the TVA describes tests on heat transmission through certain house structures, made at Norris under rigid control, and at Hiwassee in inhabited houses identical except for insulation.

The article points out that a small insulated house may be heated by a warm-air oil-fed burner in a first-floor chamber 3 by 6 ft., whereas an uninsulated house of the same size would require a cellar to house a heater of sufficient capacity to heat it.

Unique Roof Design: Glued Laminated Timber Arches. By Frederick Jones. Architect and Engineer, San Francisco, Oct., 1940, pp. 49-52. Illustrated

ADAPTABILITY, flexibility, and economy are advantages of a type of construction little developed in this country prior to installation of glued arches in the Service Building of the Forest Products Laboratory in 1935.

The present article shows the use of arches designed by Professor Sergev of the University of Washington for that University's one-story Penthouse Theatre.

Eight laminated wooden arches support the auditorium roof. These arches or trusses extend vertically for about 20 ft. from the side wall and continue "on a rather sharp angle" to the roof, meeting in a "hub" at the roof peak. Otherwise standard construction is used.

This type of construction makes possible wider uses for lumber and innovations in design without overcomplicating building methods. Arches to span large unobstructed areas are available with superior architectural effect; and the use of wood in a wood-producing country is not only economical but contributes to harmony of the structure with neighboring buildings.

Sensation of Warmth as Affected by the Color of the Environment. By F. C. Houghten, H. T. Olsen, and John Suciu, Jr. Heating, Piping, and Air Conditioning, New York, Nov., 1940, pp. 678-681. Illustrated

"THERE IS an accepted belief that a person's sensation of warmth may be affected by color . . . (one feels) warmer in a color scheme in which red predominates, as compared with one in which blue is the prevailing color." This article reports an experiment resulting from an exploratory study by a joint committee of the ASHVE and the Illuminating Engineering Society, in collaboration with the John B. Pierce Laboratory of Hygiene and others.

Mouth and skin temperatures and indication of the subjects' feelings of warmth were charted during a period of several days when two subjects were exposed to various colors under controlled conditions of temperature, relative humidity, and air motion. While considerable variations were noted "none of these variations shows any correlation with the color experienced." The log of the seventh and last test is reproduced.

Current Trends in Oregon Architecture. By Roi L. Morin, AIA. Architect and Engineer, San Francisco, Oct., 1940, pp. 19-38. Illustrated

PICTORIAL EXPOSITION of recent buildings to support the author's thesis that a style of architecture and building indigenous to Oregon and the Pacific Northwest is developing. Oregon design is "overwhelmingly influenced by the abundance of economical structural wood, a long season of rainfall, a deep-green background without too much sunlight, coupled with a lack of the finer clays for brick and tile and a scarcity of rich building stones and metals."

Criticism: Queen City Yacht Club. (Monthly Series). By James MacQuedy. Architectural Review, London, Sept., 1940, pp. 91-2. Illustrated

THIS small yacht-house in Seattle, Wash. has clapboard walls; windows both circular and "moderne" with horizontal muntins; and a studied asymmetry characteristic of the emancipated "twenties." It constitutes a design "reminiscent of the so-called modernists who enthusiastically adopted new period designs after the Paris Exposition of 1925, without ever being able to discard their Beaux-Arts habits of thought."

The Role of Carpet in Commercial Interiors

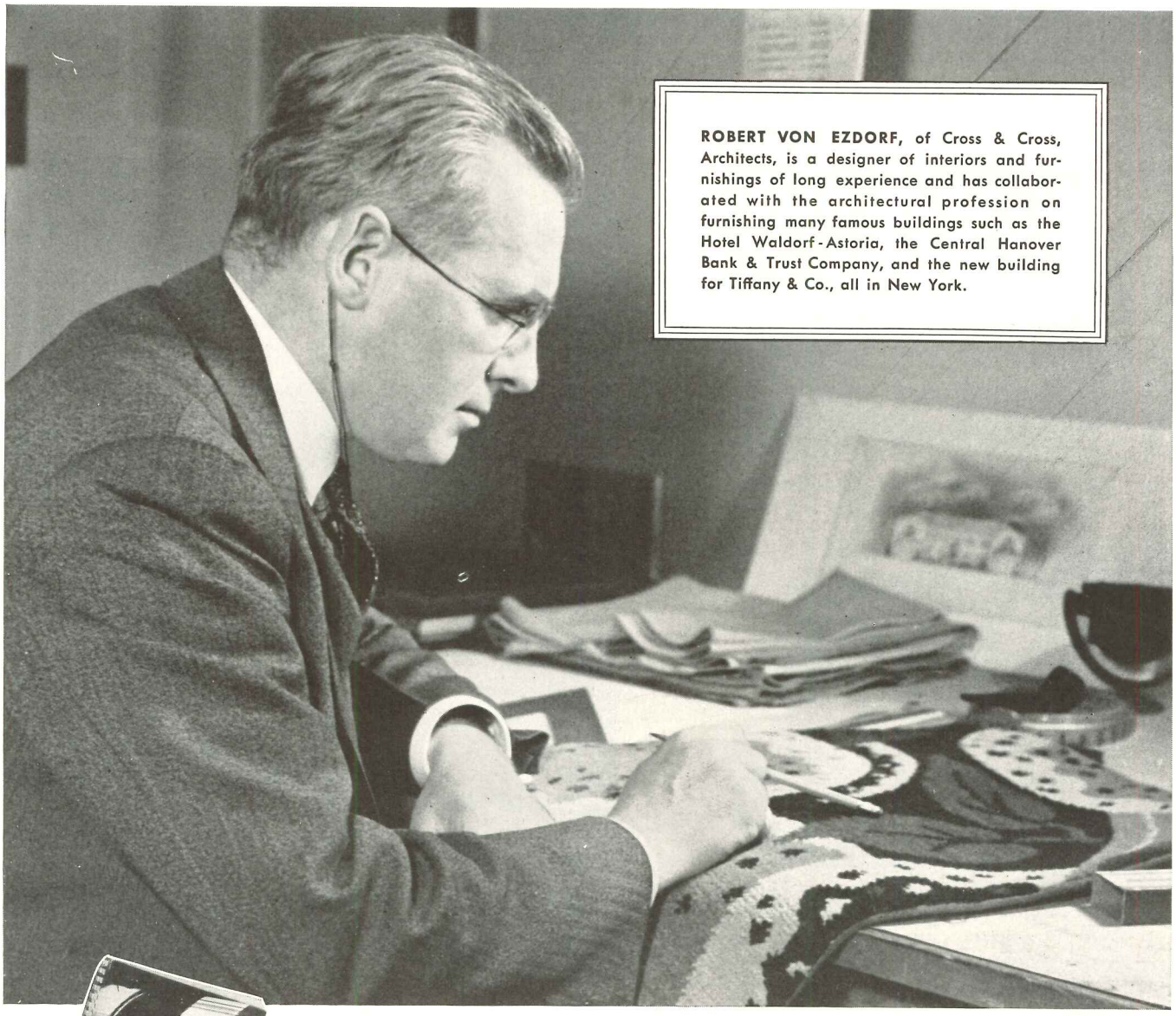
by ROBERT VON EZDORF

"MY association with Alexander Smith & Sons Carpet Co. has extended over a long period of years, and it has been my experience that they have consistently furnished me with the right carpet for the right purpose plus an exceptional and helpful service.

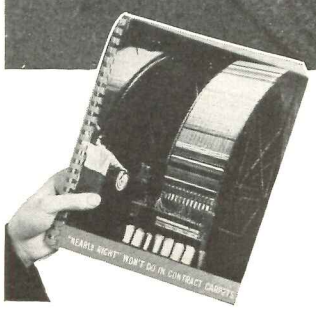
"In commercial interiors, for example, I plan for a carpet which will help create an attractive, pleasant interior and which will blend in with the articles on display and make them more salable.

"This results in surroundings stimulating to customers and comfortable to the occupants who work there many hours of the day.

"Plans for carpets, such as those used in the new Tiffany's Store and in the offices of the Central Hanover Bank & Trust Company, call for assistance in the way of samples, colors, and designs from the carpet company. I do not hesitate to say that Alexander Smith have rendered this service in the fullest extent."



ROBERT VON EZDORF, of Cross & Cross, Architects, is a designer of interiors and furnishings of long experience and has collaborated with the architectural profession on furnishing many famous buildings such as the Hotel Waldorf-Astoria, the Central Hanover Bank & Trust Company, and the new building for Tiffany & Co., all in New York.



When one of your jobs involves the selection or designing of carpet, our Contract Division will be glad to work closely with you, as it does with Mr. von Ezdorf. For information telephone MUrray Hill 4-7500, Ext. 17, or write for our recently published book, "Nearly Right Won't Do in Contract Carpets," in the opinion of many the most comprehensive and helpful book on the subject ever published. Address Contract Division, Alexander Smith & Sons, 295 Fifth Avenue, New York, N. Y.

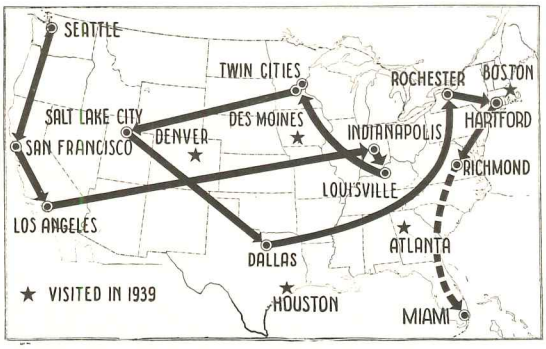
ALEXANDER SMITH CARPET

THE RECORD POLL

(Continued)

Photos by Dementi, from Sickles

ELEVEN NOMINATIONS: United States Tobacco Co. Model Factory. It was designed by the architectural firm of Smith, Garden & Erickson.



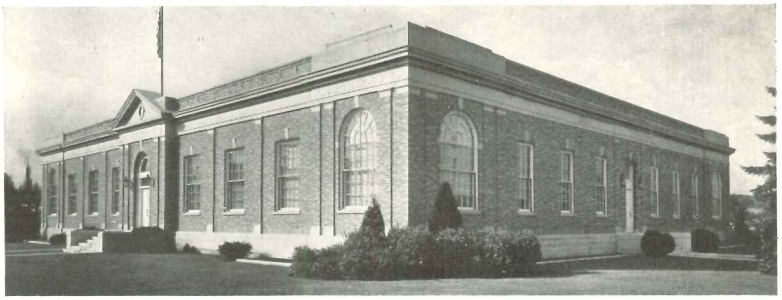
Courtesy American Map Co.

Miami and Miami Beach are the January Poll objectives.

EIGHT NOMINATIONS: The Westhampton Theater, by A. O. Budina of Neighborhood Theaters, Inc.

SIX NOMINATIONS: the Frank A. Bliley Funeral Home, designed by Architect Edward F. Sinnott.

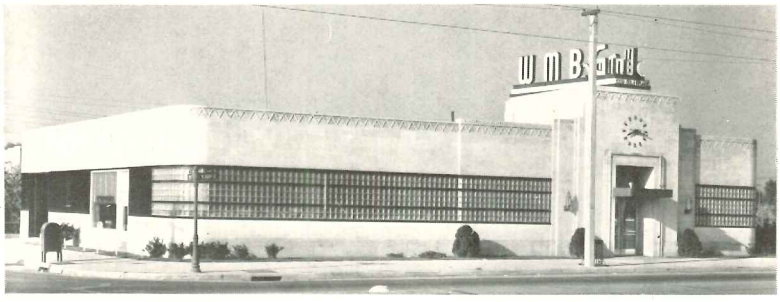
FIVE NOMINATIONS: Reconstructed Egyptian Building, Medical College of Va., Baskervill & Son, Architects.



FOUR NOMINATIONS: new research laboratory of the American Tobacco Co. It was designed by the architectural firm of Francisco & Jacobus.

(Continued from page 16)

Sinnott, Architect); Home for Confederate Women (Carl M. Linder, Architect); Philip Morris Tobacco Plant (Francisco & Jacobus, Architects); William T. Reed, Jr., residence (Baskervill & Son, Architects); Richmond Sand & Gravel Co. Bldg. (Edward F. Sinnott, Architect); St. Catherine's School—Central Building (Hobart Upjohn, Architects); Virginia Museum of Fine Arts (Peebles & Ferguson, Archs.)

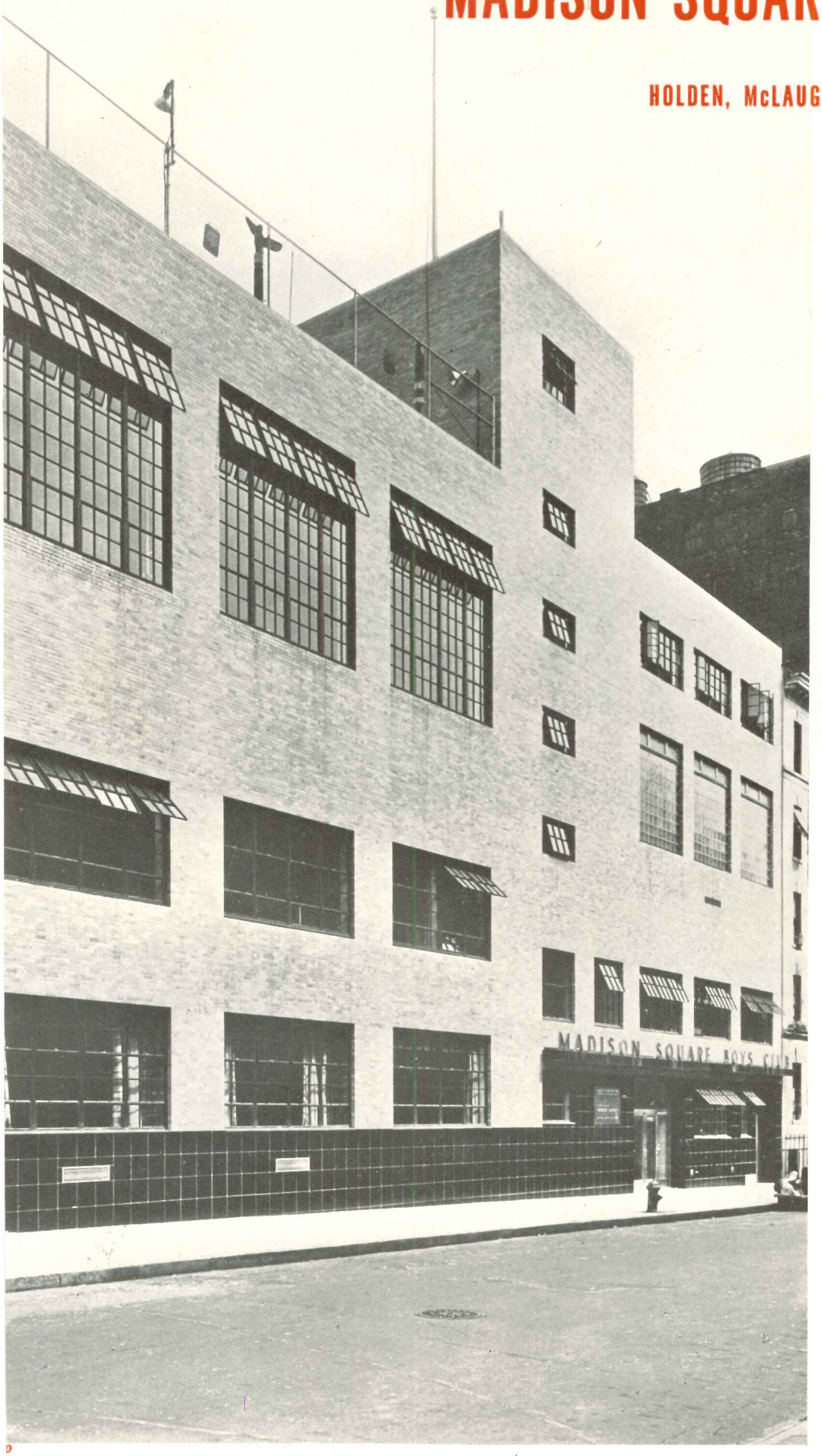


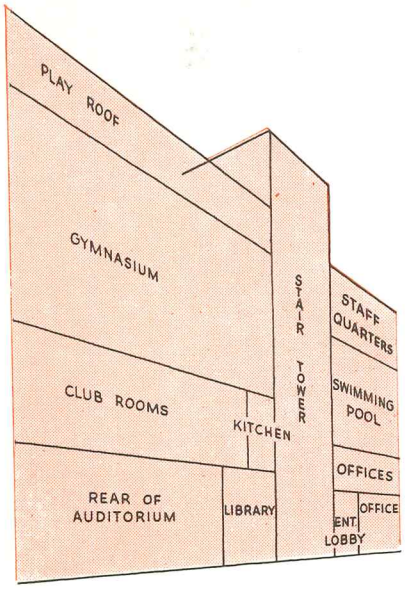
FOUR NOMINATIONS: Broadcasting Building for radio station WMBG. William H. Rhodes was the architect for this recent project.

MADISON SQUARE BOYS CLUB

HOLDEN, McLAUGHLIN & ASSOCIATES, Architects

The Madison Square Boys Club in New York City was built with funds given by the Hayden Foundation as a memorial to the late Charles Hayden. Excluding professional fees and cost of equipment, construction cost came to approximately $350,000. In addition, $20,000 was set aside for contingencies and refinements.





THE BUILDING is the noteworthy result of careful pre-planning from all points of view—budget, design, plan, and equipment.

Planned for a possible membership of 2,500, with average daily visits of 400 boys, the building includes departments for athletics, games, dramatics, classes and clubs, arts and crafts. Beside the regular club facilities, there are also living quarters for the staff.

NEWS AND TRENDS

Photos by Gottscho

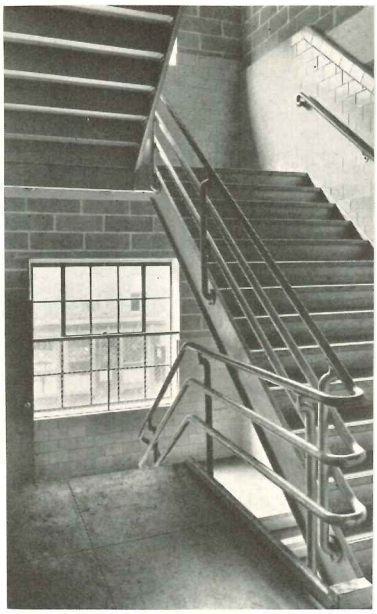
WHILE DEVELOPING THE PLANS, the architects worked closely on construction and maintenance estimates with the builders, the Turner Construction Co. An alternate plan was always kept in mind in case of the need of budget economies.

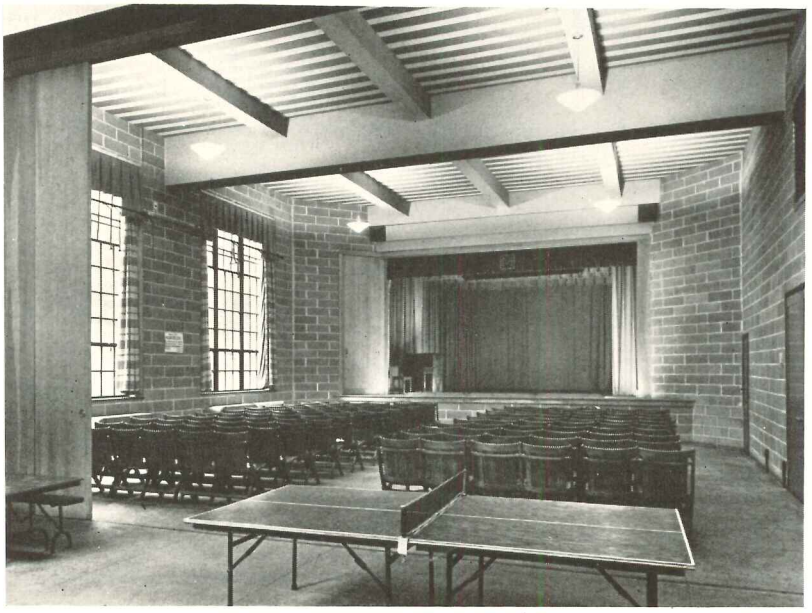
The final solution led to location of gymnasium and swimming pool on the third story. The ground floor was thus left free for the main lobby (in which is a mural executed by Charles C. Curran), game and play rooms, canteen, library, and assembly room. And, by careful planning, club offices were sandwiched in under the shallow end of the pool.

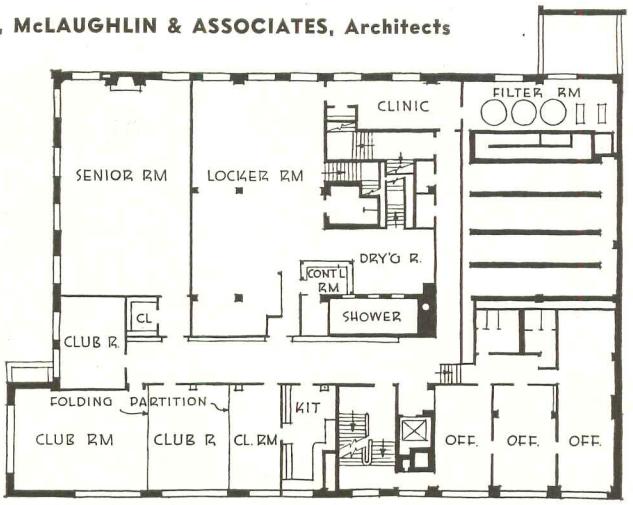
Two plan features are particularly notable—central location of control rooms, from which several activities may be supervised at once, and the flexibility of use of various rooms made possible by rolling partitions (see photos opposite).

In construction, plaster (except in the staff quarters) is almost completely eliminated. An ashlar slag block in a range of tan and light-brown colors serves for all masonry partitions and furring.

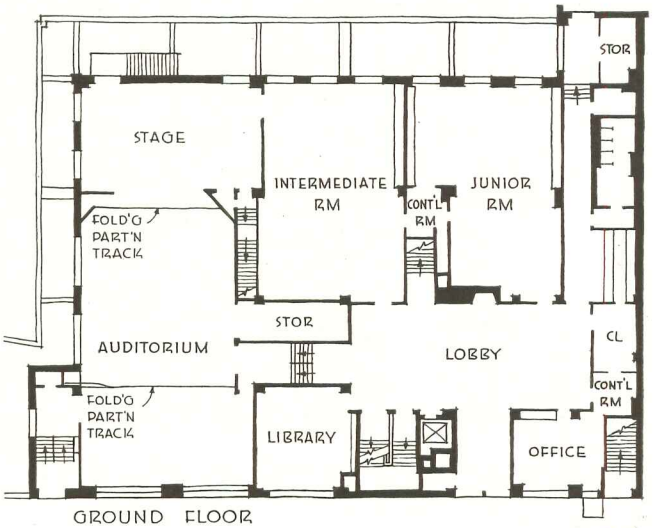
An interdepartmental speaker system, controlled from the head offices, allows communications of all sorts to or from any part or parts of the building.



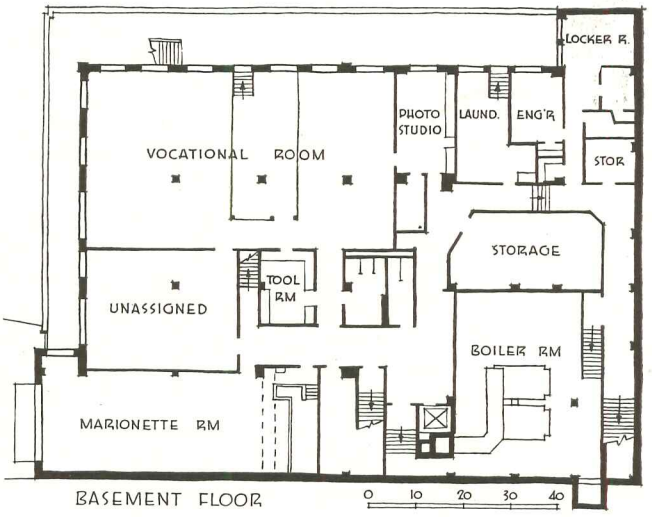




SECOND FLOOR

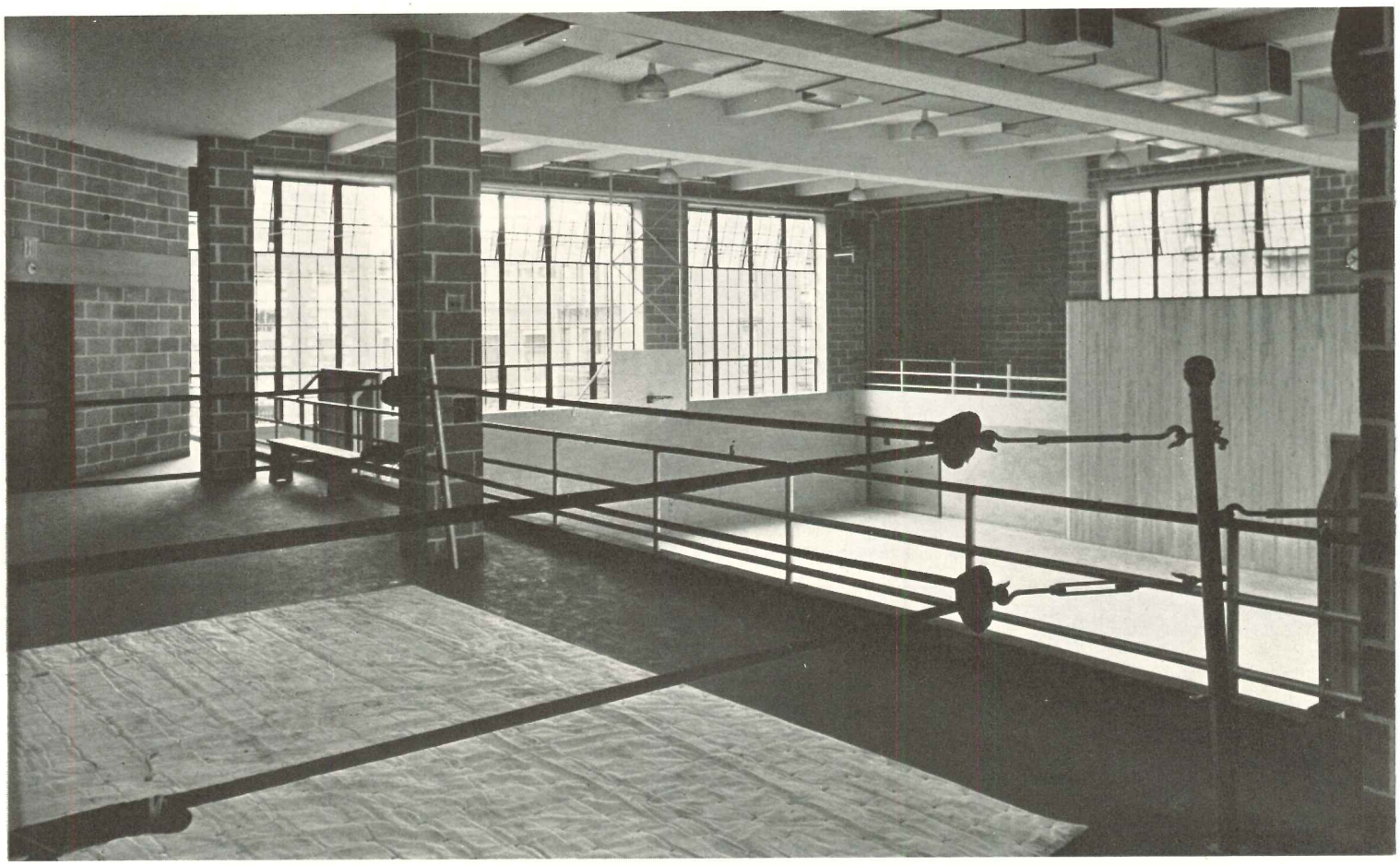


GROUND FLOOR

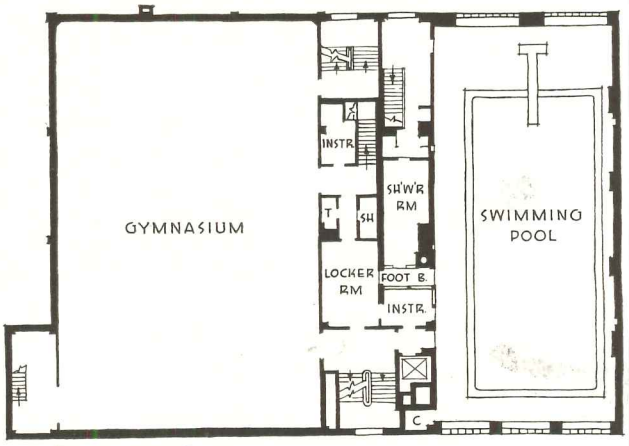


BASEMENT FLOOR

THE MAIN ASSEMBLY ROOM, at left bottom. The rear area (foreground) may be cut off from auditorium by movable partition. At left of the stage is housed a similar partition that pulls across to form a shallow stage for speeches, debates, etc. At right of stage, on the same level and connected with it, is the large game room shown in the photo at center. Note movable partition (closed), on the other side of which is another playroom. Both rooms are controlled from a single station point (window at far right of photo). Photo at top shows three club rooms on second floor which may be used separately or (wtih partitions rolled back) as a single large room.

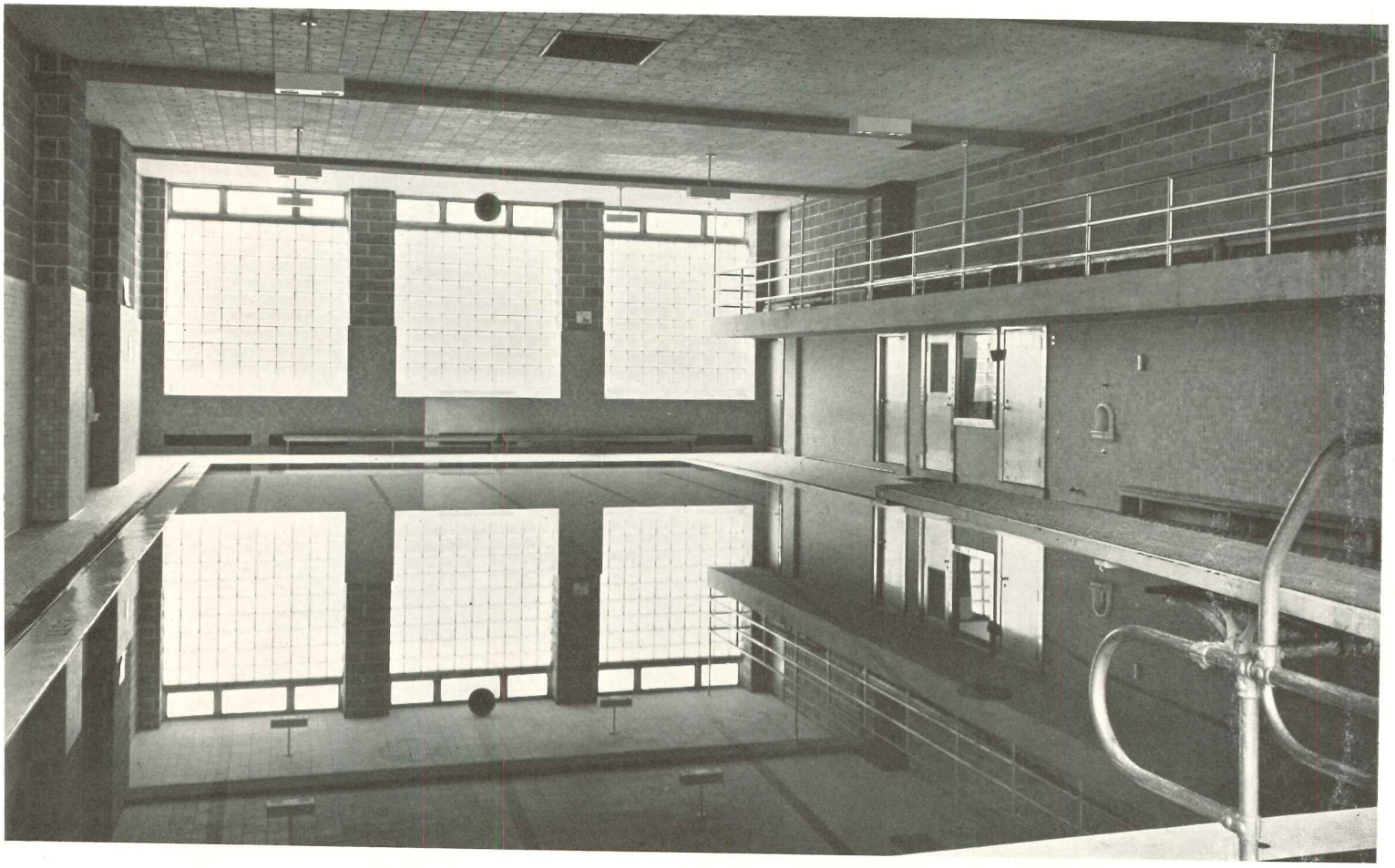


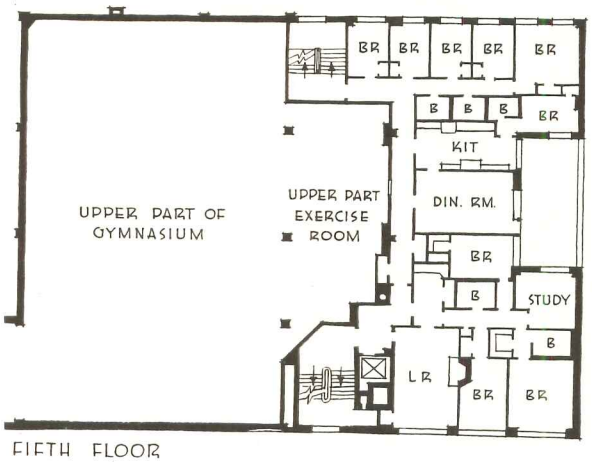
Photos by Gottscho



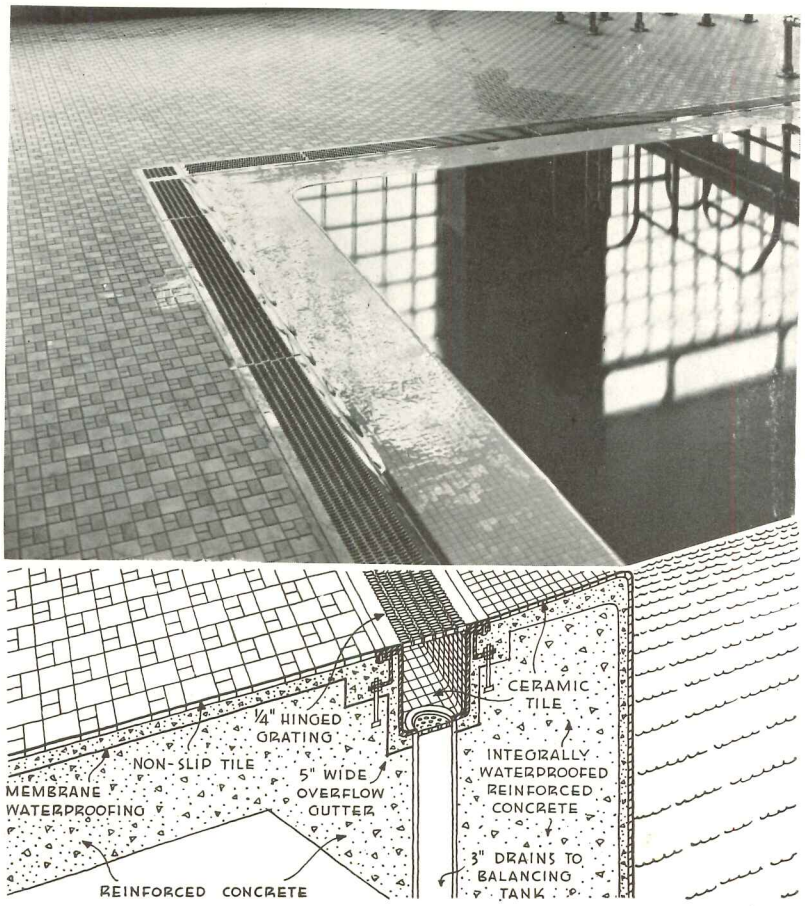
THIRD FLOOR

GYMNASIUM. Activities in both the gym and the swimming pool, located at the third-floor level are supervised from a control room located at the head of stairs from locker rooms. Notice in plan how boys entering pool automatically pass through shower rooms and foot bath. Structural slabs are of lightweight concrete, cast in plywood forms. Exposed ducts and grilles are part of the architectural treatment. Gymnasium walls and the pool ceiling are soundproofed with cork. Auditorium and gym ceilings have fiberboard soundproofing.





FIFTH FLOOR



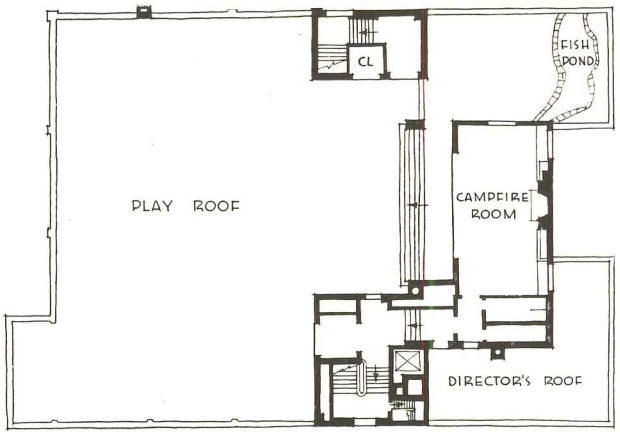
SWIMMING POOL. One of the first successful flush-deck pools with balancing tank (see detail at right). Throughout the building—in foundation walls, floors, swimming pool, and tile mortar—integral concrete waterproofing was used. The entire area below the pool is protected by a waterproofing membrane.

The building's heating system was designed to work on a reduced basis. The gymnasium is heated by unit heaters; locker room, pool, auditorium and young boys' club room are heated by ventilating units. The pool is lighted by indirect and lensed fixtures and by underwater lights.

MADISON SQUARE BOYS CLUB

HOLDEN, McLAUGHLIN & ASSOCIATES

Photos by Gottscho



PLAY ROOF. Every square inch of the roof area is put to use. A large campfire room with an open fireplace serves as a woodworking and nature-study room. By rolling back the big doors, the room becomes a stage for summer dramatics. Extension of the floor of this room onto the terrace forms an outdoor stage. The play roof is finished with a resilient roof surfacing. Roof cappings are of precast cement. These were constructed with a specially designed dowel so that the bond with the parapet and with adjacent stones would be complete even without mortar.

George D. Haight

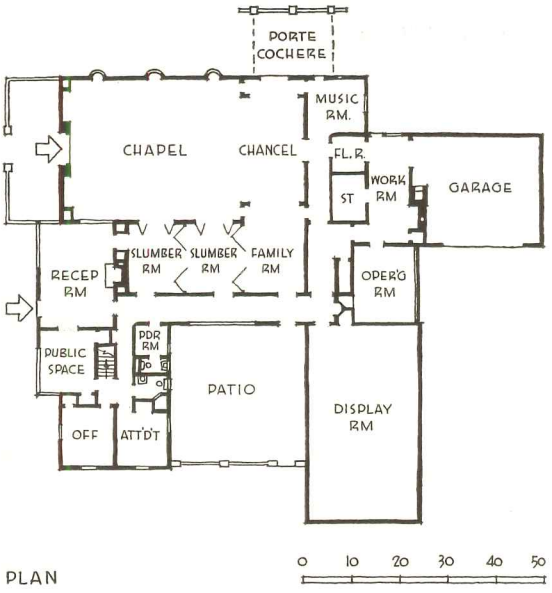
RICHARDSON MORTUARY, ONTARIO, CALIFORNIA

The architect, GRAHAM LATTA, sought qualities of "quiet repose, dignity, and avoidance of anything gloomy." In addition, he produced an unusually flexible plan and a challengingly fresh design for a type of building that is frequently handled in an unimaginative manner.

THE SCALE AND CHARACTER of the building are wholly congenial with the residential district near which it is located. According to the architect, however, "the chapel seems to identify the purpose of the building sufficiently so that the owners have never felt it necessary to clutter it with a sign." Organization of the plan (see next page) is such that the two main entrances are clearly distinguished. A person calling on business instinctively heads for the office door, while those who attend a service automatically go to the chapel entrance. The stucco exterior of the building is painted light straw color; the trim is white.

THE TWO ENTRANCES clearly define the chapel and the business office. Families may reach their room privately through the patio.

Photos by George D. Haight



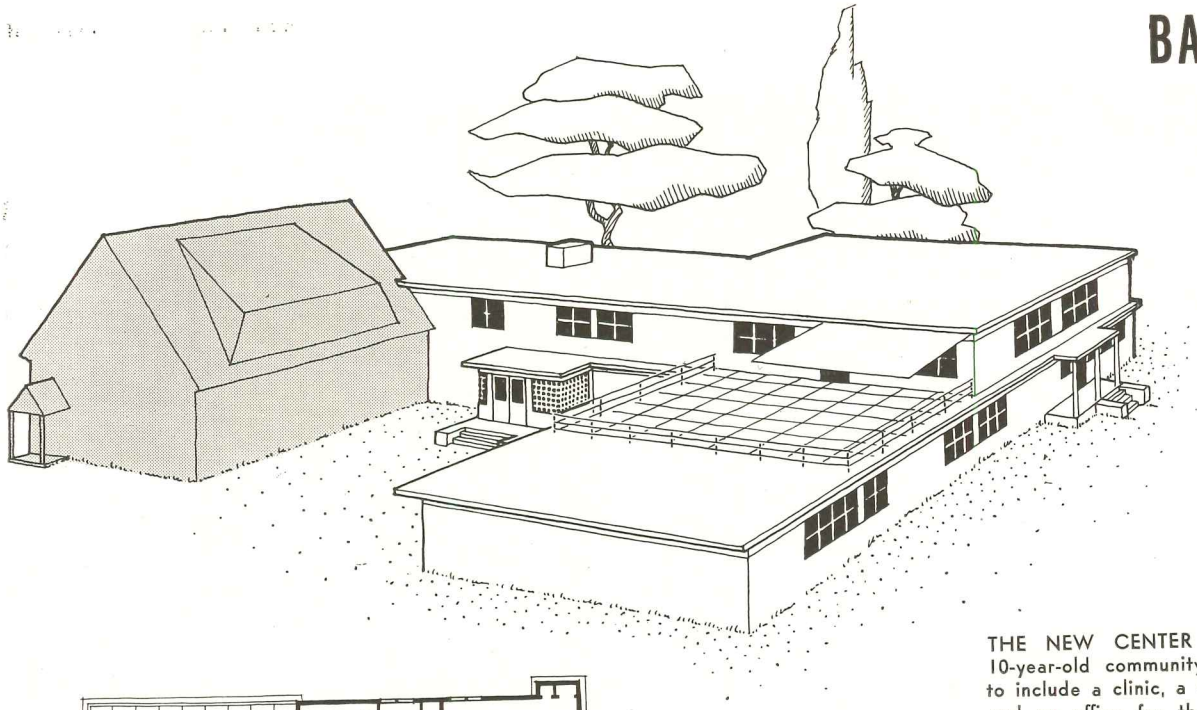
PLAN

WALLS OF THE CHAPEL are painted a cool green; trim is white. The ceiling is of thick structural insulating slabs which span the purlins.

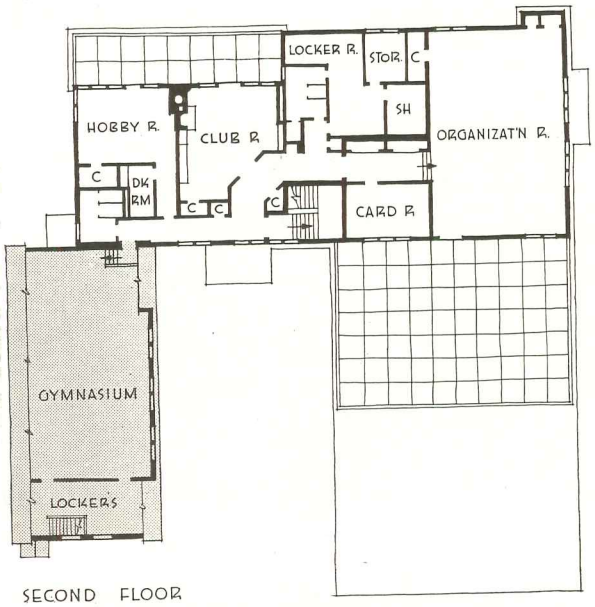
THE PROGRAM CALLED FOR complete segregation of functions. All rooms serving the public open from the reception room and its adjoining hall. Persons attending a service enter the chapel directly. Florists and doctors enter the workroom, entirely separated from public rooms.

Flexibility is gained by the folding walls of slumber rooms. For a small service, both slumber rooms and the family room combine to form a small chapel seating 50. For ordinary services the main chapel seats 126, exclusive of the family room. Or, the slumber rooms may be opened into the chapel, giving a total capacity of 170. The family may reach its service room privately by doors from the patio, reception room, or music room. The garage is so located that all unloading is entirely private and inconspicuous.

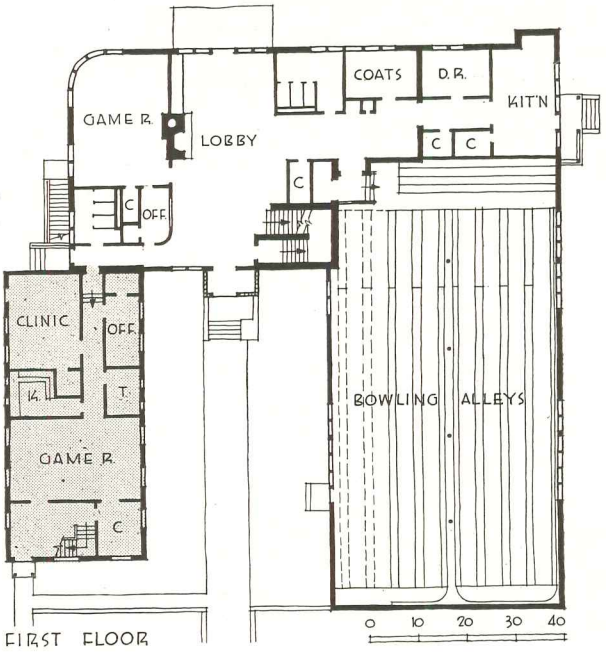
BAYWAY, N. J.,



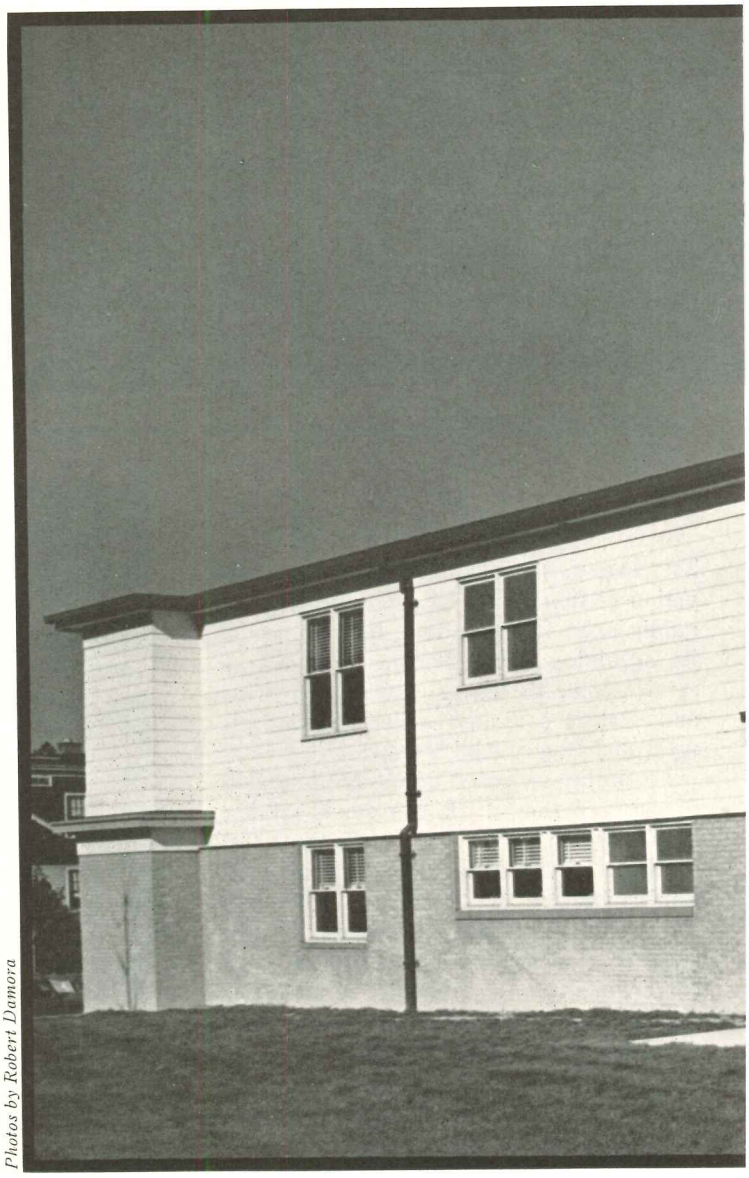
THE NEW CENTER is a sizable addition to a 10-year-old community house, which is now altered to include a clinic, a game room, a small gymnasium and an office for the use of the social directress.



SECOND FLOOR



FIRST FLOOR



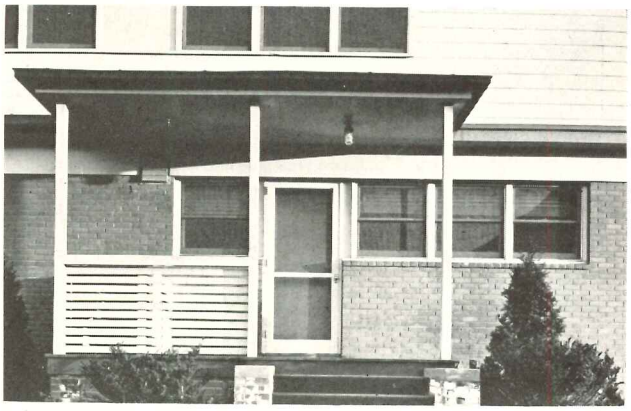
Photos by Robert Damora

COMMUNITY CENTER FOR EMPLOYEES OF STANDARD OIL PLANT

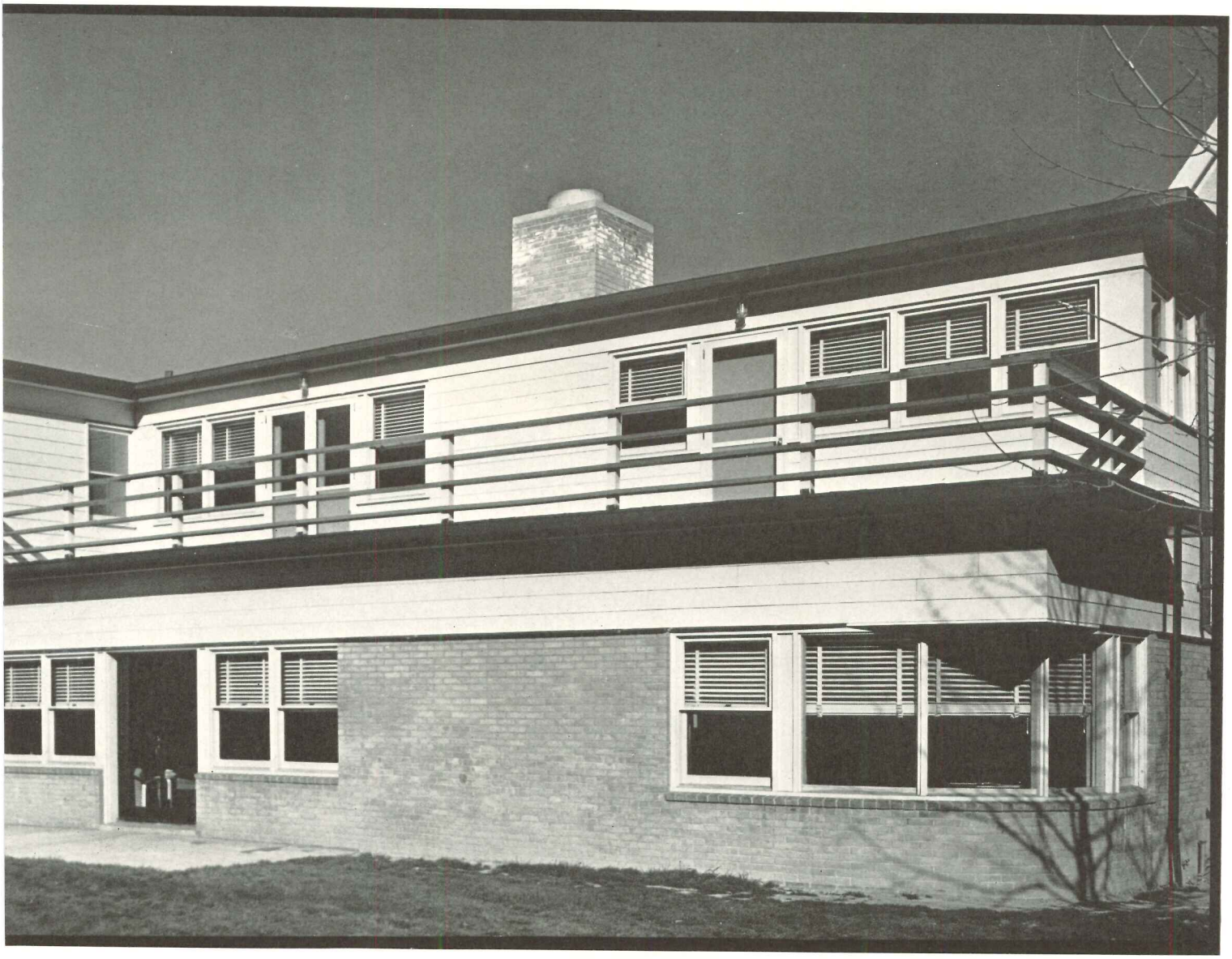
This multi-use structure was built for leisure-time use of families of 5,000 employees of the Bayway Refinery, Standard Oil Company of New Jersey; SEARS & FOOTE, Architects.

IN THIS NEW COMMUNITY CENTER, Standard Oil of N. J. and the Rockefeller interests provided facilities for all age groups. The entrance lobby is both a central control point and a lounge. Children's games take place in the first-floor game room. In the dining room, luncheon visitors are entertained and food prepared by children's cooking classes is served. The bowling alleys are used by a league made up of teams from the various departments of the refinery.

On the second floor is the Organization Room, for large club activities such as meetings, banquets, concerts, and dances; a locker room for men and boys; a card room for the older people; a club room for the use of women's groups; and a hobby room. The roof terrace serves both as a play area for small children and for evening dances in summer.

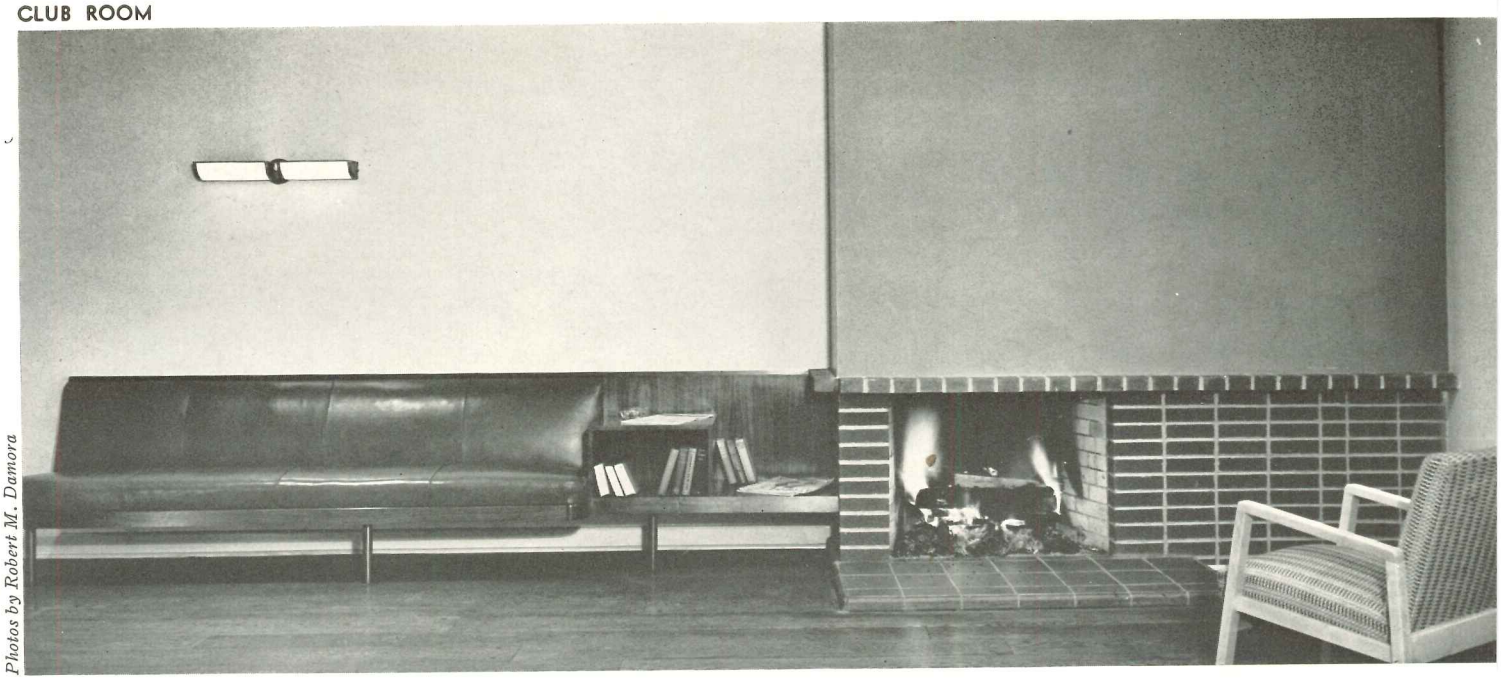


KITCHEN ENTRANCE

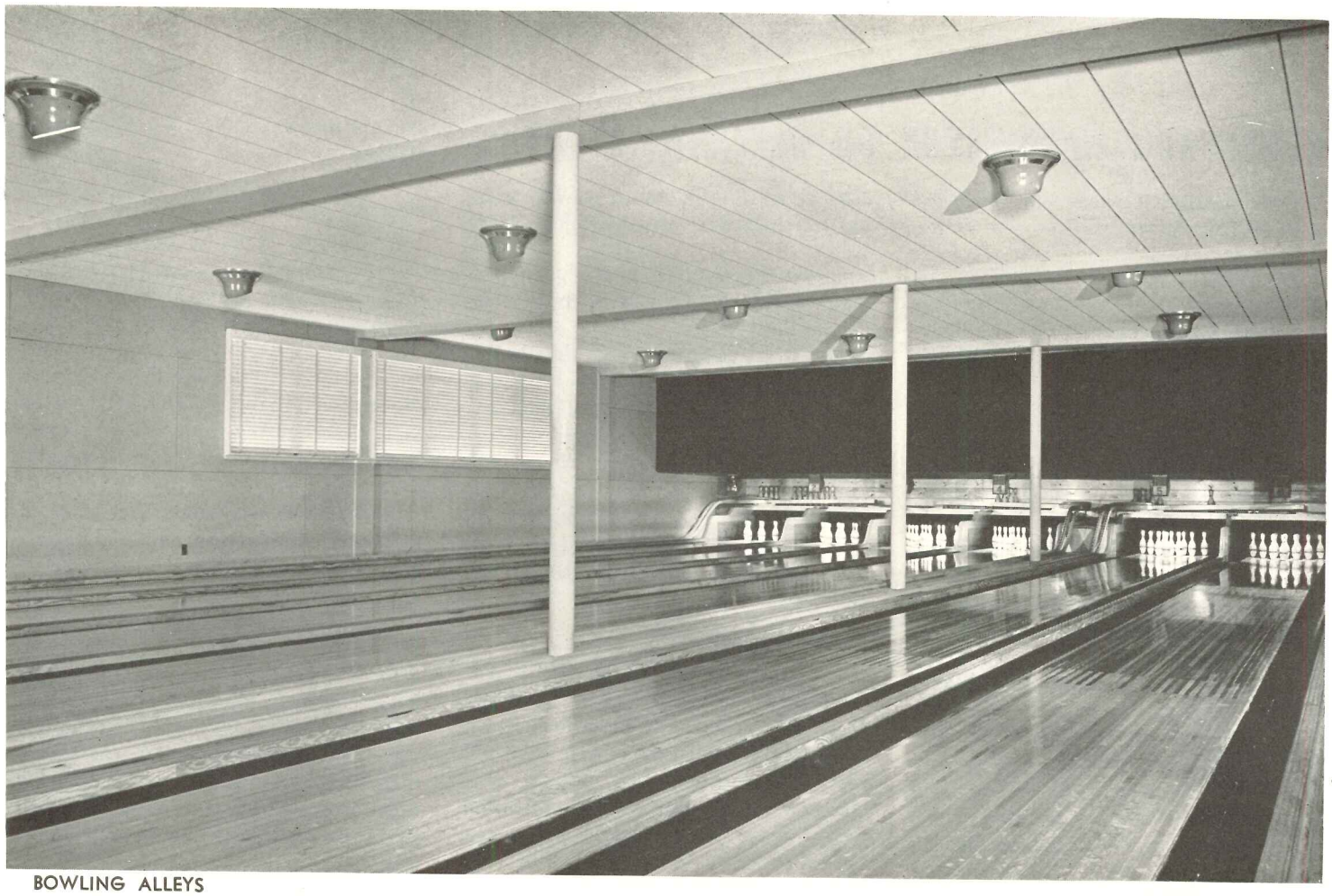


LOBBY

CLUB ROOM

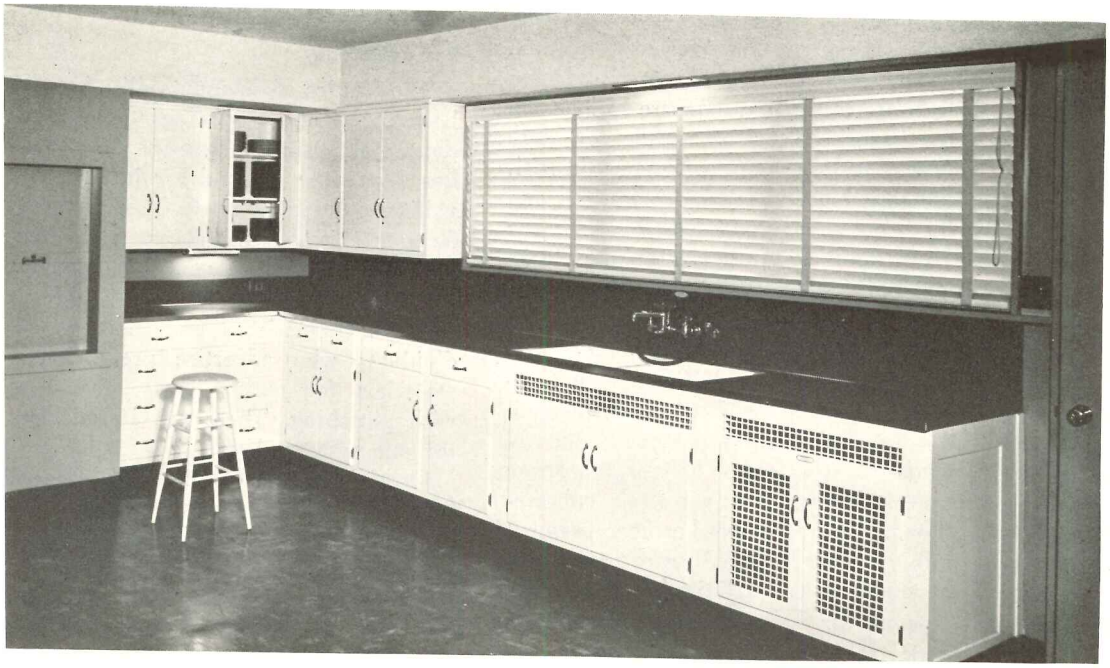


Photos by Robert M. Damora



BOWLING ALLEYS

KITCHEN



LOBBY. Built-in furniture arranged for lounging. Windows overlook outdoor activities.

CLUB ROOM. Second-floor room for meetings of women's groups. Wall over fireplace, cobalt blue; remainder of walls, pale yellow.

BOWLING ALLEYS. Three pairs of alleys with space for a fourth. Walls and ceilings are of insulation board.

KITCHEN. For cooking classes and food for other club uses. The dumbwaiter serves the Organization Room above.

NEWS FROM WASHINGTON ON DEFENSE ACTIVITIES

Private architects' place still not officially defined; most likely to be in site planning and design adaptation. Use of prefab systems indicated — By Kendall K. Hoyt

OVER THE PAST month, war housing work under the initial 150,000,000-dollar Lanham Bill appropriation has moved forward as rapidly as could be expected against the delays in acquisition of sites and in planning normally to be met at the outset of a major housing program.

Beyond the funds earmarked for specific projects reported in the last issue, the Public Buildings Administration is proceeding quietly with additional work without announcing the sites, lest the costs be raised by local land speculation arising from news of the projects. Thus the bulk of the program has not yet reached the stage where local architects can be retained.

It appears that there will be little place for private architects in the actual design of houses since the unit requirements are believed to be about the same in all parts of the country, varying between two and three bedrooms per house. Where the architects will come in, if at all, is in the site plans and in adapting the standard designs to conform with local conditions as to climate, prevailing styles of architecture, and building regulations.

No answer on status of architects

President Edwin Bergstrom of the American Institute of Architects, flanked by representatives of the American Society of Landscape Architects and the American Society of Civil Engineers, has continued his efforts to clarify the place of the design professions in the program. But the official response is zero to date.

Meanwhile, the three associations have been drafting standards indicating the functions which members of each of the three professions should properly perform on a typical housing project. These standards are intended as a guide to Federal policy if approved by the governing boards of the association.

A good many of the Federal people are architects themselves and would like to see their colleagues in private practice have a fair share of the work. They can only express sympathetic interest and give no facts since the policy remains to be worked out by brass hats up the line.

Architects who write the Public Buildings Administration, however, are being asked to send in a record of their experience with data on their present organizations and facilities. Some 500 have done so. The returns are filed alphabetically and geographically so that if work develops in a given area, the responsible architects thereabouts can be called in.

Can Congress help?

In some quarters, it is thought that if an official determination as to where architects can actually serve in the program is not soon forthcoming, an effort should be made toward passage of a special act of Congress setting forth the terms under which they can be employed. Such a bill could not be considered until after the new Congress meets in January.

Although the House refused to let the present session adjourn after the election, the only item of business in the architectural line, as this is written, is the repair job on the roofs over the House and Senate chambers which the Architect of the Capitol has repeatedly warned were in a dangerous condition.

The only holdover bills in the housing field are the House measure to broaden the Home Loan Bank system for more widespread financing of homes through the building and loan associations, and the Senate-approved measure to give the U. S. Housing Authority another 800,000,000 dollars. Neither is expected to pass.

USHA, whose people have long been unpopular on Capitol Hill, does not appear to be in a position to push through any legislation in the tag end of the old Congress. Rumors as to reorganization, however, have not yet been substantiated. Although there has been frequent talk, and still is, that Nathan Straus will be replaced as Administrator, there are reasons for believing that he will remain, so that no drastic change in the organization is in sight, for the present at least.

Plans for prefab

A definite intention to experiment with prefabricated housing in the industrial defense program is expressed by Washington officials. Speed in construction, uniformity, reduced labor costs, and possible economies through mass production are of possible bearing as in all mass housing work. But even more important is the need for demountability.

Although it is thought that most of the Army and Navy housing will be permanent, as appears to be the case at most of the sites where work is being done, there will be many cases where the need is but temporary in the environs of industrial plants working on defense contracts. Mindful of the "ghost towns" which sprang up during the last war and remained tenantless as eyesores thereafter, the planners are looking for types of construction which can be taken down and salvaged for re-erection at other locations.

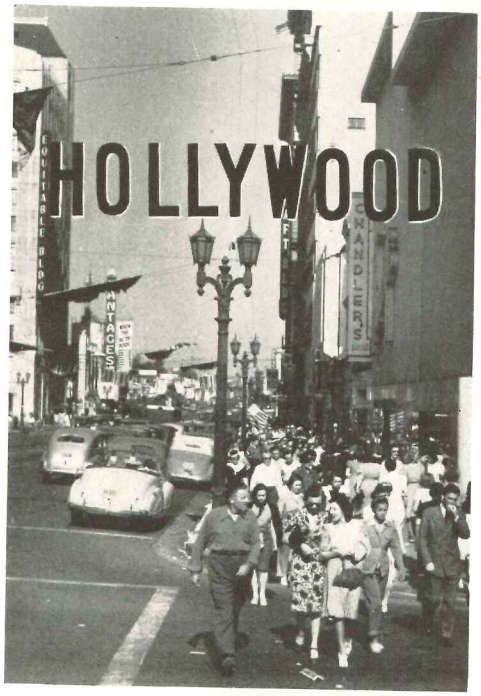
While there are now many dealers in prefabricated systems of construction, there are only a few basic types, some with steel frames and others with wood studding as supports for enclosing panels. Most seem adequate for one-story houses which prevail in the defense program.

Demountability

The feature of demountability has not been given much previous thought by the prefabricators themselves since there has been little demand for it. The prevailing opinion seems to be that 100% demountability is not economical, especially as to foundations which can best be laid with concrete or cinder block on the site. Otherwise, there are many individuals who advertise prefabricated materials for entire houses, complete with plumbing. There are 153 dealers for one system alone.

Careful studies of the prefabricated field have been made by the Advisory Committee on Engineering and by a special committee set up by C. F. Palmer, Defense Housing Coordinator. The plan has not yet reached the stage

(*Continued on page* 100)



HOLLYWOOD TACKLES THE PARKING PROBLEM

It is one thing to determine a course of action necessary to pump new life into a shopping center. It is quite another to persuade merchants and property owners that the cost of the plan is an investment that is necessary to prevent loss of business to the merchant, lower rentals to the landlord. The Hollywood (Calif.) Chamber of Commerce, faced with this problem, is lining up merchants and property owners behind a plan to attract more shoppers through improved parking facilities. How they approached the task of getting near-perfect co-operation is told in this story by DON TAYLOR.

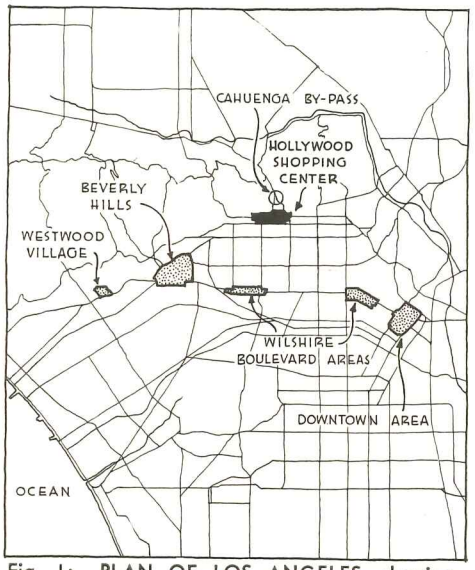


Fig. 1: PLAN OF LOS ANGELES, showing location of Hollywood in relation to rivals

HOLLYWOOD, second largest shopping center in the Los Angeles area, developed like most American cities without benefit of planned control. It stretches along Hollywood Boulevard, a solid front of stores, shoulder to shoulder, for the better part of a mile. Business frontage on side streets and parallel streets, with very few exceptions, is almost negligible.

Like all Southern California shopping centers it draws trade from a radius of many miles and most of its customers come by automobile.

Although the center has more or less kept pace with the average rise and fall of business in the metropolitan area, its future is threatened not only by congested traffic conditions, but also by inadequate parking facilities and the untidy appearance of many parking areas, distasteful to better-class patronage. Further, many parking areas must be considered to be on a temporary basis because their owners believe them to be potential business sites; and if present vacant sites are built up, further harm will result from an aggravated parking problem.

Merchants are bringing pressure to bear on landlords because they can't maintain present rentals on the basis of present sales volume. The problem of attracting more business, therefore, acutely concerns property owners because while *they can't move*, merchants can!

Congested traffic is being eased by major highway and intersection improvements (fig. 1), and through traffic is to be diverted. But it is evident that the key to the whole problem is parking and it is to this factor that the Hollywood Chamber of Commerce is giving its attention.

HOLLYWOOD PARKING PLAN

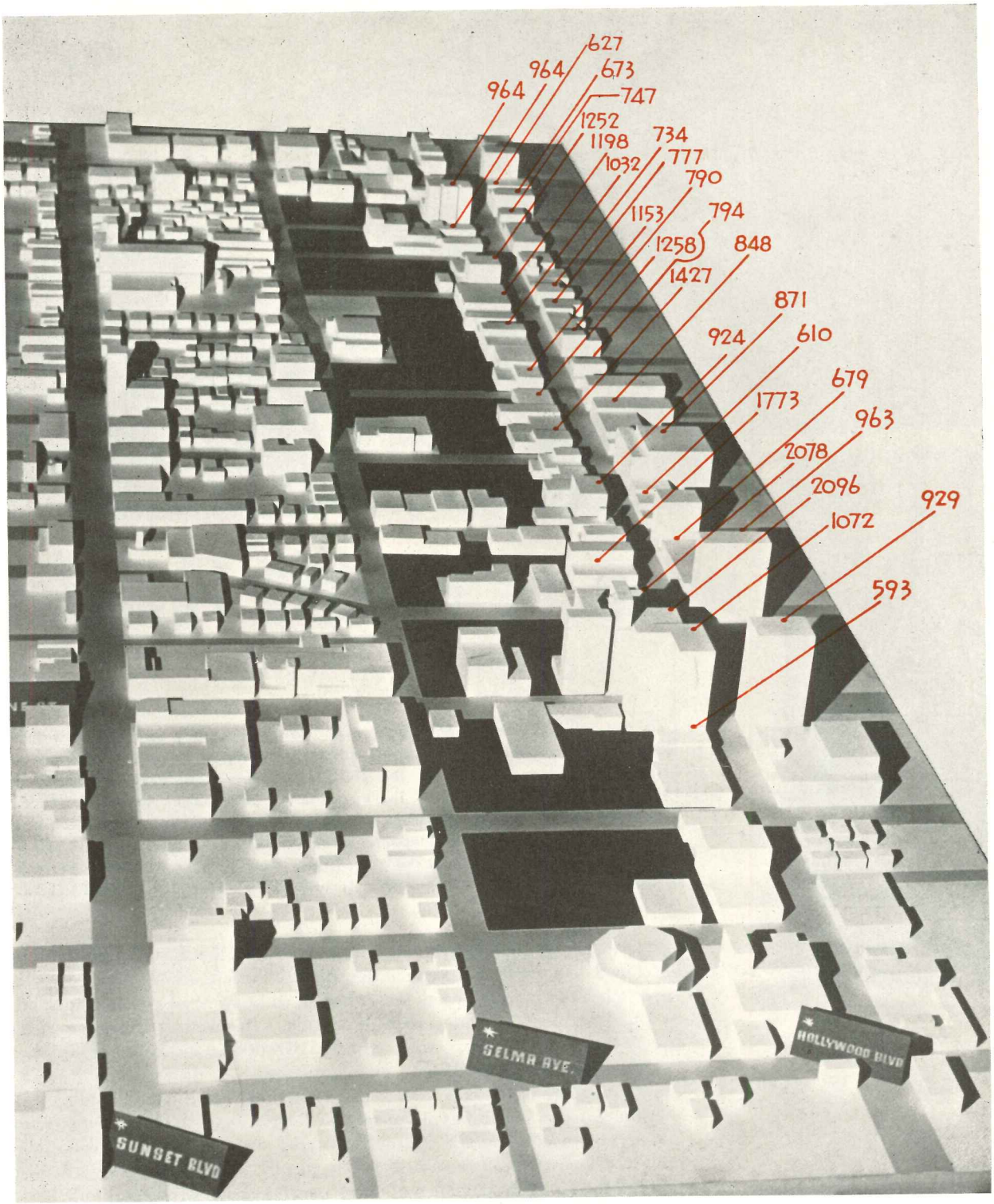


Fig. 2

SOME OF THE COUNTRY'S MOST VALUABLE real estate lies along the dozen-odd blocks of Hollywood Boulevard which are shown in the scale model (Figure 2) prepared by students of University of Southern California's architectural department. Figures represent assessed valuation per front foot. Shown in black are the areas proposed for parking. At right are two proposed layouts—the first (Figure 3) discarded in favor of the safer and more economical second (Figure 4).

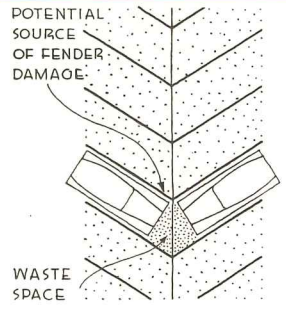


Fig. 3

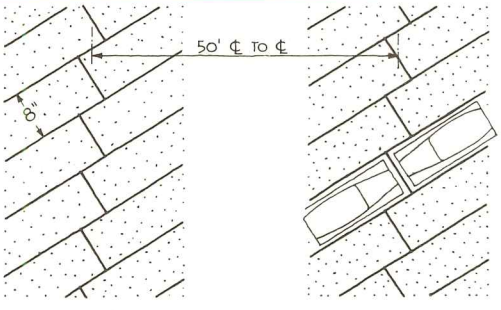


Fig. 4

ARCHITECTURAL STUDENTS AID IN "VISUALIZATION" OF PROJECT

Main problem was to develop a plan of organization that would weld together the various merchants, property owners, and operators of parking lots in the district. But before this could be done it was necessary to envision the physical aspects of the project in order to determine costs and to help "sell" the plan.

Assistance of architects and especially of the College of Architecture, University of Southern California, was sought with regard to efficient lay-out and harmonious, economical landscaping of parking lots, and improvement of elevations of structures abutting on the lots. The University used the problem as an instructional project for students, and prepared scale models of the district and of typical individual parking areas and abutting structures. (Figs. 2, 3, 4, 5.)

In calculating potential lot capacities it was found that 165 sq. ft. were necessary per car when parking was handled by attendants, while 275-300 sq. ft. per car were advisable when done by customers.

In cases where low-rental-value sites make the more wasteful customer parking economically feasible, a not inconsiderable saving of 24 sq. ft. per car was effected by the arrangement shown in Fig. 4 instead of the more common herringbone arrangement, Fig. 3. This layout also lessens hazard of dented fenders due to careless parking. In the case-study lot (Fig. 5), the change from herringbone layout to the type in Fig. 3 increased capacity from 258 to 302 cars. (Capacity of this particular lot was further increased to 360 cars by better arrangement.)

Because of the length of time the average car is parked during shopping (see Fig. 8), and consequent low turnover, it is not necessary to provide generous entrances and exits as, for instance, in a market where average parking time is much shorter. Elimination of unnecessary adits and exits increases capacity.

General specifications for all parking areas include over-all paving with stalls painted on the surface. (Curbs between stalls and all low barricades are eliminated to reduce stumbling hazard.) They call for installation of two 500-watt lamps on 20-ft. standards every 50 ft. in every bank of cars, and provide 8-ft. stalls in banks on 50-ft. centers.

A uniform system of landscaping is being developed in which plants and shrubs are grouped into sizable units rather than scattered in small units. With this arrangement one gardener can take care of all parking lots in the shopping center. Trees, when used, must be trimmed to give minimum clearance of 5 ft. 6 in. under lowest limb. (See Fig. 6 for costs.)

WHY EARLIER PARKING PLANS FAILED

Primary purpose of the plan is to provide community-wide free parking to customers of *all* shops in the center. A previous community-wide parking plan in which customers' parking charges were paid by *merchants* proved unsatisfactory. The previous plan involved issuance of stamps which were purchased from the Chamber of Commerce by co-operating stores (about 60% of all merchants) and affixed to the customers' parking tickets at time of purchase of $1 or more. The stamps had a face value of 5 cents and were accepted as such at co-operating parking lots which were, in turn, reimbursed by the Chamber of Commerce. Co-operating stores and parking lots were identified by an emblem. This validation was usually on the basis of one hour's free parking per store so that customers could park free for an almost indefinite length of time without cost if they made purchases in a sufficient number of stores. This has proved unsatisfactory for many reasons: (1) not all stores and parking lots co-operated, hence the primary purpose—community-wide free parking for customers of *all* shops—was defeated; (2) stores had no voice in management of lots, could not effect improvements; (3) co-operating merchants were penalized because they paid parking expense for customers who also patronized the holdouts but got their tickets validated at Stamp Plan stores; (4) certain stores which ostensibly participated in order to attract trade, shunned this accommodation as much as possible to save expense, whereas co-operating stores even went so far as to instruct clerks to suggest validation to customers. This meant that a major part of park-

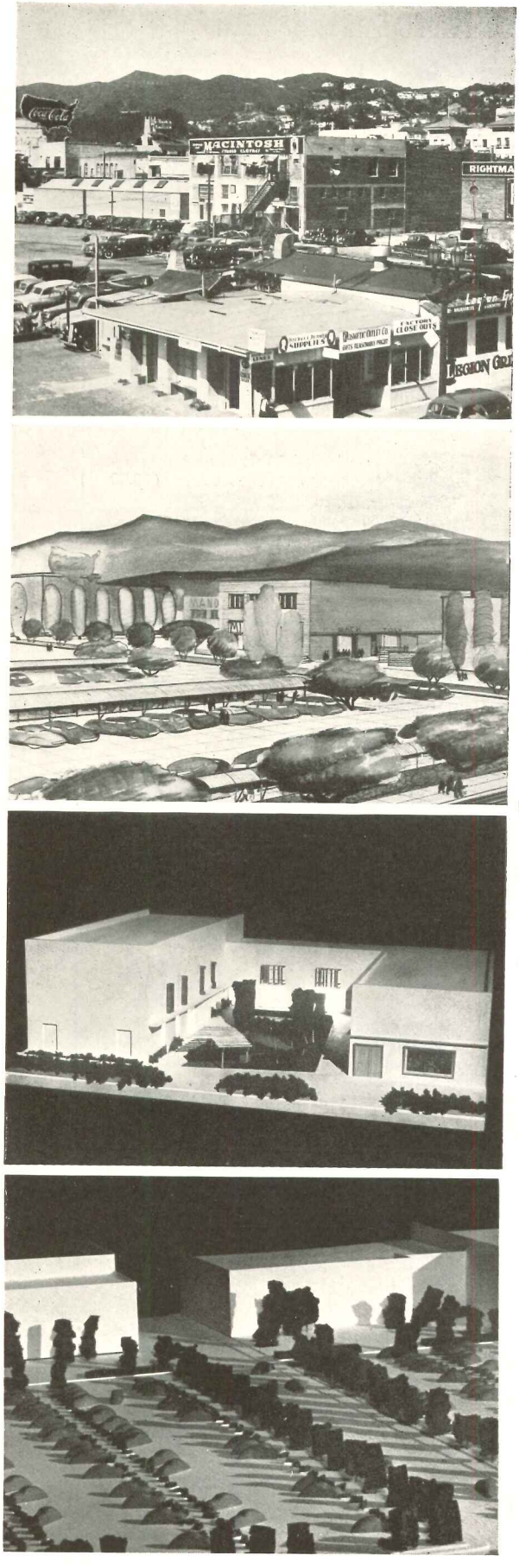


Fig. 5: CASE STUDY OF SPECIFIC BLOCK showing present condition (top); how parking lot might be developed (center); and suggested reconstruction of building's rear (bottom). Scale model of entire block using one of the earlier and less economical parking layouts.

Paving—101,442 sq. ft. @ 2¢/sq. ft.		$2,028.84
Curbing—2,316 ft. @ 60¢/linear ft.		1,389.60
Fencing—382 ft., 12-ft.-high wire @ $1.20/ft.	$458.40	
1,090 ft., 6-ft.-high wire @ 65¢/ft.	708.50	
		1,166.90
Walks—1,052 ft., 6-ft. wide (6,312 sq. ft.) @ 10¢/sq. ft.		631.20
Planting — 4-ft. strip along fence—1,472 ft. @ 30¢.	$441.60	
15 small triangles @ $7.50.	112.50	
7 large triangles @ $10.00.	70.00	
		624.10
Lighting—40 standards, 50 ft. apart @ $15.00 (Standards 20 ft. high, and with two 500-watt lamps in special reflectors in each.)		600.00
Total		$6,440.64

Fig. 6: TOTAL IMPROVEMENT COST OF CASE STUDY shown on p. 47 indicates that plan is economically feasible.

Purchase per Validation in Various Outlets

Type of Store	Sale/Parking Ticket Validated
Department store (medium-price merchandise)	$9.96
Large department store	18.97
Men's apparel store	30.48
Women's apparel store	31.78
Furniture store	31.77
Highest average purchase of any store (a men's shop)	47.60
Average of all stores	17.45

Fig. 7: ANALYSIS OF PURCHASE PER PARKING TICKET showed an average of $17.45, while pedestrian purchases from the street averaged only $6. Note wide variation of purchase by type of merchandise.

Time Parked	Percentage of Customers
1 hour	11%
2 "	42
3 "	19
4 "	17
5 " and more	11

(The survey also revealed that 52% of parking-lot customers used validated tickets.)

Fig. 8: OVER 60% OF ALL CUSTOMERS using parking lots "stayed put" for between two and three hours.

ing expense was borne by a few public-spirited merchants.

Under the new plan the cost will first be borne by landlords on a percentage-of-rentals basis but is expected to be returned in increased rentals through better business generated. (Rentals are generally based on sales volume.) Most merchants well know that it pays to park their customers; know, too, that even a small increase in sales means a big increase in profits*—and realize that better parking facilities result in better sales.

However, in order concretely to demonstrate the value of parking-lot service, checks were made in many stores to determine the average amount of purchase per validated parking ticket. Results varied widely depending upon the individual store but all indicated that the average validation cost (7½ cents) was a worthwhile investment. (See fig. 7.)

A postcard survey of daytime parking-lot customers was used to determine average length of parking time and amount spent during that period. Curb-parked cars were also queried. It was also shown that average purchase per parking-lot customer was more than double average purchase of street-parked customer (street average, $6; parked in lots, $17.45).

THE NEW PLAN

The plan involves creation of a non-profit corporation of all Hollywood Boulevard property owners which will pay all co-operating parking-lot operators for all tickets validated. It will provide free parking in *any* lot to every shopper, regardless of where she shops or where she parks. Knowing the total number of customers to be accommodated, knowing further the relative distribution of these customers over the parking lots, the corporation can execute contracts with parking-lot operators agreeing to deliver a specified minimum of contracts over a set period of years. Adjustments in rates of compensation per car are made on the basis of the relative gross rental values of the lots as indicated by assessed valuation. In return for the income guaranteed, the corporation stipulates improvements to be made in conformity with the master plan.

It is so much to the advantage of every landlord to co-operate that at this early date nearly unanimous accord has been reached. Similarly, owners of vacant properties (now parking lots) find it more profitable to maintain the status quo than to construct new buildings which would further aggravate the parking situation. Tenants of landlords who decline to join the corporation would be excluded from privileges of the plan, and must arrange and pay for other parking arrangements, while their competitors would have their parking costs paid by their landlords.

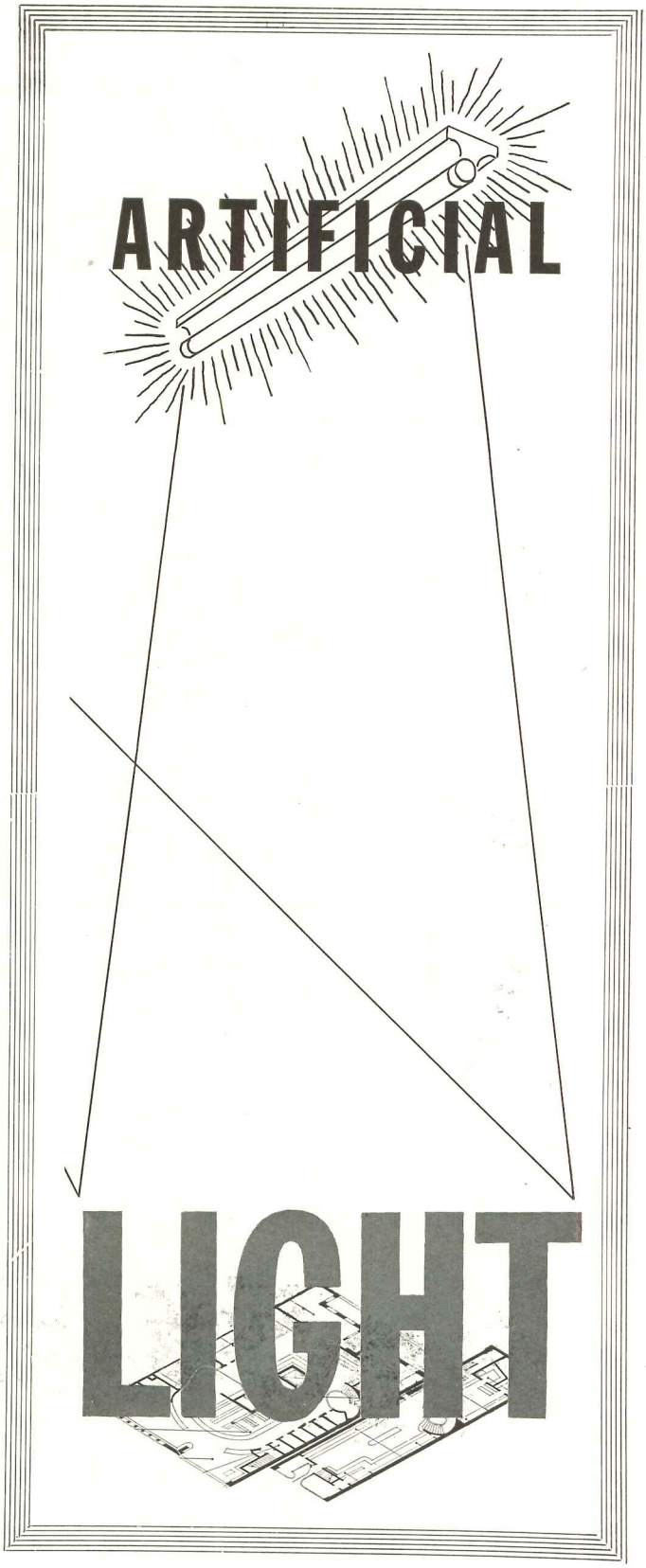
By estimating the total number of customers to be accommodated in the whole shopping center during the year and calculating total annual rental in the center and total cost of parking, it was determined that an assessment of approximately 8% of rentals (about one-half of 1% of sales) would provide 3 hours of free parking for every customer.

Gradual accumulation of a surplus is planned which may be used to buy up privately owned parking lots so that they may be beautified and controlled directly by the corporation, and to purchase strategic properties now occupied by unprofitable structures so that they may be converted into additional parking lots controlled by the corporation. California law permits condemnation of property for parking purposes in the same manner as for street right-of-way, etc. However, the association does not intend to foster such condemnation except as a last resort because it vests control of areas so acquired in the city instead of the corporation.

Rubber-stamped validation on the back of parking tickets will entitle the customer to a reasonable amount of free parking (probably 3 to 4 hours) in virtually any parking lot. Validation will be made in the stores at time of purchase. The parking-lot operator will then charge the Chamber of Commerce (acting for the corporation) for the parking toll due on the validated ticket, thus, in effect, receiving his money from the corporation (via the Chamber of Commerce) instead of directly from the customer.

*Harvard Graduate School of Business Administration reports that retail dry-goods sales last year increased 5½%, profits 45%!

The Integration of NATURAL AND ARTIFICIAL LIGHT



Only the architect, in the last analysis, can achieve that correct integration of artificial and natural light which modern building demands. In this, the first of two studies, MR. HANS BLUMENFELD surveys many complex factors involved

OLD CHAMBERS* evidently thought only of natural light. In his days artificial light was merely a weak competitor of darkness; only a generation ago it became a competitor of daylight; today, the position is reversed and natural light is a competitor of artificial illumination, asked to show cause why it should not be replaced by its younger brother. The architect is faced with the new problem of weighing their respective merits and coordinating their effects. It is no longer possible to design for daylight only, and let artificial lighting take care of itself. If it is true that there cannot be too much light, it is equally true that it must be the right kind, and in the right place. Both are interrelated in many ways; to mention only the most important:

(1) Artificial light should approximate daylight in brightness, direction, and color, wherever a room is used at night the same way as it is in daytime (fig. 1).

(2) In many cases artificial light is necessary to complement natural light.

(3) Transition from natural to artificial light, both in time and in space, should be achieved smoothly (fig. 2).

(4) Where natural light comes in, artificial light goes out.

Light, an unknown quantity

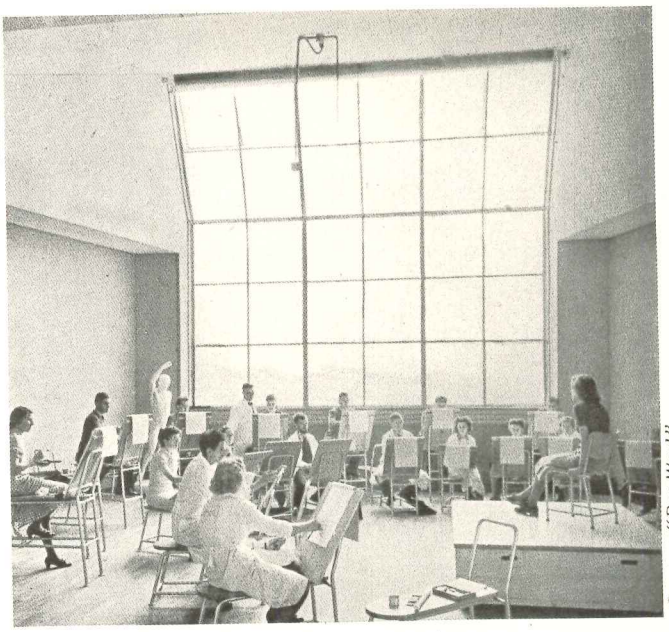
Practically all sources of light emit also radiant energy at wave length both longer (infrared) and shorter (ultraviolet) than those visible to our eyes. All of these affect our health and must be controlled; our main interest, however, is in those rays which possess the strange faculty of evoking in our eyes the sensation of light, enabling us to see.

Light, being a subjective sensation, can not be objectively measured. All the "lumens", "footcandles" (f.c.), etc., so freely used by the illuminating engineer, really measure certain amounts of radiant energy at certain wave lengths, which are expected to evoke equivalent sensations in the eyes of that mythical person, Mr. Average. Because seeing is a mental act based on a physiological process, there can be no hard and fast rules for illumination, and no cure-alls.

The development of the human eye has been conditioned by natural light for millions of years before it became human, and for scores of millions before it became an eye. It is therefore wise to follow natural conditions as closely as possible. The almost unlimited possibilities of artificial illumina-

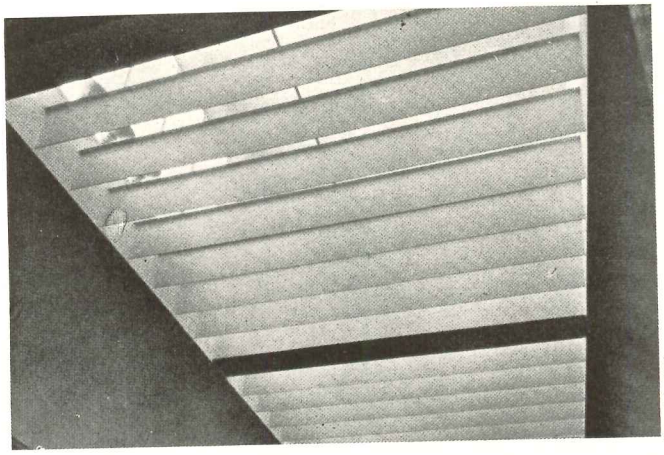
*"*In dwelling houses, and all places where pleasure is the main purpose, there cannot be too much light."*

WILLIAM CHAMBERS, 1759
(A Treatise on Civil Architecture)



Courtesy "Das Werk"

Fig. 1: AT NIGHT THE REFLECTED LIGHT from the white curtain produces exactly the same shadows as does light from the window in daytime.

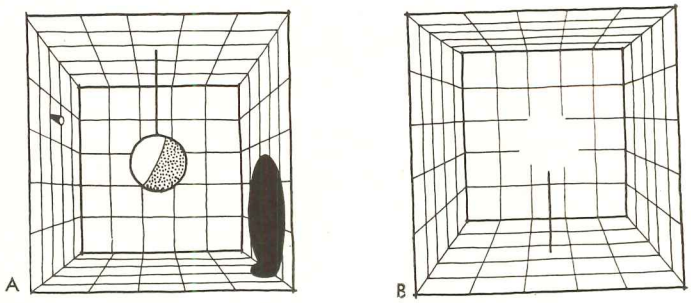


Sturtevant

Fig. 2: ARTIFICIAL LIGHT, installed above the skylight, merges with daylight.

Courtesy "Glass in Architecture and Decoration"

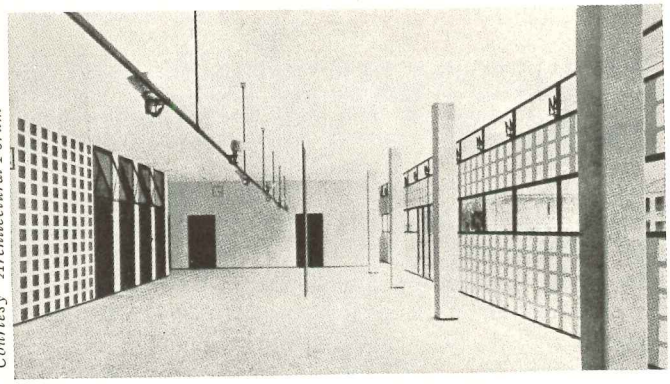
Fig. 3: AT NIGHT THE RIBBON WINDOWS do not light the factory, but the street. Looks fine, but a tremendous amount of light is wasted.



POINT SOURCE OF LIGHT. Harsh shadows; discrimination of detail impossible; cast shadows confuse form.

UNIFORM LIGHT FROM ALL SIDES makes shape disappear entirely.

Fig. 4: EXTREMES IN LIGHTING



Courtesy "Architectural Forum"

Fig. 5: THIS HALL APPROACHES VERY CLOSELY the ideal illumination. Note absence of cast shadows and soft shadows on columns near glass wall.

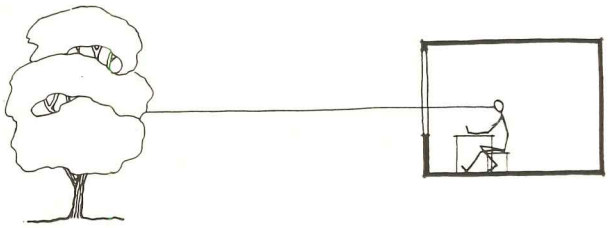
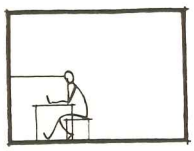
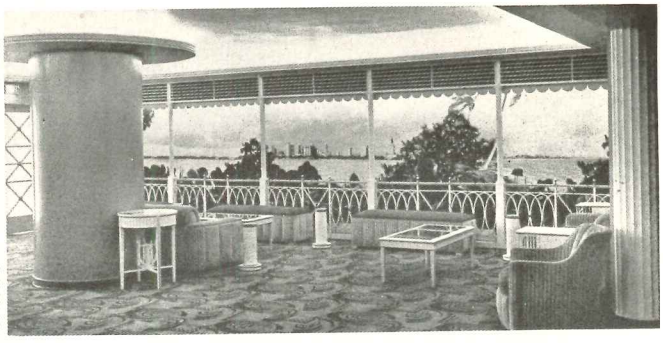


Fig. 6: THE IMPORTANCE OF A DISTANT VIEW. An occasional view out of the window (above) affords the eyes an opportunity to relax by adaptation to distant vision. A room without a view (right) condemns the eyes to constant near vision, resulting in eyestrain.





Gottscho

Fig. 7: PHOTOMURALS SUCH AS THIS are stimulating to the mind, but do not afford relaxation from near vision, as would the "real thing"; instead they increase eyestrain.

tion should not lead to a deviation from this rule without good reason, certainly not in rooms for permanent use.

The luminous environment

We did not develop the ability to see just for the fun of it, but in order to grab, and to avoid being grabbed. The good, the true, and the beautiful light is the light that enables us to perceive real bodies. We want to perceive their exact size, shape, and distance, and perceive them safely, easily, and quickly.

Primarily we do not see bodies, but just surfaces, varying in shape, brightness, and color, and laid out on the inside of a perisphere, of which our eye is the center. As every surface in this visual perisphere emanates light, control of light means control of the entire luminous environment, though only a part of it is visible at one time. This part, called the visual field, centers around the axis of vision, extending about 100° to either side, and 50 to 70° respectively upwards and downwards.

In the process of perception shadows are our main guides. Two extremes must be avoided: A perfectly uniform brightness (and color) of the entire visual field would make all objects invisible. With the limited means formerly available this was not likely to occur, but with modern methods of illumination it has become a danger to be guarded against (fig. 4b). On the other hand, excessive contrasts make discrimination of details in the shadow impossible (fig. 4a).

In general own shadows tend to clarify form, while cast shadows tend to confuse it. A very extended source of light, occupying about half the perisphere, practically eliminates cast shadows, while it emphasizes plastic form by soft own shadows (fig. 5).

Only at close distances is perception not entirely dependent on mental processes translating two-dimensional images into bodies, but receives three-dimensional impressions by the physiological acts of focusing and convergence. Changes in focus—or accommodation—are noticeable at distances under twenty feet, while convergence of the two eyes operates even at distances of several hundred feet: Converging and focusing apparatus co-operate automatically, adapting the eyes to the distance of the object.

The importance of a distant view

The eyes having been developed for frequent changes in distance adaptation, mostly for objects far away, it is little wonder that eyestrain is caused by continuous adaptation to the close tasks imposed by civilization. The strain is relieved by looking at distant objects from time to time, even if it be only for a few seconds. This relaxation is usually achieved by looking out of the window (fig. 6).

Generally this physiological function of the distant view is overlooked and the desire to "look out" is attributed to a mental urge only. Hence ugly views are deemed worse than useless and are excluded. They do afford some relaxation, however, though this may sometimes be partially offset by depressing effects on the mind. Certainly the mental influence of a cheerful view is also very important; but if it were alone to be considered, an actual distant view might be replaced by a mirror, or by a photomural or a painting. While these may be very stimulating to look at, and quite appropriate in rooms for transient use, such as a foyer (fig. 7), they can never replace the "real thing." Instead of affording relaxation from near-vision adaptation, such a "trompe d'oeil" makes matters worse by seducing the eyes to accommodate for distant vision. This results in a blurred image, causing serious eyestrain.

The popular preference for the traditional window is not to be hastily discarded as a sentimental hangover from the pre-electricity age. The possibility for distance adaptation is a constituent element of good seeing. This fact should never be forgotten in comparing lighting through windows with artificial illumination, and also with the use of skylights, translucent walls, etc.

Without a view out of a window a degree of distance adaptation is possible in large rooms, provided that the view of the end of the room is not obstructed by glare. Therefore equalization of surface brightness is far more important with artificial lighting than it is with daylight received through windows. At distances less than 20 ft. no satisfactory visual relaxation is possible; it is hardly an accident that rooms are generally considered small if their greatest dimension does not attain this minimum.

Means of control

The great advantage of artificial light is the possibility for almost perfect control. Subject to control are *three basic qualities of light:* (1) intensity, (2) direction, (3) color. These three qualities are controlled first by the source of light, which is out of reach in the case of daylight. They are further dependent on transmittent and reflecting media, which may absorb, redirect, or diffuse all or part of the light received from the original source, and which may be used as well with natural as with artificial sources. Briefly our *means of control* may be summed up as follows:

(I) SOURCES.

(A) Natural.		(B) Artificial.
(1) the sun	*point source*	(1) incandescent filaments
(2) the sky	*extended source*	(2) luminescent gases
		(3) fluorescent coatings

(II) MEDIA.

(A) transmitting		(B) reflecting
opaque	*absorbing*	black surface
prismatic	*redirecting*	specular surface
translucent	*diffusing*	mat surface

All lighting fixtures and systems are composed of these elements. Once this is realized, they can easily be analyzed and compared. The frosted and silvered-bowl lamps, for instance, combine a point source with a diffusing transmittent or a specular reflecting surface respectively. Enclosing globes are always transmitting surfaces, either diffusing or redirecting. In cove lighting the light of a point source is first redirected by a specular reflecting surface towards the ceiling, which throws it back into the room by diffusing reflection. A mirror, specularly reflecting the diffused light of the sky, uses the same elements in reverse order.

In most cases the desired result can be achieved by more than one combination of these three basic means: choice of source, transmission, reflection. A ceiling panel of specified shape and brightness may consist of rows of fluorescent tubes, or of a skylight of opalescent glass, or of a reflecting surface lighted from below (fig. 11). Similarly a yellow wall may be realized by throwing on a white wall light from a monochromatic yellow source, such as sodium light, or from green and orange sources; or by filtering white light through a yellow glass; or by painting the wall yellow.

Sunlight and skylight

In daytime light may be received from the sun and from the sky in greatly varying proportions. On a clear day, with the sun at the zenith, about six times as much light is received from the sun than from the entire hemisphere of the sky; with the sun standing 10° above the horizon, the amounts from both sources are about equal. A hazy sky is several times brighter than a clear one, and of the same white color as the sun, while the light from a clear sky is very poor in yellow and red rays, and calls for correction by addition of reflected sunlight (figs. 12 and 13).

Artificial sources of light

Incandescent bodies, such as the tungsten filament lamp, emanate light of high brightness and may be regarded as point sources. The same holds true of open arcs, as used in the carbon-arc lamp, and of enclosed high-pressure arcs, as represented by some mercury-arc lamps. The light from such sources may easily be redirected by reflectors with a loss of no more than 10%.

In low-pressure arcs, the source of light is also a luminescent gas, such as neon. In fluorescent tubes a paint or coating emanates light based on the low-pressure mercury arc. These tubes are extended sources of low brightness. Redirection of their light by reflectors is more difficult and involves a loss of about 30%. They may, however, be used as directly visible sources in large rooms, where they are not too close to the eye. Fluorescent paints are also used on walls, carpets, etc. They are a very extended source of very low brightness, normally insufficient for illumination and restricted to decorative and theatrical uses.

While neon and similar tubes may be made of practically any length and bent at will, fluorescent tubes are as yet restricted in shape and size.

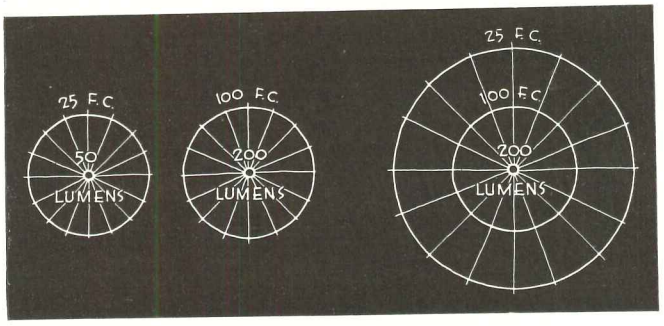
Compared to incandescent lamps, fluorescent lamps use about one third of current, and live more than twice as long. Against this must be held higher cost of the fixture, and higher expenses for cleaning. At current utility rates these factors seem about to balance. It is too often forgotten that the first cost of a fixture is usually only a fraction of the annual maintenance cost, which is composed of: (1) replacement, (2) cleaning, (3) electric current.

The first two items enter also into the calculation of maintenance cost of daylight. The last item is furnished freely by the sun, but its place is taken by the need for cooling.

Color

The most striking difference between the various sources of light is their color. Color is the sensation by which our eye registers differences in wave lengths of radiant energy; sensitivity to these differences varies widely for various individuals. Furthermore, in one individual identical sensations may be evoked by an infinite number of combinations of various wave lengths. At low brightness our eyes are more sensitive to short—blue and violet—rays than to long ones. Therefore so-called "daylight" lamps are white only at high brightness, but bluish when they are dim, and should be used with discrimination. With artificial light it is generally safer to err towards the longer than towards the shorter end of the daylight spectrum.

The incandescent lamps have a continuous spectrum similar to that of the sun, but with a greater percentage of long rays. With increases in temperature the peak shifts towards the shorter rays. The hotter the filament, the cooler—and brighter—the light; therefore high wattages are much more



A B

Fig. 8: INTENSITY OF ILLUMINATION (measured in footcandles—f.c.) depends on: (A) intensity of source (measured in lumens), (B) distance from source. Decreases in proportion with square of distance.

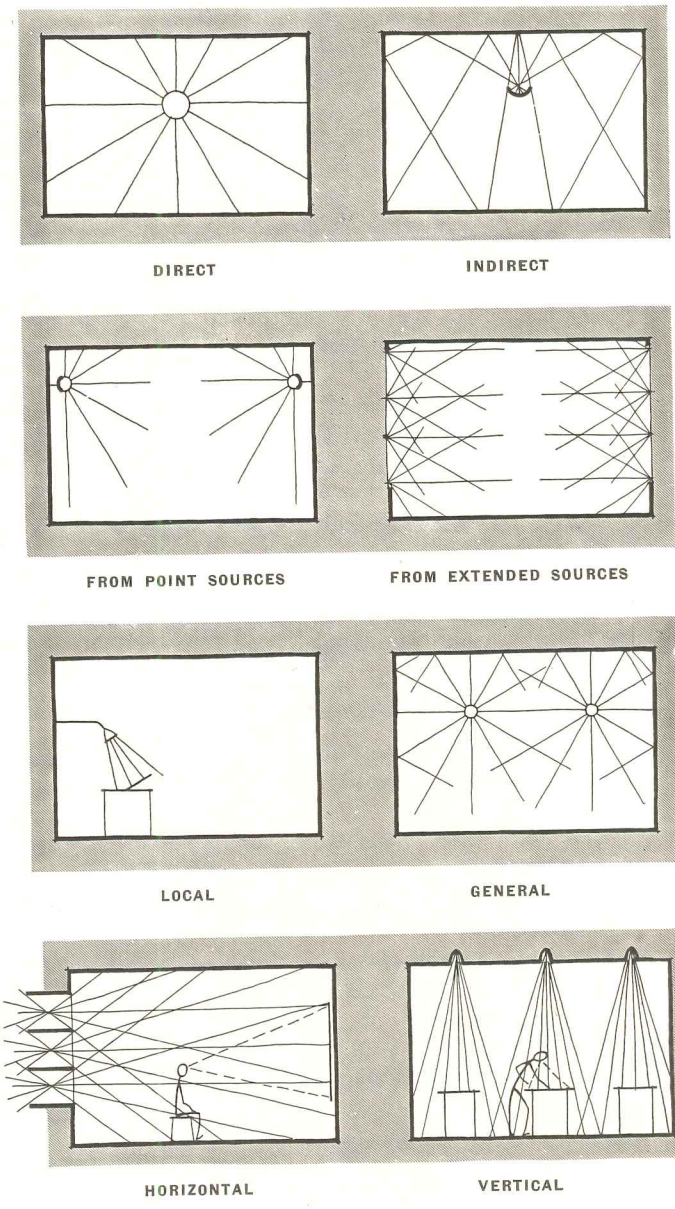


Fig. 9: DIRECTION OF ILLUMINATION may be any of those pictured above.

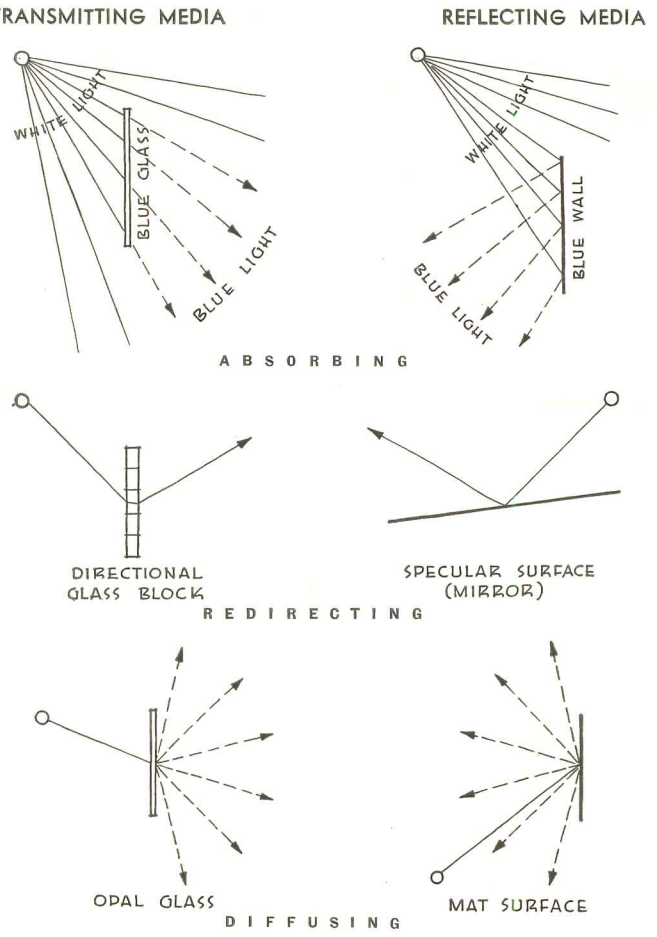
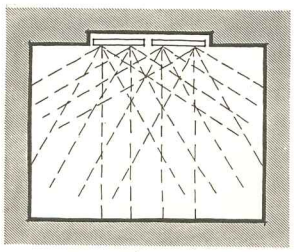
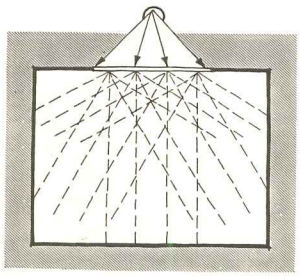


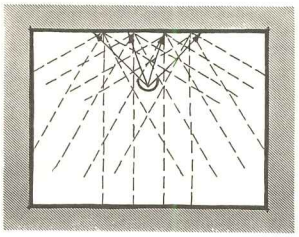
Fig. 10: THREE WAYS OF FILTERING LIGHT.



CHOICE OF SOURCE: rows of fluorescent tubes recessed into ceiling



TRANSMISSION: light from point source transmitted through evenly diffusing opal glass



REFLECTION: light from point source reflected from an evenly diffusing mat white ceiling

Fig. 11: THE SAME EFFECT, that of a ceiling panel emanating light, achieved by three different methods.

economical than low ones. In order to match daylight, however, even with the highest wattage, more than three quarters of the total light of the bulb has to be filtered out. This means not only increased expenses for current, but also increased heat.

The old carbon-arc lamp produces a fairly white light. Cored with certain compounds, it emanates a spectrum more nearly like the sun's than do other artificial sources. As the flicker and noise that once eliminated it from the field have been overcome, the carbon-arc may possibly come back.

The neon, sodium, mercury-vapor, and other enclosed-arc lamps have discontinuous spectra, consisting of a number of "lines". These are strongly modified by changes in voltage and pressure, becoming more continuous as pressure increases.

Discontinuous spectra may cause unpleasant surprises. A light resembling daylight when reflected from white surfaces, may strongly affect some other colors. This is the case with the low-pressure mercury arc, which is overdosed with blue and yellow, but poor in green, and deficient in red: against this is the fact that the tubes are cool.

Fluorescent tubes, based on the mercury arc, share these characteristics, but modify them by filtering through the fluorescent coating. Addition of warm incandescent light to the spectrum of mercury-vapor or fluorescent lamps is usually the best way to match the color of daylight.

Light of a single wave length—monochromatic light—has the advantage of eliminating the phenomenon known as chromatic aberration, which slightly blurs our vision in any light having a continuous spectrum, such as daylight. Actually objects can be seen more clearly in sodium light, which is monochromatic yellow.

Both translucent colored bodies and reflecting colored surfaces act as selective filters, absorbing all light waves of other colors than their own. They produce colored light by deduction, with a corresponding loss of brightness. The loss amounts to about 50% for most pale colors and for pure yellow, and to about 90% and more for saturated colors. Mixing the light of luminescent gases of different colors produces color by addition, the resulting brightness equaling the sum total of the brightnesses of the sources. This opens up new perspectives: perhaps we will soon come to mix our light according to our personal taste.

Care must be taken to avoid twilight, which is light from two sources of different color, which have not mixed. It occurs frequently when the very blue light of the evening sky meets the yellow light of an incandescent bulb (fig. 14).

Where artificial light is used alone, much is to be said for the natural continuous spectrum of the filament lamp, which is identical with the spectrum of the sun seen through a thick layer of air.

General brightness

The human eye has an almost unlimited ability to adapt itself to brightnesses varying from one to ten million units, but efficiency and ease of seeing increase greatly with increasing brightness. The improvement is very great up to 15-20 f.c., substantial up to 50 f.c.; above this limit it decreases, but remains distinctly noticeable.

These facts furnish the base for the standards accepted for artificial lighting: general illumination of 15-20 f.c. for ordinary tasks, about 50 f.c. for rooms where work is done on close tasks such as sewing, drafting, etc., plus local lighting where higher brightness is needed. These brightnesses can easily be achieved at reasonable cost with both incan-

descent and fluorescent light installations of many sorts.

They are rarely achieved in daylighting. The sun being an exceedingly unreliable source, any calculations of daylight must be based on the light of the sky. For this purpose the daylight unit has been evolved, meaning the amount of light received on a horizontal surface from 1% of the hemisphere of the sky. A simple construction will show how many daylight units are available at any point of a room.

According to the changing brightness of the sky, the light of a daylight unit varies from zero to about 20 f.c.; 6 footcandles is a safe average. With the current standard of window surface equal to one seventh of floor surface the darkest part of the room receives no more than one or two daylight units, resulting in 6-12 f.c.; varying according to the shape of the room and the brightness of walls and ceiling.

If natural lighting is to stand up in competition with artificial illumination, the unobstructed window surface must extend to about one-third of the floor surface; this would result in 15-25 f.c. at the darkest point of the room. In schools, offices, etc., practically the whole wall will have to be of glass, in order to guarantee a brightness of about 50 f.c. throughout the room (fig. 15).

Brightness distribution

It is often said that such large windows would be glaring. But glare is seldom, if ever, the result of excessive absolute brightness, but of excessive brightness contrast. The brightness of the sky seen through the window will be the same in all cases—corresponding to 180 f.c. in our example—and the brightness at the window will also be the same, about 150 f.c., resulting in a brightness contrast not exceeding 1:10 in a room with a one-third window; this is generally considered as admissible in good lighting practice. In a room with a one-seventh window, however, the contrast may be 1:30 and more, and the sky will be felt as glaring. This starts the vicious circle: curtains at the window against the glare, hence greater darkness, hence glare anew, hence more curtains, and so on, until rooms are more fit for moles than men.

Wrong distribution of brightness, not general lack of light, is also the trouble in the traditional stair well, with the glare of the window thrown right into the eyes of the people walking down (fig. 16).

Wherever possible, the best way to avoid glare is equalization of brightness on all surfaces of the visual perisphere. As light attracts the eye, the highest brightness should be in the focal point, and gradually fade outwards. Because the eye is more sensitive to light from below, it should decrease strongly toward the bottom, slightly toward top and sides.

In the ideal case the object itself is the source of light. This occurs in advertising signs, or when we look at a bright object merely for enjoyment, e.g., at a sunset or at decorative lighting. Where silhouette perception is sufficient, this ideal condition may also be realized in the work world, as in engraving on a translucent surface.

Normally however the object is darker than the source from which it receives its light, and therefore this source should be shielded from the eye. This is easily done in the case of local lighting, though it is still often forgotten. It is not possible in general lighting, where every point of the visual perisphere may become the object of vision. Therefore, directed local lighting is generally preferable.

Not only the primary source, but any surface brighter than the object occasions glare, especially if located at an angle of less than 30° from the line of vision (figs. 17, 18). This secondary glare is more difficult to control, especially with specular reflection. With an extended or a feeble source, reflection from specular surfaces is tolerable, but bright punctual sources and specular surfaces are mutually exclusive. This applies both to direct sunlight and to the light of incandescent or arc lamps. Many uses of brilliant metal surfaces, which were appropriate with the dim light of the oil lamp, must be excluded with modern sources of light. Notably in well-lighted workrooms, any brilliant color or polished surface should be avoided. By careful design, reflected glare may be kept out of the line of vision, provided all possible locations of both the object and the eye are known; in the work world this is rather the exception, especially with curved surfaces.

General illumination

Extended sources and bright mat surfaces, acting as secondary sources, are the best means of avoiding glare.

Fluorescent walls, ceiling, and floor are the only available source which by itself would achieve equal brightness of the entire room, but are at present hardly a practicable solution. Daylight in an all-glass house approaches this condition with an overcast sky, but calls for means to control direct sunlight. In large rooms evenly distributed fluorescent tubes may prove satisfactory. Normally, however, the light of the source must be diffused by transmission or reflection. We talk of "luminous architecture" in the first case, and of "indirect lighting" in the second, but the same laws apply whether a luminous ceiling or wall be produced by a source behind or before the luminescent surface.

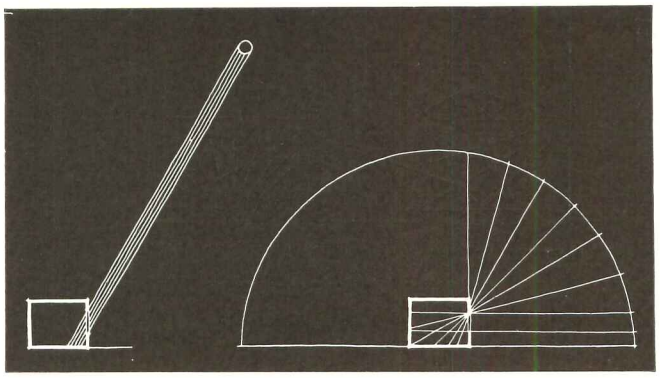
In both cases equal diffusion can only be achieved over a surface subtended by an angle from the source not exceeding 90°. As the available space behind the surface—in many cases piping space—is usually very limited, the difficulties in luminous architecture arise mainly from the necessity of extending and multiplying the source (fig. 19). With incandescent light this can only be done by using many bulbs of low wattage; besides using an excessive amount of current, these bulbs produce a very yellow light and a great amount of heat. Fluorescent tubes, being extended, of low brightness, and cool, are the answer.

In indirect lighting, on the other hand, the main problem is to avoid obstruction of the room by the source and to minimize the accumulation of dust on the reflectors which direct the light towards the ceiling or wall. The source, which includes a specular reflector, may be hidden, as in cove lights, or enclosed in a visible fixture, as with suspended or floor lamps. Both cases call for a small number of point sources of high brightness, such as incandescent or arc lamps. Only where the cove is very close to the reflecting surface are tubes preferable, but tubes of minimum thickness and high brightness.

Diffusion by transmission

The number of translucent media is practically unlimited: glass, slabs of marble or alabaster, and an ever increasing number of plastics; in addition, textiles, both old and new, and paper are also used. All of these means differ as to the relation of diffusing and specular transmission, and of absorbtion, which affects not only brightness, but also modifies color. In general, the less thorough absorbtion increases as diffusion becomes more complete.

In diffusing glass and in most plastics, diffusion—achieved by the molecular structure of the material—is practically



THE SUN, a point source

THE SKY, an extended source

Fig. 12: SOURCES OF DAYLIGHT

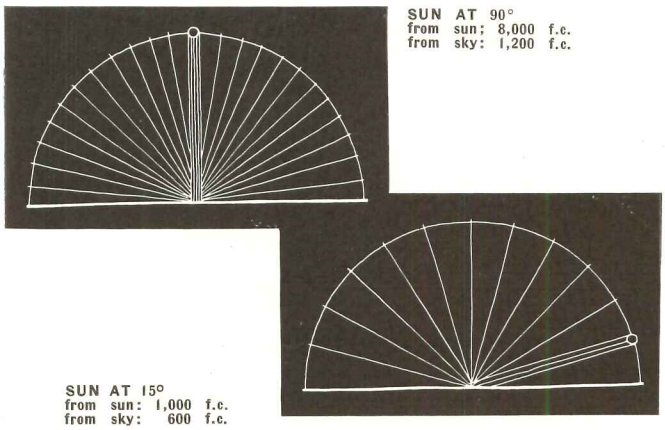
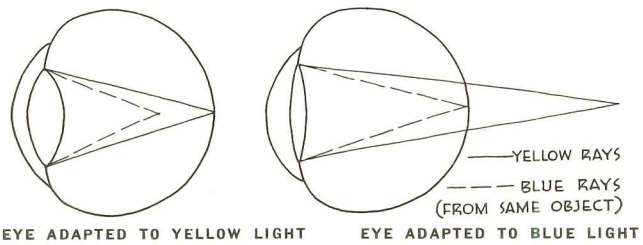


Fig. 13: INTENSITY OF SUNLIGHT AND DAYLIGHT

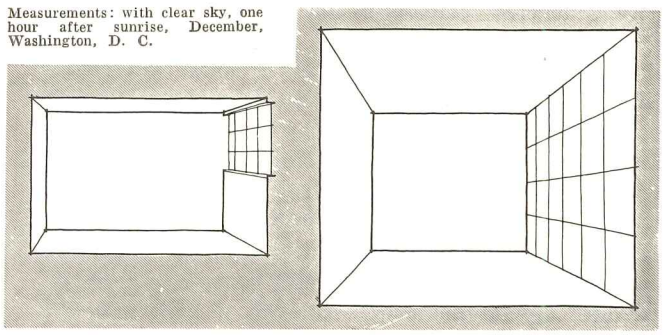


EYE ADAPTED TO YELLOW LIGHT

EYE ADAPTED TO BLUE LIGHT

Fig. 14: WHY TWILIGHT CAUSES EYESTRAIN. The eye is constantly changing from adaptation for the yellow light of the electric bulb to the blue light of the sky and back again.

Measurements: with clear sky, one hour after sunrise, December, Washington, D. C.



KITCHEN 12′—0″ deep
8′—0″ wide
8′—0″ high
window surface—33% of floor
minimum brightness—15 f.c.

CLASSROOM 14′—0″ deep
24′—0″ wide
12′—0″ high
window surface—88% of floor
minimum brightness—50 f.c.

Fig. 15: IF DAYLIGHTING IS TO LIVE UP TO standards accepted for artificial illumination, window surfaces must increase.

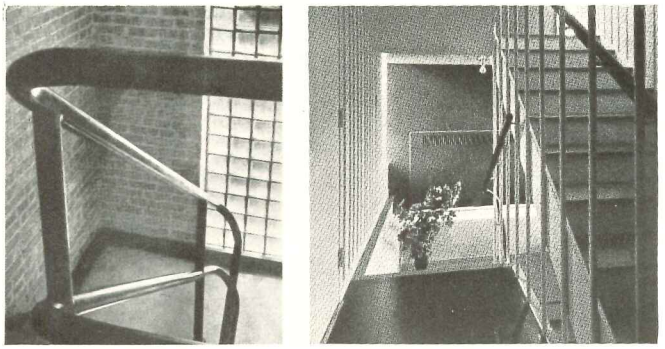
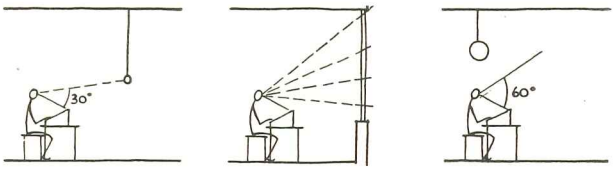


Fig. 16: IN THE TRADITIONAL STAIR WELL the glaring light of the window is thrown right into the eyes of a person walking down. A better solution is location of window on the side of the landing.

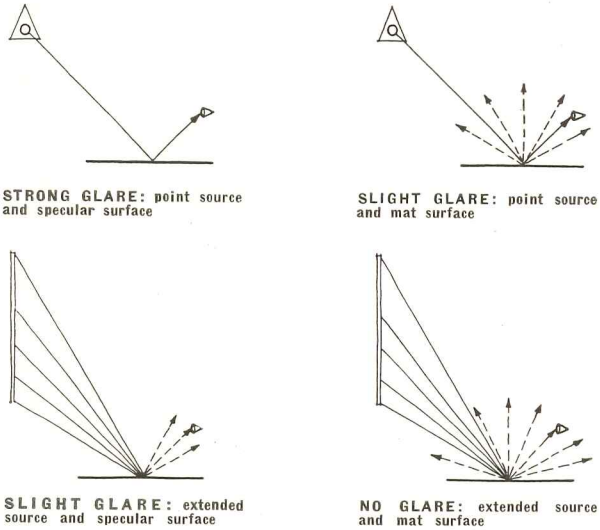


STRONG GLARE: point source in the field of vision

SOME GLARE: extended source in the field of vision

NO GLARE: source outside the field of vision

Fig. 17: PRIMARY GLARE



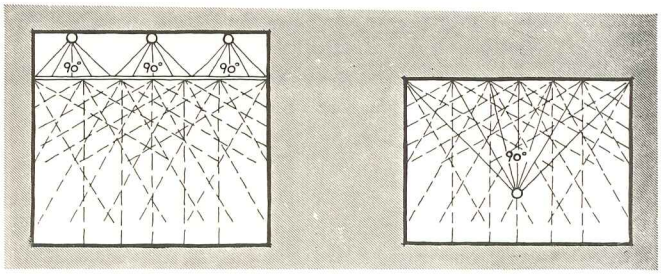
STRONG GLARE: point source and specular surface

SLIGHT GLARE: point source and mat surface

SLIGHT GLARE: extended source and specular surface

NO GLARE: extended source and mat surface

Fig. 18: SECONDARY GLARE. Any bright surface within the field of vision may occasion glare, notably at angles under 30° from the line of vision.

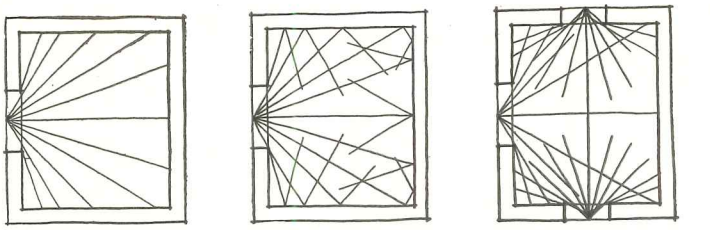


SOURCE ABOVE TRANSLUCENT GLASS; lack of space makes multiplication of sources necessary.

SOURCE BELOW REFLECTING CEILING; suspended source obstructs room, accumulates dust.

Fig. 19: THE SAME RESULT, a luminous ceiling of equal brightness, achieved by various means.

Fig. 20: GLASS-CONCRETE CONSTRUCTION, using lenses with silvered lateral surfaces, transforms the wall into a translucent screen.

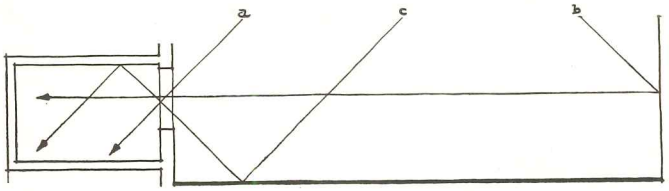


DARK WALLS AND CEILING: bright at window, dark at back

LIGHT WALLS AND CEILING: light equalized throughout room by reflection

DARK WALLS AND CEILING: equalization of light possible only with several sources

Fig. 21: DISTRIBUTION OF LIGHT.



a: LIGHT DIRECT FROM SKY lights part of room close to window.
b: LIGHT REFLECTED BY OPPOSING WALL lights depth of room.
c: LIGHT REFLECTED BY PAVEMENT diffuses throughout room by reflecting ceiling.

Fig. 22: REFLECTED LIGHT, unlike charity, ends at home, begins out-of-doors.

perfect; in flashed opal glass a diffusing veneer, thinner and less absorbent, covers a sheet of clear glass. The same principle applies in painted and enameled glasses. In laminated glass a layer, which may also serve to increase resistance to breakage or temperature, is enclosed between two panes of clear glass; this layer may be a paint, or a tissue of glass silk, etc. In the sandblasted, frosted, and similar glasses diffusion is achieved by breaking the surface into microscopic sections at different angles. As these sections grow in size, transmission becomes less diffusing, and more redirecting. This is the case with figured glass, where an infinite variety of sparkling designs is possible, dependent on the size and shape of the broken surfaces. However, all glasses achieving diffusion by uneven surfaces accumulate dust. This difficulty has been overcome in glass blocks, where the figured surfaces are protected, being on the inside of the sealed block.

The glass block is merely an enclosing material, which affords protection from sight, sound, and temperature; thick lenses and prisms may also serve as structural materials. We use them mainly in pavement lights; in Europe, notably in France, they have been widely used in glass-concrete constructions of walls, ceilings, vaults, and domes. Most lenses are diffusing; besides, the reflection from their lateral surfaces, especially when these are silvered, transforms the wall as a whole into an evenly translucent surface (fig. 20).

In current practice panes of clear glass provide protection and transparency, and a curtain or shade provides diffusion. By this division of functions we have gained flexibility, allowing for a view; but we have to pay the price of cleaning four surfaces instead of two. This inconvenience has to be weighed against the advantage of the view, in order to determine the relation of transparent and translucent walls.

Diffusion by reflection

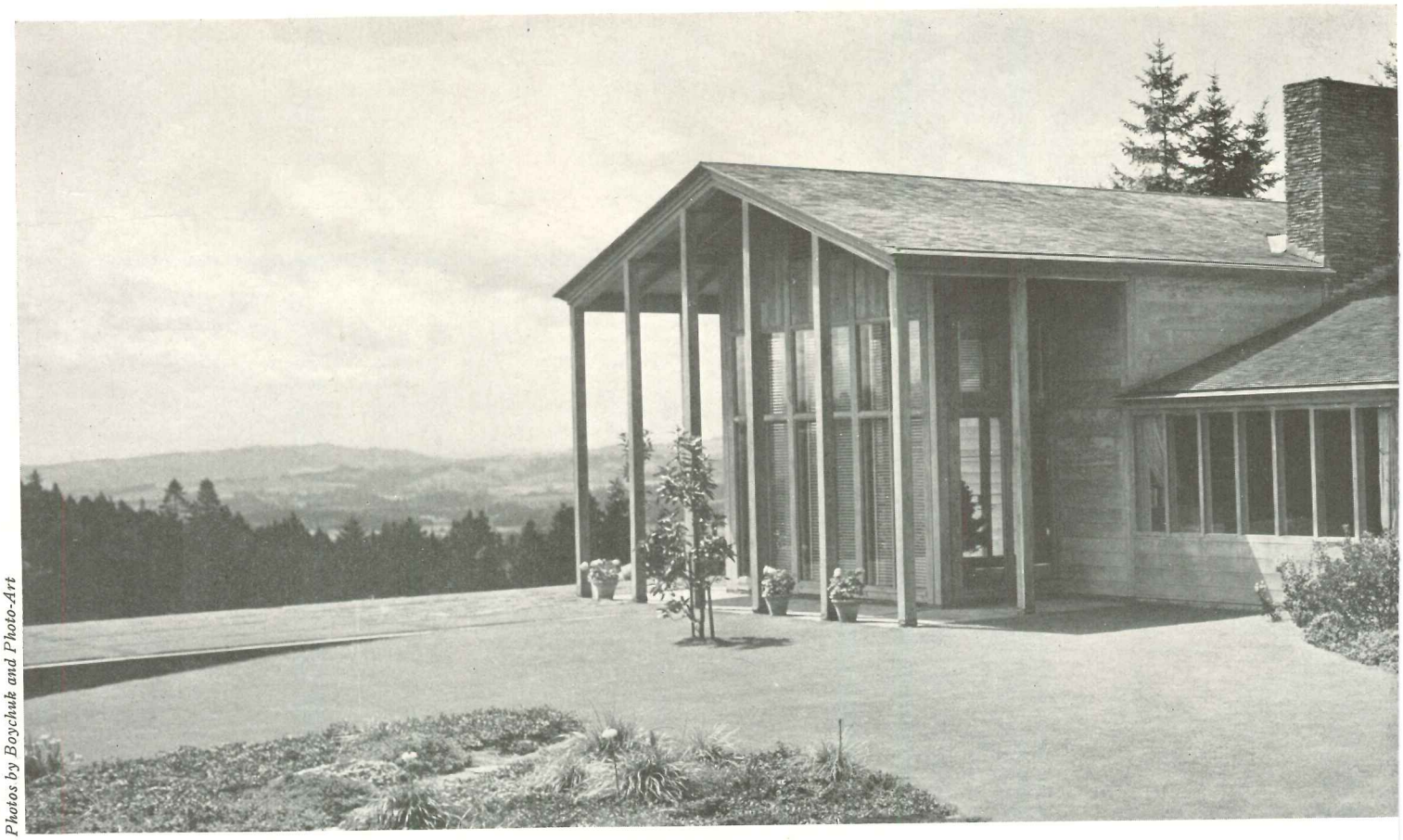
Even with glass blocks, as with any other translucent medium, there are still two surfaces to be cleaned. With a reflecting medium there is only one. Therefore reflecting media are much more widely used, both in natural and in artificial illumination. Alongside the source, they are the most important factor in lighting, which receives too little attention. In Holland manufacturers print the reflection factor of their products on the back of wallpapers, and on the front of cans containing paint. The American architect or interior decorator must find out for himself.

Any mat white surface, whatever the material, will have a reflection factor of about 80%. In a room with windows in one wall, white walls and ceiling will contribute almost half of the illumination. With dark surfaces even an approximate equalization of brightness can only be achieved by multiplying the sources; such rooms call for windows in two or more walls, and for a distribution of lighting fixtures throughout the room (fig. 23). Any change in the color of the source may affect not only the color, but also the brightness of colored reflecting surfaces. White surfaces help to equalize illumination not only in space, but also in time, contributing evenly to day- and night-light.

Unlike charity, reflected light ends at home, but begins out of doors. Every object is a source of light, and is often brighter than the sky. Sunlit snow may be 40 times as bright as a deep blue sky, and even in the shade a white wall is brighter than a clear sky. Light from sources opposite a window is thrown into the depth of the room, and light from below will be reflected and diffused by the ceiling. Therefore walls facing a window, and pavements of courts, terraces, and balconies are more valuable sources of light than the upper part of the sky, which lights mainly the part of the room next to the window. These surfaces should be kept bright, but not to an extent that may produce glare. Walls facing north may be white, but walls and especially pavements exposed to the sun should be of a yellow or buff color; this will also help to correct the cold color received from a clear blue sky (fig. 22).

HOUSES

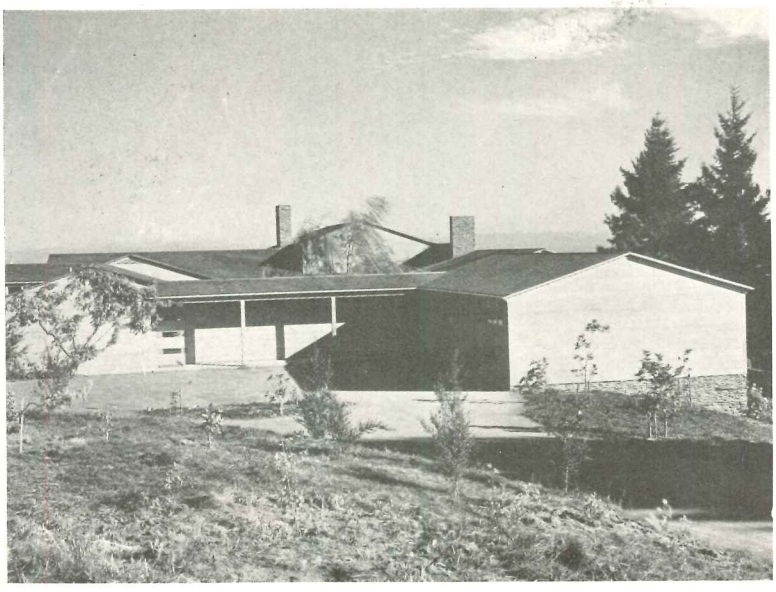
This month's house section leads off with a residence near Portland, Oregon, of which this is the forecourt and garden.



Photos by Boychuk and Photo-Art

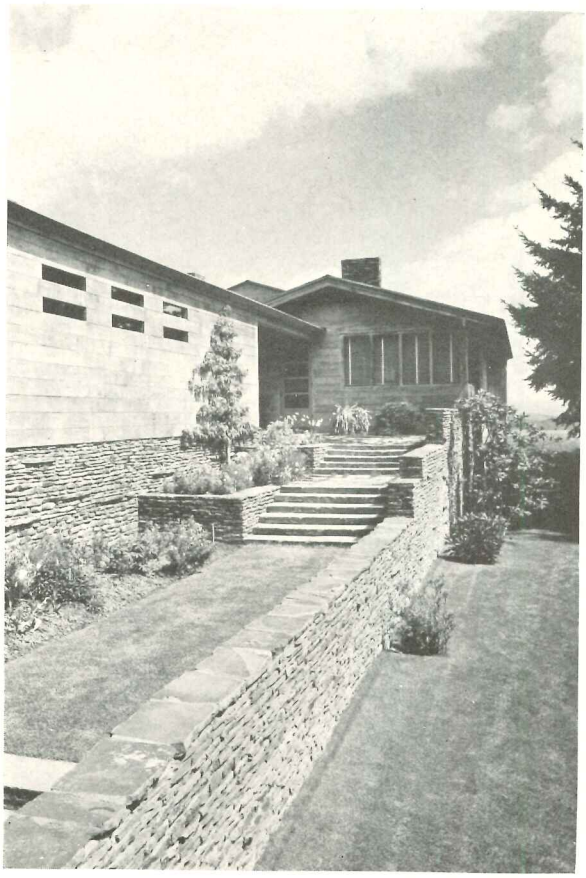
A COUNTRY HOUSE IN THE OREGON HILLS

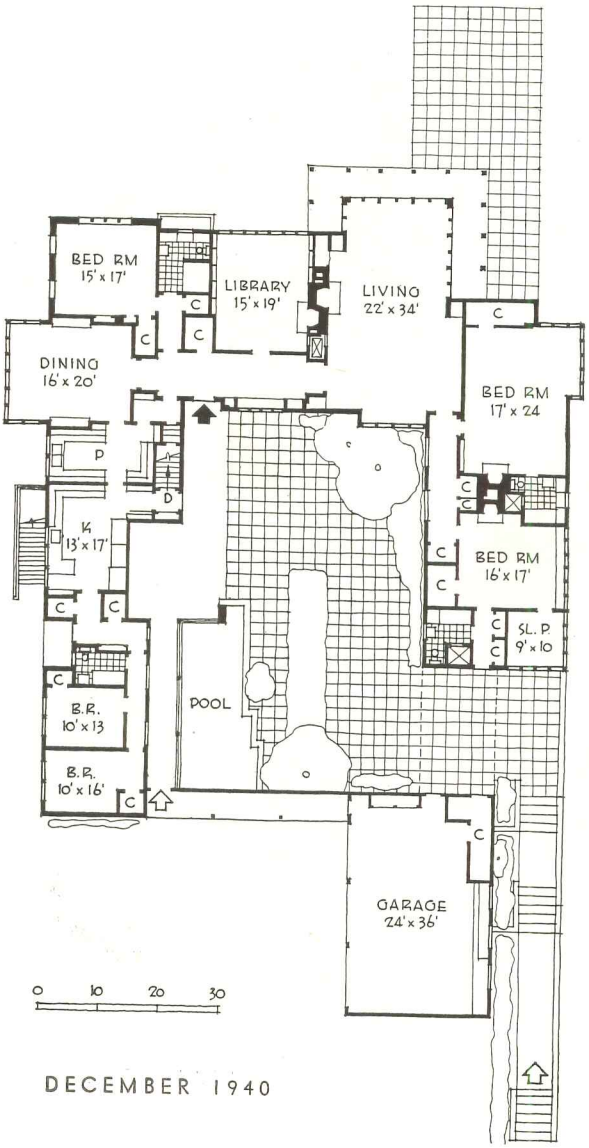
This residence near Portland, Oreg., for Mr. A. R. Watzek is the work of A. E. DOYLE & ASSOCIATE, Architects, and JOHN YEON, Collaborator. Its structure is entirely of wood, on a stone foundation. It represents "an emotional effort to solve the elements peculiar to the problem, in terms of regional architecture". Gardens and interior furnishings were designed by Mr. Yeon.

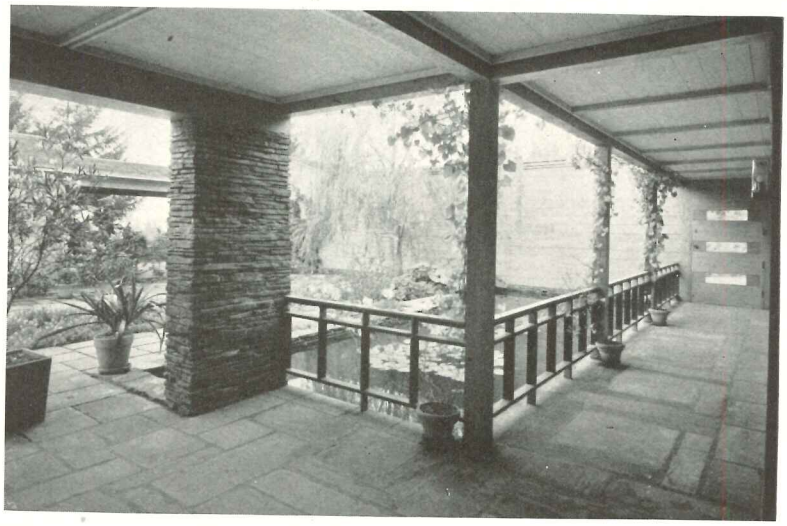


THE HOUSE SEEN FROM ABOVE THE MOTOR COURT; door to loggia at left

ORIENTED AND DESIGNED TO TAKE FULL ADVANTAGE of the view toward the Cascade Mountains and the intervening valleys, the house at the same time creates a feeling of shelter through the enclosed garden court. The main façade (above) faces the view, and principal rooms all have the same outlook. The garden court can be entered from a number of points, but the most frequently used is that which leads from the motor court direct to the loggia beside the pool. At the side of the house is a terrace (opposite page, top left) with stone steps which lead to the open porch and thence to the garden court. Exterior walls are of flush fir siding over conventional stud structure except for the garage, where fir boards are held together with steel pins; exterior has a silvery gray finish. The house has steam-actuated split-system heating. Individually controlled convector cores, incorporated in duct work as boosters, raise temperature for the heating-up cycle. Convectors may be used for heating without fan through separate convector returns.



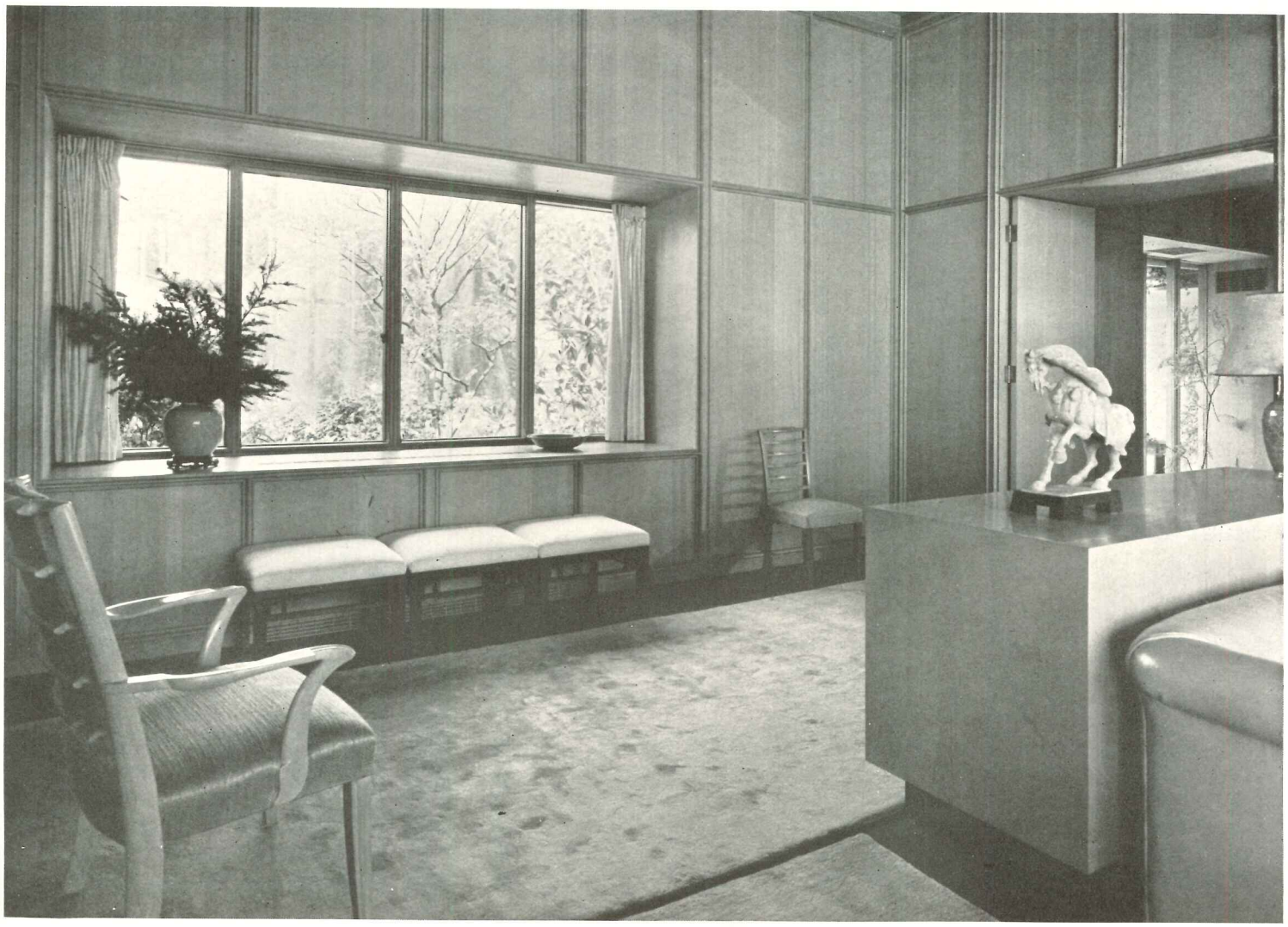




THREE VIEWS OF THE GARDEN COURT: top, from the covered porch; center, looking across to the porch; bottom, looking along the loggia. Planting is varied, and includes trees, potted plants, and a bed for flowers.

Photos by Boychuk

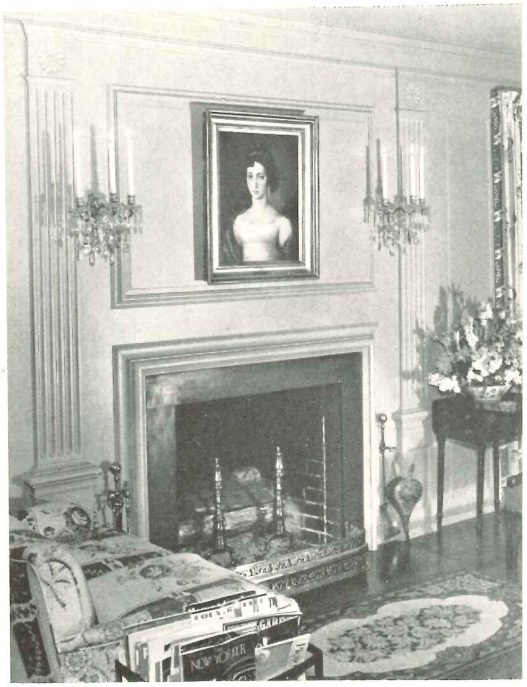
THROUGHOUT THE HOUSE the natural color of the different wood finishes was preserved. In the living room (p. 60, and below) walls and ceiling are paneled in vertical-grain noble fir. On either side of the fireplace are sliding door panels which conceal storage closets. The dining room (right) likewise has paneled walls; the ceiling is of plaster painted coral. The projecting bay, glazed from ceiling to floor, overlooks a group of evergreen trees.



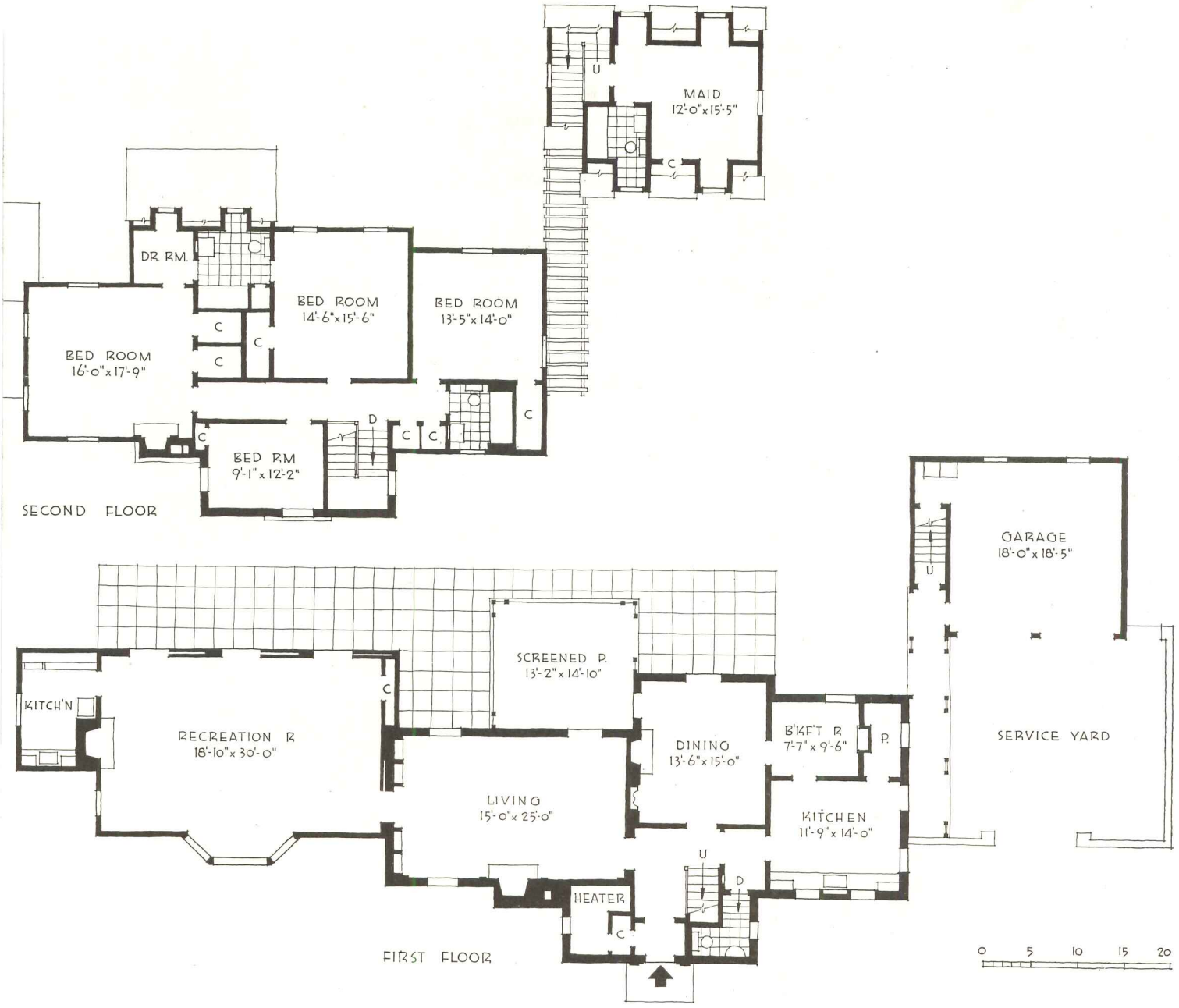
Photos by George Hampton Matchett

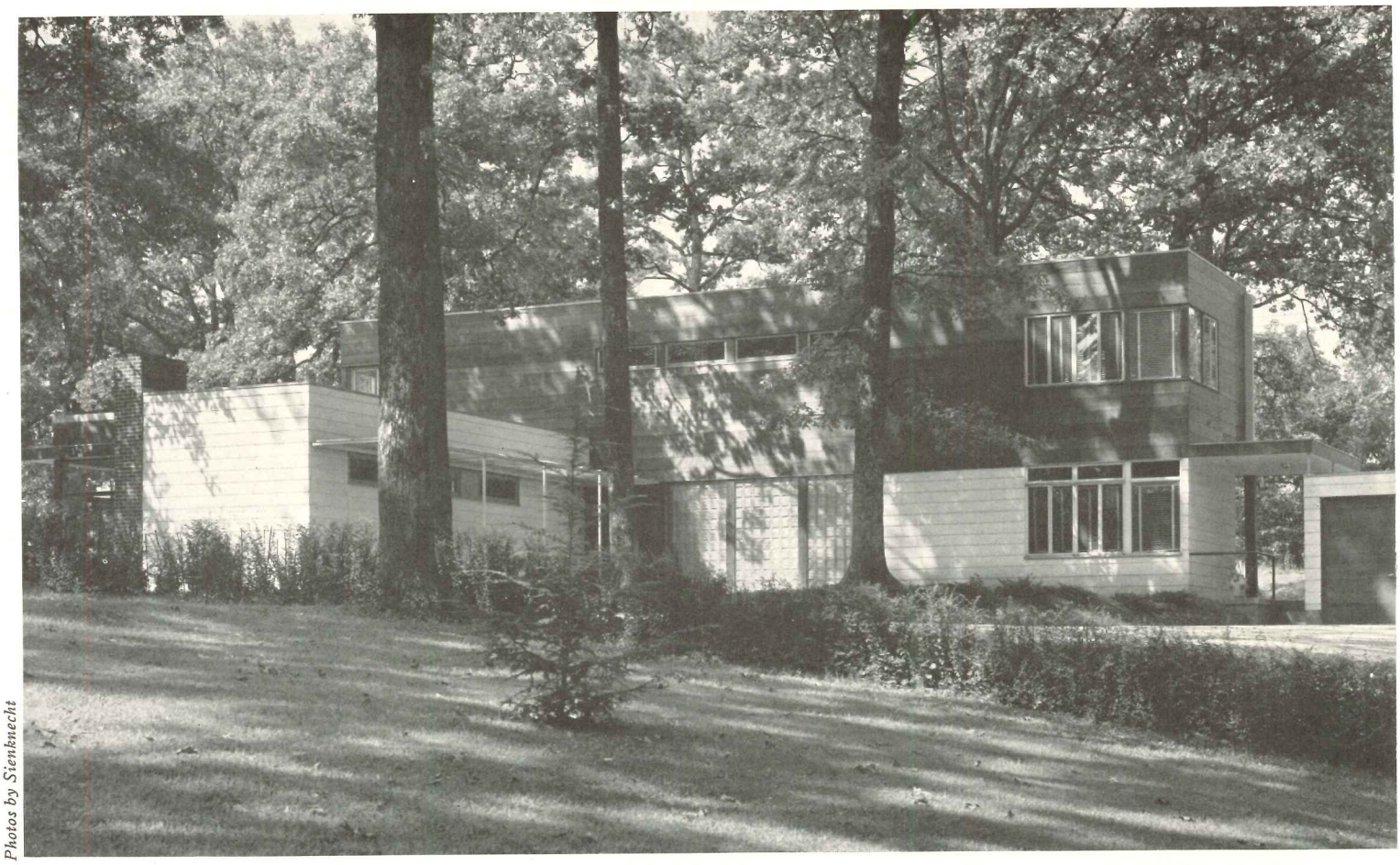
BRICK, SHINGLES VARY TEXTURE OF TEXAS HOUSE

This house for Dr. and Mrs. C. M. Griswold in River Oaks, Houston, was designed by the architectural firm of STAYTON NUNN - MILTON McGINTY. Krause & Stone were in charge of interior decoration.

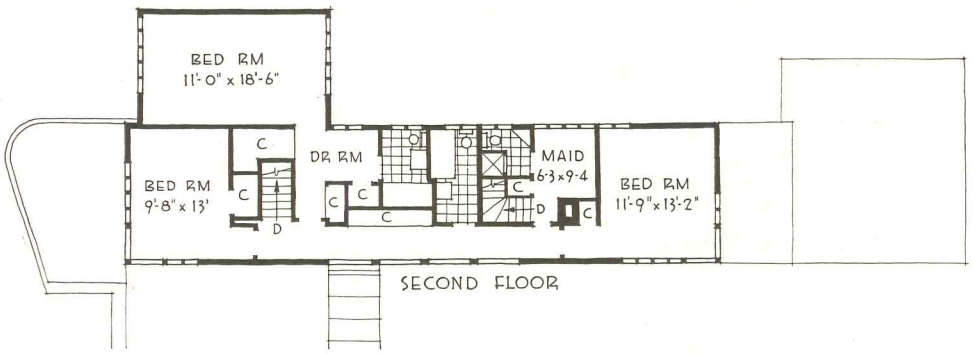


As ORIGINALLY DESIGNED and built the house did not include the recreation room, with its separate kitchen for impromptu eating. Three French doors in this room give easy access to a flagstone-paved terrace which overlooks the lawn. Noteworthy is the disposition of elements on the first floor, and the careful use of hall space. The cross ventilation obtained in living room and recreation room is a necessity in the climate of this locality. A covered walk connects kitchen with the garage and maid's room above. Service yard is convenient to kitchen.

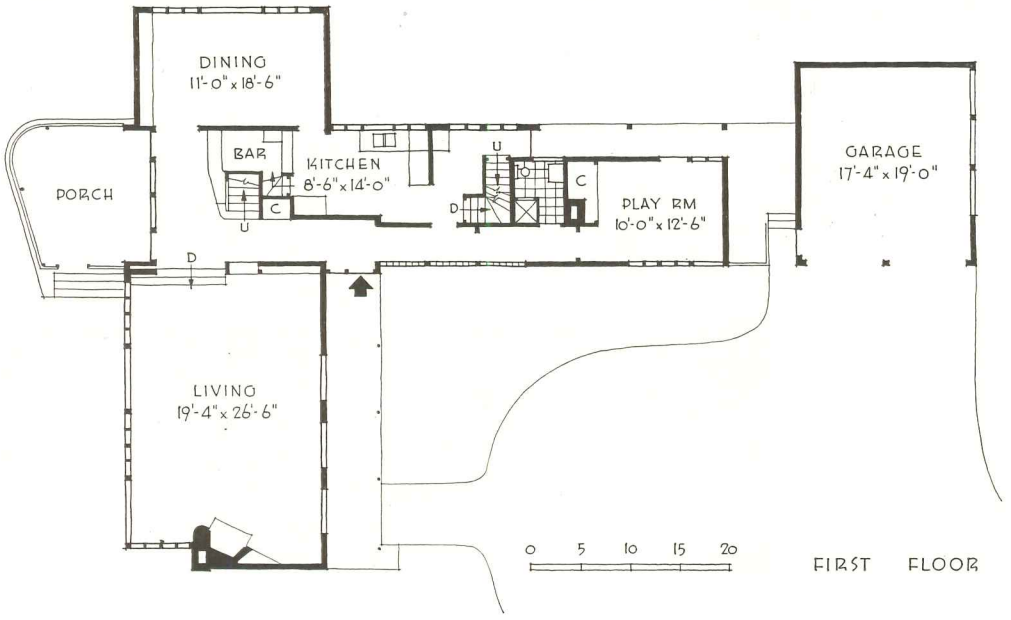

MAID
12'-0"x15'-5"
U
C
DR. RM.
BED ROOM
14'-6"x15'-6"
BED ROOM
13'-5"x14'-0"
BED ROOM
16'-0"x17'-9"
C
C
C
C
D
C
C
C
BED RM
9'-1"x12'-2"
SECOND FLOOR
GARAGE
18'-0"x18'-5"
U
SCREENED P.
13'-2"x14'-10"
KITCH'N
RECREATION R
18'-10"x30'-0"
C
DINING
13'-6"x15'-0"
B'KF'T R
7'-7"x9'-6"
P.
SERVICE YARD
LIVING
15'-0"x25'-0"
KITCHEN
11'-9"x14'-0"
U
D
HEATER
C
FIRST FLOOR
0 5 10 15 20

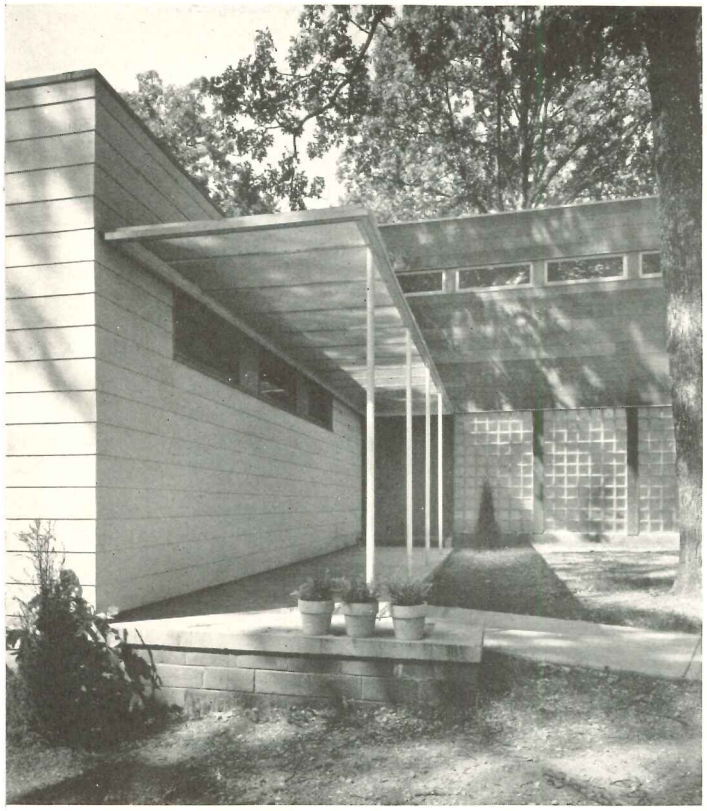


Photos by Sienknecht



THE SCREENED PORCH faces due south.





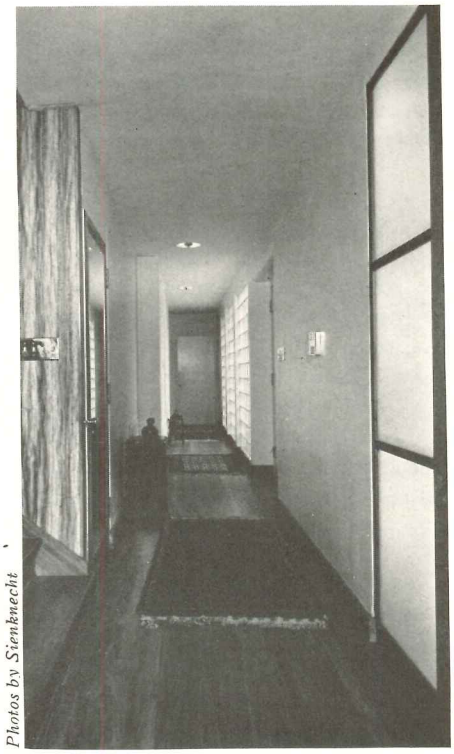
MAIN ENTRANCE is at end of a porch with a frosted-glass roof.

PLANNED FOR PRIVACY OF INDIVIDUAL ROOMS

ALFRED CLAUSS and JANE WEST CLAUSS designed this residence in Knoxville, Tenn., for Mr. and Mrs. J. T. Mengel. Requirement that the various rooms be planned for individual privacy accounts for location of living room in one wing; of play room at end of house; of service stair within over-all area of maid's room.

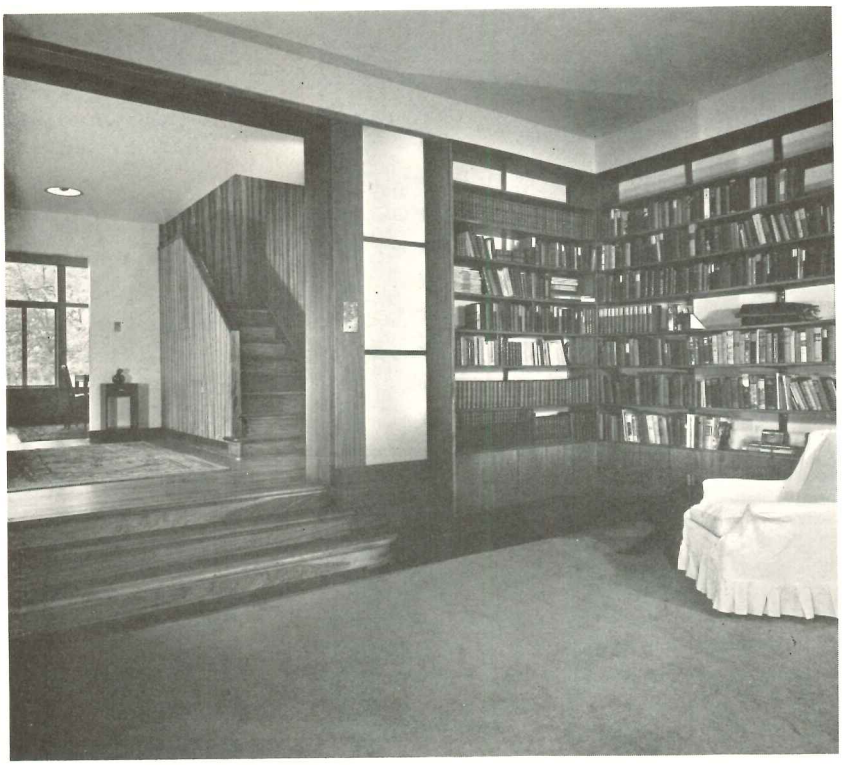
THE ELONGATED T-SHAPED PLAN was well suited to the level area on hilltop selected, for economy, as the site of the house. The site is far enough from the street to offer privacy, and has a high enough elevation to catch all prevailing winds and to permit unobstructed views. The location of the living room in a wing permits exposure on three sides (desirable in summer) and also gives privacy to the room, which can be closed off entirely by means of sliding doors. Living areas are concentrated at this end of the house. The children's play room (occasionally used as a guest room) had to be located away from the center of the house with east and west exposures and an independent entrance from the outside play area. The use of three materials for exterior surfacing obtains an unusual and interesting effect: white asbestos clapboards on first floor and west wing; shiplapped redwood siding, natural finished, on second floor; and handmade rough-textured maroon brick on the south side of living room, and on the chimney. The hall and foyer get natural lighting through large glass-block panels. The foundation is a continuous reinforced concrete slab set on a cinder fill.

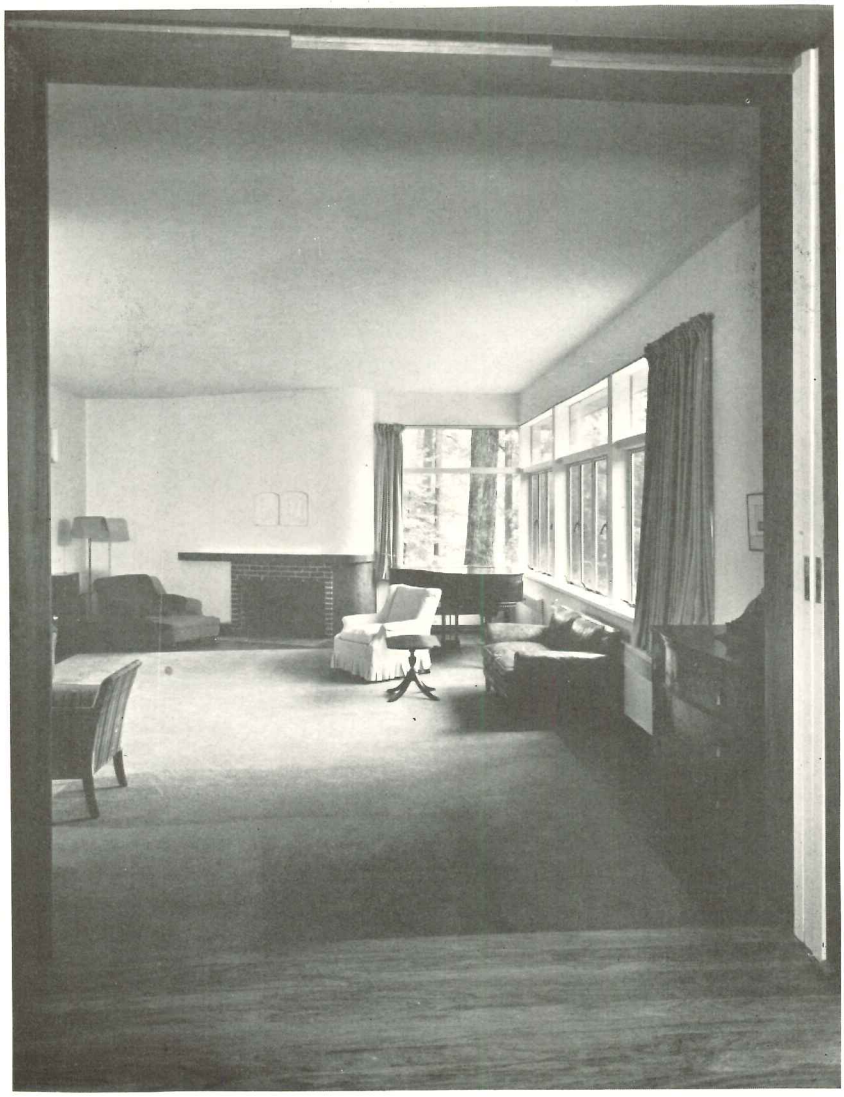
ALFRED CLAUSS and JANE WEST CLAUSS, Designers



Photos by Sienknecht

VIEW ALONG HALL toward foyer (glass panel at right is part of living-room wall); stairwell is paneled in primavera veneer.





LIVING ROOM looking toward hall and stairway (above, right) and seen from the hall looking toward front of house (below). Living-room walls are of plaster with trim of mahogany.

RESIDENTIAL DETAILS: FLORICULTURAL

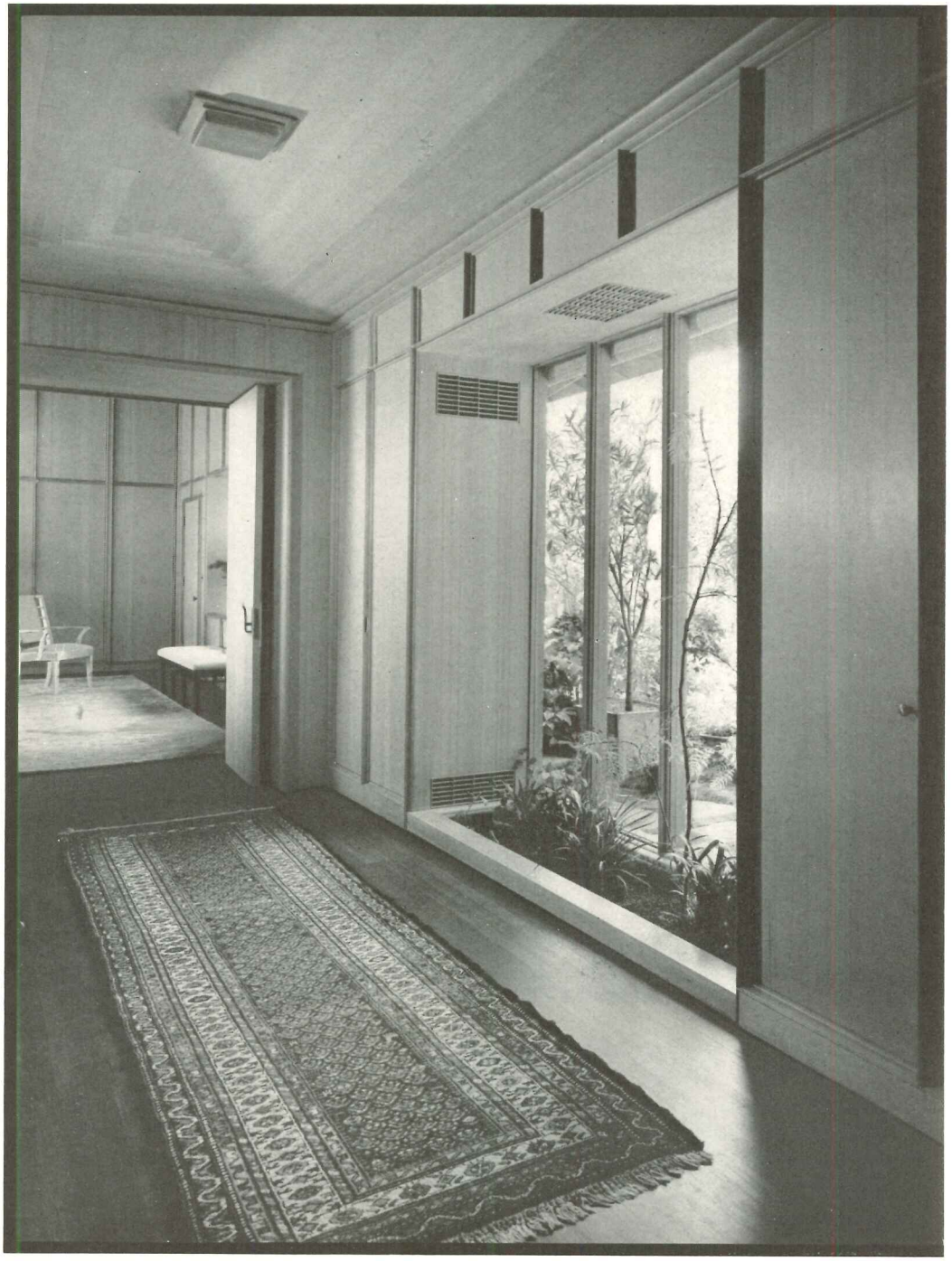
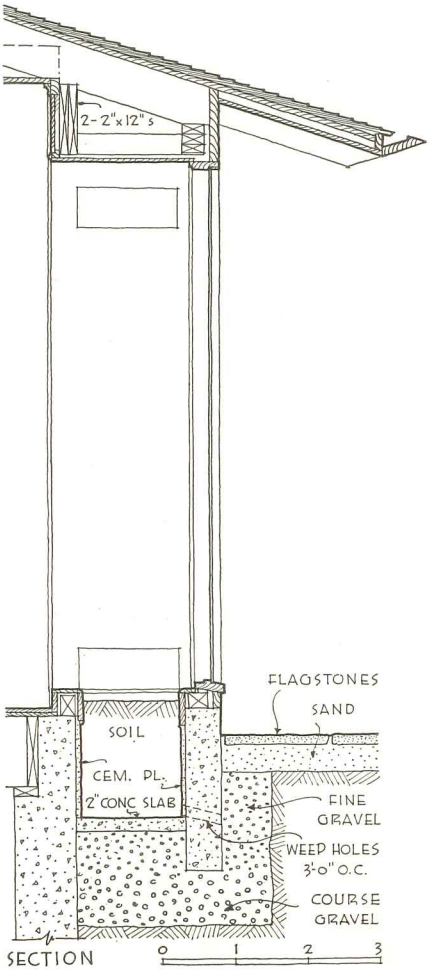
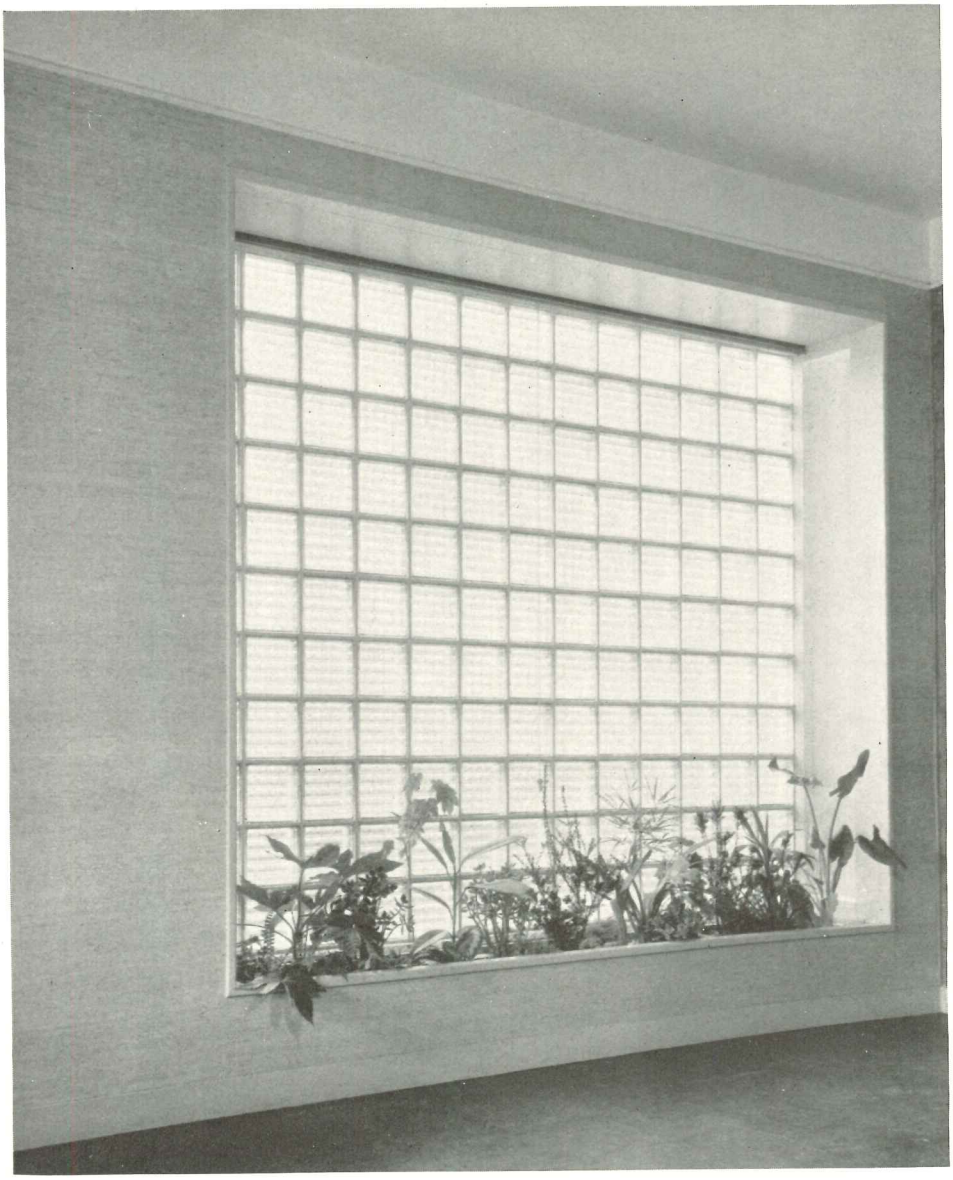


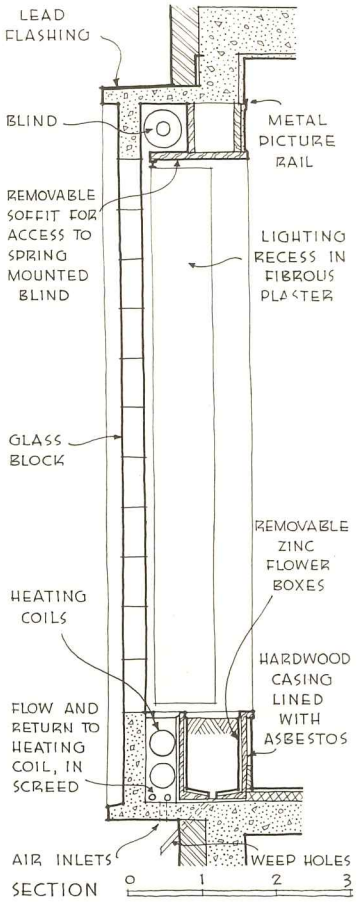
Photo by Boychuk

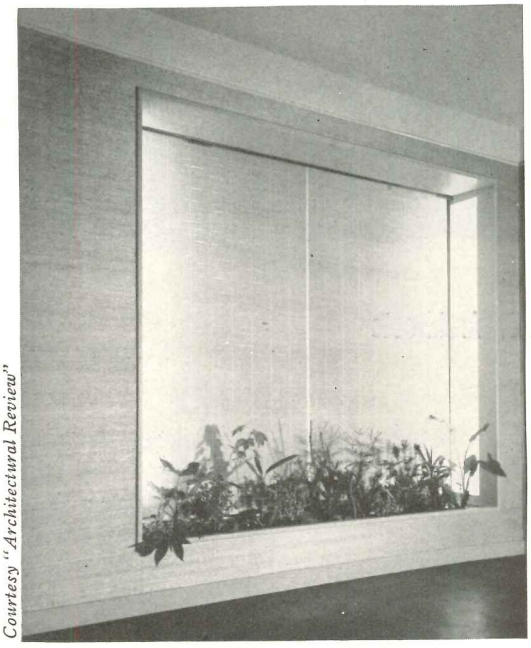


1. A. E. DOYLE and ASSOCIATE, Architects
JOHN YEON, Collaborator

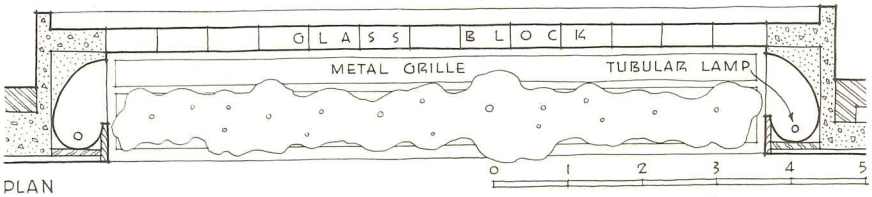
INCREASINGLY APPARENT in residential design is the use of growing plants as part of the interior decorative scheme, and the provision, integral with the structure of the house, of plant beds. These floricultural provisions range from large conservatories devoted exclusively to plants, to small beds designed as incidental details to a room. In the example above, the indoor planting, located against a full-length fixed window, serves as a connection between the courtyard and the interior of the house.

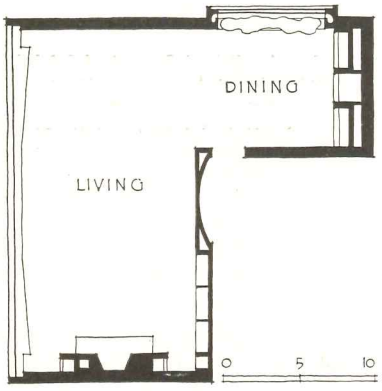






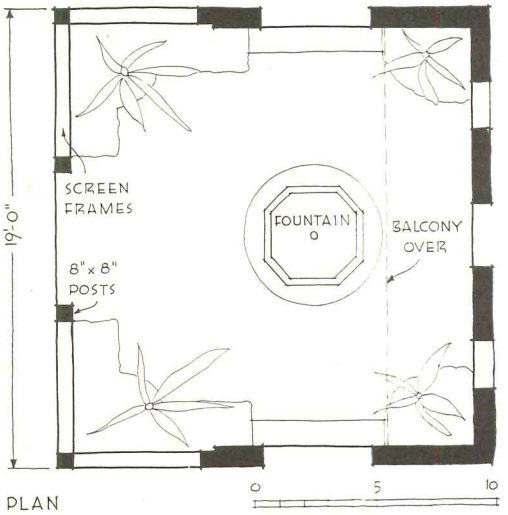
Courtesy "Architectural Review"

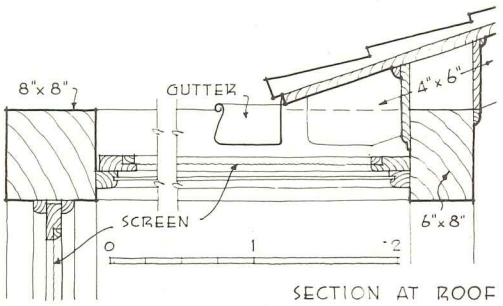




2. DENYS LASDUN, Architect

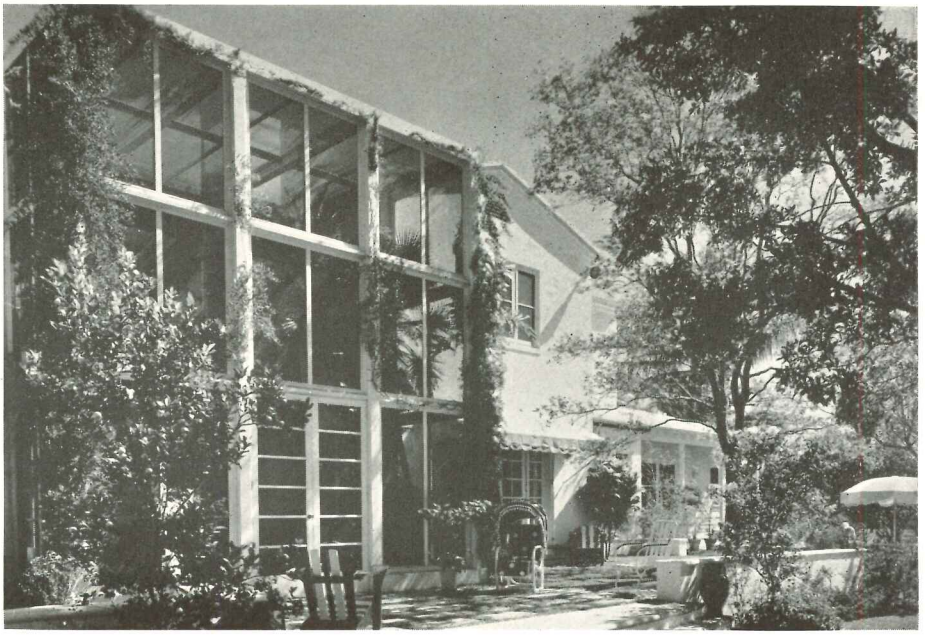
DESIGNED AS AN ESSENTIAL element of the decoration of the living-dining room, this flower-box window accomplishes its purpose by night as well as by day. Light sources, concealed in recessed reflectors at either end, illuminate the whole window area. The heating coil partially insulates the flower box and gives sufficient heat during winter for semitropical plants.



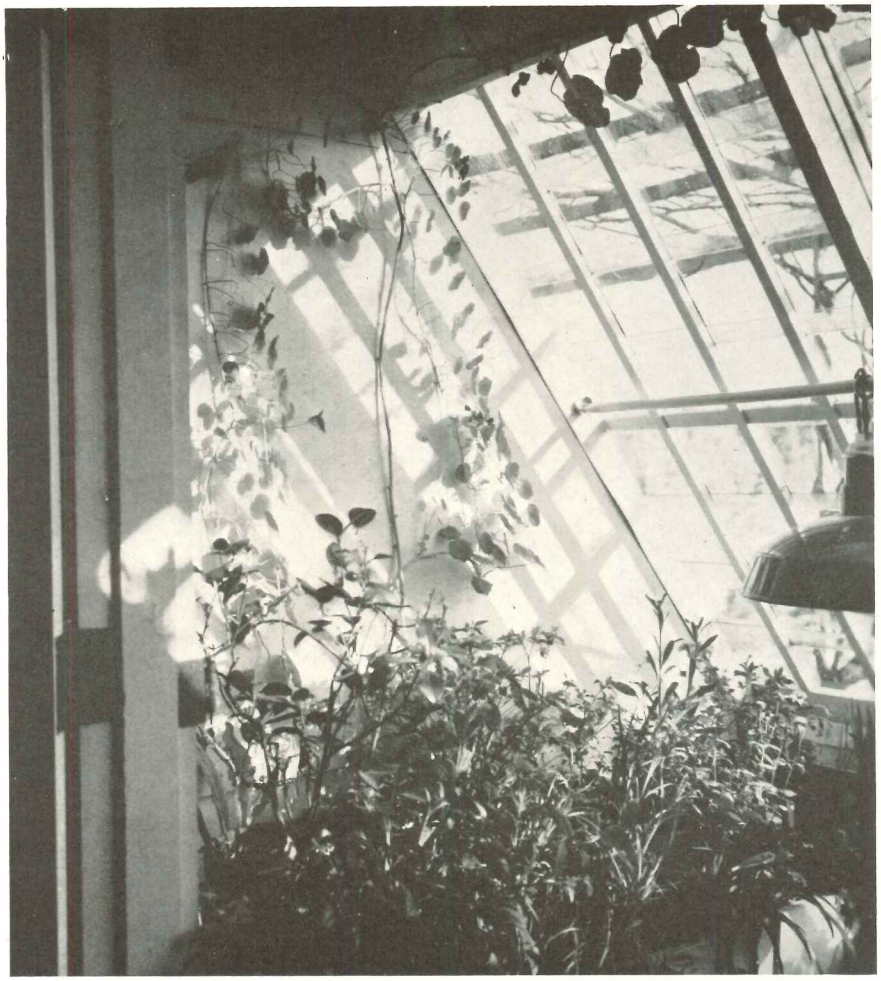


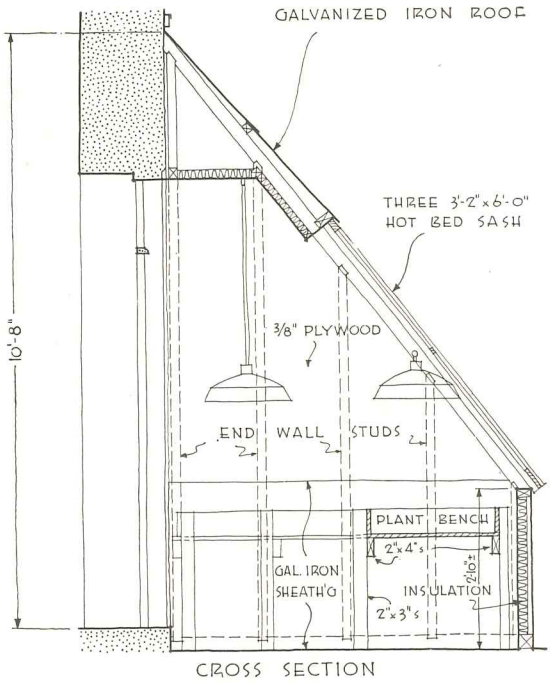
3. JOHN and COULTON SKINNER, Architects

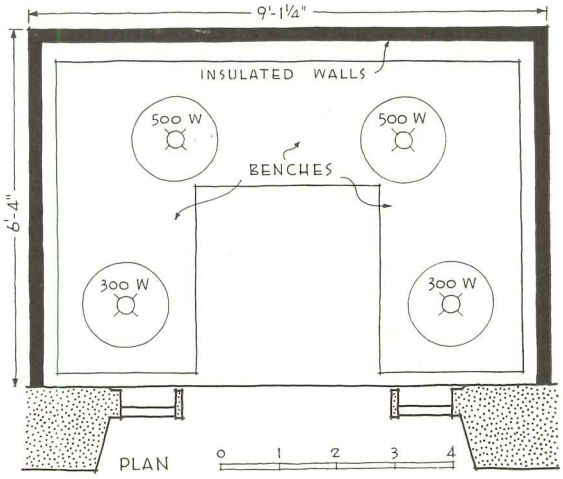
ACTUALLY A TWO-STORY screened-in area partially enclosed by the angle formed by dining and living rooms, this "patio" acts as an intermediate link between house and open terrace and garden beyond. Height of patio permits tall planting.



Photos by Ernest Graham

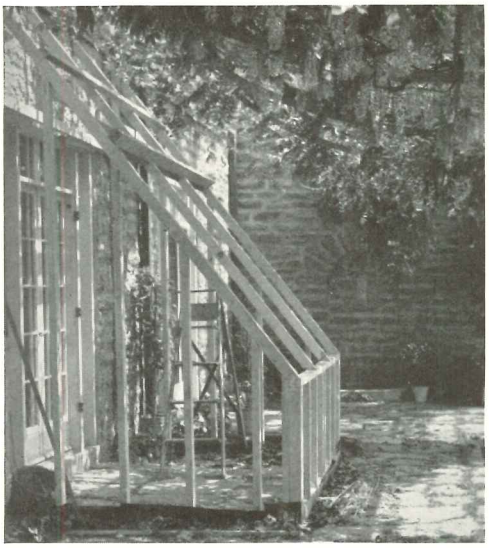


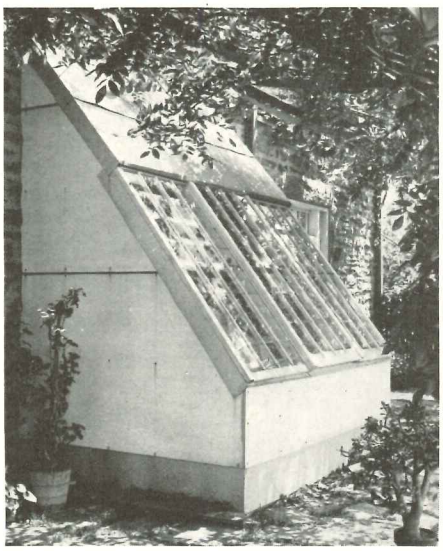




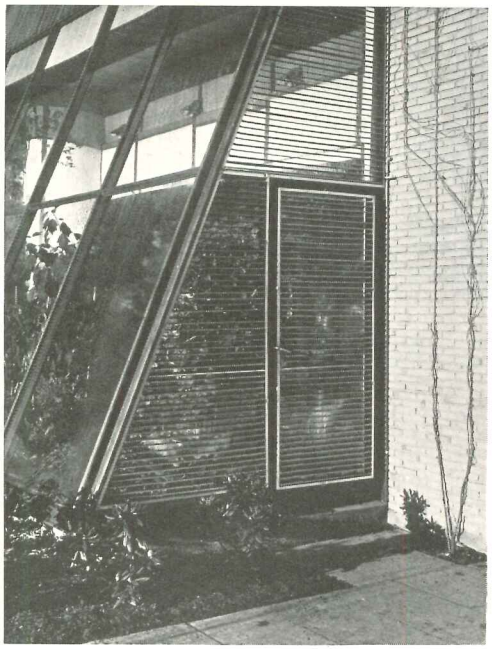
4. GEORGE A. ROBBINS, Architect

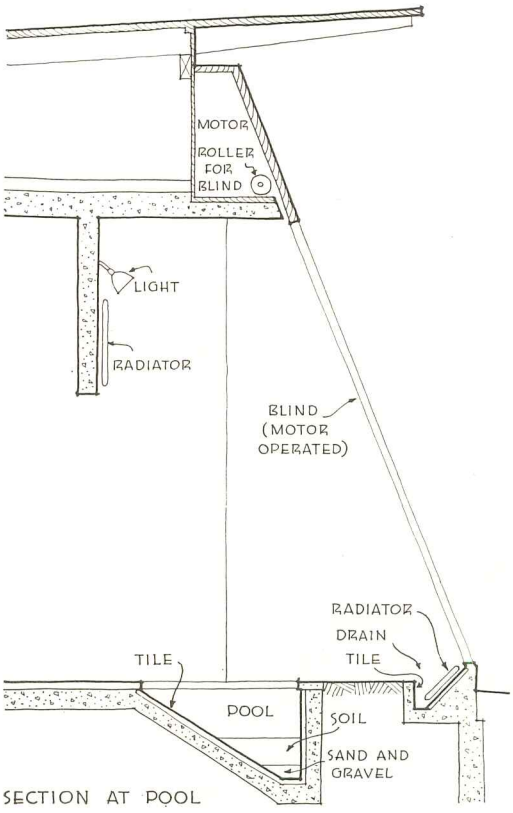
THIS DEMOUNTABLE GREENHOUSE is fastened on the south wall of a house. Hence plants get all necessary heat and sunlight through the cold-frame sash, and are protected on the north side by the walls of the residence. Light and heat are obtained from the sun and are supplemented at night by four ordinary light bulbs of 300-500 watts, equipped with reflectors and hung on pulleys for quick adjustment as plants grow. Thermostat controls on lights maintain 63° temperature.



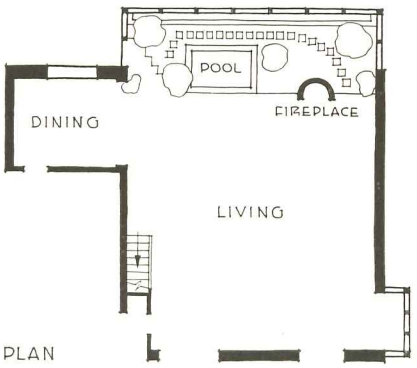


Photos by G. E. Kidder-Smith





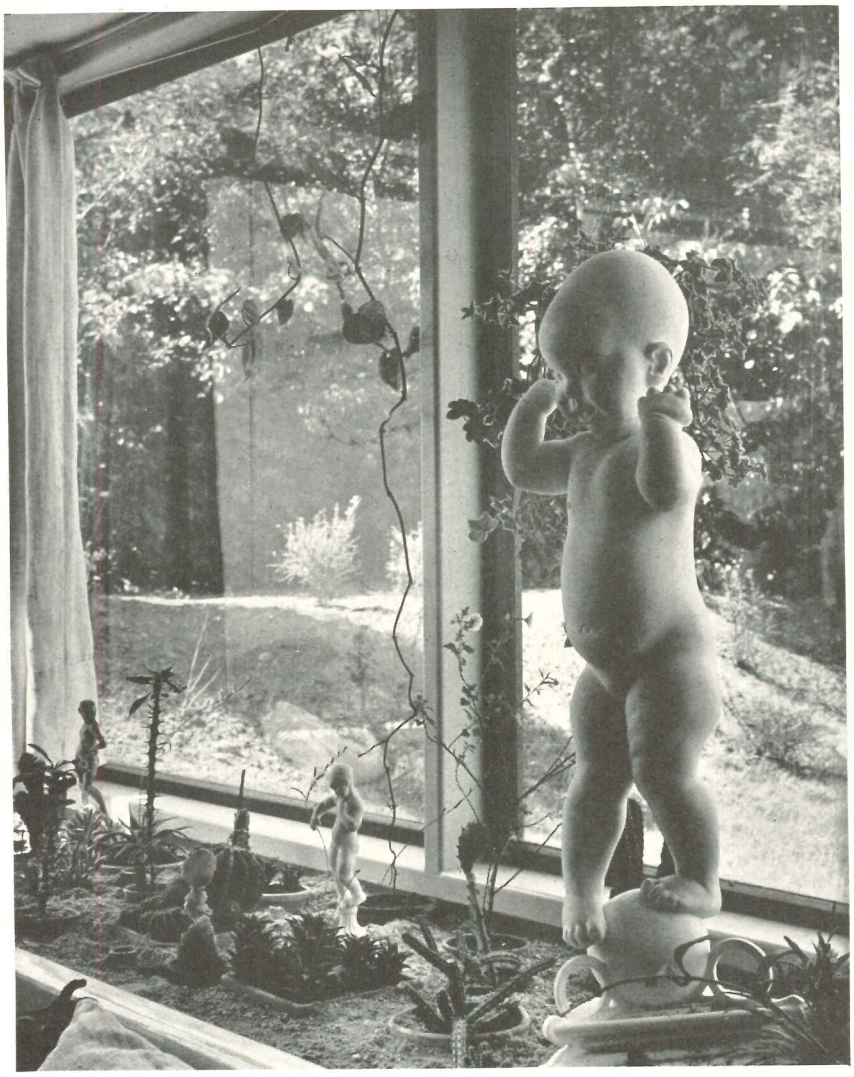
SECTION AT POOL



PLAN

5. BACKSTRÖM & REINIUS, Architects

THE FEATURE OF THIS LIVING ROOM is a large winter garden, which extends across one end of the room. The splayed glazed wall admits a maximum of sunlight. Along the top and bottom of this wall are radiators which provide proper temperature for the tropical and subtropical plants. High humidity is required for these plants; the house is air conditioned and air from the living room is exhausted by a blower at the top of the fireplace.

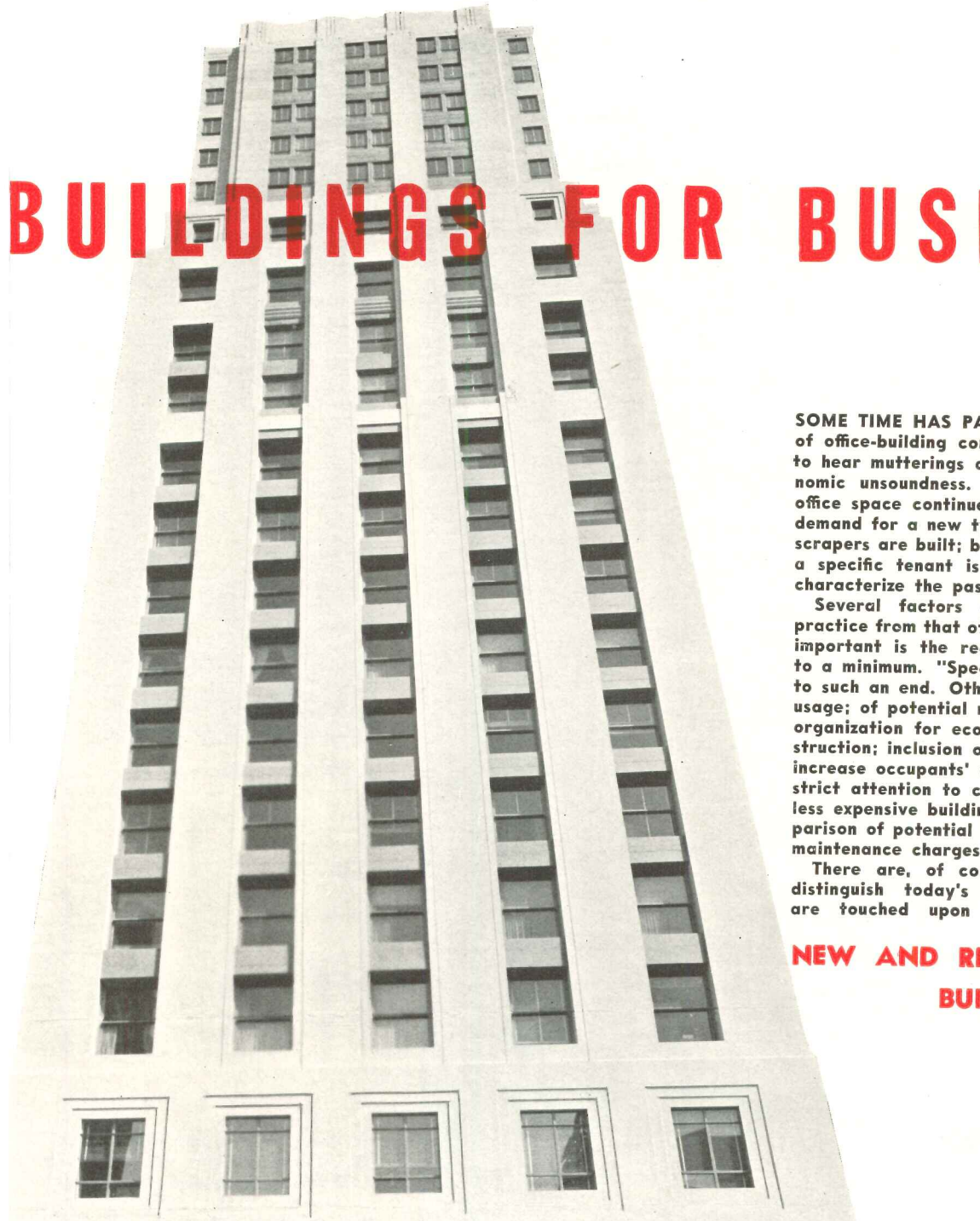


6. ARNE JACOBSEN, Architect

THESE THREE EXAMPLES of the use of flower boxes as integral parts of the structure are the work of a distinguished Danish architect. Potted cactus plants are set in a sand and gravel mixture in the examples shown above and below (left). Such plants require only a little moisture. The picture at right (below) shows plants set in boxes along the window.

Photos by Sigurd Fischer

BUILDINGS FOR BUSINESS



SOME TIME HAS PASSED since the boom days of office-building construction—since we began to hear mutterings about the skyscraper's economic unsoundness. Yet the demand for new office space continues, though it is generally a demand for a new type of space. Isolated skyscrapers are built; but the building designed for a specific tenant is the type which seems to characterize the past few years.

Several factors distinguish current design practice from that of other days. Probably most important is the reduction of speculative risk to a minimum. "Specific tenancy" is one means to such an end. Others include: studies of land usage; of potential neighborhood changes; plan organization for economy of services and construction; inclusion of technical advances which increase occupants' comfort and efficiency; and strict attention to costs, both by using newer, less expensive building techniques, and by comparison of potential income with first costs and maintenance charges.

There are, of course, other factors which distinguish today's designs; many of them are touched upon in this presentation of

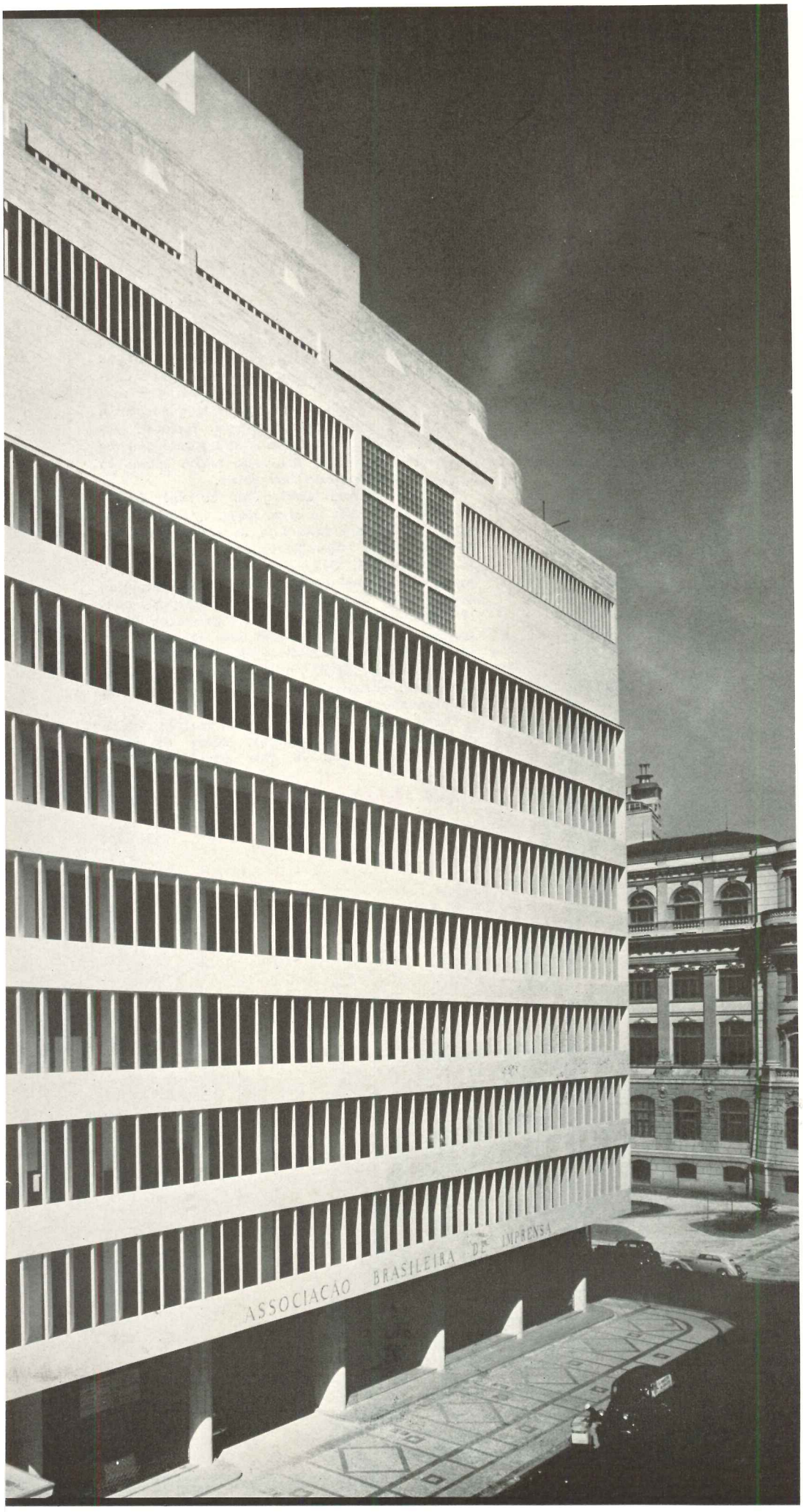
NEW AND REMODELED OFFICE BUILDINGS

Gabriel Moulin

BUILDING TYPES

A B I

ELEVATOR LOBBY opens on street . .

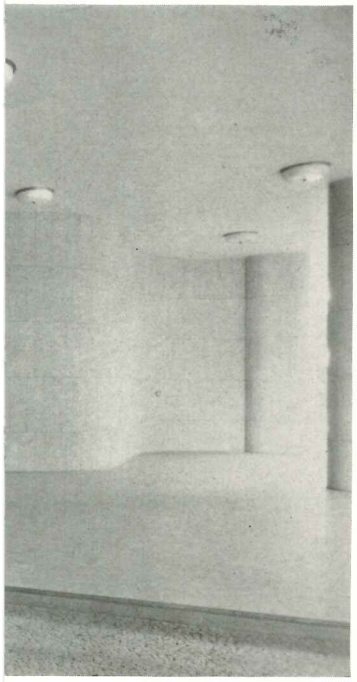


In designing the new home of the BRAZILIAN PRESS ASSOCIATION (Associacao Brasileira de Imprensa) in Rio de Janeiro, MARCELO and MILTON ROBERTO, Architects, faced problems which are not often encountered in the U. S. A. However, their straightforward solution, their logical plans, and their use of advanced techniques make their ABI Building unusually interesting to North American readers.

Chief among their difficulties was the tropic sun. To combat solar heat and intense light they enveloped the building proper with rows of louvers which serve as sunbaffles, which are separated from window-walls by spaces called, in their aggregate, the "heat dispersion zone". Also, the building is completely air conditioned.

The climate had some beneficial effects on the design problem: no heating system was necessary, and the street floor lobby could be left open to the sidewalk.

FROM NEW TECHNIQUES SPRING NEW FORMS

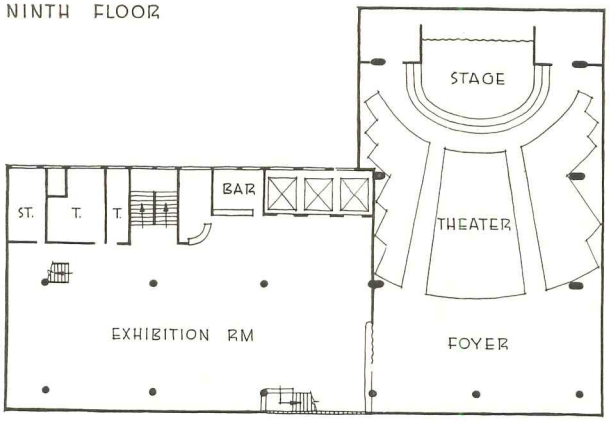


. Driveway leads to parking space.

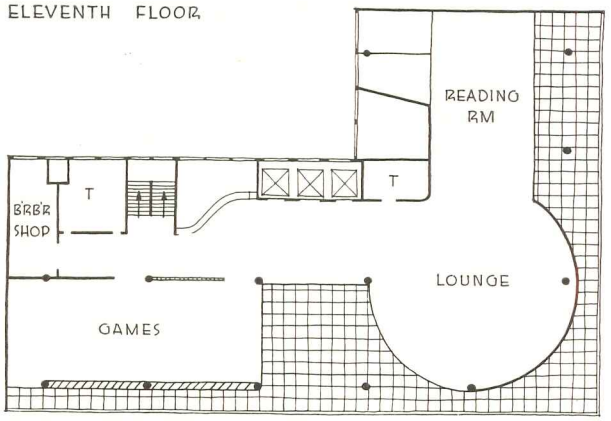
EXHIBITION HALL on ninth floor

Photos © Overseas Press

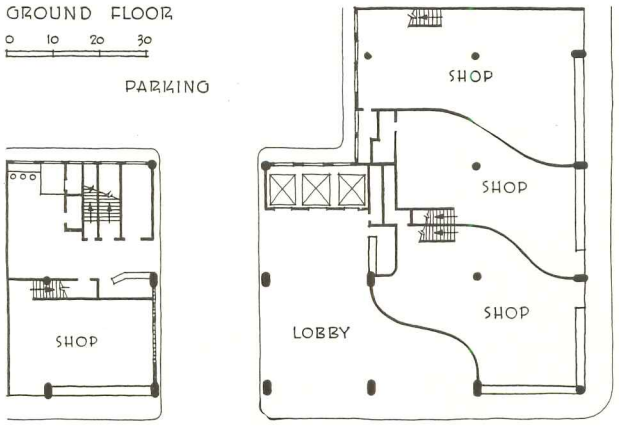
NINTH FLOOR



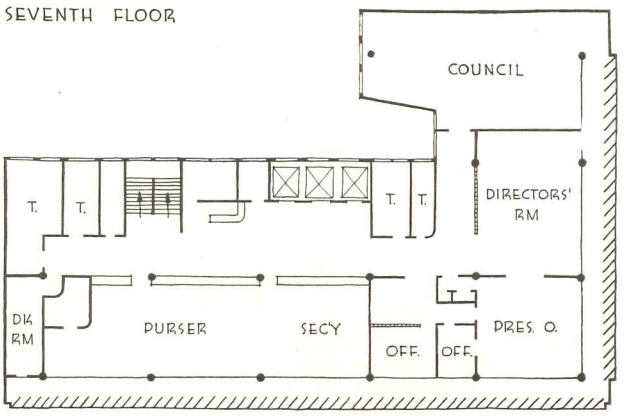
ELEVENTH FLOOR



GROUND FLOOR

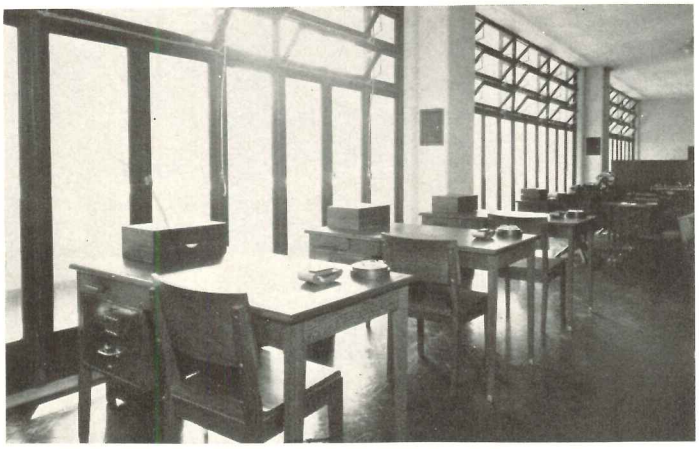


SEVENTH FLOOR



Photos © Overseas Press

IN THE PRESIDENT'S OFFICE, above, walls are sheathed with, and furniture constructed of, sucupira wood from Para. Chairs are upholstered in chrome-tanned leather from Rio Grande do Sul. Board of Directors' room is visible through sliding doors. At right, typical office space, with special desks which contain built-in file cases. Below, the Association's Council Room. All three of these photos were taken on seventh floor.



THE ARCHITECTS HAD TO PROVIDE several widely differing types of space, ranging from typical business offices to club rooms and a theater. The design problem, complicated by the tropical climate, was solved with the aid of several newly developed structural techniques. Most apparent of these is the system of sun-baffles which give the building its exterior form and ornament. These are detailed on page 81.

Construction is of reinforced concrete, faced with Tijuca granite and travertine. The sun-baffles are faced with white cement and Alba sand. Concrete exterior walls have an inner lining of hollow brick; between the concrete and brick, a 5-centimeter air space was left for thermal insulation. Interior wall finish is mostly in sucupira wood, with some Ipê tobacco wood, Peroba de Campos, and Rosewood. In the ground-floor lobby, open to the sidewalk, column facings, walls, and floor are of Tijuca and Bangu stone. Weather-resisting steel sheets line the elevator wall.

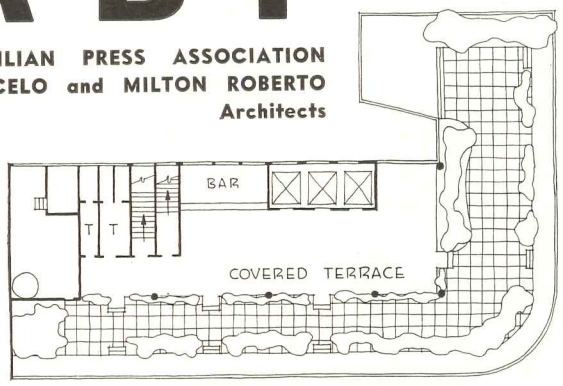
A B I

BRAZILIAN PRESS ASSOCIATION
MARCELO and MILTON ROBERTO
Architects

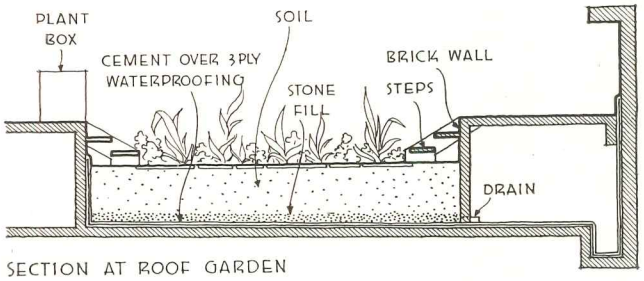
450-SEAT CONCERT AND LECTURE HALL on ninth floor, at left, has excellent acoustic properties. Below, eleventh-floor lounge

A B I

BRAZILIAN PRESS ASSOCIATION
MARCELO and MILTON ROBERTO
Architects

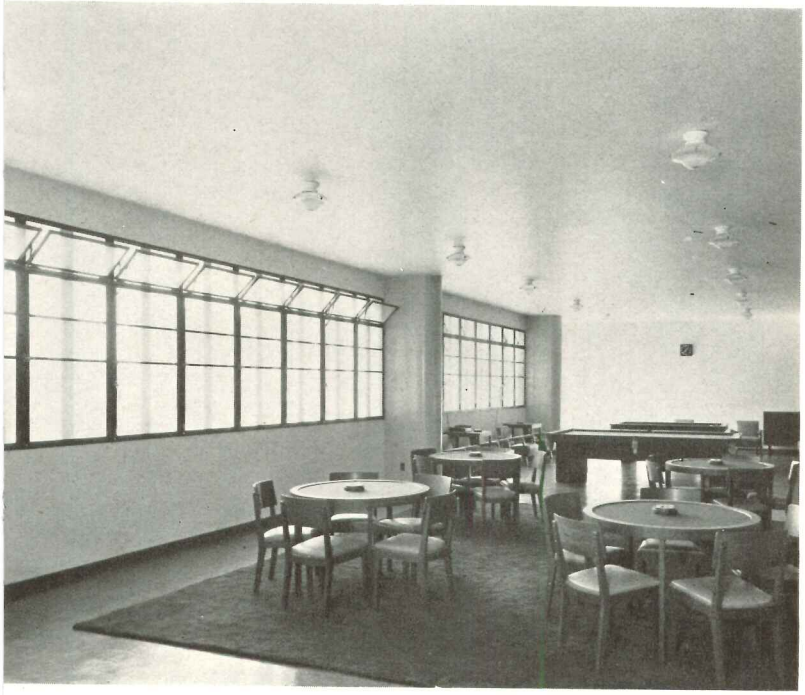


ROOF GARDEN

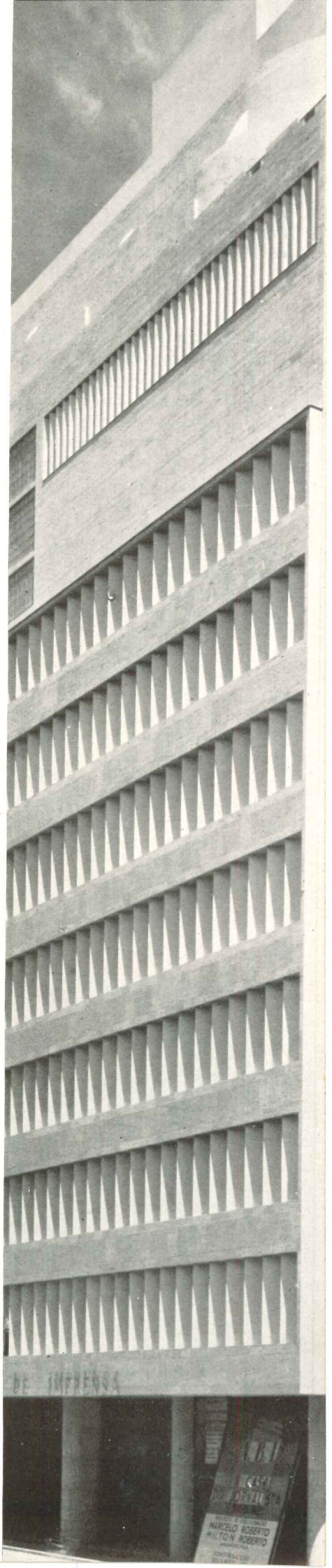


SECTION AT ROOF GARDEN

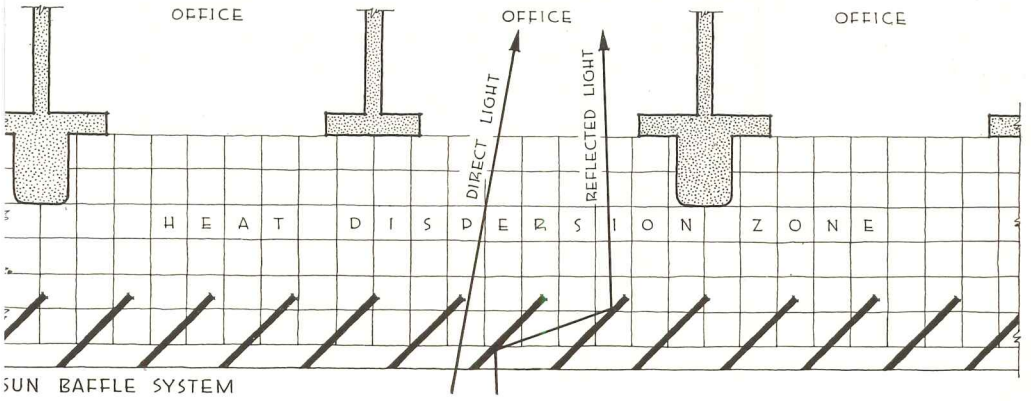
THE RESTAURANT AND ROOF GARDEN (section at left) where specimens of Brazilian plant life are displayed. There is an excellent view over the city and Guanabara Bay.



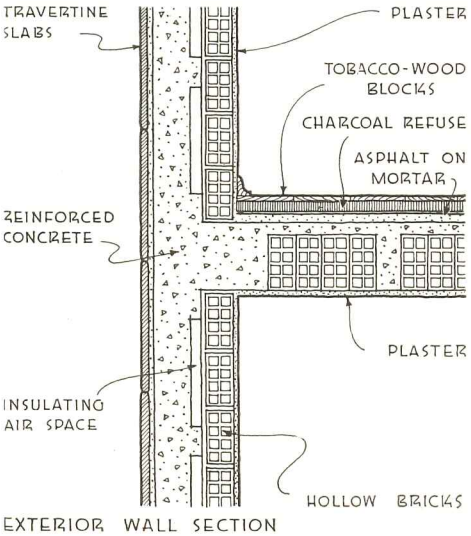
INTERIOR OF LOUNGE, left, shows effects of sun-baffles which characterize exterior elevation shown at right.



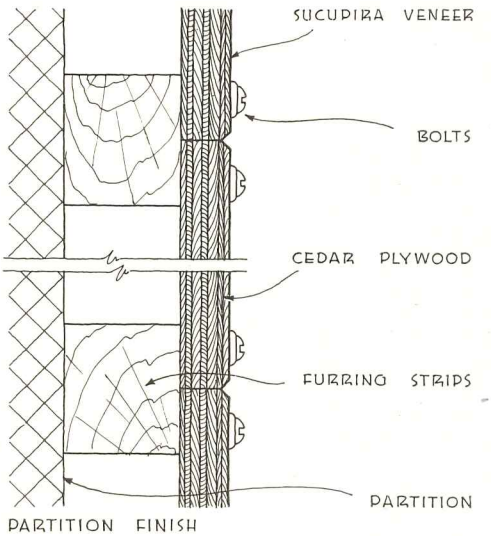
DETAILS OF CONSTRUCTION



SUN BAFFLE SYSTEM



EXTERIOR WALL SECTION



PARTITION FINISH

PROFIT FROM RENTABLE OFFICE SPACE

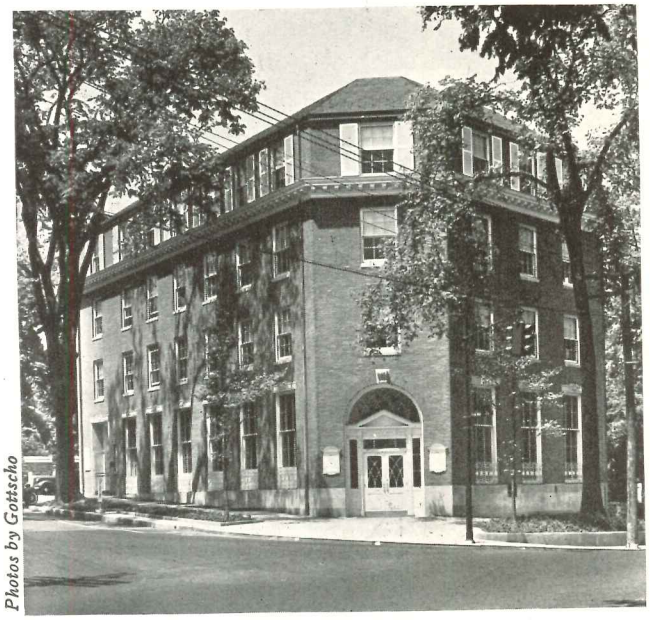
Architects WYETH and KING designed for the First National Bank, in Greenwich, Conn., a simple Colonial combined bank and office building which pays profits.

THE PROBLEM IN DESIGNING this bank-and-office building consisted in providing two banking floors and three floors of rentable office space at minimum cost, on an irregular, sloping, corner site. There was little other modern office space for rent in Greenwich. The clients desired fire-resisting construction and a Colonial exterior. The extreme simplicity which was essential to meet the budget resulted in elimination of decoration and of expensive materials.

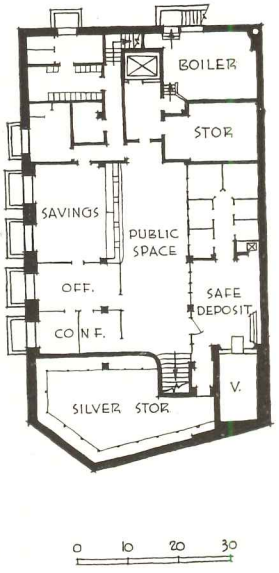
Exterior masonry bearing walls and steel interior columns and girders frame the building. The banking floor is of the steel-pan type; upper floors have open-web steel joists and concrete slabs. Lighting in the bank is from a combination of directional flush lights and fluorescent fixtures. Heat is supplied by a "split" system which utilizes two-pipe vapor to office radiators, and indirect warm air to banking rooms, with provision for future cooling.

Cost of land, including landscaping, was $43,000.00. Cost of building, excluding design fees and furnishings, was $122,700.00. The cubage, 245,000 cu. ft., yields a cu. ft. cost of approximately 50¢, which is so low that rents from two office floors pay maintenance and financing charges. Rents from the third floor are clear profit for the bank.

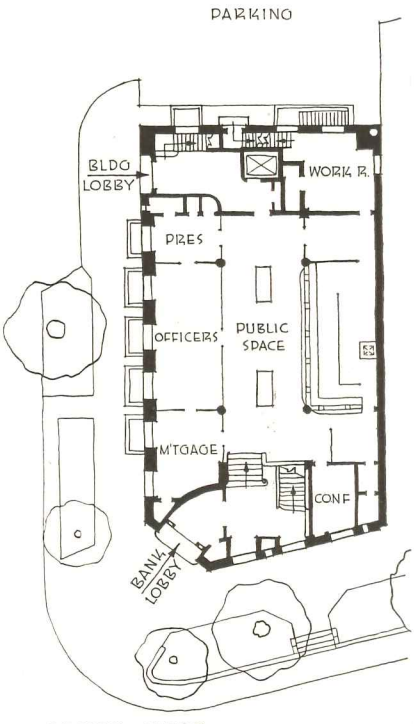
LOOKING FROM UPPER BANKING FLOOR toward split-level bank entrance; stairs to lower floor at left



Photos by Gottscho

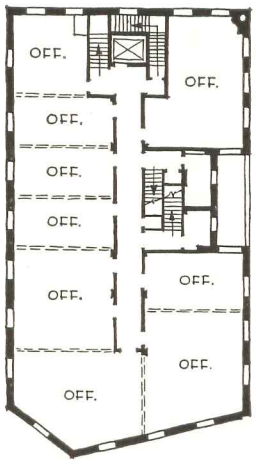


BASEMENT



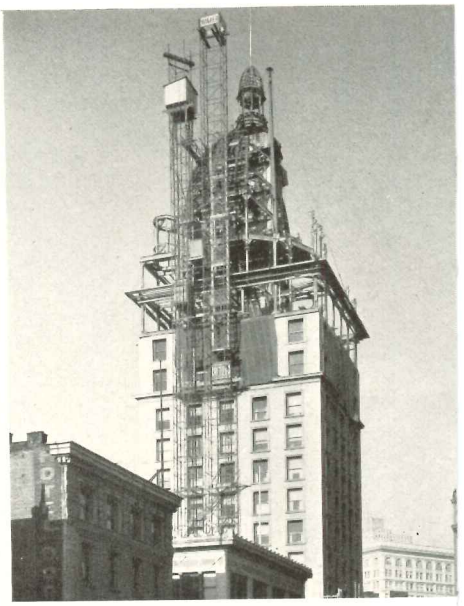
GROUND FLOOR

INTERIOR, MAIN BANKING ROOM, shows counters faced with Duali plywood, which is used for most of the cabinet-work because of its comparatively low cost. Below is a detail of the vault on the lower banking floor.

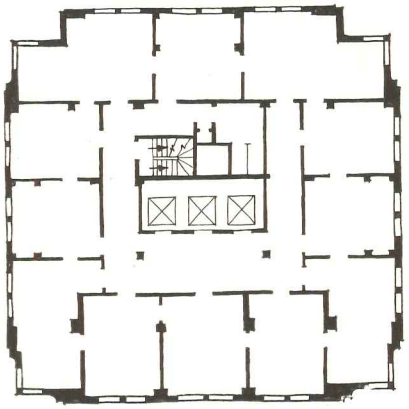


SECOND FLOOR

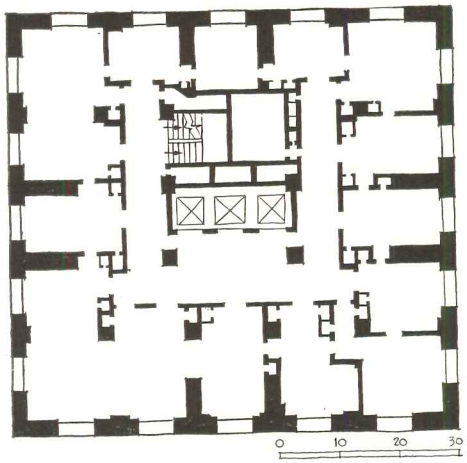
Photos by Gabriel Mulin



PROGRESS SHOTS show most spectacular part of the job of remodeling San Francisco's historic Claus Spreckels Building (later the Call Building) into the new Central Tower. Left, the original, which withstood the 1906 earthquake, as it was April 15. September 15: hoist-cage up, preparations for removing uneconomical upper stories in progress. November 15: dome half down, cornice masonry removed . . .



NEW FLOORS have light, strong construction.



OLD FLOORS (below 12th) are massively strong.

ECONOMIC FORCES PROVE STRONGER THAN EARTHQUAKES

After San Francisco's 1906 earthquake, when much of the city was leveled, the Call Building remained unharmed amidst wreckage. It was designed prior to 1896. Economic obsolescence and necessity of replacing much of the sandstone facing caused the building to be remodeled.

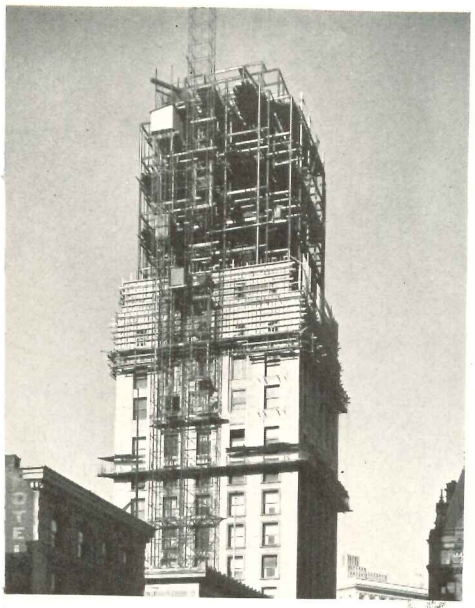
The original building was 69 by 74 ft. for 15 stories, topped by a dome which housed four more stories. Foundations were most substantial: base is 25 ft. below grade, and consists of a 2-ft.-thick concrete mat, 96 by 100 ft. square, on compact sand. On this platform rest 58 continuous, heavy steel beams. On top of these, and at right angles, are 63 similar beams. This grillage is filled solidly with concrete. The building has a heavy steel frame throughout, with substantial portal bracing carried up exterior walls to the fourth floor. Extra heavy gusset connections and diagonally braced interior columns contributed to the designed lateral strength of 50 lb. per sq. ft. In 1906, the U. S. Geological Survey called the structure: ". . . probably the best designed piece of such work in the U. S."

Loads were lightened to a considerable degree by removal of all masonry above the 14th floor, and all steel from the 15th floor up, excepting columns which supported elevator machines, etc. It was found that no unusual care had been taken to anchor masonry, beyond bolting the heavy cornice to substantial steelwork bracketed out from the framing.

Four particularly difficult problems arose. First, design data on the old building was almost non-existent. L. C. Strobel, original engineer, was dead. Fire had destroyed his records. Magazine articles, a lucky find in a University of California storeroom, and direct examination of the framing permitted reconstructing sufficient data.

Second, a balance had to be found between rentable area of six new floors and cost of construction. This entailed a series of studies, partly guided by engineering potentialities, which determined that six new rectangular floors, each slightly smaller in area than the old tower, would prove more satisfactory than either fewer and larger floors or more smaller ones.

Third, a method of demolition and of erecting new work had to be devised which would permit operation at all times of at least two of the three elevators. Likewise, tenants had to be

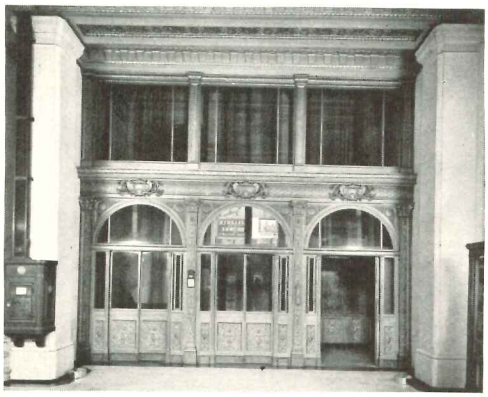


. . . On January 15, new steel work extended up from the old, and the building was partly refaced. On April 1, work was nearly complete, and in September, a year after the job started, modern Centra Tower was finished. ALBERT F. ROLLER, Architect, and H. J. BRUNNIER, Structural Engineer, with able consultants and contractor, accomplished the job without disrupting elevator service or dislodging tenants.

satisfactorily accommodated during remodeling.

Fourth, light yet strong structure was essential, as were satisfactory means of uniting new work and old. Weight of new work was held to a minimum by using such materials as concrete with lightweight aggregate.

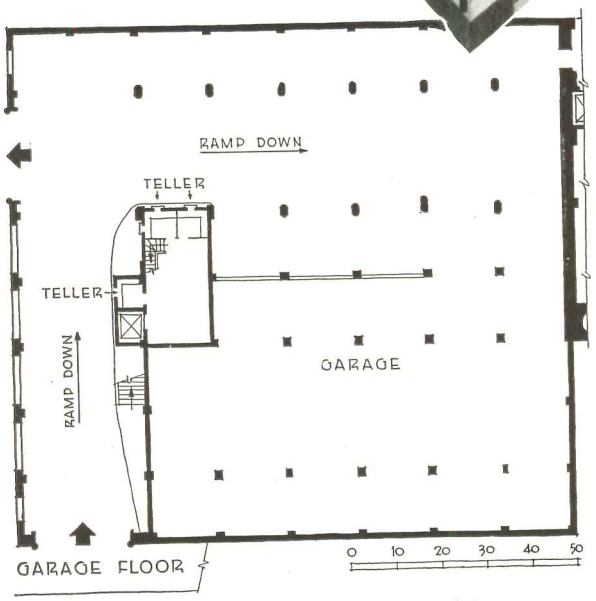
Besides the tower structure, new elevators were installed, main lobby and all toilets were modernized, and an existing annex, separated by 25 ft. from the tower, was integrated with the main portion of the building.



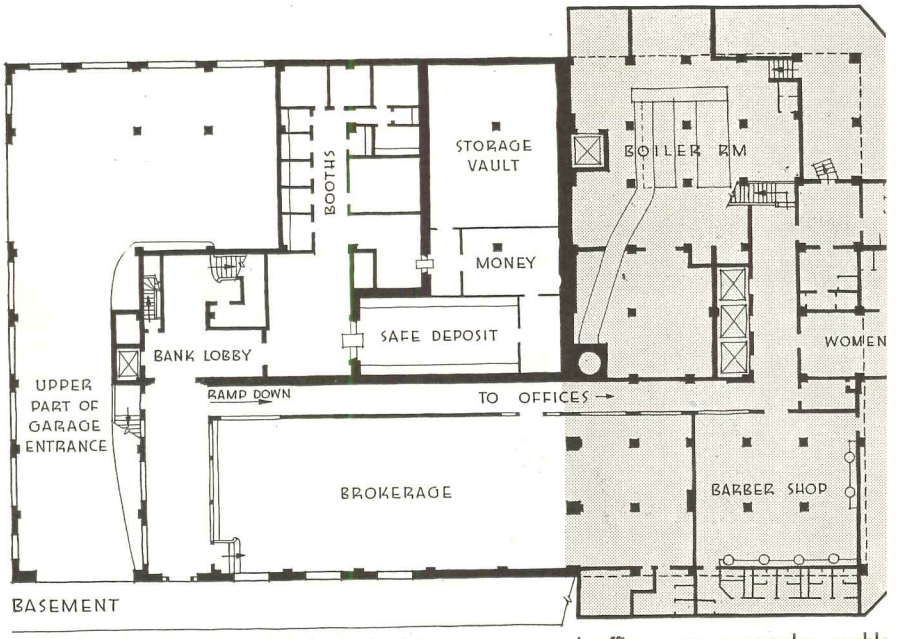
OLD LOBBY, above; modernized at right

NEW FOR OLD:

EXTENDED to cover a plot more than twice the original size, stripped of a heavy cornice, with new banking offices, parking garage, radio studios, and renovated and new offices, this building now boasts some of the most desirable office space in Nashville.



Drop in grade permits sub-basement to be used for garage.



Circulation between garage, bank, brokerage space, and offices was a complex proble

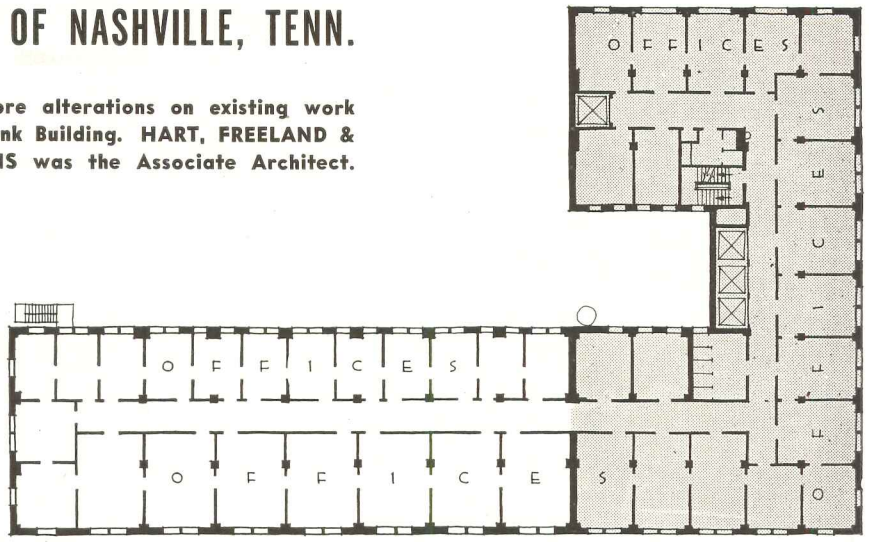
REMODELED INTO THE RADIO CITY OF NASHVILLE, TENN.

Extended banking quarters were added to old before alterations on existing work started, in modernizing Nashville's Third National Bank Building. HART, FREELAND & ROBERTS were the Architects; FREDERIC C. HIRONS was the Associate Architect.

IN ORDER TO CLEAR the main banking room of columns from the stories above, structural steel trusses were installed between the third and fourth floors to carry the two interior columns omitted in each bay below. Trusses are 14 ft. 6 in. on centers (width of offices on second floor), and span approximately 38 ft. 6 in. (width of lobby and office wing). Top chords of trusses are built into the fourth floor and bottom chords into the third floor; web members come in partitions between offices, and are arranged so that the corridor passes through trusses at their centers. Details are shown overleaf.

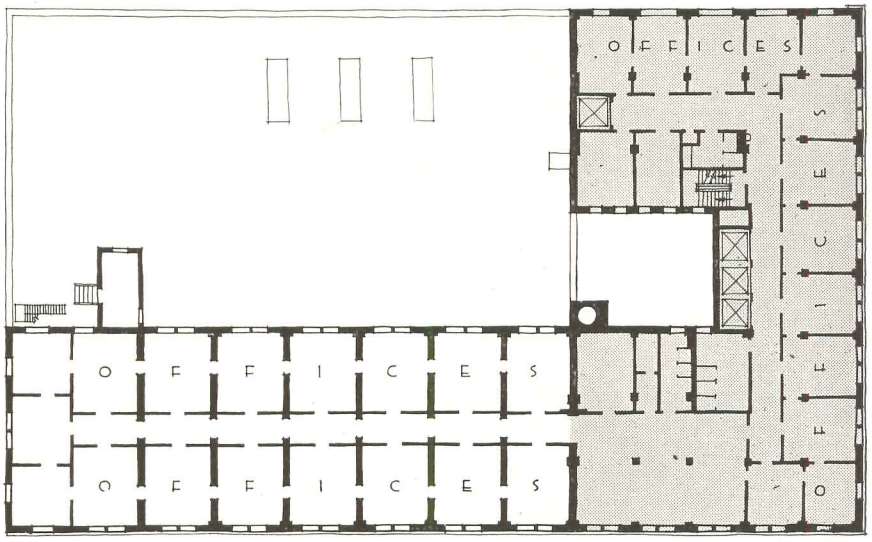
Banking quarters (first floor, first and second mezzanine, and basement) are completely air conditioned, both summer and winter; second, third, fourth, fifth, sixth, and twelfth office floors have summer air conditioning; seventh, eighth, ninth, tenth, and eleventh floors are heated for winter, not air conditioned.

Conditioning system for the banking quarters is of the direct-expansion type, with central conditioner. A conditioner, fan, and duct system on each conditioned office floor has chilled water for cooling pumped from compressors in the basement. The system is designed for 80° F. when outside temperature is 95° F.



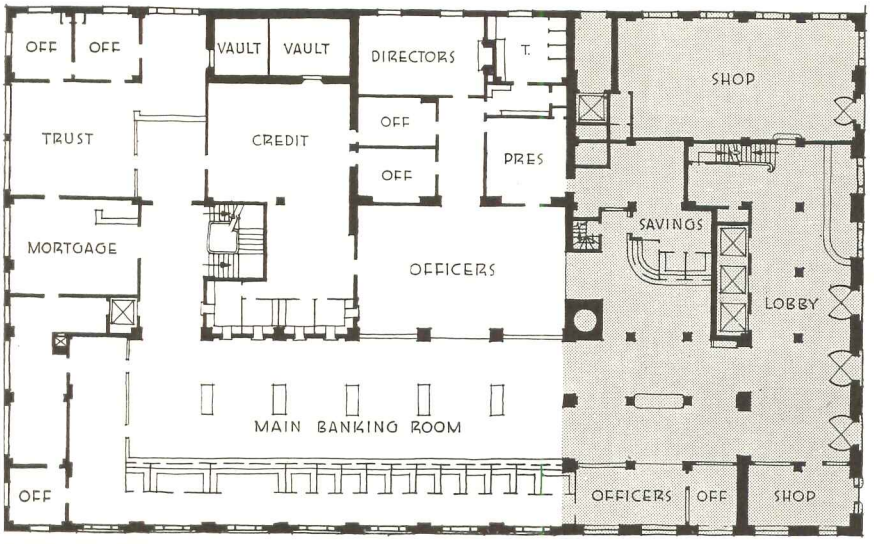
TYPICAL FLOOR

Shaded portion of plans indicates original building. On typical floors, office space was approximately doubled.



THIRD FLOOR

On air-conditioned floors, an equipment room is centrally located, adjacent to flue. Note, in new wing, thick partitions which conceal trusses.



FIRST FLOOR

On first floor and two mezzanines between it and third floor are principal banking rooms. Public lobby was modernized, new entrances and shops added.

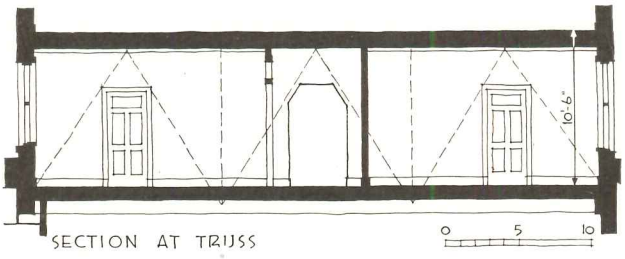
Photos by Wiles, and St. Thomas

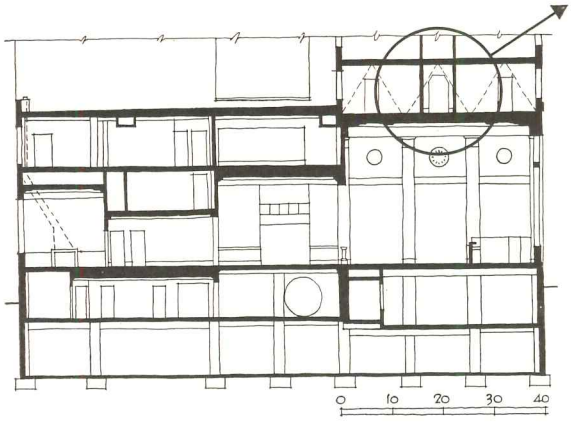
UNIQUE FEATURE is group of tellers' cages at garage floor level. Drive-in customers deposit and withdraw funds without alighting from their automobiles.

THIRD NATIONAL BANK

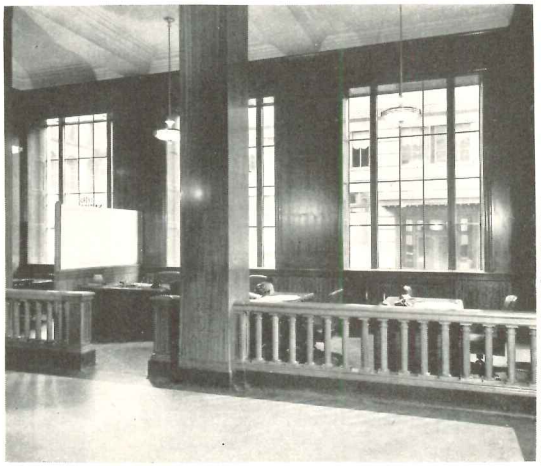
HART, FREELAND & ROBERTS, Architects
FREDERIC C. HIRONS, Associate Architect

OLD (below) and NEW main banking room





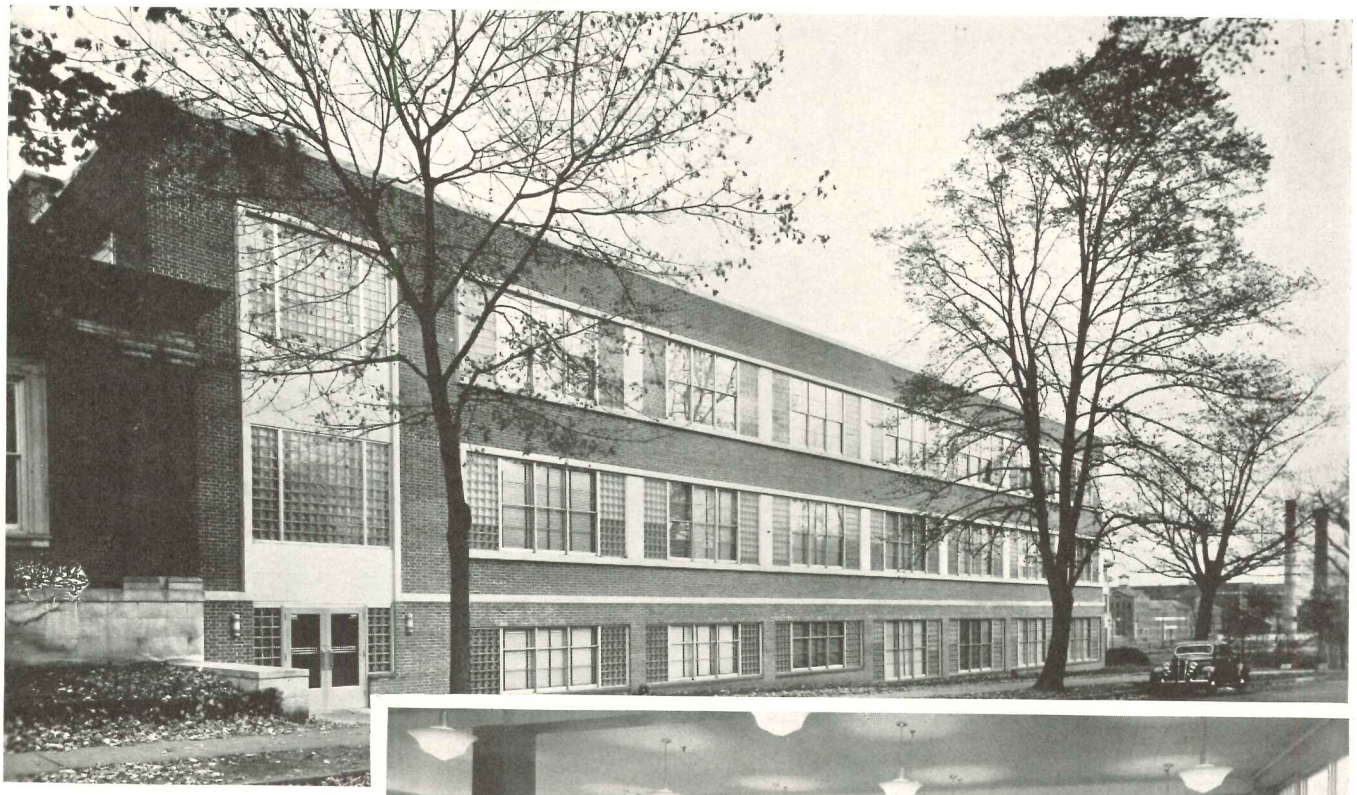
SECTIONS OF NEW WING, above, show how two mezzanine floors of banking space balance the impressively high main banking room; and indicate trusses which carry upper floors. A simple walnut-paneled interior replaces the lush marble of other days.

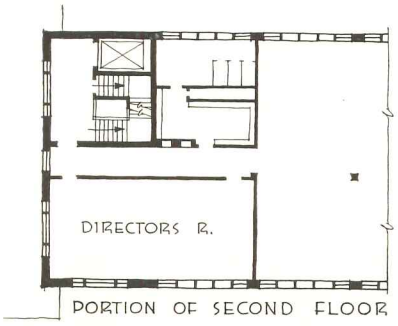


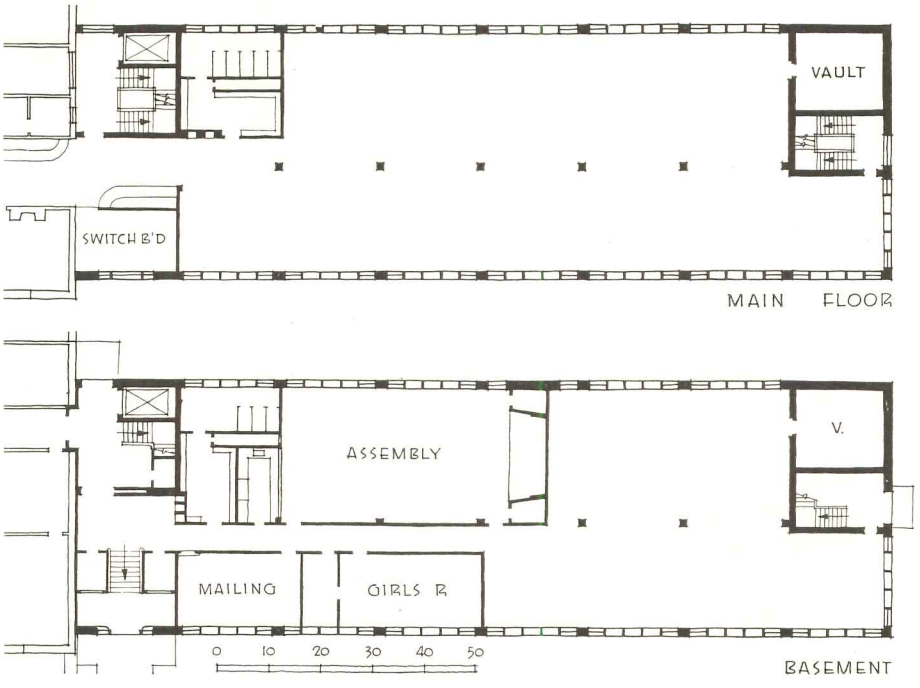
Photos by Wiles, and St. Thomas

Detail of OFFICERS' SPACE

OFFICES FOR A MANUFACTURING PLANT—AN IMPORTANT FIELD OF PRACTICE





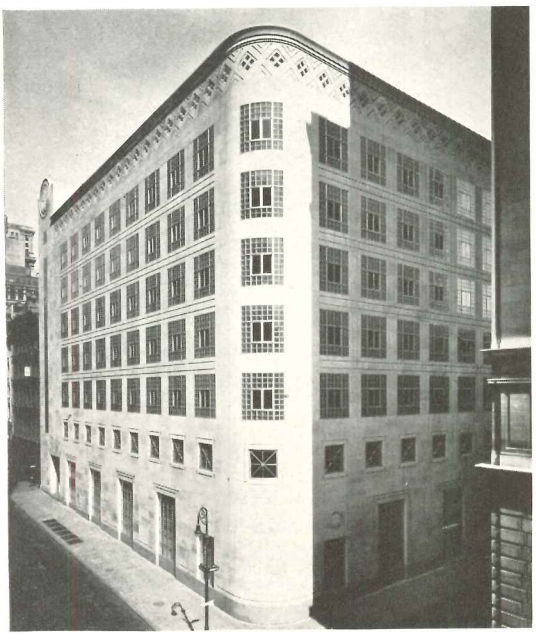


Architects MOORE and SALSBURY designed this three-story, 158 by 50-ft. addition to the offices of the Stanley Works at New Britain, Conn.

WITH INCREASING NUMBERS of manufacturing plants, with modernizations, with sales, credit and management forces quartered in or near the factory, plant office buildings become increasingly important. Most examples, like this Stanley building, are simple, efficient structures. Good working conditions are demanded as a matter of course.

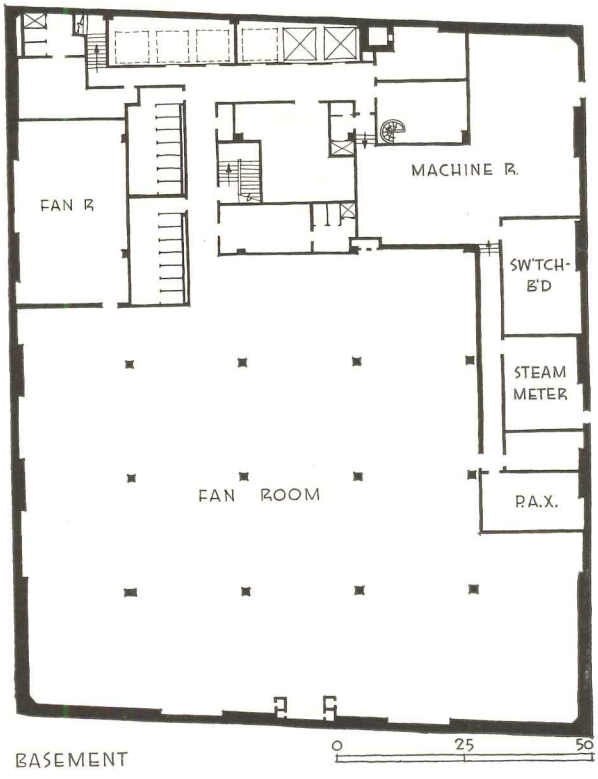
In the Stanley Works offices, doors between old and new offices are of tempered plate glass, frameless, automatically opened by photoelectric-cell controls. Quantities of glass block, aluminum Venetian blinds, and semidirect luminaires supply adequate light. Ceilings are acoustically treated.

Photos by Mattie Edwards Hewitt



LOWER FLOORS SEALED AGAINST NOISE AND DIRT

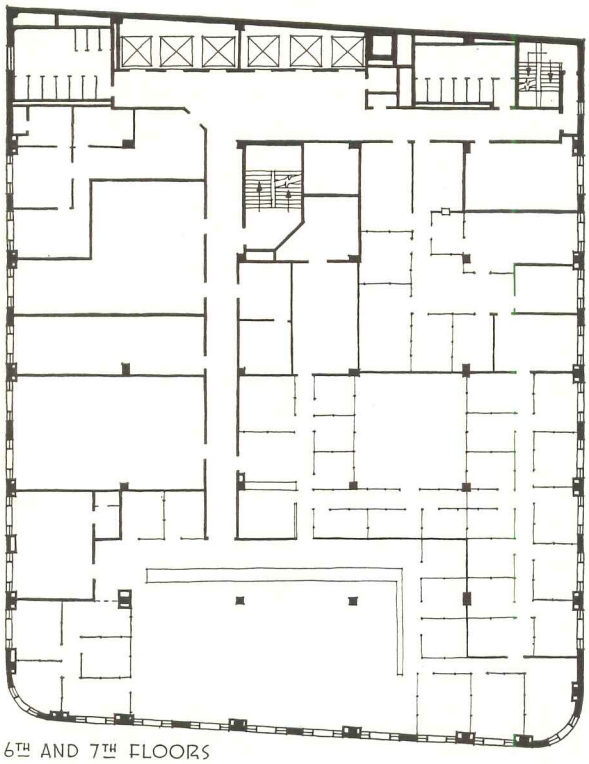
The building designed by CROSS & CROSS, Architects, with EGGERS & HIGGINS, Associates, for the Aetna Life and Affiliated Companies in downtown New York City, faced several interesting problems: exclusion of the financial district's noise and dirt; and ground-floor circulation for two different sets of tenants.



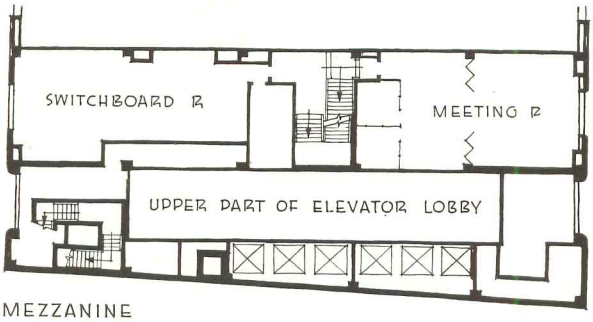
BASEMENT

BY THE USE OF GLASS BLOCK instead of conventional windows on lower floors, noise and dirt have been largely excluded from this seven-story structure. At upper floors, steel sash are set into glass-block areas. In order to make the most of what natural light penetrates between the district's tall buildings, the structure's cornice was omitted, and a corner of the building was rounded so it would cut off fewer light rays. To aid in controlling noise, ceilings are acoustically treated, and upper-story floors are surfaced with heavy linoleum.

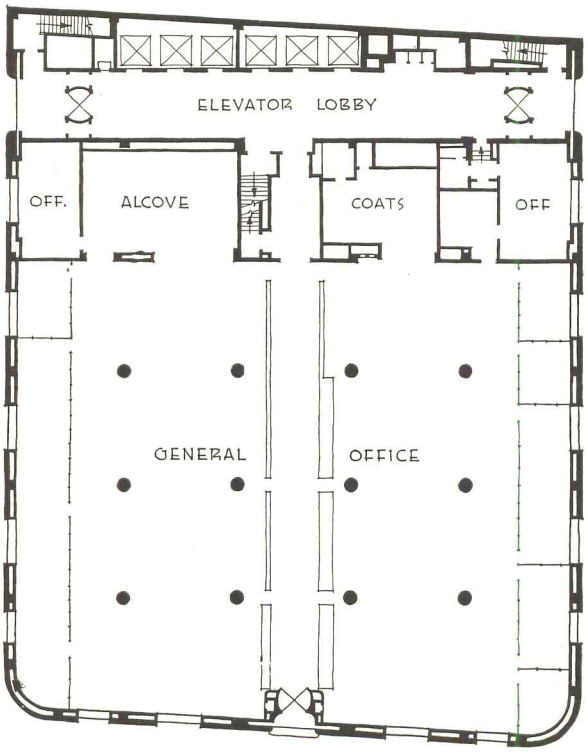
Across the rear is the elevator lobby, with doors at either end (one for upper-floor tenants, the other for service). Aetna Life offices are entered from the main door; tenants are affiliates and company agencies, whose offices require some connection to Aetna Life offices, but are, in the main, independent.



6TH AND 7TH FLOORS



MEZZANINE

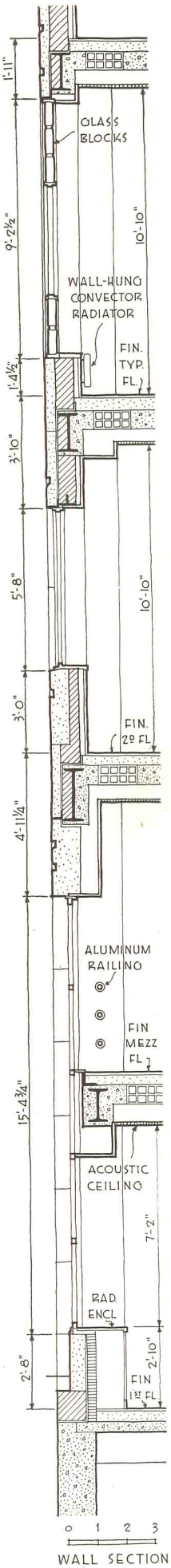


GROUND FLOOR

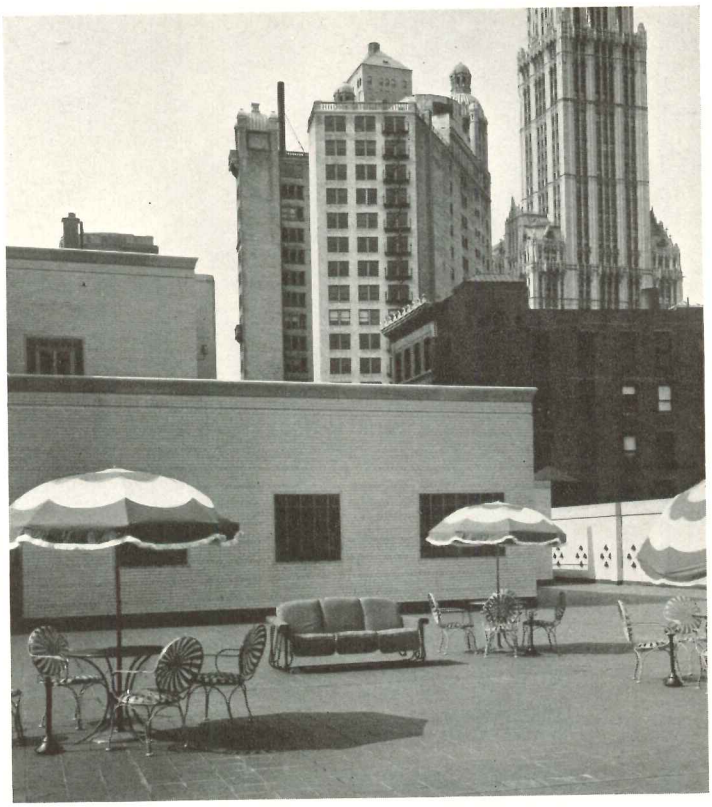
TYPICAL MAIN-OFFICE WORK SPACE. Lighting fixtures were tested exhaustively by the owner's engineers. Top photo shows elevator lobby.

AETNA BUILDING

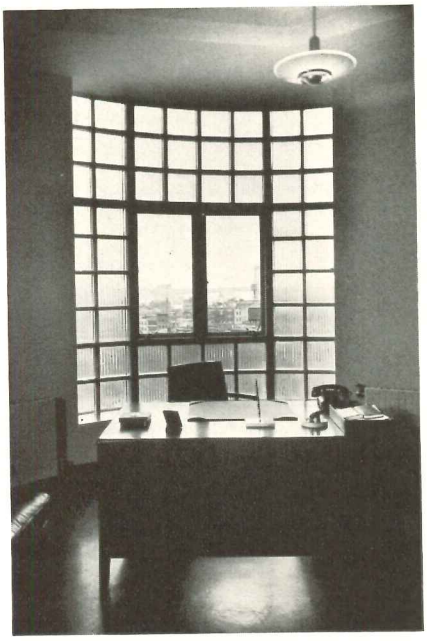
CROSS & CROSS, Architects **EGGERS & HIGGINS, Associates**



WALL SECTION

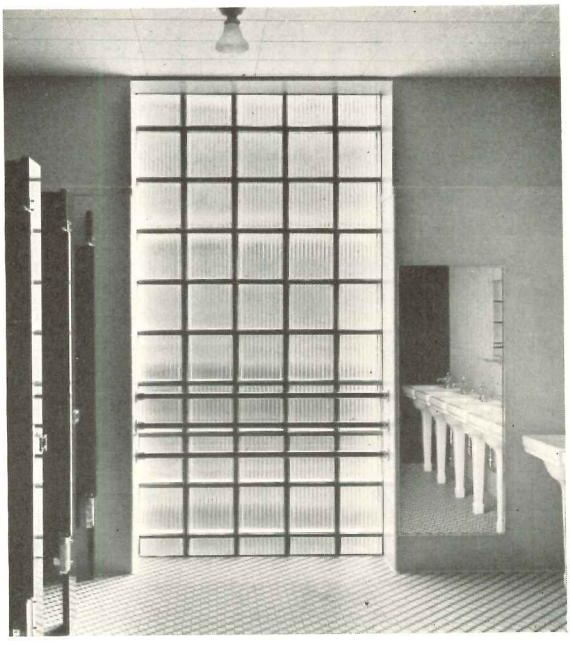


ROOF OF THE BUILDING, shown immediately above, is reserved for employees' recreation. The building has six 750-ft.-per-min. elevators, and electric dumbwaiters for mail distribution. There is a central system for distributing drinking water, another for vacuum cleaning, and an extensive under-floor electrical grid. Ventilating system can be converted to air conditioning. Structure is designed for two additional stories.



EXECUTIVE'S OFFICE

One of the SECONDARY ENTRANCES



TYPICAL WASHROOM

TELEPHONE INSTALLATION—COMMERCIAL BUILDINGS

ARCHITECTURAL RECORD
TIME-SAVER STANDARDS
DECEMBER 1940

Information on this sheet is intended to provide preliminary data on equipment sizes and installation practice for telephone systems in large buildings such as office buildings. Telephone companies will furnish, install and maintain complete systems, but they do not provide for facilities which of necessity become a permanent part of the building. Data have been collected by Ronald Allwork. Information was obtained from American Telephone and Telegraph Company engineers and from publications of The Bell System.

Cables require facilities which will permit them to be extended into and through the building. These consist of the following units, in sequence (numbers refer to diagram):

(1) Service entrance; **(2)** main cable terminal cabinet or room; **(3)** riser shaft (or vertical riser conduit); **(4)** splicing closet (or splicing cabinet); **(5)** floor conduit (between units 4 and 6); **(6)** distribution terminal cabinet.

These facilities are built into the building and are provided by the building owner.

Requirements vary according to type of building. Provision for frequent changes has to be made in loft and office buildings; institutions and public buildings also require flexible service. Thus all facilities must be designed for the maximum needs likely to be encountered. Sizes and location of facilities, length of conduit, radii of bends, etc. are determined by sizes of cables, working space required for splicing, etc., and the telephone company should be consulted in all cases.

Service entrances are of two types: **(1)** underground (most common); and **(2)** overhead. The exact point of entrance is preferably determined by the telephone company, and is best located so that cables, in being brought to the main cable terminal cabinet or room:

(a) will be removed from electric-light or power circuits or apparatus, and from gas or water pipes or other grounded metallic objects;
(b) will be located where liability to mechanical injury is at a minimum;
(c) will follow the shortest route from the point of entrance to the main cable terminal cabinet or room;
(d) will be attached to permanent walls or ceilings.

Underground service entrance: Arrangements should be made either to leave an opening in the foundation wall, or to install sewer tile sleeves.

Overhead service entrance requires the advice of telephone company engineers as to location and size of conduit. In some instances protectors are needed.

Main terminal cabinet or room: Type of terminal facilities depends on size of installation. Small sizes of wall-type terminals are mounted in metal cabinets which are attached to or recessed in permanent walls or columns. If the cabinet is an integral part of the building it is supplied by the building owner. Large sizes of wall-type terminals and all frame-type terminals (terminals mounted on frames accessible from both sides) should be located in rooms which are intended for the purpose and constructed of fire-resisting materials. It is important that the terminal cabinet or room be in a dry, clean, well-lighted, well-ventilated space. A double electric outlet is required.

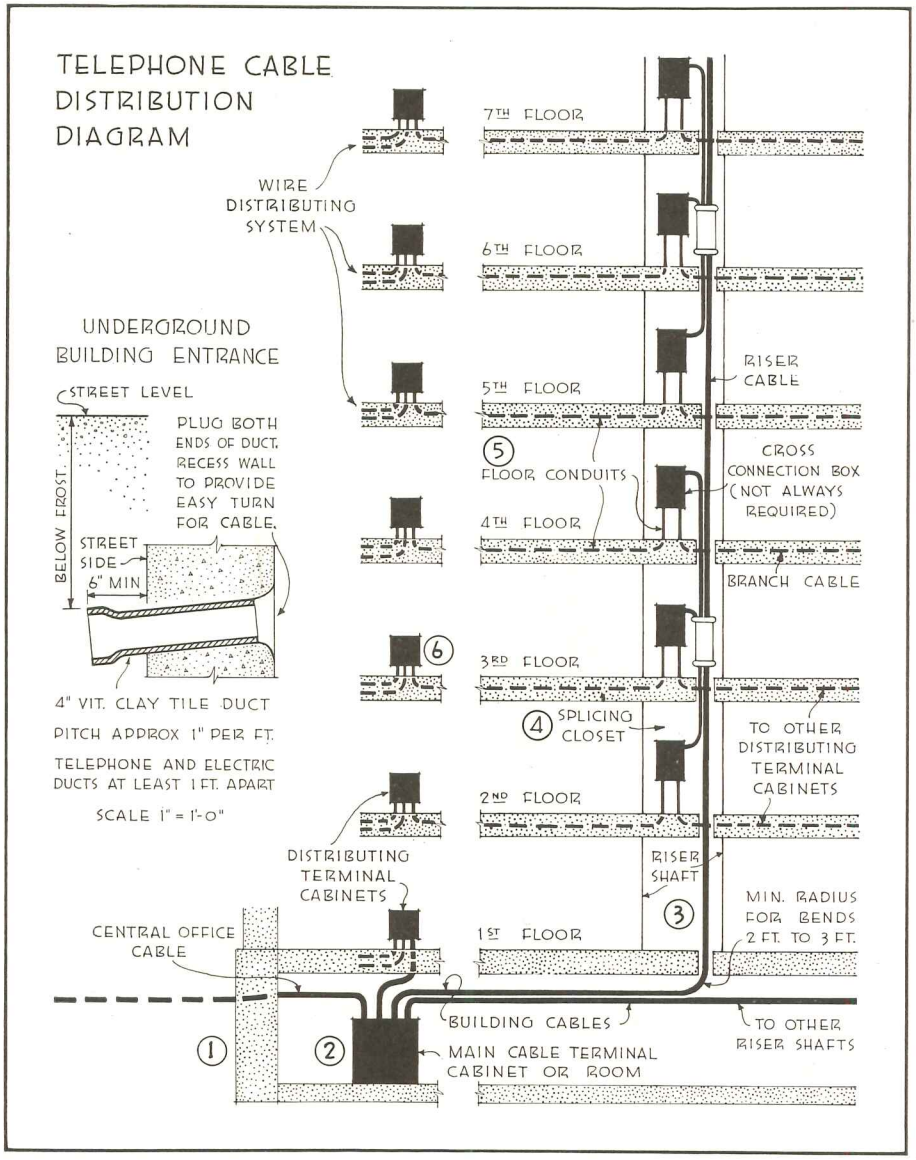
Riser shafts or vertical riser conduits: Riser shafts generally afford the most satisfactory means of vertical distribution for cables, although conduit is often used in the smaller buildings.

Risers, whether shaft or conduit, require central locations in relation to the floor area each riser serves. Buildings with large floor areas, or with floors so planned as to result in two or more distinct areas, will probably need a separate riser for each area. The riser has to be readily accessible from a corridor or other public space. A riser shaft is in fact a series of individual full-length interconnecting closets, called splicing closets, which are aligned vertically, one on each floor and each fitted with a fireproof access door. Slots in the floors form a clear, unbroken opening (except for fire stops) normally extending from top to bottom of the building.

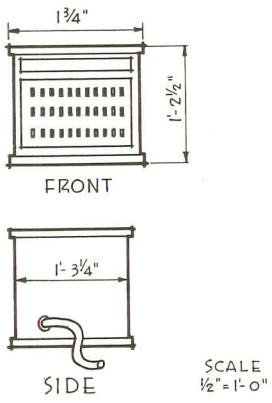
A riser conduit system consists of a series of metal cabinets, called splicing cabinets, aligned vertically through the building, one on each floor, and connected by vertical conduit. The usefulness of a riser conduit system depends on its being properly designed, and the telephone company should be consulted.

The splicing closets, or splicing cabinets, permit the riser cables in the shaft or riser conduit to be spliced or interconnected to the cables or telephone wires on the various floors.

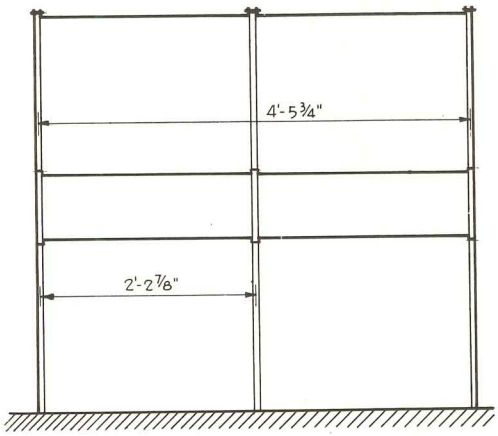
Floor conduits connect the splicing closets or splicing cabinets to the distribution terminal cabinets. They permit cables and wires to be placed between the splicing closets or cabinets and the distribution terminal cabinets or underfloor ducts, wall outlets, etc.

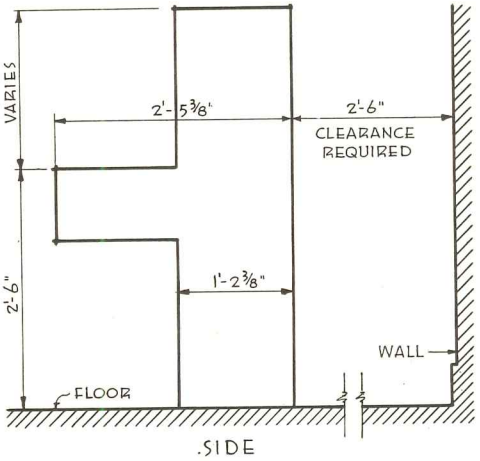


TELEPHONE INSTALLATION—COMMERCIAL BUILDINGS



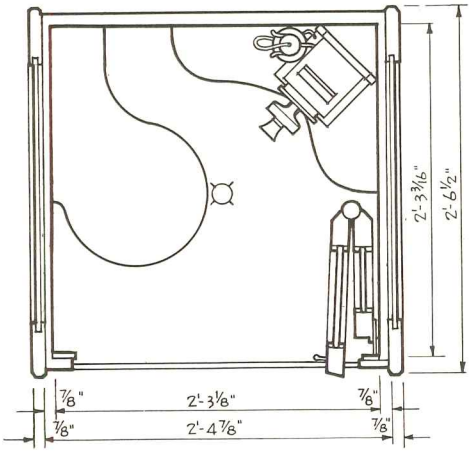
DESK-TYPE SWITCHBOARD



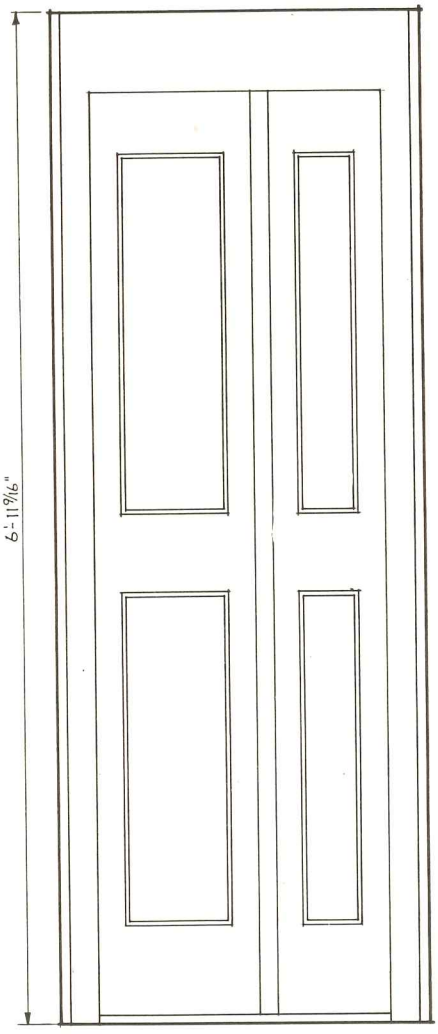


FLOOR-TYPE SWITCHBOARD

NOTE – DIMENSIONAL DATA AND OTHER DETAILS PERTAINING TO THE CONSTRUCTION OF BOOTHS "BUILT IN" AS A PERMANENT PART OF THE BUILDING, AND TO RELATED FACILITIES SUCH AS DIRECTORY RACKS, LIGHTING REQUIREMENTS, ATTENDANT SWITCHBOARD (WHERE REQUIRED) ETC., ARE AVAILABLE AND MAY BE OBTAINED FROM THE TELEPHONE COMPANY.



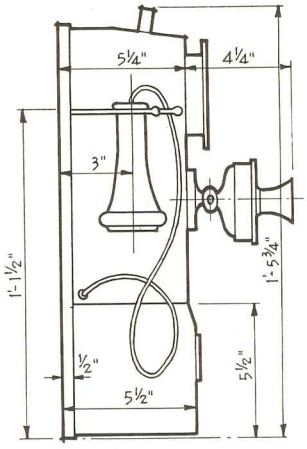
PLAN

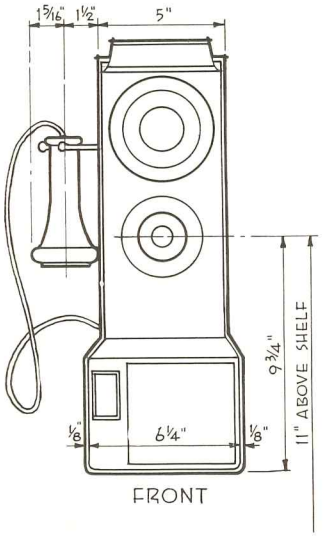


FRONT ELEVATION

TELEPHONE BOOTH

SCALE ¾"=1'-0"





PAY TELEPHONE (WALL TYPE)

SCALE 1½" = 1'-0"

FLASHINGS—MULTISTORY MASONRY WALLS

Information on this sheet was collected and prepared by Ronald Allwork. Sources include the publications of The British Building Research Station, Copper and Brass Research Association. and The Nat'n'l. Assn. of Sheet Metal Contractors.

GENERAL

Moisture penetrates masonry walls because either *a,* the porous nature of the wall material permits; or *b,* the opening up of joints as a result of expansion and contraction induces penetration, or both. Depth to which moisture penetrates cannot be precisely determined, but is 4½ in. on the average, possibly 9 in. under severe conditions. (This does not apply to walls subject to continuous or prolonged wetting.) Diagrams at right show possible courses of penetration for typical walls. Note that points of final penetration often occur immediately after water has encountered a change of material in its downward course.

Parapet walls are exposed to weather on both sides and top. Because few forms of construction will withstand such exposure, particularly penetration from the top, the coping is of first importance.

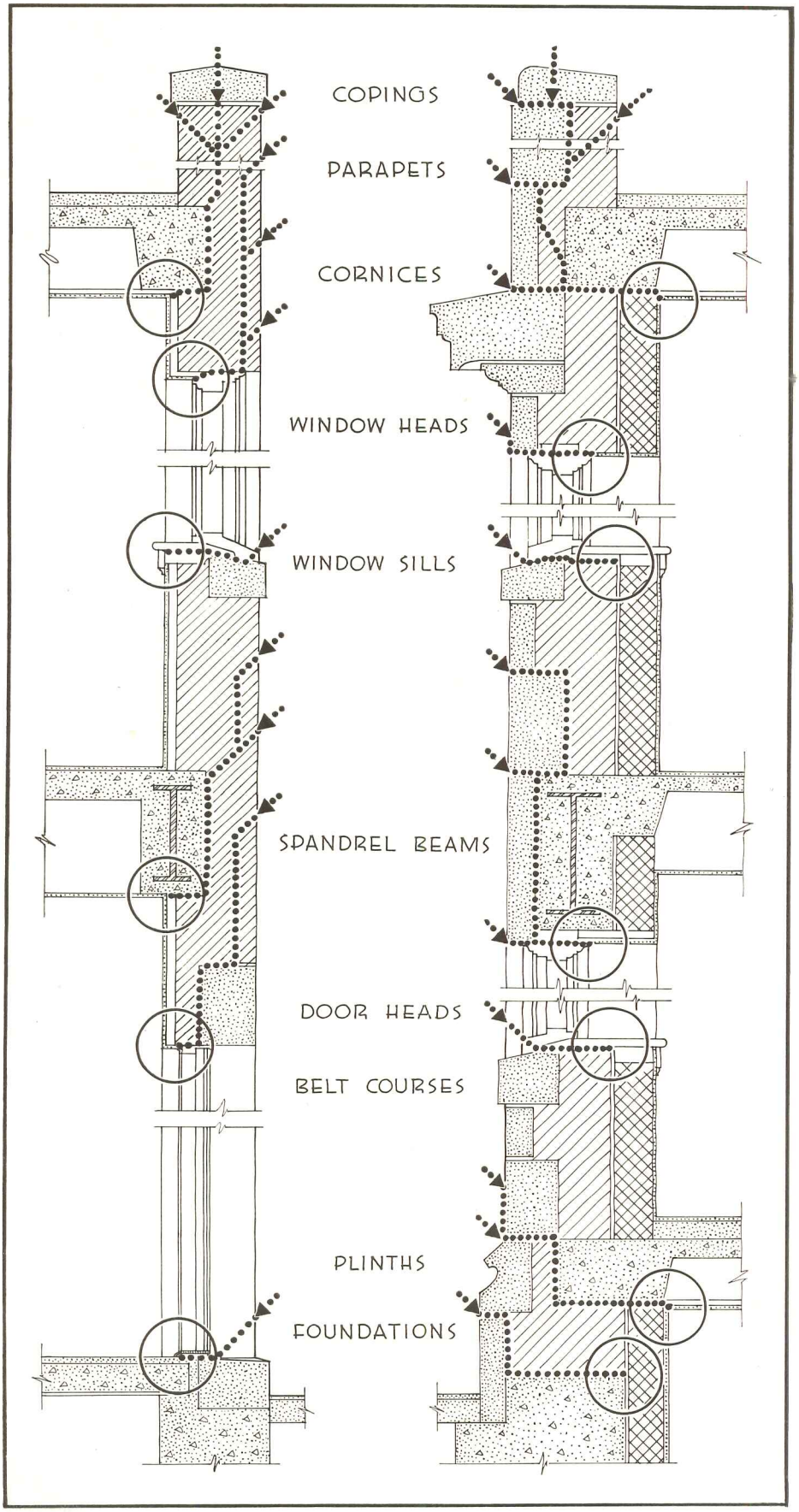
Copings will provide greater protection for walls if they are: *a,* made of a material of low permeability and good frost resistance; *b,* given an overhang and provided with a drip; *c,* designed to shed water in direction of roof; and *d,* provided with saddle-back (or similar) joints.

DESIGN OF WALL FLASHINGS

(1) *Consider the effective life of a flashing material* in relation to the life of the wall.
(2) *Bear in mind the corrosion factor of the flashing material* due to *a,* local atmospheric conditions; and *b,* contact with wall materials.
(3) *Investigate the suitability of the flashing material* from the standpoint of *a,* tensile strength to withstand perforation; *b,* flexibility to conform to mortar bed; and *c,* resistance to squeezing out due to weight of wall.
(4) *Study location of flashings* to provide for the diversion of water to the exterior surface of the wall at its vulnerable points.
(5) *Provide for stability of the masonry* above "through-wall" flashings by use of dowels, keying, steps, or other means.

TYPES OF FLASHINGS

Sheet metal, metal-and-paper, and fabric (or membrane) flashings are available either as basic sheet materials, from which flashings are job-fabricated; or as preformed flashings. Most of the latter are patented types offered under various trade names. Fabric flashings are also available with integral reinforcing; and both metal and fabric types can be obtained in special shapes (or with other special provisions) for maintaining an effective masonry bond.



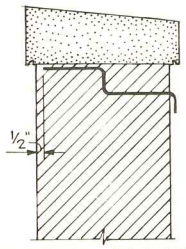
ARCHITECTURAL RECORD
TIME-SAVER STANDARDS
DECEMBER 1940

FLASHINGS—MASONRY WALLS—Copings and Parapets

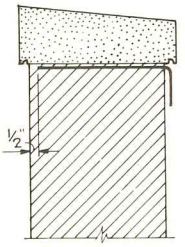
Copings may be flashed in one of the following ways to maintain a bond with the wall: (a) by use of a step in the flashing; (b) by use of a straight flashing, and the provision for dowels to secure the coping; or (c) by use of a shaped flashing which assures a bond between the flashing and mortar.

Parapet walls are usually provided with through-wall flashing subjected to the same considerations mentioned above. Base flashings may be carried up under coping flashing, which then has to be extended and turned down to form a cap. If wall is higher than 2 ft., base flashing needs vertical standing seams.

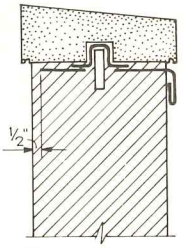
Reglets are needed in concrete or solid stone construction to secure flashing. Flashing is held in reglet by lead plugs 12 in. o.c. Intervening spaces are filled with lead wool or elastic caulking compound. Flashings received by reglets are preferably small to avoid results of movement due to temperature changes.



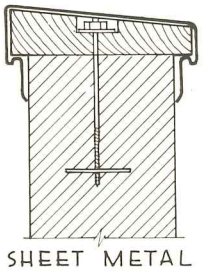
STEPPED FLASHING



PATENTED TYPE

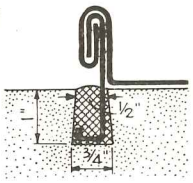


DOWELED COPING

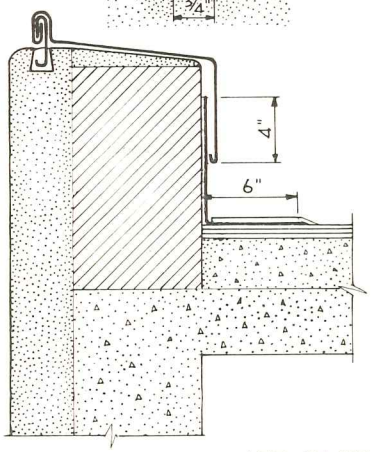

SHEET METAL

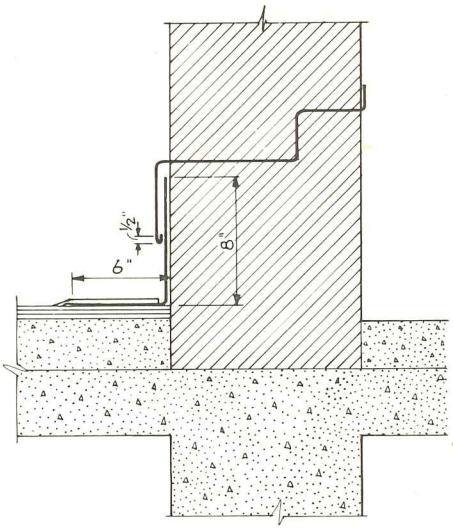
COPINGS

REGLET DETAIL
3" = 1'-0"

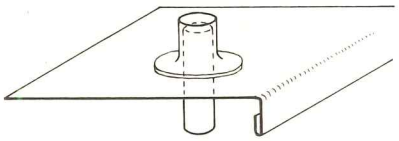


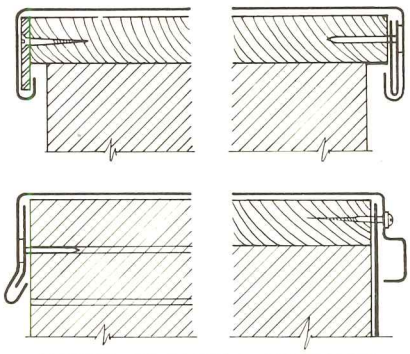
DETAILS AT SCALE 1" = 1'-0" UNLESS NOTED

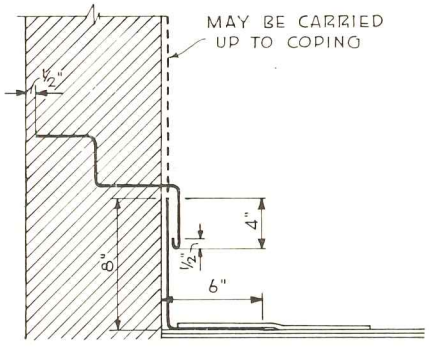




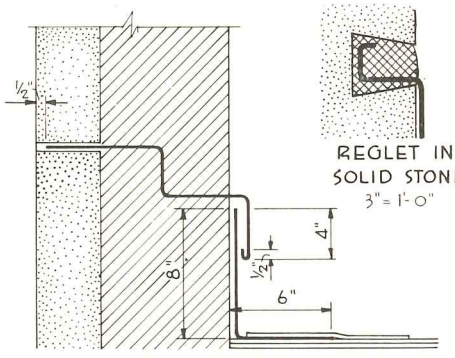
SET-BACK IN WALL


DETAIL OF DOWEL 3" = 1'-0"


DRIPS AT METAL COPINGS

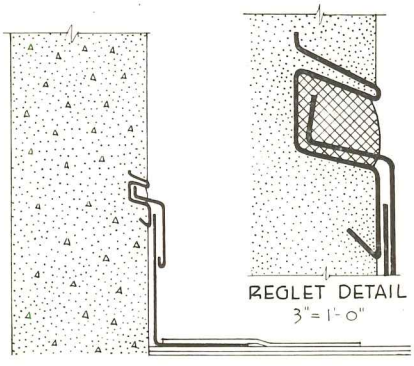


BRICK WALL



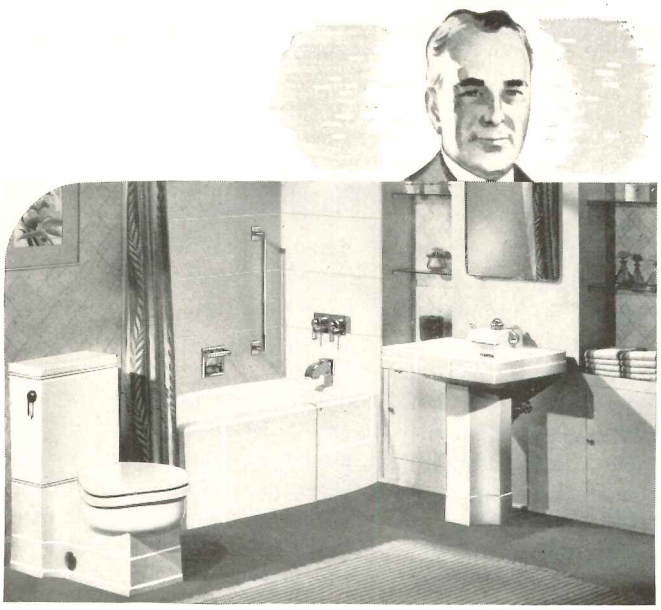
CUT STONE FACING

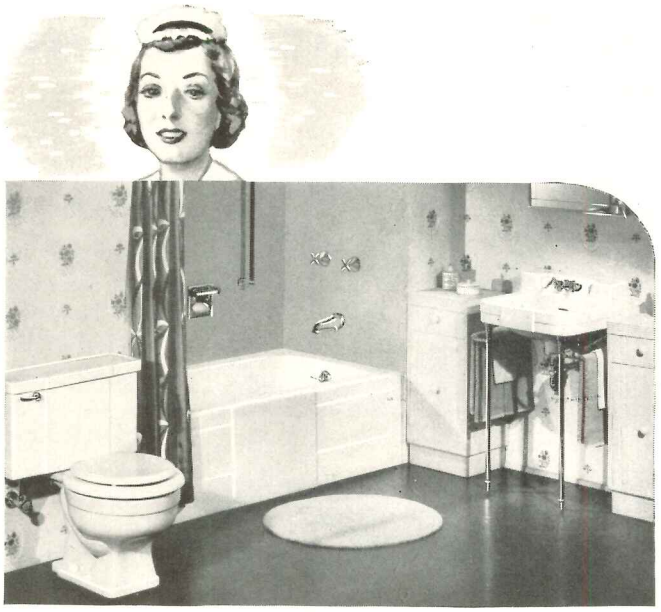
REGLET IN SOLID STONE
3" = 1'-0"



CONCRETE

CAP AND BASE FLASHING FOR PARAPETS





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....CRANE PLUMBING MEETS EVERY NEED

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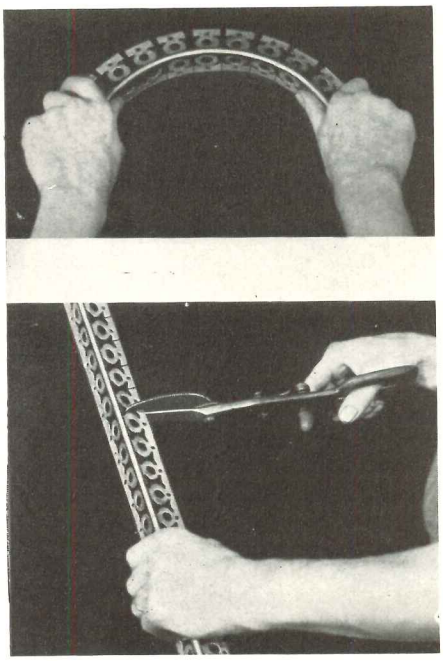


Figure 1

Figure 2

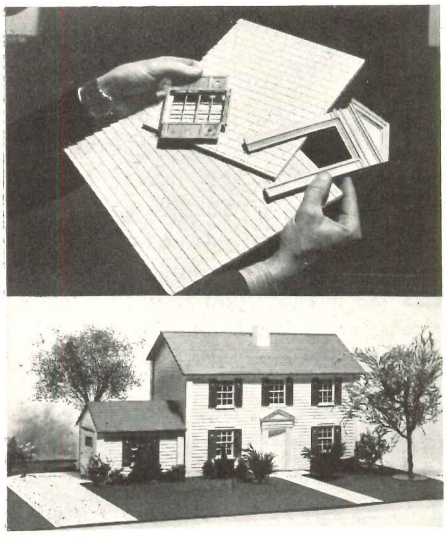


Figure 3

Bendable Beads

A CORNER BEAD that can be bent into any desired curve by hand, yet may also be used for any rigid plumb-line vertical or horizontal corner, offers new ease of preparation of plaster arches and curves. The bead can be used straight or formed right on the job, without special tools or equipment, into a smooth arc with no kinks or breaks in the nose. To prepare the bead for bending, the outside flange is cut through at intervals along the section to be curved, allowing the cut sections to spread open under the bending action. The curve is then easily produced by hand. *Milcor Arch Bead*, Milcor Steel Company, Milwaukee, Wis. (See figure 1.)

Slip Streams for Drafting Tables

STREAMLINED drafting table! Tubular steel supports, hand-wheel table adjustment highlight a new drafting table. Stronger than a wood table, it is claimed, and far less clumsy, the new table is designed to make height and tilt adjustments as effortless as possible, to provide comfortably placed foot rests, and to eliminate sharp, projecting undercarriages. Tubular metal supports have satin chrome finishes; adjustment castings are finished in black enamel; table tops are of soft textured pine, 1⅛ in. thick. A detachable shelf for reference drawings and materials is also available in various sizes. Eleven table sizes range from 31 by 42, to 48 by 96 in. *Metapost Table*, Frederick Post Company, Hamlin and Avondale Avenues, Chicago, Ill. (See figure 2.)

Little Business for Architects

MINIATURE LUMBER enables architects to build their own house models. A complete line of miniature building materials now available include brickwork, siding, shingles, door and window frames, shutters, spandrels, and sills. To facilitate use, siding, shingles, and brickwork are not individual pieces, but are manufactured in board form to a scale of ½ in. to the foot. *Tiny-Bilt Scale Model Products*, Architectural Decorating Co., 1600 S. Jefferson Street, Chicago, Ill. (See figure 3.)

Blueprint Caches

STEEL BLUEPRINT CABINETS that can be bolted into solid batteries for easier, more rigid use, provide better blueprint storage, allow for ready reference, it is claimed. The unit cabinet has eight drawers, each with a hood in the rear and a lift compressor in the front to hold prints flat and in place. Drawers will accommodate drawings up to 24 by 35 in. *Plan File or Blueprint Cabinet*, Standard Steel Products Company, Poughkeepsie, N. Y.

Tough-to-Everything Floor Paint

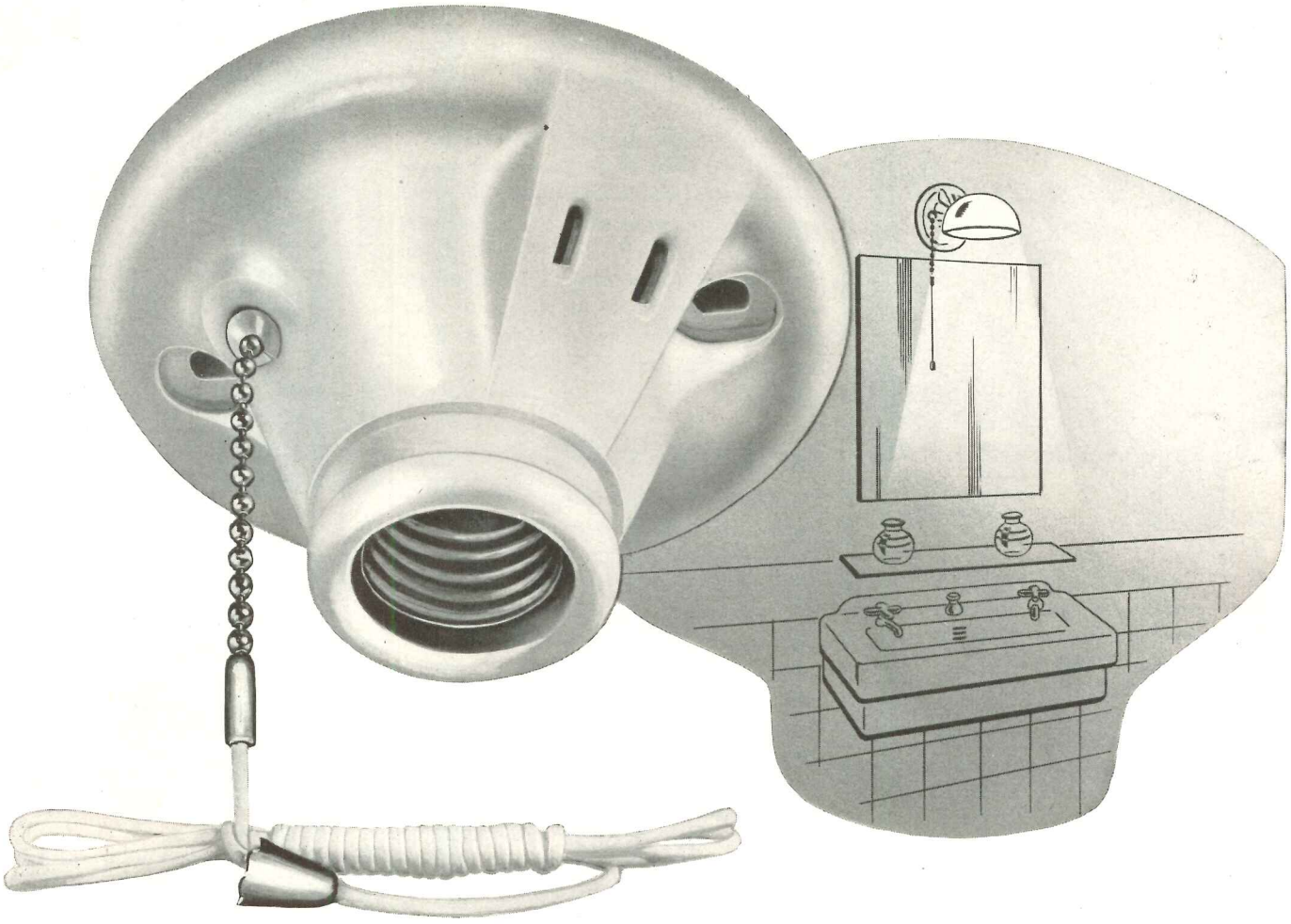
AN ALKALI- AND MOISTURE-PROOF paint for wood or concrete floors employs a chlorinated rubber base which, it is reported, renders it gasoline, oil, grease, alkali, moisture, sunlight, and lime-proof; makes it suitable for use on basement floors, outdoor concrete porch floors, garage floors, or outside walks laid directly on the ground. The new paint contains no linseed oil, flows easily, and brushes out smoothly. Dries in 48 hours, may be walked on after only a few hours' drying. While recommended for exposed floors, it may also be used for sales and display rooms, offices, hotels, hospitals, printing plants, factories, laboratories, bottling plants, dairies, and food plants. It is made in six colors: two grays, brown, green, blue, and red. *Paratex*, Truscon Laboratories, Inc., Detroit, Mich.

Concrete Fills Out New Forms

SMOOTHER, STRONGER concrete surfaces are obtained with a new form liner. Made of felted wood fibers, the new lining prevents the formation of water and air voids formerly created by the use of vibration-placed concrete. The finished concrete surface, as a result, is improved in appearance, more resistant to weathering, abrasion, and chemical attack. The smoother, dryer surface, according to tests conducted by the manufacturer, is stronger and more craze-resistant. On interior walls, the use of a covering coat of plaster is unnecessary. *Absorptive Form Liner*, Fir-Tex, 1108 Porter Building, Portland, Oreg.

(*Continued on page 98*)

EVERY OUTLET DESERVES A BRYANT DEVICE



BOX MOUNTING LAMPHOLDERS

Lights in closets, halls, basements, attics, storerooms, stairways, are essentials in modern adequate wiring plans. Bryant porcelain lampholders are ideal for such lighting because they are easy to install and convenient to operate.

In your Bryant Catalog Number 40 you will find the types of box mounting lampholders as well as every other wiring device you need to make every job an adequately wired job. And Bryant Superior Wiring Devices are moderately priced too!

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SUPERIOR WIRING DEVICES

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Since 1901 *a subsidiary of* **WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY**

 (*Continued from page 96*)

Wall-Hung Electric Heater

A SURFACE-MOUNTED electric wall heater with fan-forced circulation is recommended by its manufacturer for use in homes, offices, factories, stores, where wall construction makes a recessed heater impracticable. The new heaters range in capacity from 1,500 to 6,000 watts; are easily mounted on any wall surface, and project only 6 in. into the room. An induction-type motor—to eliminate radio interference—operates the fan. *Wall-Attachable Heetaires*, Markel Electric Products, Inc., Buffalo, N. Y. (See figure 4.)

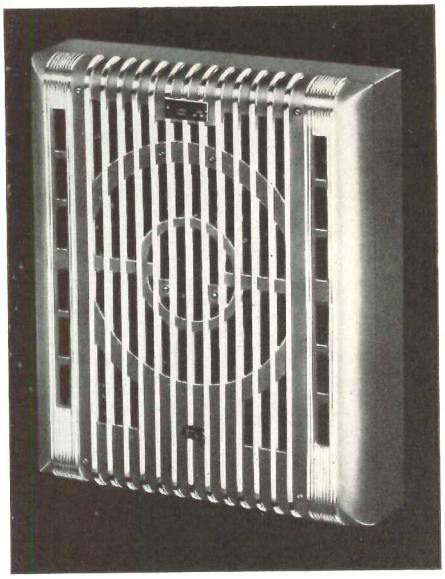


Figure 4

For Decorating Glass Block

A PROCESS for decorating conventional hollow glass blocks with applied designs of fused-glass powders opens up a new field of decoration for glass-block walls and partitions. An entire range of colors is available, it is claimed, as well as all degrees of opacity. Both the design and the colors used have the unique property of being visible as a transparency or as an illuminated design, depending on light position, in front or in back of the glass. According to the manufacturer, any design or pattern can be produced. Further advantages claimed for the process are that the applied colors, being composed of pure glass, are nonfading; they may be washed or scrubbed; lime and water will not affect them. *Block De Cor*, Rambusch Craftsmen, 2 West 45th Street, New York City. (See figure 5.)

Figure 5

Slick Wallboard

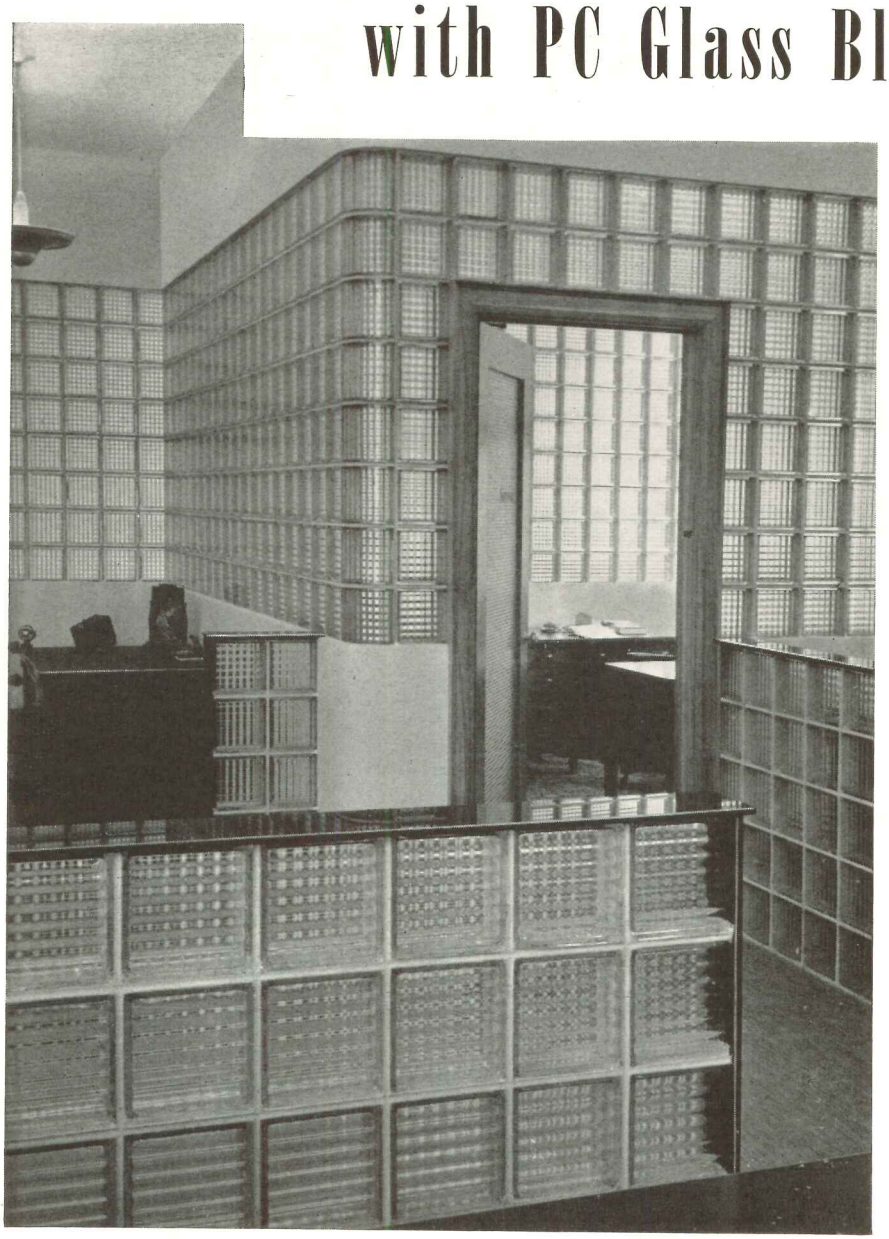
A LOW-COST, glazed surface wallboard is recommended by its manufacturer wherever a permanent, sanitary, tile-like wall or ceiling finish is desired. The board is an oil-treated presdwood material with a hard, glazed, baked-on surface which completely seals the pores of the board against moisture and dirt. Acids, alkalis, and nonabrasive cleaning compounds are repelled, assuring a stainproof, easy-to-clean surface. Sawed, planed, and fitted with carpenter tools, the board is held securely to its base by means of a special mastic. Cap, base, and bathtub moldings are also provided to complete installations. Two surfaces are available, tile-scored and plain; board sizes are: 4 by 6, 4 by 8, and 4 by 12 ft. Thickness is 5/32 in. It is available in five pastel colors plus black and white. *Macolite*, Marsh Wall Products, Inc., Dover, Ohio.

New Window Swings from the Waist

A NEW PIVOTED WINDOW from Sweden, requiring no muntins and sash frames, provides from 35 to 50% more light, greater vision, built-in sunshield, draftless ventilation, inside cleaning. The new window, now extensively used in northern Europe, is made here in two models. First of these consists simply of a single sash pivoted in the horizontal middle, so that when opened, the head of the sash swings into the room, the foot outward. An integral shade, built into the sash, provides sun protection and privacy. This type is recommended for air-conditioned buildings or for use where no protection against insects is required. The second type duplicates the pivoted sash, but employs, in addition, a single transom-type sash set below the larger sash. The transom, easily screened, may be used for summer ventilation. *Perspective Windows*, Perspective Windows, Inc., Chicago, Ill.

(*Continued on page 108*)

Now... Partitions *Designed for "Daylighting"* with PC Glass Blocks



OFFICE PARTITIONS OF GLASS BLOCKS *help "daylighting," preserve privacy, increase office beauty and are easily erected or dismantled.*

PC GLASS BLOCK partitions transmit daylight generously, making offices brighter, better lighted. They bring "borrowed" light from one office to the next, or from corridors into offices. Depending upon the pattern of blocks used, they can direct or diffuse the daylight as desired. At the same time, they are strict guardians of office privacy, because they are non-transparent, and because they effectively insulate against outside noises.

Architects have found that PC Glass Block partitions serve other practical purposes, as well. Their high insulation value cuts down heating costs, makes offices more comfortable. Their easy cleaning properties insure lower cleaning costs. And they are quickly and easily installed.

Today, PC Glass Blocks may be set in prefabricated Revere Metal members of bronze or aluminum, to form interior partitions that are neat, strong, and extremely smart and attractive in appearance. The interior panel so constructed can be completely salvaged should it later prove desirable to change its location.

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NEWS FROM WASHINGTON

(Continued from page 44)

of drafting specifications under which a general contractor can erect prefabricated houses. But it is likely that something definite will develop before our next issue.

Since demountability is a point in thousands of the units which will be built, the business is potentially big enough to enable the prefab industry to reduce costs through larger production and to iron out kinks by large-scale experience both at the factory and at the site.

The effect on private architects, on the surface, does not seem to be large as far as the defense program itself is concerned. It is evident that they could not get any less work on prefab projects than on the present ones built by standard plans sent out from Washington.

Defense housing shortages

Several cities where there is an acute shortage of housing facilities for defense have been announced by the President. A deficiency totaling 6,750 dwelling units is found in Jacksonville; Pensacola; Charleston, S. C.; Indianhead, Md.; New London, Conn.; Boston; Vallejo, Calif.; Bremerton, Wash.; and the Island of Oahu, Hawaii. The finding is that the housing will not be provided by private capital and will require funds from the Lanham Act appropriation.

Defense Coordinator Palmer meanwhile has announced plans to stimulate private building in strategic centers. Philip Norton of Los Angeles will act as special consultant for the area west of the Mississippi. He will work out vacancy registrations such as already are being made in the eastern area to determine the need for providing housing for workers.

Morton Bodfish has been appointed as a dollar-a-year consultant on the general problem of financing homes with private capital.

Clark Foreman, head of the PWA power division, has been named an assistant to Federal Works Administrator John M. Carmody with duties to include housing matters.

DEFENSE ACTIVITY BROADENS SCOPE OF BUILDING NEEDS

Population shifts affect schools; increased construction indicated but no sign of boom prices; slight rise in labor rates foreseen

—By Peter A. Stone

HOUSING IS NOT the only type of construction to be stimulated by the defense program. One of the important items of current interest to architects is the fact that responsible Washington officials are beginning to consider the secondary effects of expansion in defense-active areas. The vast increase in employment in certain areas is already beginning to be felt in schools and related public buildings. So important is this considered that the Senate passed a resolution requiring the Army and Navy to report on (1) the effect of defense activities on the school burden, and (2) the ability of political subdivisions to meet this added burden.

In the last five years a large portion of the Public Works Administration funds has been used for building and rehabilitation of schools. To this extent the added burden may easily be provided for in some places. However, in a good many places this cannot be met by present facilities, which presents the possibility for construction of additional schools and other public buildings.

It is quite within the realm of possibility that the next five years may see a growth in cities comparable to that of the 1920's, with all of its attendant construction of schools, churches, and commercial buildings. The report of the Army and Navy on this subject will probably be presented to the Congress early next year, and may result in further appropriations to aid in the construction of such facilities.

In this respect an important item that should be watched by architects is the little-known bill (S. 4387) introduced in the Senate by Senator Wiley of Wisconsin, which would require that sketch plans for all public buildings be submitted to the War Department for approval. Undoubtedly the sponsors have in mind the designing of public buildings in relation to possible air attack. The bill, if passed, may result in important design changes affecting public buildings, principally those within 250 miles of any U. S. border.

Priorities Board appointed

The President has created a Priorities Board in the National Defense Commission, which will be administered by Donald M. Nelson, Coordinator of National Defense Purchases. The duties of the Board will be to establish principles and policy to govern the operation of a priority system and to settle conflicts arising from the impact of the defense program.

Apparently the manner in which the priority system will operate will be through preference ratings rather than complete prohibitions as to use; that is, the orders of various industries will be rated in the order of preference. However, these will not be blanket ratings, according to the recent announcement of the new Priorities Board; but the top rating, which to date has not been used for any given item, would take immediate precedence over all other contracts —private or Government. It is indicated that such ratings will be given only in exceptional emergencies.

The only ratings indicated so far would be for machines for machine tool builders. Probably the next rating would be for machine tools. It is highly unlikely that any rating will be given to construction materials.

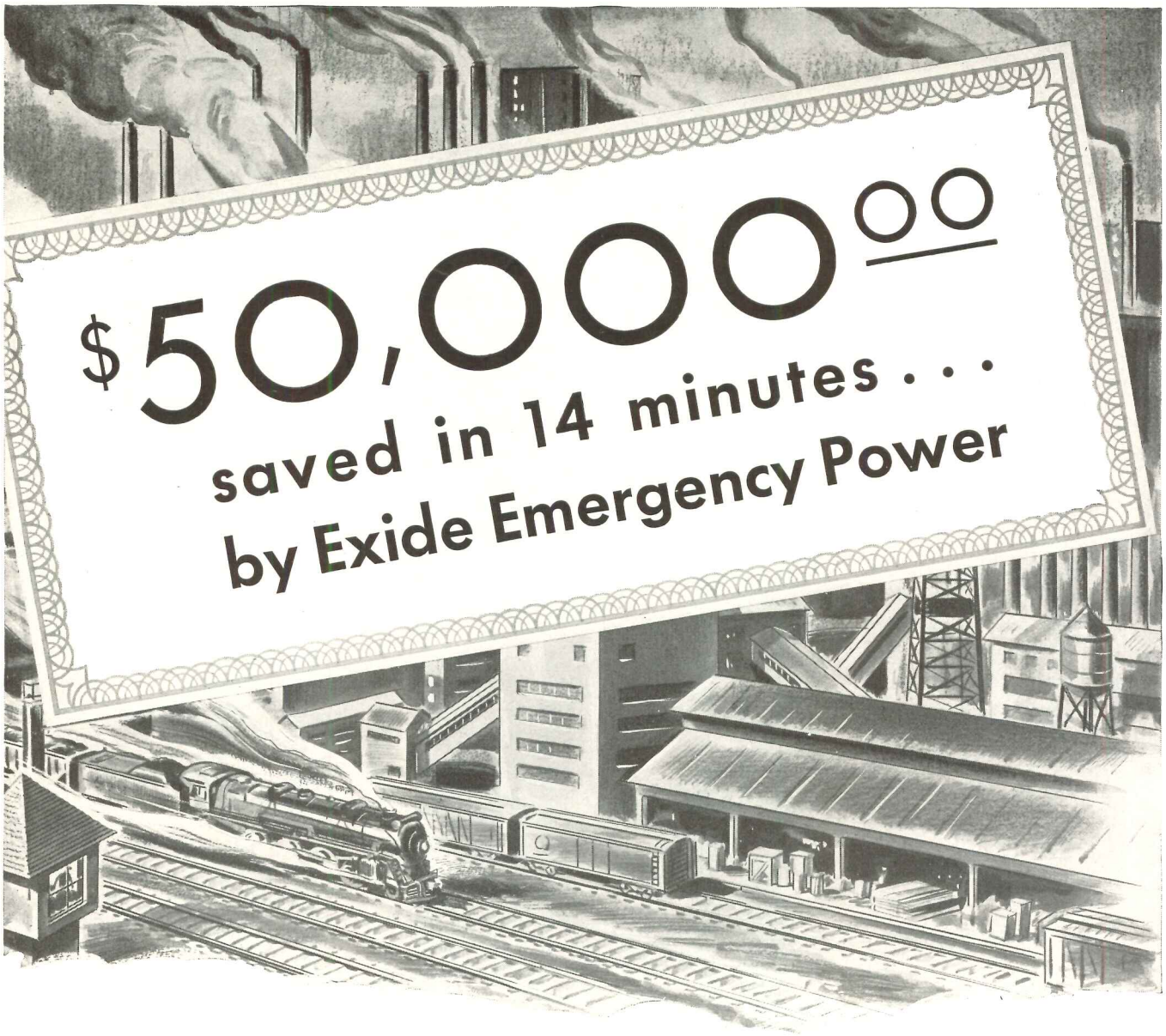
In 1917-18, non-war construction was virtually prohibited due to priorities for war materials.

Nevertheless, while the vast present and expected increase in construction activities will result in a considerably greater use of the present capacities of construction materials and supplies industries, construction now in prospect does not indicate a use of that capacity equivalent to the boom period of the 1920's. Consequently, while material prices are expected to be affected to some extent, there is no reason at present to believe that defense activities should cause boom prices.

Lumber prices up

The only material prices that have been affected so far have been lumber

(Continued on page 102)



. . . AMERICA'S DEFENSE INDUSTRIES NEED THIS SAME SURE PROTECTION

IN AMERICA'S defense program, many new industrial buildings need the adequate, unfailing protection of Exide Emergency Light and Power. Failure of the normal electric current supply can often mean far more than a plant tie-up lasting a few minutes or hours. It can result in damage to equipment that it may take months to replace.

For example—A large plate glass company suffered an electric power interruption, during which the Exide Emergency Battery carried the power load of about 720 amperes. The emergency lasted only 14 minutes, but plant officials estimate that more than $50,000 damage to their equipment would have resulted if they had been without such protection.

The utility companies take every precaution, but cannot control the effects of storms, floods, fires, or street accidents. Exide Emergency Units, supplying light or power, or both, operate *instantaneously* and *automatically* upon any interruption of the normal electric supply. They are easily and economically maintained by the normal staff of a plant.

If you are working on a project that needs this unfailing protection, wire or write the nearest Exide Branch and an experienced Exide Field Engineer will call promptly to help with plans and specifications.

Exide
EMERGENCY BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia
The World's Largest Manufacturers of Storage Batteries for Every Purpose
Exide Batteries of Canada, Limited, Toronto

TRENDS IN BRIEF

(*Continued from page* 100)

prices. The lumber industry has increased prices, particularly for Southern Pine common lumber, to the extent of about 20%, due, of course, to the enormous quantities of Southern Pine lumber used in cantonment building in the Southeastern states. This has had a secondary effect on other species of lumber. The cantonment building, by all indications, will be completed about June of next year. Thus the pressure will be relieved and it is expected the price will drop some, although not to its pre-defense level.

Except for the Southern Pine section of the industry, production is at approximately 60% of capacity. A considerable increase in demand would be necessary in order to bring about a more permanent rise in lumber prices, lumber, of course, being the most important item in construction. For large-scale construction neither cement nor brick have shown any tendency to increase, and if such increases do take place they should be slight.

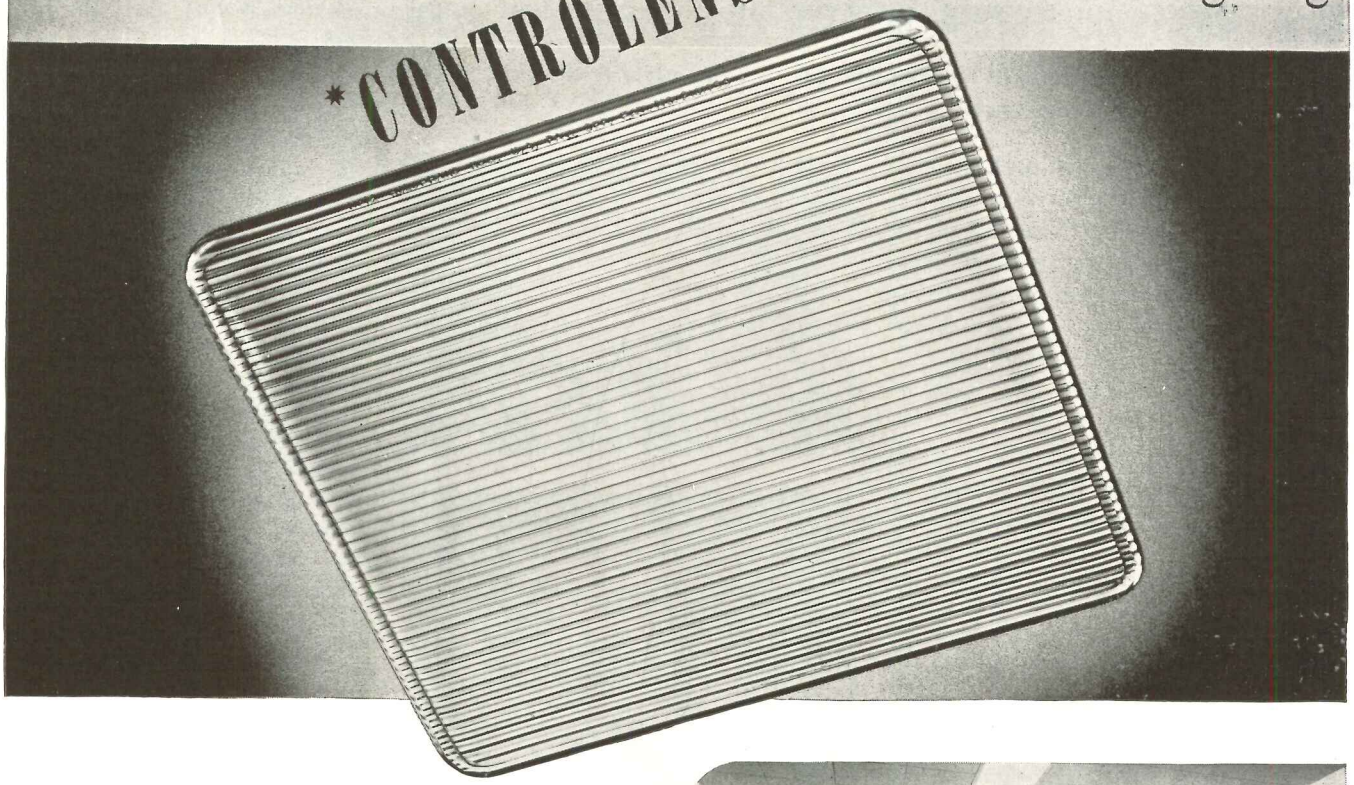
Effect of CIO salutary?

Some increases may be expected in labor rates next spring, but these, too, should be slight and sporadic. One factor that may be taken into consideration in some areas is the growth of the CIO Construction Workers' Union. One of the principal effects of this Union, where it has attained any strength, is that through its type of organization there is the chance of eliminating any jurisdictional disputes, and in the long run, given the same wage rates as the regular AFofL unions, there is the possibility of lowering labor cost through more efficient organization and operation.

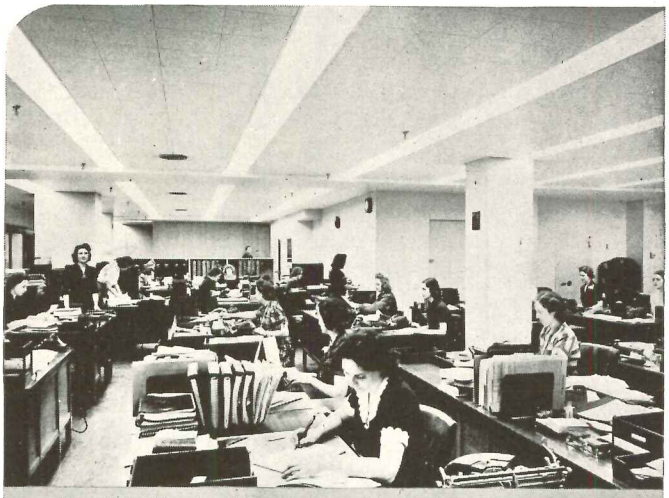
The growth of the CIO Union has also had a salutary effect on the AFofL, in that its jurisdictional disputes are being kept at a minimum. On the other hand, there is the possibility of strikes and disputes in many areas where the two Unions are evenly matched and fighting for jurisdiction. On the whole it is believed that the advent of the CIO Union has been a beneficial factor, at least in areas where it has sufficient strength, in permitting the use of new types of construction, principally the assembly of prefabricated units, which has been frowned upon by AFofL Unions.

(*This section continued on page* 104)

Predicted Performance... *CONTROLENS... for Fluorescent Lighting



In the use of Fluorescent lamps, lighting experts have stressed the need for careful planning *before* each new installation. *After* the fixtures are installed, there is no possible adjustment for error, no opportunity for change to lamps of higher wattage. The foot candles must be sufficient from the outset. Thus, the introduction of this Holophane Controlens, engineered for "predicted performance," is important news for those interested in Fluorescent . . . Authorities have pointed out that Fluorescent lamps should be enclosed or shielded when used for general lighting. This Controlens meets that requirement, at the same time providing added utilization efficiency, accurate control, low brightness, fine appearance and decreased depreciation . . . Write today for data prepared especially for architectural reference and application.



In the offices of E. R. Squibb & Sons, New York

Holophane No. 11-E-12 Controlenses have been used continuously — in troughs on five-foot centers — flush with the ceiling — 40-watt Mazda F lamps. Measurements show an average illumination of 50 foot candles.

Designer, Donald Deskey.

Associated Architect, R. Doulton Stott.

Installation, Polarizing Instrument Company.

Photo, courtesy of Mary-Nelle Griffith.

● *The Holophane Engineering staff will be glad to extend consultation and advice to architects on any specific lighting problem without charge.*

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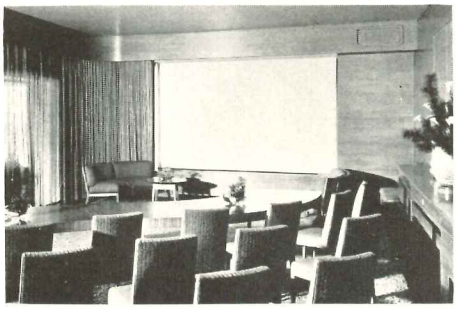
HOME MOVIE PROJECTION CREATES NEW DESIGN PROBLEM

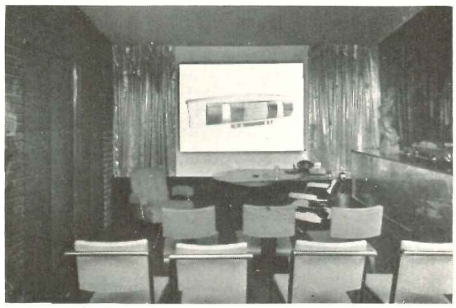
Growing practice favors designating one particular room as movie theater and making structural provisions for equipment

ONE OF THE NEWEST additions to household activities is the projection of motion pictures and slide films. So rapid has been its emergence as a national pastime, that the problem of providing for projecting, viewing, and screening must be seriously considered by the architect when designing the modern house.

The auditorium demands first consideration. Although most projection equipment is conveniently portable, enabling its use anywhere, growing practice favors setting aside one room in the house as the movie theatre and making structural provision for equipment. This room may be the living room, study, or basement recreation room. The size and extent of the built-in provisions may include any or all of the following: shelf or booth for projector, built-in screen, light-tight window blinds, light-tight fan ventilator, and closet for films, camera, projector, and other accessories.

Provision may also be made for a built-in radio-phonograph with automatic record changer to provide musical accompaniment when desired. If space is available, a darkroom may be built adjoining the theatre, useful in developing and printing black and white stills and motion pictures.





Above: Concealable beaded-glass movie-projection screen in a Chicago house. Below: Wall screen in the New York office of Gilbert Rohde, Designer.

Present screens are a far cry from the loose sheet used for lantern-slide projections 'way back when. Today, a variety of surfaces, frames, and sizes are available, each with its special advantages. The onrush of colored movies, however, has favored the use of beaded-glass and mat white surfaces, which, with their high reflectivity and brilliance, neither distort nor absorb projected colors.

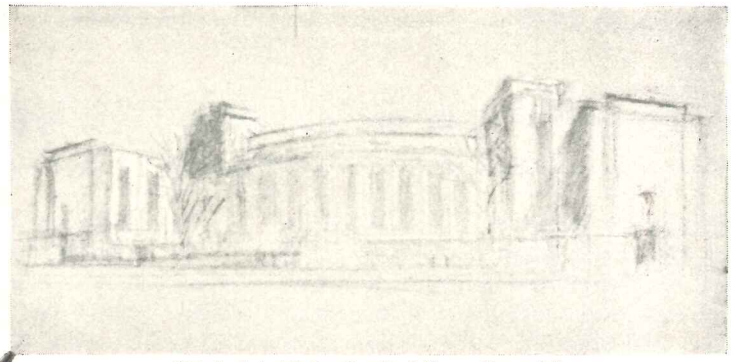
The size of the screen will be determined by the "throw," or distance to the projector, and the length of the lens focus, a variable for different makes of projectors. Tables giving image sizes at various distances are provided by each manufacturer.

Three types of screen mounting are generally available for home use. These comprise portable, roller, and frame types. They may be folded up, rolled up, or applied to the wall. Roller and frame types may be hung from either walls or ceiling. They may be concealed behind architectural treatment, or left exposed. All screens, however, should be protected against dust and damage when not in use, by means of covers or boxes.

Viewing angles play important roles in planning the auditorium. Best angle is included in a 0 to 25° angle with the screen-projector axis, although an angle up to 45° with the axis also provides reasonably undistorted viewing. Hanging ceiling fixtures should be so placed that they won't be caught in the beam of the projection. Other electric outlets should be so switched that the operator can conveniently control the "house" lights. Storage room for films and other equipment should adjoin the theatre if possible. Particular care should be exercised, however, to avoid keeping films, especially color films, in a damp place.

(This section continued on page 106)

THIS, TOO started with a pencil



Original sketch for Cardinal Hayes Memorial

The CARDINAL HAYES MEMORIAL

designed by Eggers and Higgins

Final rendering showing remarkable fidelity to original

The Chapel with its 14 side Altars

Corner of Garden Entrance

Here is one of the outstanding buildings of the year—a complete High School, Faculty Residence Quarters, Chapels, a Cafeteria and Gymnasiums —all in one great building reared to the memory of Cardinal Hayes.

You can well imagine the intricacy of such a project—the sketches, renderings, blue prints—the long hours of many men spent with no tools but their skill plus paper and pencils. That's when pencils count. That's when Venus pencils stand out. Their careful gradation of 17 degrees gives the draftsman and architect the exact degree of hardness or softness for each job, from 6B to 9H, plus 3 special Venus Tracing degrees T1, T2, T3, for making direct blueprint reproductions (without ink tracing). It is this precision of gradation plus the smoothness and strength of lead provided by the exclusive *Colloidal Process, that have made Venus the most famous and largest selling professional pencil in the world. May we send you samples? Just say the word—and the degree. Address Dept. B. * *U. S. Pat. No. 1,738,888*

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SMALL-HOUSE CLUB OFFERS ARCHITECTS NEW OPPORTUNITY

Community construction scheme may restore important share of ready-built house design

THE SMALL-HOUSE club—a new scheme of community house construction—may alter the speculative builder into a contract builder; vastly improve the appearance and sensibility of American home communities; and restore to the architect, alive to its possibilities, an important share of ready-built house design.

Now swinging into a nascent popularity in the Northeast, the house club plan is not new-fangled. It has been tried before; but its topical interest arises from the Great Truth that too much of the house architect's business has been slipping through his fingers into the ready hands of businessman-builders. Based on a mass-production plan, aesthetically squired, the small-house club offers reinstatement to the architect. It appears that he is, after all, best qualified to endow the mass-produced nonentity with individuality.

The nub of the idea is a pretty picture. This is it: Starting with a piece of platted land, the architect designs an individual house—or variations of several basic plans—for each specific lot. These are so arranged that the entire development has a continuity of form and color rarely obtained in the individually-built community; rarely achieved in the speculative-built development.

Because he designs the entire development at one time, he has the unequalled opportunity to work out problems of orientation, circulation, aesthetic harmony, and contrast of form and color. He may project cost economies: by means of module units; use of standardized units sizes; by means of quantity purchases.

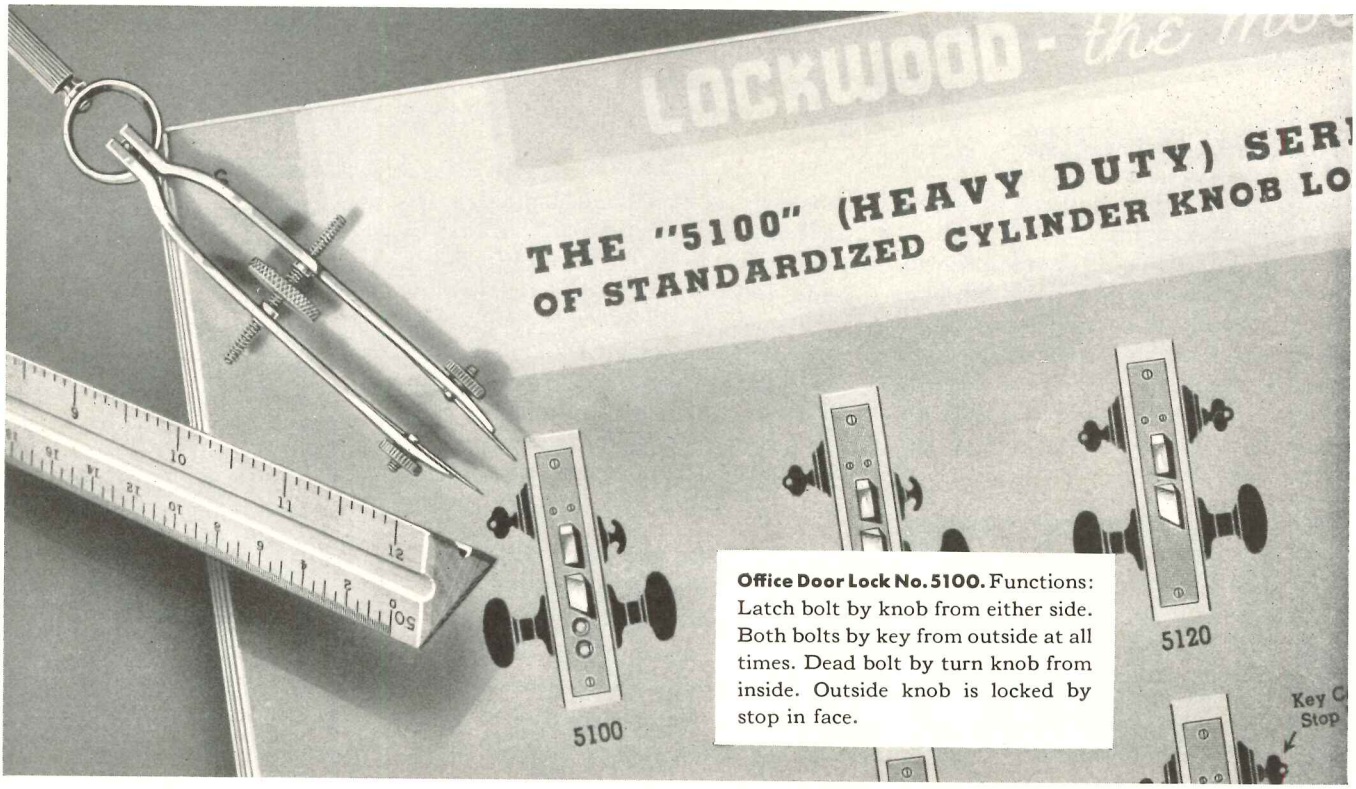
Upon completion of the design, the projected community must be fully pictured. Renderings of individual houses, of the entire group, of individual blocks must be prepared for submission to the public. These are not professionally "arty," but rather realistically accurate. The exact technique should vary with the cost range of the houses. More expensive units require more conservative coloring; less expensive should employ brighter colors, according to recommendations of architectural color experts.

After approval by the FHA and local building department, an advertisement is placed in the newspapers. This is usually brief, asking all those who are interested in owning their own homes—and who are willing and able to pay the required monthly payments—to write in for further particulars.

In several instances, this simple announcement has been met with a flood of inquiries. The advertisement, however, may take any desired form and elaborateness.

Inquirers are next approached by salesmen, armed with the renderings of the development, who outline its virtues. All houses, they instruct, must be sold from the plans before construction will proceed. This permits reducing the cost of the houses to a minimum. Promoters of the scheme believe mass graduated production permits savings of as much as 20%. This saving is passed on to the buyers. The purchaser may buy any house he desires but must also take the lot on which the house stands. This

(*Continued on page 108*)



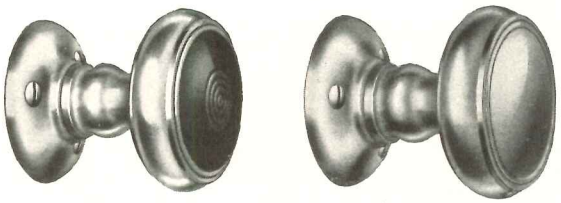
Office Door Lock No. 5100. Functions: Latch bolt by knob from either side. Both bolts by key from outside at all times. Dead bolt by turn knob from inside. Outside knob is locked by stop in face.

Let's Measure Up Office Door Locks!

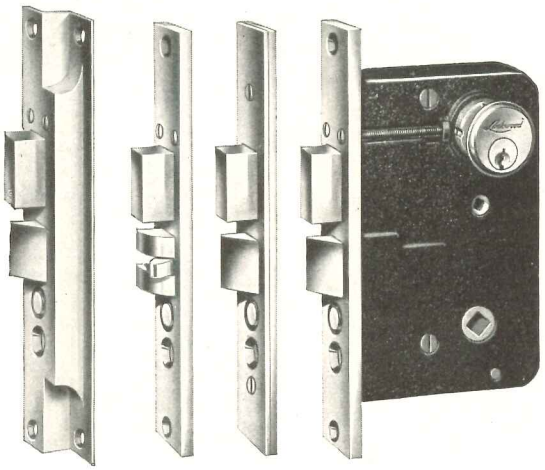
For Office doors, we offer you No. 5100 in the Lockwood Modernized Line of Cylinder Locks. This lock is equipped with the famous Lockwood Equipoise Knob action — balanced for easy operation in either direction, and overcoming the annoyance of "one-way" knobs — an especially valuable feature for Office doors.

This lock is built with Lockwood precision and ruggedness, to operate smoothly and dependably under constant service. It is suited to wood or metal doors, and like all locks in this line, conforms to the standard dimensions adopted by the Hollow Metal Mfrs. Association. It is thus interchangeable in the same mortise with any other lock in its series.

The New Lockwood Catalog shows more than 300 different Cylinder Mortise Locks in an easy-to-read panorama style. We would like to send you a copy. It will save hours of your time in writing lock specifications. Send today for your copy and for full information.



The readily interchangeable tops of Polyflex Forged Brass Knobs assist you in matching various architectural patterns. Dardelet Set Screws in these knobs also assure permanently tight, non-rattling attachment.



Plain cast front, plain latch bolt regularly furnished. Rabbeted front, anti-friction latch bolt, armored front—all are available when so ordered.

LOCKWOOD
N

Lockwood Hardware Mfg. Co.

Division of Independent Lock Co. Fitchburg, Massachusetts

THE SMALL HOUSE CLUB

(Continued from page 106)

preserves the unity of the development and simplifies selling.

Various methods of securing the interest of the potential buyer have been tried. One of these requires a down-payment of approximately 1% of the cost of the house merely to hold it. While the buyer is exercising this option, the house cannot be sold to any other purchaser.

When all houses have been sold, down payments of 10% are required of each buyer. Construction of the entire tract then proceeds, usually under one lump contract.

The field, however, is not the natural monopoly of the titanic building-materials dealer. It may also be cultivated by progressive architects, working hand in hand with property owners. Because each house is sold before construction starts, working capital is reduced to the minimum. In addition, because all construction proceeds at one time, it is possible to contract the entire construction at once. —J. R. Von Sternberg

(Continued from page 98)

Plastic Sheet for Direct Lights

A NEW SHEET PLASTIC eliminates the need for louvers on exposed lighting fixtures. The plastic sheet, designed to be placed over the light-fixture opening, consists of very thin parallel translucent louvers, or "slats," either white or colored, running through the depth of a clear, transparent sheet at right angles to the surface. The new material combines in large measure, it is claimed, the diffusion obtainable with an opal material with the directional efficiency obtainable with a clear material. It is primarily designed for fluorescent lighting, which with its continuous light source, frequently requires louvers to eliminate glare and to control direction. The new material, when seen from the side, appears translucent and the color of the slatted striping. When viewed from directly in front, it appears transparent with translucent hair lines running through it. A variation of the sheet has a prismatic surface, designed to obscure the interior of the fixture when viewed from any angle, and to diffuse the light. Colored striping has many special uses. The use of pink translucent stripes, for example, overcomes the unflattering and off-tint appearance given by fluorescent lighting to objects of reddish and brownish hues. *Louverglas*, Doane Products Corporation, Meriden, Conn.

New Paint Hides Mistakes

A MANY-PURPOSE synthetic aluminum-casein paint serves as an economical primer and sealer for plaster, plasterboard, wallboard, cement, concrete, brick, wood, and other porous surfaces. It successfully hides dark coats, prevents bleeding of stains through superimposed coatings, hides feather-edged plaster patches, acts as an anti-bleeder for bituminous undercoatings, may be used as a finish coat wherever a high reflecting aluminum finish is desired. It may be applied over any firm painted surface: oil, paint, washable water paint, varnish glaze, or enamel. Any paint surface may, in turn, be applied over it. Odorless, it dries in 30 minutes on unpainted surfaces; in 3 hours on painted surfaces. *Brytenall Alumi-Bond*, Brytenall Co., Ossining, N. Y.