ARCHITECTURAL RECORD

11 NOVEMBER 1963 • TWO DOLLARS PER COPY

BUILDING TYPES STUDY: MENTAL HOSPITALS

SEVEN HOUSES BY ULRICH FRANZEN

SYNAGOGUE BY BELLUSCHI

FULL CONTENTS ON PAGES 4 & 5

Foresight

Foresight was the byword in the late Eero Saarinen's planning of the Dulles International Airport.

Plush mobile lounges whisk passengers effortlessly to the huge silver birds perched on the runways. A veritable forest of millions of trees were strategically planted to cushion the roaring of the jets from the ears of people who will someday populate the area around Dulles but who now don't even exist.

Foresight was used too, in the locksets chosen for this monumental terminal. Lockwood Mortise Locksets—structurally strong and mechanically perfect enough to give faithful service far into the future.

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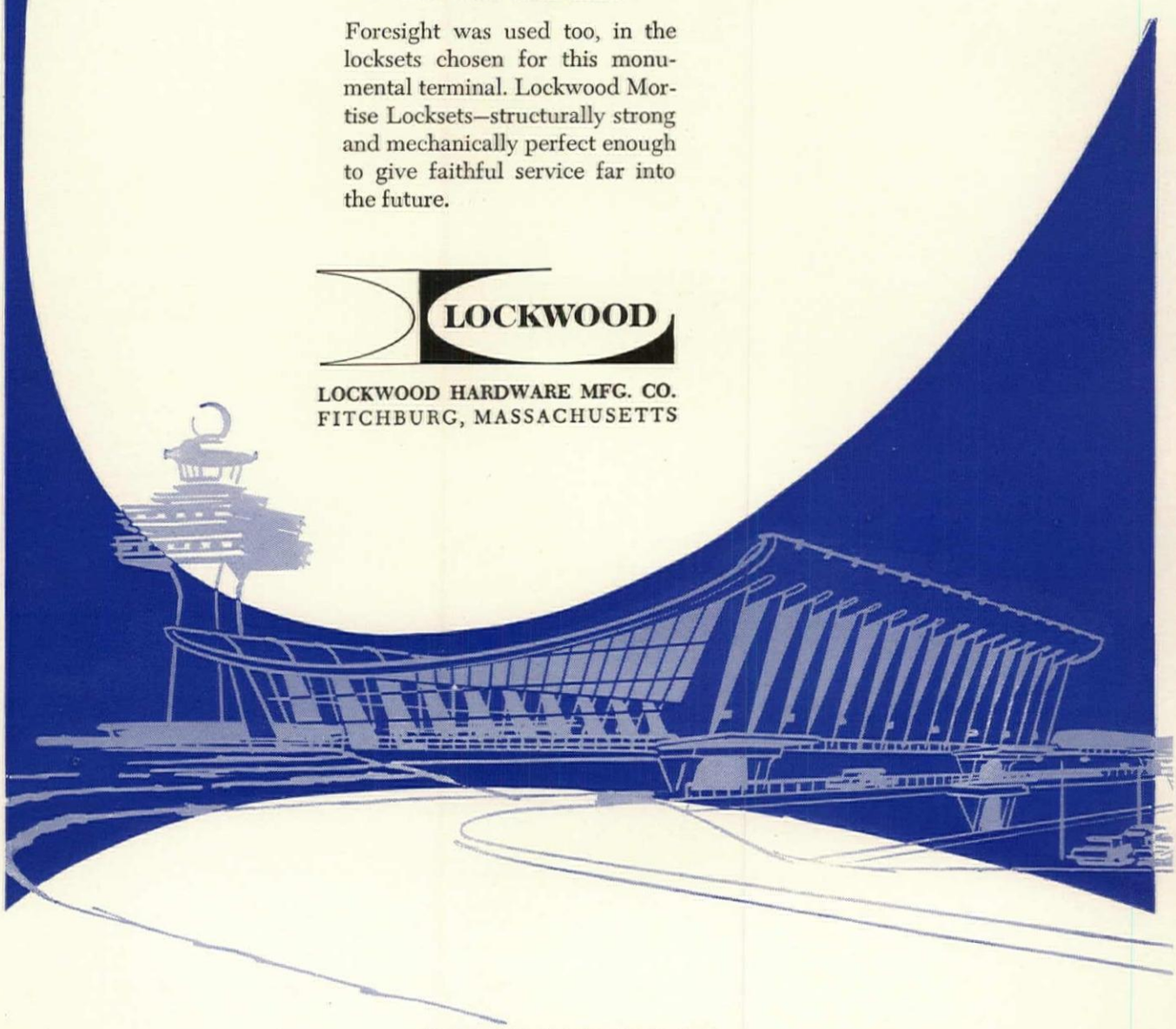

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Sterick North Parking Garage and Holiday Inn — Memphis, Tenn.

Most of the 24 precast columns and 96 post-tensioned tee-girders are in place. The tees, 20 ft. o. c., rest in deep tapered seats in the columns. Cast-in-place slab was 5" thick, and post-tensioned in 2 directions. Total area approximately 220,000 square feet.

Architects — Furbringer and Ehrman (Memphis); Structural Engineers — T. Y. Lin & Associates (Chicago); Contractor — J. M. O'Brien & Co. (Memphis); Holiday Inn Architects — William W. Bond & Associates (Memphis).

ADD Holiday Inn®

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During construction of the Sterick North 400 car parking garage, the owners decided to add a 120 unit Holiday Inn with swimming pool to occupy the 8th, 9th and 10th levels. Total area of the 10-story structure is approximately 220,000 square feet.

The post-tensioned parking garage structure is a continuous ramp type utilizing 24 columns and 96 tee-girders with a cast-in-place slab. The 71′ single tees were post-tensioned using the Prescon System as was the 5″ thick light weight aggregate slab which was post-tensioned in 2 directions.

A leveling slab was placed across the top level of the parking garage. This slab was strong enough to take the column loads of the Inn wherever they occurred. The leveling slab and swimming pool, which was part of the slab, were post-tensioned using Prescon tendons. This formed the 8th level.

The Prescon System of post-tensioning prestressed concrete allows the architect and engineer the utmost in design flexibility, often at the most economical cost. The Prescon System is particularly advantageous where long spans, and column-free interiors are desired. WRITE for brochures showing many examples of all sizes and types of structures that have used the Prescon System.

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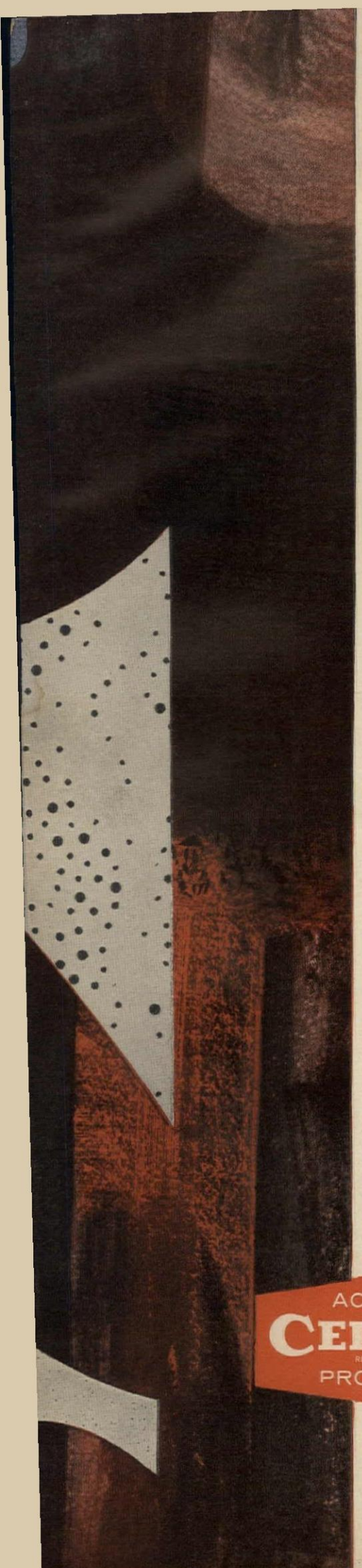

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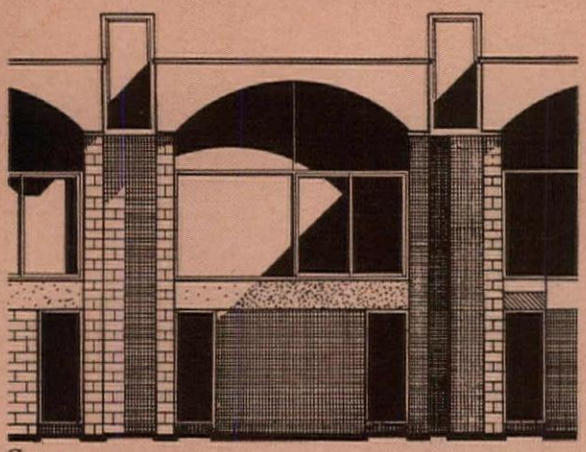

Cover:

Drawing of house in Great Neck, Long Island, New York by Ulrich Franzen, architect

Advertising Index: 310

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Architectural Engineering

ARCHITECTURAL

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Authors and Articles:

Record Reports

Features

RECORD

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November 1963

Building Types Study 326: Mental Hospitals

Coming in the Record

BREUER'S CHAPEL FOR THE BENEDICTINES

A major stage in the construction of Marcel Breuer's monumental complex for the Priory of the Annunciation in Bismarck, North Dakota, was climaxed with the completion of the chapel and bell tower which are the focal point of the scheme. The new buildings in the windswept hills of North Dakota have an air of solidity and permanence as though they had always been there, but they are a thoroughly contemporary expression of a great tradition.

BUILDING TYPES STUDY: INDUSTRIAL BUILDINGS

A variety of design problems will be taken up in next month's Building Types Study on Industrial Buildings, and the variety of the examples is one indication of the wide range of projects of this type with which architects are these days concerned. Indications are that opportunities are about to increase further in terms of sheer volume—F. W. Dodge foresees not only a significant increase in volume next year but a steady advance over the next decade.

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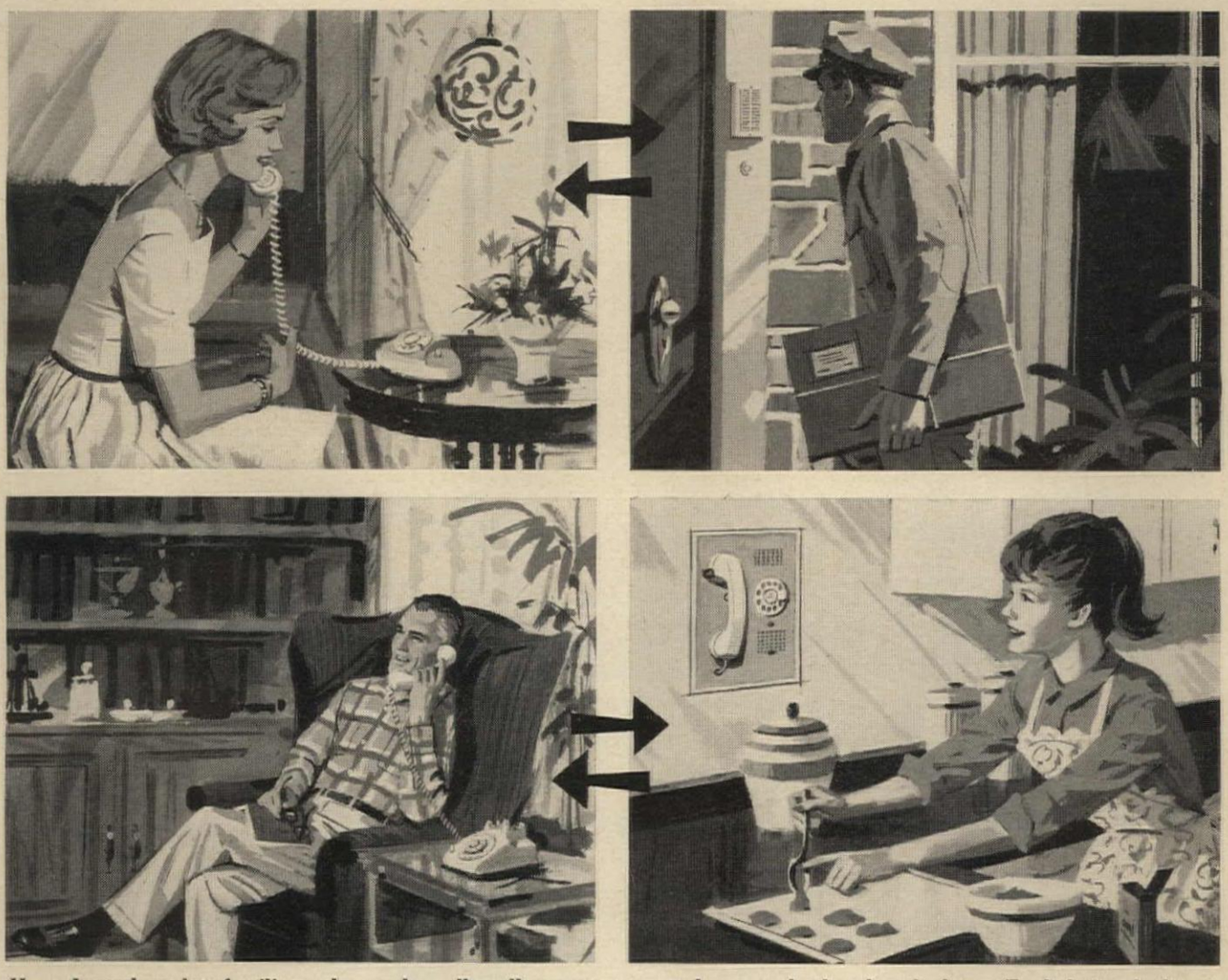

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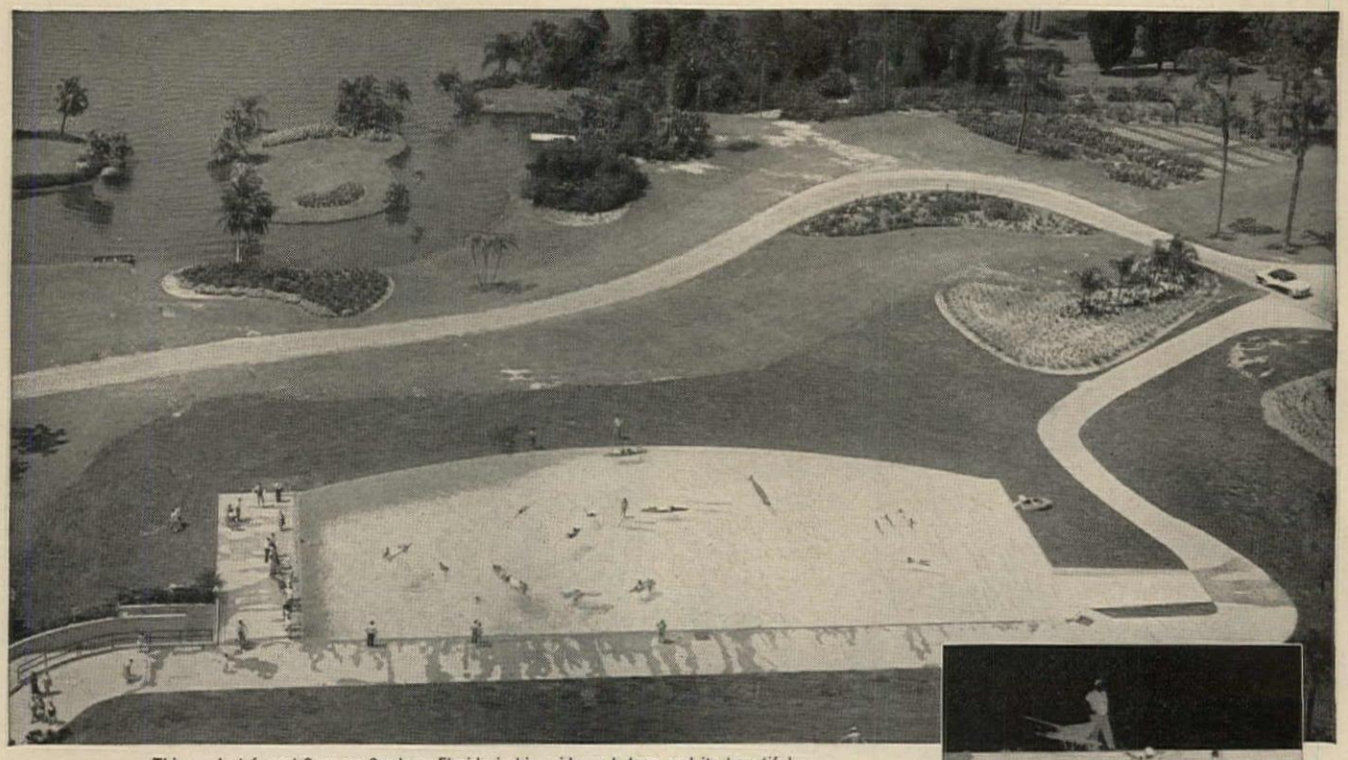
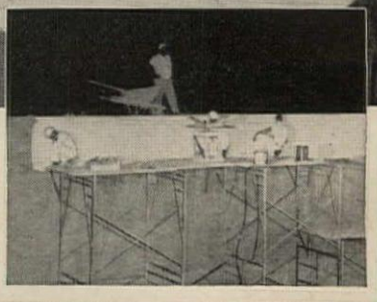
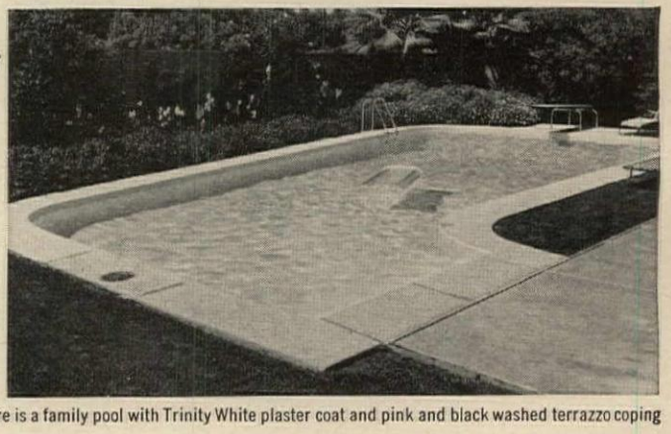


This pool at famed Cypress Gardens, Florida is big, wide and deep and its beautiful whiteness comes from the Trinity White plaster coat. Templin's Inc., Lakeland, contractor. (inset) Applying the Trinity White plaster coat at Cypress Gardens.



BIG COMMERCIAL POOLS OR SMALL RESIDENTIAL POOLS

...Both use Trinity White for durability and eye appeal



Here is a family pool with Trinity White plaster coat and pink and black washed terrazzo coping

Swimming pools—like highways and skyscrapers—are at their best when built of concrete. There is solid value in a concrete pool. It is durable. It has the utmost flexibility of design and a great potential for beauty.

The best concrete pool is one plastered with Trinity White Portland Cement. It can be sparkling white or tinted by adding color pigment to the mix. Trinity White has the same strength, workability and characteristics of ordinary gray cement.

It is available from building material dealers. In some areas specialty manufacturers handling swimming pool supplies furnish the plaster coat in premixed form.

Other uses of Trinity White in swimming pool construction include precast coping, precast decorative wall units, portland cement paint and washed terrazzo paving around the pool.

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Time for Dissent

In recent months we have been stirring some controversial subjects, and we are not displeased to have moved some readers to dissent. One is Raymond Epstein, head of the large firm of A. Epstein and Sons, engineers and architects, Chicago. He writes:

"In answer to your self-posed question in the July 'Behind the Record,' namely: 'Are the editors of the architectural magazines capable of naming the best architects?' I would like to suggest, in answer, a vigorous 'NO.'

"I read, enjoy and benefit by the three major publications in the architectural field, but I am constantly impressed with the fact that the principal attention seems to be limited to the work of a handful of firms. Perhaps the criterion of 'bold and innovative and egocentric' narrows the field down this sharply, but if so I would consider it far too restrictive an editorial standard.

"There is a vast amount of good, efficient and architecturally praiseworthy work being performed throughout the country by a host of firms both large and small. In many cases the principal emphasis is economy of construction—a factor which seems to be conspicuously lacking in most of the projects deemed worthy of publication. To ignore the economic aspects of typical architectural commissions is far from realistic and, I believe, fails to provide your readers with a true perspective of the everyday problems of architectural life.

"If you would cast your net wider and give us the benefit of thoughtful comment on some of the less esoteric work now and then, it would be of greater service."

Well, no wish to cross examine; I shall only remind the witness of the RECORD's Building Types Studies and Architectural-Engineering section in which we do publish some buildings which are not necessarily "bold and innovative and egocentric."

Let me give "equal time" to another protesting reader, who rises to the piece in this department for August, which was entitled "Give 'em Hell."

E. V. Lofstrom, Minneapolis, writes:

"Are you sure you understood your architect friend? It seems possible that he was urging you to condemn bad architecture, of which there is a superabundance today just because so many architects are 'bold, innovative, and egocentric,' qualities which, unless controlled by a firm self-discipline, are likely to result in offenses of one kind or another. Boldness can easily become assertiveness and stridency. Innovation, unless consciously directed toward achievement, becomes random sensational experiment. Egocentricity is another name for neurosis and is the pervasive sickness of our culture, thanks, I suppose, to Freud.

"I think that the younger generation of architects is generally better trained, more imaginative, and more creative than the older. But it lacks the coherence which results from the mutual acceptance of a common discipline. Feasibility seems to be the only criterion, and it is hardly a discipline. Probably for our age the needed discipline is social responsibility; certainly lack of it can be held to account for most of the architectural failings of our time . . .

"Good architecture should always be praised. But it is rare, and it is most likely to be encouraged if you will relentlessly remind us of the social responsibility on which, in our democratic age, it must be based."

We will indeed.

—Emerson Goble

GROPIUS ADDRESSES CONVOCATION AT WILLIAMS

Education in the arts, and an exalted spirit of collaboration, suggested as an answer to the age of mechanization—for the architect as well as for Everyman

Williams College this year dedicated its fall convocation, held September 21-22, to the theme "Architecture and Education." The major address was read by Walter Gropius, long known for his interest and accomplishments in both fields. Excerpts of his address, "Creative Education Key to Good Architecture and Design," appear below.

The vast development of technology has thrown us out of balance, and has overshadowed other components which are indispensable to the harmony of life. This balance must be re-established. What we obviously need is a re-orientation on the cultural level. . . .

Nobody seems yet to know how the ominous consequences of an affluent society for the average man can be counteracted. No doubt the demoralizing effect on a man who is thrown out of the market by automation and remains unemployable is dangerous for the whole fabric of society. I believe we need a change in attitude of mind from the "bigger" to the "better," from quantity to quality, by triggering the creative potentialities of every individual through intensified education and by putting ever greater emphasis on the humanities. This trend, I believe, is needed not only for the selected few who have access to higher education, but in principle it should become the essence for all schooling from the nursery on, in appropriate degree for the various stages. Such a shifting in emphasis throughout the educational system toward an active participation in the arts could perhaps outbalance the negative effects of automation. . . .

This unintegrated society of ours needs participation in the arts as an essential counterpart to technology and to its atomistic effect on us, for art develops intuition. Made into an educational discipline— of which the Bauhaus was a beginning—it would lead to the unity of visible manifestations as the very basis of culture, embracing everything from a simple chair to the pattern of a modern town. Every one of us has to a greater or lesser degree innate artistic qualities with which to achieve harmony and dynamic equilibrium, if only our educational system would give greater emphasis to the need of cultural "equipoise," as I should like to call it, and accordingly would recognize the necessity of training head and hand simultaneously on all levels of education from the nursery on. . . .

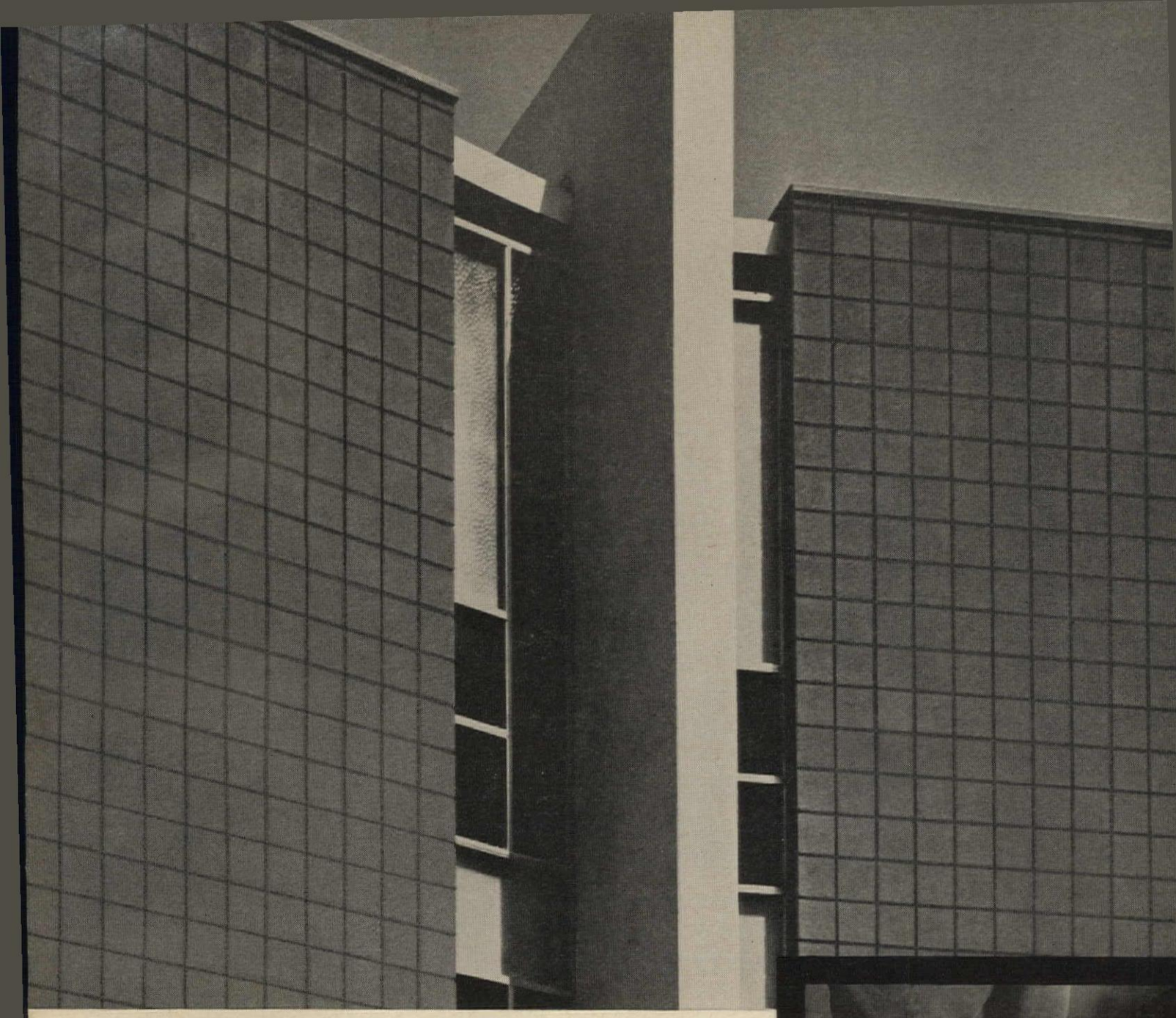
In contrast to the technological process of mechanized multiplication by the machine, the artist's work consists of an unprejudiced search for the forms that symbolize the common phenomena of life, which requires him to take an independent, uninhibited view of our whole life process. His work is most essential for a true democracy, for he is the prototype of the whole man. His intuitive qualities are the antidote against over-mechanization. If mechanization were an end in itself, it would be an unmitigated calamity, robbing life of its fullness and variety by stunting men into sub-human robot-like automatons. But in the last resort mechanization can have only one purpose: to reduce the individual's physical toil in order that hand and brain may be set free for some higher order of activity. Our problem is to find the right balance and coordination between the artist, the scientist and the businessman, for only together can they create humanized standard products and build with them a harmonious entity of our physical surrounding. . . .

If the aim of true teamwork is to give the best possible service through closest integration of all the factors involved in manufacturing a product, or a building, then the professional work of each member of the team is of equal importance for the final result. Consequently, each member must be of equal rank, which makes for the specific technique of teamwork, "implying collaboration and not direction—freedom of initiative, not the impress of authority," as Herbert Read defines it. The approach does not exclude the selection of a job captain by the team itself, as the first among equals, whose task it is to control and schedule the processes of integration. The further development of teamwork, I believe, will bring the artist, the architect, back into the fold of the community. This will be decisive for the architecture and town planning of the future. . . .

As a successful democracy hinges on our ability to cooperate, we need a new technique of collaboration in teams. The essence of such technique should be to emphasize individual freedom of initiative instead of authoritative direction by a boss. Synchronizing all individual efforts by a continuous give-and-take of its members, the team can raise its integrated work to higher potentials than the sum of the work of just so many individuals. It keeps resilient and flexible and is more efficient and more adaptable to the rapid changes taking place than the boss-employe relationship, and it develops the stature of the individual under the voluntary collective effort of the team.

Through such mutual exchange a common language of architecture and design and its individual variations can be formed again, a humanized standard, fitting the whole of our community, but simultaneously satisfying also, by its modifications, the different desires of individuals. . . . In short, the inspiration of the coming generation of architects and designers should lead them in the direction of a common expression of a growing culture rather than to pretentious individualism. . . .

Architecture will become an integral part of our life if its creator will find the response of the user. Through ever broader education in the humanities for all, people will grow sensitive to the sublime goal of the truly creative architect who strives to express the intangible through the tangible, to bring inert materials to life by investing them with spiritual meaning.



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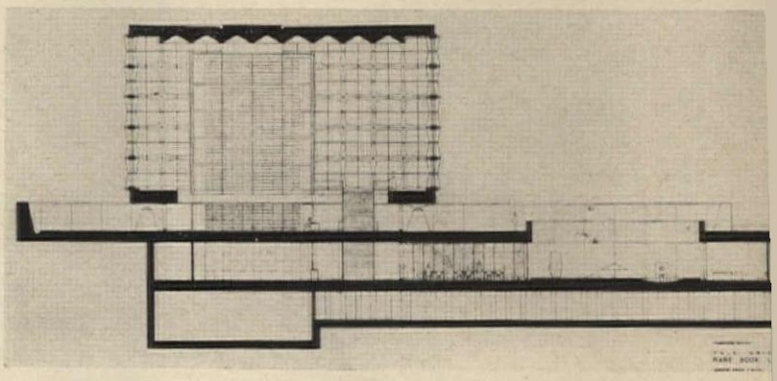
Ezra Stoller Associates photos

RARE BOOK LIBRARY AT YALE DEDICATED

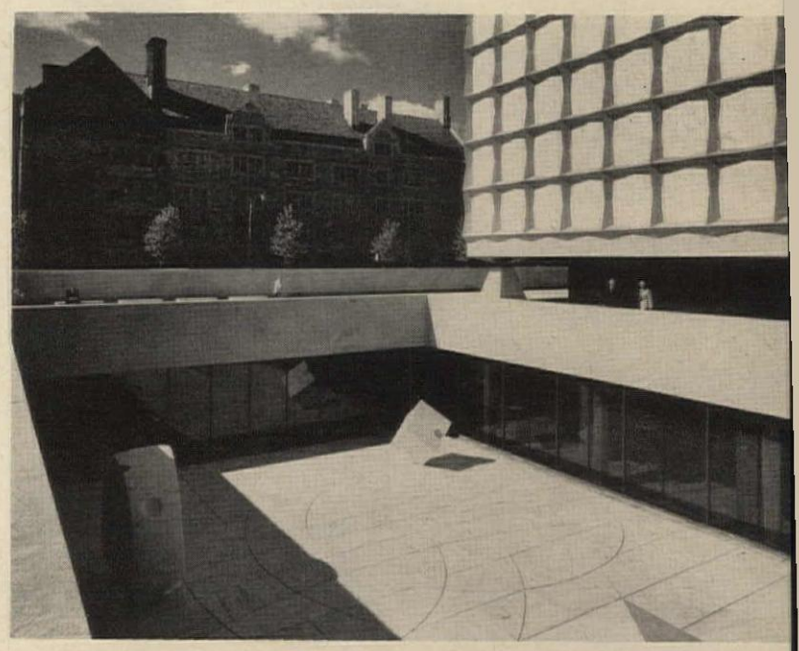


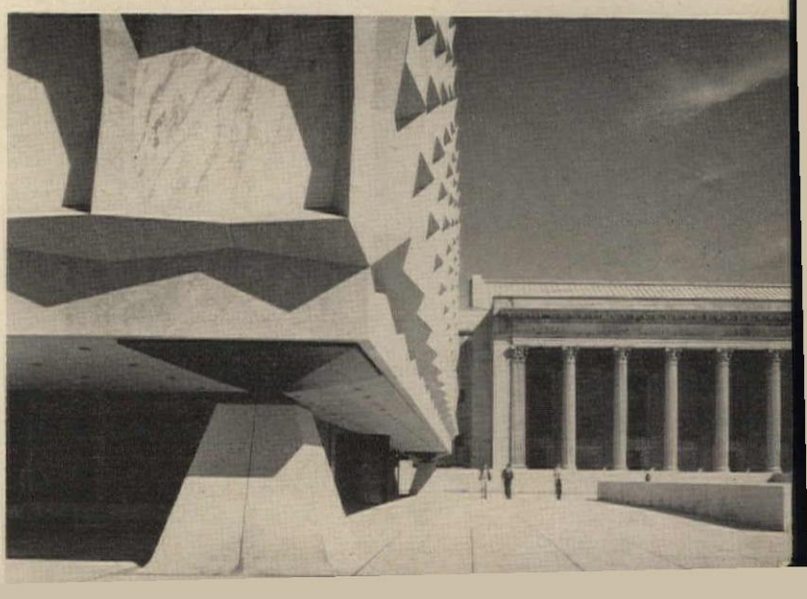
This unique building at Yale is designed as a treasure house for one of the most valuable book and manuscript collections in the world. The collection is dramatized by means of a spectacular showcase six stories high, glowing with light and the kaleidoscopic color of bindings. The bronze and glass case, 35 by 50 feet in plan and 60 feet high, is the free-standing, central focal point of the building's interior; its importance effectively emphasized by the height and softly lighted aura of its marble and cast stone interior. As the sun moves around the building, the marble panels of the east, south, and west walls come alive with a soft yellow glow of transmitted light, overlaid with the brownish gray striations of the stone. The Beinecke Library is one of the most unusual and successful interiors created by the SOM office.

The four enclosing walls of the building are structural, and carry part of the roof load (the remainder taken by the core). Each wall is a Vierendeel truss of structural steel sheathed in bluish gray granite outside and precast concrete inside. The infilling panels are of one- and one-half-inch-thick Danby marble, since sufficient onyx—as originally specified—could not be found. The walls are brought down to four points, leaving the ground floor periphery free of other support.

The two lower floors of the building contain curator's offices, a conference room, microfilm, catalogue and work areas, and extensive book storage vaults. The first lower level centers on a sculpture court designed and executed by Isamu Noguchi.

The Beinecke Library now houses 250,000 volumes (160,000 in the six-tiered showcase) and more than one million manuscripts. Its ultimate capacity is 800,000 volumes; its shelves total 21 miles in length. All book storage areas are air-conditioned to maintain a constant 70 degree temperature and 50 per cent humidity.





Beinecke Rare Book and Manuscript Library
Yale University, New Haven, Connecticut

ARCHITECTS: *Skidmore, Owings & Merrill*
Gordon Bunshaft, partner in charge of design
David H. Hughes, project coordination
Sherwood Smith, design assistant

STRUCTURAL ENGINEER: *Paul Weidlinger*

MECHANICAL ENGINEERS: *Jaros, Baum & Bolles*

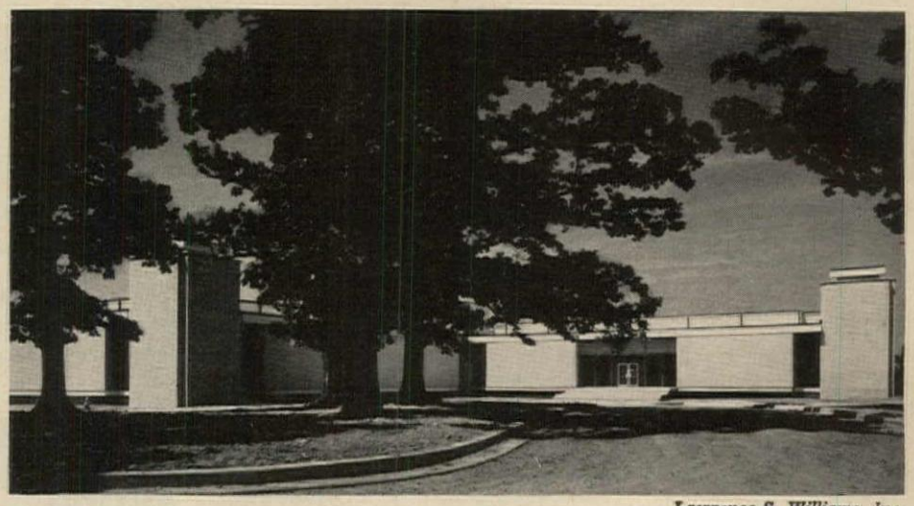
GENERAL CONTRACTOR: *George A. Fuller Company*

Yale's Geology Lab

Architect Philip Johnson stands in front of Yale's Kline Geology Laboratory, one of six buildings Johnson has designed for the Kline Science Center, and the first to be completed. Plum-colored glazed brick and sandstone are facing for the reinforced concrete building. Besides labs and classrooms, there is a "penthouse" for library stacks and a sub-basement shielded laboratory for radio-carbon dating

Industrial Lab

Three "space modules," each 90 feet square and 14 feet high, with a surrounding band of lower-ceilinged office and service areas, form the research and manufacturing space for a molecular electronic laboratory for Westinghouse Electric Corporation. A similar module for administration offices has a 61-foot-square reflecting pool. Modules will be added as needed. Vincent G. Kling was architect for the facility, which is in Anne Arundel County, Maryland, south of Baltimore



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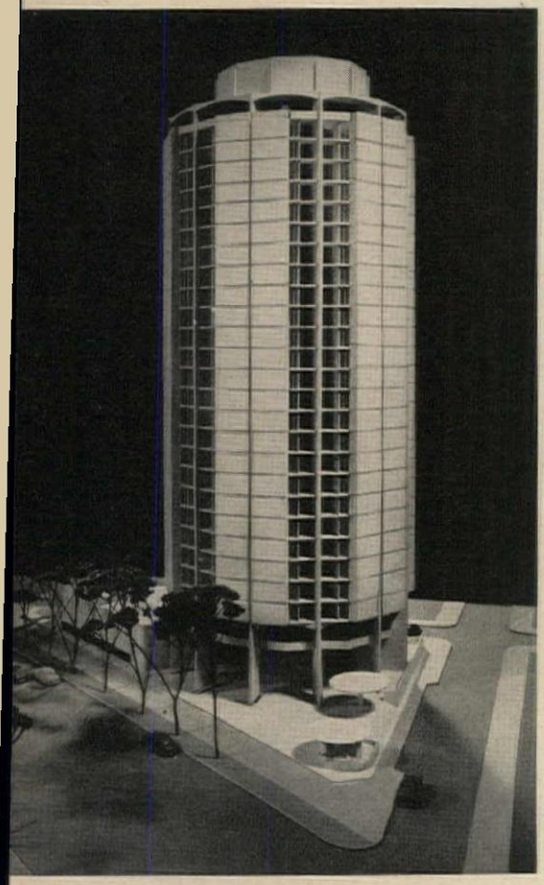
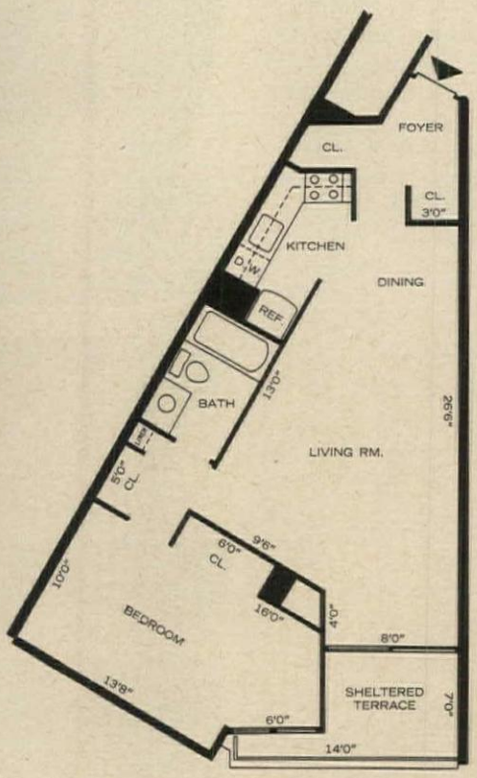
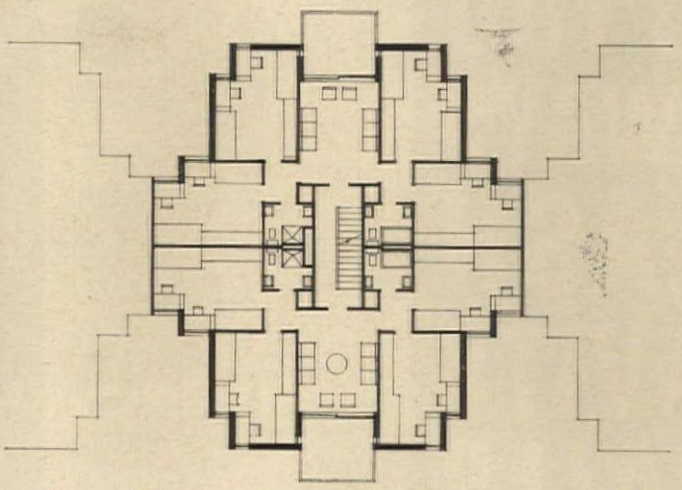




Apartment Tower

A cylindrical apartment tower, 112 feet in diameter and 265 feet high, will rise on a triangular site bordering the Benjamin Franklin Parkway near the center of Philadelphia. The Plaza, designed by the Philadelphia firm of Stonorov and Haws, will have a structural frame of exposed reinforced concrete. It will have 305 apartments, all with living rooms and bedrooms that open on private terraces. Plan shows layout of a one-bedroom apartment; there will also be studio and two-bedroom units, with similar layouts

SMALL UNITS COMPRISE RESIDENCE COMPLEX FOR U. OF RHODE ISLAND



Small housing units of about 50 students are the basic social grouping in a $10 million residence complex planned for the University of Rhode Island in Kingston. Construction of the first phase will begin next April. By 1970 there will be eight four-story residence halls, housing 1,600 (more than one-quarter of the projected enrollment).

Architects for the first phase are Pietro Belluschi, Cambridge; Sasaki, Walker and Associates, Watertown, Mass.; and Kent Cruise Associates, Providence, in joint venture.

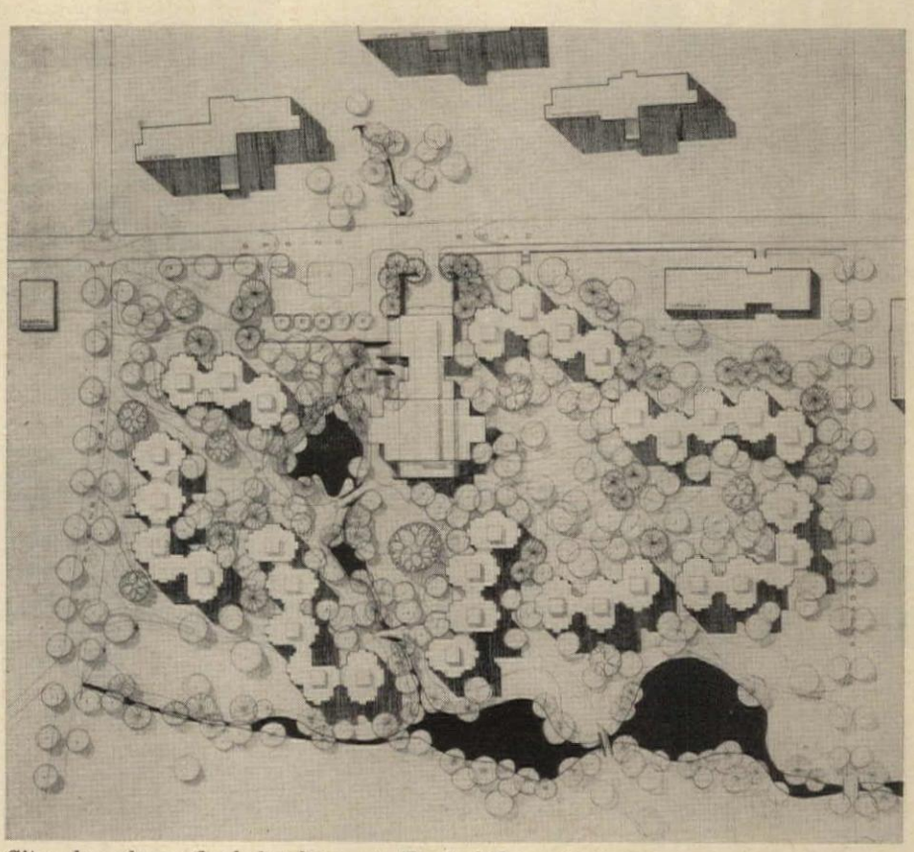
In an effort to personalize campus housing and create a climate for both learning and meaningful social development, the complex will contain recreation, dining, study and classroom areas.

Private space is provided in double rooms that are 20 square feet smaller than the average dormitory room in order to give space for common areas. "Families" of eight share a living room and two bathrooms. Each house of about 50 has a study room which will serve as a classroom or seminar room by day.

Three or more houses are grouped together to form a residence hall, with a common public lobby and apartments for faculty residents.

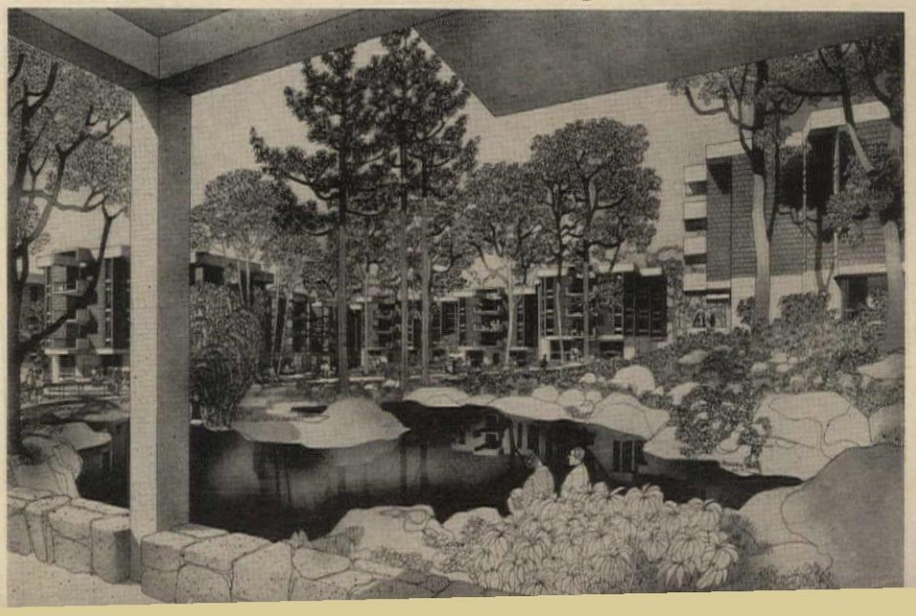
Phase one calls for two residence halls—one with three houses, the other with five—to be finished by the summer of 1965. The commons building, to be started in 1965, will have dining facilities, meeting and study rooms and recreation rooms.

Each residence hall will sit on a concrete pedestal formed by the foundation and the first floor, with the upper floors of precast concrete structural panels. Upper floors will have projecting U-shaped balconies.



Site plan shows final development. Typical floor plan at top

Rendering of residence halls from commons building



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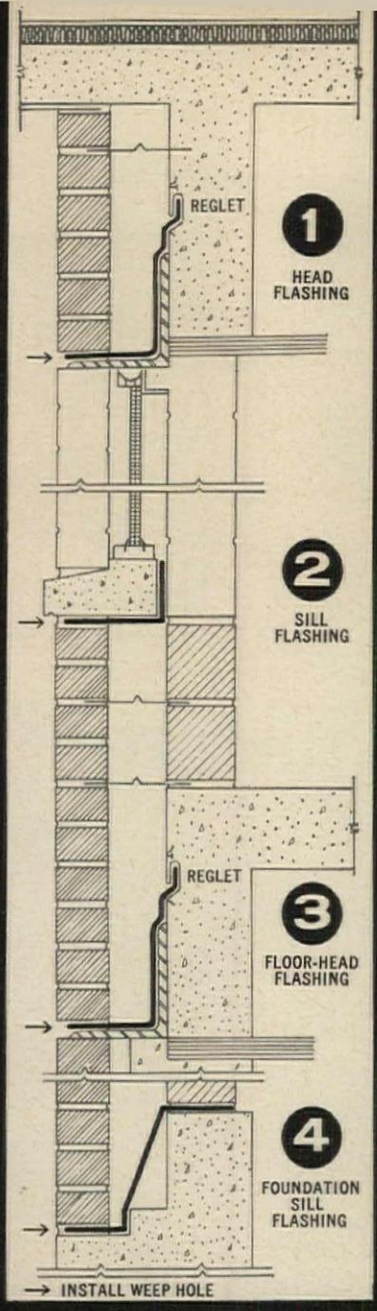

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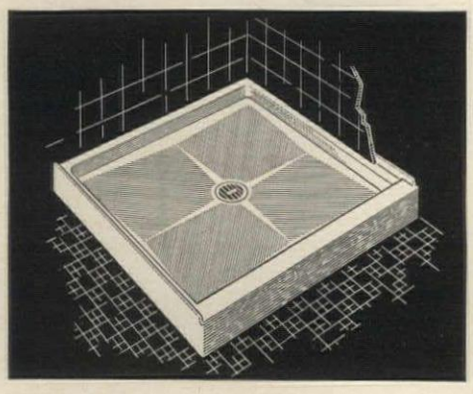
APPLICATION HOME/SCHOOL/CLUB

Cadet is the key to economy in planning for showers: Saves cost of carpentry (no lumber needed); saves cost of sub-pan (uses Pre-Cast Terrazzo floor); saves on call-backs (over 2,000,000 Fiat showers prove value and performance in new homes, remodeling and institutions). Contractors claim they save ⅔ the cost of built-on-the-job showers.

SHOWER FLOORS



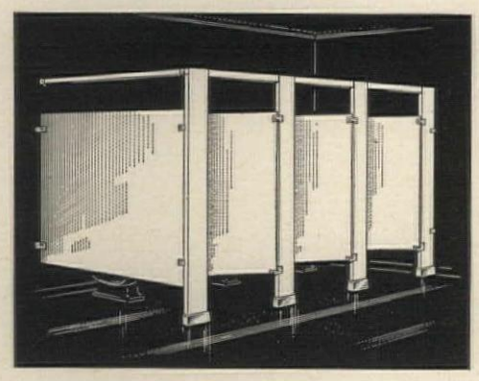
PRODUCT CASCADE FLOOR

New, exclusive Molded-Stone process gives this shower floor even greater economical advantages than those that made Pre-Cast Terrazzo floors such a specification favorite. The **Cascade** is 80% lighter, yet retains the permanence of natural stone. Precision molding produces perfect uniformity; unique floor pattern provides a safe, non-slip surface. Write for descriptive literature.

APPLICATION ANY TYPE SHOWER

Ease of handling and exceptional weight saving make this floor ideal for many applications. Can be carried and installed by one man. Drain is factory-attached and tested to be leakproof. Molded with tiling-in flange, the **Cascade** has reinforcing ribs to eliminate the need for special structural support. Available in all popular sizes. See Sweet's Light Construction File 12c/Fi.

TOILET ENCLOSURES



PRODUCT TOILET ENCLOSURE

Duro headrail-braced model shown is the most simple and hence the least expensive toilet enclosure to install. It was deliberately designed to meet popular concepts of clean, modern design and yet was engineered to economize on details that do not detract from its appearance, nor lessen its performance or long-life.

TYPES AND APPLICATION

The Duro model is ideal for replacement, remodeling projects as well as new construction. No special reinforcement of floor, wall or ceiling required. Ceiling-hung and floor-braced models are also available with the "years-ahead" features that have earned a reputation for durability, low maintenance and easy installation.

See Sweet's 22B/Fi and 26C/Fi or write nearest Fiat office for literature.

NEW YORK — Plainview, Long Island
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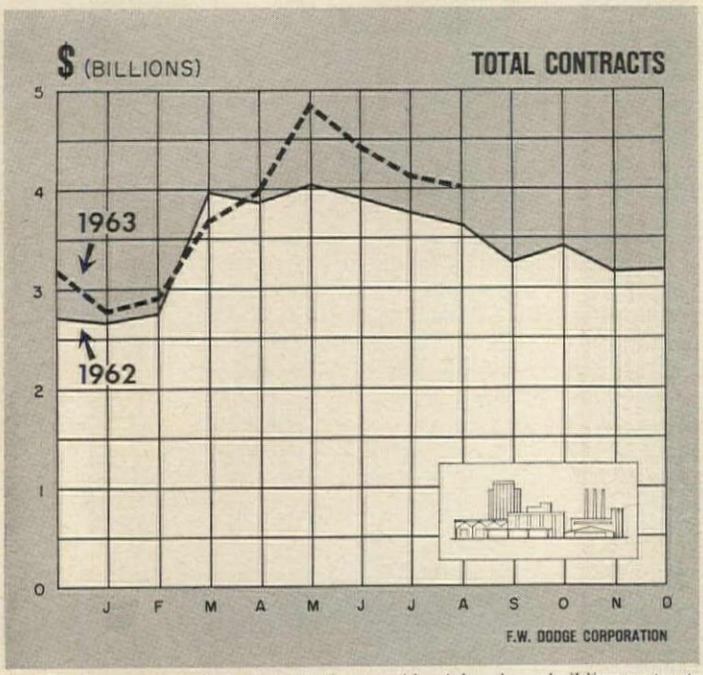
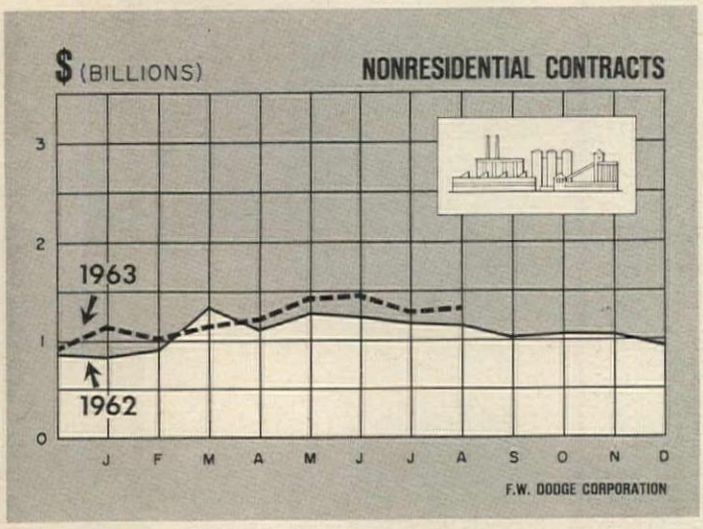
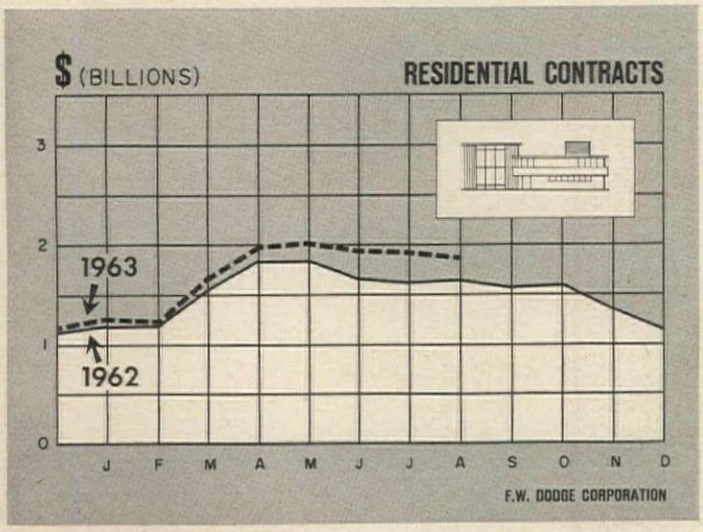


Total contracts include residential, nonresidential and non-building contracts





MENTAL HOSPITALS

The medieval notion that mentally ill persons were possessed by demons that had to be exorcised by punishment, torture or worse held its grip on people well into the 19th century. The insane were put away in prisons, dungeons or work camps, remote from the remainder of the population. It was only towards the middle of the 19th century that the treatment of mental patients took a step forward: they were transferred from prisons and work-camps to asylums specifically built to house them. These institutions, many of which are still with us, were huge, depressing complexes of many buildings usually located far away from the communities of "normal" people.

In recent years, however, increasing knowledge about the causes and treatment of mental illness, changing concepts of how mental patients should be cared for and, perhaps most important, the introduction of many new drugs have dramatically affected the treatment of mental patients and mental hospital construction.

Probably the most striking result from the rapidly advancing knowledge of psychotherapy has been the declining number of resident patients in mental hospitals. There were 510,000 resident patients in state and local mental hospitals in 1950. (This accounts for roughly 90 per cent of all resident mental patients; the remaining 10 per cent are in Veterans Administration, public health and private hospitals.) The number of patients climbed to 559,000 in 1955—the high point—and since then has declined to about 516,000 in 1962. So far this year, the downward trend has continued.

More important, however, is the fact that the number of resident patients has declined even though the number of people admitted to mental hospitals has steadily increased. The reason is that the net number of patients released has risen much faster than admissions. For example, admissions rose from 152,000 in 1950 to over 270,000 in 1962—an increase of almost 80 per cent. But, during the same period, net releases jumped over 130 per cent, from under 100,000 to over 230,000.

Another result of better therapy has been a decline in the average time that patients spend in mental hospitals. Although the data are both sketchy and tricky, there are indications that the average length of stay a few years ago was between one and two years for *patients who were released.* This average has dropped sharply and is currently around six months.

Because new forms of therapy have been successful and because it is difficult to apply these methods in the traditional mental hospital, there has been a definite trend away from building huge institutions, remotely located. Today, even for chronic, long-term patients who have little hope of being released, the maximum recommended size is 1,000 beds. For short-term patients, 250- to 500-bed hospitals located within the community are suggested, along with the increasing number of general hospitals that have psychiatric wards.

The outlook for future mental hospital construction is bright. Although the Administration's $867 million mental aid program bill, which the Senate passed by a 72 to 1 vote, was sharply cut by the House Commerce Committee, that Committee didn't remove the $230 million for hospital construction.

Henry C. F. Arnold, Economist
F. W. Dodge Corporation
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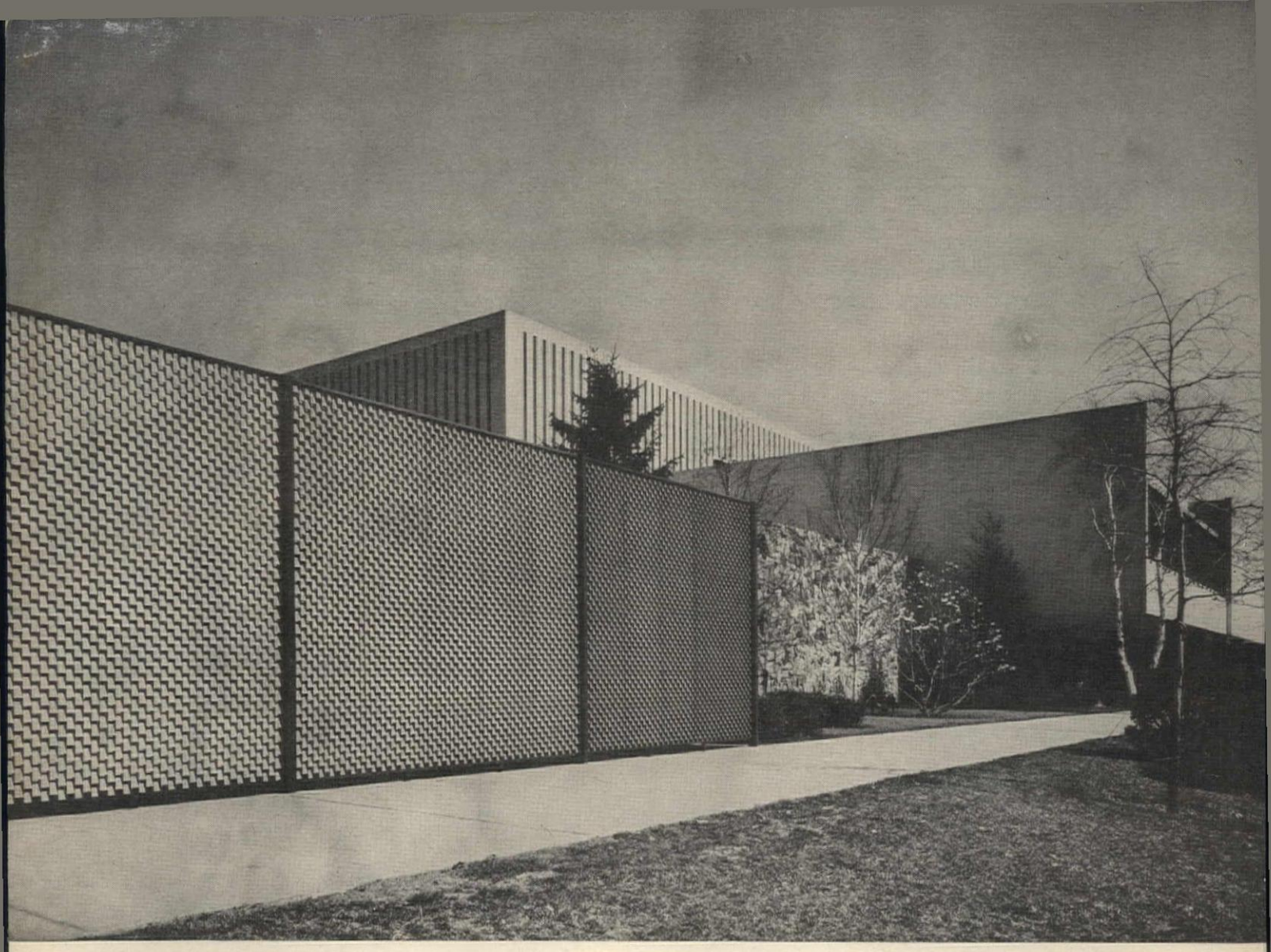

Architect: Abbott, Merkt & Company

BORDEN ARCHITECTURAL DECOR PANELS: DECA-GRID

Shown above: Custom-designed Borden Deca-Grid panels with tilted spacers, used to separate and screen the service area at Saks in Garden City, Long Island.

With the Deca-Grid style, specifications for spacings and spacer bar positions may be varied almost indefinitely. Another variation available for Deca-Grid is known as the Slant-Tab variation—here the spacers are mounted at angles of 30°, 45°, 60° or 90° and the spacers (called Slant-Tabs) may be altered in length, depending on angle of mounting selected.

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Building Construction Costs

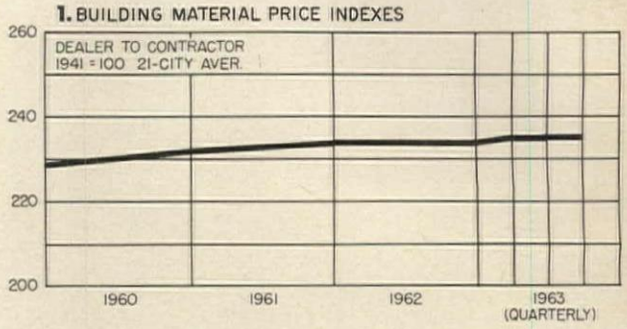
By Myron L. Matthews
Manager-Editor, Dow Building Cost Calculator, an F. W. Dodge service

The information presented here permits quick approximations of building construction costs in 21 leading cities and their suburban areas (within a 25-mile radius). The tables and charts can be used independently, or in combination as a system of complementary cost indicators. Information is included on past and present costs, and future cost can be projected by analysis of cost trends.

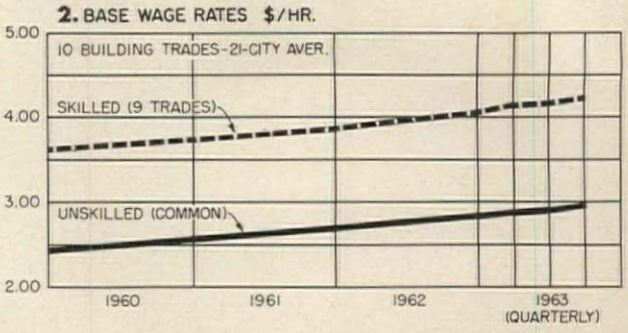
A. CURRENT BUILDING COST INDEXES—OCTOBER 1963
1941 Average for each city = 100.0

Metropolitan Area	Cost Differentials	Current Dow Index Residential	Current Dow Index Nonresidential	Per Cent Change Year Ago Res. & Nonres.
U.S. AVERAGE— 21 Cities	8.5	258.4	274.1	+2.24
Atlanta	7.1	291.9	309.7	+2.51
Baltimore	8.0	263.7	280.5	+1.13
Birmingham	7.4	241.7	259.9	+2.56
Boston	8.4	233.9	247.5	+1.53
Chicago	8.8	290.5	305.5	+2.87
Cincinnati	8.8	251.8	267.6	+1.50
Cleveland	9.3	263.4	279.9	+2.75
Dallas	7.8	200.8	207.3	+2.13
Denver	8.3	268.9	258.9	+2.61
Detroit	8.9	262.4	275.5	+1.90
Kansas City	8.3	237.4	251.3	+2.90
Los Angeles	8.4	264.1	289.0	+1.61
Miami	8.4	259.9	272.8	+3.25
Minneapolis	8.9	262.1	278.6	+2.15
New Orleans	7.9	237.6	251.8	+1.14
New York	10.0	268.7	289.1	+2.02
Philadelphia	8.7	261.4	274.4	+2.33
Pittsburgh	9.1	245.8	261.3	+2.41
St. Louis	8.9	252.1	267.1	+2.81
San Francisco	8.5	329.5	360.5	+2.29
Seattle	8.5	239.5	267.6	+2.71

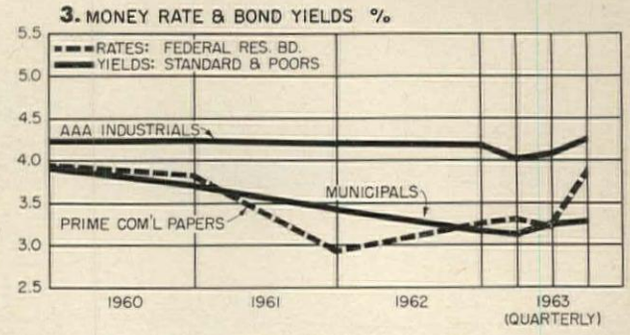
1. BUILDING MATERIAL PRICE INDEXES



2. BASE WAGE RATES $/HR.



3. MONEY RATE & BOND YIELDS %



B. HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL BUILDING TYPES, 21 CITIES
1941 average for each city=100.0

Metropolitan Area	1947	1952	1957	1958	1959	1960	1961	1962 (Quarterly) 1st	1962 (Quarterly) 2nd	1962 (Quarterly) 3rd	1962 (Quarterly) 4th	1963 (Quarterly) 1st	1963 (Quarterly) 2nd	1963 (Quarterly) 3rd	1963 (Quarterly) 4th
U.S. AVERAGE 21 Cities	185.9	213.5	244.1	248.9	255.0	259.2	264.6	265.1	265.9	267.4	268.7	269.4	270.3	273.4	
Atlanta	190.0	223.5	269.6	277.7	283.3	289.0	294.7	296.5	297.6	298.2	300.6	302.0	303.0	305.7	
Baltimore	181.0	213.3	249.4	251.9	264.5	272.6	269.9	270.5	272.6	272.4	271.9	272.3	272.9	275.5	
Birmingham	175.0	208.1	228.6	233.2	233.2	240.2	249.9	249.9	249.9	249.9	250.6	251.3	252.0	256.3	
Boston	187.0	199.0	224.0	230.5	230.5	232.8	237.5	238.5	239.9	240.4	240.4	240.4	241.2	244.1	
Chicago	182.0	231.2	267.8	273.2	278.6	284.2	289.9	289.9	289.9	292.6	295.8	296.4	296.4	301.0	
Cincinnati	178.0	207.7	245.1	250.0	250.0	255.0	257.6	257.6	257.6	260.0	260.0	260.0	260.7	263.9	
Cleveland	173.0	220.7	258.0	257.9	260.5	263.1	265.7	265.7	268.4	268.4	271.7	272.3	272.8	275.8	
Dallas	202.0	221.9	228.4	230.5	237.5	239.9	244.7	244.7	244.7	247.7	250.8	251.5	252.2	253.0	
Denver	187.0	211.8	245.6	252.8	257.9	257.9	270.9	273.1	276.3	275.3	274.8	275.0	275.4	282.5	
Detroit	158.0	197.8	237.4	239.8	249.4	259.5	264.7	264.7	264.7	267.1	267.1	267.1	267.9	272.2	
Kansas City	172.0	213.3	230.5	235.0	239.6	237.1	237.1	238.5	239.5	240.8	241.8	242.3	242.9	247.8	
Los Angeles	180.0	210.3	248.4	253.4	263.5	263.6	274.3	274.3	274.3	278.0	278.6	279.1	279.7	282.5	
Miami	193.0	199.4	234.6	239.3	249.0	256.5	259.1	259.1	259.1	260.8	262.4	262.4	266.7	269.3	
Minneapolis	176.0	213.5	235.6	249.9	254.9	260.0	267.9	267.9	267.9	269.5	270.8	271.4	272.1	275.3	
New Orleans	180.0	207.1	232.8	235.1	237.5	242.3	244.7	244.7	244.7	245.5	245.5	246.5	246.5	248.3	
New York	181.0	207.4	240.4	247.6	260.2	265.4	270.8	273.5	273.5	276.7	280.4	280.9	280.9	282.3	
Philadelphia	209.0	222.3	255.0	257.6	262.8	262.8	265.4	265.4	265.4	265.0	265.0	265.6	265.6	271.2	
Pittsburgh	191.0	204.0	234.1	236.4	241.1	243.5	250.9	250.9	250.9	252.1	253.5	255.0	256.1	258.2	
St. Louis	191.0	213.1	237.4	239.7	246.9	251.9	256.9	254.0	254.3	256.2	257.3	260.1	262.4	263.4	
San Francisco	243.0	266.4	302.5	308.6	321.1	327.5	337.4	339.1	340.8	344.5	348.7	350.1	350.1	352.4	
Seattle	175.0	191.8	221.4	225.8	232.7	237.4	247.0	249.0	251.9	253.7	255.3	256.5	257.8	260.6	

HOW TO USE TABLES AND CHARTS: Building costs may be directly compared to costs in the 1941 base year in tables A and B: an index of 256.3 for a given city for a certain period means that costs in that city for that period are 2.563 times 1941 costs, an increase of 156.3% over 1941 costs.

TABLE A. Differences in costs between two cities may be compared by dividing the cost differential figure of one city by that of a second: if the cost differential of one city (10.0) divided by that of a second (8.0) equals 125%, then costs in first city are 25% higher than costs in second. Also, costs in second city are 80% of those in first (8.0 ÷ 10.0 = 80%) or 20% lower in the second city

TABLE B. Costs in a given city for a certain period may be compared with costs in another period by dividing one index into the other: if index for a city for one period (200.0) divided by index for a second period (150.0) equals 133%, the costs in the one period are 33% higher than those of the other. Also, second period costs are 75% of those of the other date (150.0 ÷ 200.0 = 75%) or 25% lower in the second period. CHART 1. Building materials indexes reflect prices paid by builders for quantity purchases delivered at construction sites. CHART 2. The $1.20 per hour gap between skilled and unskilled labor has remained fairly constant. CHART 3. Barometric business indicators that reflect variations in the state of the money market

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CORNELL STUDENTS STUDY "ABROAD": SEMESTER PROGRAM IN NEW YORK CITY

A new twist is given to "the junior year abroad" by the New York program of Cornell's architectural school. Art and architecture students are spending a semester in New York City, where they can get a first-hand view of how experts and decision-makers work in a metropolitan center.

For the architecture students it means three years studying basic fundamentals at Cornell, a semester of stimulation in New York, then a final year in Ithaca which will also be a period of digestion and evaluation of what is learned in New York.

The first group in the program—eight fourth-year architectural students and 10 seniors in art—has headquarters in the Architectural League Building, in the same building as the offices of the New York Chapter of the American Institute of Architects and just a half-block from the Architects Building where many New York firms have offices.

Burnham Kelly, dean of architecture at Cornell, explained that the main value of the program is in letting the students see the impact of forces on the design process as they actually operate, and not how they are supposed to work as in an academic setting.

James Foundation Grant

A $50,000 grant from the James Foundation is providing the starting capital for the venture. Art students will come only in the fall semester, with architecture students present both in the fall and spring semesters.

Professors of architecture from Cornell are directing a course in architectural history which all the architecture students elected to take. The students have taken their own walking tours of various New York neighborhoods to interpret, in design terms, where each area has been, where it is going, and what could be done to fit it with the rest of the city.

Students are also analyzing changes in functional design requirements, through time, of specific types of structures, such as hotels, office buildings and terminals.

Administrator of the program is Elliot Willensky, of the office of Max Urbahn. He is also in charge of showing just how an architectural office operates, with some of the inherent problems and possible opportunities. Phases of work from design sketches through completion of construction will be studied.

John Belle, a Londoner working for Victor Gruen Associates, is teaching design of urban buildings.

Stewart Brisley, another Englishman, who has taught at the University of Florida and Cornell, is teaching drawing to the architects and painting to the art students. He will be taking the students around the city to see art objects.

Alan Salomon, curator of the Jewish Museum in New York, is teaching a course in "the artist in urban culture." He is working mainly with the art students; assisting is Lisa Esherick.

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CALIFORNIA TO GET SCHOOL-COMPONENTS BID

On November 14th, the staff of the School Construction Systems Development Project (S.C.S.D.) located at Stanford University will know how well it has succeeded in its efforts to cut school costs through the avenue of integrated standard components for structure, mechanical system, lighting system and partitions.

The "moment of truth" arrives on the 14th, since this is the day that the sealed, lump-sum bids from manufacturers will be opened by the First California Commission on School Construction Systems, representing 12 school districts, ranging geographically from Sacramento to Los Angeles. The Commission is an agency organized under California law by the local school districts whose objective is to achieve an integrated system of components which will: (1) offer architects design flexibility in meeting changing program needs of individual schools; (2) reduce the cost of school construction and give better value in terms of function, environment, first cost and maintenance, and (3) reduce total time needed to build schools.

Manufacturers are basing their bids, which must include both cost of materials and installation, on detailed performance specifications prepared by S.C.S.D., and on an aggregate floor area of not less than 1,400,000 sq ft. The specifications for each component category indicate the range of products required, together with the quantity for each product type. A month after bids have been opened, the Commission will select the lowest bidders.

The schools will be designed individually by architects and consulting engineers selected by each of the school districts.

Criteria for the component categories which have been developed from educational needs include: (1) long-span structures, (2) varied movability of partitions, (3) full environmental control with adaptability to changing plan configurations, and (4) an efficient, attractive, low-brightness lighting system which adapts to changing plan configurations.

The basic premise upon which S.C.S.D. based its performance specifications is that a higher degree of coordination is necessary in the design of components, and that industry should be encouraged to design products which are compatible with one another, and preferably be multifunctional.

Manufacturers have responded enthusiastically to this new approach, according to Ezra Ehrenkrantz, project architect for S.C.S.D. A number of companies have developed completely new products, and in many cases have formed joint ventures in order to submit bids on compatible components, sometimes including all systems involved.

The School Construction Systems Development Project has been carried out as a joint activity of the School Planning Laboratory of the Stanford University School of Education and the Department of Architecture of the University of California at Berkeley under a grant from the Educational Facilities Laboratories, Inc. of the Ford Foundation.

NEW YORK STATE OFFERS STOCK SCHOOL PLANS

New York State now has nine standard school plans developed by nine architectural firms available on a voluntary basis to school districts for the costs of reproducing the plans and specifications. All the schools are described as expandable, with such "economy features" as dual-use auditoriums and cafeteria areas; all have fallout shelters which can be used for various other purposes, and all have special features for physically handicapped students.

The plans are a result of 1960 legislation which received Governor Rockefeller's support. A two-year delay in release of the plans was partly due to the Governor's insistence that each school have a fallout shelter.

Estimated construction costs range from $13.15 to $14.85 per square foot, based on December 1962 costs in the Albany area. Estimates were made on the experience of the nine architectural firms which developed the plans; the State Department of Public Works and the State Department of Education. The 1962 median cost of public schools in the state was $17.42 per square foot.

When using the stock plans, school districts will have to employ architects or engineers to prepare foundation and site development drawings and to supervise construction.

Architects for the three elementary school plans are King & King, Syracuse; August Lux & Associates, Albany; and Foit & Baschnagel, Buffalo. A junior high school was designed by Duane Lyman and Associates, Buffalo.

Architects for two senior high schools are Chapman, Evans & Delehanty, New York City; and Frederic P. Weidersum Associates, Valley Stream and New York City.

Plans for three junior-senior high schools were prepared by Reginald E. Marsh & Associates, New York City; Perkins and Will, Chicago and White Plains, N.Y.; and Urbahn & Brayton, New York City.

So far, reactions from school districts have been mixed. While some school men have ordered specific brochures and others are planning to do so, there are many who are not convinced the plans will result in much savings. It is expected that architects' fees for adaptation will be about 3 or 4 per cent, in contrast to the usual 6 per cent. As one school principal in Erie County commented, however, a saving of "only" 2 per cent on million dollar school is still a substantial amount.

Max Urbahn, in commenting on the plans, said that to be effective, stock plans should be constantly revised, especially for something as rapidly-changing as schools. He added that plans three years old are certainly stale.

According to the official booklet, a second set of nine plans are to be developed after use of the current plans can be reviewed and evaluated.

EDUCATION NEWS

A College of Architecture and Design at Kansas State University, Manhattan, was approved in September by the Kansas Board of Regents. Dean of the new college is **Emil Fischer,** present head of the department of architecture and allied arts.

The college will incorporate the landscape architecture program in the College of Agriculture and the work in architecture, architectural engineering and regional planning offered in the engineering college.

Dr. Harold R. Rice, formerly president of the Moore College of Art, in Philadelphia, is now dean of the University of Cincinnati's College of Design, Architecture and Art. He succeeds **Dr. Ernest Pickering,** now dean-emeritus.

Robert A. Deshon, professor of architecture at Cincinnati, has been named assistant dean.

Nine faculty appointments to the School of Architecture at Texas A&M University have been announced by Prof. Edward J. Romieniec, chairman of the school. **Paul Pate** will serve as assistant chairman of architecture. New assistant chairmen of the research and graduate center are **Herbert Ohl** and **James Patterson.**

Appointed to teach in the advanced design program are **John Gallagher** and **David Yarbrough.** Also new on the faculty are **Ralph Clampitt, William Kellett, Cartier Newton** and **John Greer.**

Thomas W. Mackesey, F.A.I.A., dean of the University Faculty at Cornell University has been appointed associate provost for planning. He has taught regional planning at Cornell since 1938. From 1951 to 1960 he was dean of the College of Architecture.

Dale R. Corson, dean of the College of Engineering, is now provost at Cornell. He has taught there since 1946 and has headed the engineering college since 1959.

Every accredited architectural school in the U.S. has now received a $750-a-year, three-year scholarship from the Tile Council of America.

BUILDING PRODUCTS NEWS from Dow Corning

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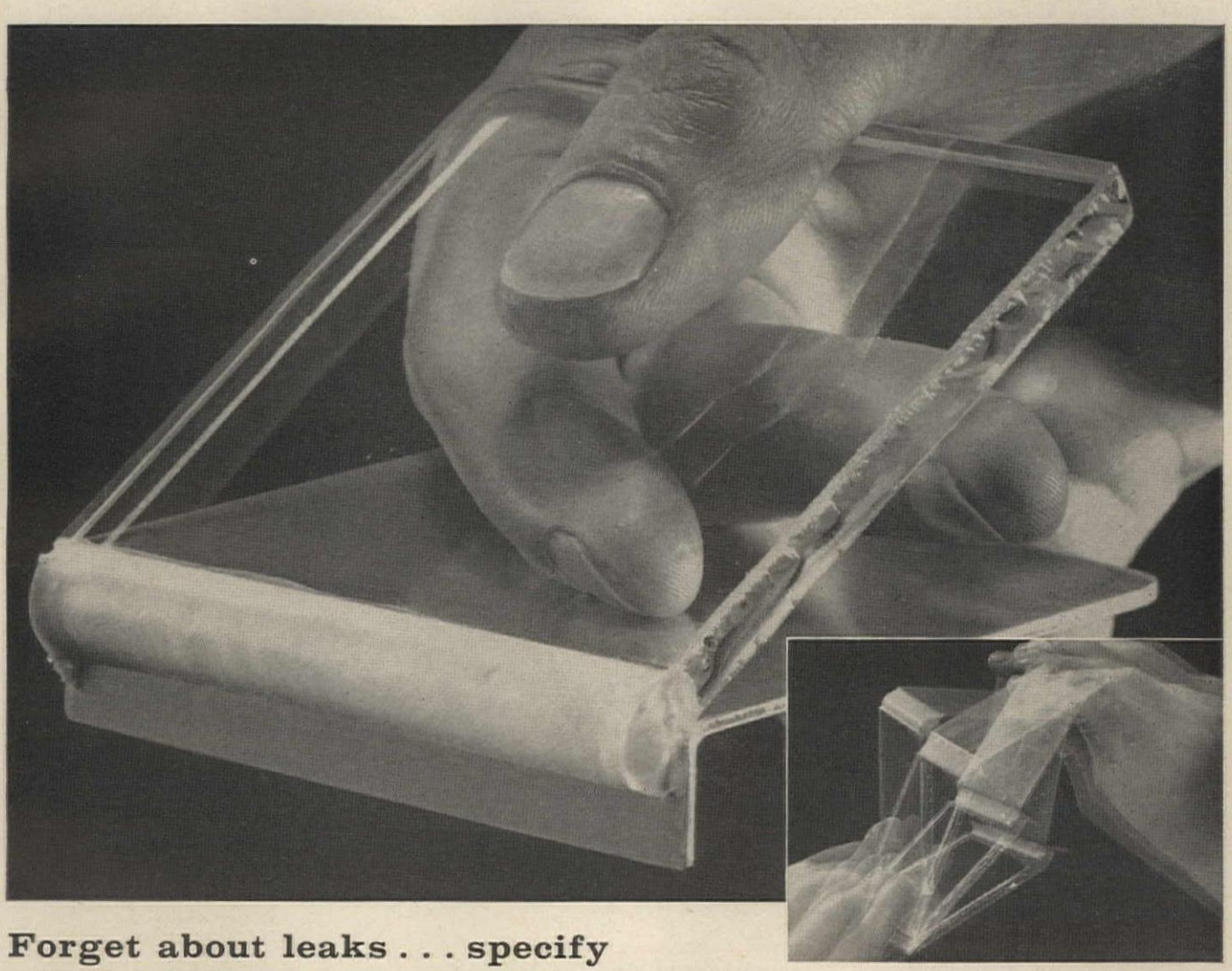

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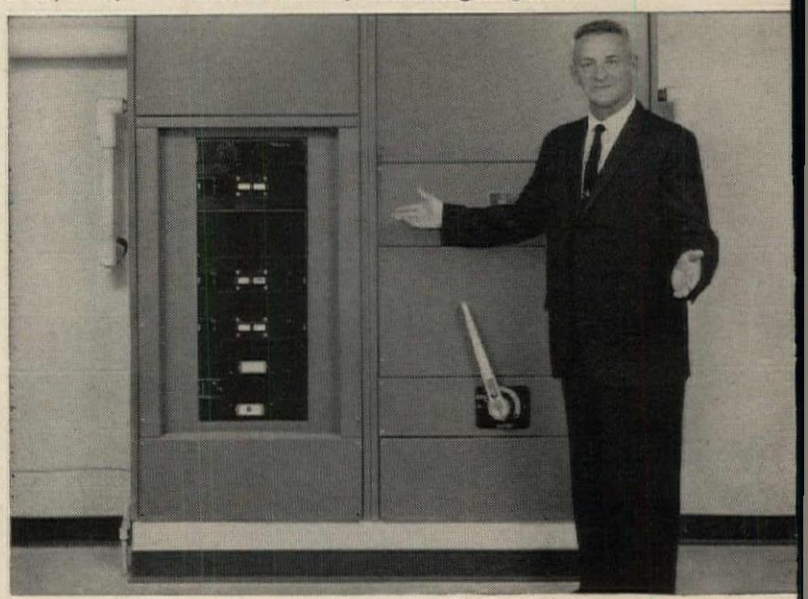
KEY FIGURES in City of Virginia Beach total electric school design are, left to right in foreground, Frank W. Cox, Superintendent of Schools; J. C. Lindsey, Superintendent of Maintenance; Ernest F. Stone, Superintendent of Construction. Trio left to right in background includes B. S. Martin, Virginia Electric & Power Company representative; John S. Waller of Waller & Britt, Architects; Denard L. Gusler, P.E., of Vansant & Gusler, Consulting Engineers.

CLEAN; UNOBTRUSIVE electric radiant sill heat for classrooms wins Supt. Stone's approval both for efficiency and appearance. Simplicity of installation and operation help keep overall costs down.



SPACE-SAVING features of main electric distribution board are emphasized by Supt. Stone. All controls for entire school's total electric design are contained in this single unit.

TOTAL ELECTRIC DESIGN SIMPLIFIES VIRGINIA SCHOOL CONSTRUCTION AND KEEPS COSTS DOWN

Architect and engineer join City of Virginia Beach officials in praising the flexibility and space-saving features of total electric design for schools

According to Frank W. Cox, dynamic City of Virginia Beach Superintendent of Schools, total electric design is saving his community close to $100,000 per high school in initial construction and equipment costs, with proportionate savings on smaller elementary schools.

But the decision to go with total electric design in the City of Virginia Beach school system was not just snap judgment based on economy alone.

After considerable study of comparison figures, Ernest F. Stone, Superintendent of Construction, and J. C. Lindsey, Superintendent of Maintenance, recommended total electric design: electric heat, total electric kitchen operation, electric water heating, and lighting levels designed for specific task performance.

With the assistance of architects Waller & Britt, consulting engineers Vansant & Gusler, other architects and engineers, and Virginia Electric & Power Company, eleven total electric schools have been built in the City of Virginia Beach in the past four years, or are now under construction.

The results have been nothing short of spectacular. In addition to the original $100,000 saving on construction and equipment, maintenance costs have dropped 88% and custodial attention has been reduced to a routine minimum. Thus, the City of Virginia Beach is using total electric design to build better schools for less money.

Facts like these may be meaningful to you, too.

For architects and consulting engineers, total electric design offers the modern method of combining heating, cooling, water heating, and lighting into one efficient operation using a single source of energy. If you are interested in how it can help you with commercial and industrial buildings, contact your local electric utility company. They will welcome the opportunity to work with you.

BUILD BETTER ELECTRICALLY

Edison Electric Institute, 750 Third Avenue, New York 17

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The Home Federal Savings & Loan Association Building, Des Moines, Iowa, bears the unmistakable signature of Ludwig Mies van der Rohe. Bold, disciplined, meticulously detailed, it is as always, an articulate statement of structure—expressed in steel.

The building's exterior is an extension or expression of its steel frame. Columns and spandrel beams are sheathed in hot-rolled carbon steel plate, formed to pencil-line sharp arrises, and mullions are wide-flange sections. Exterior joints were field welded, and all exposed steel was sand blasted, prime coated, and painted.

The total effect is one of eloquent simplicity and utile space. Forty-foot bays provide column-free interiors that afford maximum flexibility for interior arrangement. The webs of floor beams were pierced and reinforced to permit the passage of ductwork and conserve interior space.

Again, Mies has used steel to demonstrate that "less is more."

Architect: Mies van der Rohe, F.A.I.A., Chicago, Illinois • Associate Architects: Smith-Voorhees-Jensen, Architects Associated, Des Moines, Iowa • Structural Engineer: Nelson, Ostrom, Baskin, Berman and Assoc., Chicago, Illinois • Contractor: Ringland-Johnson, Inc., Des Moines, Iowa • Structural Fabricator: Des Moines Steel Company, Des Moines, Iowa • Structural Erector: Price Erecting Company, Milwaukee, Wisconsin

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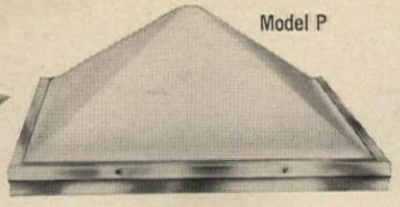

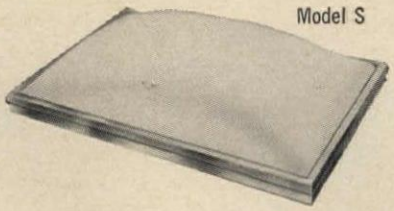

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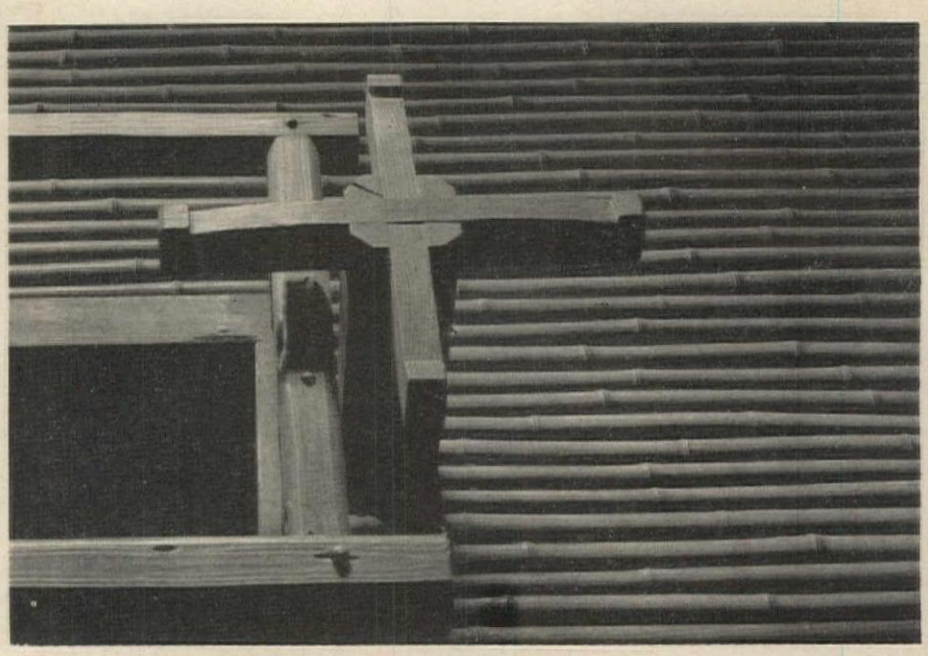

Washroom floor, Katsura Palace
—from "The Roots of
Japanese Architecture"

Japan

THE ROOTS OF JAPANESE ARCHITECTURE. *By Yukio Futagawa; text by Teijo Itoh. Harper and Row, Publishers, Inc., 49 E. 33rd St., New York 16. 207 pp., illus. $25.*

For lovers of matchless photography and superb printing, this collection is worth all of its rather extravagant price.

Mr. Futagawa is a more than accomplished architectural photographer. To say that his approach to architectural photography is impressionistic would be misleading. If his photographs are not the crisp efficient shots used in journalism, neither are they uninformative abstractions. Architecture is uppermost, if slightly idealized—it is hard to believe that even the best of traditional Japanese architecture displays such richness of texture, of spatial relationships, of landscaping. The impact of Mr. Futagawa's studies is fairly described by Isamu Noguchi in his foreword: ". . . in their composition, such photographs suggest an addition to esthetic experience and, like the 'museum without walls,' create a new ghost reality that some may even find more significant than the physical architecture they record."

Mr. Itoh has provided a brief but perceptive text on the natural and cultural foundations of Japanese architecture, as well as commentaries on each of the buildings depicted in the plates.

Neither have the publishers stinted in providing the photographs with a setting they deserve—luscious gravure plates, velvety paper, handsome binding, cryptomeria endpapers, good typography.

Urban Studies

THE HISTORIAN AND THE CITY. *Edited by Oscar Handlin and John Burchard. The M.I.T. Press and Harvard University Press, Cambridge 42, Mass. 299 pp. $7.50.*

This report includes papers read by American and English historians, sociologists and economists at a meeting in August 1961, in Cambridge, Massachusetts. The meeting was sponsored by the Joint Center for Urban Studies of the Massachusetts Institute of Technology and Harvard University.

A number of conclusions emerge from this study of the relation between historians and urban studies. For one, historians—general, social, economic and architectural—pretty much agree that the city is a subject overripe for professional discussion. For another, because the city has been thus ignored, scholars must virtually start from scratch in assembling data and formulating approaches. For still another, a scholarly breakthrough is not likely to occur in the near future, and architects and planners wrestling now with immediate problems will not get immediate help from historians for some time.

Although the participants made many suggestions for repairing the recognized lack, two of these suggestions appeared, in some form, time after time. Many of the participants urged a coalition of the various scholarly disciplines in the study of urbanization—what Sir John Summerson called a disintegration of the boundary between social-economic and art history. And most participants also deplored the paucity of raw data, calling sometimes for more, and more thorough, local histories, and sometimes for more imaginative research.

All of this self-castigation paints a picture perhaps more gloomy than actuality. The report also includes a number of brief monographs on city planning which may not perfectly meet the suggested standards, but which nevertheless display both industry and imagination. And the lengthy bibliography, compiled specially for this study, indicates that historians have not been altogether idle.

If working architects and planners are unlikely to get any easy answers from these papers, they may have

continued on page 54

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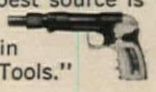

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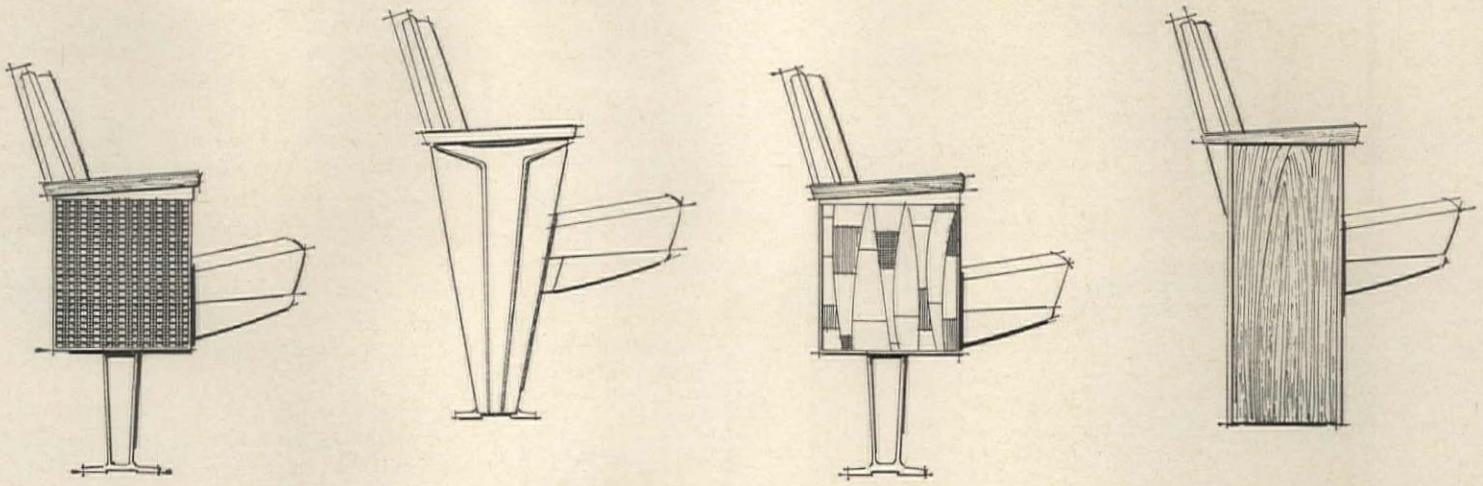

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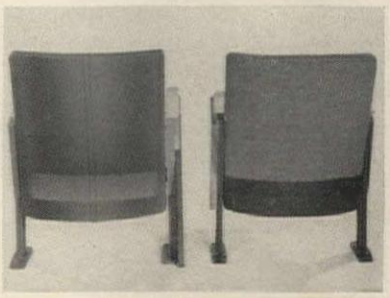

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Single or double armrests are available. You may choose either.

Exclusive Soil-Guard (optional) protects upholstery at top of chair back.

For more data, circle 46 on Inquiry Card

Required Reading

continued from page 54

graphs does not exhaust the design possibilities of stone and brick.

The text in each of these books is minimal—an extremely short introduction, short captions. Unfortunately, credits have also been eliminated in the interest of brevity.

If the editor has been catholic in his choice of illustration, he has also been outspoken in his captions. If the architect's idea is good but the execution or the taste faulty, Mr. Zimmerschied makes this discrepancy quite clear.

Apart from caption descriptions of material, virtually no technical information has been included. Neither book is designed as a self-help aid.

These are the first of a projected series on the design possibilities of building materials.

Inns

INTERIORS BOOK OF HOTELS AND MOTOR HOTELS. *By Henry End. Whitney Library of Design, 18 E. 50th St., New York 22. 264 pp., illus. $16.50.*

For the most part, the book surveys the in-town, resort and international hotels and motels during the 1950's to date. A brief historical background is given covering the grand hotels during the 19th century. A photographic portfolio accompanies each hotel or motor type concerned. There are 238 illustrations (three in color) but only five plans. Text and photographs are so arranged that separate or simultaneous study can be made at choice.

A large portion of the text is devoted to the renovation of hotels that have become more or less obsolete in the jet age.

The problems of the interior designer are enumerated and clearly defined. The last chapter is devoted to the prospects of the hotels of this decade.

"Interiors Book of Hotels and Motor Hotels" is the third in the Whitney Library of Design Contract Series. The previous volumes were on offices and restaurants.

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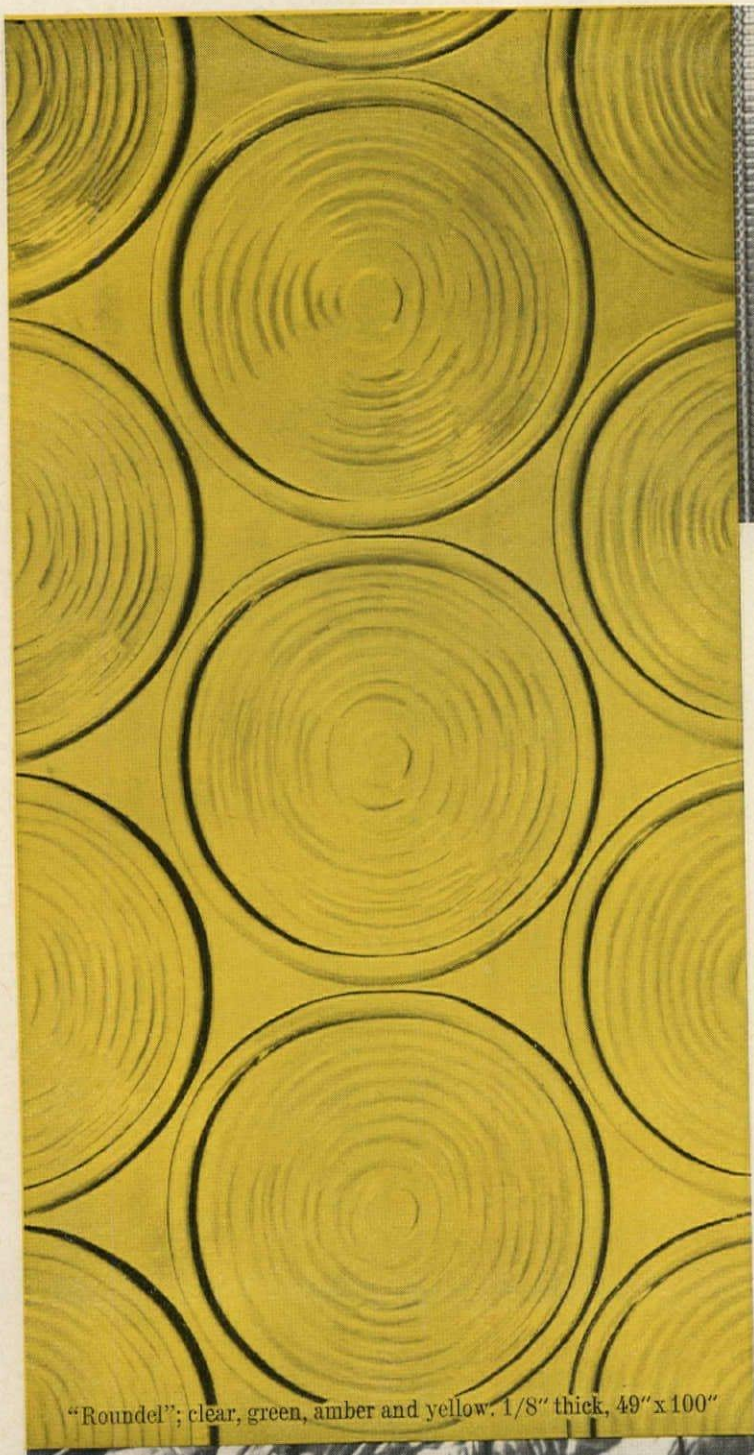
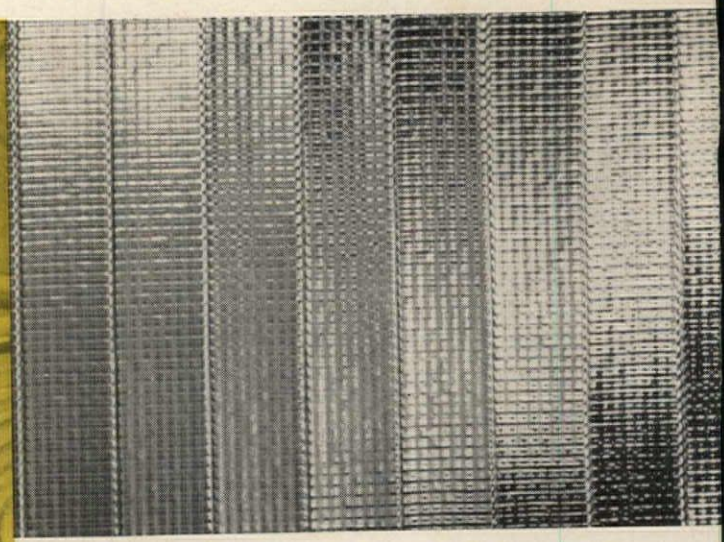


"Roundel"; clear, green, amber and yellow. 1/8" thick, 49"x100"



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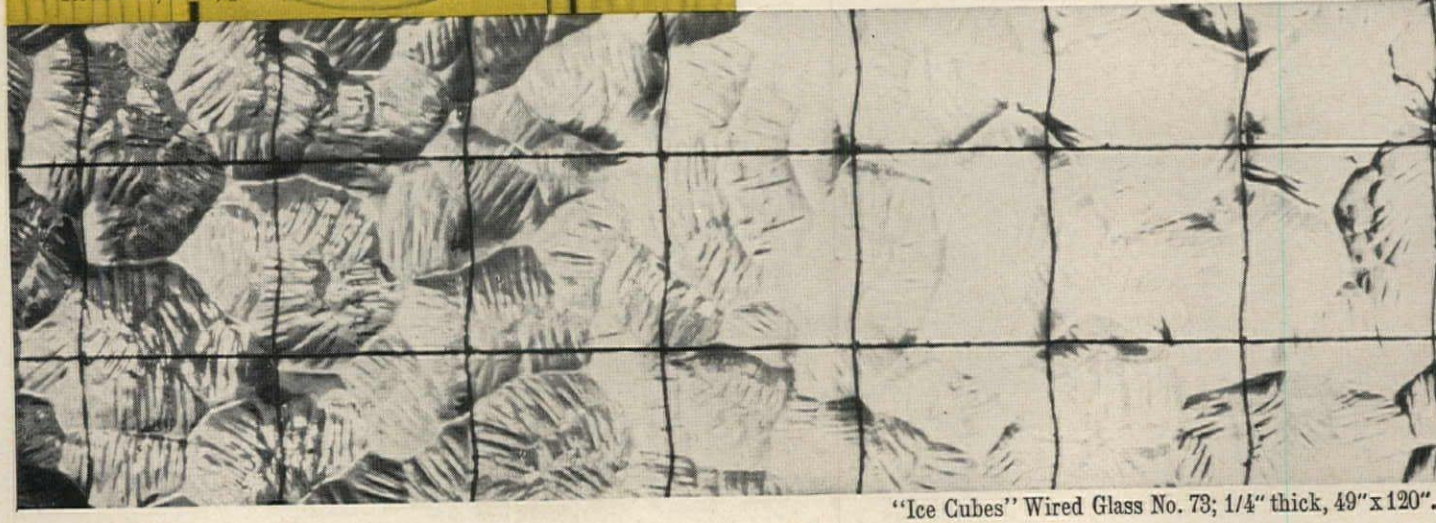
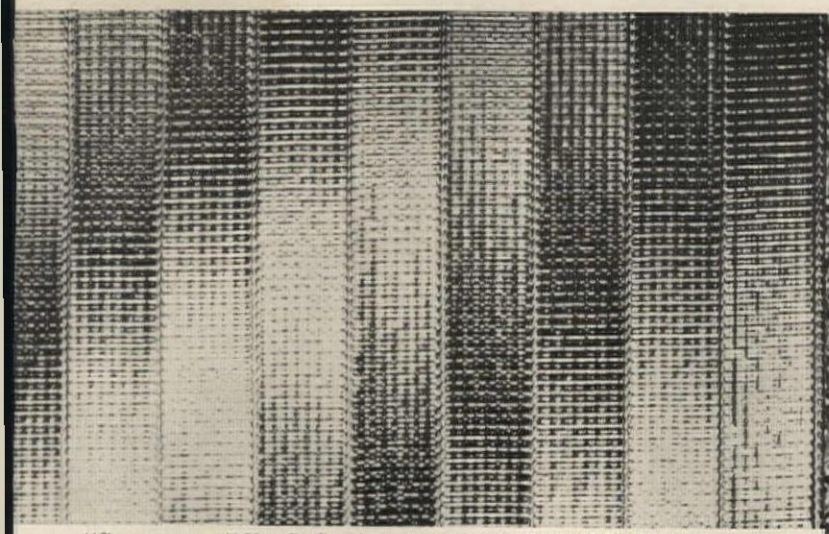


"Ice Cubes" Wired Glass No. 73; 1/4" thick, 49"x120".



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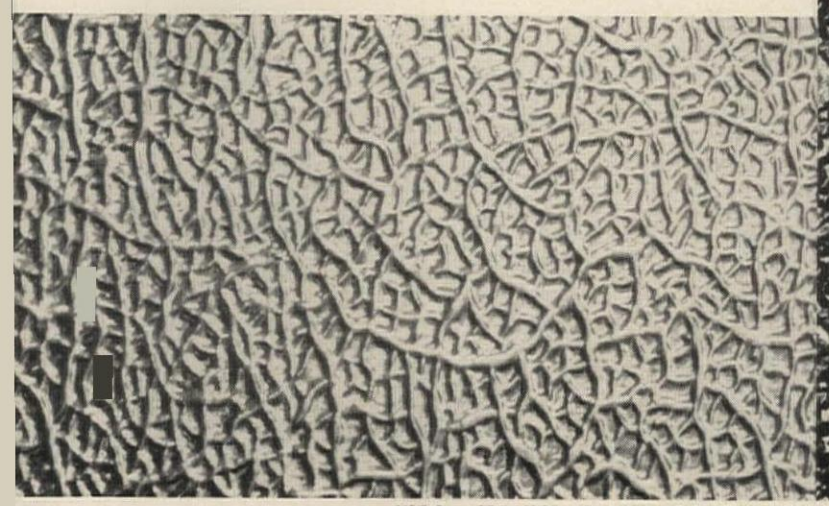
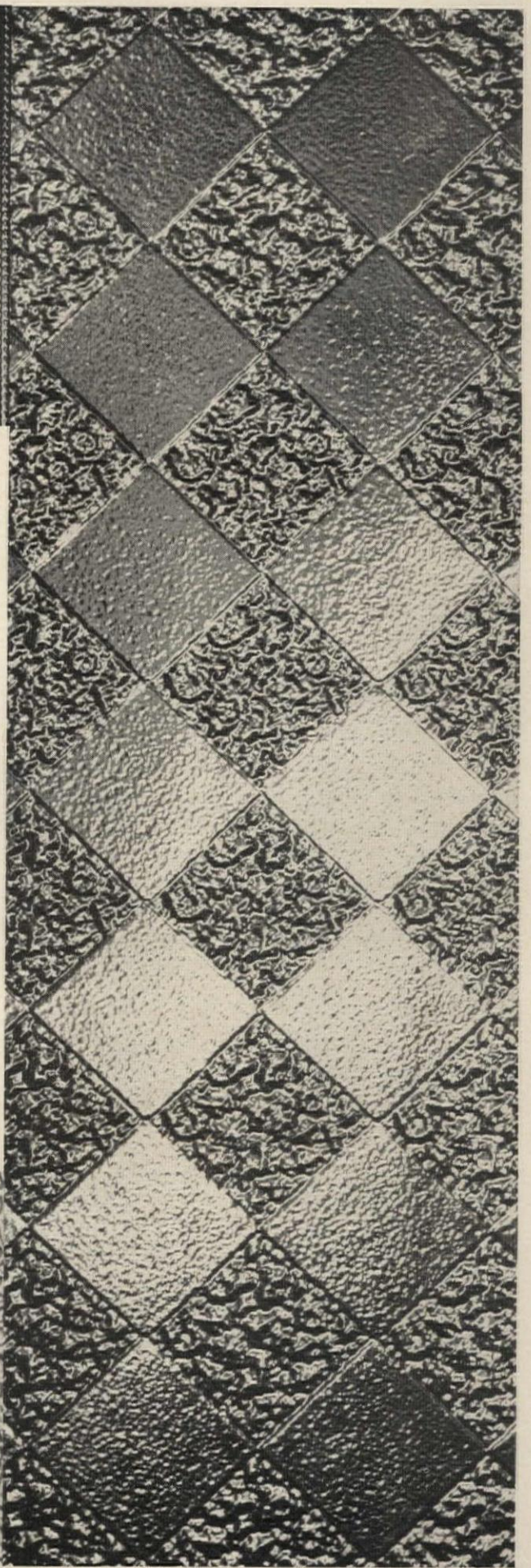


"Melon Skin" No. 9; 1/8" thick, 60"x120".



"Checkerboard" No. 86; 1/8" thick, 60"x120".

For more data, circle 49 on Inquiry Card

PRECAST CONCRETE
for all-new community college

A variety of precast units play an important role in the buildings of new Big Bend Community College at Moses Lake, Wash. Huge, exposed aggregate panels with a cast-in diamond design form the gymnasium walls. Ribbed window panels form the walls of the administration and classroom buildings. And precast "Y" frames combine with a folded plate roof to cover the unusual inner courtyard.

LEHIGH EARLY STRENGTH CEMENT BENEFITS ALL MEMBERS OF THE TEAM

Columbia Sand and Gravel Inc. used Lehigh Early Strength Cement for all the precast units in the new college. Here, as in almost any concrete work, this cement provided important benefits for the precaster, contractor and architect alike. Quicker reuse of forms . . . with fewer forms required. Earlier availability of units. Assured on-time delivery for smoother planning.

Lehigh Portland Cement Company
Allentown, Pa.

LEHIGH CEMENTS

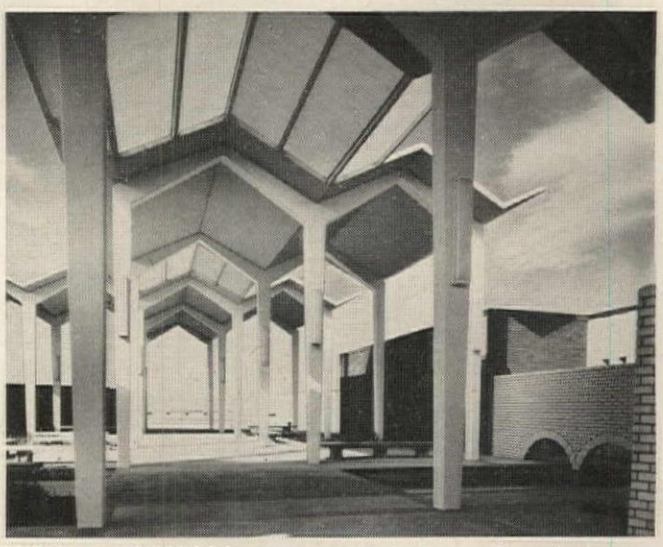
Architects: Donald Hollingbery, A.I.A.—Moses Lake, Wash.; Cowan & Paddock, A.I.A.—Yakima, Wash.

Structural Engineer: John P. Esvelt—Spokane, Wash.

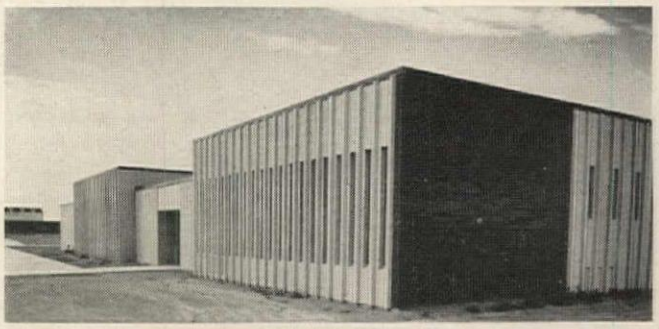
General Contractor: General Investment Co., C. Beedle—Longview, Wash.

Precasting Contractor: Columbia Sand & Gravel Inc.—Moses Lake, Wash.

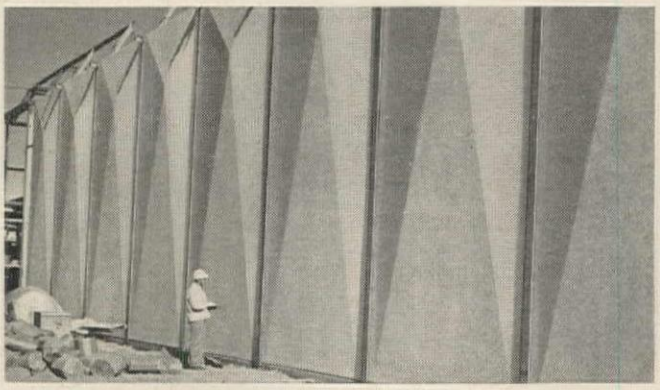
Ready Mix Supplier: Columbia Sand & Gravel Inc.—Moses Lake, Wash.



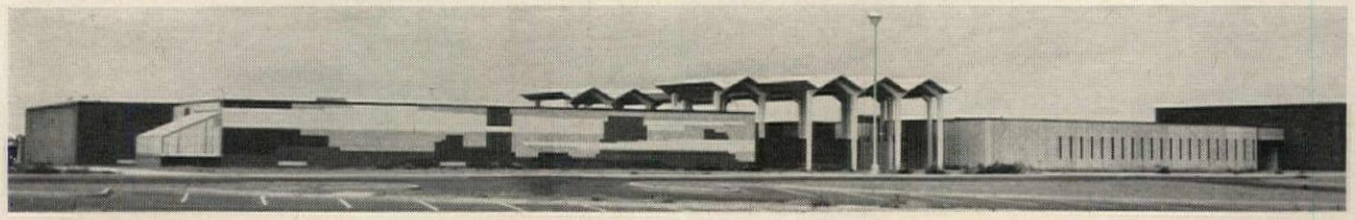
"Y" frames, 28'6" high, support folded plate roof panels that are 30' long, 8' wide and 4" thick. Together with inserted skylight sections, they form an interesting mall.



Walls of library-student union building (shown here) and the administration building are precast exposed aggregate ribbed panels. Panels are 13' to 17' high, 8" thick including 4" rib and are cast in 8' sections. Note slots for windows and ventilation louvers.



The exposed aggregate units forming the gymnasium walls feature an unusual raised diamond design cast into each panel. Units are 6" thick at the base; 8" thick at highest point of design.



The central portion of the new campus. Mall connects administration and science buildings. Lehigh Early Strength Cement was used for all precast concrete and Lehigh Portland Cement for cast-in-place concrete.

COMPETITION FOR PUBLIC SQUARE

An international competition for the design of Allegheny Public Square in Pittsburgh has been announced by the Urban Redevelopment Authority of Pittsburgh.

The three-acre square will serve as an open transitional area between the business and residential sections of the 79-acre Allegheny Center Redevelopment area.

The competition has been approved by the American Institute of Architects, the American Society of Landscape Architects and the International Union of Architects. It is open to sculptors, painters and city planners as well as architects, but all design teams must include a registered architect or landscape architect.

Drawings only will be required for the preliminary judging. Five finalists, who will receive cash awards of $5,000 each, will then submit both drawings and models.

On the jury are Hideo Sasaki, chairman of the Harvard Department of Landscape Architecture; Dahlen K. Ritchey of Deeter & Ritchey; Gordon Bunshaft of Skidmore, Owings & Merrill; H. J. Heinz of the H. J. Heinz Company and Adolph W. Schmidt of T. Mellon & Sons.

Registration closes Nov. 15. Entries are due March 13, 1964 and finalists will be announced April 13, 1964.

Requests for registration forms should go to the professional adviser, Paul Schweikher, Department of Architecture, Carnegie Institute of Technology, Schenley Park, Pittsburgh 13, Pennsylvania.

COMPETITION FOR FALLOUT SHELTER

Cash prizes totaling $55,000 will be given by the Office of Civil Defense for the design of a shopping center incorporating a fallout shelter.

The competition is open to architects and engineers registered in the United States and to faculty members and graduates of accredited architectural and engineering schools. Because of the scope of the problem, design teams of architects and engineers are encouraged.

A grand prize of $15,000 will be awarded to one entry from among eight regional first place winners. The other seven regional winners will receive $4,000. Second prizes of $1,000 and third prizes of $500 will be given in the eight Civil Defense regions. The jury may also award up to 50 honorable mention certificates.

The American Institute of Architects is conducting the competition. Copies of the program may be obtained from the professional adviser, A. Stanley McGaughan, A.I.A., National Community Fallout Shelter Design Competition, 1341 New Hampshire Ave., N.W., Washington, D.C. 20036

Addendum

The RECORD inadvertently failed to credit George F. Driscoll Company as general contractor in its story on the Charlesbank Apartments in Boston, Massachusetts; Hugh Stubbins and Associates, architects (September 1963, Building Types Study, pages 212-213).

Custom Bigelow Carpet in the Five Chateaux Restaurant of the Cambridge Charter House.

Here you enter the Tivoli Coffee Shop on a special gold-toned Bigelow. Inside, Bigelow's tweed-textured Margate.

Burnt orange, terra cotta, gold and black of the carpet are keys to the color scheme in private dining areas.

Roland Wm. Jutras, N.S.I.D., is Director of Design for the Hotel Corporation of America.

HCA'S Roland Jutras designs brilliant new carpets; Bigelow weaves them specially for Cambridge Charter House

The newest Hotel Corporation of America hostelry is Bigelow-carpeted from lobby to guest rooms. Bigelow wove the colorful patterns above and other custom carpets to designs and colors specified by Mr. Jutras and his staff. Other Bigelow Carpets in the Charter House include Margate for the coffee shop, Pontio for guest room suites.

Leading designers like Mr. Jutras select Bigelow Carpet for their most important hotels and motels. Price, service, performance under traffic, and beauty—as well as our special designs, colors and textures—are prime considerations in choosing Bigelow Carpet for public areas.

Consult our carpet specialists—without charge—about colors, patterns, weaves at prices you can afford. Contact Bigelow through the nearest sales office. Or, for colorful free brochure on Bigelow commercial carpets, write Dept. B, 140 Madison Ave., New York 16, N. Y.

PEOPLE WHO KNOW ... BUY Bigelow RUGS & CARPETS SINCE 1825

Bigelow sales offices are located in the following cities: Atlanta, Georgia; Boston, Massachusetts; Chicago, Illinois; Cleveland, Ohio; Dallas, Texas; Denver, Colorado; Detroit, Michigan; Los Angeles, California; Minneapolis, Minnesota; New York, New York; Philadelphia, Pennsylvania; Pittsburgh, Pennsylvania; St. Louis, Missouri; San Francisco, California; Seattle, Washington

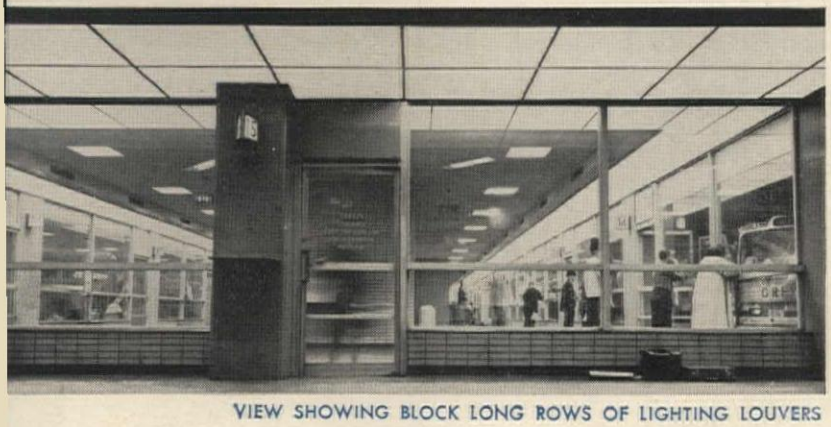
For more data, circle 51 on Inquiry Card

GREYHOUND BUS TERMINAL, CHICAGO, ILL.

Greyhound solves lighting and maintenance problem *with* american plastic louvers

greyhound engineers selected American 3 ft. x 4 ft. styrene louvers to upgrade their lighting and bring maintenance down to a minimum, so not to disturb the continuous 24 hour a day traffic flow.

ARRIVAL AND DEPARTURE AREA OF TERMINAL



VIEW SHOWING BLOCK LONG ROWS OF LIGHTING LOUVERS

INSTALLATION: American Plastic Louvers are adaptable to all types of lighting luminaries — single, recessed, surface or modular units and suspended ceiling systems. Panels may be cut, grooved or sized to fit requirements.

DIRT AND DUST DROPS THROUGH American Louver open-celled panels. Destaticized panels stay cleaner longer — reduce cleaning and maintenance.

LAMPS AND BALLASTS ARE COOLED, NOT CUT-OFF by solid diffusion systems.

AIR DUCTS ARE COVERED BUT NOT CONFINED. Holes allow free circulation of conditioned or heated air through the light diffusion panels.

SPRINKLER HEADS ARE HIDDEN BUT NOT HAMPERED because American Louvers open-cell construction permits free flow of water.

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3 COLOR CATALOG TODAY!

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THE BEST IDEAS
ARE MORE EXCITING
IN CONCRETE
PAN AM

WORLD'S TALLEST "AIR-BORNE" BUILDING HAS 12 ACRES OF CONCRETE CURTAIN WALLS

The 59 stories of the new Pan Am Building rise on air rights above the tracks and platforms of New York's famed Grand Central Terminal. It's the tallest building of its type. And with 55 acres of concrete floors, it is one of the world's largest commercial office buildings.

The unique octagonal shape and some 9000 wall panels of precast concrete give exceptional interest to the structure's soaring facade. Of white cement with exposed quartz aggregate, the panels create a brilliant surface which is punctuated by the angular shadows of deeply recessed windows. The effect is one of organized dignity and elegance.

Such stimulating use of concrete, today, is bringing a new beauty to buildings of all types and sizes. More and more, architects are exploring—in modern concrete—whole new fields of creative design.

PORTLAND CEMENT ASSOCIATION

A national organization to improve and extend the uses of concrete

Architect: Emery Roth & Sons, New York City. Design Consultants: Walter Gropius (T.A.C.) & Pietro Belluschi, Cambridge, Mass. Structural Engineer: James Ruderman, New York City. General Contractor: Diesel Construction Company, New York City. Concrete Panel Manufacturer: The Dextone Co., New Haven, Conn. Owner: Grand Central Building, Inc.

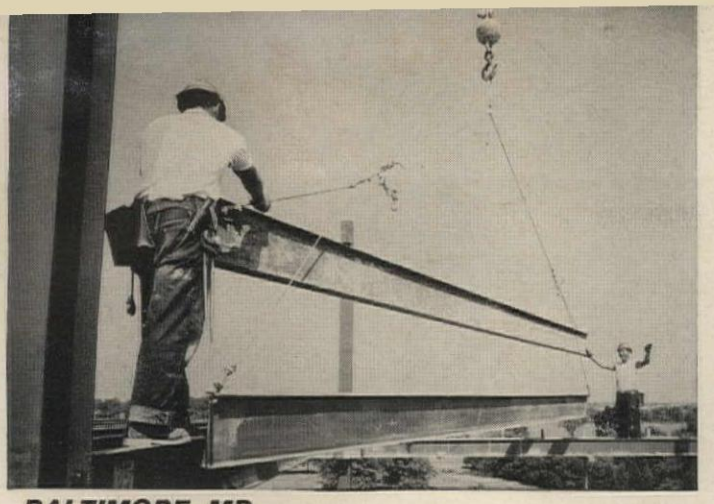
NEW ORLEANS, LA.

NEW YORK, N. Y.

HOW TO BE RIGHT ON

Steel's Symbol of strength, long life, and economy.

ATLANTA, GA.



BALTIMORE, MD.

SOUTH BEND, IND.

THE JOB... SPECIFY J&L LIGHTWEIGHT STEEL STRUCTURALS

NEW ORLEANS, LOUISIANA

In-place cost of structural framing for Studio Arms IV, a luxury apartment in a New Orleans suburb, was 30% less than with conventional methods. The novel design called for Double Warren trusses fabricated with standard channels as top and bottom chords, and standard angles as diagonals. Junior Beam joists, spanning 24 feet, rest in the vertices of triangles formed by truss diagonals. Results: Lightness and ease of construction, less steel weight per square foot, saving of one foot of height per floor. Builder, Dominion Construction Corp., New Orleans; Design and Fabrication by Milan Engineering Co., New Orleans.

NEW YORK, NEW YORK

The architects wanted an unbroken stairway of 200 flights for the Time & Life Building in New York . . . the answer was lightweight Junior Channels for straight stringer sections, joined at the landings by 3/16-inch sheet that had been bent into a spiral on a brake press. To make the spirals look like part of the straight stringer sections, "dummy" flanges were cut from 12-inch Junior Channels that had been heated and shaped to match the spiral, and were welded in place. "This job could not have worked out so easily without the flexibility we derived from 12-inch Channels," says Mr. Robert Sexauer, Treasurer, Sexauer & Lemke, Inc., architectural metals firm that fabricated the stairs.

BALTIMORE, MARYLAND

In the 9-story 11 Slade Apartments, a Mullan Contracting Company project in Baltimore, secondary floor members (12″ Junior Beams and 14″ Light Beams) were embedded in reinforced concrete girders. These were formed with removable Junior Channels spanning between columns and supporting secondary beams. Cast iron "K-Clips" were then hooked over the top flanges of the Junior Beams, and plywood forms placed on the protruding ends of the clips. After curing of the concrete girders and the floor, K-Clip ends were knocked off, allowing the plywood forms to drop. Construction efficiency and reuse of forms saved considerable money and time—four days to complete a floor instead of the usual six. Architect, Joseph Foutz; Structural Engineer, Edward S. Klausner; Associate Engineer, Wallace & Gutberlet.

SOUTH BEND, INDIANA

Two men can easily install lightweight 6-inch Junior Beams, delivered cut to length, in brackets suspended on prestressed concrete foundation walls. Crawl space is designed as a plenum chamber with a plastic sheet, laid on the ground as a vapor barrier. Ductless heating is provided through registers in the sub-floor and finish flooring. Besides reducing detail work on the site, this method devised by Place & Company of South Bend saves an estimated 15 cents per square foot in construction of their 3-bedroom ranch homes.

ATLANTA, GEORGIA

"The 14-inch Light Beams proved to be most economical for the spans and loads involved," say the designers of Atlanta's modern air terminal. Light Beams are used extensively in the six protruding 2-story concourse sections that efficiently cope with heavy traffic peaks. Formed metal decking, serving as support for insulation and built-up roofing material, is welded to Light Beam purlins which also help support a maze of concealed piping. Further economy was gained by using Junior Channels as stair stringers. Designers were Robert and Company Associates, an Atlanta architectural and engineering firm.

Easily adapted to a wide variety of architectural designs, Lightweight Structurals help to reduce steel tonnage. They're easy to fabricate, raise and position, and this reduces labor costs. For more facts about lightweight structurals, call or write direct.

Jones & Laughlin Steel Corporation
3 Gateway Center, Pittsburgh 30, Pa.

J&L STEEL

For more data, circle 53 on Inquiry Card

54" Circular Washfountain

Many times, the shortest distance between two points is a circle . . . a provocative story by Bradley Washfountain

Conquest of Inner Space

Building costs per square foot spiralled upward, floor space shrank, and washroom walls seemed to close in on you . . . as you fought your daily battle to conquer **inner** space. Then along came Bradley Washfountains, and the battle was won! Bradley Washfountains do more in less space than any other washfixtures. Eight-person circular models save as much as 25% on floor and wall space. Semi-circular 36″ Washfountains extend only 22″ off the wall, yet serve three people! ☐ But the savings only begin there. Washfountains serve up to eight people at one time with just one set of plumbing connections — speeding traffic flow, and cutting installation costs as much as 80%! They save water and maintenance expenses, too. And they are far more hygienic: with foot-operated Bradleys, hands touch only a clean spray of tempered water, never touch germ-laden taps or faucets. ☐ You'll like working with Bradleys because they provide so much design flexibility (there's a wide variety of shapes, colors, and compositions to stir your imagination). So, remember Bradley Washfountains for all modern buildings: schools, institutions, hospitals, offices, and the like. Spin the circle; Begin with Bradley!

See your Bradley representative for assistance on specific applications. And write for latest literature. Bradley Washfountain Co., 2375 West Michigan Street, Milwaukee, Wisconsin 53201.

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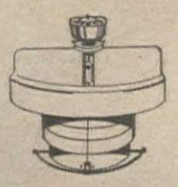
Bradley

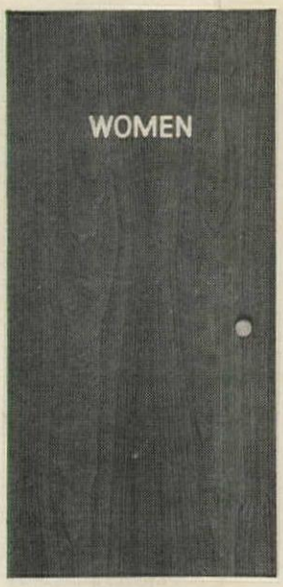


54″ Semi-circular Washfountain

36″ Circular Washfountain

36″ Semi-circular Washfountain

Duo Washfountain

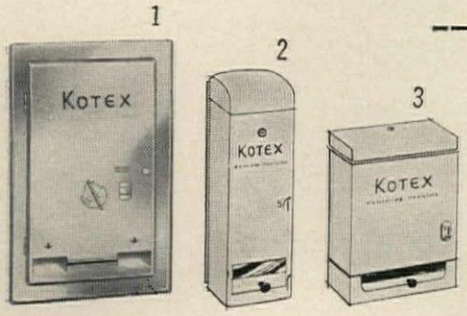


What do most women prefer in buildings?

It's a fact. Most women prefer modern, spacious washrooms equipped with vending machines for Kotex feminine napkins. It's a fact—because most women prefer Kotex to all other brands! When you make provision for vending machines for Kotex, you add a greatly appreciated thoughtfulness—and help to eliminate unnecessary embarrassment and absenteeism.

Only Kotex offers three separate vending machine designs. Each is easily installed and is available in your choice of white enamel, bright or satin chrome finish. (The Kotex recessed model is also available in stainless steel.) All three Kotex vending machines are made of sturdy 18 and 20 gauge steel, with trouble-free, long-wearing, cold-rolled steel mechanisms. (Five-cent, ten-cent or free vending mechanisms are available for all models.) (1) **Model R-63** (Recessed)—Dispenser can also be surface mounted. Holds 63 individually packaged Kotex napkins. (2) **Model MW-15** (Surface mounted)—Dispenser holds 15 individually packaged Kotex napkins. (3) **Model R-25** (Surface mounted)—Dispenser holds 22 envelope-wrapped Kotex napkins.

More women choose Kotex feminine napkins than all others combined



Kotex is a trademark of Kimberly-Clark Corporation, Neenah, Wisconsin

Kimberly-Clark Corporation, Department Number AR-113, Neenah, Wisconsin

Gentlemen: Please send complete information on vending machine service for Kotex feminine napkins.

Name _____ Title _____

Organization _____

Address _____

City _____ Zone _____ State _____

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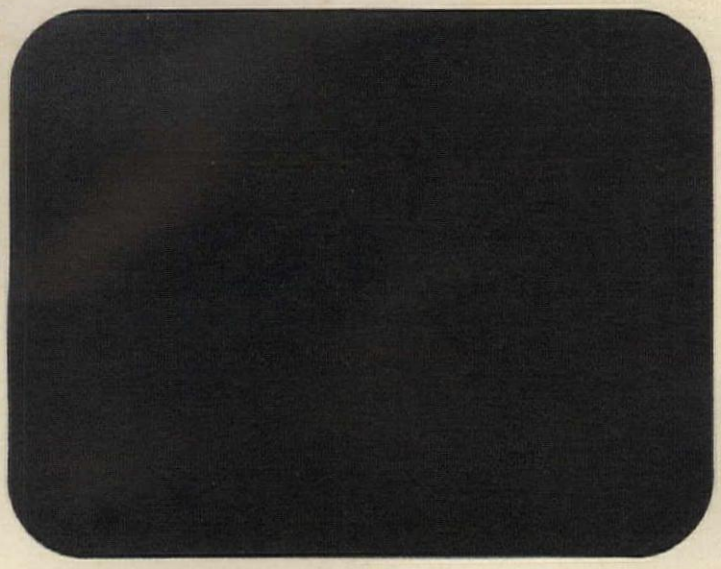
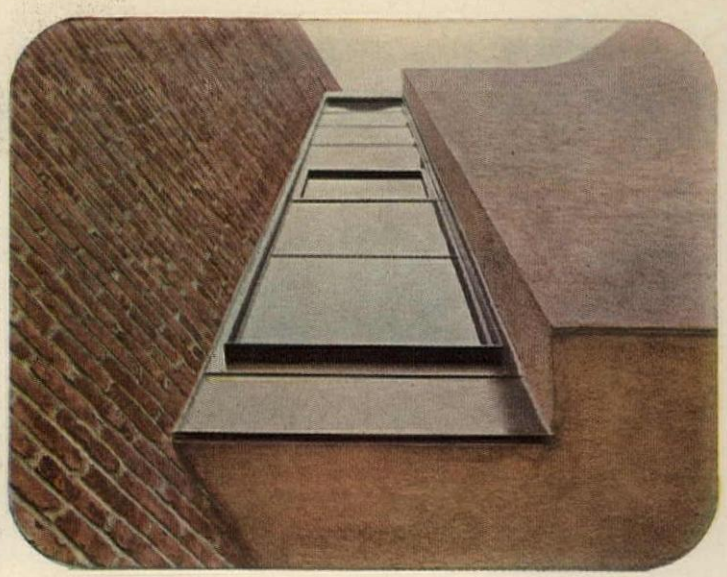
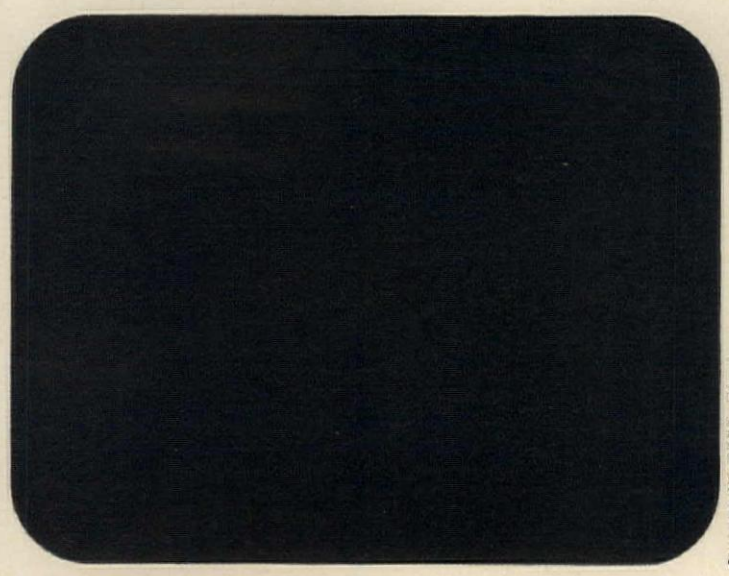
For more data, circle 56 on Inquiry Card →



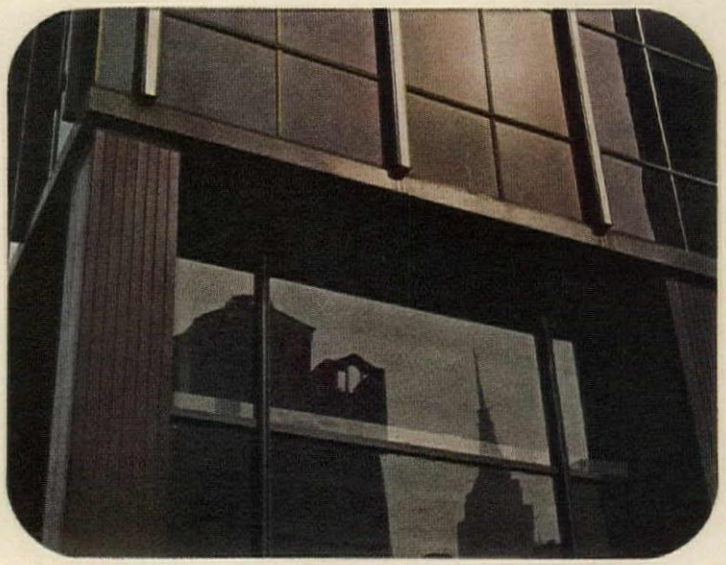
Duranodic 324S, Medium Gray
Holy Trinity Episcopal Church, Hicksville, L.I., N. Y.



Alcoa's new DURANODIC "300" finishes,



Duranodic 335S, Black
605 Third Avenue, New York, N. Y.



DURANODIC "300" finishes for panels, trim,

Salt air, hot sun, corrosive atmospheres—Alcoa® Aluminum with Duranodic* "300" finishes can take practically anything nature can dish out or man devise. And the color exhibits little or no change. Hard as sapphire, Duranodic "300" color finishes are inherent in the alloys and become integral with the metal during treatment. There are no dyes or pigments. Result: a color surface that's just about impervious to scuffing. See the enlarged model of an anodic cell structure to the left: The upper example has color added. Below it is the way cells in a Duranodic "300" finish look—color clear through! Call your nearest Alcoa Sales Office for complete information.

Credits—Holy Trinity Episcopal Church. Owner: Holy Trinity Episcopal Church, Hicksville, L. I., N. Y. Architect: Seth Hiller & Edward F. Knowles, N.Y.C. Duranodic Applicator: Electro-Color Corp. Fabricator: Samson Window Corp., 605 Third Avenue. Owner: Fisher Bros. Architect: Emery Roth & Sons, N.Y.C. Duranodic Applicator: Cupples Products Corp. Fabricator: Cupples Products Corp., One Charles Center Building, Baltimore, Md. Owner: Metropolitan Structures, Inc., Chicago, Ill. Architect: Mies Van der Rohe, Chicago, Ill. Duranodic Applicator: Cupples Products Corp. Fabricator: Cupples Products Corp. Erector: F. H. Sparks Co., Inc.

*Trade Name of Aluminum Company of America

ALCOA

ALCOA BRINGS YOU AMERICA'S FINEST NEWS SHOW . . . THE HUNTLEY-BRINKLEY REPORT, ON NBC-TV

ARCHITECTURAL LEAGUE SEEKS NEW FOCUS ON ROLE OF BUILDING ARTS

A program designed both to focus new public attention on the role of the building arts and to stimulate inter-professional communication about their changing problems and opportunities has been inaugurated this year by the Architectural League of New York, the national organization of practitioners of the building arts.

The program has been developed around three major series of events:

—"The Pursuit of Civic Excellence" will bring public officials and professionals together for discussion of barriers to and opportunities for civic excellence in areas affected by and affecting the building arts.

—"The Changing Alliance" will spotlight successively each of the building arts (landscape architecture, engineering, mural decoration, sculpture, and design and crafts) in discussion of the changing role, opportunities and problems of the art in its relationship to architecture.

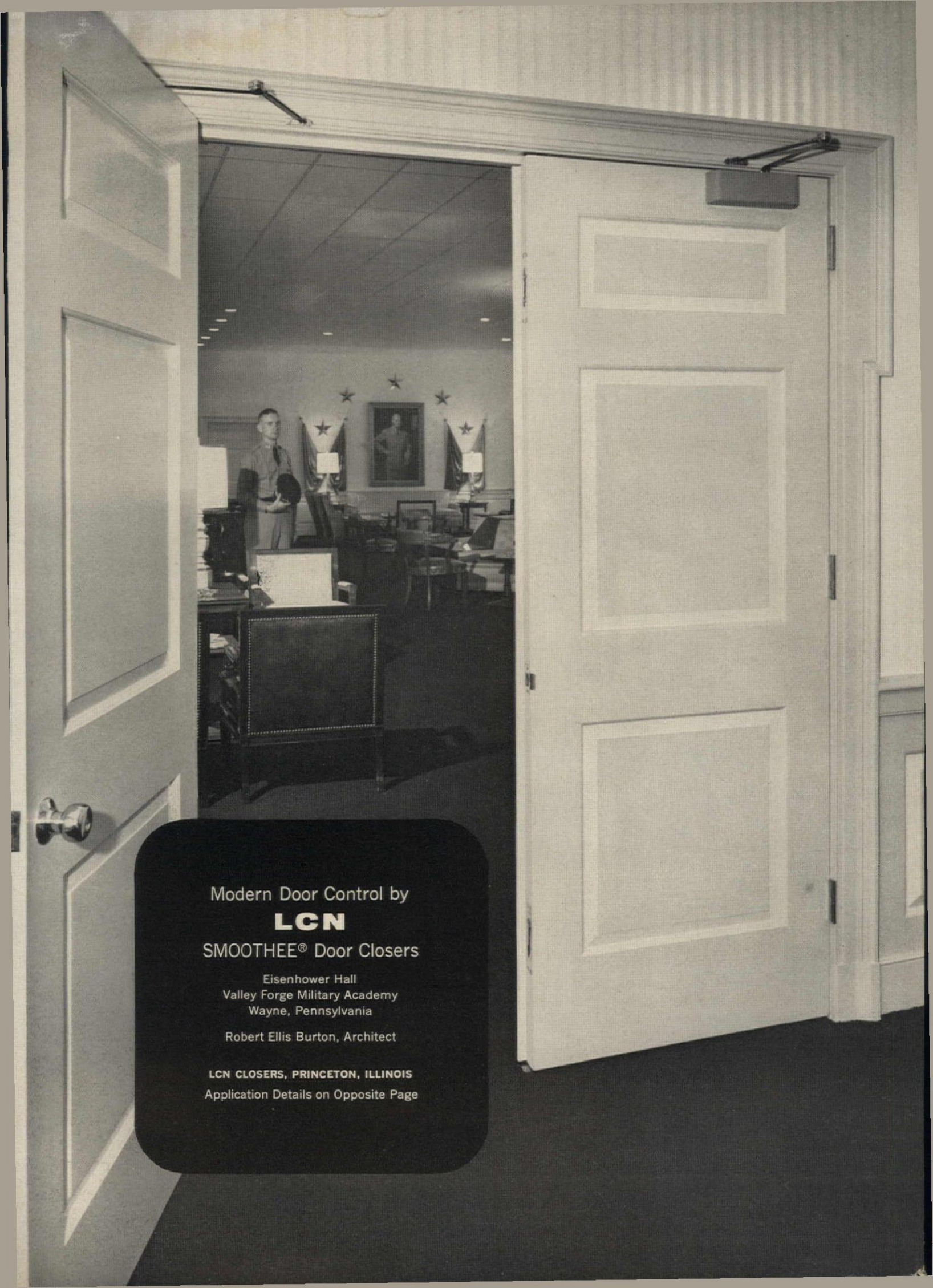
—"Seminars on the Building Arts" will bring a series of practitioners of achievement to speak informally about their work and respond to questions about it and about their field. This series is intended to provide an opportunity for younger practitioners to meet and talk to their older colleagues and for all practitioners of the building arts to gather for free discussion of their common (or uncommon) concerns.

The fall series on "Civic Excellence" opened on October 17 with a special program celebrating the world premiere at the League of a major exhibition of the new town of Tapiola, Finland. Keynote speaker on the theme "Approaches to Civic Excellence Abroad" was Frederick Gutheim, author, critic and president of the Washington Center for Metropolitan Studies. Heikki von Hertzen, managing director of Asuntosaatio, the housing foundation which developed Tapiola, told the remarkable story of the planning and construction of that most remarkable new town.

Successive programs in the "Civic Excellence" series, which has Robert S. Cutler, F.A.I.A., as moderator, were scheduled to focus on urban renewal (October 31), housing (December 5), schools (January 9), the role of the press (February 20), Federal architecture (March 19) and "Goals for New York" (April 30). William Slayton, Commissioner of the Urban Renewal Administration, Washing, D.C., was to be the principal speaker for the October 31 program.

Opening "The Changing Alliance" series on November 21 will be a program on "Architecture and the Arts: The State of the Union," with John Ely Burchard, dean of the School of Social Studies and Humanities at the Massachusetts Institute of Technology, as the keynote speaker.

Charles Luckman was the opening speaker for the "Seminars on the Building Arts" on October 4, and other speakers scheduled are Max Abramovitz, on November 15, and Edward Larrabee Barnes, on December 13. Architect Charles E. Hughes is the continuing moderator.



Modern Door Control by

LCN

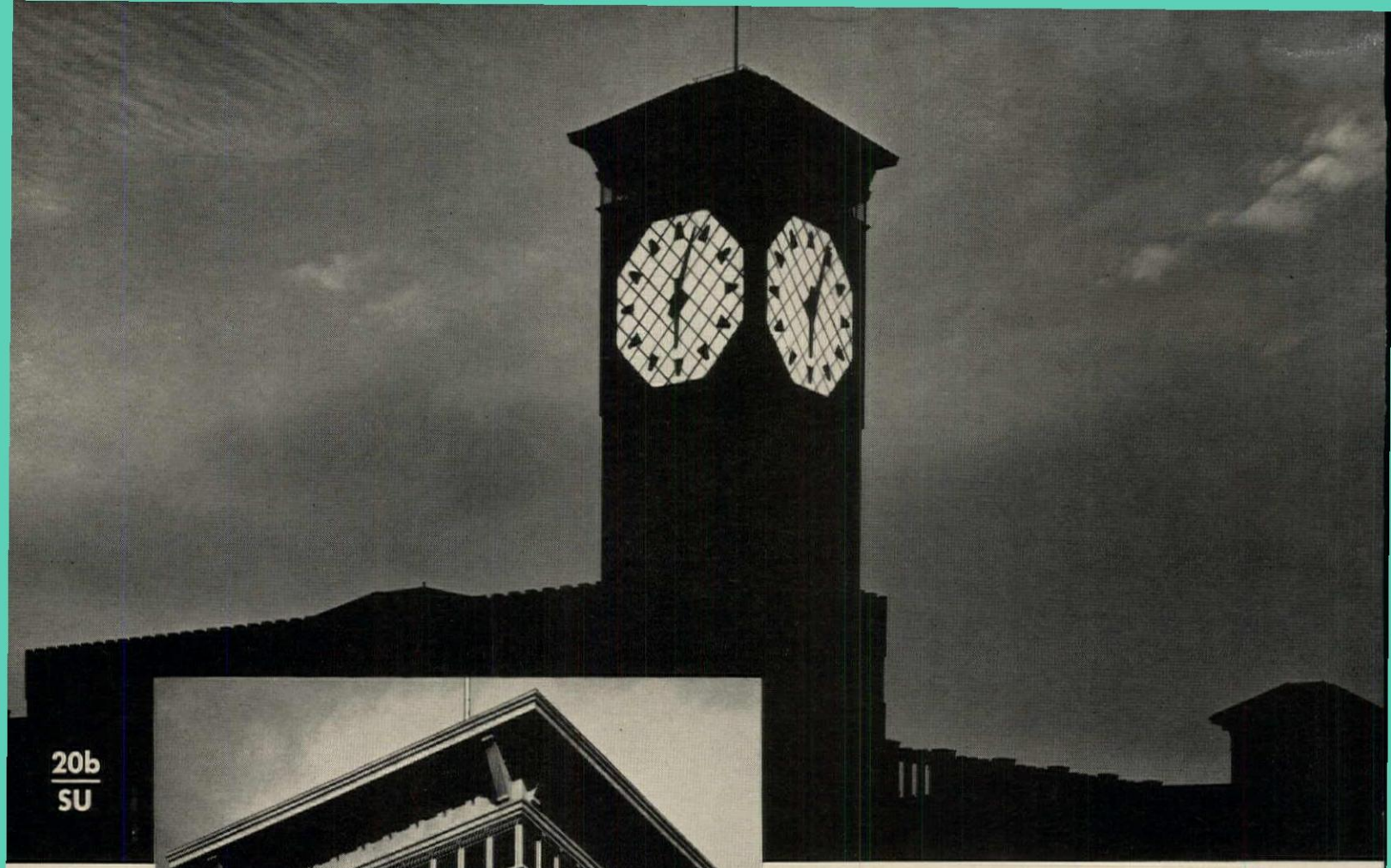
SMOOTHEE® Door Closers

Eisenhower Hall
Valley Forge Military Academy
Wayne, Pennsylvania

Robert Ellis Burton, Architect

LCN CLOSERS, PRINCETON, ILLINOIS

Application Details on Opposite Page



20b
SU

ALLEN-BRADLEY COMPANY
MILWAUKEE, WISCONSIN
ARCHITECT:
FITZHUGH SCOTT, A.I.A.

Clock Height: 260 ft.
above street level
Clock Visibility: 25 miles

Engineering Features

- Each face: 76 individual pieces opaque, laminated glass set in custom aluminum extrusions
- Weatherproof neoprene glazing strips
- 3,900 lbs. glass, 1,600 lbs. aluminum per face
- "Floating" aluminum channel mounts compensate for expansion — contraction
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- Black aluminum numerals, 3 x 4 ft.

World's Largest Clock illustrates *Versatility*

of Super Skylighting

Look to Super Sky to create the new dimension of form and beauty in functional skylighting. Case in point: four 40-ft.-diameter illuminated clock faces — engineered, fabricated and erected by Super Sky to produce a brilliant architectural highlight.

Super Sky's ability to fabricate the unusual — as well as standard and custom geometric domes, pyramid and ridge skylights — can help you achieve new freedom of shape and dimension on your next project. From *your* plans we design the skylight — and guarantee it! Write for detailed drawings, engineering data, estimates and suggestions. No obligation, of course.

FREE illustrated booklet — "A New Concept in Dimensions Unlimited" — at your request. Write Super Sky Products, Box 113-AE, Thiensville, Wisconsin, 53092.

SUPER Sky PRODUCTS INC

For more data, circle 69 on Inquiry Card

SUPER SKY PRODUCTS, INC.
BOX 113-AE, THIENSVILLE, WISCONSIN
PHONE: CHestnut 2-2000
Milwaukee phone: FLagstone 4-6700

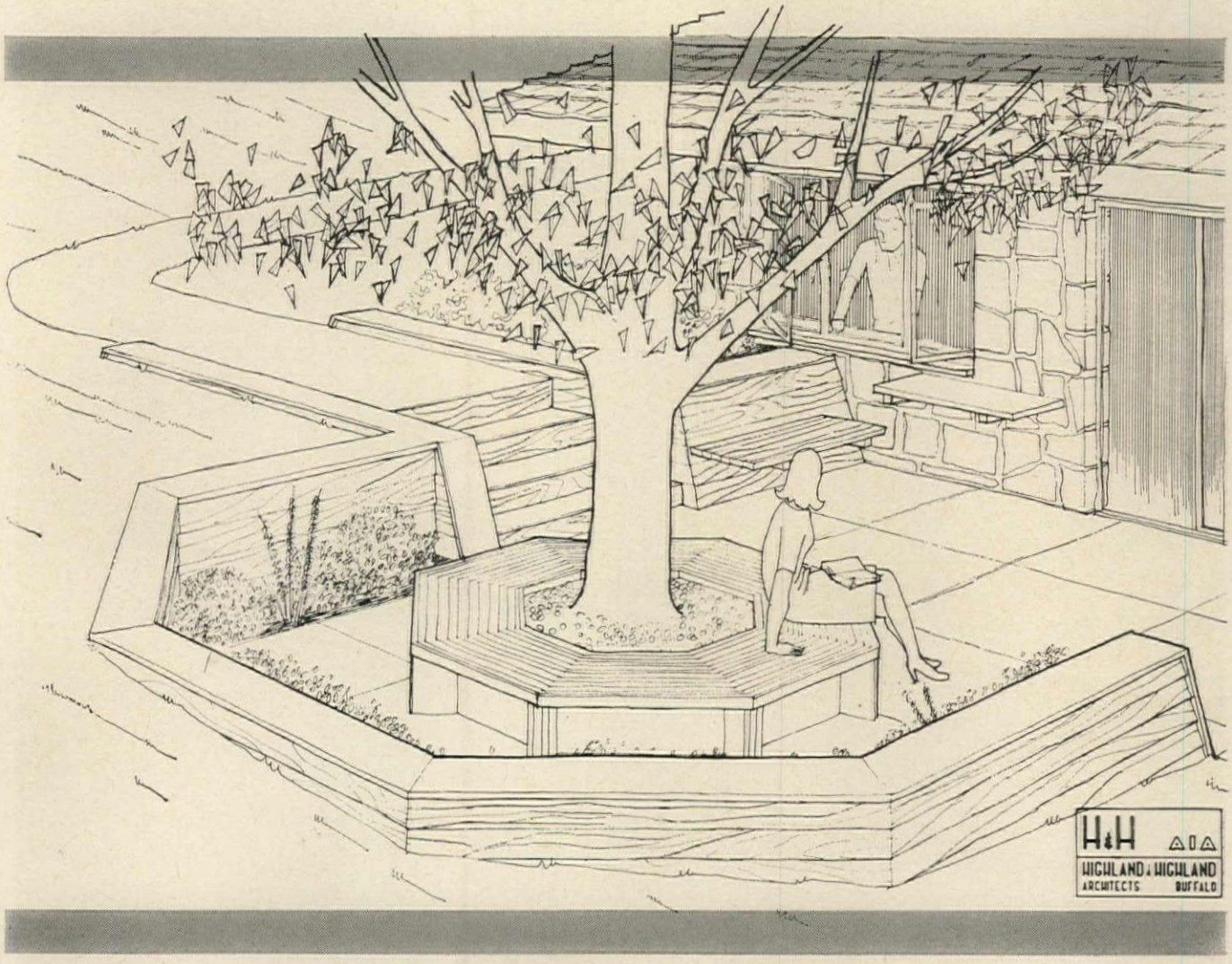
Student Center Building, Brooklyn College, Brooklyn, N.Y. Chapman-Evans & Delehanty, architects. Rand Construction Co., Inc., builders. L. Barba Construction Corp., mason contractors. For lobbies on four floors, architects created the abstract design for 10 ornamental polychrome panels, custom-made in Ceramic Veneer. Panels are 5' 11" x 9' 5", formed by Ceramic Veneer units 23½" x 22⅜16". Spandrel facing on exterior of building is cream Ceramic Veneer in units 19" x 26" and 26" x 36", set in a random pattern.

Dramatize your design in colorful Ceramic Veneer

There's no need to confine creativity or sacrifice the right colors when you bring Ceramic Veneer into your plans. With it you can create colorful smooth surfaces, polychrome panels, perforated facades and ornamental sculpture. Ceramic Veneer's versatility of form, color and texture is unrivaled because each unit, large or small, is custom-made to your specifications. Permanent quality as well as color, moderate price and utmost economy of maintenance are other factors which favor the use of Ceramic Veneer, the modern architectural terra cotta. Construction detail, data, estimates and advice on preliminary sketches involving the use of Ceramic Veneer will be sent on request. Write today.

FEDERAL SEABOARD TERRA COTTA CORPORATION *10 East 40th Street, New York 16, N.Y.*
Plant at Perth Amboy, N.J.

F S T C



GARDEN RETAINING WALLS

Here is a most demanding need for pressure treated wood . . . split logs or large timbers used in a cribbing pattern to "hold back" the garden area and provide a functional patio flush with the below-level sliding doors. Where wood meets ground (and in this case, lots of it) the conditions for termite attack and fungus decay are most fertile. Furthermore, the design we have illustrated is often used with sloping terrain where drainage may cause extra . . . almost constant seepage. Here the need for effective protective measures is even more important. OSMOSE Pressure Treated Wood is a simple, inexpensive specification to insure against early repair or replacement. It's difficult to predict the exact longevity of the OSMOSE treatment under every set of conditions . . . but it is safe to say that wood so treated will substantially "outlive the mortgage." OSMOSE Pressure Treated Wood has many other advantages. For full information, use reader service card, or write to:

OSMOSE WOOD PRESERVING CO. OF AMERICA, INC., 980 ELLICOTT ST., BUFFALO 9, N.Y.

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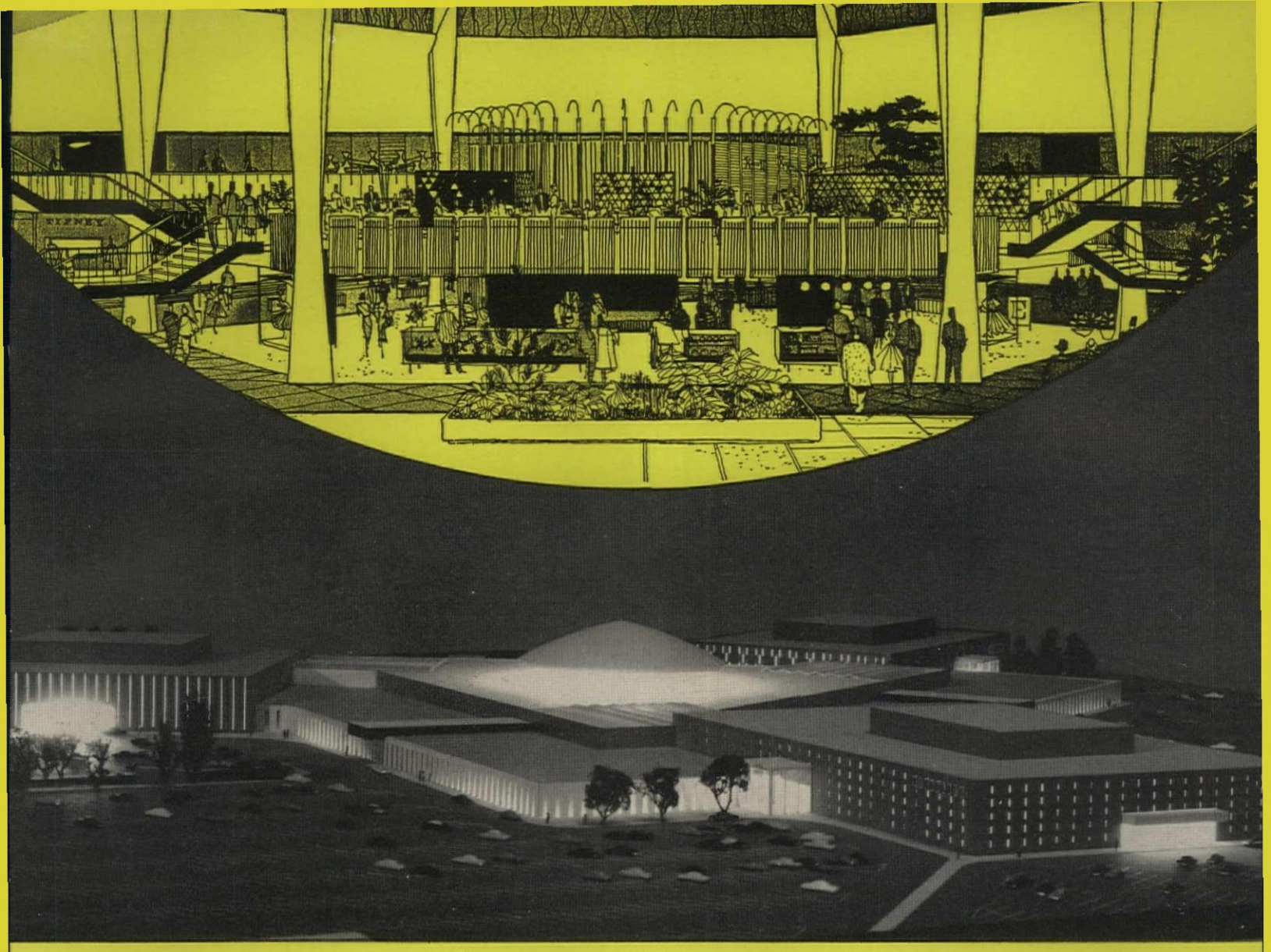

music by Muzak® *at Randhurst*

Largest fully-enclosed and air-conditioned shopping center in the world, Randhurst offers 1,200,000 square feet of area, providing a unique setting for shoppers. This strikingly modern suburban facility offers practically every product and service from a 100-acre site just northwest of Chicago at Mount Prospect, Illinois.

Randhurst's principal feature is an ideal environment for shopping and selling: three major department stores, professional offices, a bazaar of open shops, an entire level for service outlets, plus a pavilion area for restaurants and promotional activities, all within short walking distance from each other.

Music by Muzak has been an integral part of this unusual merchandising concept from its beginning. The scientifically arranged and recorded Muzak program provides a pleasing accompaniment for all Randhurst activities. Never an intrusion, the Muzak program changes by plan throughout the day to create a pleasant atmosphere for both personnel and customers. Natural tension is eased; buying is stimulated.

More than a motivational device, the Muzak sound system is a versatile communications tool for paging, public address, signalling and other uses. Save time and expense; specify a Muzak system in early planning stages.

A.I.A. File No. 31-I-7. Sweets Catalog File 33a/Mu. Additional details and literature on request. Write Muzak headquarters or contact your local Muzak franchised distributor.

"At Randhurst, we have found that Music by Muzak plays an important part in maintaining the quality atmosphere our customers expect. Music by Muzak is certainly an asset to all shopping and promotional activities here." — Mr. Robert J. Flynn, General Manager, Randhurst Corporation

music by Muzak®

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BEAUTY THAT ENDURES

in a wide variety of Lo-Tone acoustical patterns and types for any installation

Whatever your acoustical ceiling requirements, it will pay you to talk first to your nearby Lo-Tone Acoustical Contractor.

Perhaps you have a job where ventilating ceilings are being considered. Lo-Tone acoustical ventilating products will afford maximum comfort by controlled air induction and proper mixing of room air. This dramatic new approach to room air distribution utilizes the jet orifice principle and provides sufficient velocity for optimum air movement in occupied zones.

If you should have a ceiling installation where ease of cleaning is of real importance, you will want to investigate the unique features of Lo-Tone *vinyl-coated* ceiling tile and board. The plastic surface is sealed and static free — will not attract dirt particles.

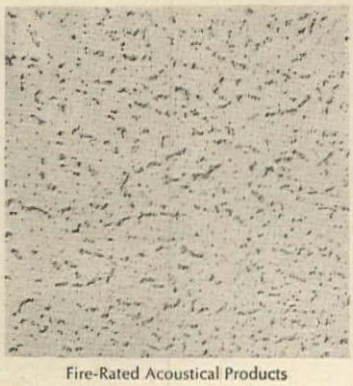
Perhaps your needs call for a Fire-Rated tile or ceiling board. Lo-Tone FR products are listed by Underwriter's Laboratories, Inc. One of the handsomest Lo-Tone FR patterns is new Fissura. This dramatic new ceiling tile captures the classic beauty of travertine marble.

For the complete line of Lo-Tone mineral acoustical products, consult Sweet's Catalog or your nearby Lo-Tone Acoustical Contractor. You may also write direct to Wood Conversion Company, St. Paul 1, Minnesota.

LO-TONE®
MINERAL ACOUSTICAL CEILINGS

Acoustical Ventilating Products

Vinyl-Coated Acoustical Products



Fire-Rated Acoustical Products

Design Tiles

For more data, circle 72 on Inquiry Card

Greek Hydria. Attributed to the Antimenes Painter. Black-figure ware. About 525 B.C. The Toledo Museum of Art.

THIS MONTH: PERMAFROST AND B.R.I. CONFERENCES

Scientists and engineers from 10 countries, including Poland and the Soviet Union, will be attending the first International Conference on Permafrost at Purdue University, Lafayette, Indiana, November 11-15.

Panelists will discuss more than 100 papers dealing with all aspects of building of permanently frozen ground. The meeting is under the auspices of the Building Research Advisory Board of the National Academy of Sciences—National Research Council. Financial sponsors include various Federal agencies, including military groups. Cooperating groups are the National Research Council of Canada, the American Society of Civil Engineers; the American Society for Testing Materials and the American Geophysical Union.

Conference Chairman Kenneth B. Woods, head of the Purdue School of Civil Engineering said the aim of the conference is to "enable man to cease living as an intruder in the Arctic."

A wide variety of technical sessions, workshops and panel discussions will be devoted to eight topics of interest to the building industry at the Building Research Institute's 1963 fall conferences to be held at the Mayflower Hotel in Washington, D.C., November 19-22.

An urban renewal workshop will discuss socio-economic, physical and political problems in three separate meetings. New approaches to high-density, low-rise housing will be explored in a research correlation conference.

A session on impact noise in housing will include a paper on the FHA guide to impact noise control in multi-family dwellings. Problems encountered in the use of masonry mortars and some possible solutions will be discussed in another conference.

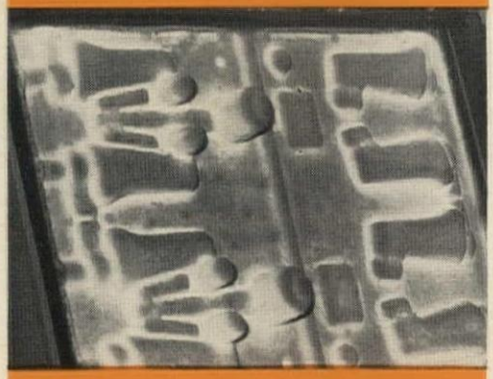
Four meetings will deal with aspects of residential construction. The subjects are recent housing research, safety needs and practices in housing, recent development in residential heating and mechanical fasteners in residential frame construction.

DESIGNING FOR POSTAL SERVICE

"Planning for Postal Service in Office Buildings" is the title of a booklet giving architects official criteria for planning mail rooms, vertical conveyors and postal elevators. Six pictures show the alternatives—mail bags being dragged through lobbies and into passenger elevators. For copies, ask for POD Publication 55 from the U.S. Post Office Department, Office of Research and Engineering, Washington, D.C., 20260.

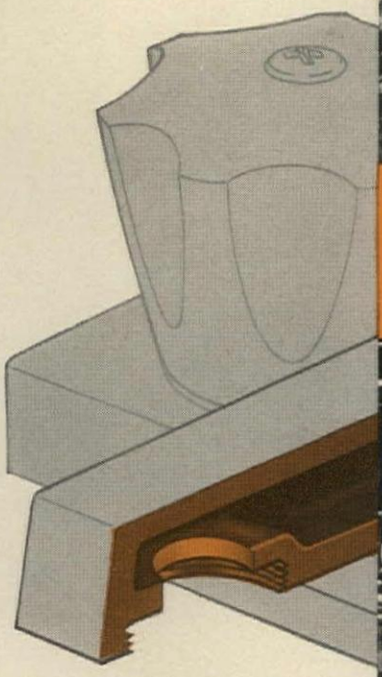
BEHIND RHEEM BRASS

The smelting of the metal used in Rheem All Brass fittings takes place in a carefully controlled atmosphere. It is then poured into the molds at exactly 2150° F.



Each Rheem All Brass fitting is carefully molded in its own individual shell mold. This form of molding provides greater detail in the casting.

The more polished and smooth the piece, the brighter the fitting will be in its final form. To provide this metal preparation, over 52 people take Rheem Brass through different stages from rough to final polish.



After Rheem All Brass castings are molded, machined and polished they are *triple plated* with copper—nickel and finally sparkling chrome.

Yes sir, in the business of specifying components for a building you sure want to know how things are made—how they will perform and, if they are exposed, how they look.

As it concerns Rheem All Brass fittings, here are the facts for your serious consideration. Rheem Brass is all brass—all metal parts are made of brass, inside and out. This *all brass* composition is important to you for you know that brass can take it in the everyday battle with all kinds of water.

And we use plenty of brass—first chance you get, heft a piece—it's heavy—it even feels good!

Rheem fittings are stylish and fashionable, too. We call them the Fashion Line. Rheem fittings are triple plated—with copper, nickel and, finally, sparkling chrome. Rheem Brass will look good for years. The working parts—valves* and other controls—in Rheem fittings are machined to close tolerances. They will stand up under hard usage.

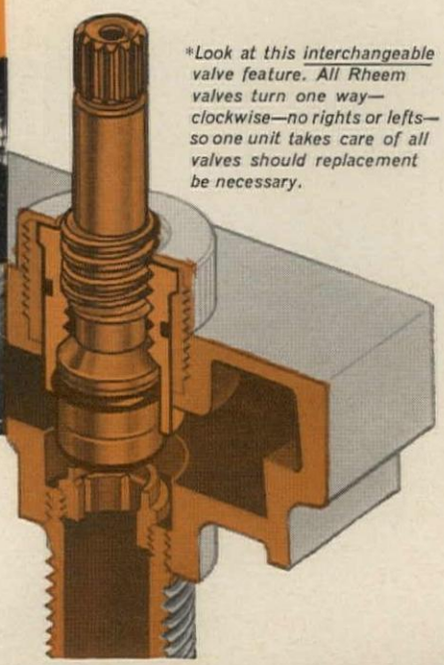
Add it up—all brass—meticulously manufactured—simple maintenance—topped with downright good looks. These are the reasons we ask you to consider the Fashion Line of All Brass fittings by Rheem. OK?

Rheem Manufacturing Co., Home Products Division, Dept. AR-11B, 7600 S. Kedzie Ave., Chicago 52, Illinois.

BRASS FITTINGS *fashioned by* Rheem

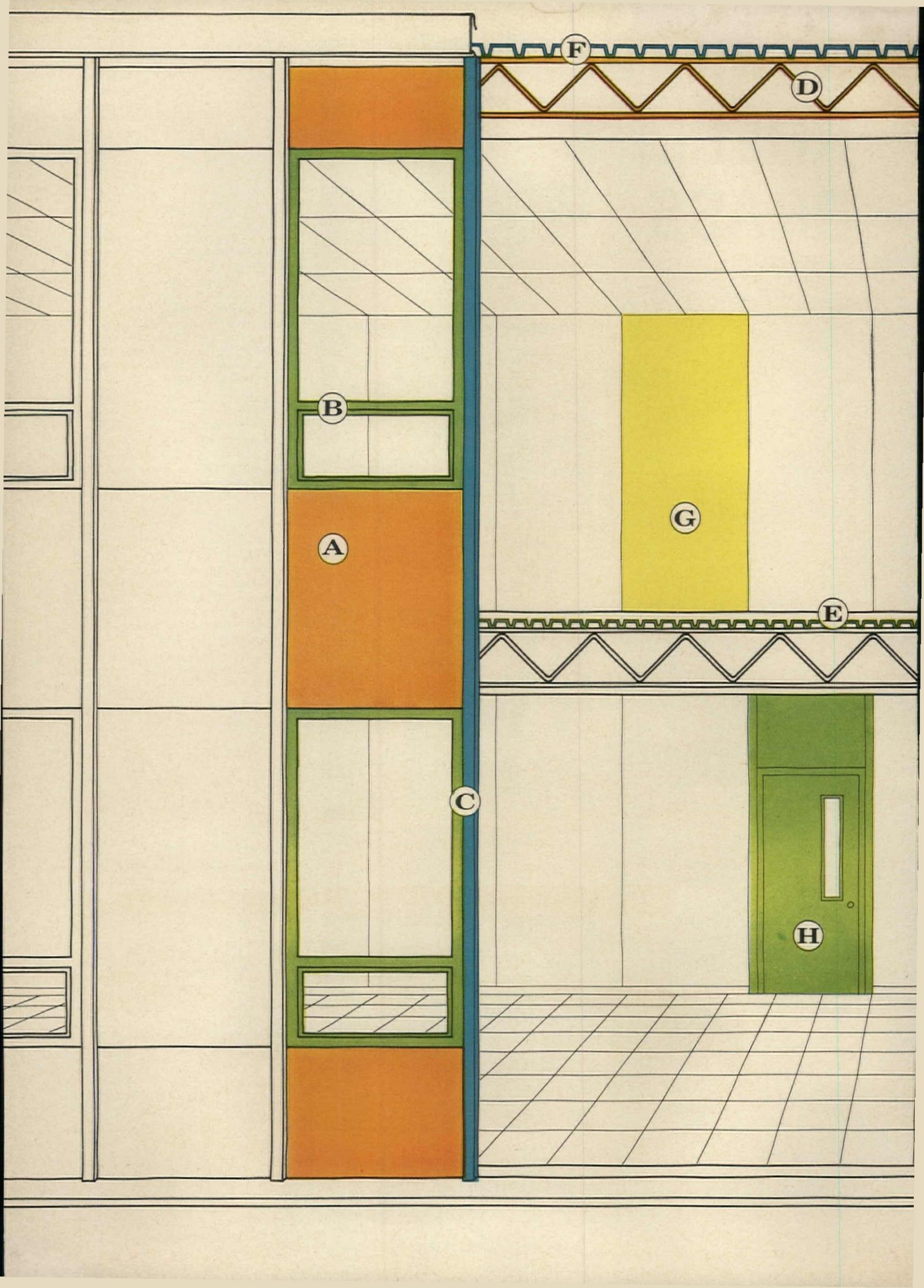
The Fashion Line of All Brass Fittings by Rheem

Lavatory and kitchen faucets, bath fillers, shower heads; lavatory, sink and tub drains.



**Look at this interchangeable valve feature. All Rheem valves turn one way—clockwise—no rights or lefts—so one unit takes care of all valves should replacement be necessary.*

For more data, circle 74 on Inquiry Card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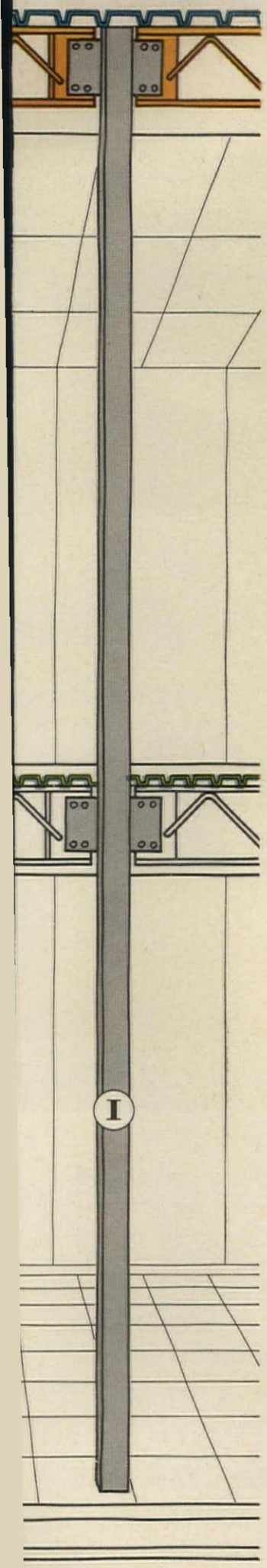


AmBridge Coordinated Building Components: beauty and the best

AmBridge Coordinated Building Components are precision-fabricated. The system is simple and fast to assemble—because every component fits perfectly. Biggest use so far for the AmBridge family of components is schools (where costs are often 13-18% less than average), but AmBridge Components have also been used successfully for power plant, bank, warehouse, laboratory, and office buildings. Architects find that AmBridge Components readily lend themselves to the most modern modular design practices.

USS AmBridge Curtainwall

(A) USS AmBridge Curtainwall systems are available with exterior faces in the 47 recommended PEI colors. Interior surfaces are fully finished with vinyl (at no extra cost to you) or baked enamel to match or harmonize with the partitions. The steel panels are normally designed to a 4-ft. module and run continuously outside the columns. Standard panels are available in 1-, 2-, and 3-story heights. Panel frame members are cold formed galvanized steel. Face sheets are mechanically attached to the structural frame. Heat transfer is controlled with thermal breaks which prevent a thru-metal condition. Because the glass fiber insulation is held away from the exterior face by stainless steel clips, the panel is free to breathe, thereby minimizing condensation. AmBridge walls are so thin compared to masonry construction that you gain about 5% usable floor space. Yet the walls provide a tested thermal "U" factor of .168 that assures comfortable temperatures at reasonable cost.

(B) Sash are high-quality 2" monumental projected or fixed-type, of stainless steel or aluminum. Vertical or horizontal sliding sash are optional.

(C) USS AmBridge Exterior Battens are extruded metal sections with provisions for mechanical attachment without drilling from interior. Battens are fitted with shop-applied neoprene gaskets that permit expansion or contraction while keeping joints weathertight. Custom-designed covers permit aesthetic variation in stainless steel, porcelain enamel finish, or special extruded shapes.

USS AmBridge Open Web Steel Joists

(D) USS AmBridge Open Web Steel Joists support floors and roof. Joist and framing details have been designed to adapt to any specific load requirements. Like all AmBridge Coordinated Structural Components, joists meet specifications of the SJI, AWS, AISC, and AISI latest adoptions.

(E) Leave-in-place light-gage steel floor forms provide support during cure for the poured concrete floor.

(F) Steel roof deck specifically engineered to the structural requirements permits all-weather installation, receives insulation for built-up roofing and supports roof loads.

USS AmBridge Partitions

(G) USS AmBridge Partitions, like our curtainwall interiors, are available in six pastel vinyl finishes that cost no more than our 28 baked enamel colors. Both finishes are applied under factory-controlled conditions. Mild detergents easily keep surfaces clean and new-looking. The panels incorporate a cold-rolled steel channel frame with face sheets attached to each side. Partitions are insulated with glass fiber, and although only 2¼" thick, they provide excellent acoustical values. Test results show an attenuation of 45 decibels or more from room to room. Partitions are easily movable (just unbolt) to permit alteration of room size with minimum disturbance and cost. Interior battens are flush with the partition and are removable for simplified wiring.

(H) USS AmBridge Steel doors with a corrosion-resistant polyurethane foam core are supplied as an integral part of exterior and interior panels. All doors are complete with pressed steel frames and hardware, baked enamel finish, and can be furnished with lights and/or louvers. Neoprene weatherstripping is furnished on all exterior doors to assure a storm-tight seal. Hardware of the finest quality approved by the architect—such as lock sets, closers, panic bars and kick plates in various finishes—can be installed under supervision of experienced AmBridge personnel.

(I) Square or rectangular tubular columns are offered for maximum economy of section.

If you want, American Bridge will provide experienced erection crews. We'd like to give you more information. For our free full-color booklet, write to American Bridge Division, United States Steel, Room 1831R, 525 William Penn Place, Pittsburgh 30, Pa.

USS and AmBridge are registered trademarks

USS American Bridge Division of United States Steel

Beauty, too. Best of all, USS AmBridge Coordinated Building Components blend handsomely with traditional materials, letting you stamp your own signature on every AmBridge Building you design. Three good examples:

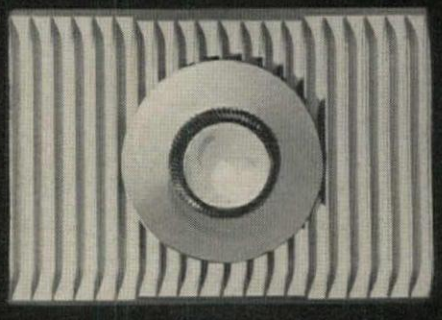
Broadway Elementary & Junior High School, Elmira, N.Y. Architect: Considine & Haskell, AIA, Elmira.

Mobay Chemical Company Office Building, Pittsburgh, Pa. Architect: J. Kenneth Myers, AIA, Pittsburgh.

Union Carbide Company Laboratory and Testing Building, Eastview, N.Y. Architect: Skidmore, Owings and Merrill, AIA, New York.

"Humph! who's given lighting the dimming range and economy that I have?"

"HUNT ELECTRONICS has!"



Actually, there was a lot to be said for the Kerosene Lamp. It was romantic; it was economical . . . two benefits electricity has never been able to fully exploit . . . until now. Hunt Dimming Controls use the old Kerosene Lamp concept to bring out a new dimension in mood and effect, plus all the economy possible from modern Lighting.

Hunt Dimmers provide the desired amount of light, from Dark to Full Bright in either Incandescent or Fluorescent models and are fully guaranteed.

In controlling mood and effect, Hunt Dimmers also control power and economy . . . and prolong lamp life. (Incandescent bulb life is increased over 1,000% when burned at 75% of maximum rated wattage.)

If you're interested in both lighting economy and flexibility, take a tip from us . . . the two-way switch is Out. Hunt Dimming Controls are In.

For complete information and specificational data on the Entire Hunt Line of Dimming Controls, contact your local Electrical Distributor or write the people who bring you the Brightest Ideas in Dimming.

HUNT ELECTRONICS COMPANY

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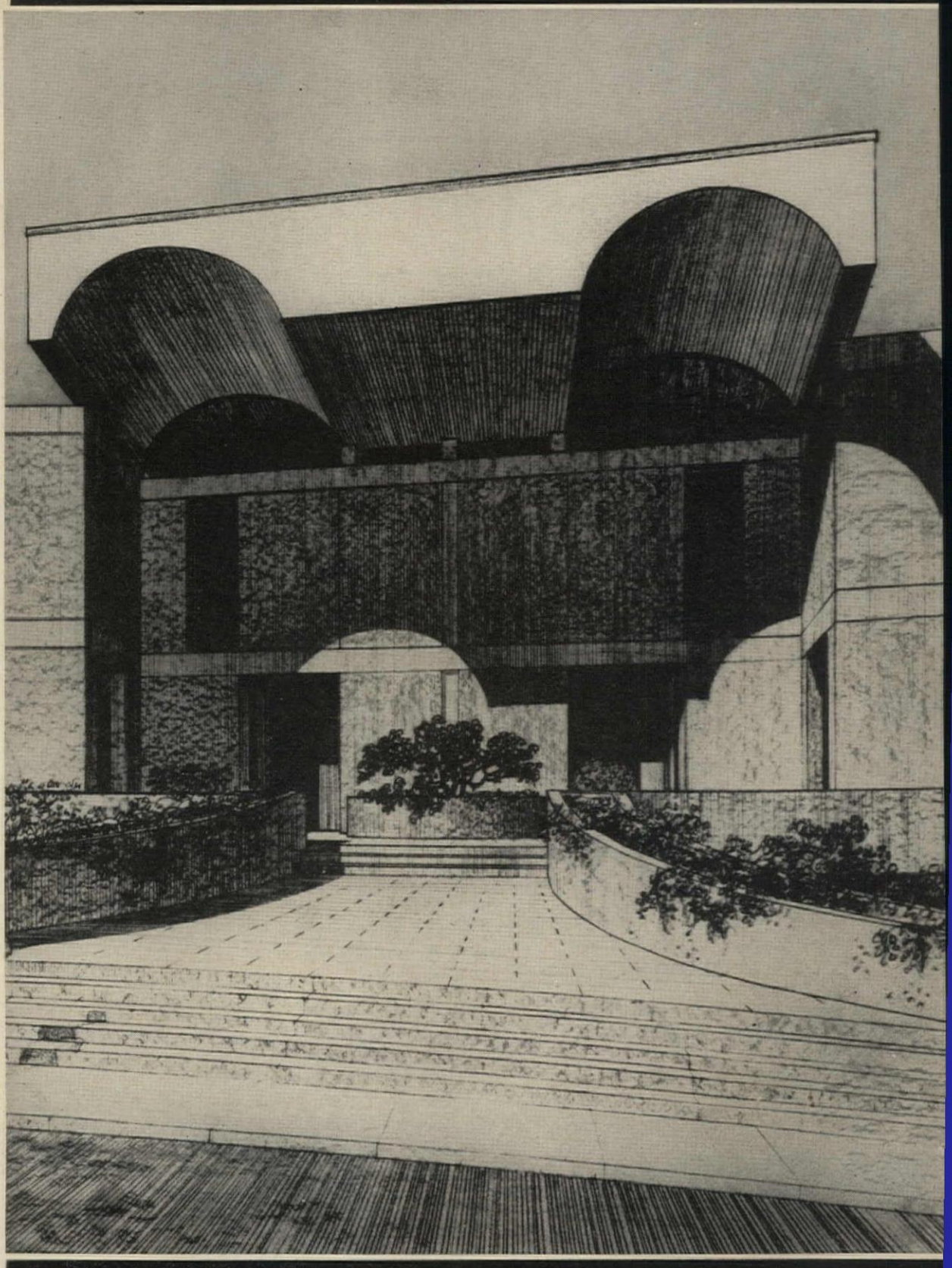
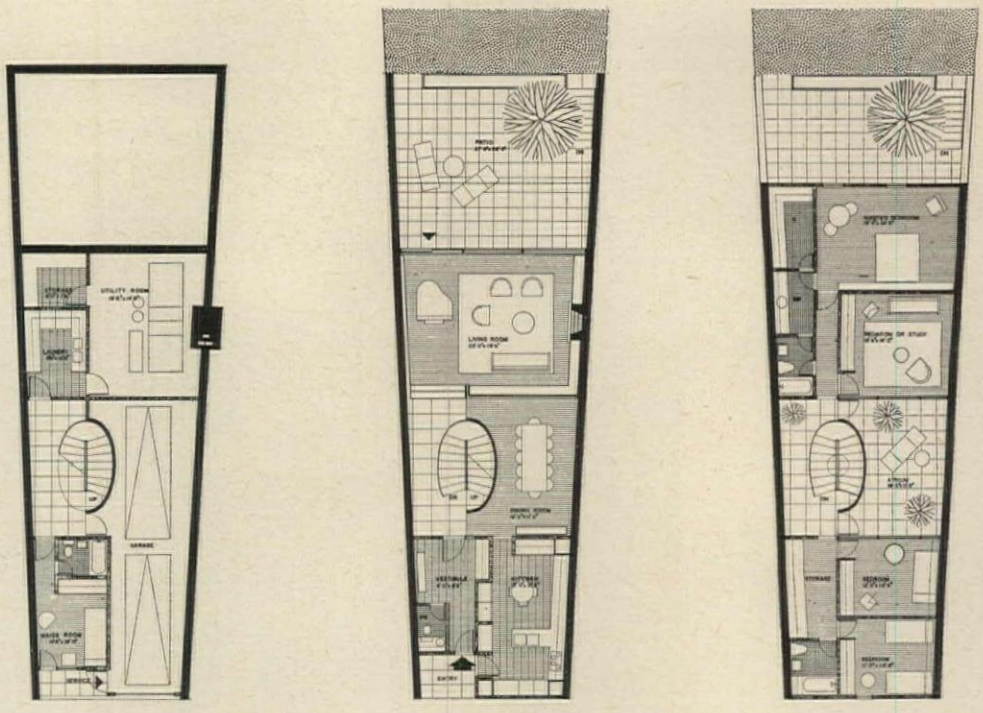


SEVEN NEW HOUSES BY ULRICH FRANZEN



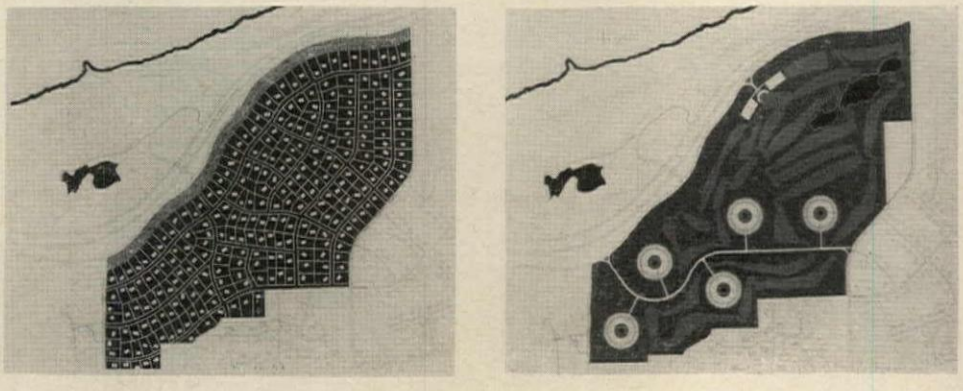
A TOWN HOUSE CLUSTER SCHEME FOR SUBURBIA

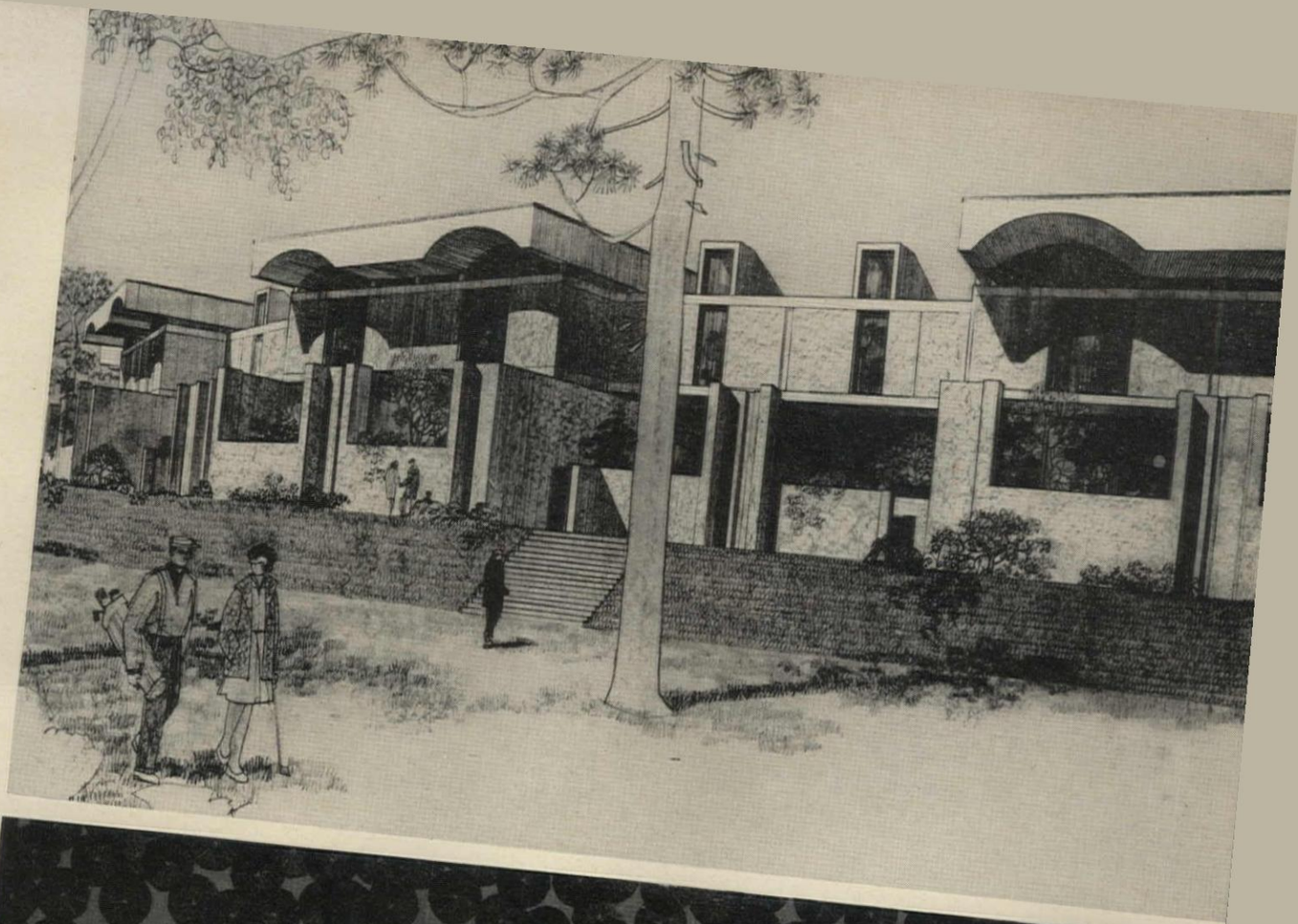
Cluster Housing for Tenafly, New Jersey

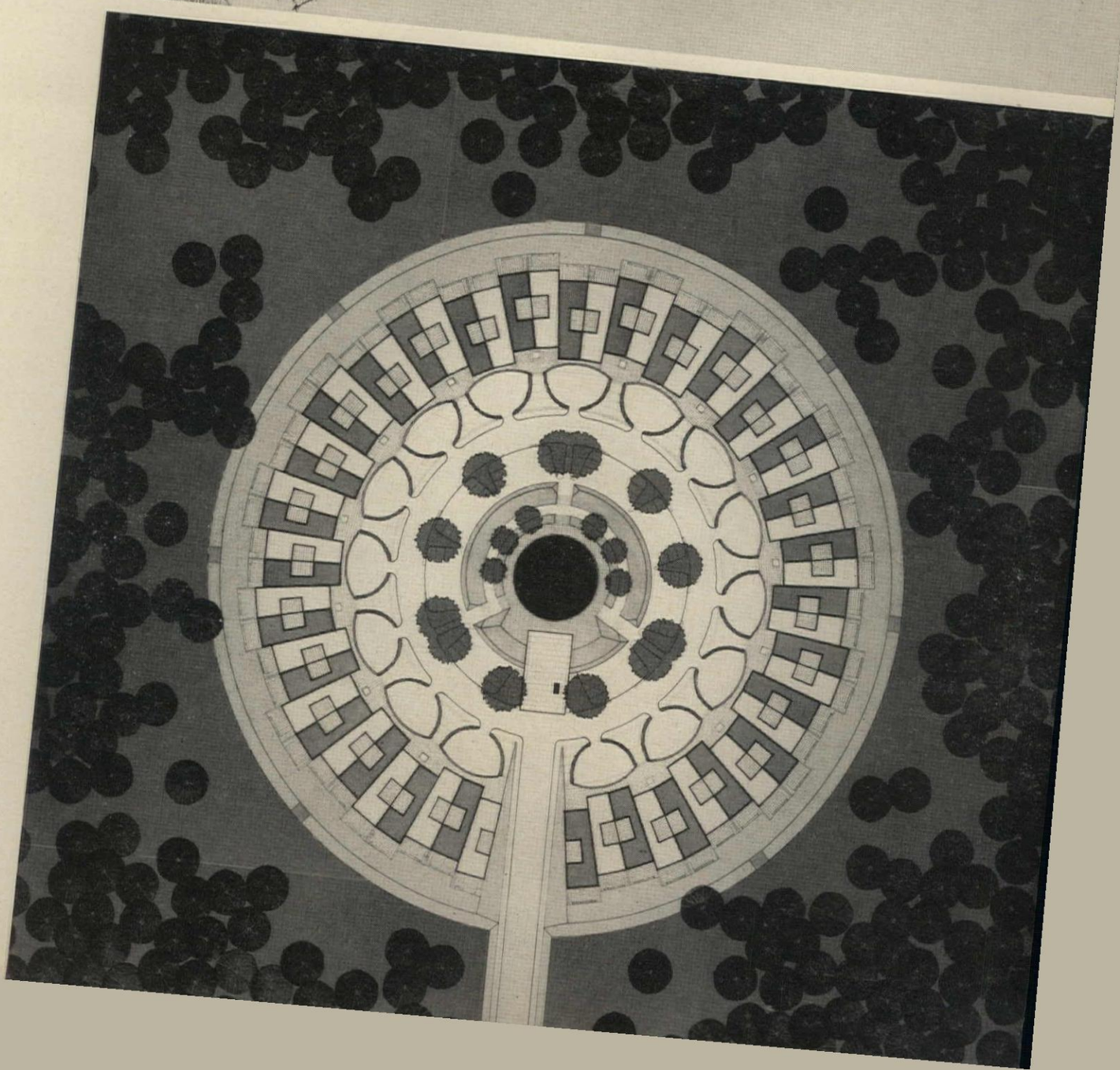
DEVELOPERS:
Blankman Development Corporation
J. L. White Investments, Inc.

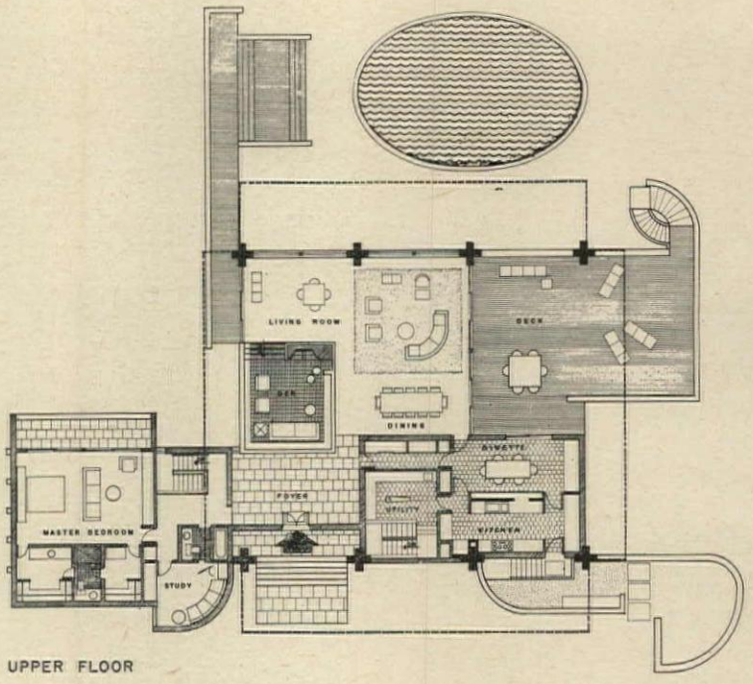
ARCHITECTS:
Ulrich Franzen & Associates

In strong contrast to conventional subdivisions (*below left*), this development saves the major part of its 276-acre tract for a recreational green belt by making five clusters of the 300 houses allowed by zoning. The clusters are 500-feet apart, with woods between, and linked to a single private road. Especially conceived to appeal to older people, each house will have 2,500 to 3,000 square feet, six to eight rooms, air-conditioning and cost about $60,000. They will be run on the condiminium principle, where each resident owns his home, but maintenance of house and grounds is done by a condiminium association for a monthly charge. The park area will be developed as a golf club to which owners may belong. The powerful architecture, synthesizing Franzen's new design directions, will have a concrete block frame, precast wall panels and laminated plywood box girders.









UPPER FLOOR

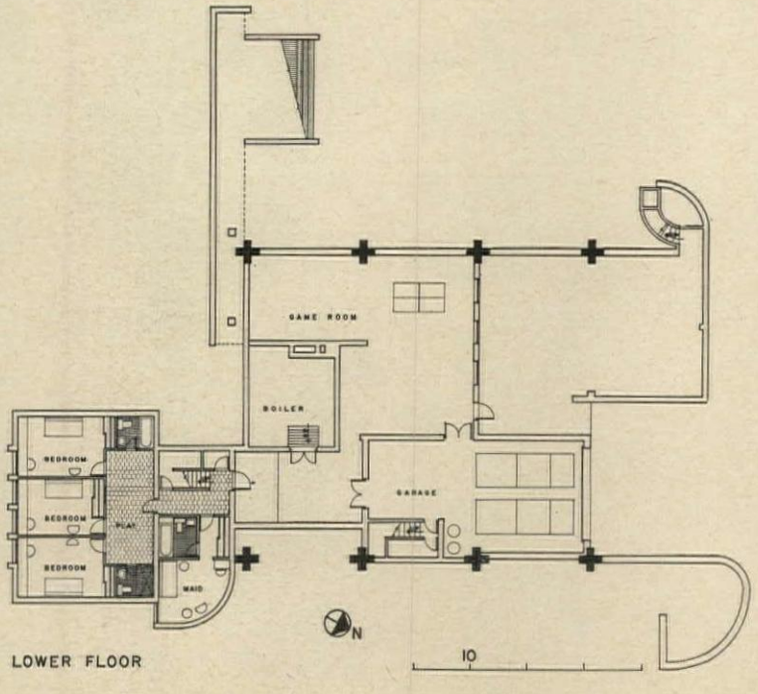
A PAVILION HOUSE ON A LONG ISLAND HARBOR

House in Hewlett Harbor, New York

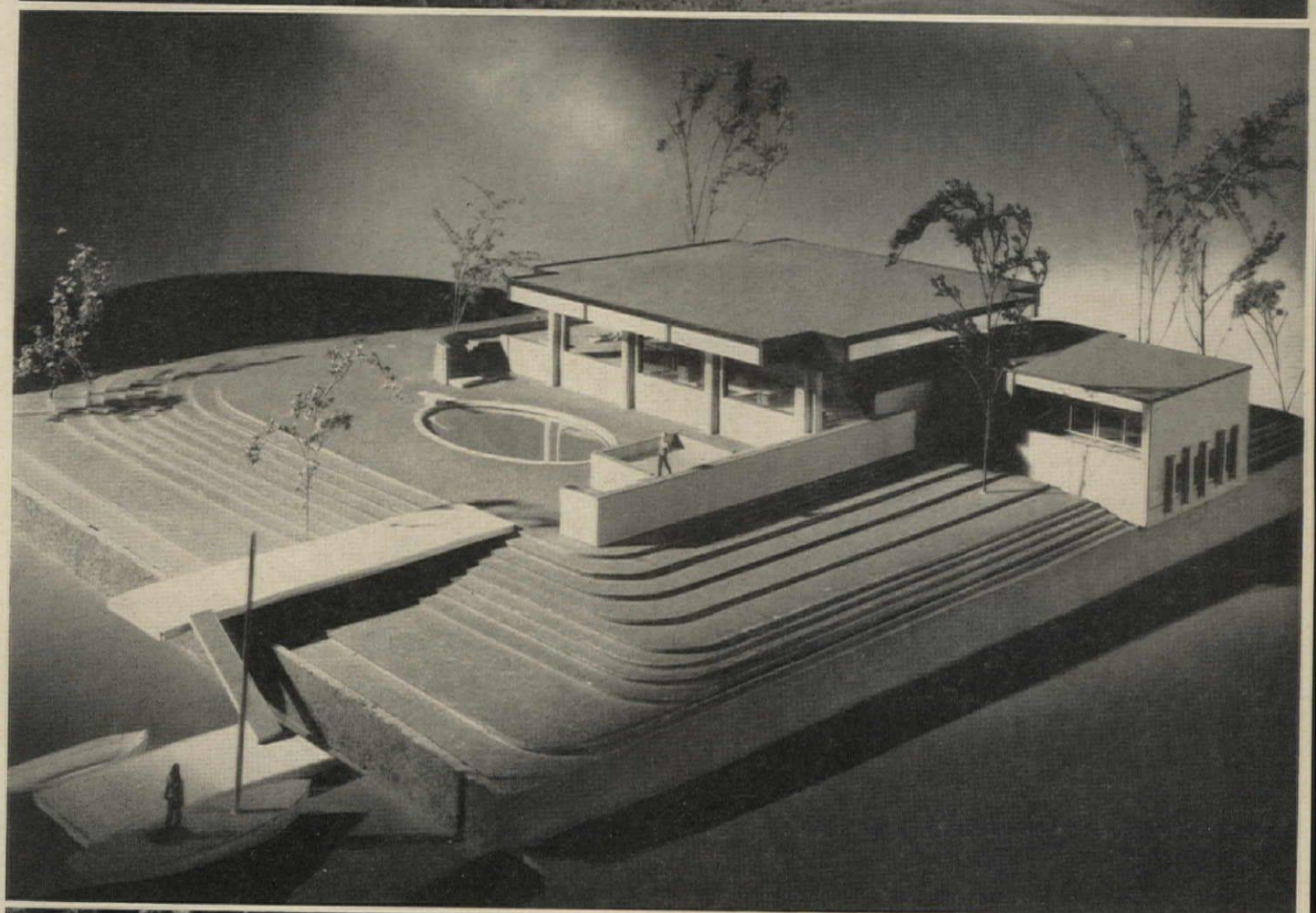
ARCHITECTS:
Ulrich Franzen & Associates

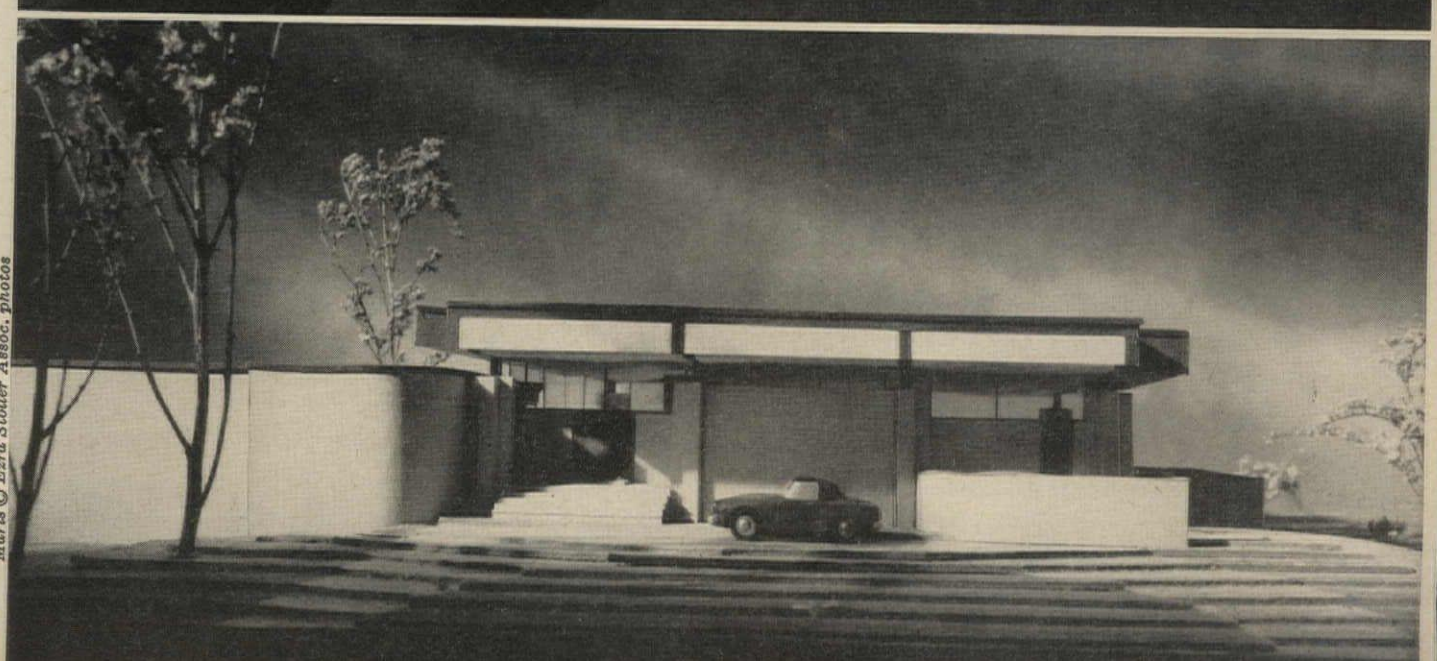
STRUCTURAL ENGINEER:
Vladimir Busch

The progressing change in Franzen's design approach is readily apparent in this house, when one recalls his earlier slender-columned, umbrella-roofed structures. Along with his concern with the nature of the site, the relationship and mass of the house are becoming more important: "A flat site, with little vegetation, seemed to demand a solution that animates the land, organizes it into a variety of spaces. The design raises the main living areas onto a podium which reaches out in the form of decks and bridges toward the water and becomes the landscape." The pavilion for the living areas is strong in its details, and more unified with the podium. The frame is concrete block and brick veneer, with a steel-framed roof hovering on spindles above the piers. Service and sleeping areas are in more solid, subordinated blocks for privacy and quiet.

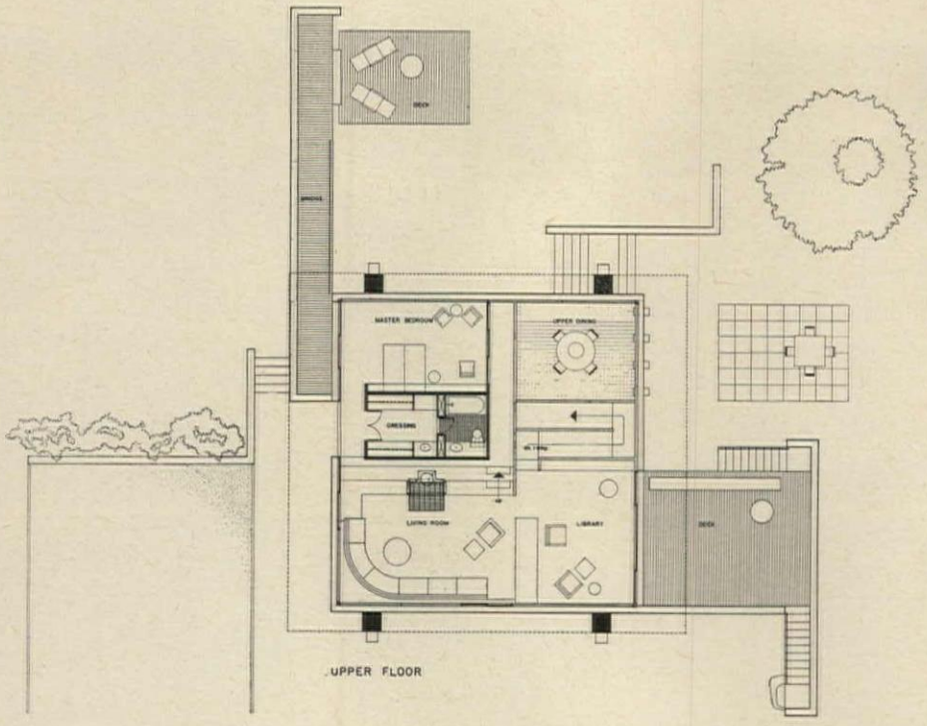


LOWER FLOOR





Maris © Ezra Stoller Assoc. photos



A MANY-LEVELED HOUSE FOR A HILLTOP

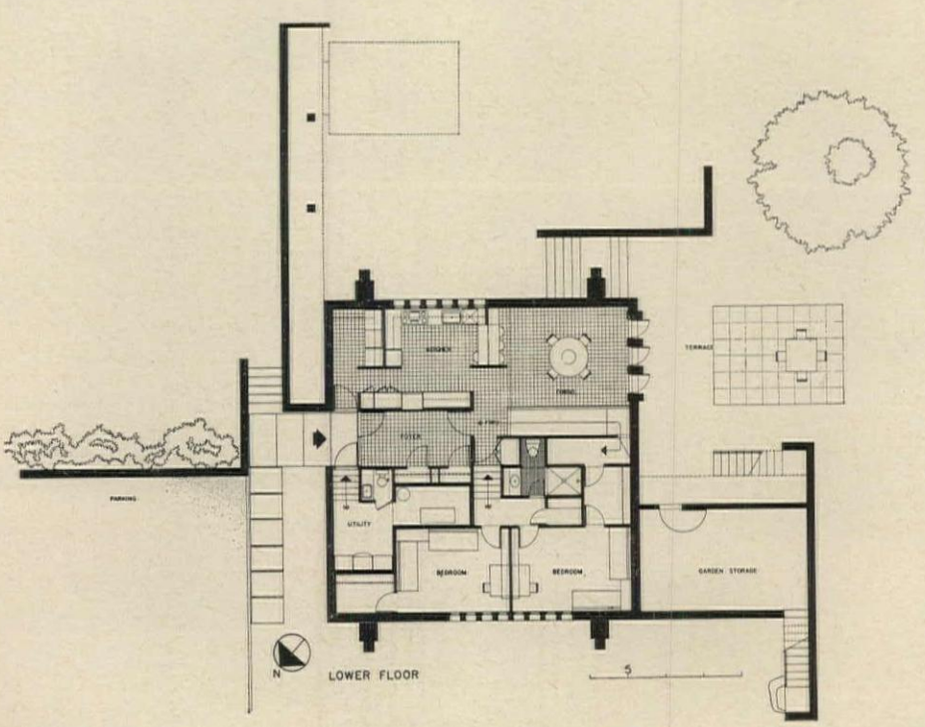
House in Westport, Connecticut

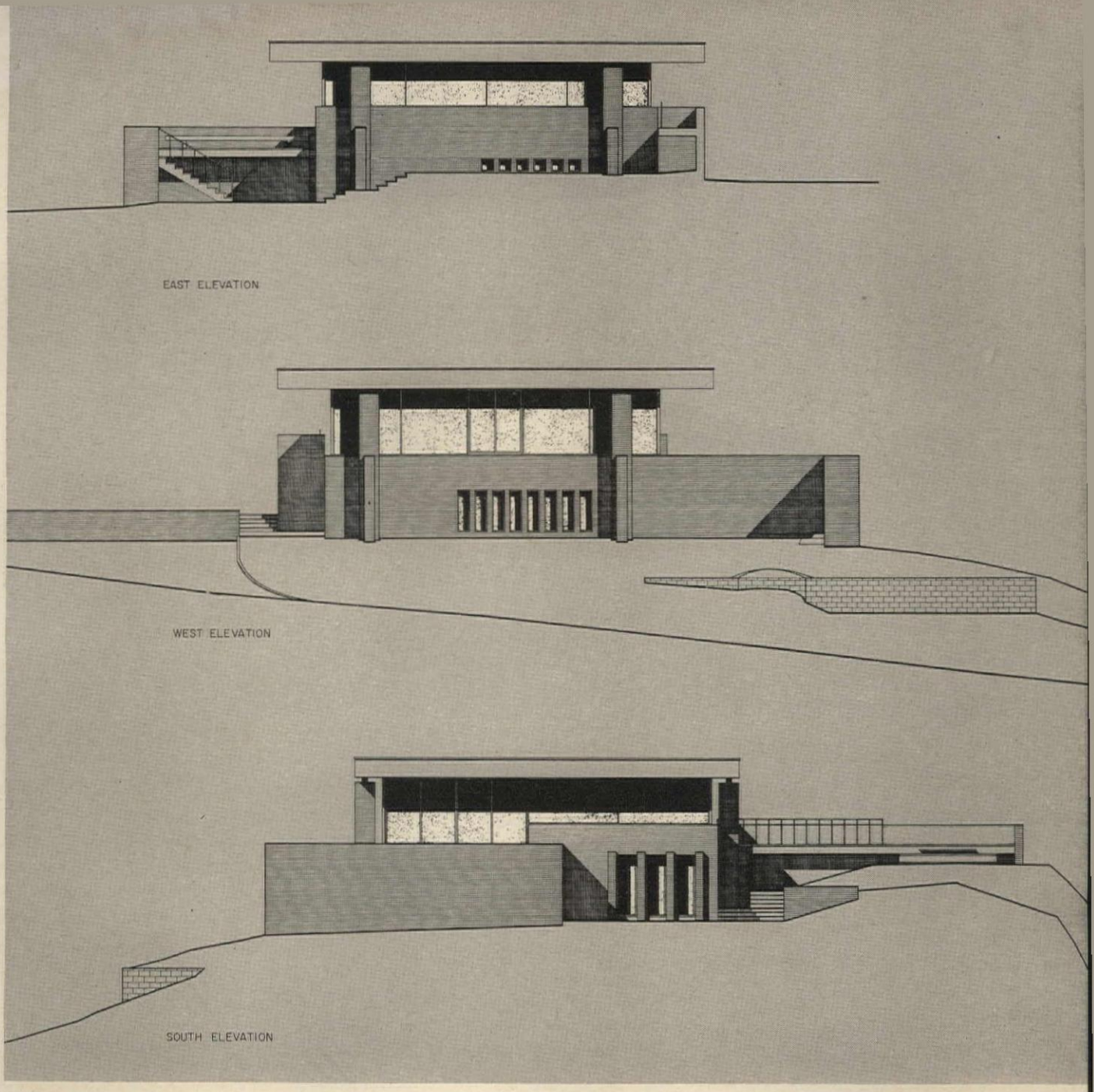
ARCHITECTS:
Ulrich Franzen & Associates

STRUCTURAL ENGINEER:
Vladimir Busch

CONTRACTOR:
Ernest R. Rau

In evolving an architectural solution, Franzen continuously thinks through a problem, concurrent with plan studies, via pen and ink sketches in a 9- by 12-inch sketch book. Three such early ideas for this house are shown (*bottom right*); the final scheme (*top right*) has more closely integrated, brick-veneered, concrete block podium and piers nestled into the terrain. "A small rocky site on a high prominence which has views of a river and Long Island Sound through a 180 degree arc. The approach and entrance to the house is from a lower level. The view is not apparent until one begins climbing up the ramp to the living and bedroom levels. The lower levels are part of the land and intended to give a sense of shelter. The upper levels are coincident with the rocky prominence and form a single space entirely surrounded by deeply-shaded glass."

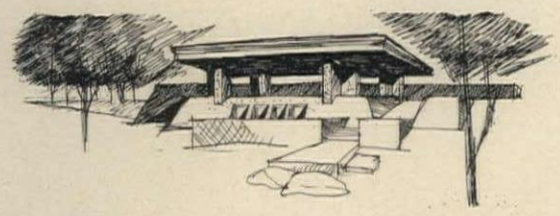


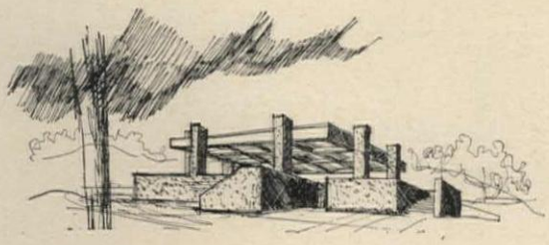


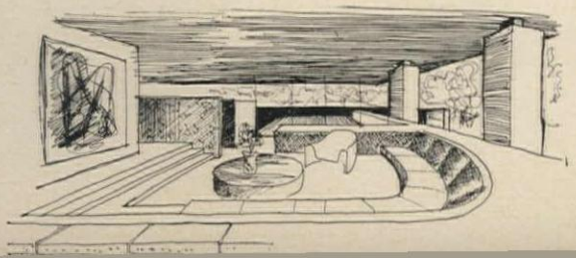
EAST ELEVATION

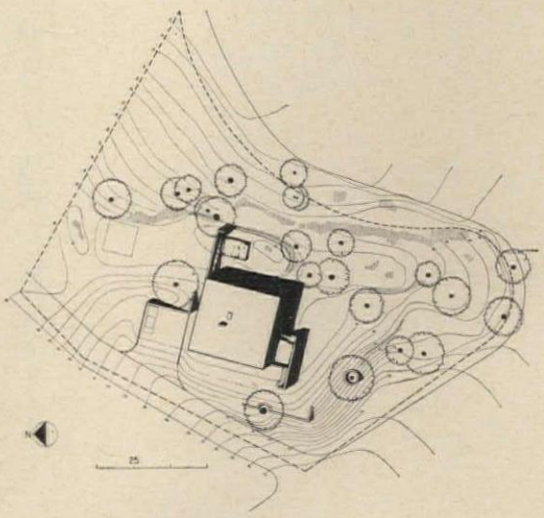
WEST ELEVATION

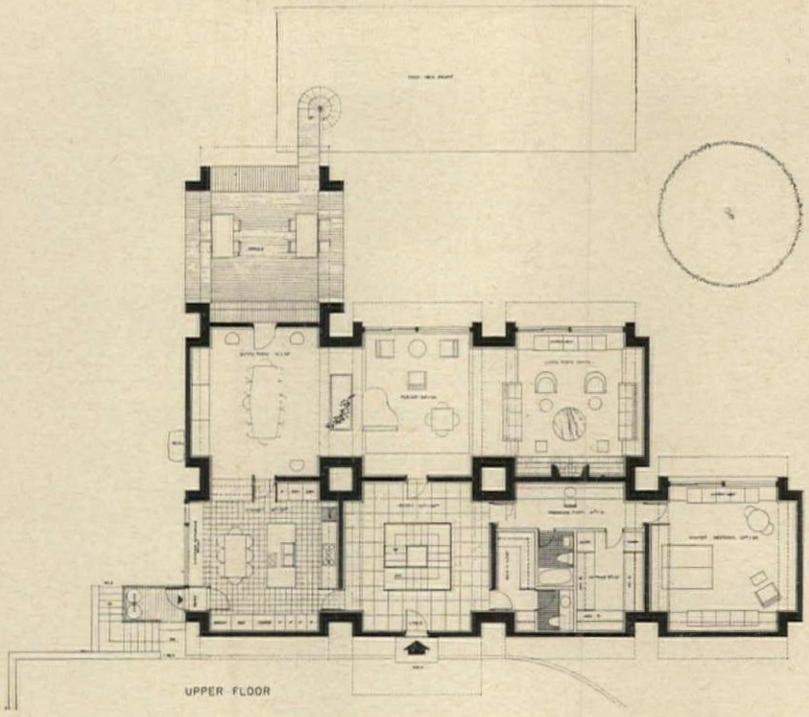
SOUTH ELEVATION











SUBURBAN HOUSE FOR A SMALL SLOPING LOT

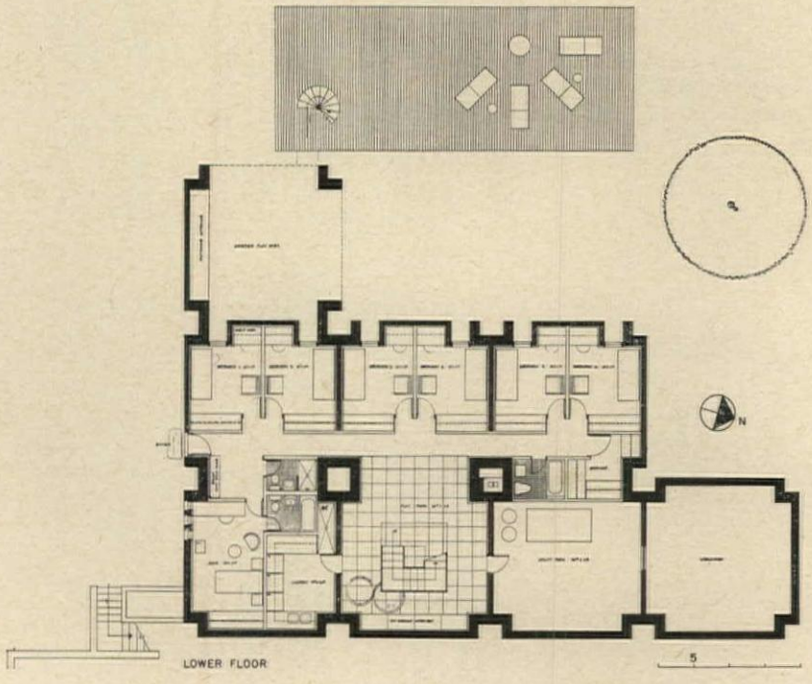
House in Greatneck
Long Island, New York

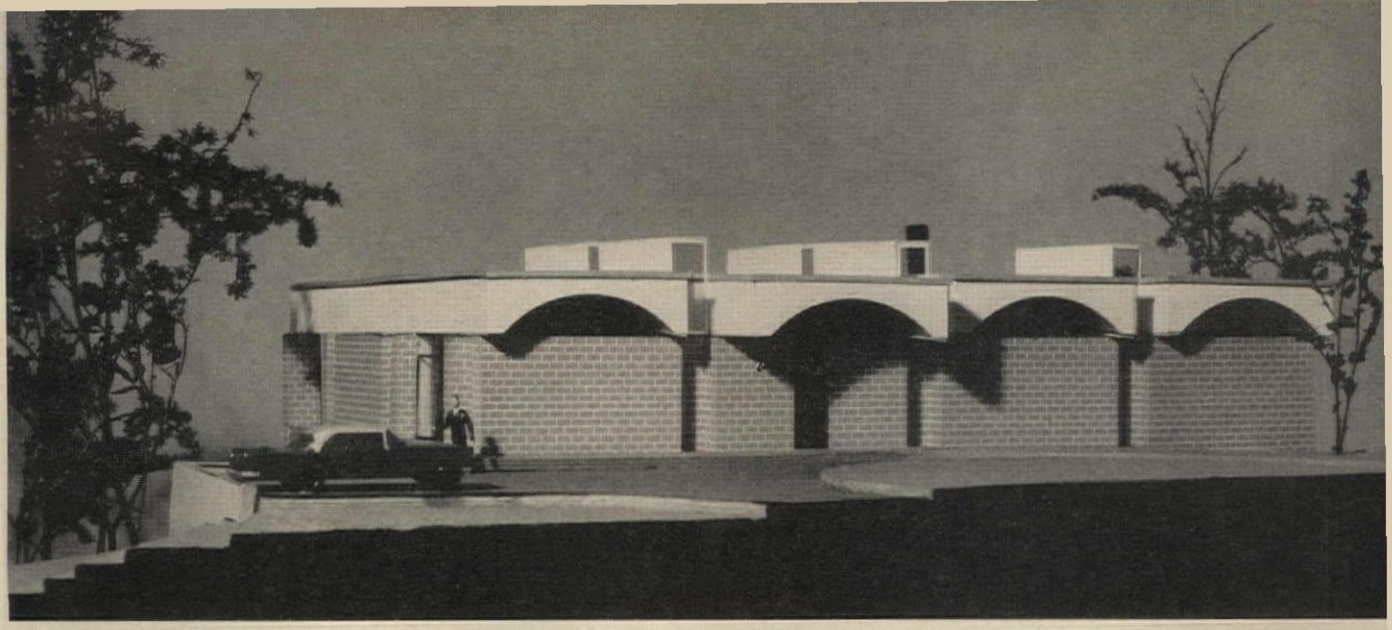
ARCHITECTS:
Ulrich Franzen & Associates

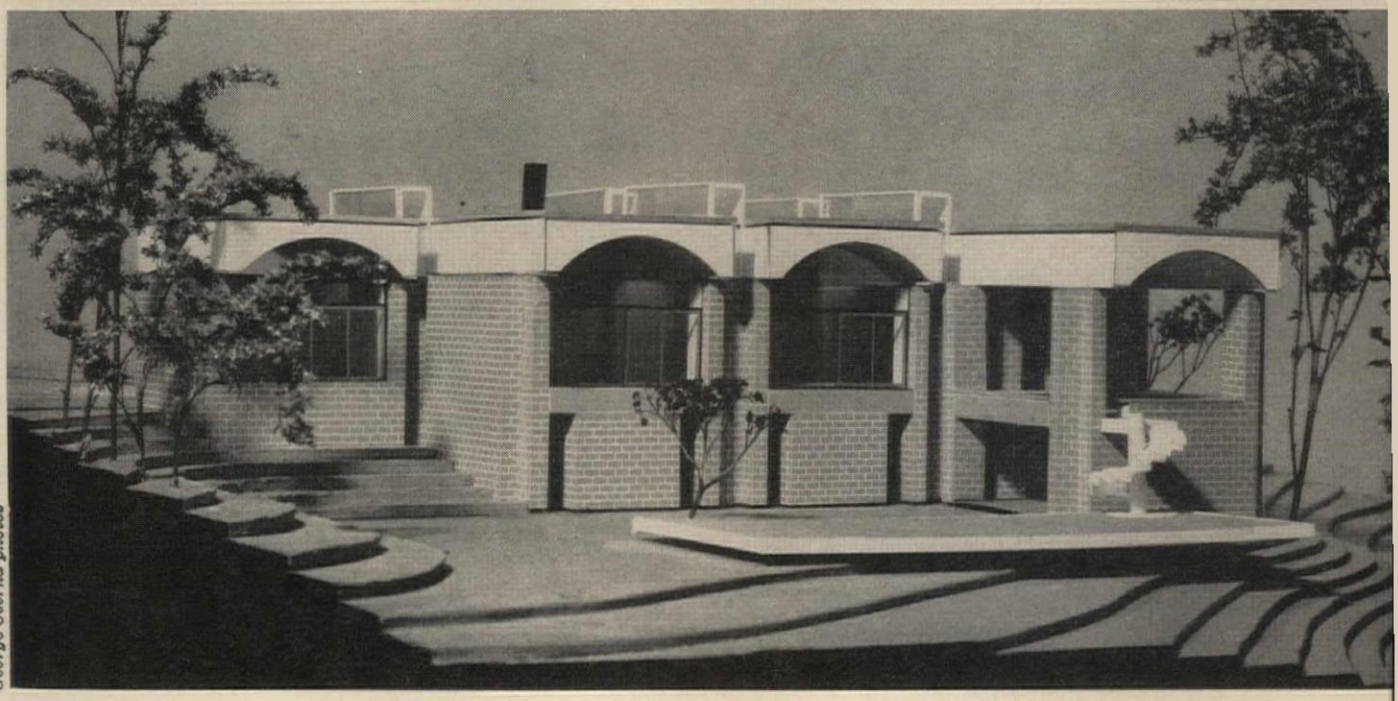
ENGINEER:
Vladimir Busch

CONTRACTOR:
Burton J. Saks Construction Corp.

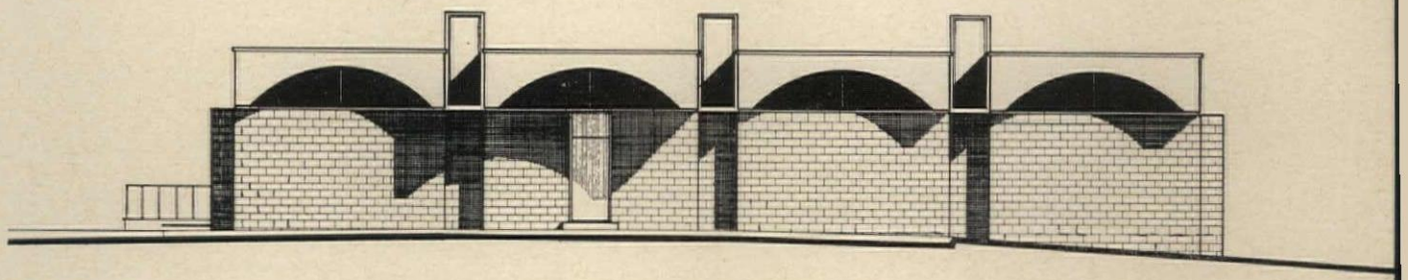
A more unit-like plan, with a bay for each major space, has been clearly expressed on the exterior of this house by insets on the facades, and variations in the "skyline" of the roof. The result is a very cohesive, but rhythmic design with vaulted wood ceilings on concrete block bearing walls. Franzen states that although the site was "located in a fully developed area, with the architectural character being a sort of Golf-Course-Colonial, we decided to affirm a more basic approach. The house is for a large family and located on the crest of a hill. The small lot overlooks New York City. It is conceived as a wall through which you enter and find the vistas revealed upon stepping into the living quarters." The three living areas—living, dining and music—merge into a single big articulated space for family activities. Children's areas are on the lower level.



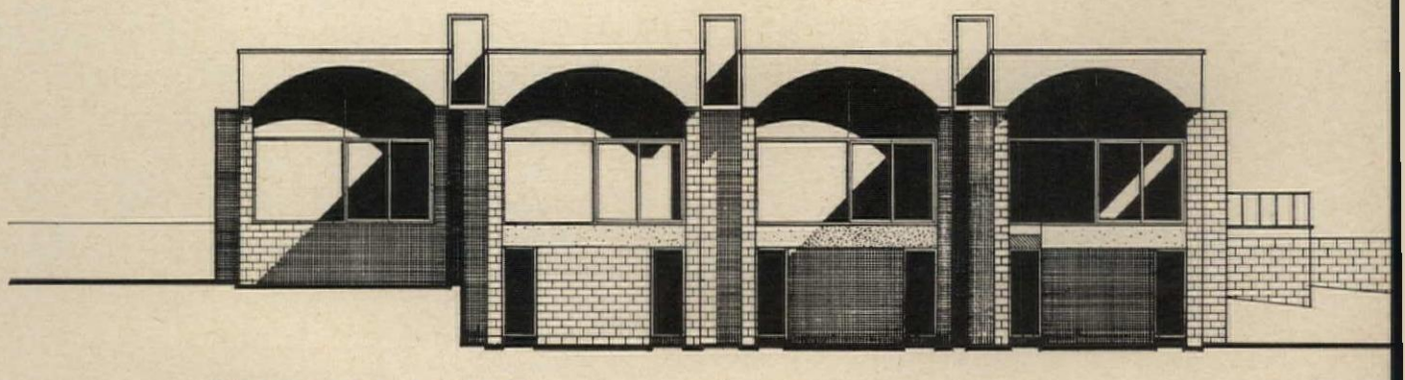




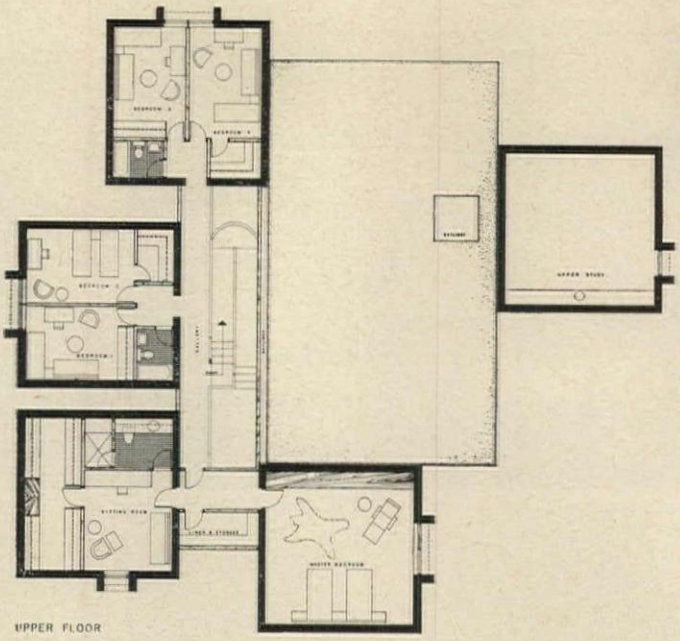
George Cserna photos



EAST ELEVATION



WEST ELEVATION



A HIGHLY ARTICULATED PLAN ADDS PRIVACY

House in New Canaan, Connecticut

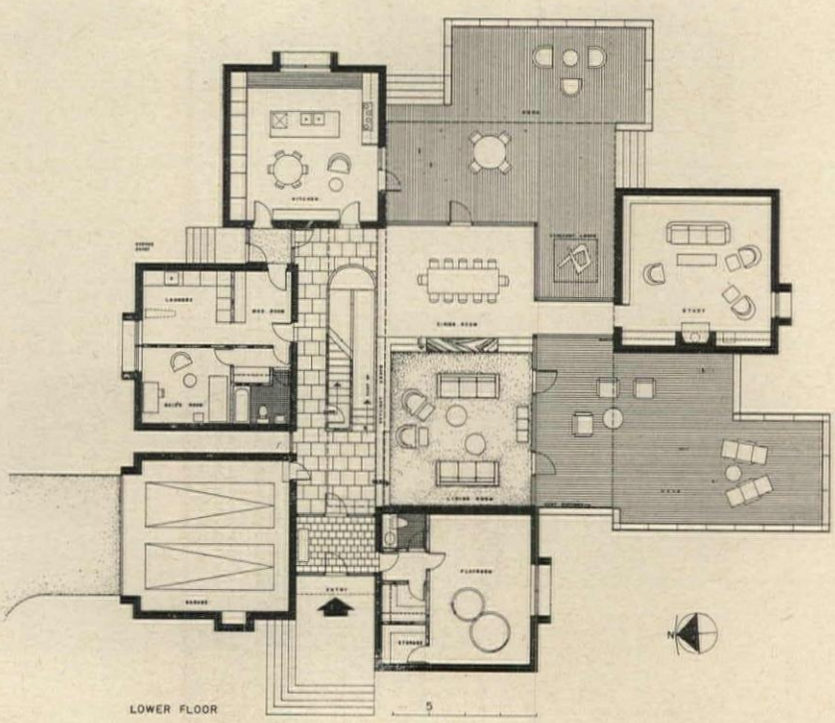
ARCHITECTS:
Ulrich Franzen & Associates

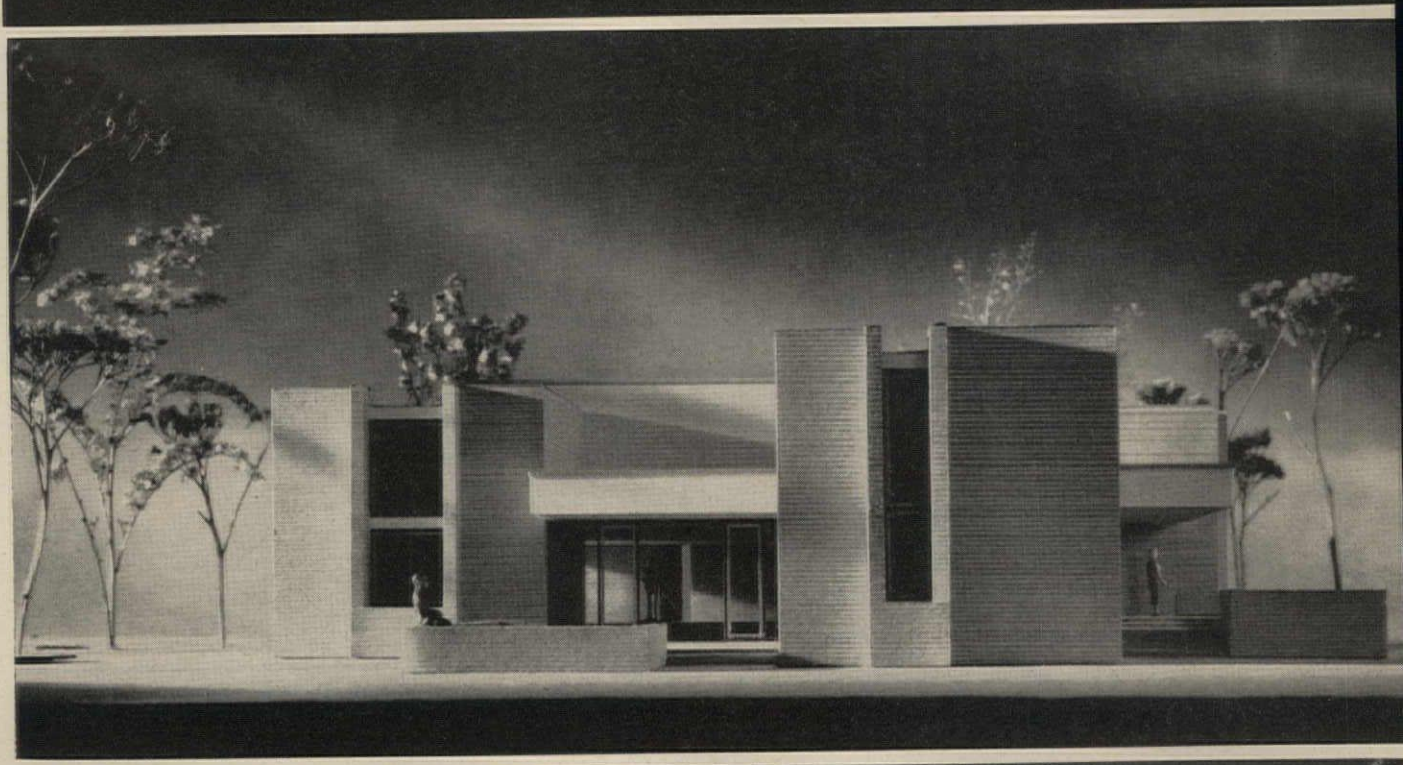
STRUCTURAL ENGINEER:
Vladimir Busch

MECHANICAL ENGINEER:
John Altieri

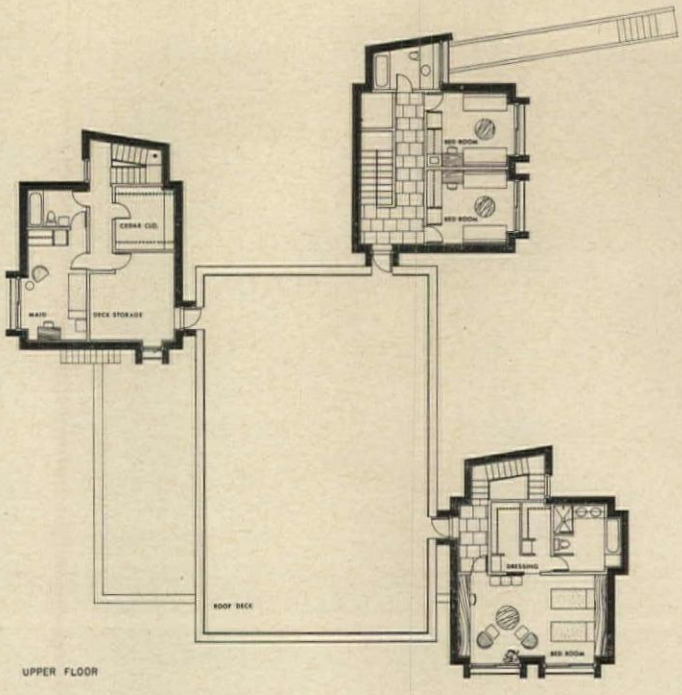
CONTRACTOR:
Emil Toikka

The various functional areas of this house have been treated as distinct, but closely related structures. Franzen comments that: "The site is ancient farm land, level and without compelling features. The solution for a large family has become a highly articulated compound, much as an old farmstead with a main house and separate structures. The towers contain the many small spaces required, and are bound together by the multi-leveled living, dining and outdoor spaces. These major spaces are defined vertically by the masonry shafts and contained under a single tremendous roof." Thus, the pavilion idea for the living spaces is preserved, but much submerged in the over-all interplay of the masses. The structure is of wood balloon frame on concrete block foundations. Exterior walls are brick veneer, and interior ones are brick plasterboard.





Maris © Ezra Stoller Assoc. photos



A HOUSE OF TOWERS ON AN ISLAND

House in Mamaroneck, New York

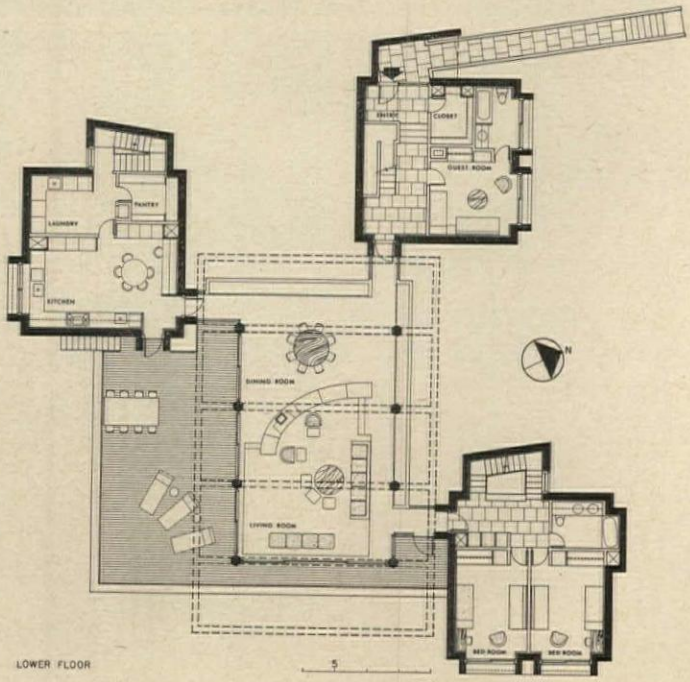
ARCHITECTS:
Ulrich Franzen & Associates

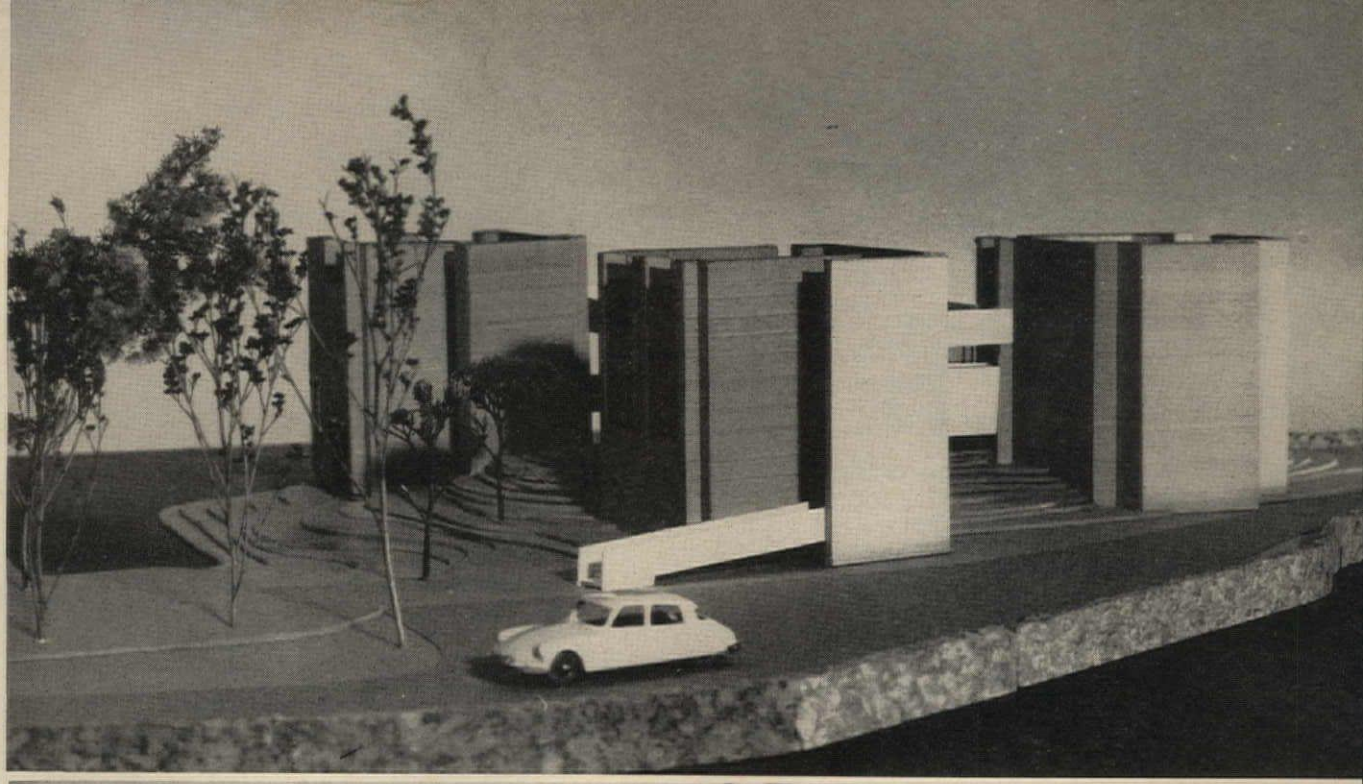
STRUCTURAL ENGINEERS:
Atlas & Rosenberg

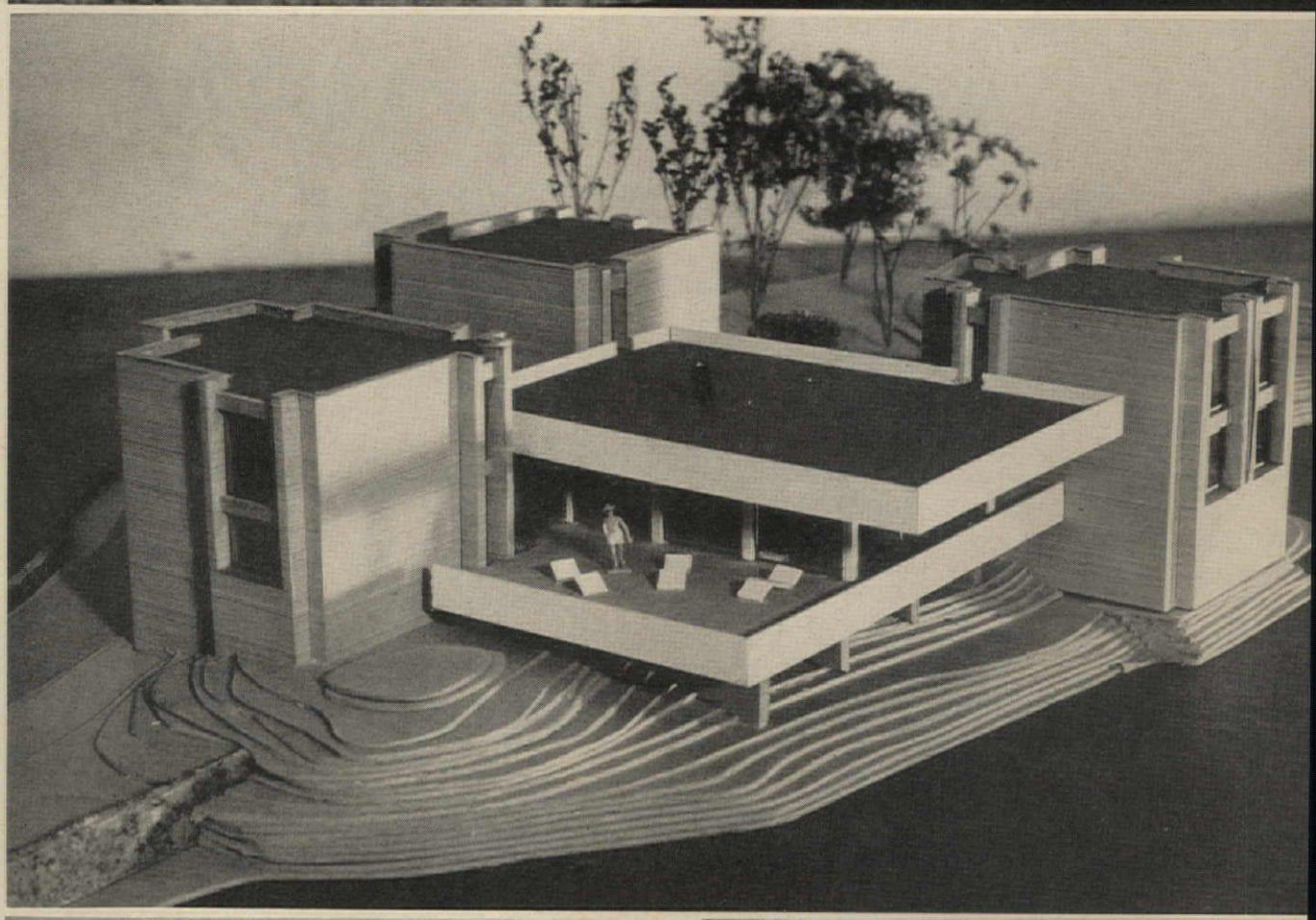
MECHANICAL ENGINEER:
John Altieri

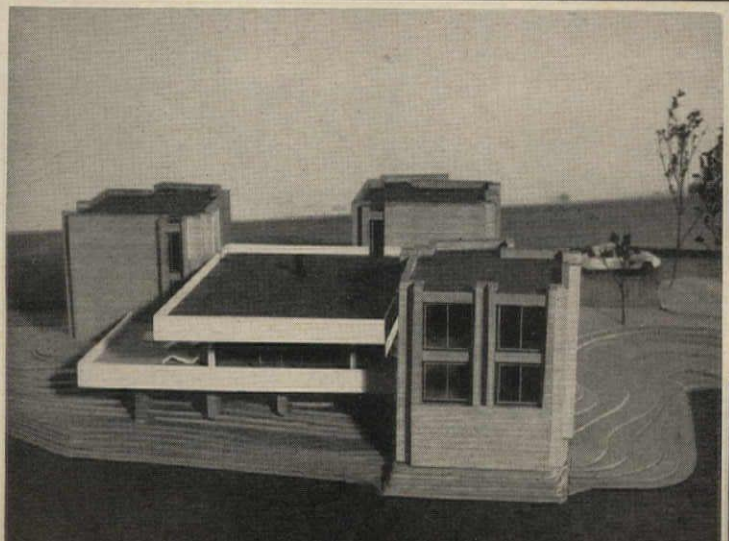
CONTRACTOR:
E. W. Howell Company

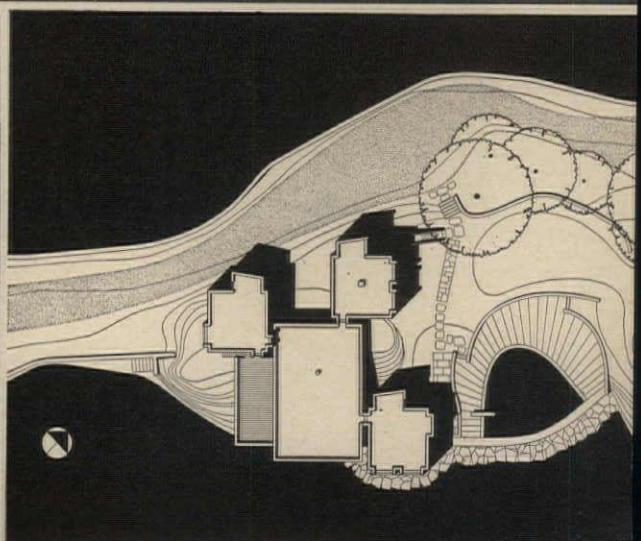
The design of this house is dominated by three massive towers disposed around a large indoor-outdoor living pavilion: "The site is a rocky ridge lying offshore in the Long Island Sound. When hurricane tides occur, the island is almost completely submerged. The concrete towers are thus anchors to which the main living area is tied, raised well above the highest flood tide. The exposed nature of the site demanded a very solid, if not rugged, looking design. On the other hand, the living pavilion embraces the sea and view toward the east and south, while being sheltered by the towers against inclement weather." The structure has a concrete foundation and frame to the first floor; concrete block from there to the roof. The exterior surface is brick veneer. Each tower has its own entrance, stairs, and access to the big sundeck on the roof of the pavilion.

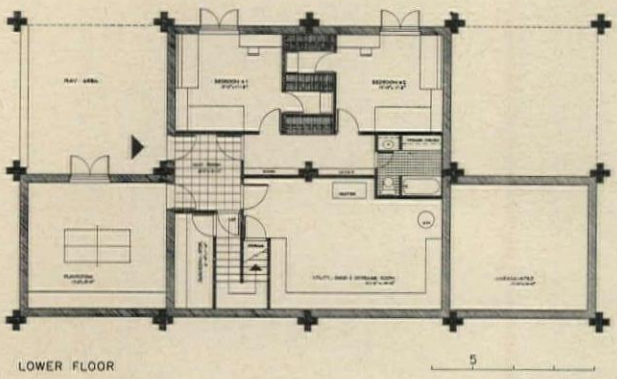


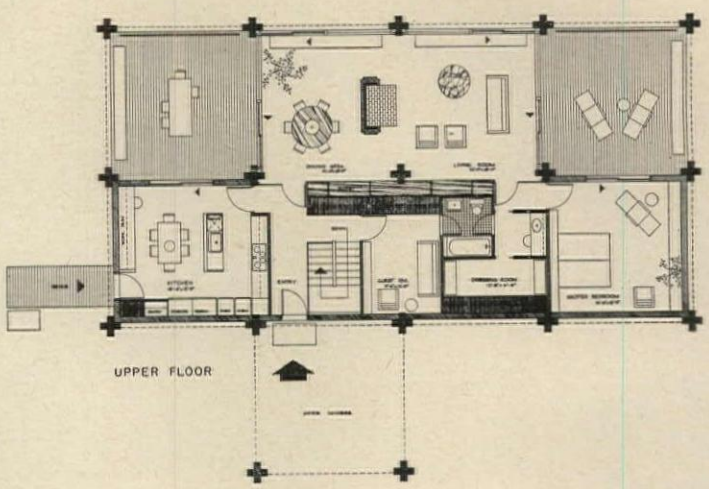












A HOUSE FOR A WOODED, COUNTRY SITE

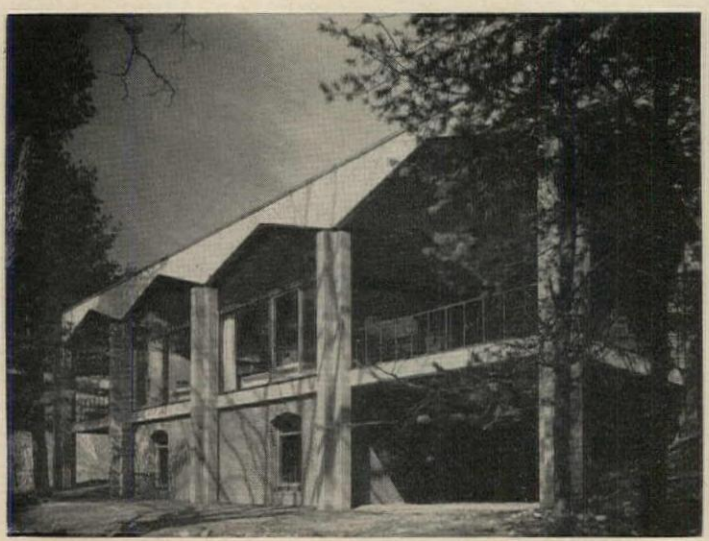
The Elliot House
Bedford, New York

ARCHITECTS:
Ulrich Franzen & Associates

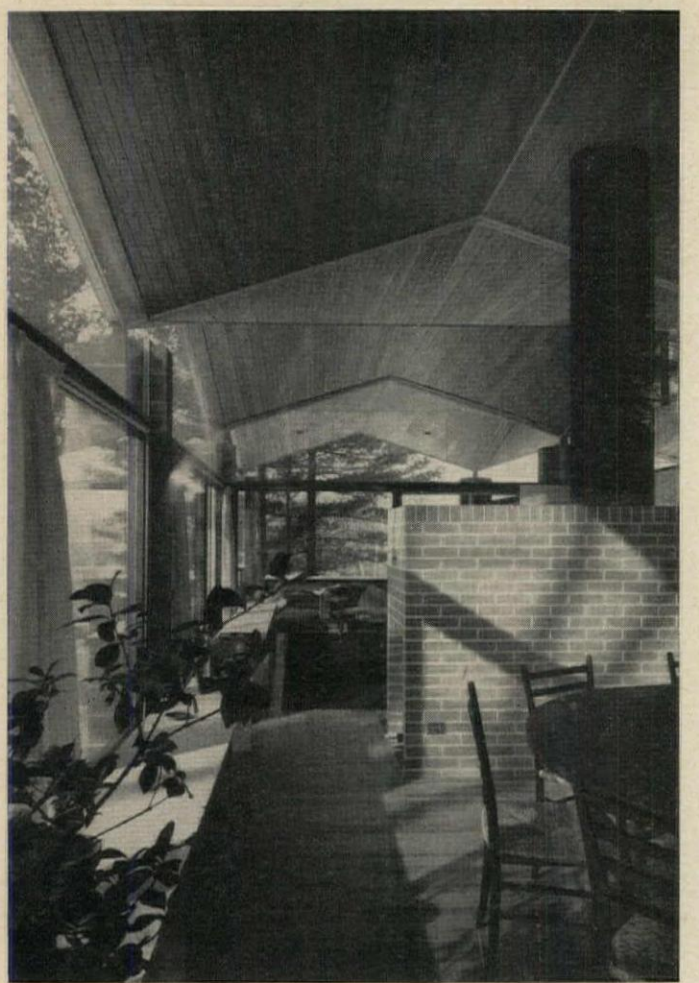
STRUCTURAL ENGINEER:
Vladimir Busch

CONTRACTOR:
Andrew Zuccare

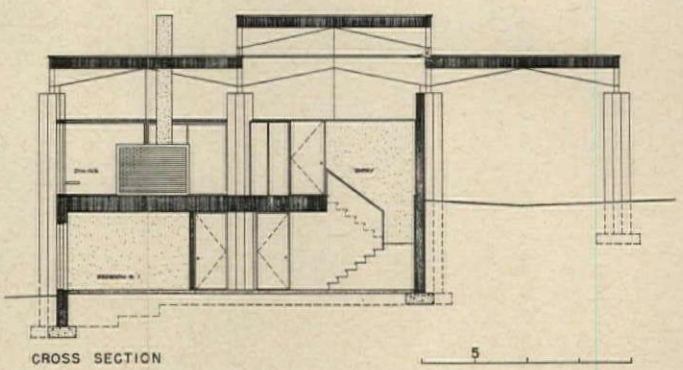
An interesting variation on his earlier glass-walled houses with umbrella ceilings, the Elliot house shows Franzen's trend to more massiveness in finished form: "Somewhat similar to the design for the Great Neck House, but different in scale because of the intimacy and idyllic nature of its site. The house nestles in a clump of evergreens through which a lovely pond can be seen below. It is zoned so that parents can enjoy the raised main living areas, and the children can have ready access to the land and lake." The structure has a wood-framed roof resting on concrete block piers. The screen walls on the exterior are brick; the interior ones are surfaced with plasterboard. The form of the house has a great deal of unity, with its rectangular plan, but there is a clear exterior definition of the interior spaces by the piers and the cornice "peaks."

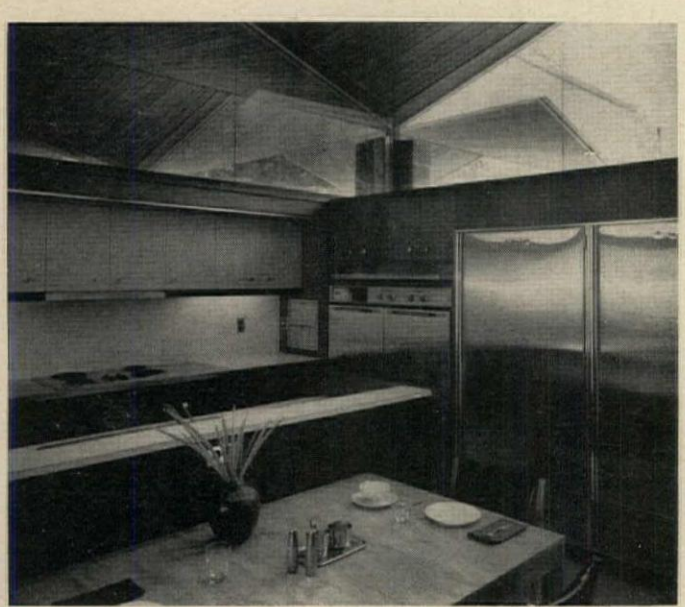


Ben Schnall photos



The upper level of the Elliot house is mainly glass walled to dramatize both view and the undulating roof. Where partitions and walls occur, the upper portions are glass to preserve the effect. In contrast to this, the lower children's level is more closed in; at the front it is set into the slope of the site. Natural finished wood and brick are used for most interior surfaces, with tidy cabinetry and built-in equipment, as can be noted in the photo of the kitchen (*below*). An early section drawing of the house is shown (*right*). In the final design, the clerestory projection of the roof was omitted



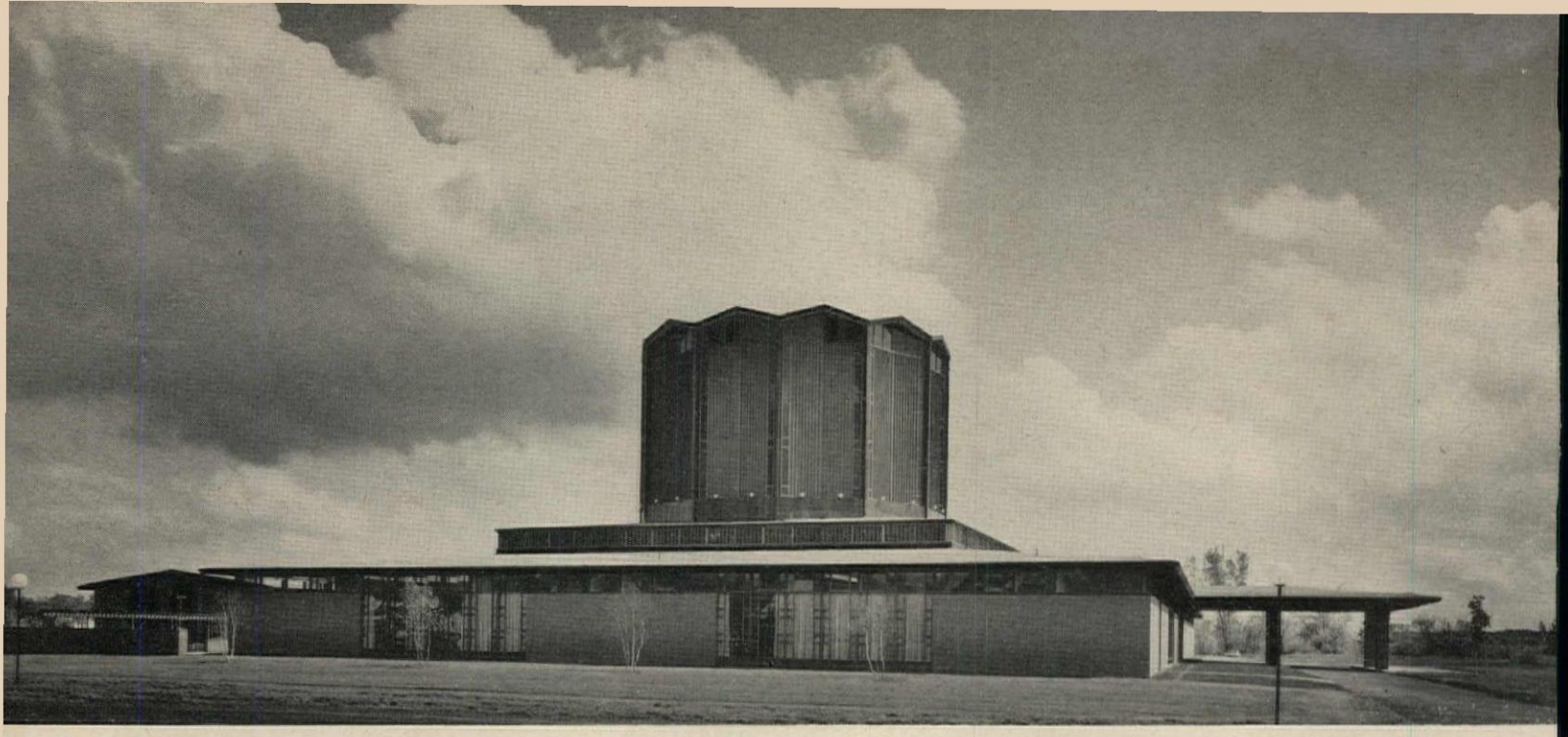


Joseph W. Molitor photos

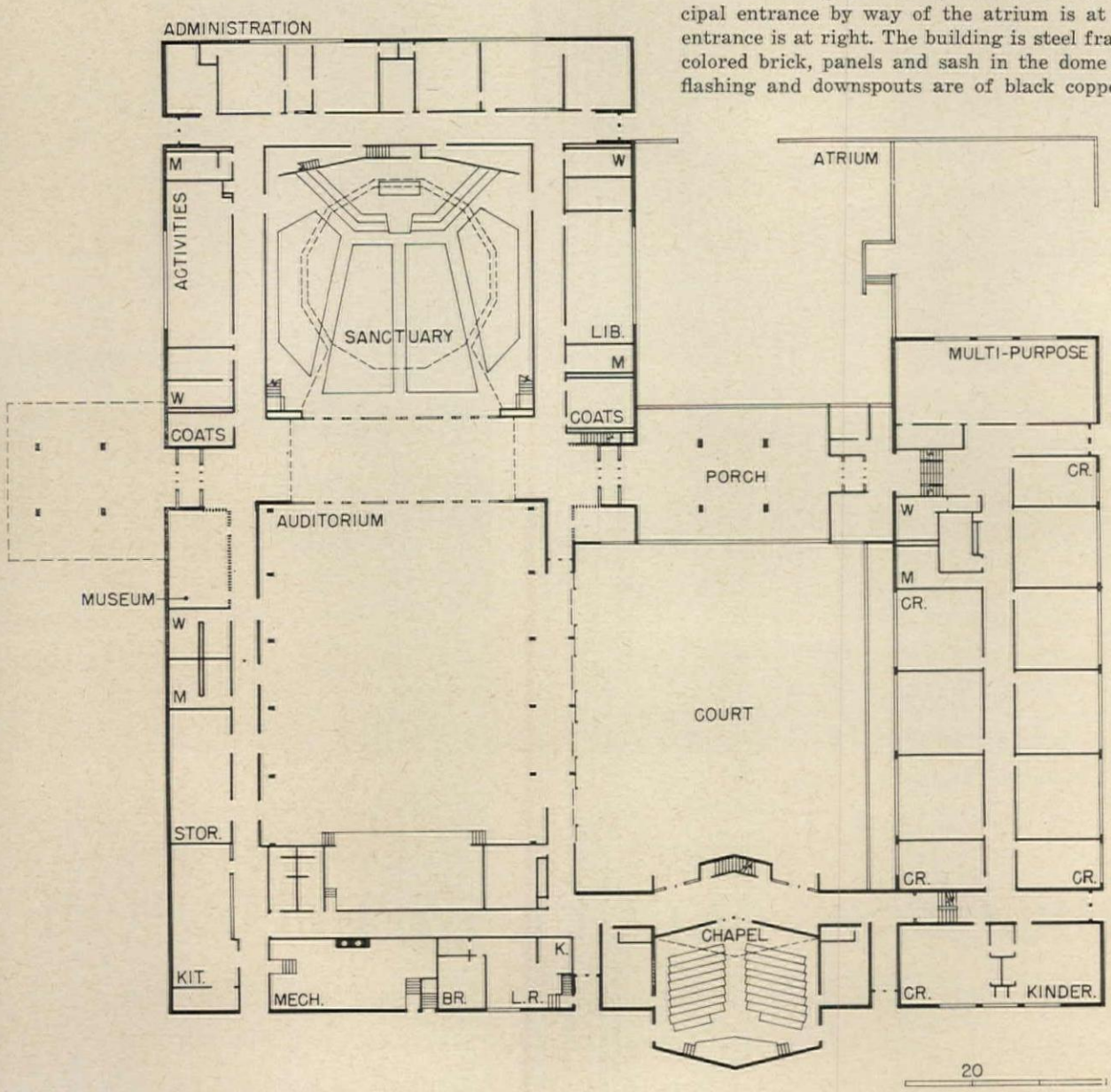
Dome and auditorium as seen from court

A MAJOR SYNAGOGUE BY BELLUSCHI

The Temple B'rith Kodesh in Rochester, New York shelters complex activities in a smoothly working plan, while it effectively proclaims its religious purpose



Above: Temple from north. The synagogue stands on 15 acres of land, and its dome is a dominant feature of the local skyline. According to Herbert Bronstein, one of two rabbis at B'rith Kodesh: "Among the few specifications in the Talmud literature is the requirement that the temple must be high. It must be elevated above the surrounding structures, even built on a hill if possible." Principal entrance by way of the atrium is at far left. Automobile entrance is at right. The building is steel frame, walls are of rose colored brick, panels and sash in the dome are of redwood, and flashing and downspouts are of black copper



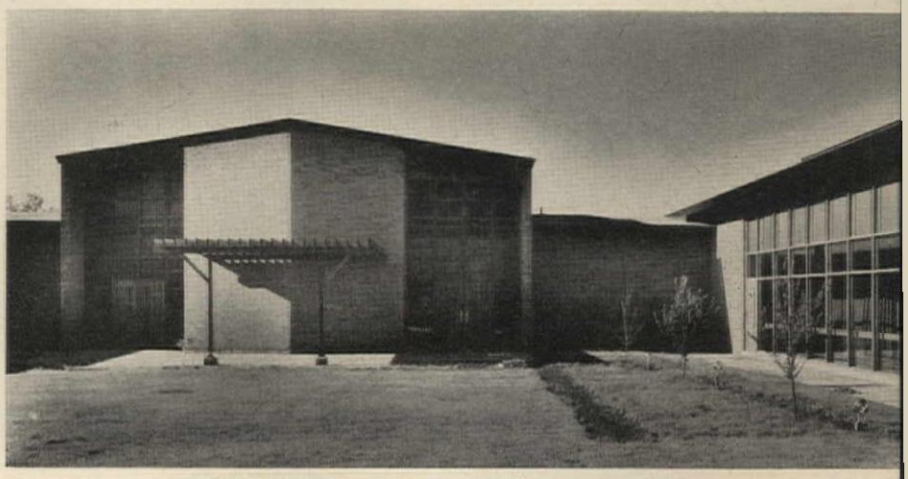
Pietro Belluschi, in describing his approach to the design of Temple B'rith Kodesh, has stated: "In America, the synagogue is developing into a complex institution where the multiple manifestations of Judaism can take place in warmth and freedom. The architects have wished to contribute to this trend and to create a space which would serve its purpose with clarity and nobility. By emphasizing the special nature of simple materials such as wood and brick, we have attempted to achieve a sense of beauty without ostentation and with great economy of means. The enclosed spaces are meaningful and pleasing, and the great sanctuary dome is a strong visible symbol of the temple. We believe that this design shows that architecture can be an eloquent expression of the spirit of man."

Built by a congregation of 1,250 families committed to Reform Judaism, this $2,500,000 structure has been designed to carry out the historic three-fold functions of the synagogue . . . *Bet Hakenesset, Bet Hamidrash* and *Bet Hatephillah* . . . the house of assembly, the house of study, and the house of worship. The synagogue provides religious instruction for approximately 1,000 children from kindergarten through high school who come to the temple for classes in the late afternoon and on weekends. Hundreds of adults study there.

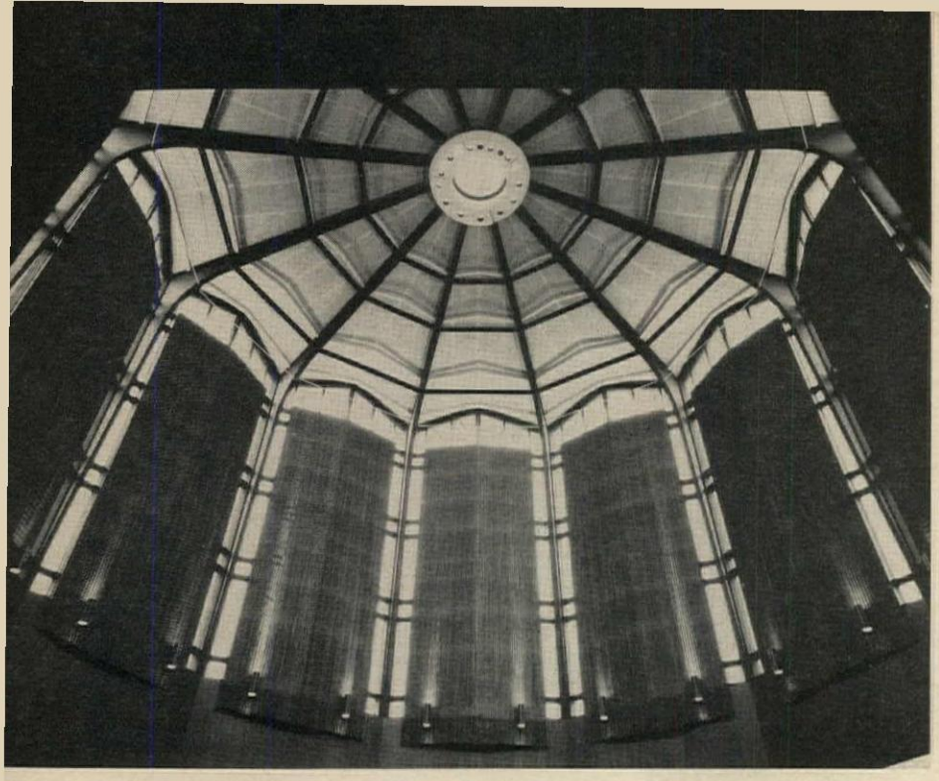
The plan (*opposite page*) consists of east and west wings connected by an entrance porch to the north and a small chapel to the south. These elements enclose a court. Beneath the porch is an underground passageway for use in inclement weather. The principal approach to the synagogue is through the outer court, or atrium, which faces the street some distance away. The atrium is paved with stone and has low outer walls. The inner courtyard (*top right*) has at the rear on the chapel wall an element known as a *succah*, here a small open redwood roof decorated at harvest time with wheat, corn and other traditional symbols of the harvest.

The west wing contains the sanctuary and auditorium separated by a foyer which connects with the entrance porch to the east and sheltered access by automobile to the west. On High Holy Days, for the large gathering which attends services at this time, panels are folded back and the two elements become one great space. The auditorium seats 1,700 persons and accommodates up to 1,000 for dinner. The two-story split level school wing to the east contains 29 classrooms. The temple is completely air-conditioned.

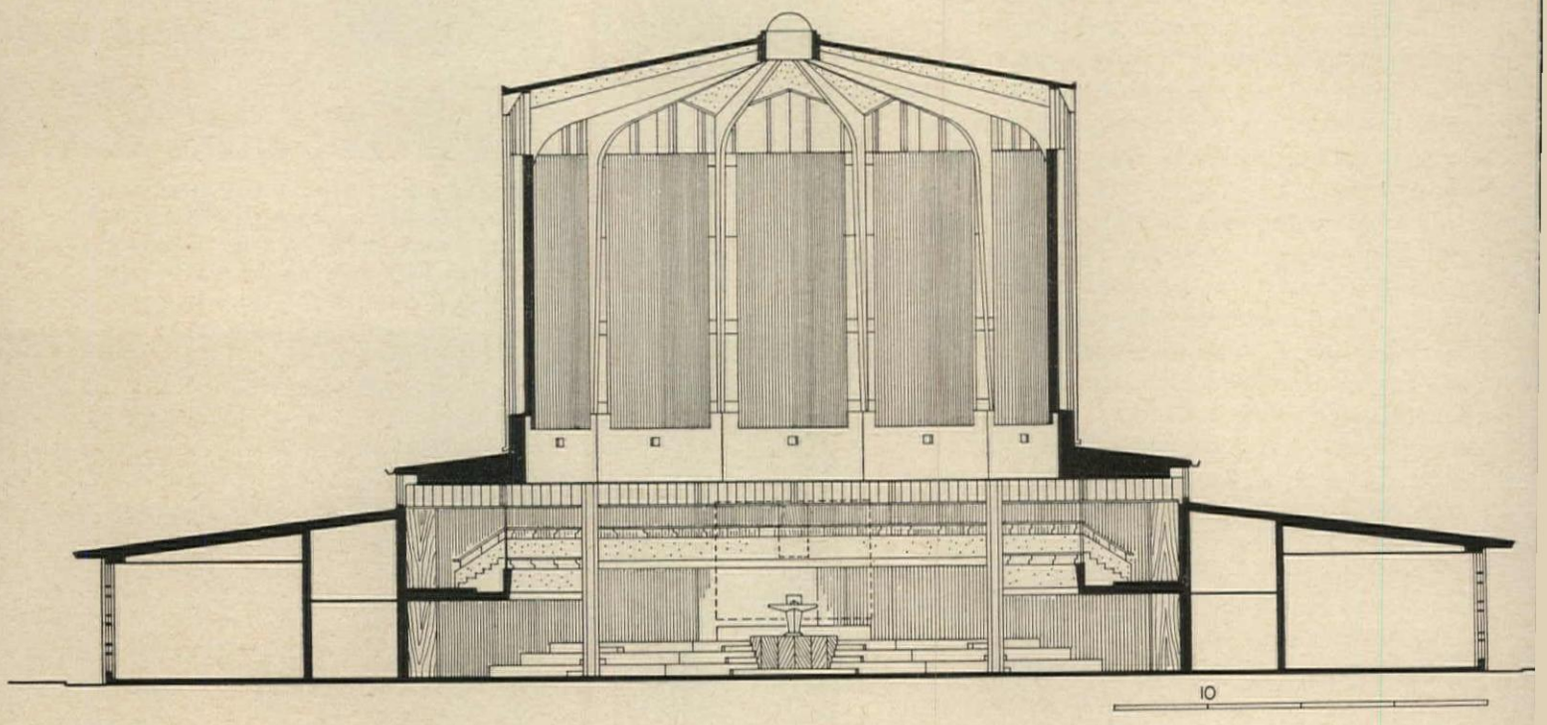
Temple and School B'rith Kodesh, Rochester, New York
OWNER: *Congregation B'rith Kodesh*
ARCHITECTS:
Pietro Belluschi—Waasdorp, Northrup & Austin
Marvin M. Meyer, A.I.A., architect in charge
GENERAL CONTRACTOR:
A. Friedrich & Sons Company, Inc.
ELECTRICAL CONTRACTOR:
Pinnacale Electric Corporation
PLUMBING CONTRACTOR:
Feinberg Plumbing & Heating Company, Inc.
HEATING CONTRACTOR:
Betlem Air Conditioning Company, Inc.



Above: Exterior of small chapel as seen from court. *Below*: Brick and walnut chapel interior. The welded metal ark was created by Richard E. Filipowski, professor of design at M.I.T., and is said to symbolize the growing expanse of the universe

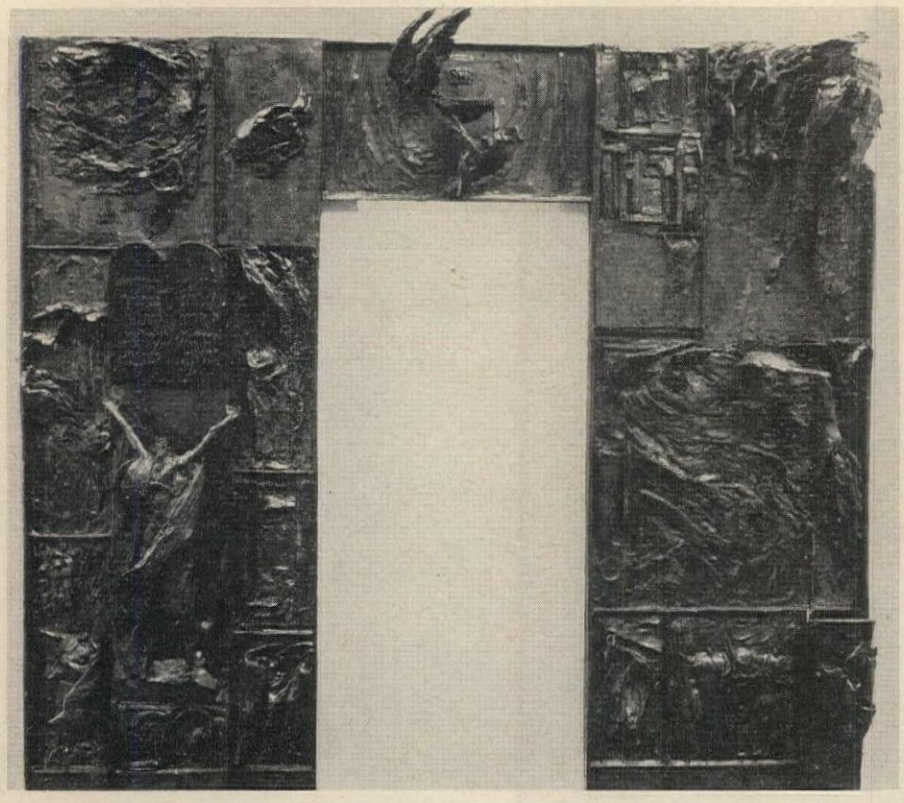


Interior suggests that Jewish temple is essentially a meeting place, not a holy place where mysterious rites occur. The 12-sided 65-foot-high dome is framed by steel ribs. Each of the 12 panels of the dome represents one of the Twelve Tribes of Israel, and the dome form itself is a symbol of the tent, the Jews' ancient place of assembly

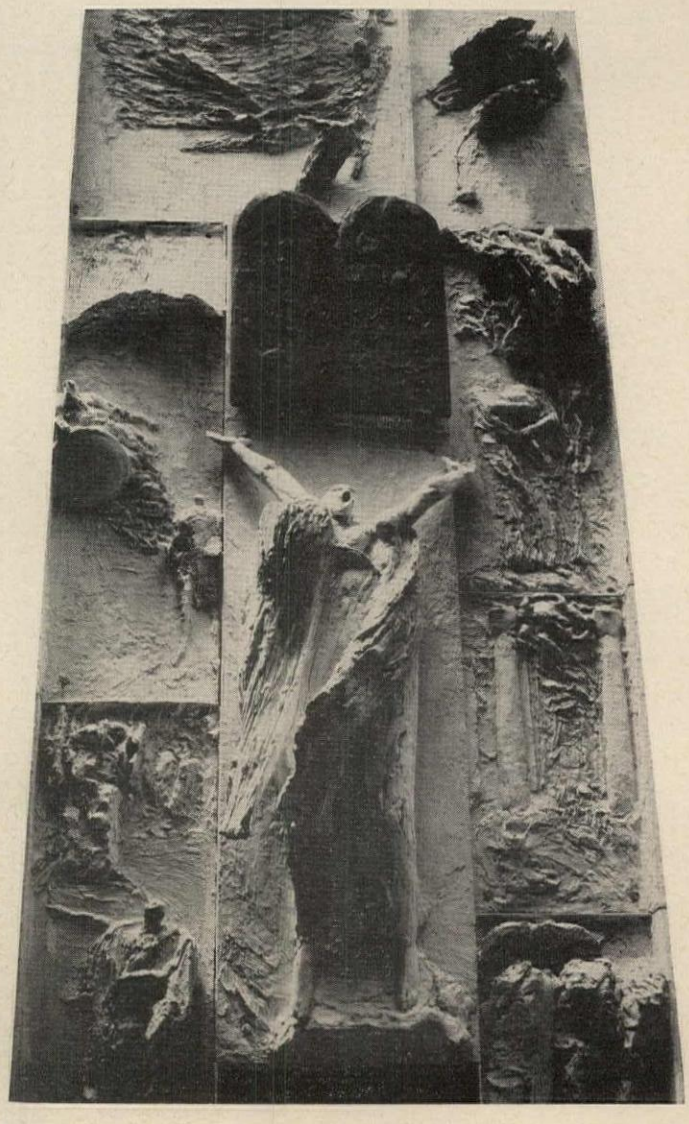


Walls along the sides of the sanctuary are of light maple with contrasting vertical walnut battens. Pews are of walnut. A bronze ark (*see next page*) will replace the temporary curtain on the *bema*

Synagogue by Belluschi



Above: Final study in model form of sanctuary ark by sculptress Luise Kaish, showing Moses and other Old Testament figures, as well as the minorah and eternal light. *Right*: A full size plaster detail being made ready to be cast in bronze. Installation of the ark early next year will complete the interior of the sanctuary



DESIGN GOALS FOR URBAN RENEWAL

If architects understand the role of design in the urban renewal process, they can help to establish a framework for their own fullest contribution to it

By William Slayton, Commissioner, Urban Renewal Administration

Urban renewal offers far greater opportunities for achieving fine urban design than any other program in the urban development field. It is the only vehicle we have constituted to encourage and provide a total framework for good urban design.

Why is this so? Urban renewal is unique in that it permits the city to decide specifically what is to be built in a particular area. The city can determine precisely what uses shall be included, the design of structures, their placement on the land, the location and design of public and private open space. For the first time in our era, the city, acting through its chosen designers, has the absolute control to create an area in whatever image it desires.

In all other developments—with the exception of the occasional civic center or public building—the city is at best only the reviewer, a constable acting to make sure that developments are within a set of zoning regulations that have no relation to urban design. These noncreative, negative limits simply prohibit supposedly undesirable use relationships and bind development mechanically to the happenstance of land parcelization.

Urban renewal, on the other hand, creates new parcels tailored to new purposes. Urban renewal need not be bound by mathematical controls on form, shape, height, setback and side yard. Urban renewal permits the city to look positively at the setting of the structures and their relationships to each other. Development proposals may be judged truly in terms of design and function.

Local public administrators—the urban renewal director, the planning director, the public housing director, the city manager and department head, the mayor and council—are the keys to achieving good urban design in renewal. These public administrators and their agencies are the clients for rebuilding our cities. They are the initial decision makers who determine the future form and function of our cities. They set the urban renewal stage on which the architect works.

So, in seeking to set urban design goals for urban renewal, we must establish a framework within which these public administrators can function as informed, sensitive, capable clients. In this direction lies the secret of unleashing the architect's creative energies.

This article deals with establishing this framework. Design goals for urban renewal are the techniques which will permit urban design to flourish.

Renewal has produced some of the most exciting urban development in the country. It has called on the nation's top architects and has had, by and large, the most enlightened developers for its projects. The results are a good deal above the character of standard urban development outside project areas. Society Hill in Philadelphia, Southwest in Washington, Government Center in Boston, Capital Mall in Sacramento: these are but a few examples of the major urban design achievements in renewal. They set a standard for all urban development.

The key word in urban renewal design is "experimentation"—experimentation designed to develop new forms for urban living, new solutions for the heart of the city which satisfy the technological imperatives of the automobile age and the unchanging demands of the human organism. Certainly urban renewal commands us to try new forms—the residential square, apartments above stores, the maisonette, town houses at higher densities, the complete separation of traffic and pedestrian, the narrow street—all now generally prohibited by municipal regulations. And all not really new. They remain to be rediscovered.

Place des Vosges in Paris is the most beautiful residential square I have seen. Can we not build to the same principle in urban renewal? The Crescent at Bath, the Rue de Rivoli are successful examples of urban environment. Yet, we consciously prohibit similar developments in nearly all U.S. cities.

Today urban designers are frenetic in their search for new site plans, and the result is an unrest and uneasiness reflected in their designs. There is almost a conscious effort *not* to enclose space. For urban design, the closed space forms the central theme—space on a scale comprehensible by the human inhabitant, not limited, in Lewis Mumford's words, to aviators and angels. A Place des Vosges provides such scale. Who need go further? This may seem contrary to the plea for experimentation, but in fact, it is paradoxical rather than contradictory. Seeking new forms for the sake of new forms alone is not experimentation. It is ego satisfaction—the desire that one's signature be different and easily discernible. Experimentation can also be the adaptation of old forms to new situations. Let us not ignore our heritage in building the future.

Architects, while paying lip service to urban de-

bility for the role of design in the renewal area.

We lack the explicit administrative framework necessary to insure that the client administrator will function effectively in achieving good urban design. We have, however, experimented with several techniques. From these experiences, we can draw some guidelines to creating a framework for achieving good design. Note the words, "creating a framework": not "creating a good urban design." The design itself must remain in the hands of the architect and the urban designer.

First and foremost is the administrative framework necessary to obtain the services of a top designer. In urban renewal many devices for doing this have been tried, none without rather basic limitations, but all with possibilities as well.

SELECTING THE DESIGNER

Often the public client has retained an architect or architect-planner team to produce the Urban Renewal Plan. Where the designer's role ceases with delivery of the Plan to the public administrator, the effectiveness of the process breaks down. The client with no access to the designer lacks the means of holding the design concept together. Given the span of years normally occurring between Plan formulation and project completion, some changes are almost inevitable. Yet without the help of his designer the public administrator may be pushed into making disastrous changes which he cannot oppose because of lack of knowledge and lack of conviction.

This situation can be, and has been, remedied by continuing the role of the designer as consultant to the public agency in the execution of the Plan. He serves by reviewing and advising on the selection of the redevelopers' proposals, and by working directly, as the representative of the public, with the architects retained by the private developers. In this way the Plan is executed as conceived.

While this procedure works effectively, it contains serious limitations. An architect often finds it difficult to serve in this consultant capacity, since his fee is based only upon the time he personally spends on the job. This does not support his office and it is a drain on the firm because of the great chunks of time required from the firm's principal.

One solution follows the course just described but adds something to it. To enable the designer to continue his work with the public agency during project execution without great sacrifice to his office, complete services on parts of the project work are added to the advisory and review operations. In this way the full capacities of the firm find utilization. But, perhaps even more important, certain key aspects of the over-all design are completed under the same hand responsible for their initial creation.

Several cities use this procedure by contracting with the designer to do the design of the project improvements. These streets, open spaces and pedestrian ways can form a design structure knitting together the separate private developments.

ACHIEVING DESIGN OBJECTIVES

A second aspect of the administrative framework for securing fine design involves the substance of the Urban Renewal Plan. The degree to which it embodies a design, the character of the controls and regulations it contains, the opportunities it opens or closes to the imagination and creativity of the architects concerned with its execution, all suggest the importance of the actual provisions of the Plan.

Most plans have been created on the false foundation of a zoning approach. Earlier this article discussed the inadequacies of this. The plan must contain basic statements of goals and policy. Performance standards and density controls are appropriate. But the public administrator client should jettison zoning type controls from his Urban Renewal Plans. In their place he may use "design objectives." It is difficult to define these in abstract terms. Their substance will differ from place to place depending upon the character of the project area and its surroundings, and upon the approach of the project designer. The design objective concept suggests the Urban Renewal Plan may be open and leave architectural and site planning proposals to the redeveloper and his team. This is most frequently the preferred approach.

Another variant goes in the opposite direction to create a very detailed design plan and build the Urban Renewal Plan around it. Such tight plans require the redevelopers to adhere to a specific design produced by the public agency's architect. Market problems and the inevitable new factors which crop up during project execution require changes in the Plan. The public administrator client needs the advice and counsel of his designer in reviewing the proposed changes.

To avoid the cumbersome qualities of a too detailed Urban Renewal Plan, the open approach can be used with the tight design plan following later. Its provisions can then be used to select redevelopers and work out contractual provisions governing their work. The redeveloper may be required to build in conformity to the urban design plan or submit a superior design of his own. Again the public administrator requires the services of his architectural adviser to evaluate alternatives.

SELECTING THE REDEVELOPER

Land disposition and selection of the redevelopers who will build on the cleared land provides a third

sign, continue to place too much emphasis on the design of the individual structure. When each building has its own architect without some over-all direction, each architect seeks to make his own statement. The result is discordant competition rather than sympathetic companionship. How much better to concentrate on the design of the area with sufficient guidance to produce a harmonious vocabulary for most of the structures. Against this background, special architectural imagination can be lavished on the few properly monumental and unique buildings and spaces. Urban renewal shows again that fine urban design stems from architectural discipline.

Understanding the role of the public agency as client for design depends upon understanding the urban renewal process itself. The nature of this process shapes the client, and he in turn shapes the designer's work situation.

THE URBAN RENEWAL PROCESS

Urban renewal has two parts: one devoted to setting over-all community goals and planning the project; the other, the action phase during which the real work of clearance and relocation, rehabilitation and redevelopment takes place.

From the standpoint of design, the first phase culminates in an Urban Renewal Plan. This document, defined by the Congress, is formally approved by the local government and by the Urban Renewal Administration. It forms a constitution establishing the legal ground rules for the action phase.

The Urban Renewal Plan is not ordinarily a plan in the sense architects use the word. Only very infrequently does it indicate specific buildings and spaces. Rather, in verbal terms, supported by certain generalized maps, it fulfills these purposes: (1) states a program to eliminate present blight and deterioration; (2) sets forth conditions to prevent the recurrence of blight and assures long-term stability in the area; (3) establishes community objectives for development of the area in conformance with the community's general plan; (4) provides legal notice to area residents, occupants and property owners, and to the general public of the community's program for the area.

Experience demonstrates that these plans with only occasional exceptions function best when flexible and open, and not tied down in great detail.

After adoption and approval of the Urban Renewal Plan, the Federal Government makes funds available to the locality so that the second phase may begin. A series of actions, some simultaneous, some consecutive, over a period of years will be undertaken to achieve the objectives stated in the Plan. Many of these actions involve design work, and taken all together they form the core of the urban renewal design process.

The nature of the specific project will determine which actions are involved and the hierarchies of importance among these actions. It will be helpful to list these actions here even though not all of them have immediate design implications.

Acquisition. Blighted property and to a limited extent property needed to achieve planning objectives may be acquired.

Relocation. Families and businesses occupying property to be cleared must be relocated in suitable accommodations.

Clearance. Structures on acquired property may be demolished and cleared to make way for new uses.

Project Improvements. Streets and street furniture, local parks and playgrounds and their essential equipment, public plantings and publicly-owned utilities may be designed and constructed.

Supporting Facilities. Part, or in some cases all, of the cost of certain public facilities may be contributed as part of the local share of project costs.

Rehabilitation. A campaign may be mounted to encourage and assist property owners to rehabilitate. This may include advice about design as well as help with financing, code compliance and construction.

Land Disposition. Cleared land may be sold to private firms and public agencies for redevelopment.

Redevelopment. New buildings and spaces may be constructed by the private firms and public agencies which have bought the land.

All of these activities interlock. They form a single process, although many agencies and many firms and individuals may be involved. Melding all of these actions into an integrated urban design is the great challenge. Here lie the design goals of urban renewal which focus attention on the leadership role of local renewal agencies and public administrators.

THE ADMINISTRATOR AS CLIENT

The public administrator and his agency decide what the future of the city will be.

The client has one major function—the acceptance, rejection, or modification of the design prepared for him. He pays the bill; this makes him the decision-maker. He makes these decisions in many ways. He makes them when he prepares an Urban Renewal Plan, deciding the uses, the limitations, the ground rules for project development. He makes decisions when he determines the procedure to be followed in selecting redevelopers and establishes the qualifications for those wishing to develop the area. He makes them when he accepts or rejects proposals for development. He makes them when he passes on the developer's proposed changes in the Plan. He makes them also in the selection of those to guide and advise him in preparing the Urban Renewal Plan. Upon him rests the ultimate responsi-

administrative framework for achieving good design in urban renewal. One rule should be uppermost —urban design is the overriding criterion in redeveloper selection. Procedures can differ considerably from project to project depending upon the character of the Urban Renewal Plan and the role of the public's designer in the operation.

Direct negotiation for land between renewal agency and redeveloper can weigh design factors in setting the conditions of sale, and the city can select the firm with which it will negotiate on the basis of design considerations, with demonstrated ability rather than elaborate design submissions as the basis.

More spectacular, and more widely used, is the design competition. This is handled most successfully in the series of competitions for Southwest project in Washington, D.C. Here an independent advisory panel or design jury reviews designs submitted by potential developers. The materials to be submitted are specified, the submissions identified by number only, and the developer is selected on the basis of the design submitted.

The renewal agency must exercise final responsibility in such an award; the jury is advisory only.

Most of the score or more cities that have held design competitions included other criteria in addition to design in making their selection. These included economic return to the city in tax revenue, contribution to employment or housing goals, construction schedule and other factors. Generally combined criteria have worked well with but one exception: mixing land price bids with design considerations does not work.

Another caveat in this kind of disposition procedure is that it should not result in an undue expenditure by potential developers. Recent competitions demonstrate that simple limits can prevent this.

A variation of the design competition which permits introduction of price bids on the land sets up two stages. First, the agency selects those designs that are acceptable and desirable. Then they require competitive price offers from among those selected.

Another variation divorces the design competition from redeveloper selection. This may be done in two ways. Either the public agency can hold the competition prior to redeveloper selection as was done in San Francisco on the Red Rock Hill site, or the redeveloper can hold the competition after he has been selected through some other process. The recent competition for the Boston City Hall illustrated this process.

THE GOAL OF COORDINATION

The last of the important administrative frameworks relating to good urban renewal design may well be more of a problem still than a solution. This is the coordination of the actions of all the many agencies of Government involved in the renewal project. The able public administrator client can cope with the problems of maintaining the integrity of the project design when dealing with a private developer, but his leverage disappears when confronted with a governmental bureaucracy other than his own.

Examine the siting and architecture of most municipal buildings. When these structures occur in renewal areas, they are usually designed outside the framework of the project and the architects for them selected on a basis contrary to the design emphasis operating in the case of private development proposals. Often the architect selected by the municipality does not relate, confer, or submit his plans to the review of the public administrator and his design adviser. The result, frequently, is inferior architecture which clashes with, or does violence to, the rest of the area.

At the Federal level this can also be true, but, of late, the Urban Renewal Administration has worked out a relationship with the Public Buildings Service of the General Services Administration that provides for consultation on the siting and architecture of Federal buildings in project areas.

What is needed is a strong position that subjects the municipal developer to the same rigorous review as is required of the private developer. Where the public administrator client has a designer consultant during the period of plan execution, he is in a much stronger position to exert design control over governmental development.

The problem of sibling sabotage confronts the public administrator on many fronts. His brother and sister agencies in government do not maintain his high design goals. For instance, he can almost certainly count on antiquated rulings of the building code to bar certain structures basic to his plans. The problem can be solved only by the strongest political and administrative leadership within the city. Mr. Administrator Client needs all the help he can get—including that of the whole architectural profession.

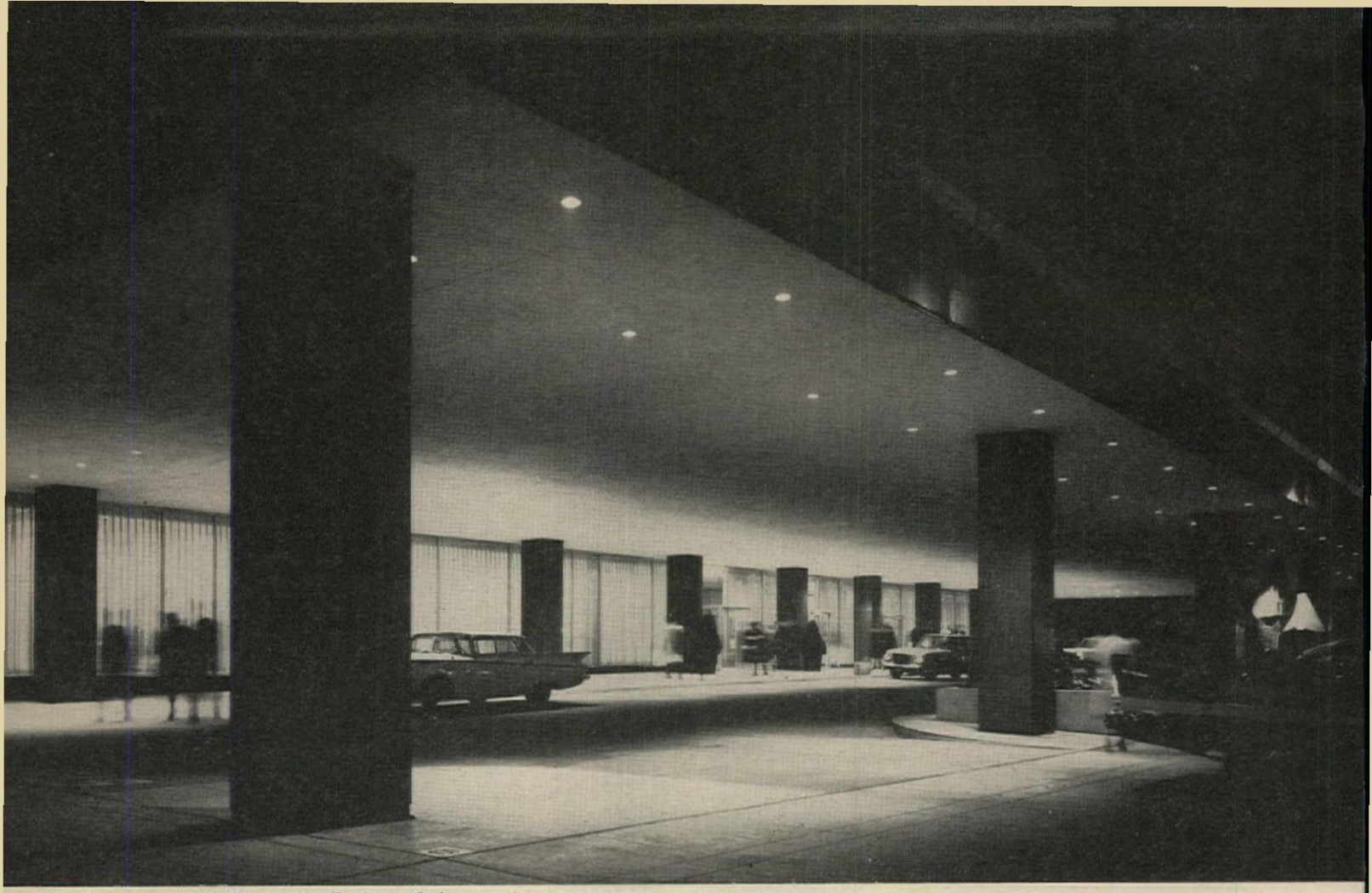
It is easy to oppose, and the negativists, the opposers, abound everywhere. It is much harder to achieve something positive. Achievement means tenacity, unflagging effort and zeal, and diplomacy of the highest order. If urban renewal design is to flourish, it needs not only public administrator clients, but also architect designers with these heroic qualities. An audacious handful of the country's finest designers have in the last years given themselves to this task. We need more.

The future of our cities, their very death or life, rests upon these people. How well cities are rebuilt, how exciting they will be, how much beauty they will bring to future generations, depends upon the strength, the sensitivity, and the ability of both client and architect.

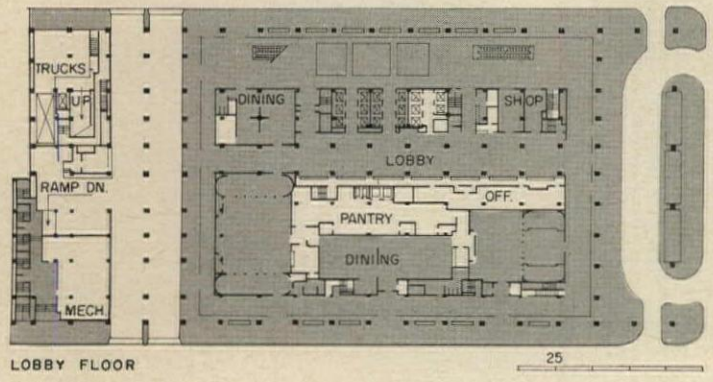
Sherwin Greenberg Studio Inc. photos

"GRAND HOTEL," NEW VERSION

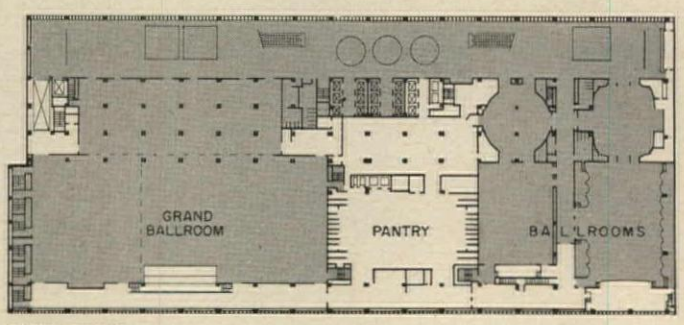
The New York Hilton, considered "the last of the grand hotels," sets the pace for the hotels and motels of the future



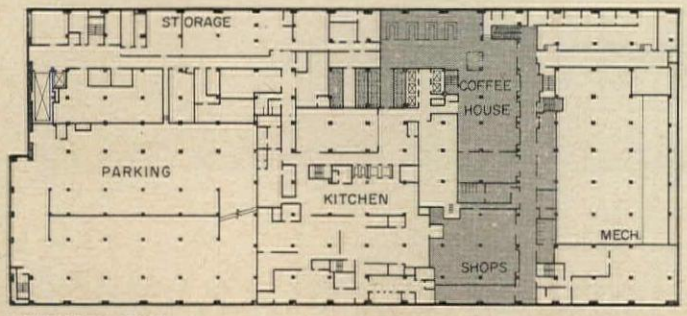
Drive-in entrance facilitates traffic flow, shelters patrons



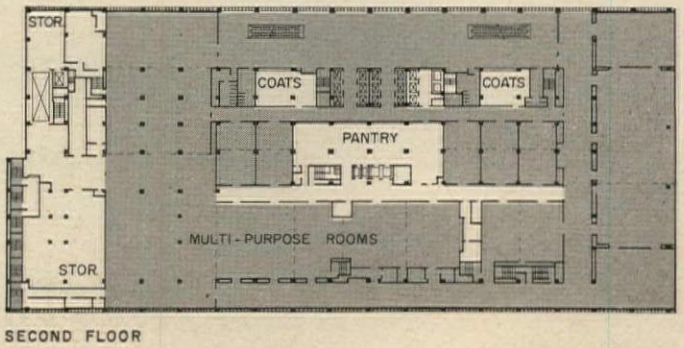
LOBBY FLOOR



THIRD FLOOR



CONCOURSE PLAN



SECOND FLOOR

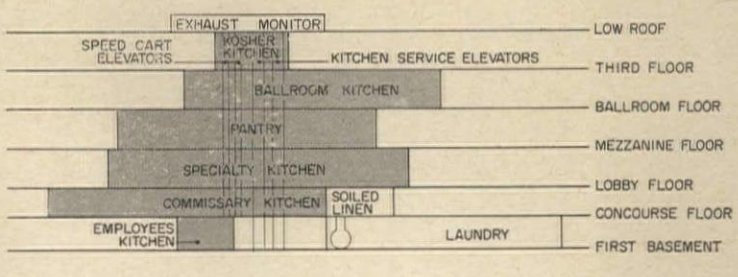
In these typical plans (*above and opposite page*) public spaces are shown in a gray tone. Note extent of kitchen service and mechanical areas required. Main kitchen preparation, dishwashing and storage is on the concourse level. On the lobby floor an interior promenade, called the *Rue Des Gourmets*, makes the four restaurants accessible to those within the hotel as well as visible and attractive to patrons entering directly from West 53rd Street. All four restaurants are served from a pantry supplied from the main kitchen below. Two of the restaurants have their own sustaining kitchens for the preparation of special dishes. A second promenade accessible from West 54th Street leads by means of two pairs of escalators to the exhibition, assembly and ballroom areas on the second, third and fourth ffoors. There are no grand staircases

Hotels of the size and scope of the New York Hilton are constructed once in a generation, and therefore relatively few architects and engineers have a hand in them. The erection of a complex of this magnitude is an event not expected to re-occur often, and such a hotel will exploit the most advanced technology as well as the most far-seeing concepts in hotel design, for it must lead the pack for many years to come. Such a building is worth the attention of the architect and engineer because it is a pacemaker, with much to teach about the design of hotel and motel accommodations of any size, and much to suggest in the design of other kinds of buildings.

The New York Hilton is the first "grand" hotel to be built in New York City since the Waldorf Astoria was completed over 30 years ago. There have been several other new hotels added to the New York scene since World War II, but none are as ambitious in concept as this one. Its owners and architect assert that the ballroom, assembly and banquet facilities are the largest of any hotel in the world. In addition to capacity, the Hilton has great flexibility, and it is more completely automated than any other hotel. "We automated everything that could be automated," said Hilton managing director Joseph P. Binns. It is a formidable competitor and its managers have already cornered a big share of the convention business for the next several years.

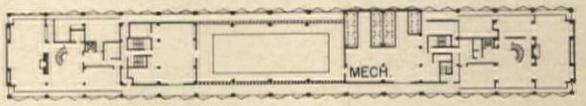
Large hotels can be compared to cities in miniature, or to great ocean-going liners, to the degree that they render all the services necessary to satisfy large numbers of people with varying tastes confined by choice within a complex envelope. William Tabler, architect of the New York Hilton, believes that a big city hotel must be all things to all people. To be successful, it should have many of the attributes of a motel and to this end the New York Hilton features a 350-car underground, drive-in-yourself garage from which the arriving guest who wishes to avoid the public lobbies may register and ascend by special elevator directly to the corridor of his floor and on to his room. The Hilton, however, aspires to far more than charming the plain man with its motel-like simplicity and convenience, for at the same time it hopes to woo certain dignitaries and heads of state away from the Carlyle and the St. Regis, by means of five luxury tower suites and two of what it calls "supersuites" on the penthouse floor. When an important personage, residing elsewhere but visiting the hotel to preside at a great banquet or assembly, arrives at the West 54th Street entrance, his limousine is driven into a truck elevator which raises him to a special receiving room on the ballroom floor in which he can prepare to face the throng. The elevator also can carry automobiles, trucks and boats for motor and marine shows, as well as all exhibition freight.

Total cost of the 2,165 room hotel, excluding land, was $52,000,000 plus, at a room cost of $24,000 plus. It was constructed by the Uris, Rockefeller and Hilton interests.

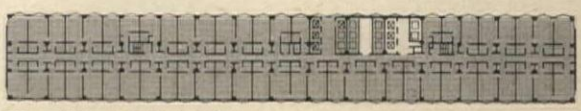


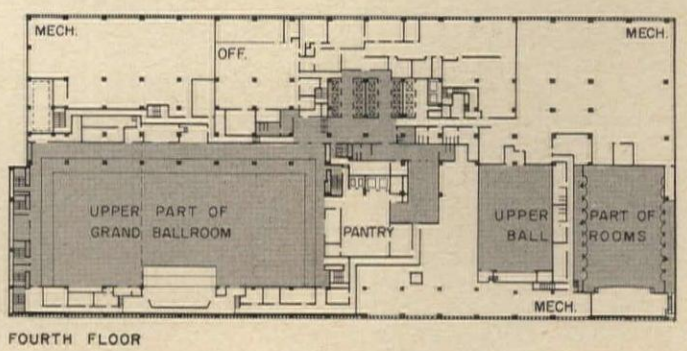
The kitchens and pantries of the Hilton can take care of almost 12,000 diners simultaneously. They are stacked on five levels and interconnect for the efficient service of five restaurants and one cocktail lounge which cater to different tastes and pocketbooks. In this complex space creole dishes from the New Orleans of the 1890's are prepared for a restaurant called *The Old Bourbon House*, lightly spiced Mediterranean cooking is concocted for the *Valencia*, French cooking for *Place Lautrec*, Italian cuisine for *The Seven Hills*, Dutch specialties for *The Taveerne*, and Turkish snacks for the *Kismet* cocktail lounge. Four elevators interconnect the five kitchen spaces. All food is received in the concourse kitchen. It has a butcher shop, vegetable preparation section, pastry section and ice cream section, and one of the two dish-washing areas in the hotel. The long pantry at the lobby level receives dishes prepared at the concourse level for the *Rue Des Gourmets* restaurants. The second floor kitchen is a completely mobile serving kitchen, serving 23 banquet and meeting rooms and the second floor ballroom. Its only stationary units are the oven and broiler units and the coffee urns. One third of the ballroom floor is devoted to the banquet kitchen which is accessible to all three ballrooms

UPPER PENTHOUSE FLOOR

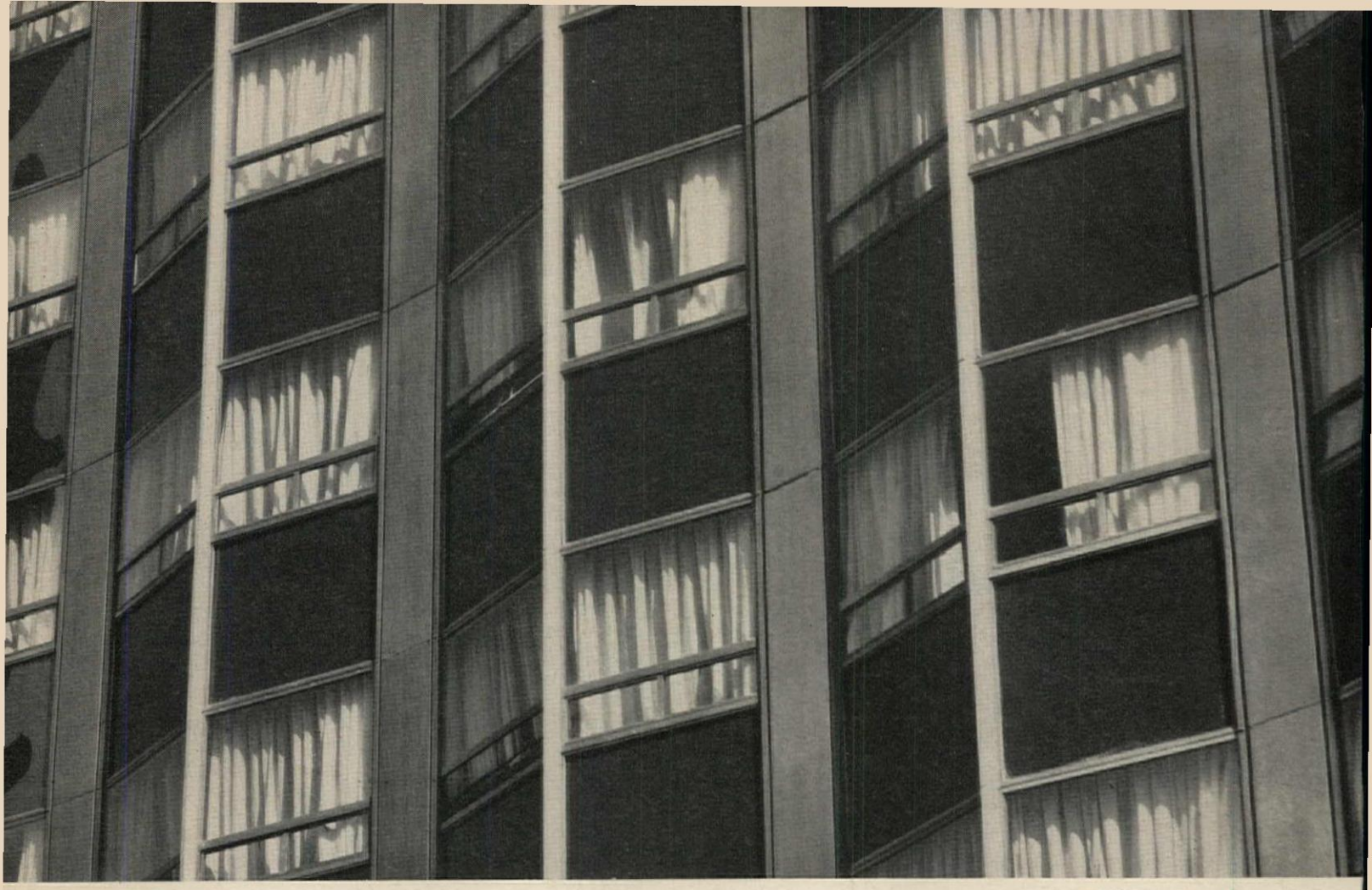


LOWER PENTHOUSE FLOOR


7TH THROUGH 23RD FLOORS

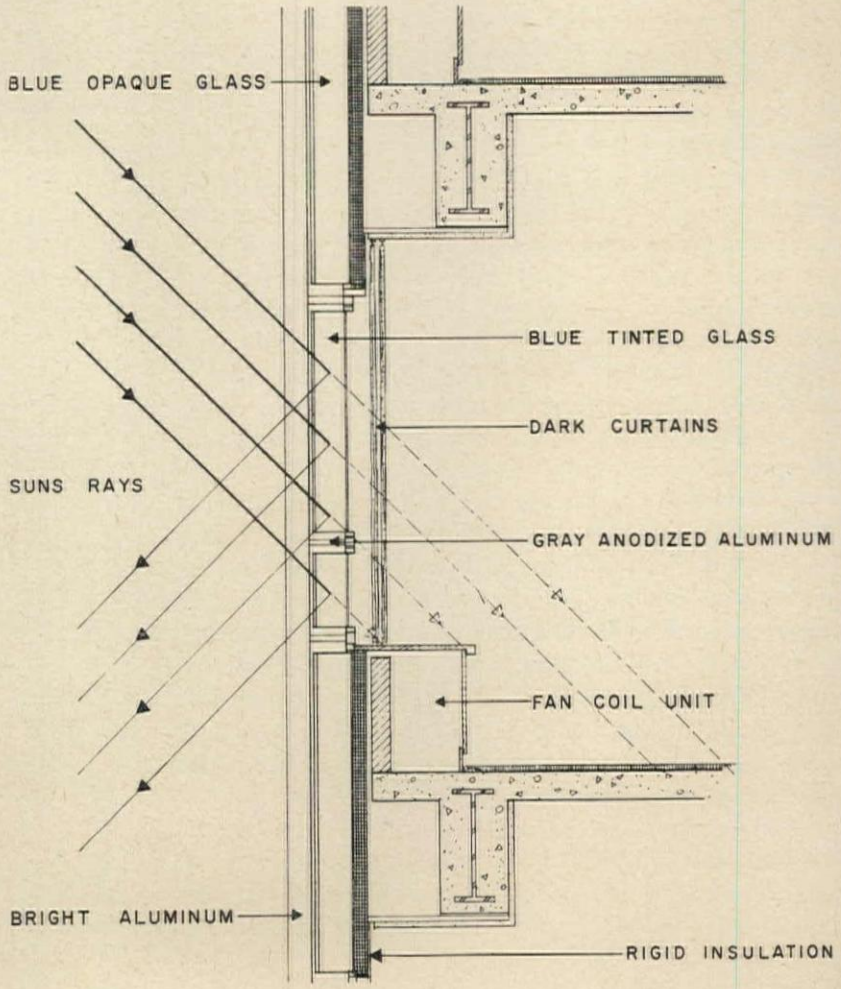


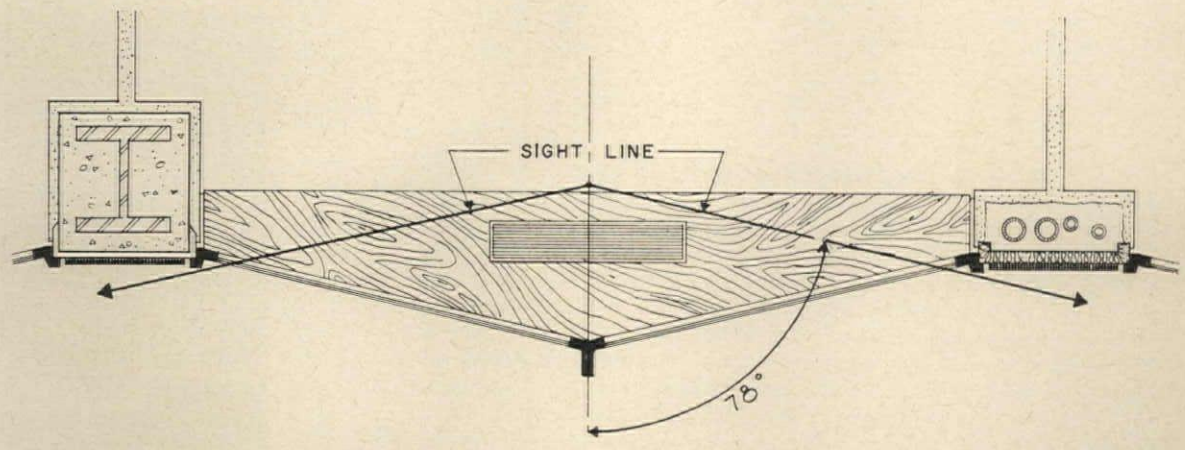
FOURTH FLOOR



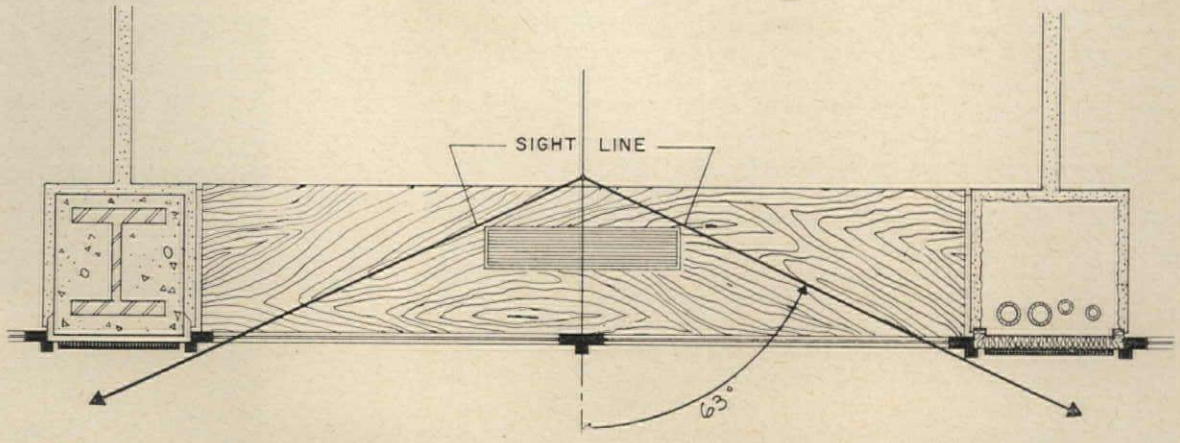
The New York Hilton

The architects have described the New York Hilton's unique curtain wall as follows: "Our problem was to take two 400-foot-long by 400-foot-high exterior walls and make them congruent with their neighbors, and residential in character in a way that avoided monotony. First we stretched the structural frame to its maximum within the esthetic and building code requirements. Then we projected the windows out beyond the structure to form an apex at each room. This permitted the heating and air-conditioning system to run beyond the face of the structural frame. By so doing, the size of the room was increased and a window was formed which is residential in scale, includes a window seat, and offers an expanded panorama. The window curtains are well back of the heating and cooling unit and will be unaffected by the movement of air. The blue opaque window glass reduces the air-conditioning costs by filtering the sun's rays. The aluminum frame is anodized a dark gray while the center mullion in each window is natural finish aluminum as a bright accent at the apex."



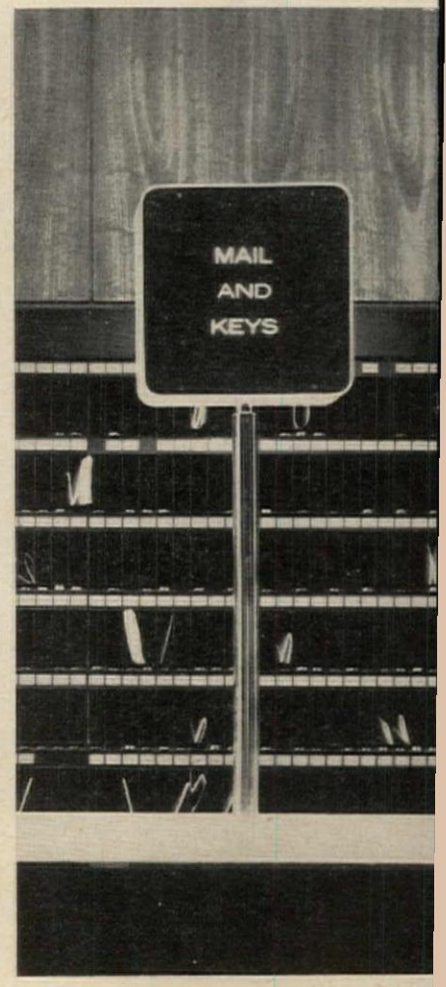


ADOPTED GUEST ROOM WINDOW PLAN



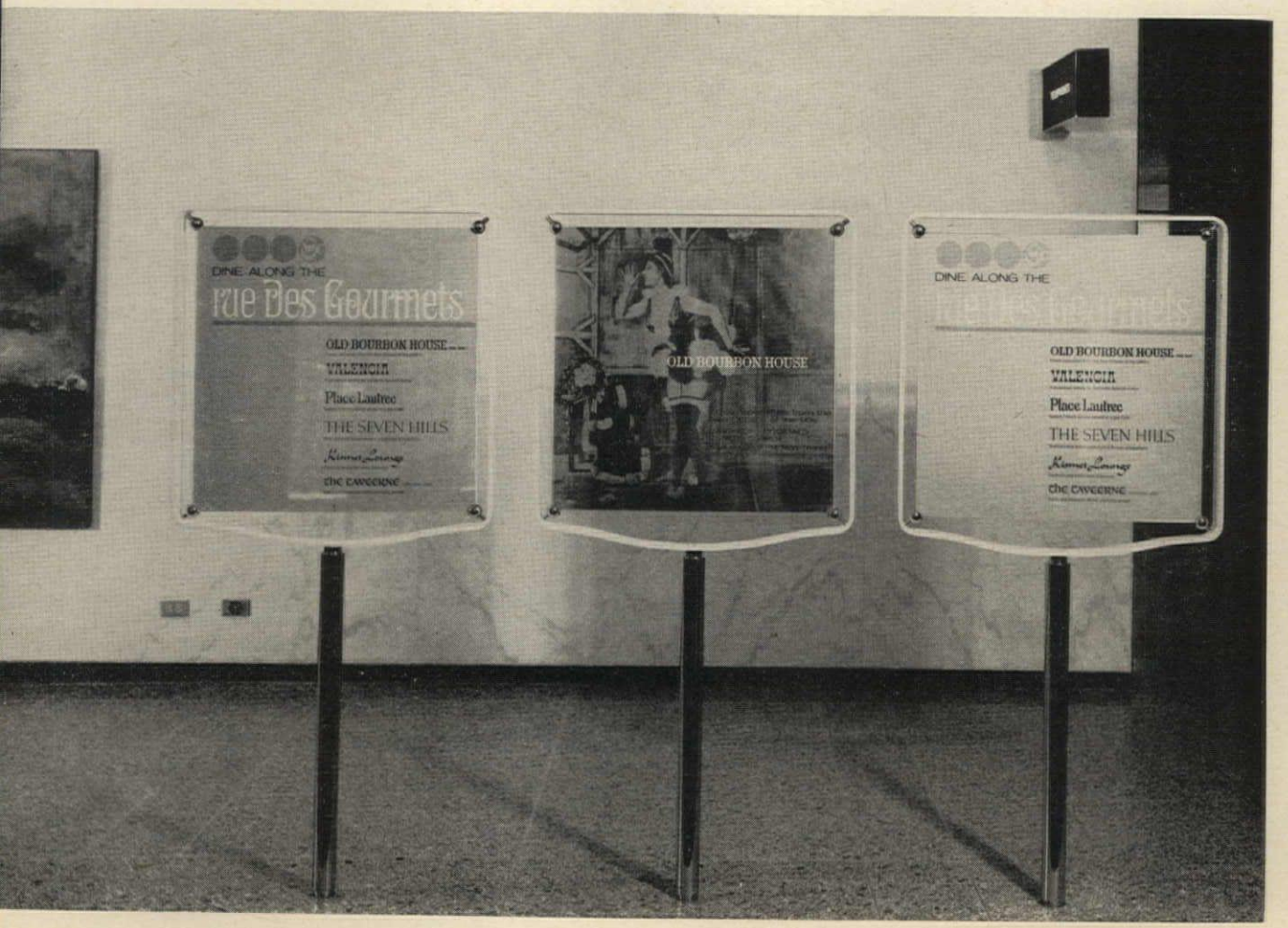
EARLY STUDY FOR GUEST ROOM WINDOW PLAN

The New York Hilton



Above: Escalators have side panels made of clear glass, reducing their apparent bulk and accenting their motion. *Opposite page, top:* The promenade lounge and other public spaces handled in a contemporary manner, were designed by Lydia Moffat-de Polo, who detailed lighting fixtures and planters, as well as identification signs on the check-in desk and lobby directional signs (*right*).

Automated wake-up systems and the first electronic data processing system to be used by a hotel for guest accounting are among innovations being introduced at the Hilton. The data processing computer provides immediate accounting of all guest charges. It is linked with data input stations in the hotel's restaurants, bars, shops and concessions, recording all charges as they are incurred. Last minute telephone calls, transmitted electronically to the computer center, are recorded as made. The computer is in service 24 hours a day, ready to furnish complete itemized bills within 10 seconds. Its memory disc can store up to 25 million items of information; it can print in duplicate at the rate of 600 words a minute. "The system was installed to eliminate long lines at check-out desks," explained Hilton executive Joseph P. Binns. "Guests won't have to wait any longer than it takes to push a button and tear off a statement to get their complete bill." The automated wake-up unit in each of the hotel's 2,153 rooms is combined in a single operation with guest message and room status services. To request a wake-up call, a guest simply dials numerically the time he wishes to be called, giving his name and room number. This is recorded and set in a timing device which enables the hotel to make all calls automatically by way of an intermittent buzzing signal. The hotel anticipates a daily average of up to 1,500 morning wake-up calls. The new device makes it possible to make all calls simultaneously, should that be necessary. For messages, a control panel in each room signals when messages arrive. A corresponding light at the front desk remains on until the message is received. The room status unit provides the room clerk with a constant check on the status of each room. As a guest checks out, the clerk signals via a master panel available to the housekeeper on each floor. When the room has been put in order, the housekeeper returns the signal, signifying to the room clerk that he may then assign that room to a registering guest


DINE ALONG THE
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THE SEVEN HILLS
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DINE ALONG THE
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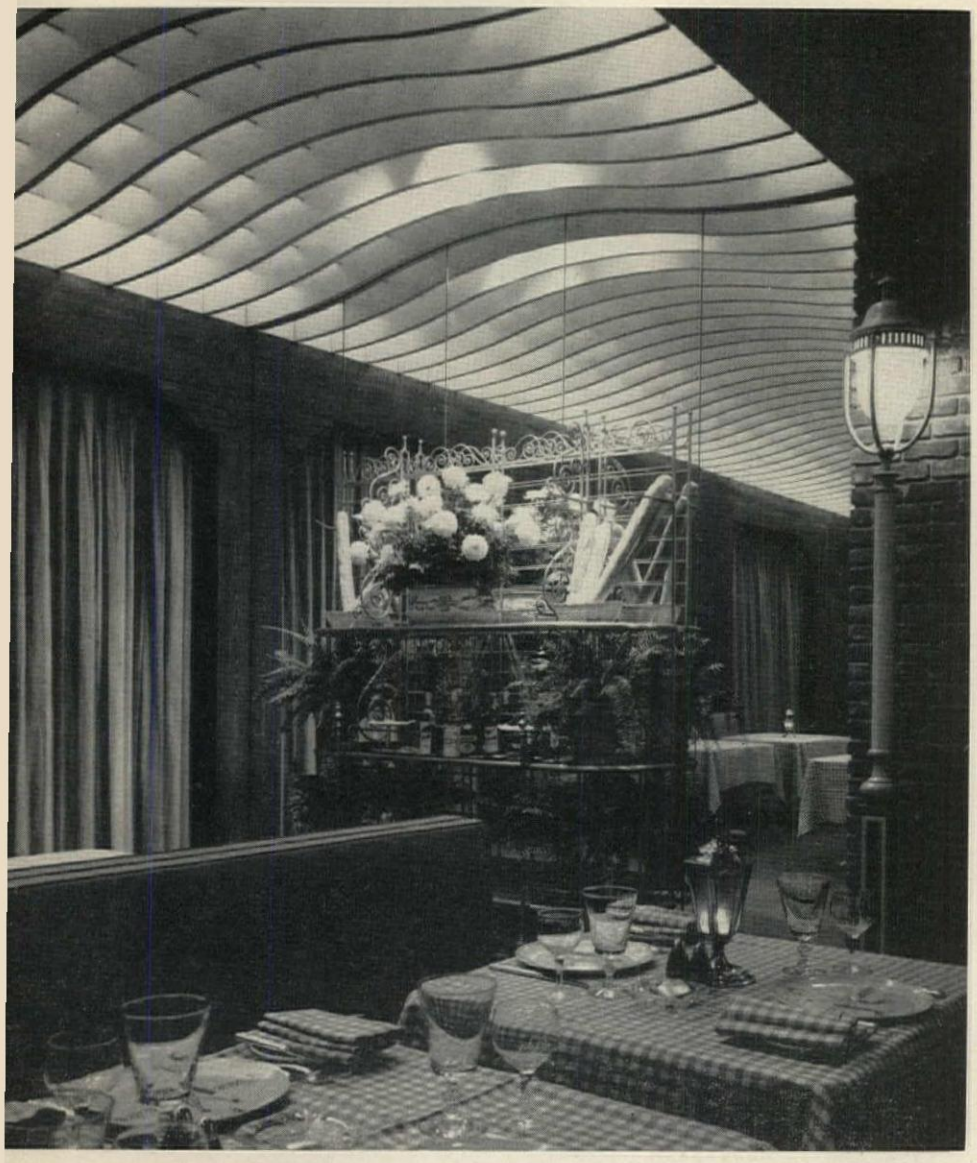


New York Hilton at Rockefeller Center
New York City, New York
OWNER: *Rock-Hil-Uris, Inc.*
ARCHITECTS: *William B. Tabler F.A.I.A.*
David P. Dann, associate in charge
William C. Meagher Jr., project manager
CONSULTING STRUCTURAL ENGINEER:
James Ruderman
CONSULTING MECHANICAL ENGINEERS:
Cosentini Associates
LIGHTING CONSULTANTS: *Wheel-Garon*
GENERAL CONTRACTOR:
Uris Building Corporation

Designer William Pahlmann handled the decor and furnishing for the *Rue Des Gourmets* and its restaurants with his usual skill. Each restaurant is warm and evocative of the country whose cuisine is featured. The hotel itself and its lobbies and promenades are designed in a quiet contemporary manner, and become thereby a perfect foil for Pahlmann's exuberant stage sets. Shown (*above left*) is the *Place Lautrec*, styled as a French cafe. Toulouse Lautrec posters are from original editions

BUILDING TYPES STUDY 326

®

MENTAL HOSPITALS

New therapies are demanding new kinds of buildings for the mentally ill

New kinds of buildings will be needed to meet the changing requirements of mental health programs. New treatment methods call for new emphasis on outpatient and short-term facilities. Even for long-term care, smaller nursing units with more open spaces, many amenities and unobtrusive security measures are setting new standards for psychiatric establishments. Buildings will be generally smaller, more varied in function and more closely related to their communities than the huge, custodial institutions currently typical of state hospitals. They will be well within the scope of all architectural practices rather than the province of a specialized few. And they will be programed with detailed attention to the needs and scale of their varied human occupants.

Provision of psychiatric services and facilities, says Dr. Walter E. Barton, medical director of the American Psychiatric Association, begins with the identification of a person in need of help. Referral of that person to an increasing variety of means to provide that help imposes a requirement for an increasing variety of building spaces in which help can be given. The psychiatrist, Dr. Barton points out, is only one of many kinds of trained individuals capable of the early identification of mental illness. As popular misconceptions and fears diminish, effective referral services are being rendered by the clergy, for example, as well as by family physicians, visiting nurses, school guidance departments, even the police in some cases.

All of this widespread understanding and concern helps to relate the person and his problem to the collective engagement of his community. As modern treatment methods develop and confinement within the foreboding walls of a remote and mammoth institution is no longer the inevitable consequence of mental illness, psychiatry is able to reach out at the family level with increasing acceptance and with a whole new panoply of services. These services, including outpatient and clinic facilities, more and more resemble those of the other medical professions; and they are demanding similarly specialized, community-oriented spaces.

Emergence of the Community Mental Health Center as a concept is described in some detail by Dr. Robert H. Felix, director of the National Institute of Mental Health, in the article beginning on the next page. While actual translation of the concept into and new buildings is now being accelerated by new treatment methods and enabling appropriations, the architectural image of the community mental health center has not yet emerged as a functional entity such as is evoked by mention of, say, schools, post offices, shopping centers or general hospitals. It is pointed out by August Hoenack and Wilbur Taylor of the Architectural and Engineering Branch, Division of Hospital and Medical Facilities, Public Health Branch, that in some communities the mental health center, with proper organization of all professionals, may utilize facilities already existing; others may add to present hospitals, outpatient departments or health departments; still others may wish to build a complete facility under one roof. Few if any communities have all the facilities required for the complete community health center program envisaged. Therefore, they conclude, a building program is necessary, and the mental health center concept needs something better than the present image of the large state mental hospital.

The work of many architects is now engaged in bringing such a better image into being. The program for six centers in Illinois, for instance, as described by Dr. Felix, has enlisted since its inception the professional services of architects, public and private. The buildings for this program, each under design by a different architect, will provide a whole spectrum of possibilities for architectural expression of basically similar space requirements. Common to all of these, and to the buildings shown on following pages which incorporate within them many kinds of new community-related facilities, is insistence upon a human scale of buildings actively related to the needs of their very special occupants. As Vincent Kling points out in his discussion of the Eastern Pennsylvania State School and Hospital, page 178, these buildings are active instruments of the very therapy they are designed to house.

Components of the community mental health center include both office and therapeutic spaces for a wide variety of services: referral agencies, diagnostic and treatment outpatient services, day hospitals from which patients return home at night, night hospitals to which they report for evening treatment and sleep, inpatient hospitals, clinics, rehabilitation facilities, consultation services, information and education services. A programing method is outlined by Alston G. Guttersen beginning page 165; and a check list of space categories is presented in this month's Time-Saver Standards, page 196.

—William B. Foxhall

THE COMMUNITY MENTAL HEALTH CENTER, A NEW CONCEPT

By Robert H. Felix, M. D., Director, National Institute of Mental Health

Revolutionary recent trends in treatment of mental illness have resulted in the development of a new type of health facility which is emerging in many communities.

These trends stem from mounting evidence that most mentally ill persons can be successfully treated in their own community and quickly restored to a useful role in society, without prolonged treatment in the traditional custodial state hospital.

The new facility to which I refer is, of course, the community mental health center, designed to provide a broad range of services for the prevention, treatment and aftercare of emotional and mental disturbances.

The concept offers an exciting challenge to American architects, whose ingenuity and imagination will largely determine the shapes these new edifices will take in the next few years. Looking ahead, we believe that the time will come when the mental health center will be as integral a part of a community as are its schools and post offices.

Because of the implications to architects of the new directions being taken in the treatment of mental illness, a review of the philosophy of community mental health centers and of developments in this crucial health area may be helpful.

The concept of the community mental health center did not spring up overnight. The seed was sown in 1955, when Congress created the Joint Commission on Mental Illness and Health, consisting of representatives of 36 national organizations with an interest in mental health. The comprehensive work of that commission resulted in the publication in 1961 of "Action for Mental Health," which challenged us to demonstrate how, with our new knowledge, we can improve the lot of the mentally ill.

A Cabinet-level committee was appointed to study the Joint Commission report and recommend a suitable course of action for the Federal government. Following the report of this committee President Kennedy, in a special message to Congress on February 5, 1963, set forth the broad outlines of a new national mental health program.

In his message the President said: "Central to a new mental health program is comprehensive community care. . . . We need a new type of health facility, one which will return mental health care to the main stream of American medicine, and at the same time upgrade mental health services."

With many communities already moving ahead in developing a variety of mental health facilities, Congress injected added stimulus through passage by both houses of legislation providing for Federal funds to assist in the construction of mental health centers.

Among recent developments that have made the concept of such centers feasible are:

- Treatment has improved. With tranquilizers, psychic energizers, improved methods of psychotherapy including group therapy and other forms of treatment, we are able to control and treat mental illness better than ever before.
- Hospitalization, when necessary, is shorter in duration.
- Alternative resources, including nursing and foster homes, outpatient clinics, day and night hospitals, and psychiatric units in general hospitals, have proved more effective for many patients than conventional state hospital services.
- While, in the past, tax monies have been the main support of mental health programs, private sources are beginning to provide more of the cost. Most voluntary health insurance plans now include coverage of in-hospital treatment of mental illness, and some also provide a limited amount of outpatient treatment. Also, exclusions against the mentally ill in Federal and state public assistance programs are being relaxed.

These are some of the factors that have made possible a shift in the kind of treatment offered to the mentally ill. They have led us to the belief that care in the community is better than care in the isolated, custodial-type institutions that have for too long been our main treatment resource.

One of the most commonly applied criteria of psychiatric illness is the patient's inability to carry on comfortably in his community. When he cannot make such an adjustment, we feel he should be treated in a setting that will enable him, as soon as possible, to get along better in the community. So it does not make sense to pick him up and put him in an institution far away from the people and places familiar to him and of which he is a part. Rather, the ties with home and community should be kept as close as possible—consistent, of course, with his condition. Home should always be just around the corner.

We believe that the community mental health center is the kind of facility that will best accomplish these goals. It will be located near his home, thus helping to maintain family community and occupational ties. In most cases the family physician will be able to continue caring for his patients in the center. Since the center would have a variety of services, the patient would be able to move quickly from one type of care to another—from diagnosis to rehabilitation—as his needs change.

We in the National Institute of Mental Health recognize that a new psychiatric environment will

inevitably result from the present trend toward community-based services. And if this environment is to be the most life-enhancing one—if we are to develop the highest quality services that can possibly be offered—we must carry on programing and planning on a scale never before attempted in the mental health field.

Such planning efforts are already under way. Even before the community mental health center legislation (which I shall describe shortly) was introduced in Congress, the sum of $4.2 million for mental health planning grants was included in the 1963 appropriation of the Department of Health, Education, and Welfare. These grants were to go to the states, on a matching basis, to facilitate the preparation of state-wide plans for comprehensive mental health services. A similar amount was included in the President's 1964 budget, now before Congress. All the state mental health authorities have submitted and received approval for their "plans for planning," enabling them to use the first year's granting-aid funds.

So the states are now getting ready to plan in a comprehensive way for mental health services. This will help assure state-wide cooperation among all community agencies and organizations—public and private—interested in mental health and will aid the states in assessing the need for facilities and services, research, training and legislation. The importance of these planning efforts cannot be overestimated; in fact I consider them the keystone to the success of our new program. *For unless each state and community examines critically and thoughtfully what is now being done in the mental health field, and decides how its own unique resources may be used to meet its own unique problems, no amount of Federal aid is going to bring about a system of care that adequately meets the needs of its citizens.*

Legislation passed by both houses of Congress provides for Federal funds to assist states in constructing mental health centers. Such centers should include, as a minimum, diagnostic, inpatient, outpatient and day care services. Appropriations will be allotted among the states on the basis of population, extent of need for centers, and financial need of the states, with a minimum of $100,000 going to any one state.

As defined in the legislation, "construction" includes not only the construction of new buildings but the expansion, remodeling and alteration of existing buildings and initial equipment of those buildings, remodeled or new.

Within six months after enactment of the legislation, the Secretary of Health, Education, and Welfare will issue regulations governing the administration of the program. The regulations will prescribe the general aspects of programs for design, for construction and equipment of the centers. Applicants will also have to meet several other requirements, such as providing assurance that adequate financial support will be available for the rest of the construction cost and for maintenance and operation of the facility when completed.

SUGGESTIONS FOR PLANNING PSYCHIATRIC FACILITIES

- For the most part the unit should be open.
- Men and women may be treated in the same unit.
- Young children should be treated in separate areas, although adolescents can sometimes be treated successfully on the adult unit.
- Special attention should be paid to the decor of the psychiatric unit—a pleasant atmosphere is extremely important.
- Lounging areas where patients can chat or read are needed, with a separate nook for television.
- Occupational activity, craft and group therapy rooms should be provided.
- Recreational areas for planned activities such as exercise and games should be provided; an outdoor recreational area is also needed.
- The number and type of treatment rooms should be recommended by psychiatric staff. Lounging, recreational and occupational facilities should be near the supervision staff area.
- Considerable latitude in use of space as bedroom-living areas or dormitory areas is desirable.
- A multi-purpose room could serve for dining, group therapy or as a lounge or recreational area.

I would like to stress that the community mental health center, as we see it and as it is envisioned in the legislation, is not so much a building as a functioning reality. The word "center" relates to the process of coordination of services so as to avoid the gaps and duplications which always occur when services grow up independently of each other.

While we believe that each center should be planned to meet the needs of the individual community, we do have in mind a broad spectrum of services and programs that would provide the optimum level of service. These are:

- A general diagnostic and evaluation service.
- An inpatient service.
- An outpatient service.
- A day and night care program.
- An emergency clinic, operating on a 24-hour basis, for walk-in patients.
- Rehabilitation facilities, including sheltered workshops or their supervision.
- Consultation services to community agencies and organizations active in the program.
- A public information and education service.
- Supervision of foster home care facilities.

In considering the area to be served by the centers, we have been basing our planning on units serving a population of roughly 100,000. Seventy per cent of the population of the United States is now concentrated in metropolitan areas, so it seems reasonable to think in terms of fairly large population concentrations. In cities over 100,000 the area to be served would be an identifiable one, such as,

for example, the northwest section of Washington, D. C., or Yorkville in New York City. But we have not overlooked the rural areas. Getting the mental health services we think should be available to all Americans to areas of low population density will take some ingenuity, but I am confident this problem can be solved.

We expect that the centers will develop under a variety of auspices—state, voluntary, municipal, private, within a group practice arrangement or any combination of these. There will also be a great deal of variety in the physical arrangements. In a large urban area, it will probably be desirable to have the facility under one roof. This may not, however, be necessary when we are fitting the final blocks into a structure that has already been in existence for some time. Some communities may decide that the center should be based in a general hospital. Since most of the general hospitals with over 500 beds already have inpatient psychiatric facilities, it would be possible to add day or night care or outpatient service all at once or in several stages. In other communities, it may be decided that the development of the center should start with a clinic. Architects will be called upon to give full range to their ingenuity in helping to fit complex program requirements together in a useful and meaningful way.

To show the different ways in which community mental health services can be developed, I would like to cite one or two examples. For a number of years in Honolulu the only psychiatric facilities were small services in two general hospitals. Then the mental health society started an outpatient clinic at Diamond Head; another clinic later got under way near Pearl Harbor. The state mental hospital was located across the island. The administrators of all these facilities decided there should be coordination among them, so they asked the State Health Department to serve as the coordinating agency, which it did. Two or three years ago a Canadian psychiatrist went to Honolulu and was employed by the Director of Mental Health to develop a day care center including various rehabilitation resources, which also came under the coordinating efforts of the Health Department, as did a school for the retarded. Home care has since been added. Thus, from a small beginning has come a complex of services now organized in a coordinated way.

A quite different approach has been taken in Illinois, which is now constructing an initial group of six regional state hospital-clinics as a nucleus for further community facilities. After a great deal of consideration of possible ways of breaking out of the traditional state hospital system, the voters of Illinois in 1960 approved a $150 million bond issue which made construction of the new facilities possible. All six of the hospital-clinics are in the northern part of the state—two in the Chicago area and the others in Decatur, Peoria, Rockford and Springfield. Two other facilities will be built later, probably in the east St. Louis and Carbondale areas. A special children's clinic is being built at Champaign to take advantage of special resources of the University of Illinois.

In preparation for these projects, members of the staff of the State Department of Mental Health and coordinating architects visited mental health facilities in various parts of the country and consulted with outstanding people in the field. A program was then devised to provide 230 beds for adults and 50 for children in each of the hospital-clinics. The ideal site size was determined to be 60 to 100 acres, making possible physical separation of such diverse groups as alcoholics and children.

Patients will pay for service to the extent they are able. The clinics will serve patients who can probably respond to intensive care over a relatively short time—often 60 days or less—and also provide outpatient services for residents of each region. After considerable study it was felt that ideally, outpatient services should be located within 50 miles of each citizen of the state. With the present six clinics all located in northern Illinois, branches will be needed to reach this goal. Such branches will be developed gradually. With adequate outpatient services, it is expected that many persons now hospitalized can remain at home, particularly if facilities are available for short-term hospitalization during times of special stress.

These examples probably represent the two extremes—one a series of coordinated but physically separate service units, the other a series of establishments providing a complete range of services within each facility. In the planning of centers under the new legislation, we hope there will be many other patterns devised, and much use made of the inventive resources of the architects and others involved in the planning process.

We especially hope that the planners will see the mental health center as part of the community and as one of a complex of community facilities. Mental disorders, unlike most other disabilities or illnesses, grow out of and contribute to family and community disorganization. They are bound up with child rearing practices, education, employment, recreation, health, religion—with the totality of family and community life. So the new mental health centers must have strong ties with other community resources. Some of them may even be housed in buildings containing other community facilities. Some, though housed separately, may use other community buildings for activity programs, as in New York City where patients from Montefiore Hospital use a nearby community center. In designing the physical plant, here again architects can use their imagination in helping facilitate communication between the mental health and other community agencies.

PROGRAMING MENTAL HEALTH FACILITIES

By Alston G. Guttersen, A. I. A.

Very frequently, programing for new hospital facilities begins and ends with group discussions and decisions; supplemented, perhaps, by visits to existing new facilities built to meet similar requirements. Although such round-table methods may be adequate for certain unusual projects, they run the risk of being unsatisfactory *unless supported by detailed factual study.*

Group discussions tend to develop insufficient factual information. Some of the participants, although professionals in other fields, may be inexperienced in programing and planning new construction. Even their professional experience, especially in psychiatric fields, may have been gained in outmoded, understaffed, purely custodial facilities toward which they can only reach backward in their thinking about new buildings. Conference programing eventually is beset by certain difficulties: the variety of opinions among experts on similar problems; a lack of quantitative and qualitative data; dominance of a single concept without recognition of related problems; decisions based on the experience of a few individuals without complete information on—or even a precise definition of—the problem under discussion. Such difficulties can be resolved only by reliance upon factual information.

In programing the Mulder Therapy Center and Kent Oaks Hospital (see following pages) a method of detailed factual study was proposed. The Center was to provide quarters for various groups of patients already under treatment at existing facilities of the Pine Rest Hospital Association. Doctor Gelmer Van Noord, superintendent, was initiating a long-range improvement program, and we were fortunate in his perception that a patient-by-patient study of the needs of each individual under treatment for the previous year, plus analysis of admissions, would give him and us a clear guide to the correction of overcrowding, better grouping, realistic allocations of therapy spaces, and planned improvement of outpatient, day care and community services.

The study itself was made on survey forms furnished by us and filled in by the staff. Although strictly factual and requiring only moderate staff time, the material is rather massive in detail, and analysis by the architect is time consuming and tedious unless the data can be put on punch cards. Nevertheless, the results provide a basis upon which both architect and hospital staff can proceed with confidence that problems have been fully explored. The information leads directly to actual requirements in space quality and kind, areas, equipment, traffic controls and staff.

The data sought in the survey were the following categories detailed for each patient:

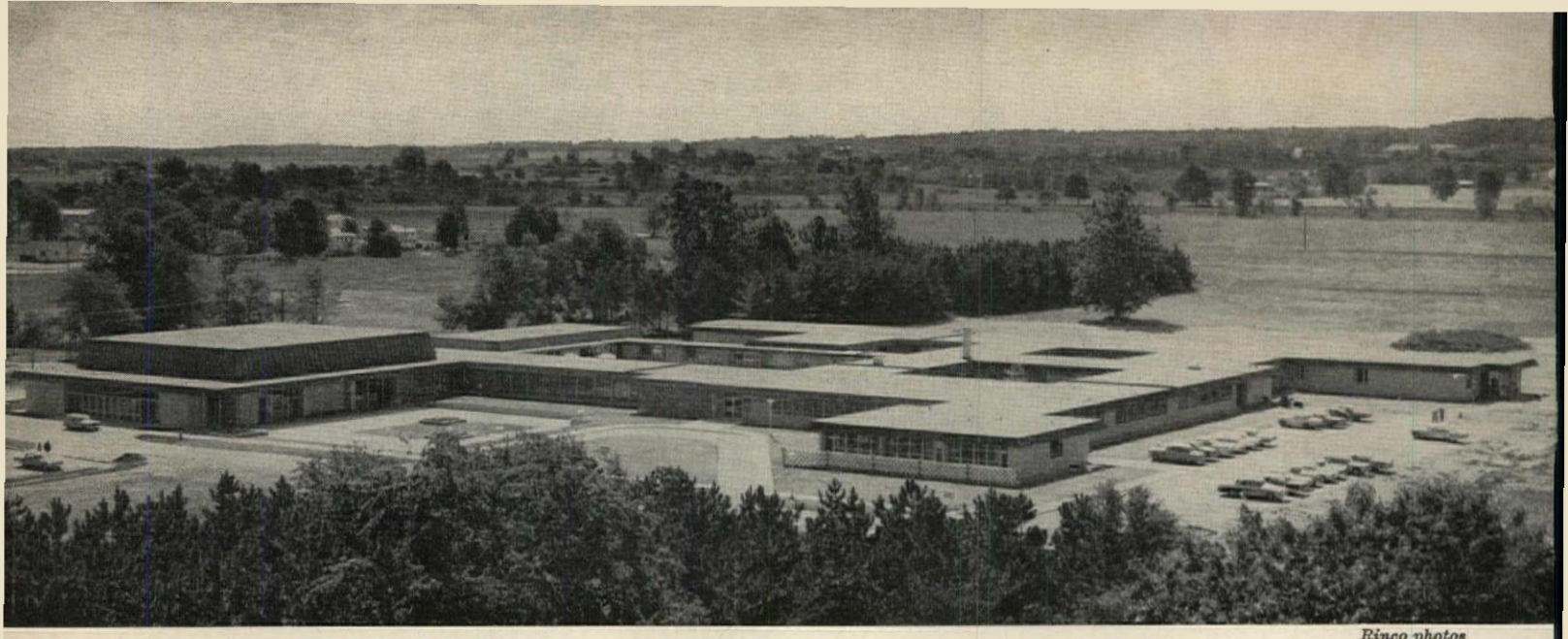
Identification data: Date of admission; occupation; sex; age; date of discharge from hospital; date of discharge from treatment (O.P.D., day-care or follow-up); residence (distance from hospital—to weigh requirements for outpatient or day-care treatment, or for family visiting—which was to be encouraged).
Physical condition: (Taken periodically while in hospital.) Ambulant; feeble ambulant; wheel chair; bed patient (partial or total); personal care as regards dressing, feeding and toileting.
Behavior: Ability to join in social and group activities; follow directions; recognize surroundings; noisy, assaultive, self-destructive, suicidal or cooperative.
Present status: Degree of privilege or supervision required; outpatient, day or night care; confined to nursing unit or leaves unit under supervision; freedom of building; no restrictions on movement; open or closed ward, or degree of security required.
Treatment and care: Examination and treatment requirements other than routine X-ray or laboratory services; medication (oral or injection); E.S.T., I.S.T. or hydrotherapy; principal nursing requirements—medical or psychiatric; type of bedroom most suitable—single, double, or four-bed room; and, psychotherapy requirements—individual or group.
Mental diagnosis: A. P. A. code classification
Frequency of visits by staff: Psychiatrist, internist (or other physician); psychologist, social worker, occupational therapist or recreation therapist.
Physical diagnosis: Disabling (cardiac, tuberculosis, blindness, etc.) or non-disabling conditions requiring treatment.
Desirable accommodations and activities: The combined staff judgment on the needs of each individual patient in regard to need for activities—arts, crafts, social activities (active or passive participation); daily living; physical activities (mild or active—indoor or outdoor); vocational and educational activities, etc.; and most desirable accommodations—as to treatment needs—in single, two- or four-bed rooms.

The survey data were analyzed to provide the following:

- Ten year summary of rate of admissions and population changes, in order to attempt to anticipate future needs.
- Number of first admissions (and re-admissions) by age, group and sex as follows:

1. Short term, acutely physically ill—requiring medical treatment and bedside nursing; contagious diseases.
2. Continued treatment patients, bedridden or wheel chair, who were: cooperative, confused, noisy, incontinent, etc.
3. Chiefly medical problems, but who were ambulant or feeble ambulant.
4. Chiefly psychiatric problems who were: ambulant, cooperative and able to live in a largely unsupervised situation; those who require supervision and help in their dormitories and in their activity programs; and, those who were more seriously ill and who were to be confined mainly to nursing units.

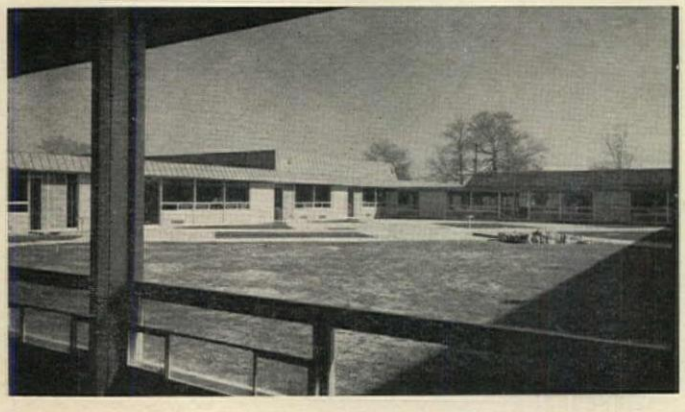
In both the Mulder Therapy Center and Kent Oaks Hospital on the following pages, the program study, derived from patient needs, led to solutions designed as Community Mental Health Centers echoing, although predating, recommendations of the Joint Commission on Mental Illness and Health.



Rinco photos

THERAPY CENTER FOR A PRIVATE INSTITUTION

Mulder Therapy Center
Grand Rapids, Michigan
OWNER: *Pine Rest Christian Hospital*
ARCHITECTS AND ENGINEERS: *J. & G. Daverman Company*
CONSULTANT: *Alston G. Guttersen*
GENERAL CONTRACTOR: *Nordstrom-Myers, Inc.*

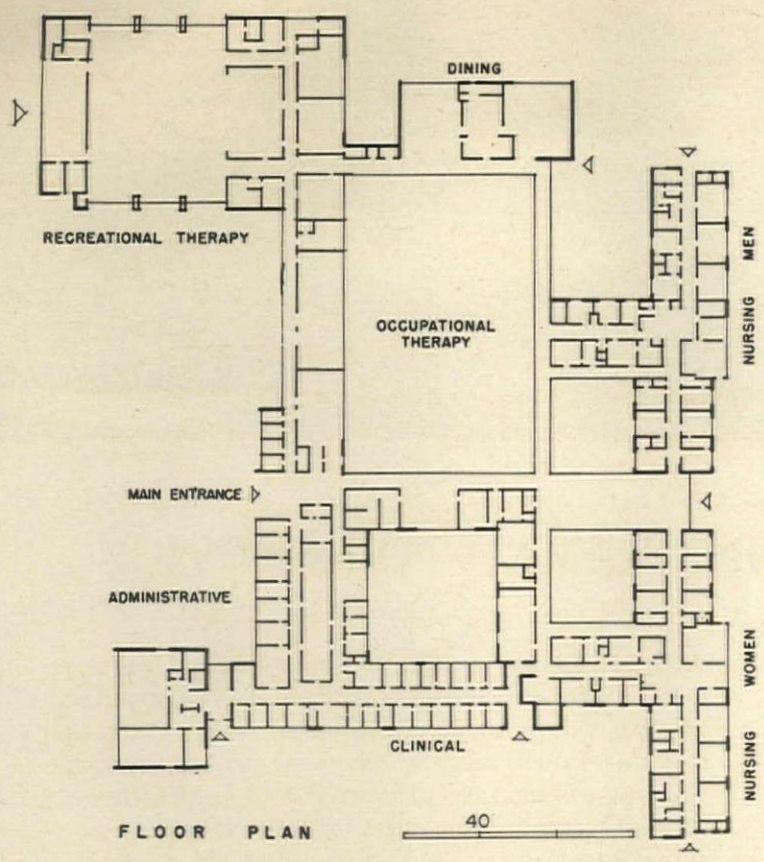


The surveys described on the preceding page provided programing and planning data for several different groups of patients at Mulder Therapy Center. The studies of admission and discharge rates by age and type of illness determined that the active ambulant category of patients would dominate space requirements. On that basis, diagnostic and treatment facilities provided for this group would be available to patients of other classifications; new patients would be removed from enforced contact with chronic patients; and the whole facility could be designed more appropriately to meet the needs of outpatient, day-care, night-care and other services required in developing a community-oriented program. A written program derived from the patient survey data provided a room-by-room analysis of requirements.

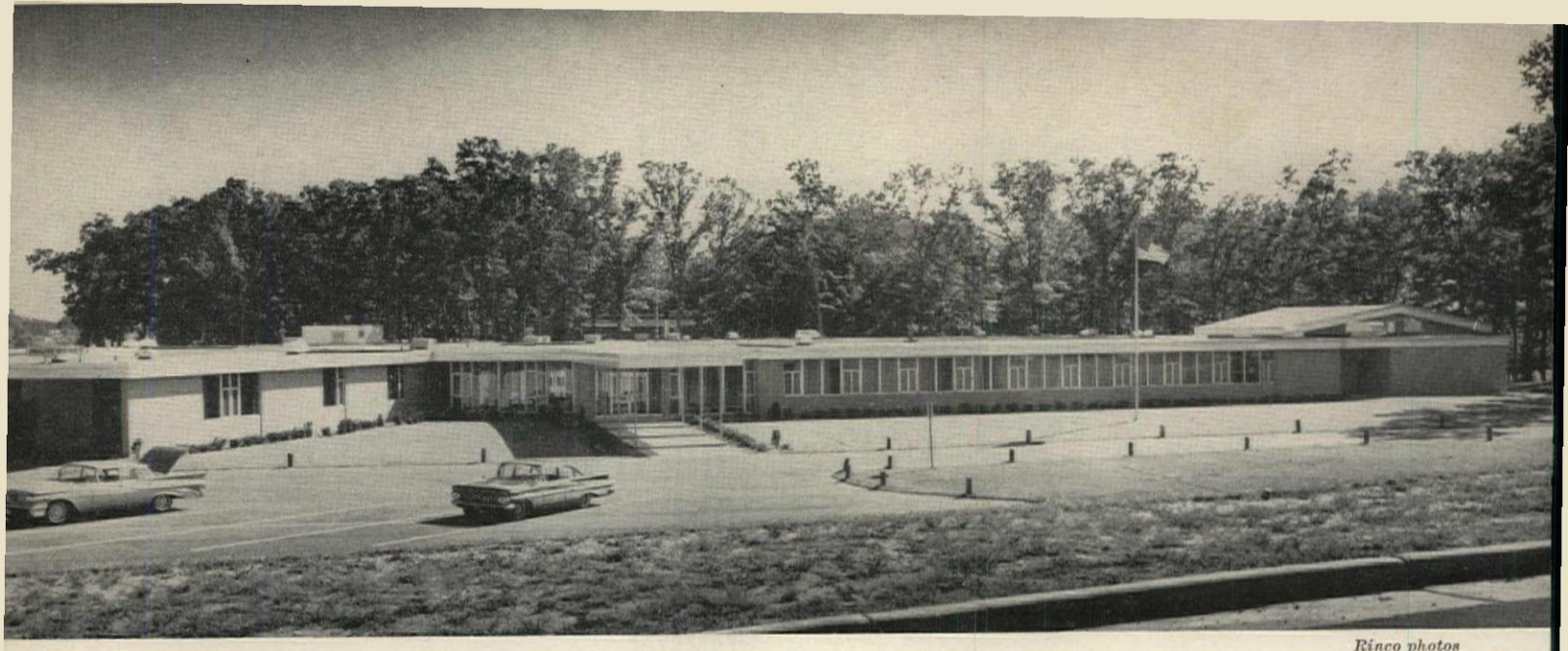
In arriving at design solutions it was agreed that it was desirable to emphasize the modern concept of treating the patient by treating his environment to best suit his particular needs; whether this be by the selection of his associates, his activities, or his placement within the physical setting. It was determined, therefore, that facilities having different general purposes should be arranged in separate—though connected—buildings in order that the purposes of each might be clearly expressed.

Facilities for admitting, for outpatient interview and examination, day care rest rooms, office and interview rooms for psychiatrists, psychologists and social workers are in a separate area with convenient access to both outpatients and inpatients. Business administration and nurses training functions are in another separate area.

Inpatient facilities—arranged in two nursing units of 25 to 30 beds each—are placed to the rear, or private side of the hospital. Each nursing unit is divided into three separate patient areas (convalescent, seriously ill and overactive or noisy) radiating from the nurses' station, so that each area can be operated separately or all three as patient area.



Sequence in arrangement of spaces at the Mulder Therapy Center permits outpatient and day care traffic to come and go without interfering with inpatient activities. Day rooms and lounge areas (*below left*) serve each of the patient group areas. Open courts and patios (*opposite page*) encourage patients to relate to the outside world and impart human scale to the facility as a whole. Indoor recreation and occupation areas (*below right*) can serve as multi-purpose space and may be used for general community purposes. Outdoor recreation areas on hospital approaches give a reassuring first impression



Rinco photos

A COUNTY HOSPITAL PROGRAMED FOR SERVICE

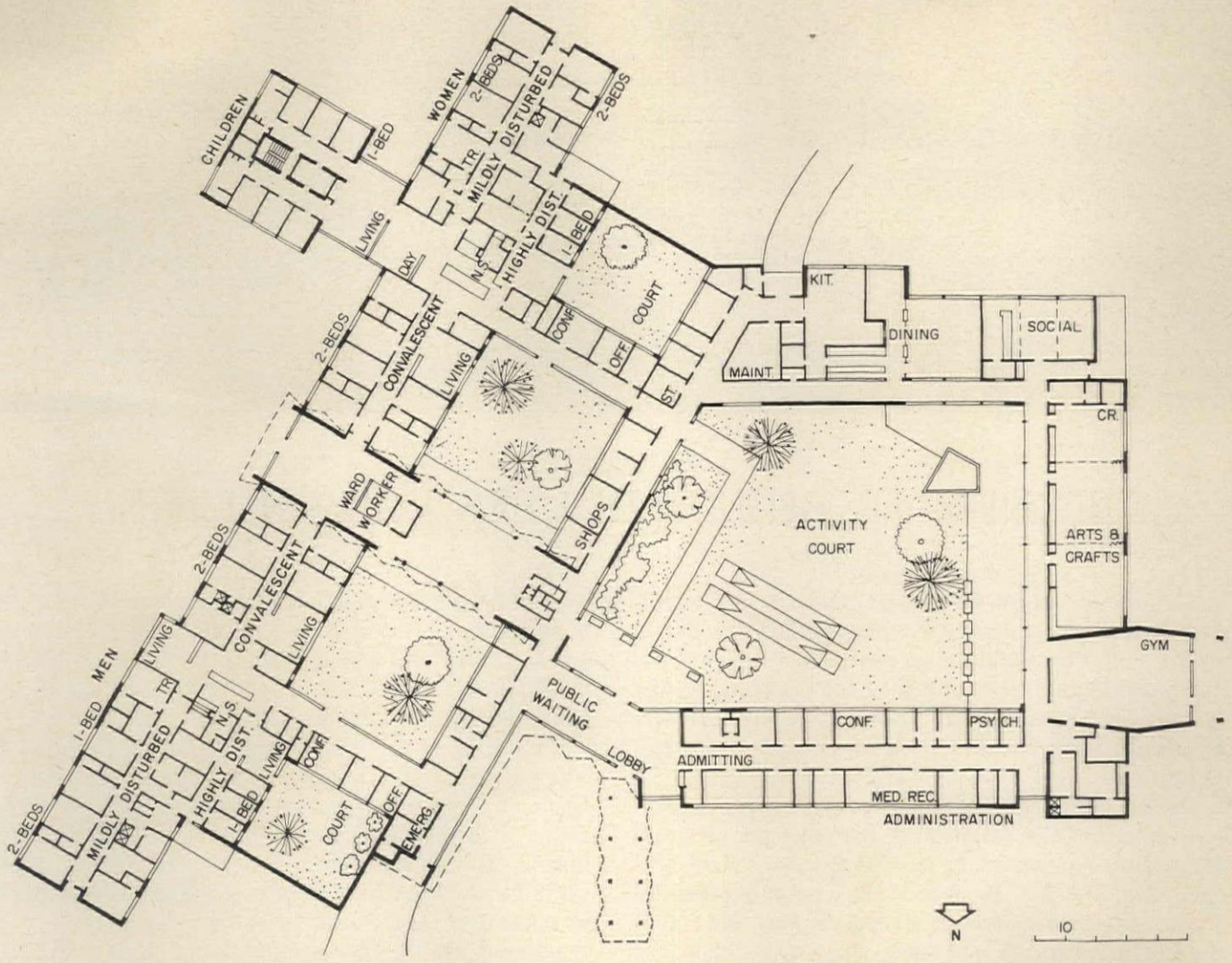
Kent Oaks Hospital
Grand Rapids, Michigan
OWNER: *Kent County, Michigan*
ARCHITECTS AND ENGINEERS: *J. & G. Daverman Company*
CONSULTANT: *Alston G. Guttersen*
GENERAL CONTRACTOR: *Geo Datema & Sons*

With increasing concern by Kent County psychiatrists for after-care of patients on an outpatient basis, it was determined to replace outmoded facilities with a new hospital which would provide more adequate community services. A site on the grounds of another county-operated general hospital—Sunshine Hospital—was selected.

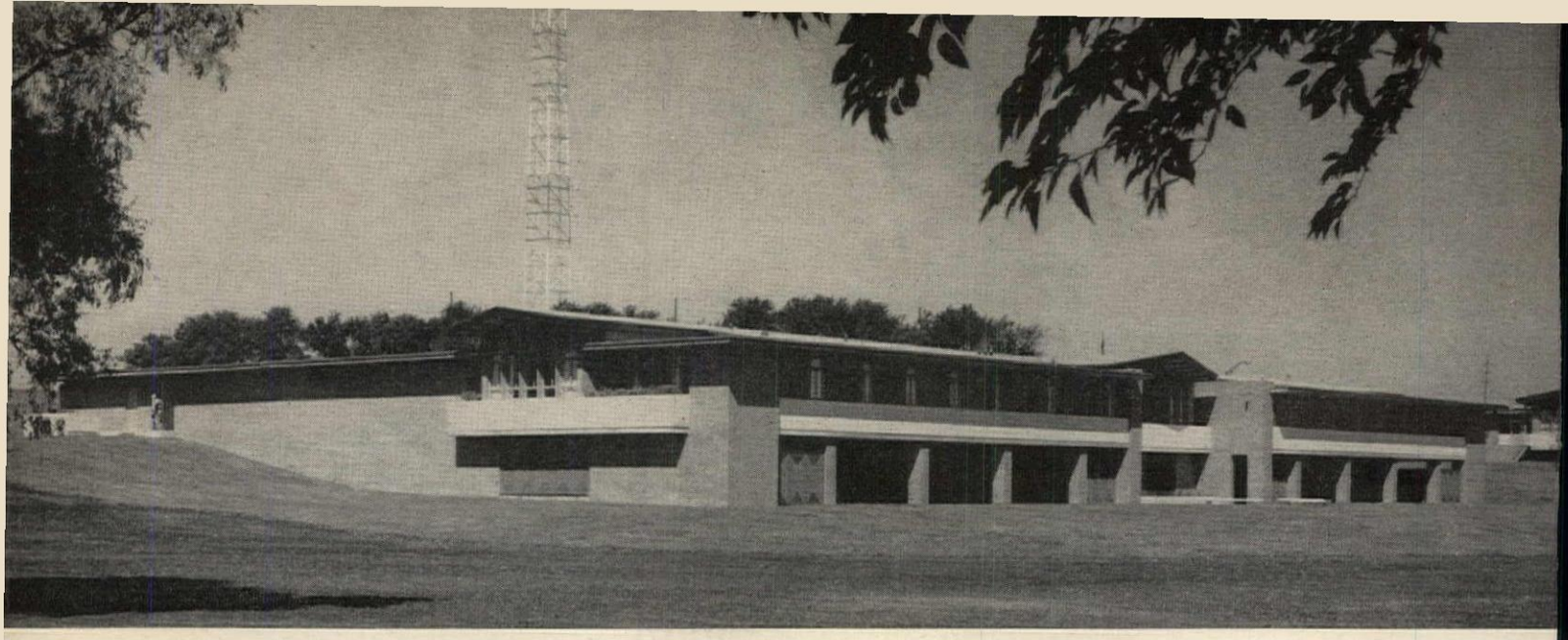
In determining programing and planning requirements for Kent Oaks Psychiatric Hospital, Doctor David Davis, director, agreed that the existing facility was so inadequate that if offered no clues to requirements for new facilities. He further agreed to a need for a survey of the previous 10 years' admissions. Consequently, a survey, similar to that described for the Mulder Center was conducted.

From this information, it was determined that services could be provided to a much larger number of patients by including additional activity areas for outpatient and day-care services. Two nursing units of 25 to 30 beds each were programed including a new separate six-bed childrens unit. It was also determined that in the long-range program of community services, additional facilities should be provided for the older age group.

The design follows the philosophy expressed in the previous discussion. The two nursing units comprised the single element which was least flexible and established the basic arrangement of spaces. Staff offices, facilities required to serve the two nursing units and the visitor's area were provided on the approach side of the nursing units. Outdoor courts opening directly from the living room areas are provided for each classification of patient. The main entrance and waiting lobby opens to a large activity court so that the first impression upon entering the hospital is of patients engaged in healthful occupational, recreational and social activities. Additional activity areas are provided near the nursing units for those patients who are not well enough to use the central activity areas.



A county hospital for 50 inpatient adults and six children includes outpatient and day-care facilities for service to the community. Day care works easily into hospital routine through dual use of a large central day room space dividing clinical from residential areas. This space traverses one entire wing, and contains an island enclosure which serves as either ward employes' operations center or as a daytime nursing station. All spaces open into courts. Three arts and crafts rooms (*below left*) can be opened into a single room by pushing back folding partitions. Entrance lobby (*below right*) is spacious and pleasantly decorated, an unusual county hospital invitation and reassurance to community traffic



MENNINGER BUILDS HOUSES FOR CHILDREN

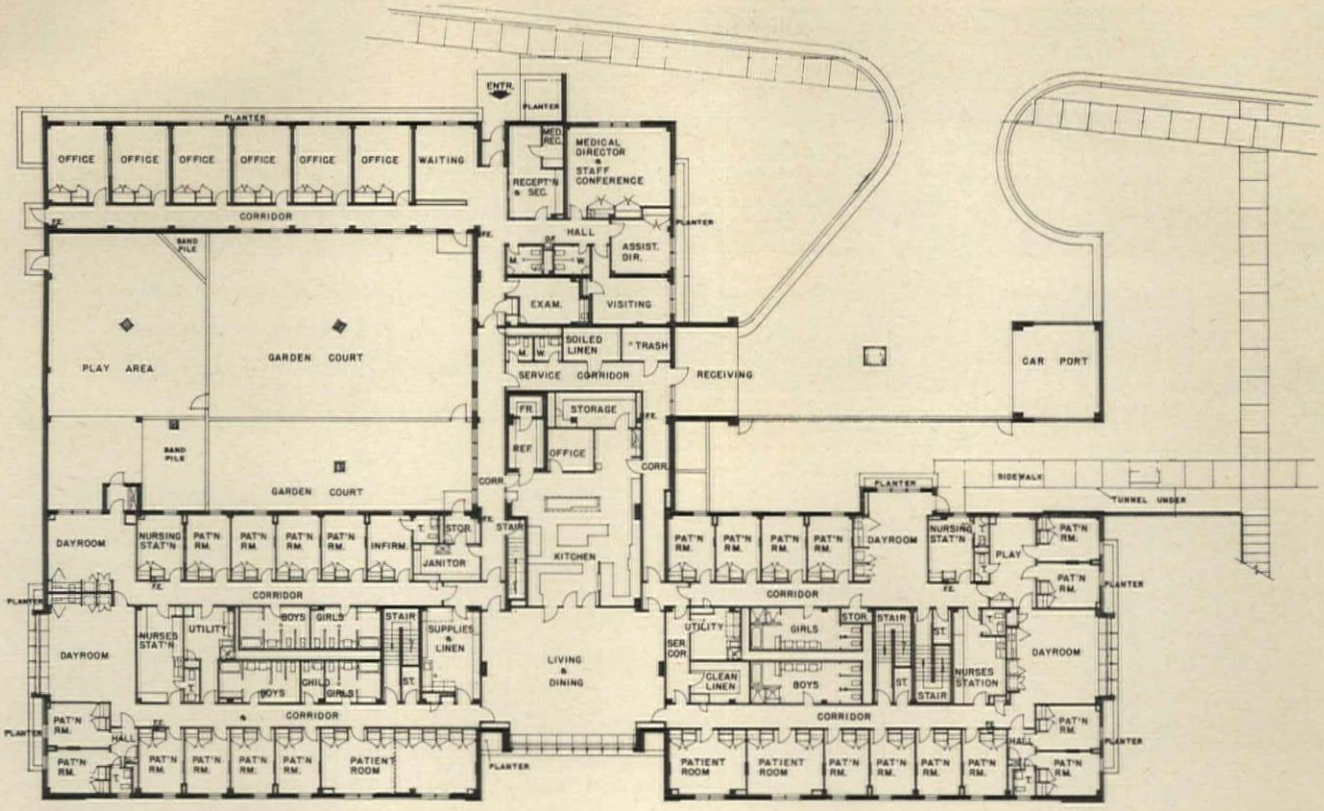
This facility, a 50-bed hospital and school for children with psychiatric and neurological disorders, consists of three buildings designed to augment both day hospital and resident treatment programs of the Menninger Foundation's Children's Service formerly administered by the C. F. Menninger Memorial Hospital.

Dr. Robert E. Switzer, director of Children's Services, describes the evolution of the program: a building committee consisting of Dr. Switzer, Miss Mildred Law and Mr. Basil E. Cole, visited residential treatment centers throughout the country, both public and private, old and new. They questioned the operators of these centers asking which features they were pleased with, and what they would do if they were given an opportunity to build an entire health center. "We wanted to plan a set of buildings that would house a carefully formulated clinical program and yet would be flexible enough to allow changes." In addition to increasing capacity of the Foundation from 20 to 50 children, the objective was to include children up to the age of 16 or so rather than continuing with age 12 as the upper limit for admission. Another objective was to build capacity to admit children without a waiting period and without intruding them immediately into the groups of children already enrolled. There was also the wish to admit a wider variety of severely disturbed children as well as the mildly retarded and mildly brain damaged children who could benefit from the clinical program. Another objective was to increase therapeutic group activities without de-emphasising or eliminating individual psychotherapy. Increased capacity for a day-care program and for special professional education activities were also considerations.

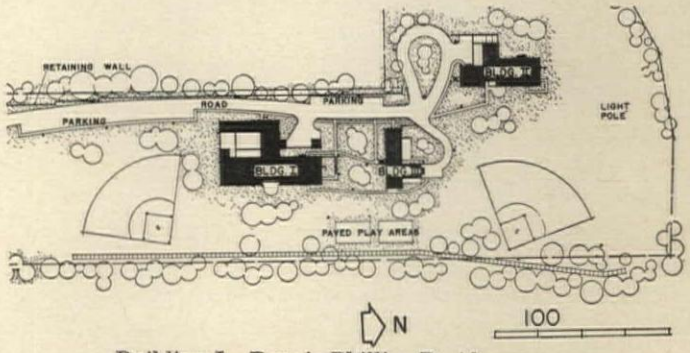
With this clinical program in mind, the building committee sat down with consulting architects, Murphy and Mackey, and drew broad outlines of plans for three buildings. The first building was for 20 boys and girls up to age 12. The second was for 20 boys and girls (later changed to all boys) from 12 to 16. The third was a school-activities building. These buildings were to be located on a 23-acre tract about 15 blocks from the former residence.

The building for the younger children, Building I (*opposite*), later designated the Bonnie Phillips Residence, was planned to include under one roof, four "little houses," each with its own day room, nursing station and traffic pattern. The first of these units houses the direct admissions and the inpatient examination of children prior to acceptance into a treatment group. This section has a designated capacity of four. The second is a somewhat larger unit designed for 10 boys and girls between the ages of 5 and 9. The third was planned to take care of six girls between the ages of 9 and 12, and the fourth was planned for 10 boys between the ages of 9 and 12. Central core of this four-unit residence is a common kitchen and a dining room into which each of the four houses opens. Except for the admissions area, each "house" in this residence has a downstairs recreation area, also at ground level because of grading, and each house has its own front door at that level. In addition, the residence includes a conference room and office for the senior resident psychiatrist and for the chief social worker. There are six multi-purpose offices included for seeing children who at any particular time could not go to the office-outpatient building.

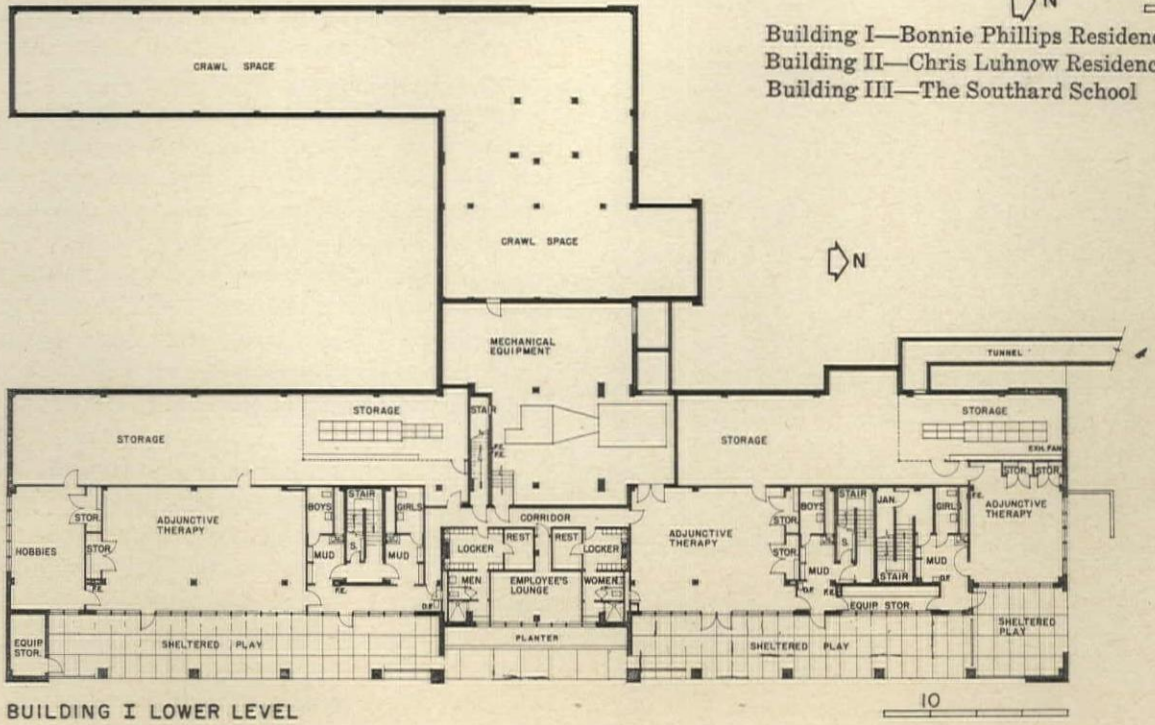
The second building, the Chris Luhnow Residence, was planned as a 20-bed unit for young adolescents. Like the first building, it is a two-story structure with both floors opening to ground levels. This residence includes three "houses" under one roof: a four-bedroom admission-examination area, a six-bed residence designed for teenage girls, and a 10-bed house designed for teenage boys. Again, all of these units have access to a common dining room. The kitchen in this residence is secondary to the major kitchen



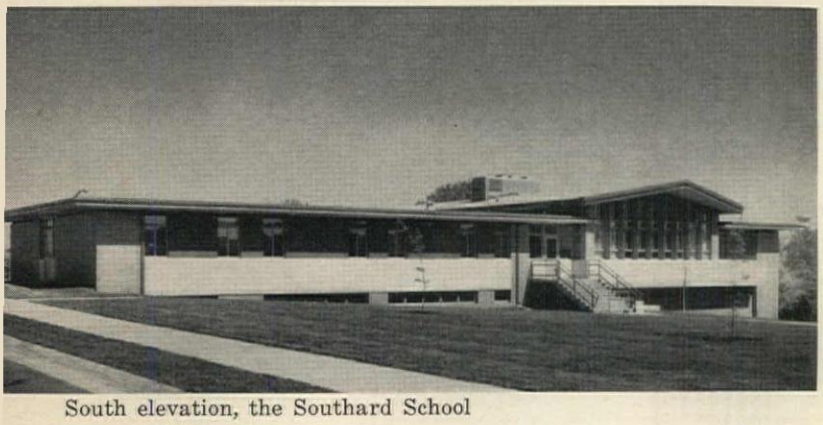
BUILDING I UPPER LEVEL



Building I—Bonnie Phillips Residence
Building II—Chris Luhnow Residence
Building III—The Southard School



BUILDING I LOWER LEVEL



South elevation, the Southard School

Children's Psychiatric Hospital

Topeka, Kansas

OWNER: *The Menninger Foundation*

ARCHITECTS: *Ekdahl, Davis and Depew*

PLANNING CONSULTANTS: *Murphy and Mackey*

MECHANICAL AND ELECTRICAL ENGINEERS:

Scott & Kinney

STRUCTURAL ENGINEERS: *Finney & Turnipseed*

GENERAL CONTRACTOR:

Charles R. Bennett Construction Company, Inc.

Waiting area (*above*) and central dining room (*below*) in the Bonnie Phillips Residence

in the Bonnie Phillips Residence. Also included were a downstairs front door and recreation area for each of the two treatment dormitories, an office for the psychiatrist in charge and three multi-purpose offices for interviews or testing.

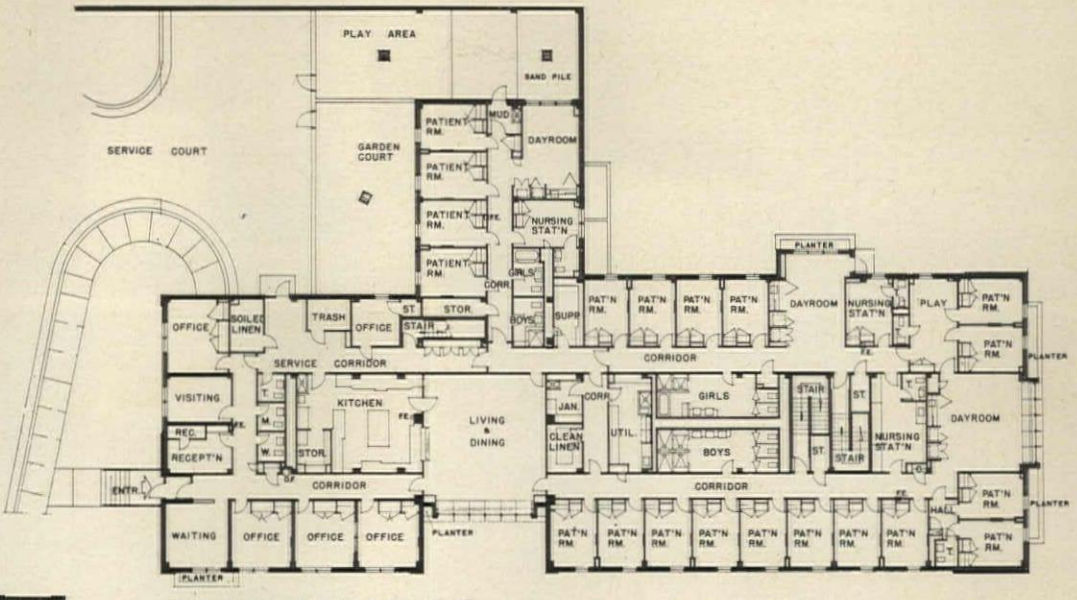
Space arrangement in the school-activities building, Building III which was later designated Southard School, was designed so that traffic patterns of the smaller children seldom cross those of the larger children. Southard School, like the two residences, is a building with two levels, each of which opens to ground-level. This building provides nine classrooms and tutor rooms, and accommodations for art, crafts, manual arts, home arts, music, shower rooms, staff lounge, principal's office, social group worker's office, clerical office, library and a small gymnasium.

Although the hospital offers a complete range of psychiatric and neurological treatments, there is no operating room in the new facility, since staff neurosurgeons find it most practicable to use the operating rooms of local general hospitals.

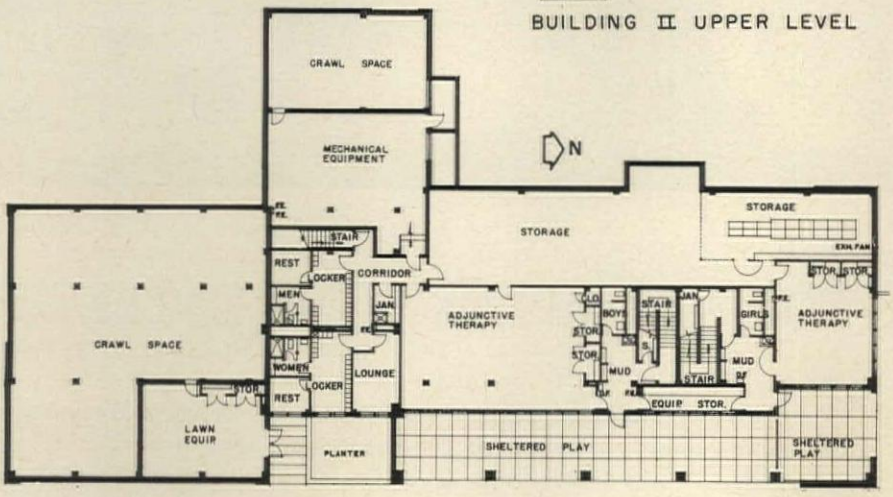
There are no security screens in the project. A standard specialized window was modified for the job and glazed with ¼-inch tempered glass. The vent operator handle is removable and normally is not attached to the window.

Particular stress was placed upon using materials that would resist hard use. Walls have Portland cement plaster finish. All interior doors are solid core wood. Sheet vinyl was used for most floor covering, together with integral cove base. The top of the cove base was recessed to resist its removal by patients.

Central boiler and an air-conditioning compressor provide the hot water and chilled water for all three buildings' heating and cooling systems, and distribution is through tunnels, the tops of which are sidewalks. High pressure air-handling units centrally located in each building supply air to all areas through a dual duct system with tamper-proof outlets that resist insertion of foreign matter.

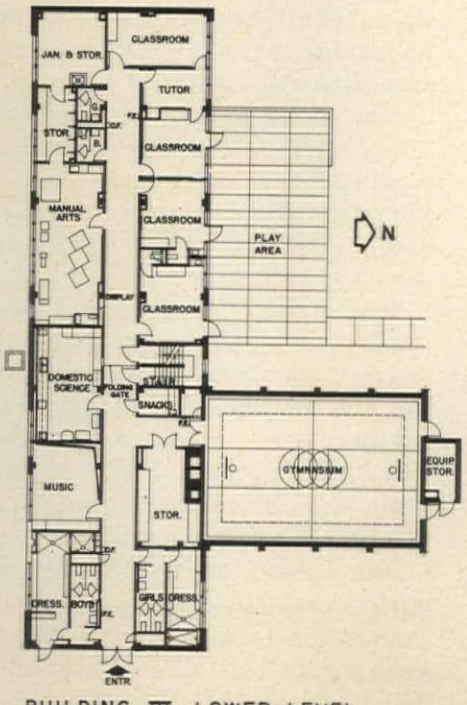


BUILDING II UPPER LEVEL



BUILDING II LOWER LEVEL

10



BUILDING III LOWER LEVEL

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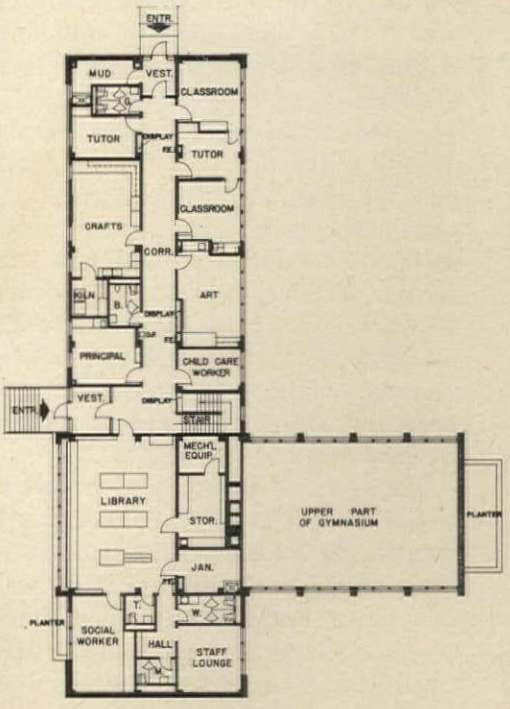
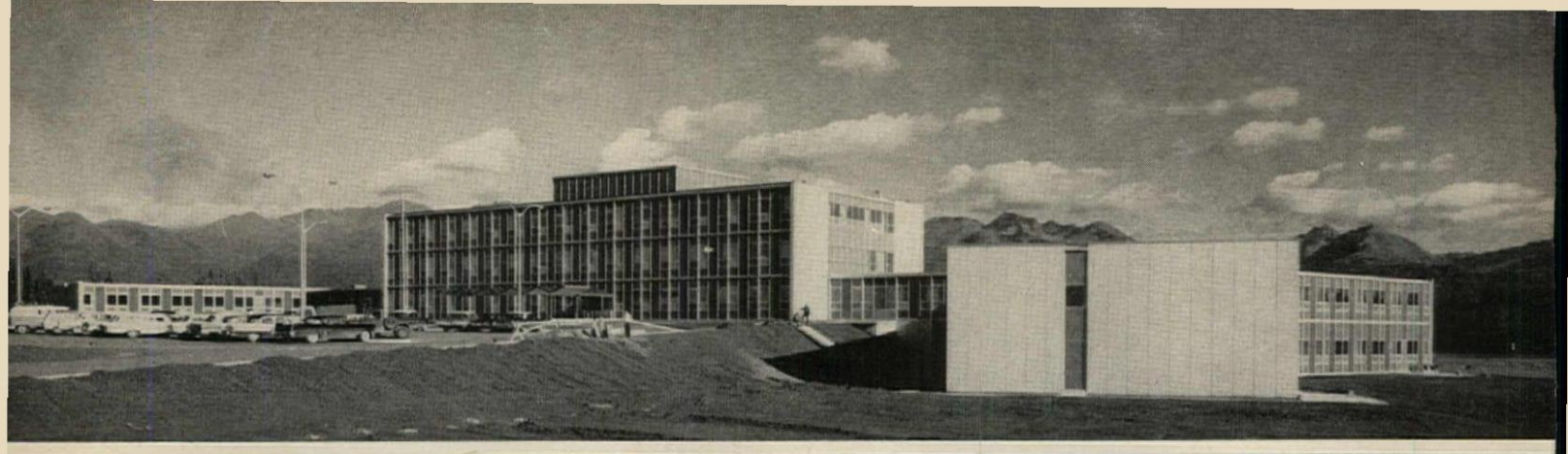
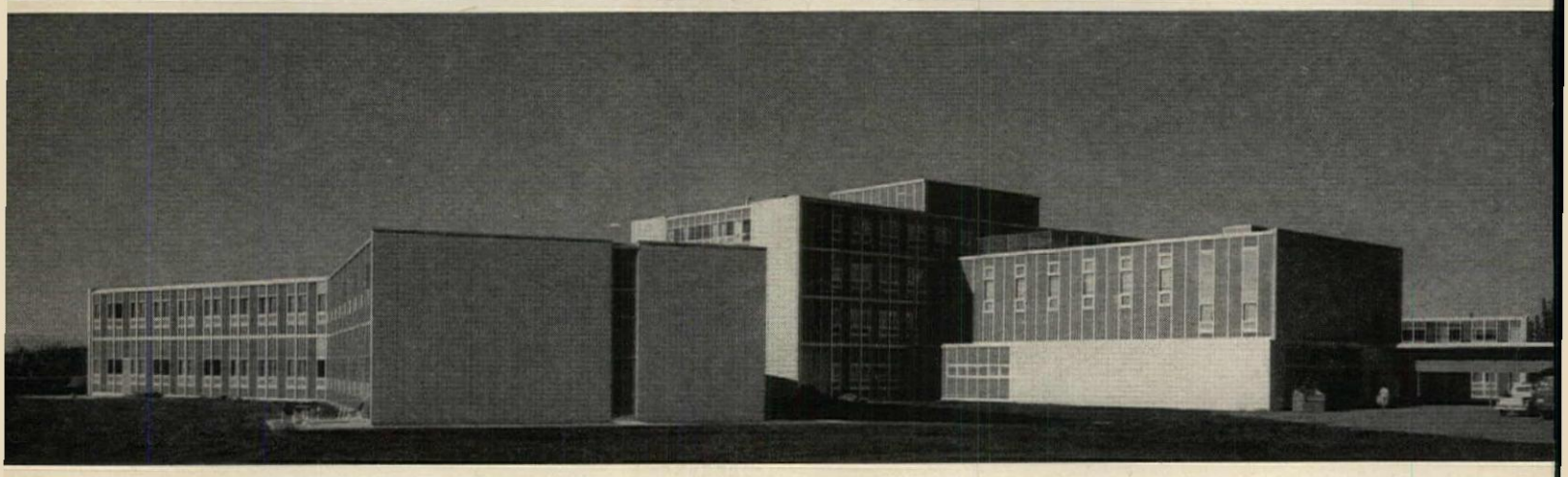


BUILDING III UPPER LEVEL





ALASKA DESIGNS FOR A COMPLEX COMMUNITY

The Alaska Psychiatric Institute, completed in July 1962, is a 225-bed facility designed by Stone, Marraccini and Patterson to be expansible to 450 beds.

Careful discipline of proportion, color and design of window elements impart a rather unexpected warmth to the over-all treatment within the curtain wall dictum. This effect is enhanced by massing of the building, which steps down the sloping site with a variation of bulk which relieves the formidable scale characteristic of many state institutions.

This is the first hospital in Alaska for diagnosis and treatment of acute mental illness in all age groups on both inpatient and outpatient bases. In spite of its extremely broad and flexible program of service, it is relatively small for a state institution. Its size reflects both the rapid turnover made possible by modern treatment and some ingenious architectural solutions to traffic and space problems imposed by the population mix and by an active program of community relations.

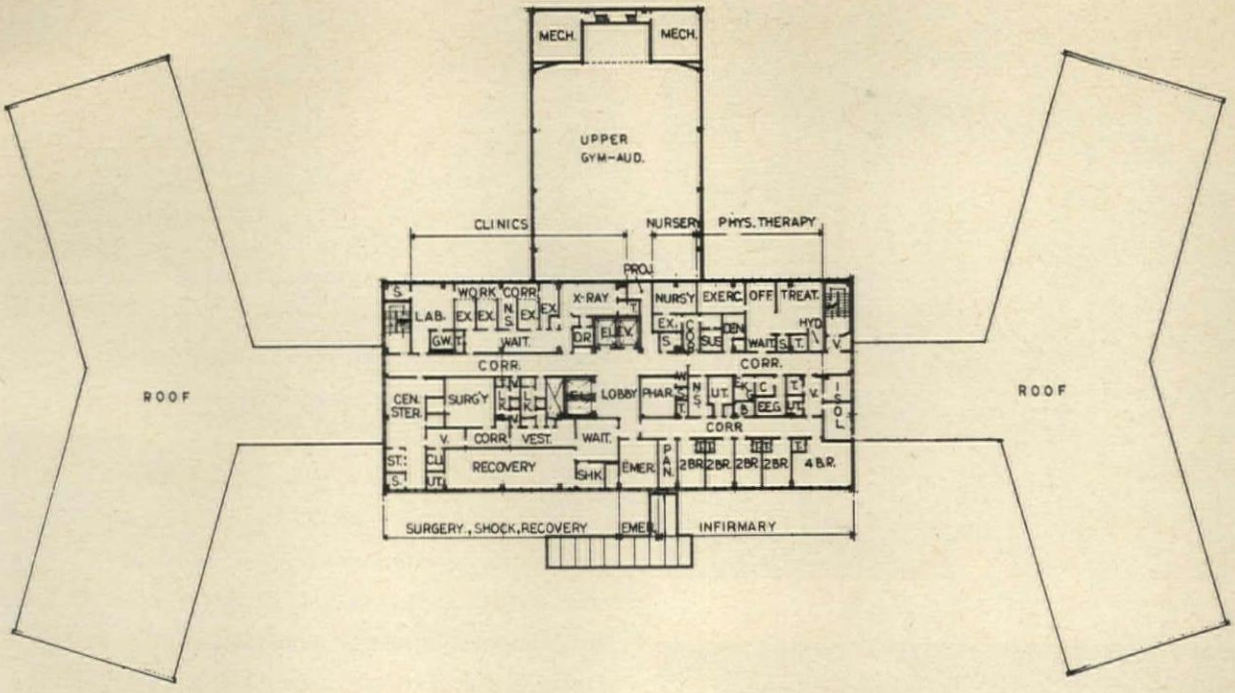
The Alaska population is composed of various tribes of Eskimos, Indians and Aleuts as well as "state-side Americans." All these require a variety of housing and activity facilities handling small groups of patients. An open plan, attractive day rooms, multiple recreational facilities and minimum, unobtrusive security devices are basic to the design.

Wards provide sleeping accommodations for 25 patients each. Spacious four-bed alcoves, either open to corridors or semi-enclosed by desk-high storage elements, permit some sense of privacy for small groups while at the same time they are subject to easy surveilance from the nurse's station. The four-bed arrangement also helps overcome difficulties arising out of the multiplicity of tribal animosities and dialects characteristic of the population. Any patient with a language barrier can be placed in a room with other patients with whom he can communicate—a vital key to his eventual recovery. Food service is also arranged for small groups.

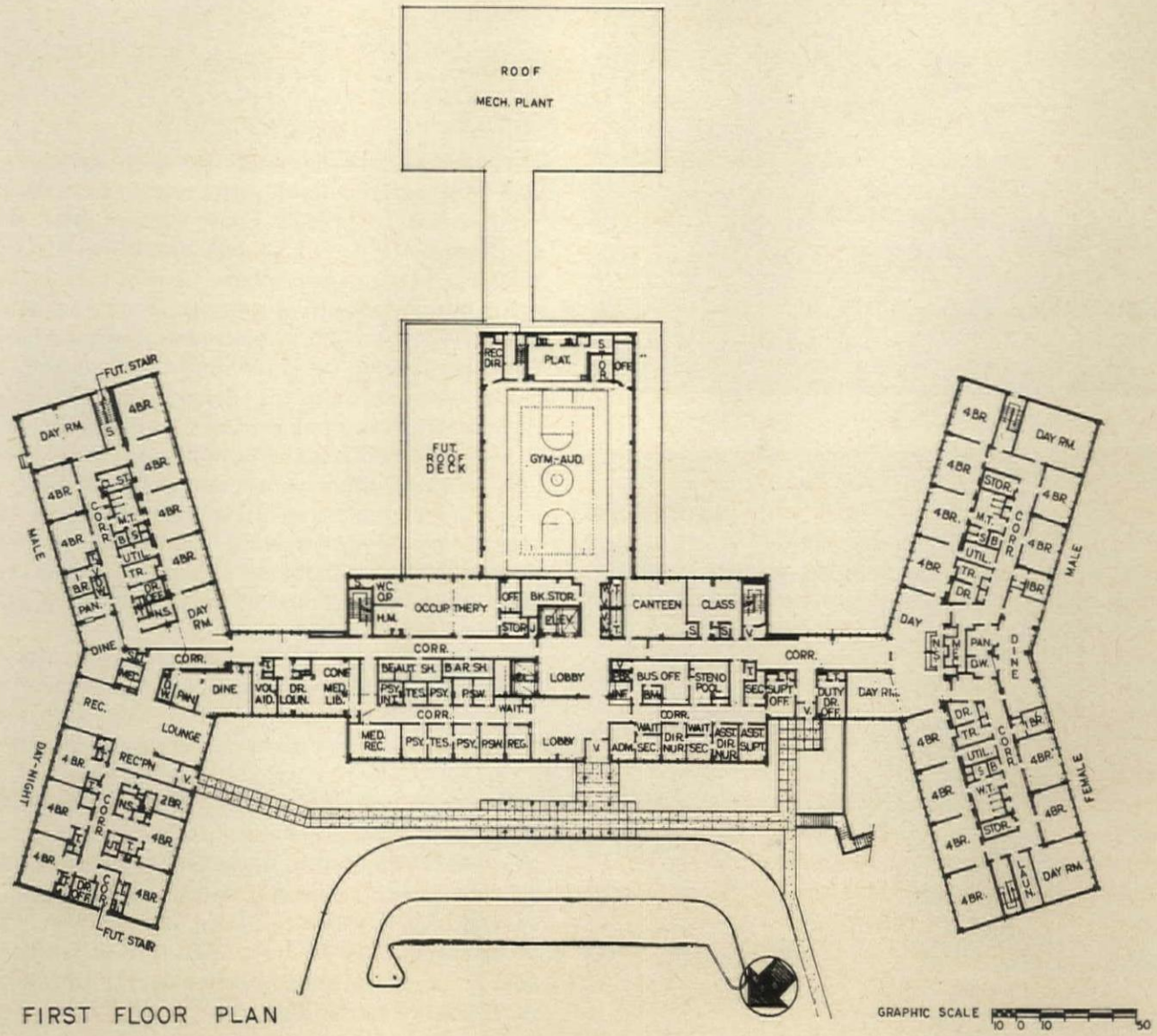
Plan of the building consists of a rectangular administrative and clinic center from which wings extend outward and divide into nursing units. Dual nursing stations at the confluence of each two units can be operated as a single station or divided into separate stations by a sliding wall.

Plan of the central building follows a two-corridor pattern permitting separation of public and professional traffic from patient traffic on its way to therapy and activity centers. A day-night hospital in the northeastern wing has a separate entrance through which patients come and go in changing shifts. Day patients enter in the morning from the community after night patients have departed to their jobs.

The frame is steel with concrete floors. Aluminum curtain wall has double glazing, with tempered glass on the inside to minimize impact hazard without creating an institutional atmosphere by the use of detention screens. Only the single bedroom on each nursing unit is equipped with security screening.



SECOND FLOOR PLAN



FIRST FLOOR PLAN

One of many day rooms for quiet patients

Dual nursing station can be divided by sliding wall with ceiling track

Four-bed alcoves permit communication, ready surveillance, but are large enough for sense of privacy

Alaska Psychiatric Institute, Anchorage, Alaska

OWNER: *State of Alaska*

ARCHITECTS: *Stone, Marraccini and Patterson*

Norman W. Patterson, partner in charge

George Agron, project director

ASSOCIATE ARCHITECTS: *Foss, Olsen & Sands*

CONSULTANT ARCHITECT: *Alston G. Guttersen*

STRUCTURAL ENGINEERS: *John H. Stevenson*

MECHANICAL ENGINEERS: *J. Donald Kroeker & Associates*

ELECTRICAL ENGINEERS: *Grant Kelley & Associates*

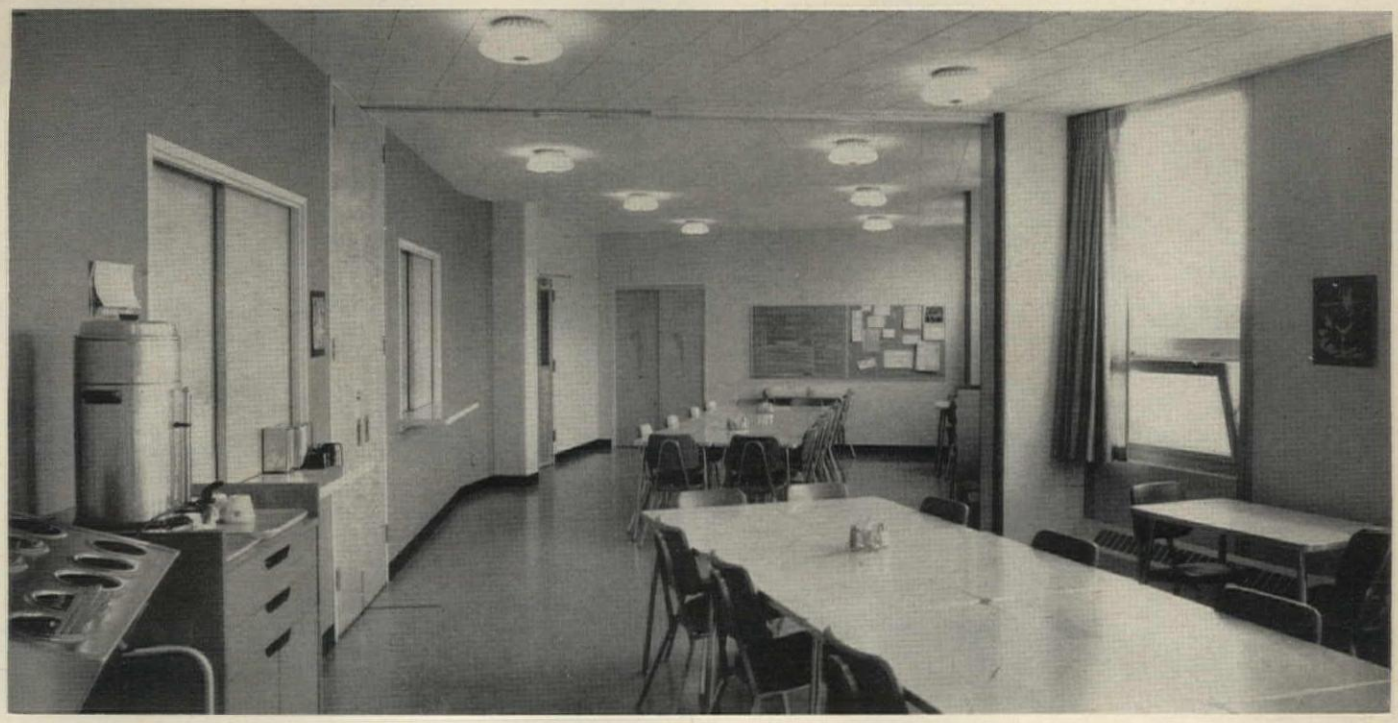
GENERAL CONTRACTOR: *Lease Company*

The concrete slab flat roof was designed for a live load of 40 psf, double the code requirement, to carry snow loads. To prevent snow accumulation on the roof, parapets were avoided, eyebrows eliminated, and all projections minimized.

Anchorage is south of the permafrost line, but continuous ¾-inch rigid insulation was installed around the perimeter of the building from floor slab to 18 inches below finish grade. Foundation footings were excavated to minimum depth of four feet. An over-all U factor of 0.15 was obtained throughout the curtain wall, including panels and mullions, and frosting was eliminated on all interior surfaces by the use of insulated porcelain enamel panels, plastic thermal breaks separating exterior and interior surfaces of all aluminum wall members; wood sash on all operating windows.

Because of a low summer design temperature, air-conditioning was installed only in the surgical suite. Heating is by convectors throughout with supplemental radiant heating in slab on grade for the pediatrics ward.

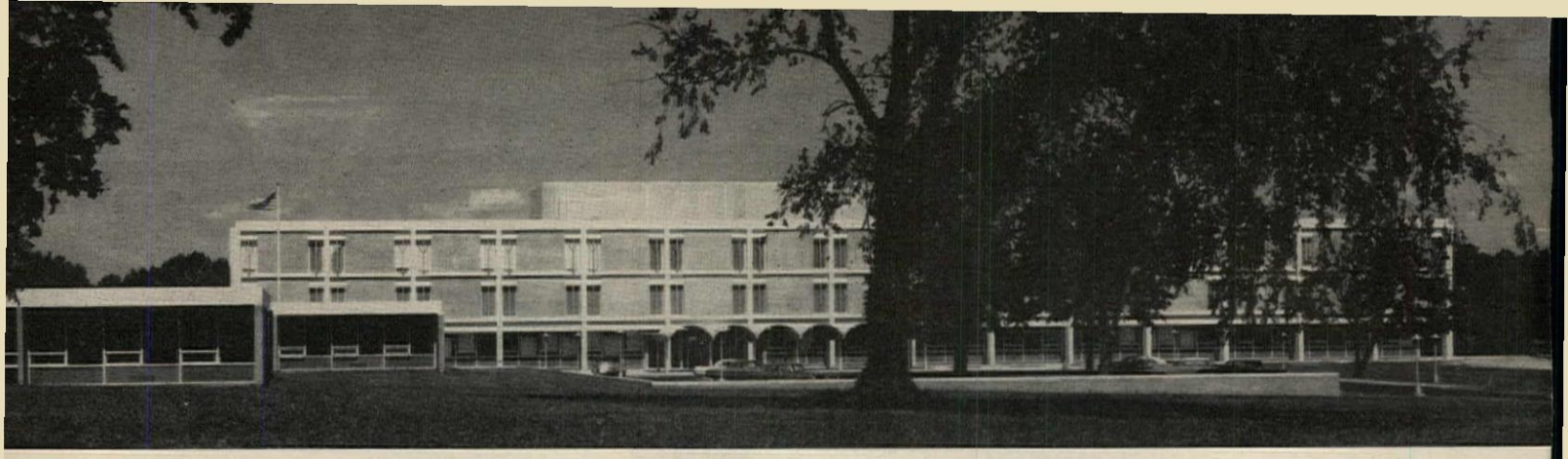
Consideration was given to seasonal fluctuations in daylight from 20 hours in summer to four hours in winter. Orientation to the south sun is avoided in bedroom areas. Ceiling drapery tracks extend wall-to-wall in all windowed areas, allowing for curtains to black out the summer night sun as needed, but also allowing optimum penetration of sunlight during the short winter days.



Two-ward dining room (*above*) can be divided by sliding wall, is served from central kitchen

Children's play room (*left*) is open to dining area and to outdoors. Nearby, a second "indestructible" playroom is for disturbed children

Occupational therapy room (*below*) has tables for arts and crafts, hand looms, home management kitchen at far end, light woodworking machines behind camera



Joseph W. Molitor photos

COTTAGE PLAN FOR A STATE SCHOOL-HOSPITAL

"The old adage that people shape and are shaped by their environment for better or worse bears repeating especially in approaching the difficult problems of designing for the mentally ill." So says architect Vincent G. Kling in an analysis of studies relating to some of his recent designs for mental facilities including the Eastern Pennsylvania State School and Hospital, shown here. "The goal of the design," Kling points out, "should be to create institutions which enrich human experience on their own level and which do even more: positively impell each patient to develop his capacities, to be the best human being that he can. The longer the step from institution to free society, the harder it is to take. Our design must tend to make this step short, easy, even necessary, for as many people as possible.

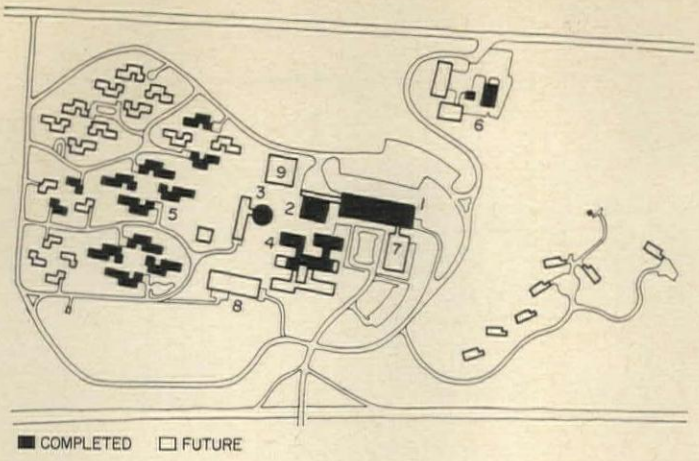
"Psychiatrists have said again and again in recent years that they need institutions which are not institutional, but are homelike. But when a psychiatrist talks about a homelike atmosphere in a hospital, he has not given the design solution. He has only stated the problem. Within the dictum of adherence to human scale and basic human needs for quiet, privacy, fresh air, natural light, color, texture and all those qualities of environment that make life more meaningful, the design itself must deal with the particulars of very special populations. The homelike solution for the long-term, largely custodial care of severely retarded children, for example, would be entirely different from the homelike solution for the rehabilitation of acutely disturbed children such as those at the Eastern State School and Hospital in Bucks County, Pennsylvania."

The patient at Eastern State School is emotionally-disturbed, a child in trouble who is drifting toward an antisocial life, but who can be rehabilitated if treated before becoming a long-term ward of the state.

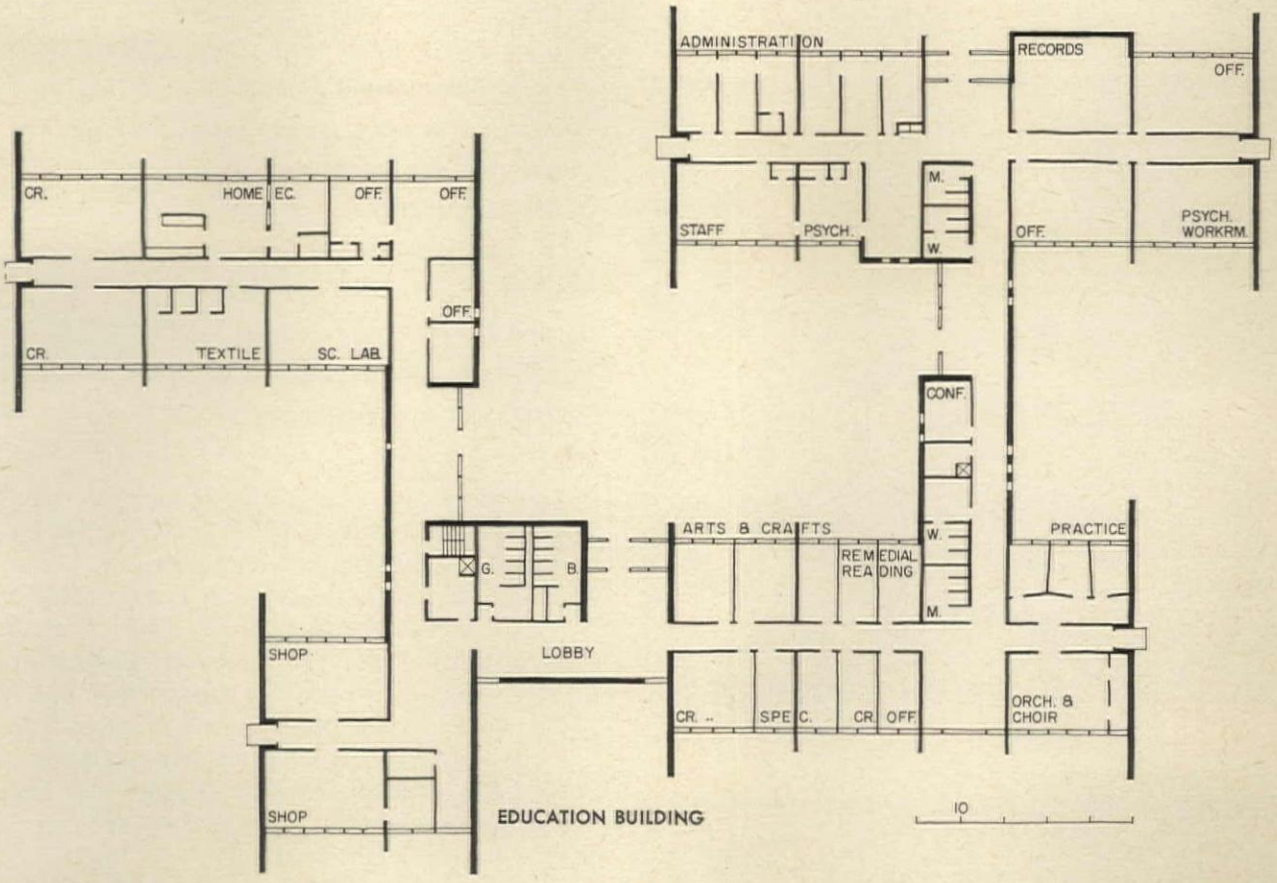
In function, the school combines a community of foster homes with an intensive treatment clinic, so that children can benefit both from skilled attention and from the warmth of personal relationships in substitute family and community circles.

The school is a complete, self-contained village of residence-type cottages, supported by buildings for educational therapy, recreation, medical treatment and administration. All non-cottage buildings are removed from the living area to preserve the residential atmosphere and human scale of the buildings which are, in fact, homes for the children.

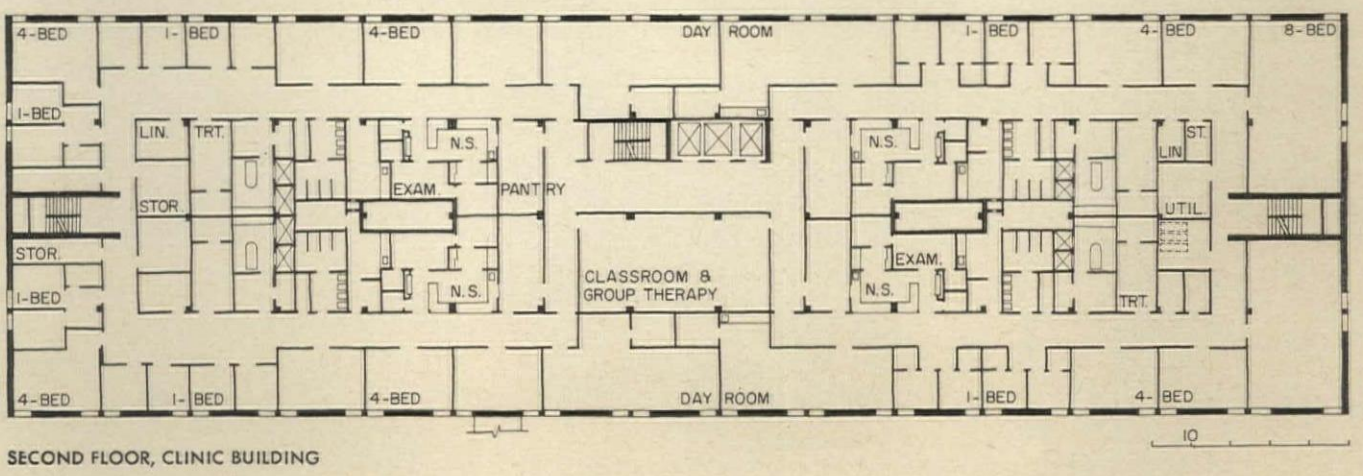
Each cottage has a husband-wife foster parent team who live in, and at least one of whom is trained to care for the child patients. Children live, sleep and eat in the cottages. They play in miniature neighborhood courts just outside their front doors. They attend classes and rehabilitory programs in the educa-



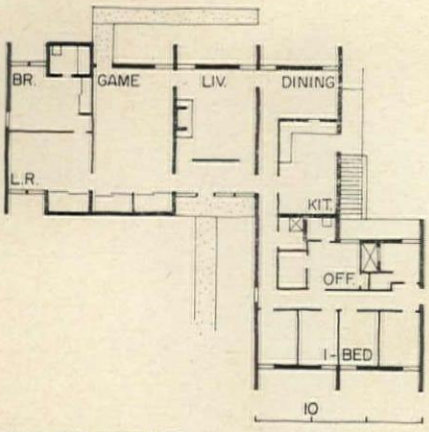
1. Clinical building
2. Food service
3. Recreation
4. Education
5. Cottages
6. Boiler plant and garages
7. Administration
8. Gymnasium
9. Research



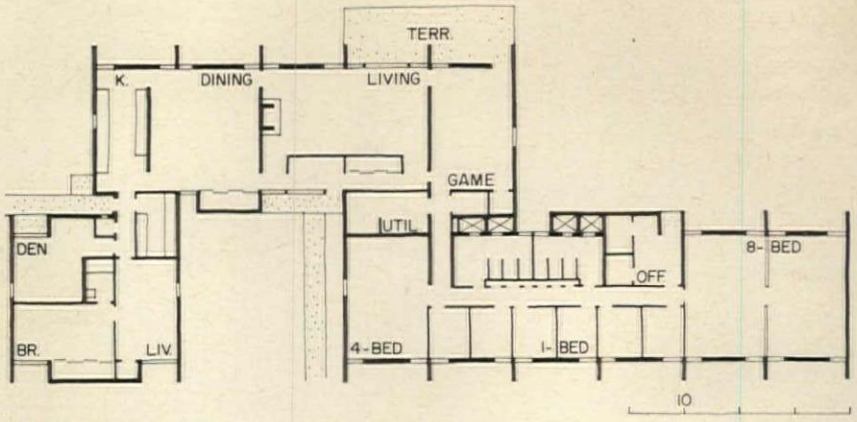
EDUCATION BUILDING



SECOND FLOOR, CLINIC BUILDING



FOUR-BED COTTAGE



EIGHT-BED COTTAGE

Eastern Pennsylvania State School and Hospital
Bensalem Township, Bucks County, Pennsylvania
OPERATING AGENCY: *Pennsylvania Department of Public Welfare*
ARCHITECT: *Vincent G. Kling*
Samuel K. Schneidman, project manager
Joseph Marzella, team designer
STRUCTURAL ENGINEERS: *McCormick-Taylor Associates*
MECHANICAL-ELECTRICAL ENGINEERS: *Pennell & Wiltberger*

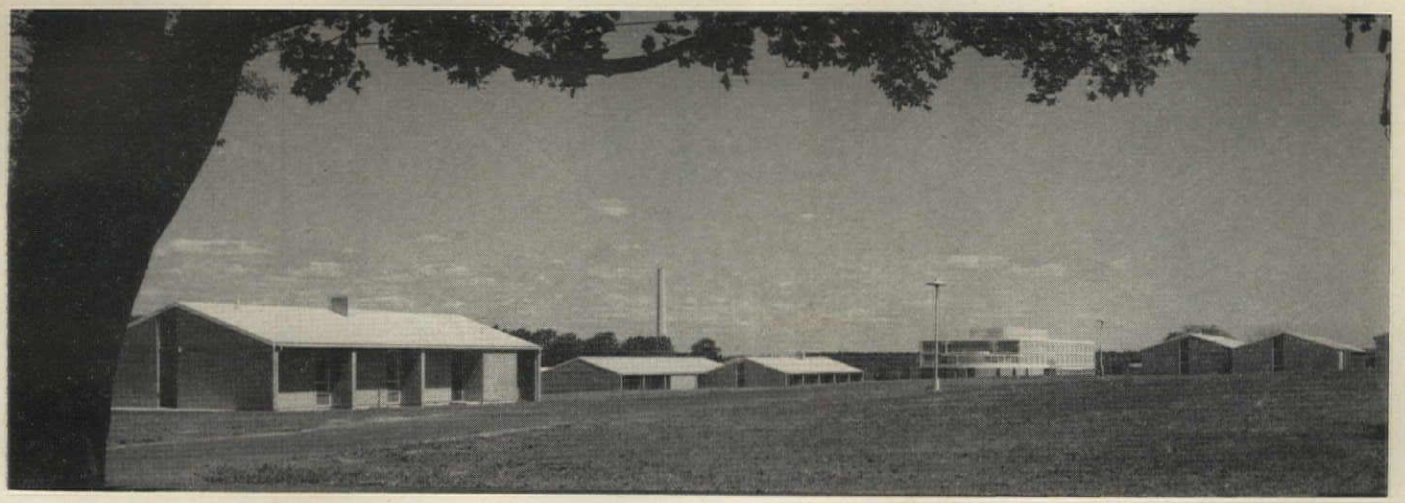
tion building, take part in group activities in the recreation building, receive medical attention in the clinic, and play outdoors on nearby athletic fields.

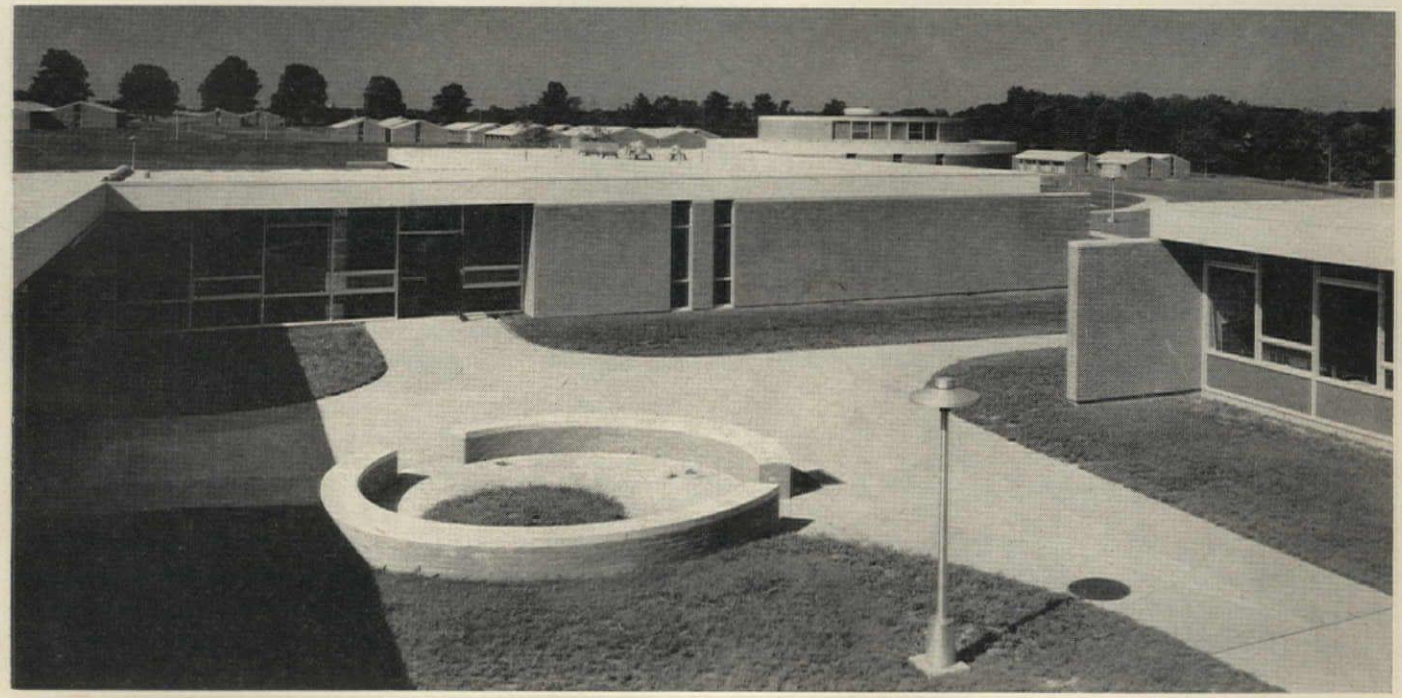
Cottages are built in three sizes. For the most nearly normal children there are 18-bed units. Patients who require greater supervision, but who can be permitted freedom of their cottage and play area will live in 12-bed units. Four-bed residences are provided for children who are capable of benefitting from the residential atmosphere but who exhibit antisocial or violent behavior.

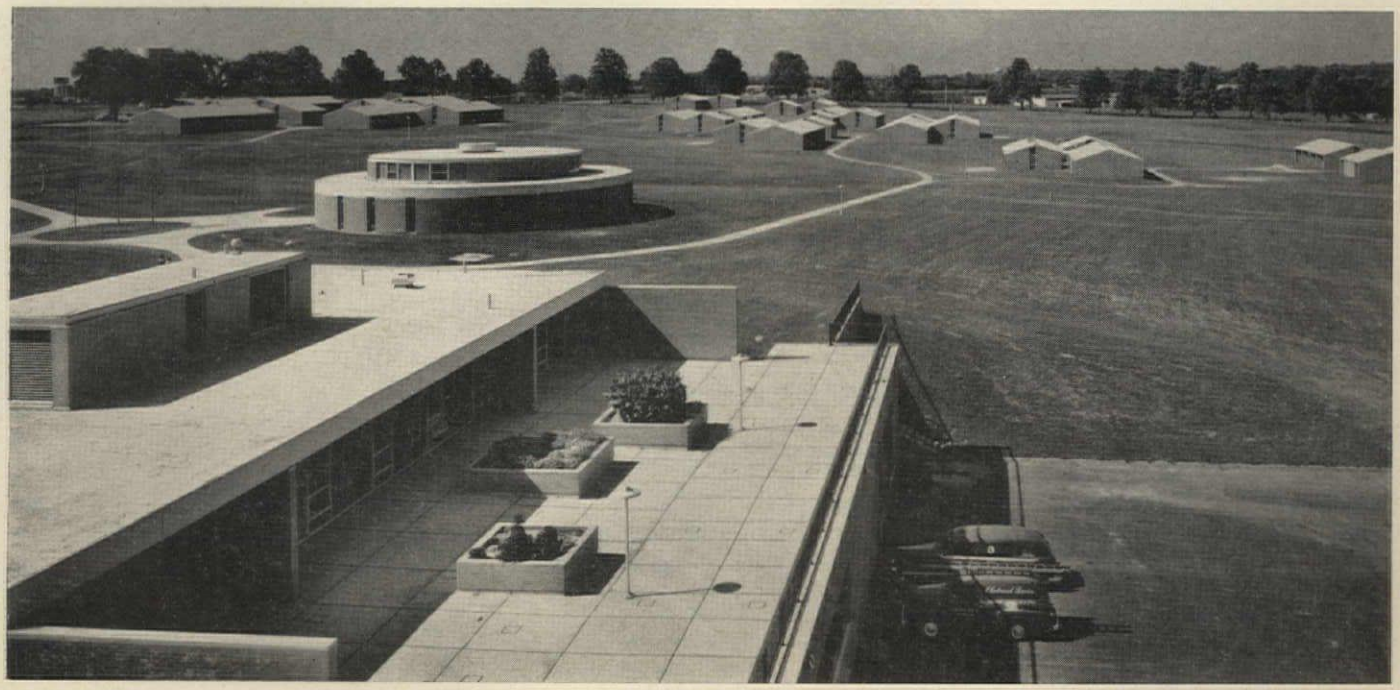
The size of the cottages is belied by their design. Gables and wings are used to create the impression of rambling, residential structures of modest size. In fact, the average size of the cottages is several times larger than typical one-family dwellings.

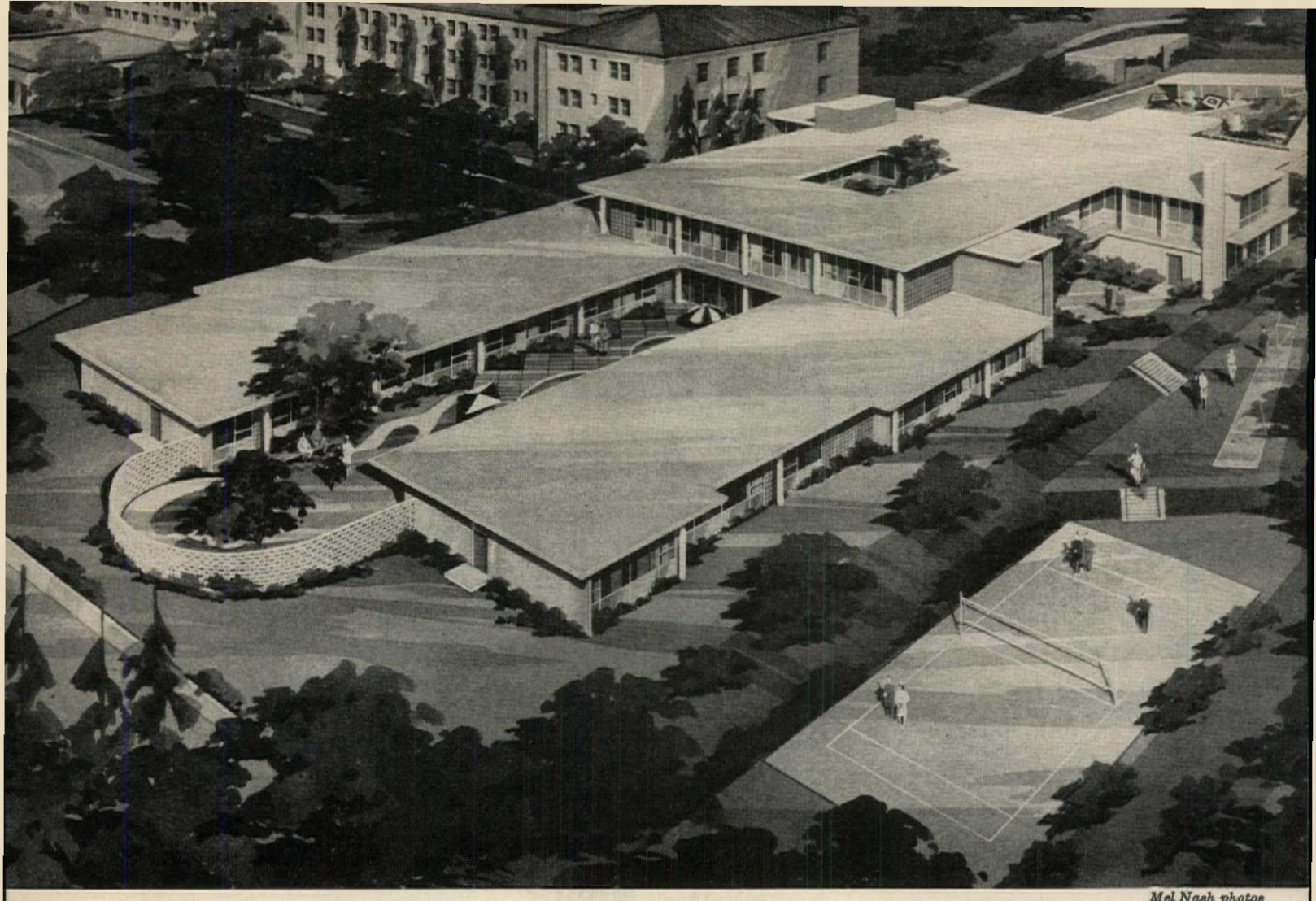
To further emphasize low, human scale in the residential area compared with the rest of the community, the clinic, food service and school buildings have been treated as one- or three-story flat-topped structures, much like their counterparts in the world at large.

The Eastern State School and Hospital is a typical American community in miniature, where the latest psycho-medical concepts have been expressed architecturally, so that the treatment span for this type of emotionally-disturbed child can be reduced from the present five or more years to one or two years.









Mel Nash photos

PSYCHIATRIC CLINIC FOR A GENERAL HOSPITAL

The Glendale Sanitarium and Hospital is a nonprofit institution which has been providing surgical and medical services for over 58 years to private and part-paying patients. Under the influence of changing requirements of the community and the enabling factors of new therapeutic techniques which permit the general hospital to become truly general, the center has embarked on an active program in the field of mental health. The Mental Health Center, designed by Fickes & Fickes, is a first step.

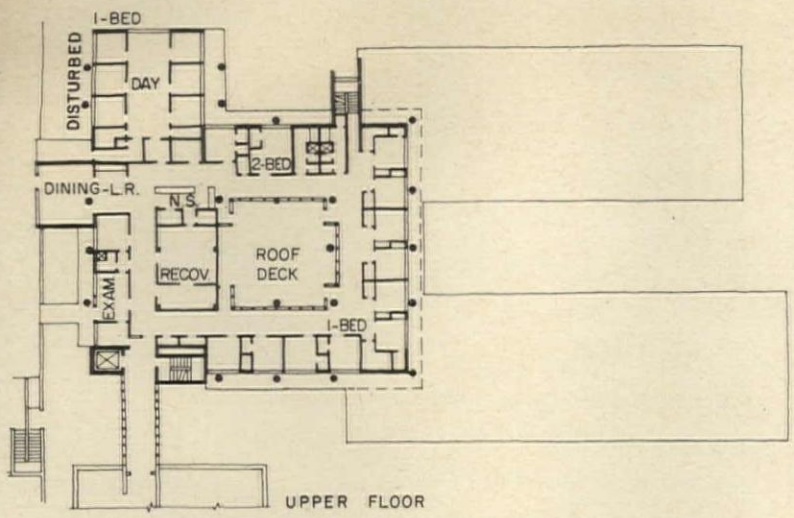
The Mental Health Center, a facility for the diagnosis and treatment of mental illness, is a two level structure connected by open passageways to the east end of the main hospital. It provides a 60-bed facility of 30,000 square feet.

The center was designed to serve both day patients and those who require short term hospitalization. Both lower and upper floors have patios at ground level made possible by the slope of the site. The lower floor is a 41-bed unit arranged in two parallel wings flanking a central landscaped court. Each wing provides sleeping and bathing accommodations for about 20 patients and each has lounge and dining areas. Lounges are decorated with carpeting, wood paneling and book shelves, and have access through sliding glass doors to a hydrotherapeutic pool with 100-degree water in which there are underwater seats. There is also a small swimming pool with 85-degree water. Both pools are equipped with alarms to signal in case anyone enters when the pools are not supervised. Reading and writing alcoves are situated near the dining and sleeping areas. One of the dining rooms has a small kitchen where patients may prepare snacks or try out favorite recipes. Food for regular meals is brought to the dining rooms from the central kitchen.

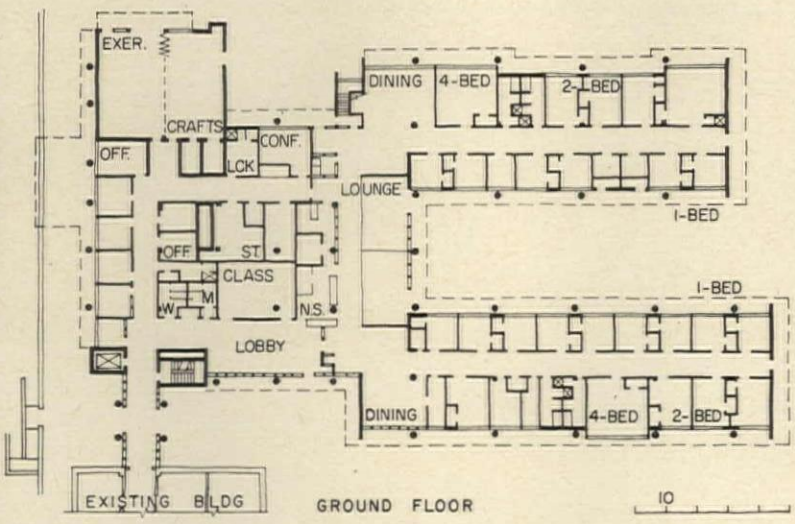
A large exercise room and crafts room is located on the first floor and can be adapted to a variety of uses by means of a folding divider.

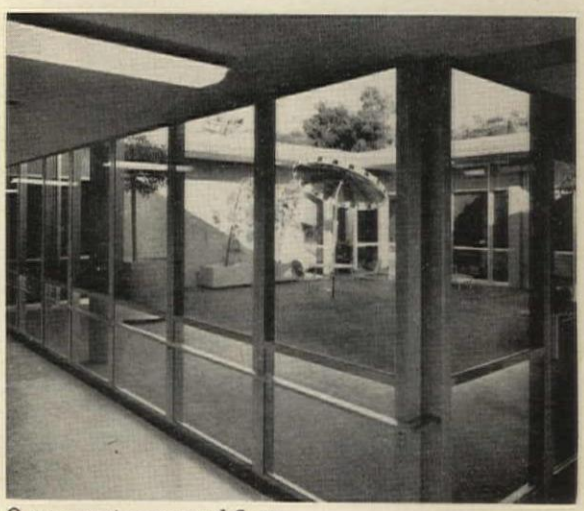
The upper floor provides accommodations for 19 patients, most of them having private rooms. These patients also have their own lounge and dining area and access to a central, second-level, open court. There is a separate section of six bedrooms for disturbed patients in single rooms arranged around a separate day room.

Goal of the facility is to create and maintain a dynamic living situation in which every form of treatment in keeping with the needs of the community will be available. It is also intended to serve as a teaching and research center for the hospitals affiliated with Glendale College.



Passageway from main hospital



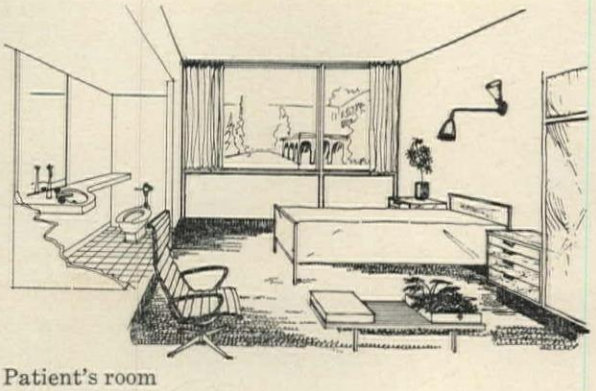


Open court on second floor

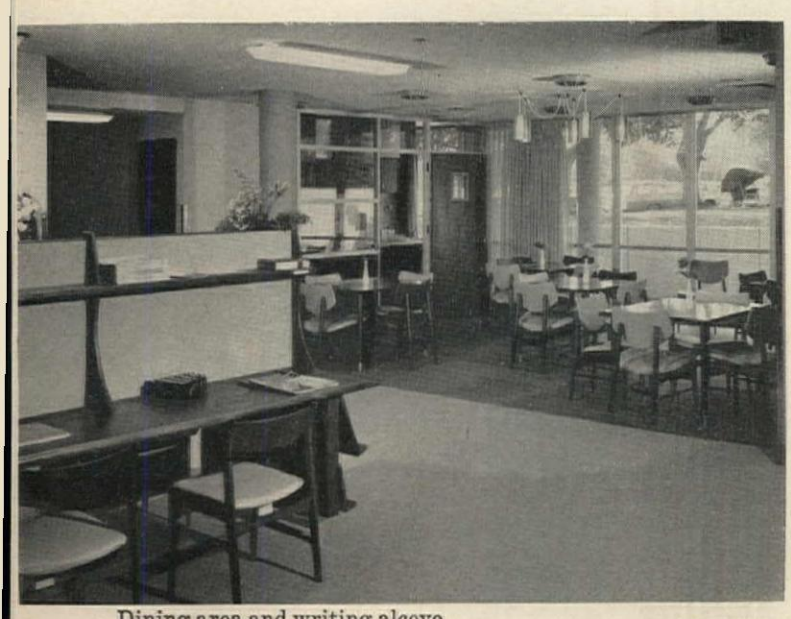
Patients' lounge on first floor

Mental Health Center, Glendale, California
OWNER: *The Glendale Sanitarium and Hospital*
ARCHITECTS: *Fickes & Fickes*
STRUCTURAL ENGINEER: *William Taylor*
GENERAL CONTRACTOR: *Steed Brothers*

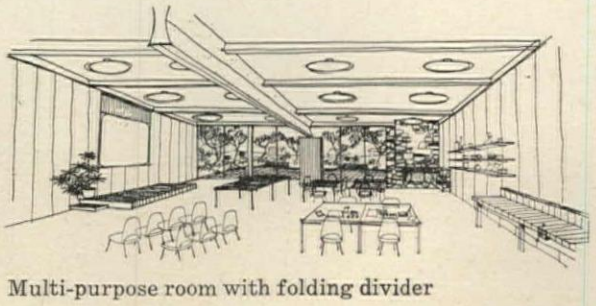
View through glass door of patients' lounge



Patient's room



Dining area and writing alcove



Multi-purpose room with folding divider

Architectural Engineering

The Skoplje Earthquake

It would not be economically feasible to repair 75 per cent of the Skoplje, Yugoslavia structures damaged by the July 26th earthquake to meet minimum earthquake safety requirements, according to the American Iron and Steel Institute sponsored team of engineers which recently returned from the site.

Although the earthquake was a small one as far as earthquakes go—the magnitude rating was estimated at between 5.4 and 6.2 on the Richter scale—it took 1,000 lives and caused considerable havoc, team member Glen Berg surmised, because its epicenter was located right in the heart of the city and its focal depth of 33 kilometers was quite shallow.

Safe drinking water, a problem the team had to face, was solved in an enterprising fashion. "Anytime I got thirsty, I reached for a watermelon. There were plenty of them around—even if they weren't chilled," commented W. G. Kirkland, organizer of the mission.

Man-Computer Communications

Three major obstacles to the computer becoming a more flexible and efficient tool in the field of engineering are: (1) the pressure to force engineering problems to conform with the input requirements of an available computer program; (2) the fact that it is still much easier and more economical to give instructions to a human being than it is to a computer; and (3) the fact that the response time of a human information system still tends to be much faster than the total response time of a machine information system. (Engineers and technicians communicate with each other via meaningful technical words and graphical symbols. A single technical word between humans may be equivalent to thousands of machine instructions.)

These problems were discussed by C. L. Miller, head of the Department of Civil Engineering at M.I.T., in his keynote address at the Third Conference on Electronic Computation, sponsored by the American Society of Civil Engineers.

Traditional methods for communicating with the computer are quite primitive and poorly matched with the capabilities of the engineer and the characteristics of engineering problems. But, Miller notes, recent developments point the way to major changes in the manner in which engineers communicate with computers. In programing, the most significant advance in this direction is the development of problem-oriented languages. At this level of communication, computer instructions are in essentially the same terminology as used among engineers.

Time-sharing of computers is another major advance which will enable each engineer to have direct access to a computer whenever needed. Time-sharing involves equipping a single computer with a large number of separate (and even remote) consoles (input/output and control devices) which allow a number of individual users to work at the machine simultaneously.

Code Will Limit Apartment Noise

"Methods of achieving quiet enjoyment [in apartment buildings] can be spelled out clearly and definitely in our law," declares New York City Buildings Commissioner Harold Birns. A New York Times story reports that Birns has directed the Polytechnic Institute of Brooklyn, which is preparing a new city building code last revised in 1937, to include provisions to control noise in new apartment houses. The present code contains no noise-control requirements.

"The authors of the present code had no concept of the cacophony produced without limit by a disharmonic symphony of radios, television, hi-fi sets, washing machines, air-conditioners, fans and dishwashers, which now thoroughly inundate our apartment houses," he said.

This Month's AE Section

BRICK BEARING WALLS EMERGE IN A NEW FORM

European housing has been built as high as 18 stories with bearing walls and partitions a few inches thick, in contrast to the ponderous masonry walls of years past. Renewed U. S. interest in esthetic and cost features has stimulated housing designs here up to eight stories

Brick, always a favorite of architects for its scale, color and texture, is currently experiencing a return to one of its original roles—that of a bearing wall in multistory structures.

In the late 1800's, brick masonry reached its zenith with Chicago's 16-story Monadnock Building in which the wall thickness ranged from 12 in. at the top to a massive 72 in. at the base. These thicknesses were based on a rule of thumb, dating back to the Renaissance, which called for a minimum wall thickness of 12 in., with an increase of 4 in. for every story below the top.

Because of the masonry wall's ponderous weight and excessive floor space eaten up by it with this type of construction, development of the skeleton frame by William Jenny in 1883 forced the multistory masonry wall into obscurity.

As a result, brick became a "curtain wall" material, supporting merely its own weight and serving as enclosure.

But then several decades ago, engineers began to take advantage of the fact that concrete or masonry walls could very efficiently resist wind loads through racking strength of the wall acting in its own plane —thus becoming a "shear wall."

Apartment buildings, with the plan form repeating on each floor, are ideally suited to brick masonry load bearing walls. The functional requirements of fire resistance and sound isolation call for a large number of relatively substantial walls which are capable of sustaining heavy loads. These walls act as thin vertical plates, which, when designed to work jointly with the floors and roof participating as horizontal diaphragms, are effective in resisting not only gravity loads but also lateral loads from wind and earthquake.

Codes

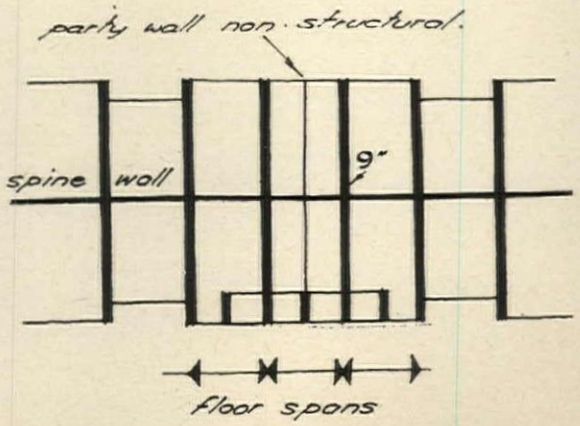
The design of load bearing brick walls developed empirically with the result that rule-of-thumb methods of design which call for excessively thick walls from a modern engineering standpoint have been used for ordinary buildings and have formed the basis of local codes. These codes had a rational basis in the days when timber construction was used for floors: the brick walls should remain standing even if all the floors were removed, as by fire. Such codes have little meaning today when the whole building can be constructed of fire-resistive materials.

European Developments

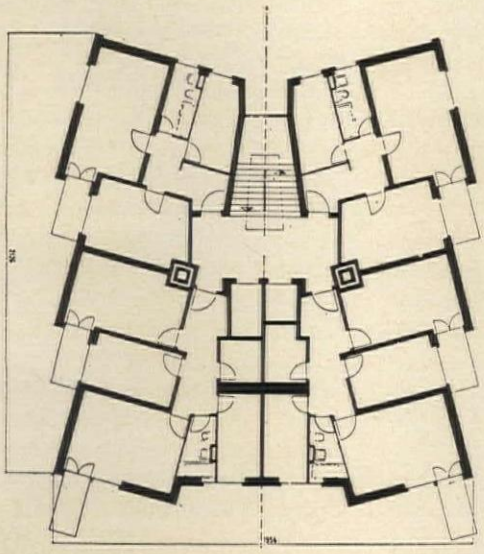
As early as 1943, two housing schemes of nine and 10 stories respectively were started in Copenhagen in which brick was used almost exclusively for structure. In the nine-story building, the structural system consists of a series of regularly spaced cross walls of 9-in. brick masonry and a central spine running the length of the building, as seen in the plan (*below*).

In Germany it is reported that practically all domestic construction, much of it multistory, is in load bearing masonry.

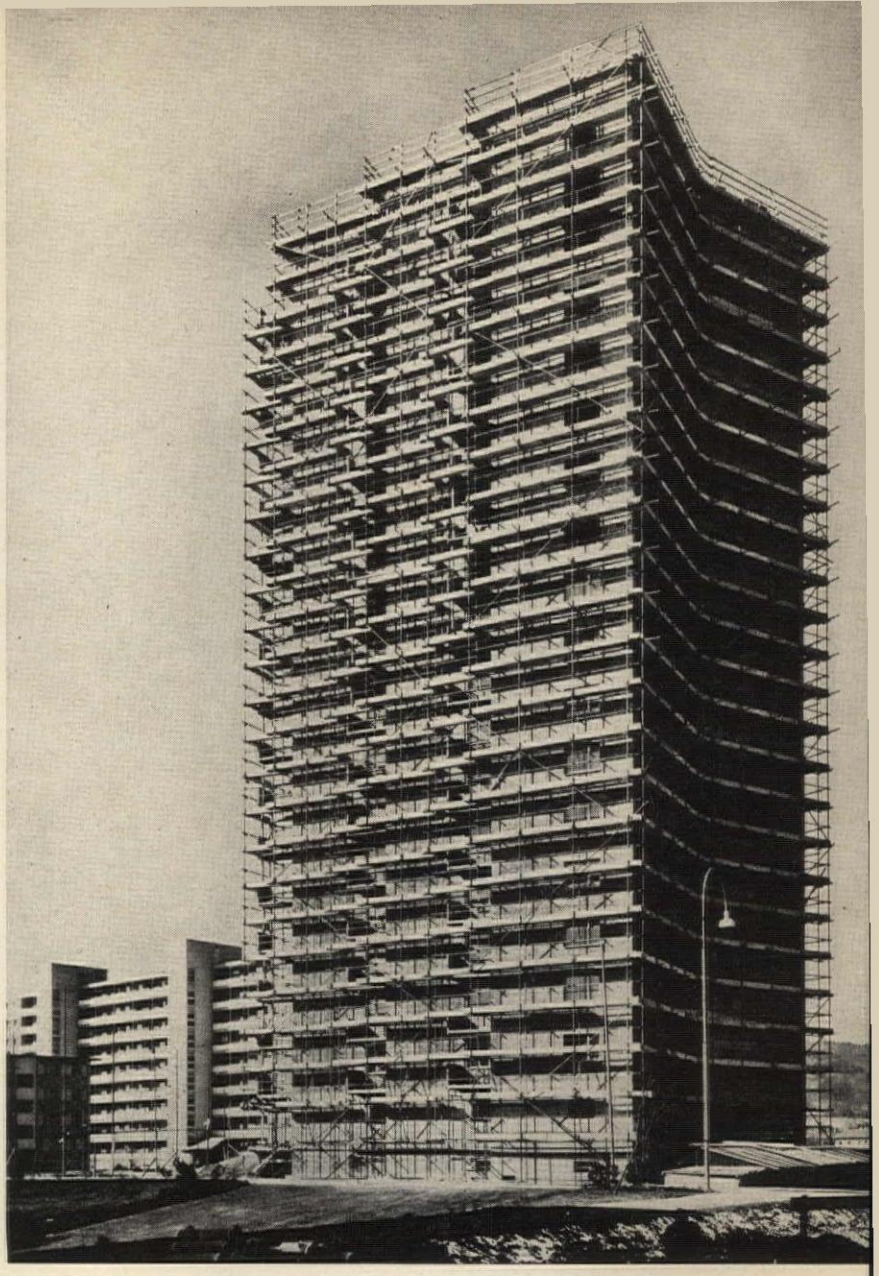
In Britain, structural brickwork is widely used for apartment buildings up to six stories. It is at about this height that brick masonry is stressed significantly. At the bottom of the facing page, however, is a 12-story apartment tower in Birming-

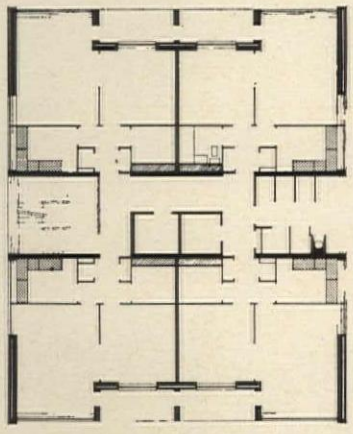


Built in 1943, this nine-story apartment building in Copenhagen is one of the earliest examples of multistory construction utilizing load bearing brick masonry. Regularly spaced cross walls are only 9 in. thick, stiffened by a central spine. Designed by Kay Fisker, C. F. Moller and Eske Kristensen



The tallest known example of this type of construction is an 18-story apartment building in Schwamendingen, Switzerland. Exterior walls are 15 in. thick; interior walls range from 4¾ to 7 in. The Swiss have done considerable testing of brick, mortar and wall strengths as well as code development





Birmingham, England has a complex of one 12-story apartment building and two three-story buildings, all in load bearing brick masonry (which the British call "calculated brickwork"). This method has been widely used in England for apartment buildings up to six stories, but higher structures have been quite rare. Architect, John H. D. Madin; structural engineers, Charles Weiss & Partners

Logan

ham, 50 by 62 ft in plan. The concrete slab, which is only 5 in. thick spans in two directions, is continuous over the internal supporting walls. The slabs are held firmly at their junctions with the walls by the weight of the structure above, giving a fixed end condition at their edges. The slabs are carried through thus minimizing the danger of high stress concentrations on the inner edges of these walls. The mortar used was 1:3, cement: sand, and containing a liquid plasticizer.

Development in Switzerland has probably been more rapid and prolific than in any other country. By 1951, Switzerland had three 13-story apartment buildings in which 12 stories are load-bearing brick masonry. Outer walls are 15 in. thick and inner walls are 7 in. thick on the first and second floors and 6 in. thick for remaining floors.

The strength of all bricks and mortar was carefully controlled, and drawings were made to show the required bonding of all junctions and quoins.

Perhaps the tallest building in load bearing brick masonry is an 18-story apartment structure in Schwamendingen, Switzerland built in 1957. The bricks had a crushing strength ranging from 5,800 to 8,600 psi and the mortar, 2,850 psi. The outer walls are 15 in. thick and the inner walls 4¾, 6, or 7 in. thick. Floors are solid reinforced concrete, forming lintels at the windows. Insulating slabs are cast into the internal angle at the junction of the underside of the floor and the outer wall to minimize possibility of condensation.

A 14-story apartment building in Luzern finished in 1961 has end walls only 7 in. thick of load bearing bricks. These walls have cement plaster on the inside face, followed by an air space and insulating slabs. All interior walls are 6-in.-high strength bricks.

Swiss engineers put a great deal of emphasis on highly skilled labor. Before a new job begins, a one-day symposium is held to explain the effect of workmanship on the strength of the load bearing walls.

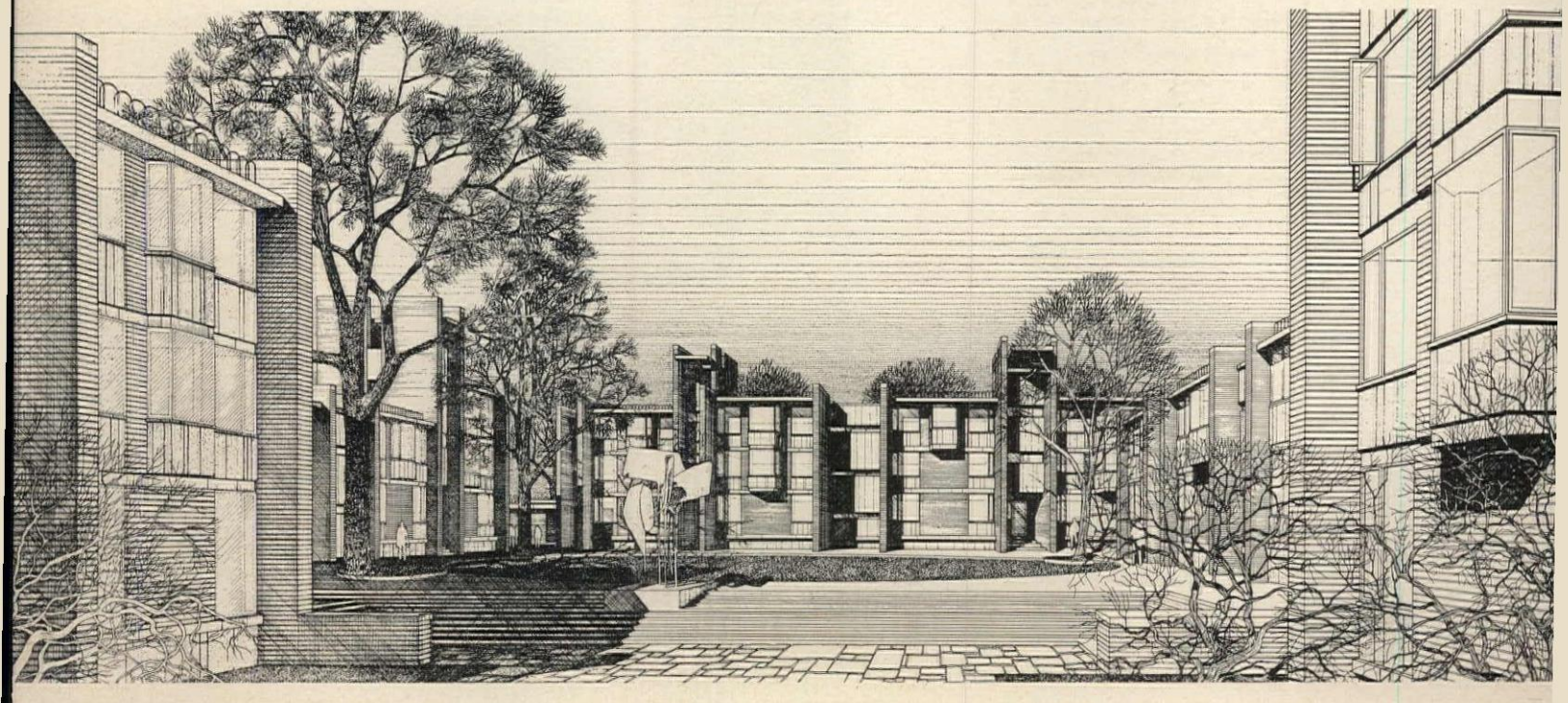
U. S. Trends

So far American experience has been on a much more modest scale. The tallest load bearing masonry structures of the new variety to be completed are a group of six-story dormitory buildings at Brandeis University designed by The Architects Collaborative and engineered by William J. LeMessurier Associates. A salient reason for the use of brick bearing walls as interior partitions is that they provide a finish material that can withstand severe abuse from students. The walls here are 12 in. thick. Floors are concrete waffle slabs. Ordinarily the code covering Waltham, Mass., location of Brandeis, would have required the walls to be 16 in. thick. Building officials permitted the engineer to reduce this thickness to 1 in., provided that he use vertical reinforcement.

Another series of dormitories similar in character have been designed by the same architect and engineer for Clark University in Worcester, Mass. Again the walls are 12 in. thick, and required by building officials to be reinforced.

A slightly different construction technique in load bearing masonry is being considered by Cleveland engineer R. M. Gensert for two apartment buildings, one of six stories, the other of eight. Gensert is proposing to use precast floor slabs rather than poured-in-place construction. The difficulty with this method is in getting even bearing of the precast slabs on the walls in order to minimize eccentric loading. Gensert is considering use of concrete masonry for upper floors and brick bearing walls for lower floors, where higher compressive strength is needed.

New dormitories for Princeton in load bearing brick clearly express structural function of the walls. Architect, Hugh Stubbins; structural engineer, William J. LeMessurier



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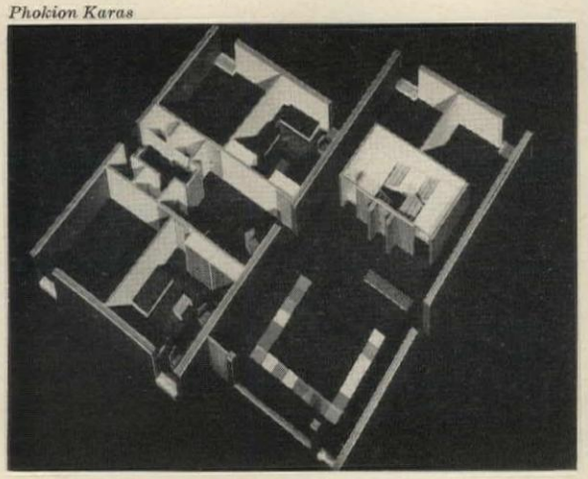
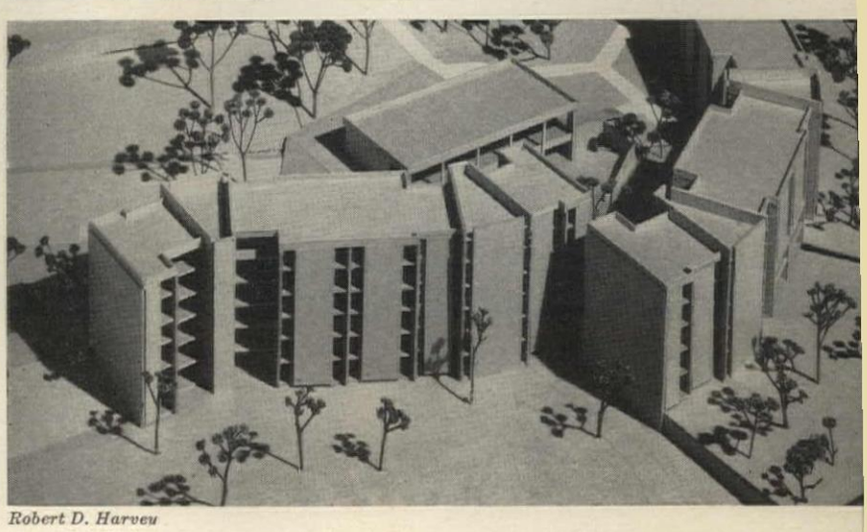


In addition to its structural capability, the natural color and texture of brick was desired for partitioning of students' rooms in this complex of six-story-high dormitories at Brandeis University. Architect, The Architects Collaborative; structural engineer, William J. LeMessurier & Associates



Robert D. Harveu

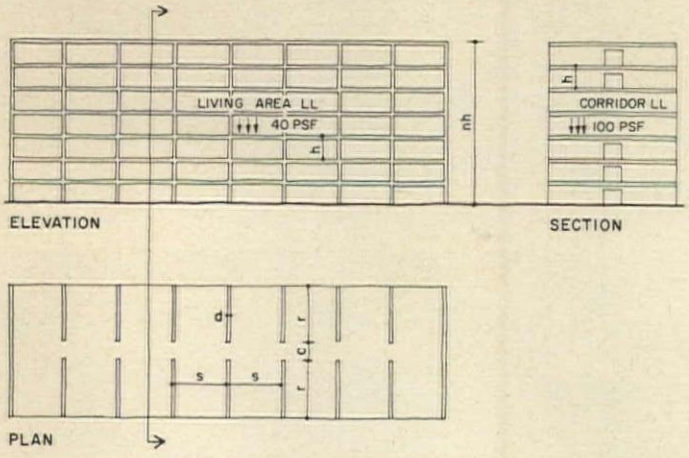
Balthazar

Reminiscent of the load bearing masonry walls of industrial buildings built in the late 1800's is the structure for this high school in Columbus, Indiana by architect Harry Weese. This up-to-date version of brick arches and piers gives an orderly pattern

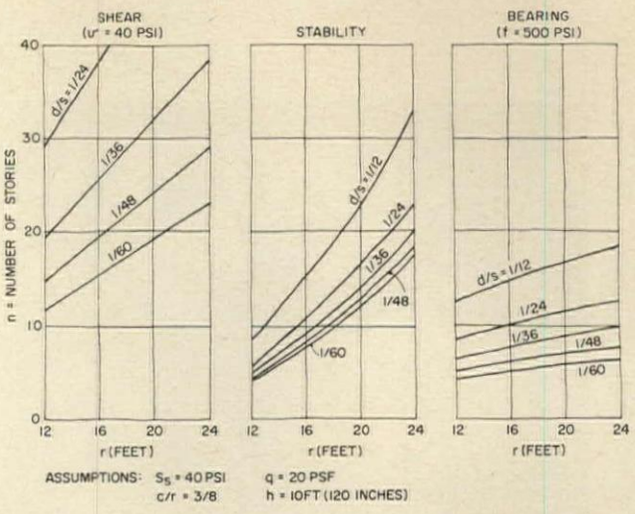
Davis Studio

Four-story Pine Springs Apartments in Fairfax, Virginia have brick masonry cross walls for structural support. Known as box-frame construction in European apartment buildings, the method has had considerable application with concrete as the construction material in both England and Denmark. Architects, Keyes, Lethbridge and Condon

CASE A: APARTMENT STRUCTURE USING CROSS WALLS



BUILDING HEIGHT LIMITATIONS



Engineering Principles

Based on technical information from Structural Clay Products Institute

Because of their structural simplicity, it is possible within reasonable limits to engineer the design of load bearing masonry structures. Two cases are presented which illustrate the building height limitations of different wall arrangements, sizes and spacings.

Case A is an arrangement in which the cross walls resist both gravity and wind loads.

In case B, the longitudinal exterior and the corridor walls carry gravity loads. The end exterior walls transfer the wind loads exerted on the long walls to the floor construction which acts as a horizontal diaphragm.

Since the strength of a clay masonry wall is relatively low in a direction perpendicular to the wall, the structural elements should be arranged to minimize this action and to exploit racking and compressive resistance.

Since it is extremely unlikely that buckling will take place in brick masonry walls at the height to thickness (h/d) ratios that would probably be used in a normal structure, allowable bearing strength becomes one of the most important factors. Use of the parabolic column formula is recommended to determine this value:

$$f_m = \frac{f'_m}{N}\left[1 - \frac{7.5}{10{,}000}\left(\frac{h}{d}\right)^2\right]$$

where:
f_m = allowable compressive strength
f'_m = ultimate compressive strength
N = factor of safety.

Once working stresses in a particular clay masonry wall have been established, it is simple through the use of graphs such as those above, derived from algebraic equations, to determine maximum story heights for given wall thicknesses, lengths and spacings.

Bending induced in walls due to eccentric loading can seriously reduce their allowable compressive strengths. It is recommended, therefore, that the allowable f_m be reduced by 75 per cent (a safety factor of four). It also is recommended that bond beams be provided between floors, roof and walls for optimum transfer of floor reactions, thus minimizing eccentric load.

For engineered clay masonry structures, two types of mortar are recommended: Type S (1C:½L:4½S) and type N (1C:1L:6S). The allowable flexural stresses for unreinforced masonry using brick with average suctions and either type S or type N mortar are 36 psi and 28 psi, respectively. For shear, a value of 40 psi is recommended for either type of mortar.

Case A—Cross Walls

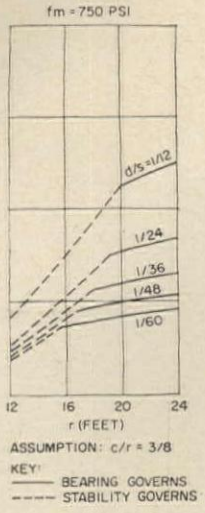
In case A the cross walls provide both bearing and racking resistance. The exterior longitudinal walls can be primarily non-load-bearing curtain walls whose thicknesses are governed entirely by wind loading. These walls will, of course, provide resistance against racking in the longitudinal direction. Although this effect would normally be negligible, the designer should investigate the use of very narrow piers between windows.

The three limiting conditions on building height for case A are: (1) shear resistance; (2) stability (resistance to overturning); and (3) bearing strength. These limiting conditions are shown in the graphs at the top of the page. Allowable shear strength of the clay masonry wall is assumed to be 40 psi; the wind pressure, q, is taken as 20 psf. The assumed 40 psi live load and 60 psi dead load would be satisfactory for a light floor construction such as steel joists. The graphs for case A show that shear resistance never governs. This will be true when cross walls are not bonded to exterior walls, as assumed here. If, however, these walls were bonded, then shear might control the design.

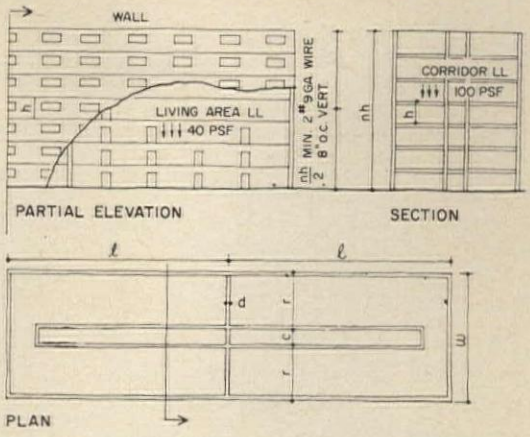
If the allowable compressive strength, f_m, were only 250 psi, then bearing would always be the limiting factor for number of stories. In a design having cross walls 12-in. thick, 24 ft long, and spaced 24 ft apart, a maximum of six stories could be built.

When the allowable compressive strength, f_m, is increased to 500 psi (third graph from left, above) stability controls for the shorter cross walls, then bearing strength takes over. To illustrate use of this graph, a building having 8-in.-thick cross walls, 24 ft long and spaced 24 ft apart, could be built 10 stories high.

FOR CASE A



CASE B: APARTMENT STRUCTURE USING END SHEAR WALLS

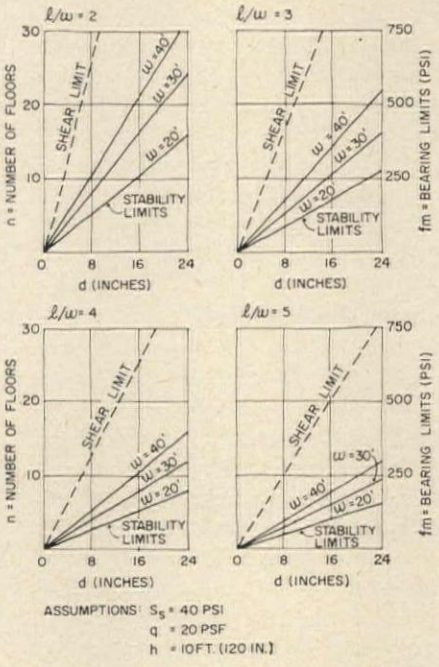


LEGEND

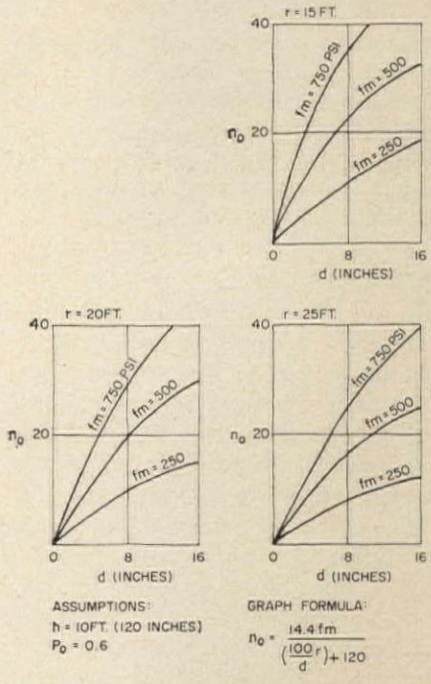
n = NUMBER OF STORIES
h = STORY HEIGHT, FEET
r = (CASE A) SPACING BETWEEN EXTERIOR LONGITUDINAL WALL AND CORRIDOR WALL, FEET
r = (CASE B) CROSS WALL LENGTH, PER APARTMENT, FEET
c = CORRIDOR WIDTH, FEET
ω = SHEAR WALL WIDTH, FEET
ℓ = SHEAR WALL SPACING, FEET
d = WALL THICKNESS, INCHES
s = CROSS WALL SPACING, FEET

BUILDING HEIGHT LIMITATIONS FOR CASE B

Shear Walls



Longitudinal and Corridor Walls



If the allowable compressive strength is increased to 750 psi, stability becomes even more significant as the limiting factor. The graph directly above has combined the stability curves with bearing curves for f_m = 750 psi. The tallest possible building under this condition is 24 stories.

Case B: End Shear Walls

Two major bearing walls are provided in case B: the longitudinal exterior wall and the corridor wall. For lateral stability, however, this example depends upon shear cross walls at the ends. Paradoxically, in no case does the shear limit of the wall control its design.

Since the local bending of the longitudinal walls between floors due to wind is negligible, these walls are proportioned primarily on the basis of compressive strength.

The shear walls, on the other hand, are proportioned not on the basis of shear or diagonal tensile strength, but on the basis of resistance against over turning being provided by their dead weight alone. This is a conservative assumption since the weight of, and the loads upon, the exterior windward wall will help resist this force to the extent that the exterior walls and floor diaphragms are tied into the cross walls.

Because of the limitation of diaphragm action of the floors, the 1/w ratio should not exceed 5. When length of the longitudinal wall, 1, is too large, some types of floor construction cannot develop the deck as a diaphragm.

Building heights for case B as limited by shear wall design can be found in the four graphs above.

Effect of bearing strength of the longitudinal and corridor walls in limiting the number of stories is demonstrated in the three graphs at right in the example. The number of stories controlled by the bearing strengths of the longitudinal walls or of the corridor walls is about the same. Although corridor walls are loaded more than the exterior walls, the percentage of openings in the exterior walls will be generally higher, permitting stress intensities approaching those in the exterior walls.

In the bearing resistance graphs, the ratio of net exterior wall length (gross length minus openings) to gross exterior wall length, p_o, has been taken as 0.6. These graphs are plotted on the basis that $p_i/p_o = 1 + 8c/5r$.

Since no distinction is made here concerning the spacing of openings, care would have to be taken to avoid overstressing of the piers. In addition, if the piers do not line up vertically then special care would be required in the engineering design; this situation is not covered in the graphs.

It will be noted that the number of allowable stories indicated by these graphs is a direct function of the wall strength.

LIGHTING HOSPITAL PATIENT ROOMS

The basic problem is to maintain visual comfort for the patient while providing adequate illumination for supervision, examination and treatment. Here are guide lines for the various types of lighting required, taken from a recent study by the U. S. Public Health Service

Lighting installations in hospital multi-bed patient rooms involve many aspects that must be considered simultaneously. The patient, the nurse, and the doctor require different illumination levels to accommodate various functions and services. The lighting levels required in the rooms range from a fraction of a footcandle for nightlighting and rest periods up to 100 footcandles or more for critical examination or treatment. Several steps of lighting levels within this range are needed for patients' use and for routine nursing service.

Types of Lighting

To provide a comfortable seeing environment for patient use during the waking hours, general lighting of a low level, about 10 footcandles, should be provided. Substantially higher levels of general illumination may produce an undesirable condition of direct or reflected glare within direct view of patients.

The maximum general lighting suitable for patient use is usually adequate for routine nursing care, but insufficient for detailed reading of thermometers, charts, instructions and other data. Although the patient's reading light may be used for this purpose, such practice is not desirable because it usually requires placing the data in the patient's visual field.

For more critical examination at the patient's bedside, a higher level of illumination will be needed by the doctor or nurse. A separate unit should be installed or furnished for this purpose, as the patient's reading light is usually considered inadequate for medical examination. Since the examination light is used for relatively short periods of time, the higher level of illumination and the associated brightnesses could be tolerated by patients in the room without undue discomfort.

When patients sleep or rest, a nightlight is needed to provide only a low level of illumination to enable the nurse to enter and move freely around the room; to enable patients to orient themselves and to attend to their minor self-care if awakened at night; and to enable ambulant patients to find their way to lavatories. This source of light should be suitably placed so as not to disturb patients who may be awake.

Common Deficiencies

The usual causes for complaint from patients are: glare from brightness of light sources and reflecting surfaces; spotty appearance of general lighting caused by abrupt or excessive variations in brightness of adjacent surfaces; heat that radiates from reading light; reading light that is hot to the touch; insufficient light for reading; reading light in wrong location; excessive illumination and/or glare from nightlight; and annoyance or disturbance due to location of the nightlight.

The usual causes of complaint from the hospital staff are: insufficient general illumination for routine nursing care or for cleaning the room, insufficient or incorrect type of light for examinations, giving intravenous injections, changing dressings; and other critical seeing tasks pertinent to patients' care.

Lighting Levels

The levels of lighting needed for particular seeing tasks and the brightnesses which can be tolerated comfortably are not definite values and may vary greatly, depending upon the user's needs and the patient's physical or mental condition. However, for design purposes, the lighting values specified below may be used.

Nightlighting: 0.5 fc, maximum, on floor, at a distance of 3 ft from the luminaire. It is desirable to provide 1½ fc for momentary use.

Observation lighting: 2 fc, maximum, 3 ft above floor, for nurse to see the patient's apparent condition, fluid drainage, oxygen therapy equipment, and to make similar observations without the need for additional lighting.

General lighting: 10 fc, for cleaning, routine nursing service, patient's self-care, visitors, dining, and as background lighting for use with reading light.

Reading lighting: 20-30 fc, 3 ft 9 in. above floor, on reading material or patient in bed or in chair.

Examination lighting: 50-100 fc, for use of doctor and nurse to make critical examinations and to administer treatments.

Tolerable Brightness Limits

General light and reading light: 90 footlamberts (fL), maximum brightness of any luminaire, light source, or room interior surface as normally seen from any normal reading or patient's bed position.

Nightlight: 20 fL, maximum brightness, normally produced on or by the nightlight as observed from any normal bed position. The maximum brightness for momentary use should not exceed 40 fL.

Examination light: 250 fL, maximum brightness of a fixed non-adjustable luminaire as seen from adjacent beds across the room, from a normal bed position.

Luminaire Types and Features

Several variations in the combination of service features have been incorporated into commercial units. For example, a patient's reading light is usually combined with some type of general lighting component and fre-

This article has been excerpted from "Lighting for Hospital Patient Rooms," Public Health Service, Division of Hospital and Medical Facilities, Architectural and Engineering Branch, Washington 25, D.C.

quently with a nightlight. Characteristics of these lighting services are as follows:

Reading lights are supplied in adjustable and non-adjustable types, arranged for mounting on wall, bed or ceiling, or they may be portable types such as table lamps and floor lamps. Adjustable and portable units require more maintenance than non-adjustable types.

General lighting for the room is usually provided by ceiling-mounted units, wall brackets, table lamps or floor lamps. Ceiling-mounted luminaires generally permit a more even distribution of lighting throughout the room than the conventional wall-bracket luminaires.

Examination lights used as local lighting by the doctor or nurse to examine or treat patients are often provided by ceiling-mounted non-adjustable units, wall brackets with adjustable arms, or portable spotlights of the floor stand and the hand-held types. Installed units do not interfere with the use of both hands or free movement of the doctor or the nurse while examining or treating patients.

Nightlighting of low level is needed in patient rooms for the nurse to see as she enters and as she moves within the room, for patients to orient themselves if awakened at night, and if necessary, for their immediate self-care. A reduction in this low level is desirable when the patient rests or sleeps. Nightlights are not intended to supply enough light for the nurse to observe the patient's face or to render nursing service, but rather to detect whether additional light may be needed for the patient's care. The preferred location for the nightlight is near the floor adjacent to the room entrance to permit a minimum, but sufficient, amount of lighting for the nurse to enter the room and to provide a subdued environment for the patient.

Additional Recommendations

Since glare produced by excessive brightness is a common and primary source of complaint in patient rooms, designers should be cognizant of the effects of color and reflectances of interior finishes which contribute to the degree of brightness produced by lighting. Glossy finishes should be avoided.

If fluorescent lamps are used in patient rooms, they should be of the deluxe (warm or cool white) type.

To prevent excessive spottiness of *general lighting* in the room, the installation should provide a lighting level ratio of less than 1 to 5 on a horizontal plane 30 in. above the floor within a radial distance of 8 ft from the maximum lighting level on that plane.

To allow the patient some freedom to turn in bed without moving out of the *reading light* zone, the area of the reading plane lighted by an adjustable-type unit should be approximately 6 sq ft. To provide a reasonable degree of uniformity of lighting over these recommended areas, the lighting level at the outer edge of each area should be not less than two-thirds of the lighting level at the center of the area.

HOW LIGHTING WAS STUDIED

Recommendations for the lighting of patient rooms were developed from three different studies. First, most of the research was conducted in mockup patient rooms equipped with a broad range of commercial luminaires as well as experimental units. Lighting needs were evaluated by the Public Health Service staff of architects, engineers, doctors and nurses working with a group of consultants. Second, studies were conducted in four two-bed patient rooms having typical commercial lighting equipment at the National Institutes of Health. Here, comments were sought from patients, nurses and doctors. Third, the staff of consultants surveyed a number of hospitals and studied literature on hospital lighting.

To provide comfortable lighting conditions for reading, the brightness in footlamberts on the ceiling, provided by some means of general lighting, should be at least equal to the illumination in footcandles on the reading matter.

The *examination light* should be of a type or so arranged to minimize shadows at the area of interest. To reduce glare and to minimize "spill light" that may affect others in the room, this light should be shielded or adjusted to confine it to the bed area of the patient being examined or treated.

Non-adjustable examination lights should light the bed area to a degree of evenness so that the lighting level does not vary more than 2 to 1 over the entire bed area.

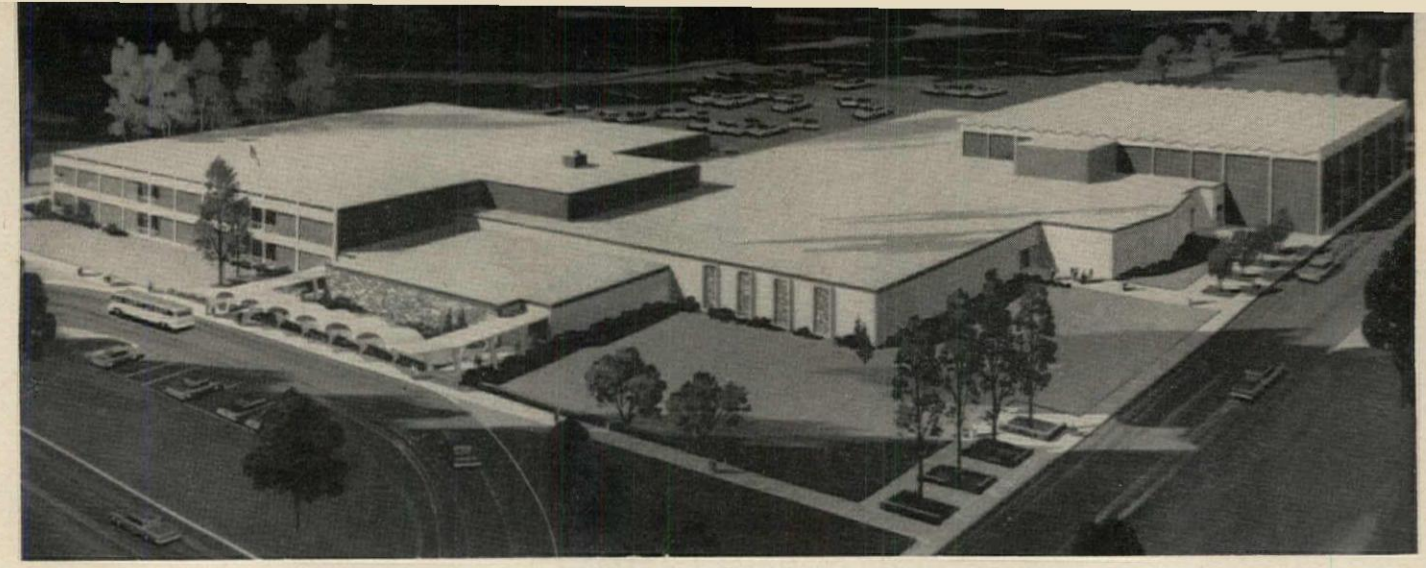
Adjustable examination lights should be capable of producing the recommended lighting levels in the center of a circular area 2 ft in diameter, at a distance of not less than 2 ft from the light enclosure, and at least half the level at the outer edge.

Portable examination lights should be capable of lighting performance similar to that described above for adjustable units.

The light level and effective color of the examination light should be adequate to permit rapid and correct evaluation of the patient's condition as judged from color or condition of the patient's skin or tissue. Daylight itself is variable, often not available, and electric lighting of this color and quality (the order of 6,500 degree K) appears quite blue unless the viewer's eyes are adapted to this light alone after individually variable periods of work under it. Consequently, daylight color and quality of electric lighting (6,500 degrees K) is not a justifiable requirement for patient rooms. In most cases, satisfactory lighting can be provided for examination of patients in bedrooms by incandescent lamps and deluxe-type fluorescent lamps that are within the color temperature range of 2,950 to 4,500 degrees K. Daylight incandescent lamps (4,000 degrees K) and deluxe cool-white fluorescent lamps (4,200 degrees K) fall within this range.

Nightlights should have a brightness not exceeding 20 fL. However, if this brightness provides insufficient illumination for the nurse, a brightness up to 60 fL and correspondingly higher fc's may be tolerated by the patient for momentary use. Brightnesses in this range may be provided by a suitable control switch, such as a rectifier-type dimming switch mounted at the door, convenient for the nurse to switch to the higher lighting level as she enters the room and back to the lower level as she leaves the room.

Nightlights that utilize louvers through which the light is emitted should be so constructed or so installed that there will be no direct view of the light source from a normal in-bed position. The surface finish of the nightlight should be such as to have a very low brightness value at all times.



LIGHTS, PEOPLE HEAT A WISCONSIN SCHOOL

Employing bootstrap idea, heat pump counts on these sources of waste heat down to 23 degrees

The new 1,200-pupil Kimberly, Wisconsin High School, which opened in September, utilizes a heat pump system to retrieve heat generated within the building by fluorescent lamps and occupants. In this way the school heats itself.

Compact design permitted many interior spaces such as science laboratories, typing rooms, library and home economics work rooms. Heat gain exceeds heat loss in these rooms even when outside temperatures are at −15 F. These rooms will require cooling all winter and produce a surplus of heat for exterior rooms.

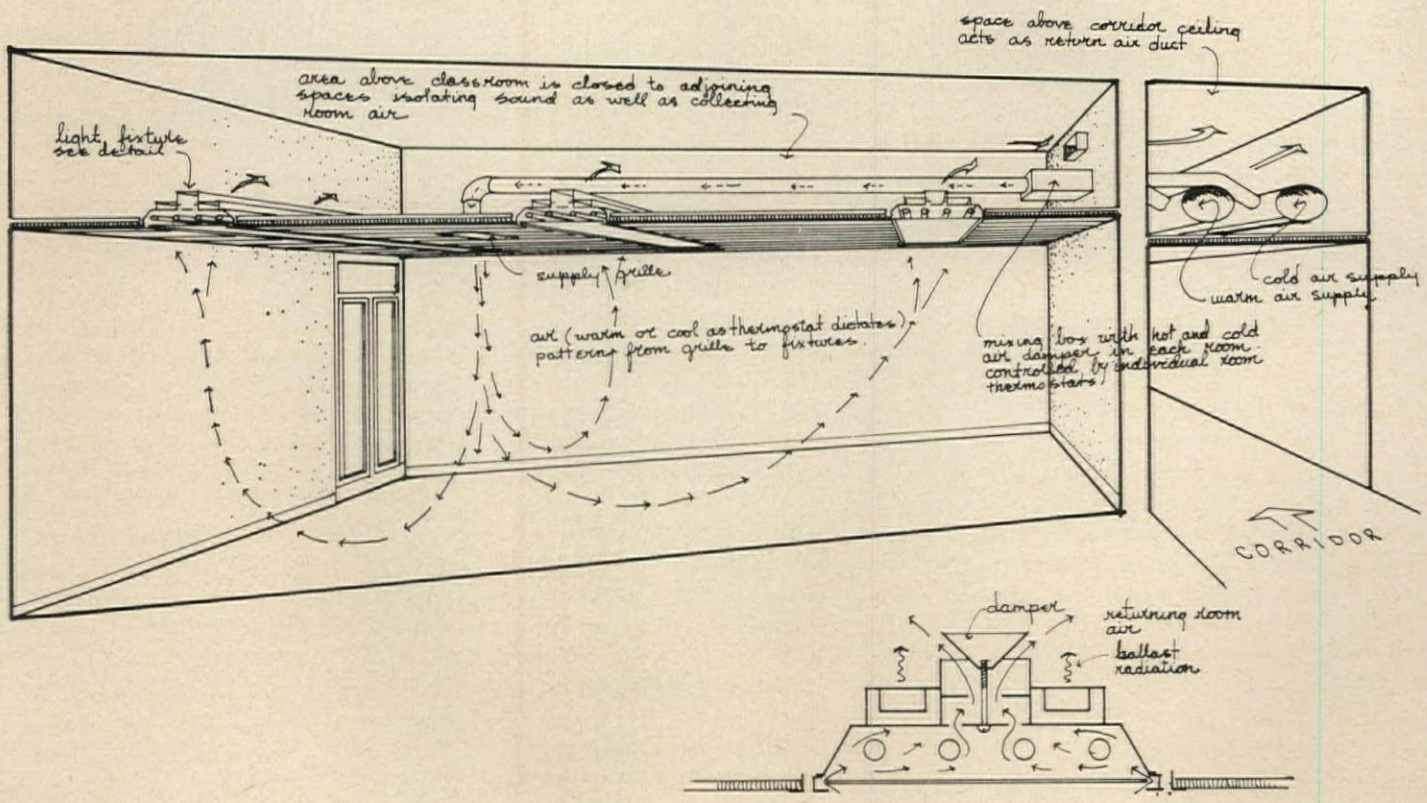
Air Distribution System

Dual-duct air distribution provides individual temperature control for each space. One duct carries air at 52 F; the other, air at 95 F. This air is blended in a mixing box according to the demands of the thermostat. Negative pressure in the ceiling plenum draws room air up through the lighting fixtures and into the cavity. Return air travels through the plenum above corridors to be mixed with fresh air and heated or cooled.

Heat Pump System

The heat pump consists of a standard centrifugal refrigerating machine, including a chiller, a compressor driven by a 450-hp motor, and a water-cooled condenser.

In warm weather, water is cooled in the chiller and this cooling effect is utilized through cooling coils which cool the air distributed through the school. Heat removed from the water



Dual-duct air system on unfinished floor of the academic wing

Typical exterior classroom showing window and part of ceiling

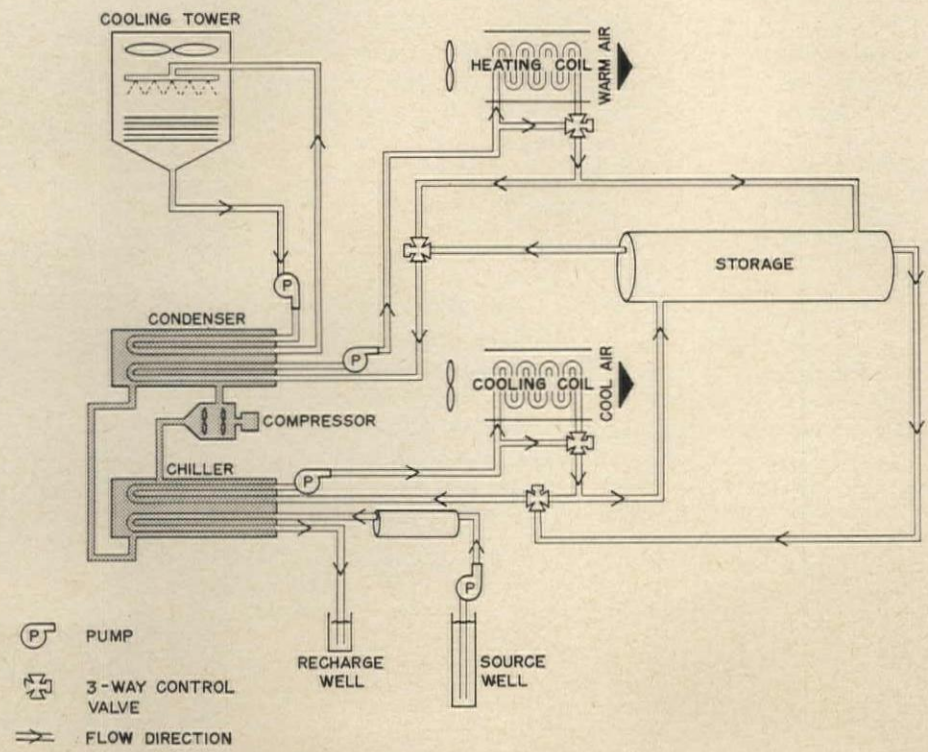
in chilling is transferred to the condenser and then rejected to the outside air through the cooling tower.

In winter, a second circuit in the condenser shell captures that heat which is rejected on warm days. This circuit removes heat in the form of 120 F water and circulates it through coils to heat the air.

Where does the building get heat for nighttime and weekend use? Calculations showed that there is a net surplus of heat whenever outside air temperatures exceed 23 F and the building is occupied. When the building's heat requirements are satisfied and a surplus is available, a three-way valve diverts all or part of the 120 F water from the heating coil into two 12,200-gallon tanks in the basement. This stored hot water is available for night-time and weekend heating as required to maintain normal building temperatures.

When the stored water temperature is lower than 90 F, this water is diverted to the chilled water circuit, creating an artificial cooling load.

Another heat source was desired to provide heat when outside air temperature falls below 23 F, and to reinforce the stored heat system for long shutdown periods, such as Christmas vacation. Well water serves as this standby heat source. The supply well is 650-ft deep. A second well, 180-ft deep, was provided into which the water pumped from the deep well is discharged after heat is extracted from it.



Condenser of heat pump gives off heat either to the heating coil (winter) or cooling tower (warm weather). Chiller cools air; picks up heat from well water

Heat Removal Lighting Troffers

By exhausting air from the classrooms through the lighting fixtures, approximately 60 per cent of the total heat from the lamps and ballasts (4 watts per sq ft) is kept from entering the room.

Each 900-sq-ft classroom has 21 2- by 4-ft, three-lamp troffers, giving 100 footcandles of light.

Costs

Cost of the 133,600-sq-ft school was $1,658,409 or $12.42 per sq. ft. The second floor of the academic wing has been left unfinished; thus eventual cost is estimated at $13.05 per sq ft. The heating, ventilation and air-conditioning contract was $436,584, including $21,184 for the two wells.

Because of heavy power usage, it was possible for the Kimberly school to buy electricity from the Wisconsin Michigan Power Company at the "general primary rate" of 1.68 cents per kwhr.

Building Heat Loss and Gain (—15 F Design Temperature)

Total heat loss including ventilation	3,940,000 btuh
Gain from lights (based on 70% use factor and reclaim of 52% of installed wattage)	568,000 btuh
Gain from people heat (900 occupancy)	405,000 btuh
Reclaim from ventilation exhaust	516,000 btuh
Total heat gain	1,489,000 btuh
Heat needed from well	2,451,000 btuh
Total Heat	3,940,000 btuh

Kimberly High School, Kimberly, Wisconsin. ARCHITECTS: *Sauter & Seaborn;* MECHANICAL ENGINEERS: *Marks-Ratai, Inc.;* ELECTRICAL ENGINEER: *John Kenton Primm;* STRUCTURAL ENGINEERS: *Davis & Watson;* ELECTRICAL UTILITY LIASON: *J. H. McLean*

CHECK LIST OF SPACES FOR A COMMUNITY MENTAL HEALTH CENTER

Compiled by the Architectural and Engineering Branch, Division of Hospital and Medical Facilities, U. S. Public Health Service; August Hoenack, Branch Chief

Facilities listed are those that may be required in the over-all programs of mental health centers. They can be in one or several buildings on one or several sites, even under one or several cooperating ownerships. The list is for review by architects and administrators whenever new facilities are planned.

ADMINISTRATION

Office space for:
1. Director
2. Assistant director
3. Nursing director
4. Secretaries and typists
5. Business office

Ancillary spaces:
1. Record room
2. Staff lounge
3. Library
4. Conference room
5. Lobby and waiting
6. Toilets: public, personnel

DIAGNOSTIC & TREATMENT

Laboratory:
1. Office
2. Clinical
3. Pathology
4. Bacteriology
5. Washing and sterilizing

Suites:
1. Basal metabolism and electrocardiology
2. Morgue and autopsy
3. Dental
4. Eye, ear, nose and throat
5. Electro-encephalography
6. Radiology

Physical therapy:
1. Electro-therapy
2. Hydro-therapy with exercise
3. Small gymnasium

Pharmacy department

Occupational therapy:
1. Space for small woodworking tools and benches for carpentry, metal work, leather work, printing, weaving, rug making, etc.
2. Office
3. Storage room

OUTPATIENT EXAMINATION AND TREATMENT

Office space for:
1. Psychiatrists
2. Psychologists
3. Social workers
4. Nurses
5. Health educators
6. Occupational therapists
7. Rehabilitation counselors
8. Recreation therapists
9. Clerical operators
10. Aides
11. Research analyst
12. Group therapy and conference

(Lobby, waiting space, and toilets may be combined with those in the administrative area.)

INPATIENT FACILITIES

Facilities may be required for the following types of patients grouped in accordance with the local program. (Separate spaces for male and female. Treatment and diagnosis spaces for each category.)

Patients' categories:
1. New admissions
2. Quiet ambulant
3. Disturbed
4. Alcoholic
5. Criminalistic
6. Day care
7. Night care
8. Children
   a. Emotionally disturbed
   b. Retarded

Each patient care unit:
1. Waiting space for visitors
2. Doctors' offices and examination rooms
3. Offices for psychologists, social workers, therapist or others as required
4. Nurses' station and toilet
5. Conference room
6. Therapy space
7. Day room(s)
8. Utility room
9. Pantry or nourishment preparation
10. Dining room
11. Washroom and toilets
12. Patients' lockers
13. Showers and bathrooms
14. Storage (for recreational and occupational therapy equipment)
15. Supply and linen storage
16. Janitors' closet
17. Stretcher alcove

Minimum room areas:
1. 80 sq ft per bed in alcoves and four-bed rooms
2. 100 sq ft in single rooms
3. 40 to 50 sq ft per patient in day rooms, preferably divided into one large and one small room

STERILIZING AND SUPPLY FACILITIES

(Sufficient to serve both outpatients and inpatients.)

SERVICE DEPARTMENT

Dietary facilities:
1. Main kitchen and bakery
2. Dietitians' office
3. Dishwashing room
4. Refrigerators
5. Garbage collecting and disposal facilities
6. Can washing room
7. Day storage room
8. Staff dining room

Housekeeping facilities:
1. Laundry
2. Separate sorting room
3. Separate clean linen and sewing room
4. Housekeeper's office and storage (near linen storage)

Mechanical facilities:
1. Boiler room and pump room
2. Engineer's office
3. Shower and locker room

Maintenance shops:
Carpentry, painting, mechanical, repair rooms

Employes' facilities:
Locker, rest, toilet and shower rooms for various categories

Storage:
1. Medical records
2. General storage (a minimum 20 sq ft per bed to be concentrated in one area)

*Universal Grout—2 components

This tops them all! Now, a new kind of grout makes ceramic tile countertops more appealing in home designs than ever.

Yes, now there's a new kind of grout that's just as stain-proof, just as "hot pot" proof, just as easy to keep clean, just as permanent as the ceramic tile itself. It's new, epoxy-based UG-II*, developed by the Tile Council of America especially for ceramic tile kitchen countertops. New UG-II is exceptionally resistant to food and household chemicals—and scorching. It forms a dense, tight joint of lasting strength. Gives countertops such a strong, seamless effect the grout becomes a part of the tile. Gives you more reason than ever to specify ceramic tile in all the homes you design. These manufacturers are marketing UG-II: Cambridge Tile Manufacturing Co.; International Pipe and Ceramics Corp.; Hydro-ment, Inc.; L & M Tile Products, Inc.; and The Upco Company. For further information, on residential and institutional uses, write: TILE COUNCIL OF AMERICA, INC., 800 Second Avenue, N.Y. 17.

UG-II

Participating Companies: American Olean Tile Co./Atlantic Tile Manufacturing Co./Cambridge Tile Manufacturing Co./Carlyle Tile Co./Continental Ceramic Corporation/General Tile Company/International Pipe and Ceramics Corporation/Jackson Tile Manufacturing Co./Jordan Tile Manufacturing Co./Lone Star Ceramics Co./Ludowici-Celadon Co./Monarch Tile Manufacturing, Inc./Mosaic Tile Co./Murray Tile Co., Inc./National Tile & Manufacturing Co./Oxford Tile Co./Pomona Tile Mfg. Co./Ridgeway Tile Co./Summitville Tiles, Inc./Texeramics, Inc./Wenczel Tile Co./Winburn Tile Mfg. Co.

For more data, circle 88 on Inquiry Card

this

...is a structural deck

...is an air distribution system

...is a flush lighting system

...is a utility raceway network

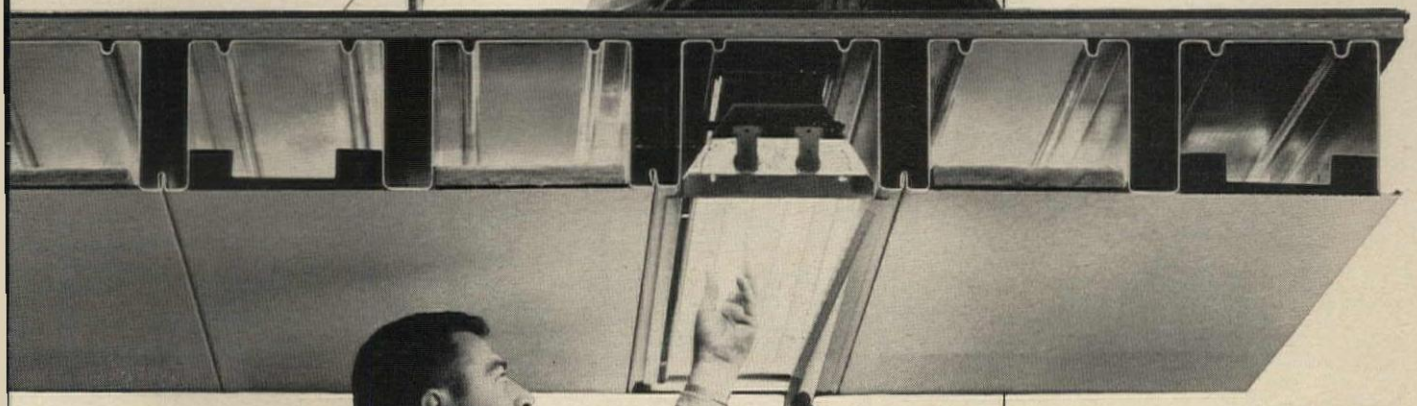
...is an acoustical finished ceiling

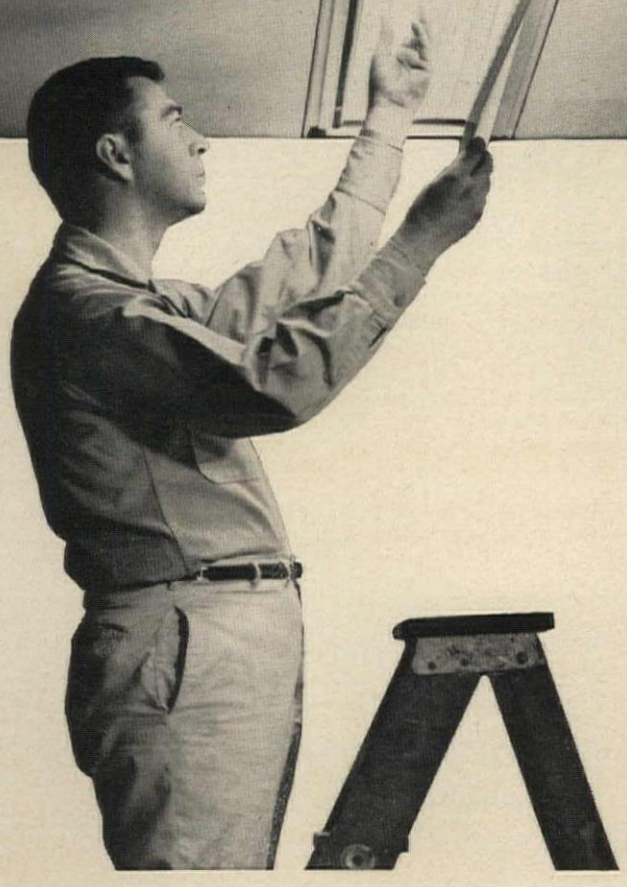
in one thin-line, single installation unit!

Mahonaire* ceiling system

Economy of materials and installation are added bonus benefits to the superior conditioned air handling characteristics of Mahonaire ceilings.

**patents applied for*





Hardin Jefferson High School / Sour Lake, Texas

Wyatt C. Hedrick & Associates, Architects & Engineers of Houston, Texas designed the new Hardin Jefferson High School in Sour Lake, Texas. School board requirements called for a 90,000 square feet building . . . built and basically equipped and air conditioned throughout (except for the gym and two shops) . . . for $10.00 per square foot.

By using a Mahonaire Ceiling System and thus capitalizing on the multi-use advantages of Mahon Cel-Beam construction, material costs were reduced, building height was lowered, material waste was minimized, labor cost was reduced and troffer lighting recesses and conduit runs were automatically provided. These savings not only permitted the architect to meet the cost specification but also allowed the inclusion of extra "deluxe" items such as electric drinking fountains, a general lighting system over 100 F/C, structural glazed tile, face brick, etc.

End result according to the Chief Architect T. Leo Dawsey Jr., and the Chief Mechanical Engineer Luther F. Coburn: "Quiet, uniform, balanced air distribution and diffusion—no pockets, no build-up, no drafts".

Consider too...for budget minded clients a Mahonaire Ceiling System can be installed for practically the same basic cost as a structural roof deck and air conditioning can then be added later with no expensive ducting needed. Write today for Catalog AC-63 for more details.

MAHON

SERVING INDUSTRY SINCE 1912

THE R. C. MAHON COMPANY

6565 E. EIGHT MILE ROAD, DETROIT 34, MICHIGAN

Manufacturing Plants
Detroit, Michigan and Torrance, California.

Sales Engineering Offices: Detroit, New York, Chicago, Torrance, San Francisco and Seattle.

For more data, circle 89 on Inquiry Card

HOW TO USE STAINLESS STEEL FOR FLASHING

Usage is increasing because the inherent corrosion resistance prevents both deterioration and staining. High strength of stainless, utilized in some new products, makes possible specification of thin gages, cutting its cost

*By D. W. Pettigrew**

There is something incongruous about burying a sheet of attractive stainless steel in the wall of a structure and never allowing it to see the light of day again. One thinks of stainless as a metal to be seen, to brighten up an area, or lend the feel of quality to its environment.

Yet today, more and more architects are specifying stainless steel as their flashing material, concealed or exposed, making this end-use one of the metal's largest applications in the architectural field.

Stainless steel as a flashing material made its debut some 32 years ago when it was first used for exposed cap and base flashing on the tower of the Chrysler Building in New York City. The installation remains noteworthy because an American Society for Testing and Materials committee, having made regular and critical inspection of the job, has reported that after more than 30 years of exposure to the highly corrosive atmosphere of New York City, the stainless steel has remained virtually unattacked under the film of soot and dirt deposited during those three decades.

The report of the committee states that where the film was removed with a mild abrasive, the Type 302 stainless steel remains as bright as when it was first installed.

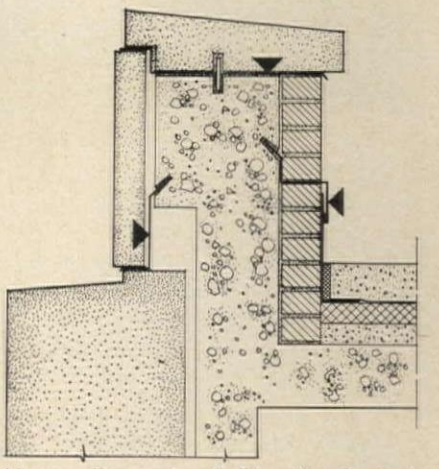
Why has stainless steel achieved popularity as a flashing material? Corrosion resistance is certainly a major factor. The metal needs no surface protection, nor will it stain or discolor areas adjacent to it. Since the corrosive action of alkalis has little or no effect on stainless, it can therefore be used in combination with brick, stone and ceramics. It is the most compatible metal available for use with aluminum and some other building metals, even in the presence of an electrolyte. For this reason many high-rise buildings sheathed in aluminum today call for protective flashing in stainless steel.

The high tensile strength and high modulus of elasticity of stainless permit safe and economical use of gages thinner than those used in non-ferrous metals, thus bringing its cost to a competitive level. Its thermal expansion compares favorably with other commonly used building materials.

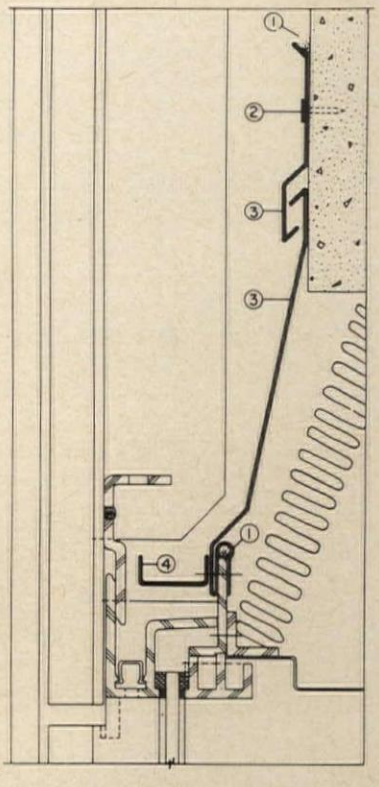
The fact that stainless steel flashing can be fabricated with all standard metalworking equipment and practices, including brake-forming and roll-forming, makes it a desirable choice. It can be soldered, welded or brazed. Soldering helps to speed up a job, especially where large sections of concealed flashing have no load-bearing requirements. Where mechanical strength is required, joints should be lock-seamed and soldered, or welded.

For most through-wall and concealed flashing applications, where appearance is not a factor, thin gages of stainless steel sheet will serve most satisfactorily, and standard mill finishes (2D or 2B) will suffice. Thirty gage (.012) is now considered standard for this purpose. Exposed flashing generally calls for 26 gage (.018) sheet with a 2B mill finish.

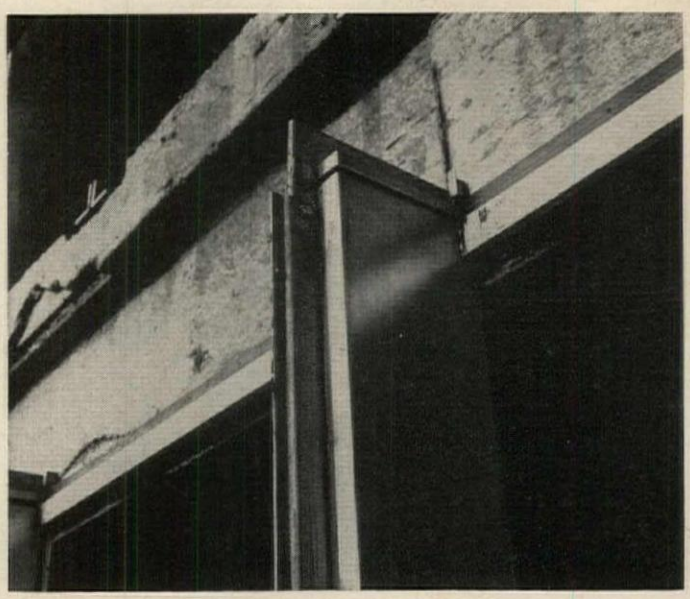
A ribbed stainless flashing has appeared on the market recently which permits an even thinner gage for through-wall and concealed



Above: Parapet of Lincoln Center's Philharmonic Hall has through-wall, cap and base flashing of stainless. *Below:* Spandrel flashing for Chase Manhattan Building in New York—1. mastic; 2. stainless nail; 3. stainless flashing (302, 2D finish, 30 gage); 4. stainless gutter



* D. W. PETTIGREW is secretary, Committee of Stainless Steel Producers, American Iron and Steel Institute



Spandrel flashing for Union Carbide Building in New York is set back on beam and has a mullion cut-out. Ordinarily, two-piece, surface-attached flashing is set at a projection from the beam and the projection is filled with a calking compound

uses. The ribs or grooves, about half an inch apart, are designed to provide a better mechanical bond in mortar joints and masonry. The rib design is in a herringbone pattern which induces drainage of moisture from any point. A sample of .008 thickness, because of the rib pattern, seems to have the rigidity of .010 or .012 material. With these very light gages and the 2D mill finish, a much larger area can be flashed at no additional cost.

Distribution oversights are gradually being overcome and flashing mechanics can now obtain stainless steel flashing material in quantities and sizes suitable to their purpose. Steel service centers and warehouses are beginning to package 50-ft "rolls" of thin-gaged stainless steel in widths from 6 in. to 36 in.

Fabrication and Installation

Base flashing is generally made of 302 stainless with a 2D finish and in 26 gage (.018). This type of flashing should be made up from 8-ft sheets with 1-in. locked and soldered seams into units of 24 ft. The units can be joined with a 3-in. slip-type expansion joint filled with an elastic calking compound before the ends are inserted into the slotted joints. On built-up roofing the base flashing should extend vertically on the wall not less than 8 in. and horizontally onto the roof not less than 4 in. The roof flange is fastened to the roof deck with stainless steel nails—flat-headed, annular-thread No. 12 by 1 in., spaced 6 in. on center.

Cap, or counter, and through-wall flashing take 302 stainless, in 2D finish, and 30 gage (.012). Ribbed sheet is being recommended as thin as .008. These sections are normally made up from 8-ft sheets, with 1-in. locked and soldered seams, into units of 40 ft. They are joined together with a 1½-in. loose lock expansion joint filled with elastic calking compound. Cap flashing extends into the masonry one full brick in depth and up 1 in. behind the brick. These sections overlap the base flashing about 4 in. and the lower exposed front edges are hemmed ½ in. to provide stiffening. Where the upper edges of cap flashing terminate in open-type stainless reglets, the edges are inserted into the reglets and secured with lead plugs spaced 12 in. on center. The reglets are then calked.

Spandrel flashing units are made in the same manner as through-wall flashing. They extend above the heads of the windows 8 in. and terminate in open-type stainless reglets inserted in the spandrel beam. The terminal edges are inserted into the reglets and secured with lead plugs spaced 12 in. on center. The reglets are then filled with calking compound.

Copings, gravel stops, fascias and parapet covers are now considered proper applications for stainless steel. In these applications a slightly heavier thickness is recommended—24 and 26 gage.

STAINLESS STEEL FLASHING GUIDE

Application	Commonly used Gages	Type	Finish	Comment
Base Flashing	26 or 28 (.018 or .015)	302	2D or 2B	Heavier gages to prevent denting and other damage
Cap and Through-Wall Flashing—flat	30 (.012)	302	2D	Mill finish eliminates cost extras
Through-Wall Flashing—textured or ribbed	35 (.008)	302	2D	Texturing increases rigidity permitting thinner gages
Spandrel Flashing	30 (.012)	302	2D	
Gravel Stops and Fascias	26 (.018)	302	2D or 2B	Heavier gage to prevent wind flutter and "oil canning"
Copings and Parapet Covers	25 or 26 (.021 or .018)	302	2D or 2B (No. 4 finish used to match spandrels in some instances)	Heavier gages to prevent "oil canning"

For more information circle selected item numbers on Reader Service Inquiry Card, pages 247–248

THREE-THOUSAND CYCLE HIGH FREQUENCY LIGHTING

General Electric has introduced a 3,000 cycle static converter for high frequency lighting which increases the light output of a conventional 40-watt fluorescent lamp by 6 per cent. Another advantage of the system is that only one instead of two ballasts is required for each group of four lamps.

The photo shows an engineer measuring the light output from one 40-watt lamp in a 26-lamp demonstration unit. Powering the unit is the new converter, shown in the background.

The heart of the converter is the high-power, inverter-quality, silicon-controlled rectifier which takes conventional 60 cycle power and converts it to the more efficient 3,000 cycle level. Any fluorescent lamp type or size can be operated to advantage on the 3,000 cycle system with a properly designed ballast. At present the system is especially applicable to large air-conditioned commercial lighting installations where 40-watt *Rapid Start* lamps are generally used. For the same light level, less lamps and fixtures are needed. Moreover, lamps and ballasts operated at high frequencies do not create as much heat as do conventional lighting systems.

The new solid-state frequency converters will be available in ratings from 20 kw through 100 kw, with input voltage ratings of 208 and 277/480 volts, three-phase wye connected and with output voltages of 300/600 volts, single phase.

The statis converters are placed in the wiring closet of each floor, and no change from standard wiring practices and codes is necsesary. *General Electric Company, Nela Park, Cleveland 12, Ohio*

CIRCLE 300 ON INQUIRY CARD

LIGHT-AND-HEAT REFLECTING GLASS

A new light-and-heat reflecting glass, known as LHR-*Twindow* developed by Pittsburgh Plate Glass Company features a mirror-like, fired-on metal oxide surface on the air-space side of the outdoor light.

This new product has greatly increased comfort-control features. Brighntess and glare are reduced in proportion to reductions in light transmittance of nearly 50 per cent. Maximum heat gain related to fenestration is reduced approximately 20 to 25 per cent. Both features result from the unique reflecting properties of the LHR-metallic oxide.

The product has a total solar energy reflectance of approximately 10 to 20 per cent. It is available with clear, *Solex*, *Solarbronze* or *Solargray* heat strengthened polished plate glass. The indoor light usually is clear polished plate glass. Sizes from 16 by 30 inches to 72 by 144 inches in 1-inch unit thickness are in regular production.

Initial installations have been completed in Orange County Civic Center, Calif.; Birmingham Eye Clinic, Ala.; Parke Davis and Co., Greenwood, S. C. (photo) and elsewhere.

Product specifications and air-conditioning design data on *LHR Twindow* are available in 1963 ASHRAE Guide form. Exploratory installations for single glazing will be made in selected locations during the coming year. *Pittsburgh Plate Glass Company, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.*

CIRCLE 301 ON INQUIRY CARD

more products on page 214

Office Literature

For more information circle selected item numbers on Reader Service Inquiry Card, pages 247–248

CONCRETE TANK DESIGN

"Preload, Prestressed Concrete Tank Design Concepts," a new technical bulletin (T-25), gives general design precepts and complete design calculations for a typical 5,000,000 gallon prestressed concrete tank. Typical drawings, temperature and seismic loading data, and condensed specifications are included in this book's 48 pages. *The Preload Company, Inc., 837 Old Country Rd., Westbury, N.Y.*

CIRCLE 400 ON INQUIRY CARD

POLE-TYPE CONSTRUCTION

The advantage of pole-type buildings using *Chemonite* pressure-treated poles are set forth in a 12-page brochure. The booklet shows and discusses application of pole-type construction in industrial, commercial, farm and residential buildings. Examples are shown of the effective use of these poles in solving difficult terrain problems for hillside homes and housing developments. Designs and construction details are also included. *J. H. Baxter & Co., 120 Montgomery St., San Francisco, Calif.**

CIRCLE 401 ON INQUIRY CARD

EMI GLOSSARY

Terms frequently encountered in electromagnetic work (used especially in connection with rooms designed to prevent radio-frequency interference), are listed in a glossary of 12 pages. The booklet offers definitions of such terms as *attenuation, cell-type enclosure, TVI, spectrum signature analysis* and many others. This short glossary is reported to be the first attempt at organizing the terminology in the electromagnetic field. *Ace Engineering & Machine Co., Inc., 60 Tomlinson Rd., Huntingdon Valley, Pa.*

CIRCLE 402 ON INQUIRY CARD

CHURCH FURNITURE

Photographs of typical installations as well as drawings of the manufacturer's extensive line of wooden church furniture are presented in two brochures. Cutaway diagrams show the dimensions of the furniture. *Turney Wood Products, Inc., Harrison, Ark.*

CIRCLE 403 ON INQUIRY CARD

STEEL JOISTS

Raychord is offering a 24-page catalog on their open web steel joists. The booklet covers their J-, H-, LA- and LH-series. Also included are load tables and specifications. *Raychord Corporation, Apollo, Pa.*

CIRCLE 404 ON INQUIRY CARD

ALUMINUM BAR GRATINGS

A brochure describing the company's new aluminum I-bar grating gives specifications and a safe-load table. *Liskey Aluminum, Inc., Baltimore Friendship Airport, Box 605, Glen Burnie, Md.**

CIRCLE 405 ON INQUIRY CARD

LIGHTING PANELS

"Precision Plastic Lighting Panels" includes special properties and applications of *K-Lite* panels, recommended levels of illumination, a plastic properties chart and a list of installations. *K-S-H Plastics, Inc., 10212 Manchester, St. Louis 22, Mo.*

CIRCLE 406 ON INQUIRY CARD

LIGHTING LOUVERS

An eight-page illustrated brochure on plastic louvers includes new louver sizes, light shielding cut-off degrees, brightness control data, coefficients of utilization, and information on properties and applications. *American Louver Company, 5308 N. Elston Ave., Chicago 30, Ill.**

CIRCLE 407 ON INQUIRY CARD

INSTRUMENT PANELS

Control and instrument panels of Melamine plastic, aluminum stainless steel, brass, bronze and Plexiglas are described in a six-page color folder. Ordering and specification instructions are also given. *Best Manufacturing Company, Box 2126, Kansas City 42, Mo.**

CIRCLE 408 ON INQUIRY CARD

GROWTH CHAMBERS

Described in a six-page folder are seven basic chamber units, from cabinets to walk-in chambers for duplicating environmental conditions useful in the study of plants and animals. *National Appliance Company, P.O. Box 6408, Portland 23, Ore.*

CIRCLE 409 ON INQUIRY CARD

CONCRETE MASONRY QUALITY CONTROL

The National Concrete Masonry Association has put out a "*Q Block* Information Kit." One booklet tells what *Q Block* is (concrete masonry manufactured under the first national quality standard established by the concrete masonry industry) and another booklet features installation photos. *National Concrete Masonry Association, 1015 Wisconsin Ave., N.W., Washington 7, D.C.*

CIRCLE 410 ON INQUIRY CARD

SILICONE TECHNOLOGY, PRODUCTS, USES

New silicone protective coatings, electronic encapsulating materials, antifoams and other recent silicone product and technological developments are discussed in the new "Silicones Digest." This publication (CDS-391) also contains condensed articles of current interest as well as a listing of new technical literature available on the subject of silicones. *General Electric, Silicone Products Department, Waterford, N.Y.*

CIRCLE 411 ON INQUIRY CARD

STEEL DOORS

A 1963 version of last year's "Steel Door Institute Fact File" consists of copies of commercial standards covering the products of the industry, an American Standard listing of steel door and frame nomenclature, and 10 four-page brochures detailing each manufacturer's products. *Steel Door Institute, 2130 Keith Building, Cleveland 15, Ohio.**

CIRCLE 412 ON INQUIRY CARD

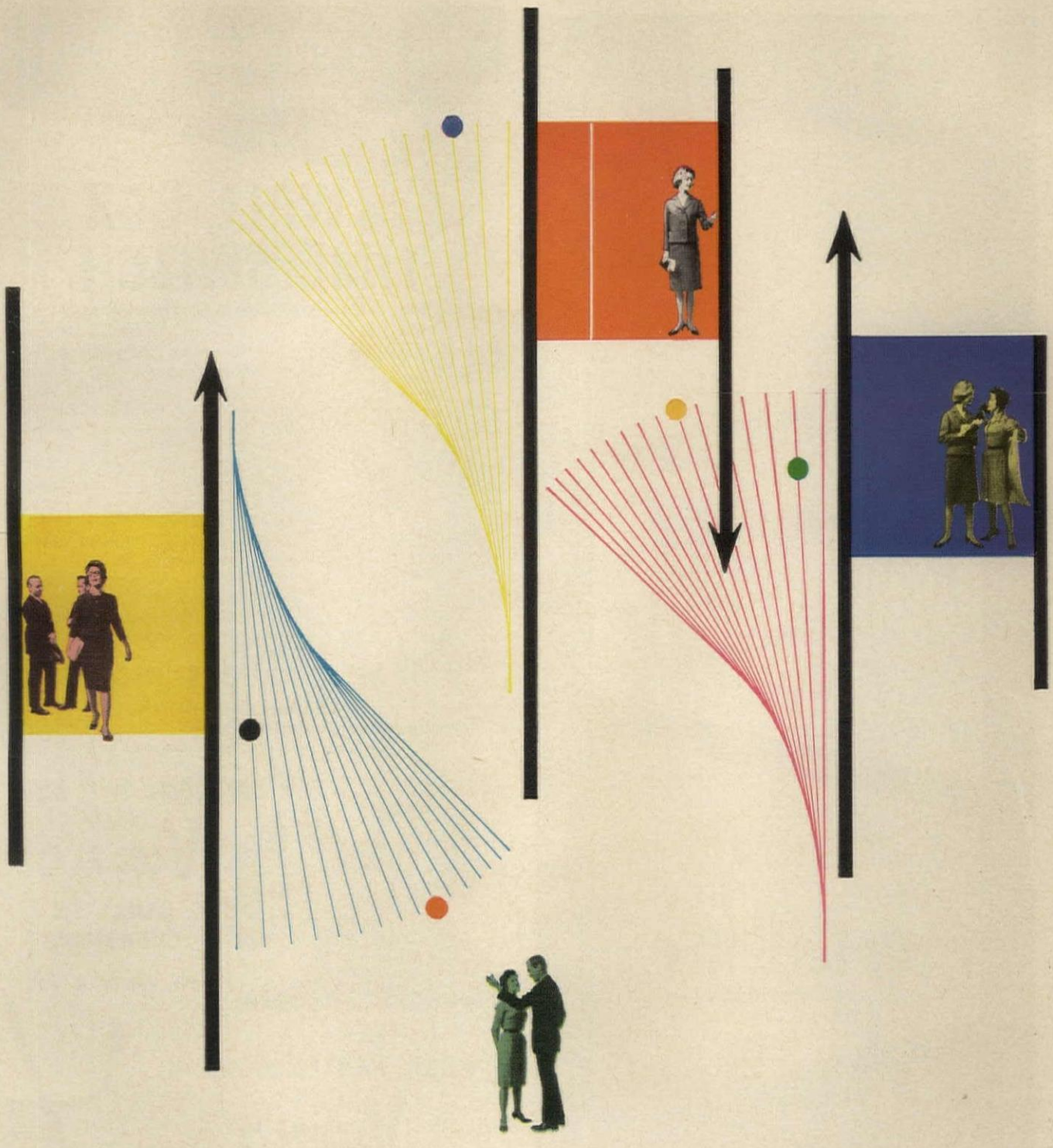
INSTITUTIONAL CASEWORK

Customized and standardized unit casework and related equipment are presented in 30 pages of photos, charts and general descriptions and specifications. The brochure content ranges from door hinges to typical cabinetry combination units. *Brentwood, Division of Brunswick Corp., 1801 S. Hanley Rd., Brentwood 44, Mo.*

CIRCLE 413 ON INQUIRY CARD

**Additional product information in Sweet's Architectural File*

more literature on page 238

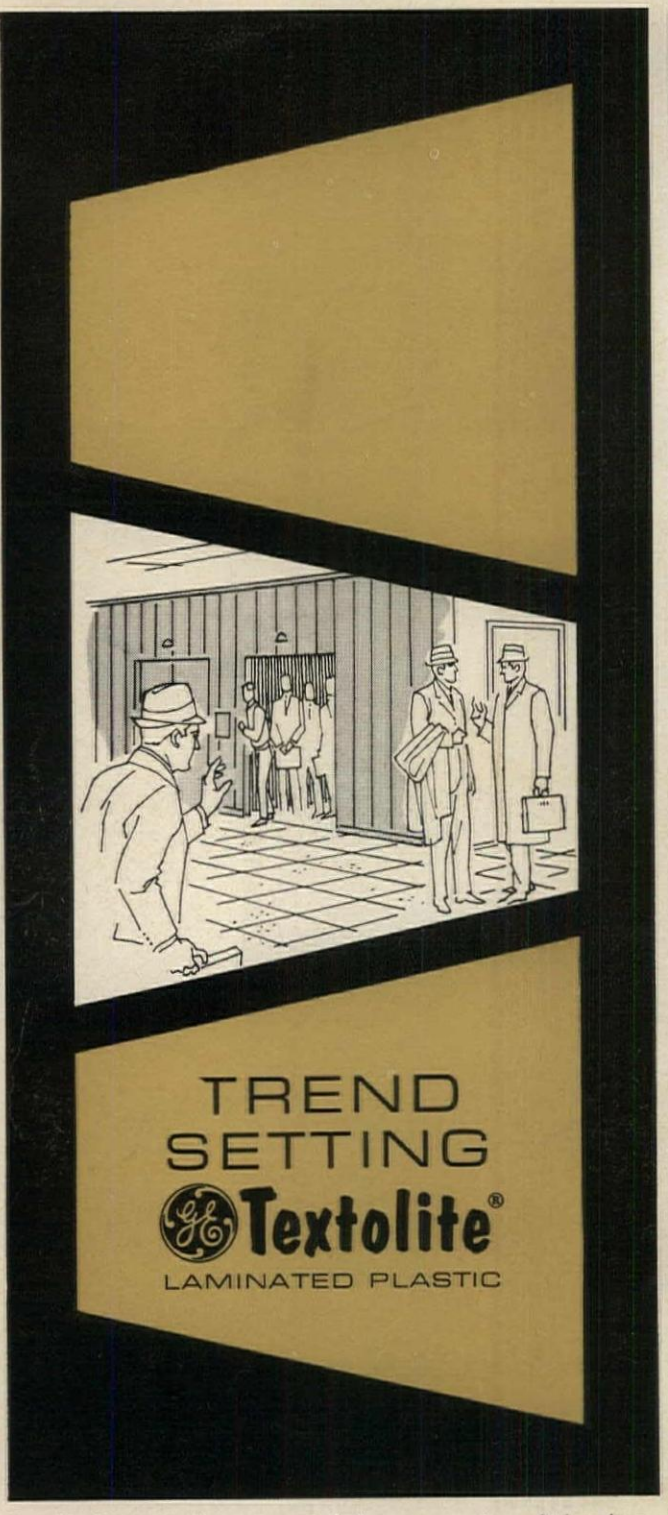


today it's unlimited elevator automation

—and almost instant elevator service. Still further advances in AUTOTRONIC® elevatoring. A constantly alert supervisory system keeps elevator service matched to traffic demands—continuously! Thru unlimited elevator automation based upon never-ending 'service sensing'. This 'service sensing' detects all demands for elevator service and transmits them continuously to the computer—the 'brain' of the installation in the elevator machine room. This data is projected against current elevator performance to reach immediate command decisions Then, these decisions are converted into signals that direct the elevators to provide the world's most advanced elevator service. Once again it's leadership by OTIS. Otis Elevator Company, 260 Eleventh Avenue, New York 1, N. Y.

Otis

AUTOTRONIC ELEVATORING



In planks, panels or special shapes . . . in solid colors, woodgrain or designer patterns, in satin or no-glare textured finish, G-E Textolite offers unlimited design versatility for commercial wall applications. Write for samples of this decorative, yet practical, surfacing.

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, Coshocton, Ohio Dept. AR-113
( ) Send samples of G-E Textolite® laminated plastic.
Name_____
Firm _____
Address_____
City_____ Zone_____ State_____

For more data, circle 91 on Inquiry Card

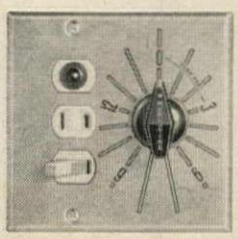
For big dividends in client satisfaction . . .

MARK-TIME®

WALL BOX TIME SWITCH

Reduces electric bills to a bare minimum

Set it-Forget it! The Mark-Time "90,000" is the proven, economical time control for turning "OFF" outside and garage lights, ventilating and attic fans and bathroom space heaters after pre-determined time intervals. Models available to turn "OFF" from 3 minutes to 12 hours maximum. For motels, schools, public buildings, homes.



Flush mounts in standard switch box. Optional face plate (illustrated) provides for Despard type interchangeable devices.

Available from electrical wholesalers . . . or write for literature.

MARK-TIME®

M. H. RHODES, INC.
HARTFORD 6, CONN.
In Canada—M. H. Rhodes (Canada) Ltd., Ottawa 5, Ontario
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. . . and our home will have

Vacu-FLO®
BUILT-IN CLEANING!
Ralph, you're a doll

THE MOST WANTED BUILT-IN IS Vacu-FLO®

TRIPLE SERVICE!

1. *The cleanest Cleaning ever*
2. *Prowler and Fire Alert*
3. *Inter-home Signal System*

Plus a startling new innovation . . .
DECOR-MOTIF IDEA
to be introduced at the
N. A. H. B. SHOW

OUR 9th YEAR IN-A-ROW AT THE SHOW

MANUFACTURED BY
H-P PRODUCTS, INC.
LOUISVILLE, OHIO PHONE 875-5556 — AREA CODE 216

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Every inch an air mixing diffuser

A Foot...

A Yard...

A Mile...

2⅜" Actual Width of 4 Row Type "EF" Stripline

STRIPLINE...has no equal

If it does not have these built-in air mixing elements it is not a STRIPLINE diffuser.

When STRIPLINE is installed you can be sure that every inch, foot or mile of these air mixing diffusers, will deliver uniform, homogenized air with control movement in every cubic foot of space served.

Unlike slot type grilles, STRIPLINE has built-in air mixing elements incorporated for functional perfection . . . induce greater quantity of room air toward the diffuser . . . rapidly mix primary and room air . . . providing equalized velocities and temperatures in the zone of occupancy.

More than 250,000 feet of STRIPLINE is now in use. Not one foot has ever malfunctioned, your guarantee that the design of STRIPLINE and the authentic performance data available for the application of these air mixing diffusers, will assure noiseless, draftless air distribution.

Slot type grilles without air mixing elements are not diffusers and are incapable of performing these functions.

For complete performance data, types and sizing ask for catalog ES-105.

FEATURES . . .

- No visible attaching screws.
- Removable core simplifies installation.
- Design eliminates complicated and expensive duct connections while assuring equalized discharge.

AIR DEVICES INC.

185 MADISON AVENUE, NEW YORK 16, N. Y.

BETTER PRODUCTS FOR
AIR DISTRIBUTION • AIR CLEANING • AIR EXHAUST

For more data, circle 96 on Inquiry Card

Structural Steel Tubing speeds service plaza construction

In a major oil company's multimillion dollar expansion program, Republic ELECTRUNITE® Structural Steel Tubing is cutting the cost of building new service stations.

Square and rectangular steel tubing was picked for columns, beams, and spandrels due to its high strength to weight ratios, low cost, ease of erection, and outstanding design efficiency. The flat sides of this tubing facilitate the fitting of glass, masonry, and curtain wall sections. And the tubing requires no finish treatment other than paint.

To minimize construction costs, all tube cutting and fabrication is done before delivery of the tubing to the job site. Spandrel sections of 3″ x 3″ square tubing, for example, are completely preassembled. Columns are fitted with base plates.

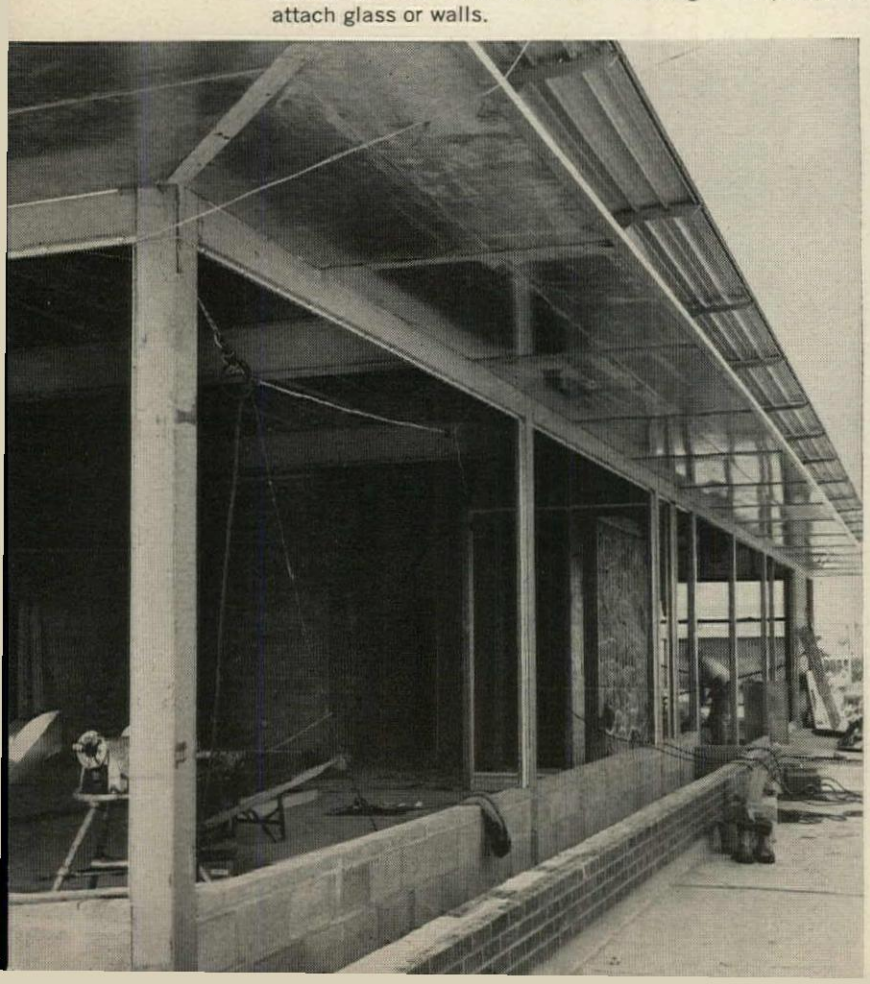
Erection proceeds swiftly at the job site where columns are placed on footings and bolted. 3″ x 6″ tubular headers and other sections are bolted together and welded. Welds are then ground to provide an attractive joint.

To further increase the design and economic advantages of structural steel tubing, Republic has increased guaranteed minimum yield strength of ELECTRUNITE Square and Rectangular Tubing by 36% over ASTM Specifications A-7 or A-36.

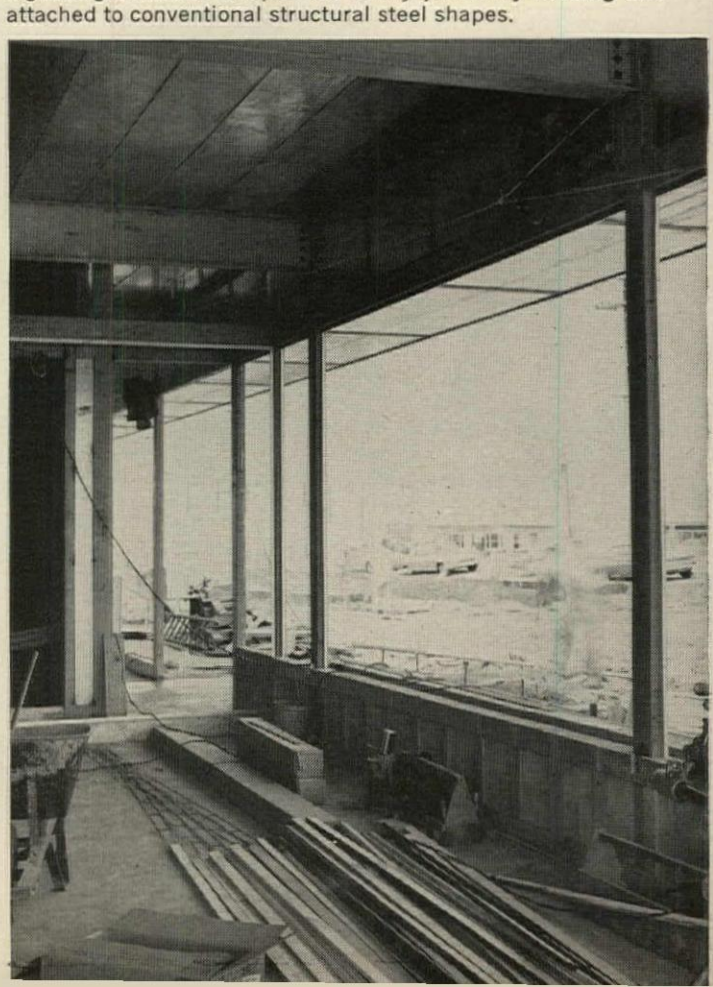
Detailed in the chart at right and in Republic's new ST-101 Specification, the higher strength can bring about substantial savings in overall costs. You *spend less money* to get needed bearing strength in columns, posts, lintels, spandrels, and other structurals.

FOR A COPY of Republic's informative, 52-page booklet—"ELECTRUNITE Steel Tubing for Structural Use"—send the coupon. ELECTRUNITE Structural Steel Tubing is available in rounds to six inches O.D., squares and rectangles in peripheries to 20 inches and wall thicknesses up to .250-inch.

Turning corners is simple when square tubing is used for corner columns. No additional framing is required to attach glass or walls.



Lightweight tubular shapes are easily joined by welding and attached to conventional structural steel shapes.



NEW REPUBLIC SPECIFICATION ST-101

		Grade A	Grade B	Grade C
Rounds	Tensile Strength, Min., psi	45,000	52,000	60,000
	Yield Strength (.2% offset), Min., psi.	33,000	42,000	50,000
	Elongation in 2", Min., percent	25	25	20
Shapes	Tensile Strength, Min., psi.	60,000	60,000	70,000
	Yield Strength (.2% offset), Min., psi.	33,000	46,000	60,000
	Elongation in 2", Min., percent	25	25	10

ASTM A-7		ASTM A-36	
Tensile Strength, psi. for shapes of all thicknesses	60,000 to 75,000	Tensile Strength, psi.	60,000 to 80,000
Yield point, Min. psi.	33,000	**Yield point, Min. psi.**	36,000
Elongation in 2" min. percent	24	Elongation in 2" min. percent	23

REPUBLIC STEEL

REPUBLIC STEEL

Cleveland, Ohio 44101

For more data, circle 97 on Inquiry Card

The Austin Company—Designers, Engineers and Builders—was selected to fabricate and package new service stations for The Standard Oil Company (Ohio). The firm of Peter Muller-Munk created the original design concept for the stations.

Steel

REPUBLIC STEEL CORPORATION
DEPT. AR-6684
1441 Republic Building • CLEVELAND, OHIO 44101

Please send a copy of the booklet,
ELECTRUNITE Steel Tubing for Structural Use.

Name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____

Product Reports

continued from page 203

METAL MOVABLE WALLS

A new composite metal panel prefabricated movable wall called the *Co-Ordinator Double Wall* consists of two parallel, identical composite panels of a steel sheet and gypsum core "sandwich." The over-all wall thickness is at least 3 in., and a generous inner air space clearance is provided.

The unique combination of steel and gypsum, says Hauserman, provides outstanding acoustical, fire-resistive, decorative and utility qualities at a cost comparable to plaster walls. Moreover, the panels can be installed, removed or replaced easily in a matter of minutes. The wall can be painted or decorated with any wall covering. *E. F. Hauserman Company, 7516 Grant Ave., Cleveland 5, Ohio*

CIRCLE 302 ON INQUIRY CARD

WHITEPRINTER AND DEVELOPER

The *Diazit Spacesaver* is a synchronized combination whiteprinter and developer which is said to produce sharp, dry copies with intense blue or black lines from any translucent or semi-opaque original up to 42-in. wide. Mounted on either wall or table, this unit features single dial electronic speed control for uniform printing, all steel building block construction with stainless steel developer section, and copying speeds from 3 in. per minute to 10 ft per minute. Its dimensions are 57 by 12 by 9½ in. *Diazit Co., Route 1, Monmouth Junction, N. J.*

CIRCLE 303 ON INQUIRY CARD

more products on page 218

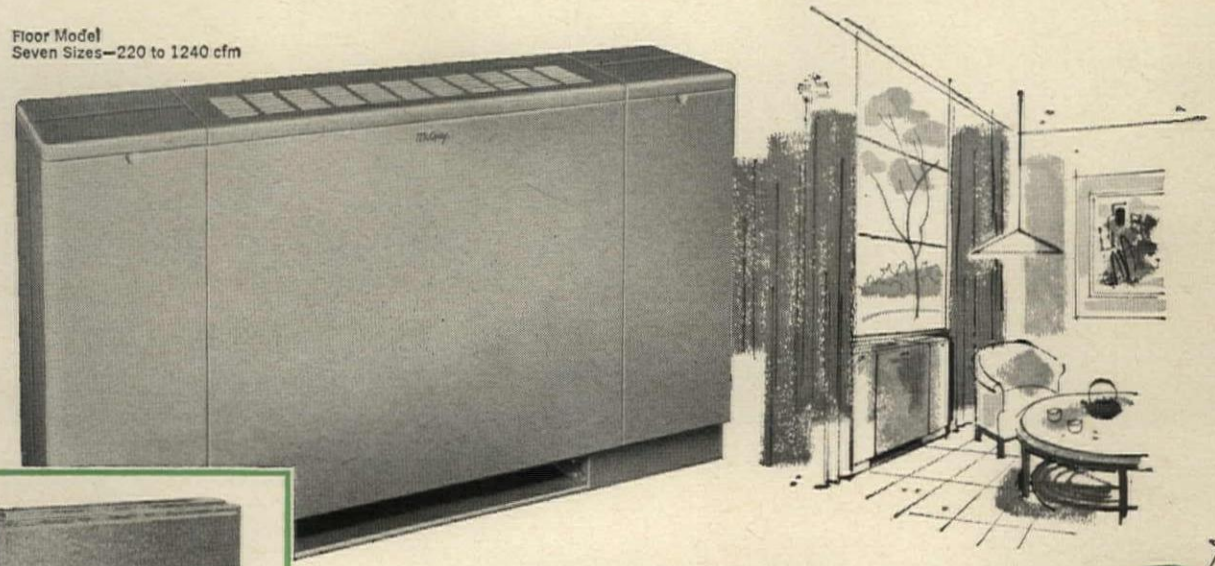
Thin-Line Seasonmakers

for saving space
for every application
for McQuay quality

The familiar Thin-Line Seasonmaker family consists of floor, basic, ceiling, and hideaway types, which permits you to select the particular unit to fit your requirements. And because they are only 8½ inches thin, they save space. Seasonmakers are whisper quiet, too, with three-speed fan control for air volume flexibility. Your McQuay representative can help you select the Seasonmaker to exactly meet your needs, or write McQuay, Inc., 1605 Broadway N.E., Minneapolis 13, Minnesota.

McQuay Thin-Line individual room

SEASONMAKERS



McQuay INC.
MEANS QUALITY

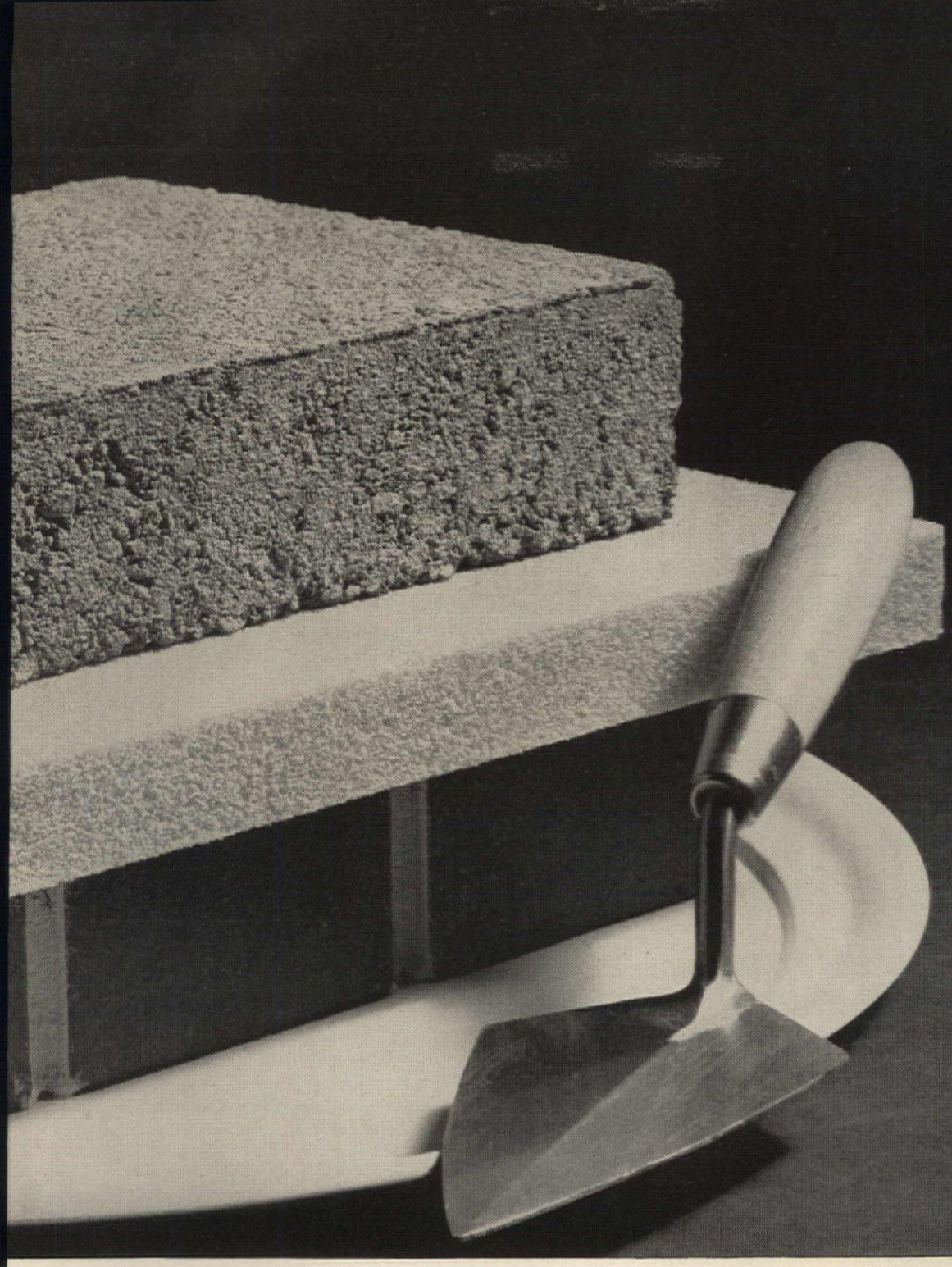
MAKE THE SEASONS COME TO YOU

AIR CONDITIONING • HEATING • REFRIGERATION

MANUFACTURING PLANTS AT FARIBAULT, MINNESOTA • GRENADA, MISSISSIPPI • VISALIA, CALIFORNIA

For more data, circle 99 on Inquiry Card

This is only one way you make a



sandwich with Styrofoam® FR.

No matter what you specify for the outside or inside walls, Styrofoam FR brand insulation board goes perfectly in between. Because it stays dry, Styrofoam FR keeps its low "k" factor permanently. And it's so versatile:

Cavity Wall—Styrofoam FR is simply placed between interior masonry and exterior brick—cutting the wall's "U" value by one-half or more. Styrofoam FR provides an excellent vapor barrier. It can't absorb moisture, can't settle, either.

Wallboard Base—Styrofoam FR bonds directly to masonry with Styrotac® bonding adhesive; wallboard to Styrofoam FR the same way. Single thickness gives double-laminate quality with no furring, nails or fuss.

Form Liner—Styrofoam FR is attached to the form, concrete poured and the form removed. Then the finish is applied to Styrofoam FR without furring or lathing: a better insulated wall at no extra cost!

DOW

For more about making sandwiches with Styrofoam FR, see Sweet's Architectural File under building insulation products and systems. Or write us: The Dow Chemical Company, Plastics Sales Dept. 1002N11, Midland, Michigan.

Styrofoam is Dow's registered trademark for expanded polystyrene produced by an exclusive manufacturing process. Accept no substitute . . . look for this trademark on all Styrofoam brand insulation board.

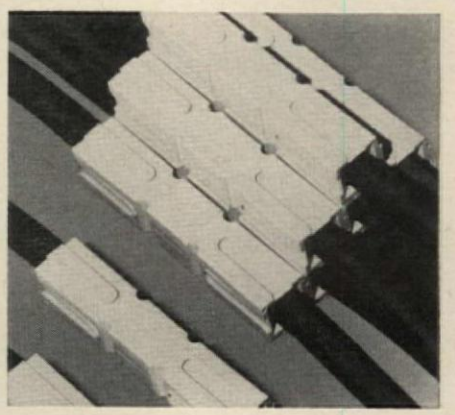
For more data, circle 100 on Inquiry Card

Product Reports

continued from page 214

MODULAR ELECTRICAL CONNECTOR

Powerstac, a new single-pole modular electrical connector, is designed to enable complete connector units to be assembled, locked together, and connected without need for additional hardware. Each connector is composed of identical mating halves having square bodies and integrally molded dovetail and mating slot configurations on all sides. The units may be used individually or stacked in multiple units to form a multiple pole connector. The connector is designed to be mechanically and electrically universal in that two or more



coupled units may be joined without reversing polarity. Individual units are rated at 600 volts and may be used with cable ranging in size from No. 6 to No. 16 awg. Assembly and disassembly of the connector is relatively simple: a contact element furnished with each connector half is crimped to the end of a cable, which is then inserted into the rear of a connector body. *Albert & J. M. Anderson Mfg. Co., 289 A St., Boston 10, Mass.*

CIRCLE 304 ON INQUIRY CARD

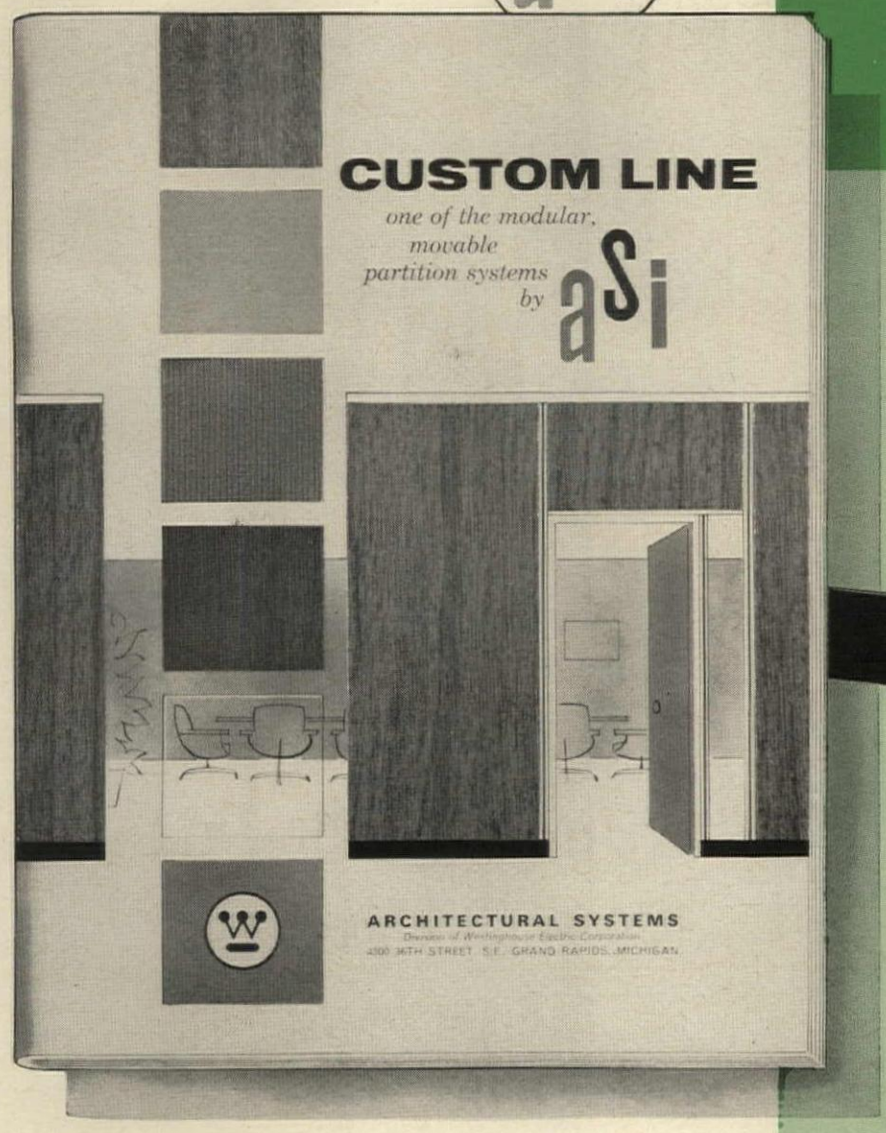
VINYL GLAZING

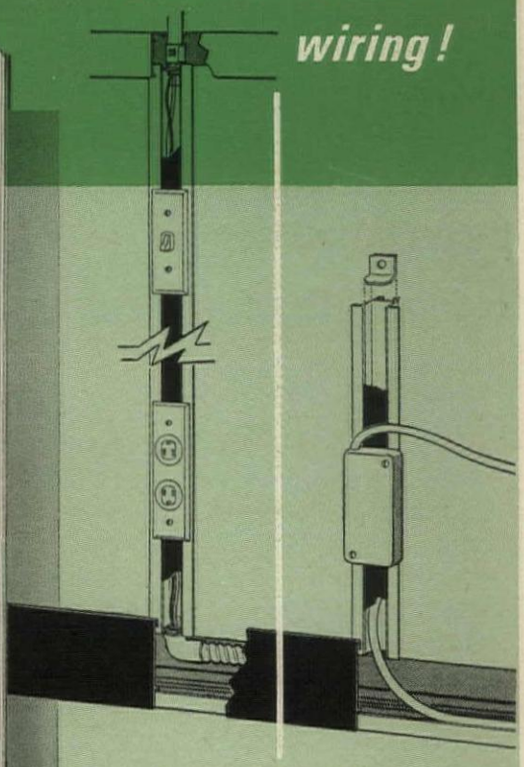
Kayrex, a vinyl glazing material reinforced with steel mesh, is furnished in prepackaged cartons containing approximately 50 sq ft each in the six most common window sizes, as well as uncut sheets up to 4 by 12 ft. *Kayrex* is highly shatterproof and noncombustible. The manufacturer also says it is unaffected by water, weather and most inorganic materials. This glazing material is furnished in two transparent shades

more products on page 222

versatile Custom Line partitions by ASI

...with new electrified posts UL approved for power and communications wiring!





You gain planning freedom and lower installation costs

ASI's new aluminum post extrusion and two simple fittings make a raceway that is Underwriters' approved for 120 volt power service and/or telephone, intercom or other low-voltage wiring. Conduit or armored cable in ceilings or baseboards connect to post-end fittings, with wiring extending direct to standard "slimline" switches or outlets. No boxes required. For telephone, intercom or other communications services in the same post, a simple block fitting divides the raceway.

write for this new catalog today

It shows you the advantages of the new Custom Line electrified posts (for instance, *all* partition panels are movable because there's no drilling or cutting for electrical wiring). And it makes a positive point—several of them, in fact—for the Custom Line's inherent adaptability to any space division requirement, aesthetic or functional.

See how ASI's range of partition materials—including Westinghouse MICARTA, the low maintenance plastic laminate—can add fresh, new vitality to your interior planning and give you the sound attenuation, fire rating and cost level you need.

Write us at 4301 36th Street, S.E., Grand Rapids 8, Michigan for your copy of the new Custom Line catalog. For even quicker action, call us at 949-1050, area code 616.

ARCHITECTURAL SYSTEMS
Division of Westinghouse Electric Corporation

We never forget how much you rely on Westinghouse

For more data, circle 102 on Inquiry Card

Order USS National Structural Tubing from your nearest Steel Service Center.

USS National Hollow Structural Tubing Progress Report:

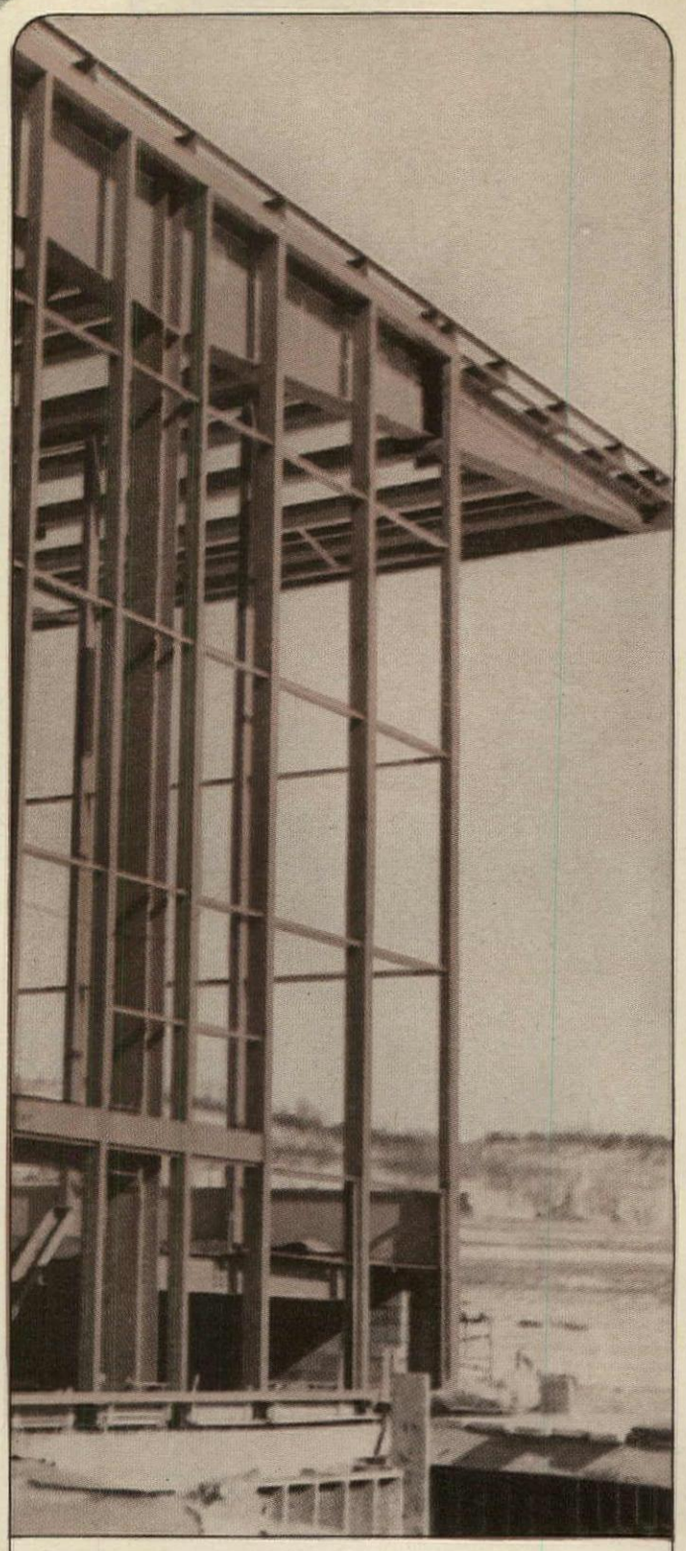
Posts, columns, beams, rafters, and mullions! These three structures show the versatility of USS National Hot-Rolled Hollow Structural Tubing. The designers specified tubing because of its attractive finished appearance, compactness, workability and excellent strength-to-weight ratio.

USS National Hollow Structural Tubing is highly efficient for compression members and can be easily joined with other structural members. Tubing is especially efficient when subjected to bending stresses in more than one direction.

USS National Hollow Structural Tubing in Grade 1 meets the mechanical and chemical properties of ASTM A7 and Grade 2 meets those for ASTM A36. Now a *new* Grade 3 tubing is available made of USS COR-TEN. Hollow structural tubing members can be painted or sheathed as required. Grade 3 tubing has a minimum yield point of 45,000 psi, atmospheric corrosion resistance 4 to 6 times that of carbon steel and is ideally applicable wherever weight reduction or maintenance cost savings are prime consideration. For more information, see your National Tube Distributor or write, National Tube, Department 101-3608, 525 William Penn Place, Pittsburgh, Pennsylvania 15230. USS, National and COR-TEN are registered trademarks.

National Tube Division of United States Steel

Columbia-Geneva Steel Division, San Francisco, Pacific Coast Distributors
United States Steel International (New York), Inc., Export Distributors



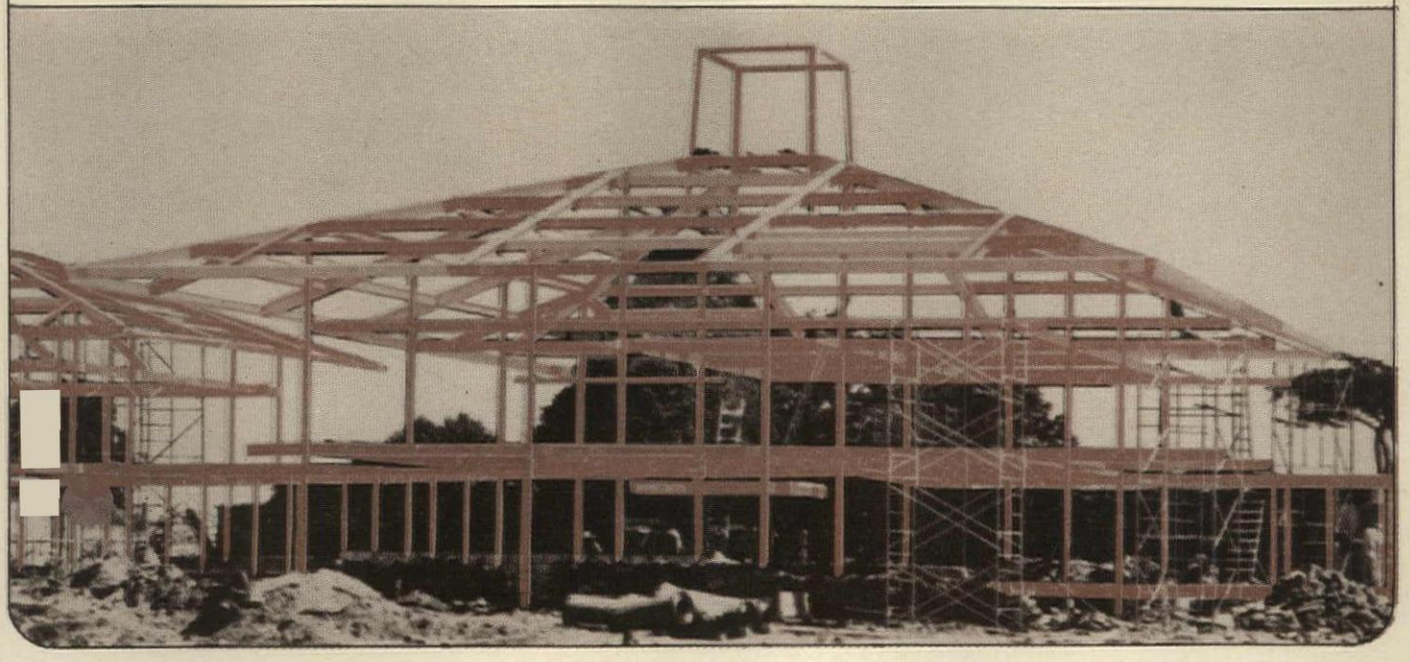
Grandstand act

The cover grandstand and combination clubhouse at the Washington Trotting Association's new Race Track, the Meadows near Washington, Pennsylvania, was designed by Harding H. Thayer & Associates, Architects of New Castle, Pa. They selected 30-foot sections of Hollow Structural Tubing for use as mullions in the clubhouse area. The tubing, framing large glass areas, presents a finished appearance when painted. Placement of the glass is simplified by the attachment of glazing stops directly to the structural mullions. Clean straight lines result in little obstruction to the spectators' view.

For more data, circle 103 on Inquiry Card

A steel house

Here's a large contemporary house in Baltimore where USS National Hollow Structural Tubing is used for columns and beams. The architects, Tatar and Kelly, and the structural engineers, Perry & Lamprecht, Baltimore, Maryland, specified structural steel tubing because of its attractive appearance, easy maintenance and the ease with which it can be joined to other materials. Structural steel tubing was fabricated by the Maryland Steel Products Company.



And one for the girls

In the three-story Quincy College Women's Dormitory all the perimeter columns are square Hollow Structural Tubing. Frank W. Horn A.I.A., & Associates, Architects in Quincy, Illinois, specified tubing to support the floors and roof. The structural steel fabrication was done by Michaelmann Steel Construction Company of Quincy. Angle brackets were shop welded to the columns for easy connection with the beams and girders. Full height tube columns will be exposed on the exterior of the building and painted to express the structural frame between curtain wall panels.

Product Reports

continued from page 218

and one translucent shade. It is available in .060-, .090- and .120-in. thicknesses. *Kaykor Products Corporation, Yardville, N. J.*

CIRCLE 305 ON INQUIRY CARD

DRAFTING TABLE

By integrating an automatic drafting table with a reference desk, Stacor's coordinate group series *N* offers a practical arrangement for the draftsman or engineer that substantially reduces floor space requirements. Dual foot pedals operate the drawing board. One raises and lowers the board from 32 to 47 in.; the other pedal adjusts the board angle from 0 to 90 degrees. The units also feature the Stacor *Micro/Plane* drafting board. Its steel "sandwich" construction provides a rigid, moisture proof, non-warping surface. *Stacor Corporation, 295 Emmet St., Newark 14, N. J.*

CIRCLE 306 ON INQUIRY CARD

CEILING DIFFUSERS

The design of a new line of extruded aluminum linear ceiling diffusers, in which one set of fully adjustable vanes controls both the air pattern and air flow rate including blank-off, permits the diffusers to be incorporated into the modular units of most ceiling systems. The diffuser vanes can be quickly, easily positioned from the diffuser face to adjust the air pattern a full 180 degrees and to set the air flow rate desired. The diffusers come in one-piece lengths up to one ft. *Titus Manufacturing Corporation, Waterloo, Iowa*

CIRCLE 307 ON INQUIRY CARD

more products on page 222D

Another sealing challenge mastered by

Strucsureseal®

Six thousand gallons of STRUC*SURE*SEAL, in specially formulated bronze color, were used to "seal in" these intricate story-high panels of the world's largest office building . . . Pan American. Here is just one more example of the high regard architects and builders have for this proven polysulfide base sealant.

Other well-known buildings permanently weather-sealed by STRUC*SURE*SEAL include Seagrams, Pepsi-Cola, Cobo Hall, Crown Zellerbach, First City National Bank (New York), First National Bank (Ft. Worth), St. Louis Municipal Airport, Tishman (Los Angeles), and St. Paul Fire and Marine Insurance.

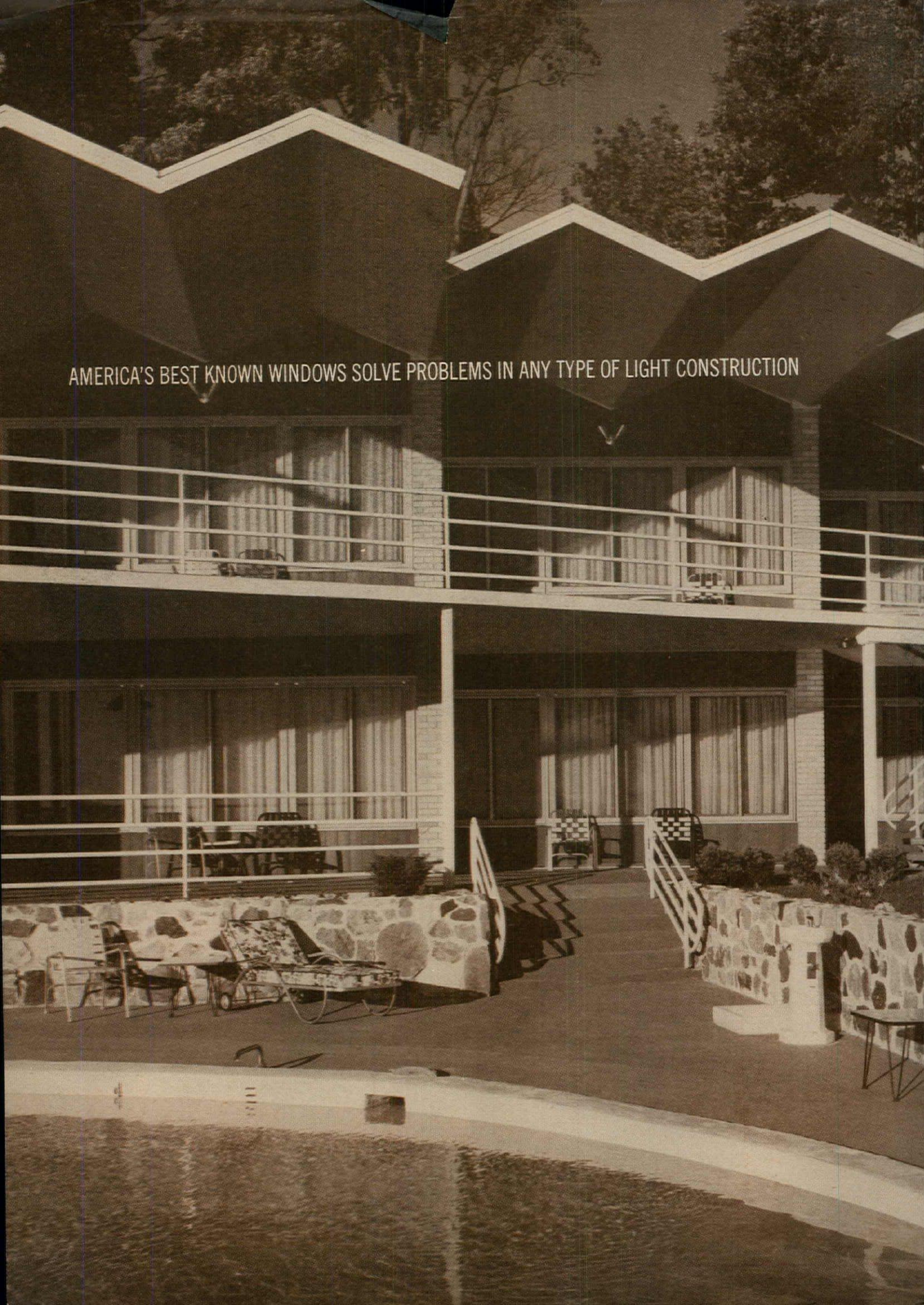
Knowledge of this sealant's reliable performance through the years in such major constructions has vastly increased architect acceptance and preference for STRUC-*SURE*SEAL among all the polysulfides. Its wide range of colors complies fully with requirements of ASA Spec. A116.1, as tested by independent laboratories. Outstanding "gunability" makes it the contractors' choice, too.

Do you have our latest sealant data file? It contains full details on our complete line of polysulfides, butyl caulks, rubber rod stock, and wide range of sealing tapes. Write or call Presstite, 39th and Chouteau, St. Louis 10, Mo., MOhawk 4-6000.

PRESSTITE DIVISION | Interchemical CORPORATION

S *See our catalog in Sweets.*

Architect: Emery Roth & Sons
Design Consultants: Walter Gropius (The Architects Collaborative) & Pietro Belluschi
General Contractor: Diesel Construction Co., Inc.
Sealant Applicator: F. H. Sparks Co., Inc.


AMERICA'S BEST KNOWN WINDOWS SOLVE PROBLEMS IN ANY TYPE OF LIGHT CONSTRUCTION

Fisherman's Wharf Motel, St. Clair, Michigan. Architect: George D. Lytle

The Andersen Window that solved two problems in this Michigan Motel

Need for large window areas plus insulating effectiveness met with Andersen Gliders

To take advantage of the view without sacrificing natural ventilation, Architect George Lytle selected Andersen Gliders—the picture windows that glide open sideways.

But, Andersen Gliders also helped solve the heat loss problem. Each unit is electrically heated—controlled in the unit and from a master control panel in the office. Temperatures in each unit can be lowered as guests leave, raised as guests arrive—all from the office. Saves on the heating bills. And, Andersen Windows, with the natural insulating qualities of wood plus their weathertightness (about 5 times industry standards) serve perfectly.

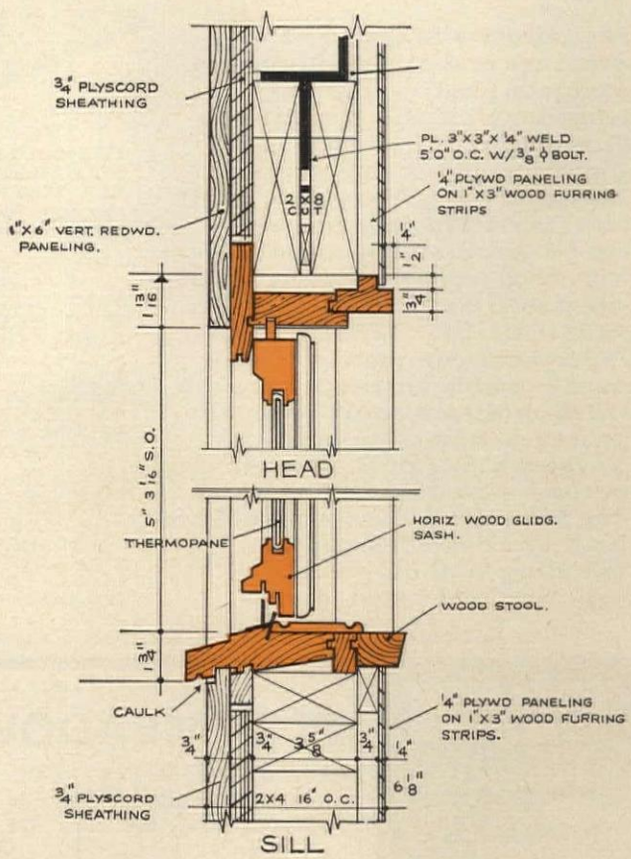
Andersen Windows offer you maximum design flexibility for any light construction project: 7 kinds of windows, 30 different types, 685 cataloged sizes.

Check Sweet's File or write for Detail catalog and Tracing detail files. Andersen Windows are available from lumber and millwork dealers throughout the United States and Canada.

Andersen Windows

America's most wanted windows AW

ANDERSEN CORPORATION · BAYPORT, MINNESOTA



For more data, circle 106 on Inquiry Card

Product Reports

continued from page 222

GAS-FIRED FURNACES

A new *SU* series of gas-fired upflow furnaces are designed to eliminate ventilation and relief openings in the front of the cabinet, thus streamlining its appearance. The new furnaces are rated from 75,000 to 200,000 Btu per hour and have air-handling capacities up to six tons of cooling. They are suitable for installation in such home locations as utility rooms, closets and basements.

The furnaces are sturdily constructed of heavy-gauge steel using a locking panel construction. *Henry Furnace Co., Medina, Ohio*

CIRCLE 308 ON INQUIRY CARD

TROWELED MARBLE

Granolux is a natural marble material applied with a trowel. It can be applied over concrete, masonry or curtain-wall construction. It is only ⅛- to ¼-in. thick and is impervious to water. Installations have experienced temperature extremes from — 40 to 100 degrees F with no adverse effects. *Cement Enamel Development, Inc., 18656 Fitzpatrick, Detroit 28, Mich.*

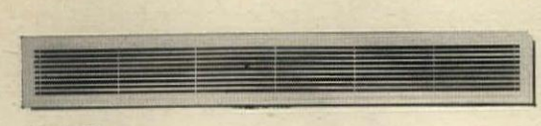
CIRCLE 309 ON INQUIRY CARD

FLEXIBLE PLASTER

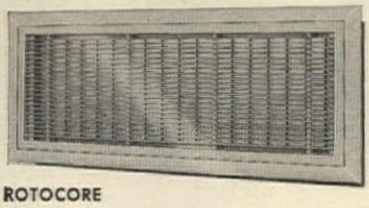
Plasterfast, a new versatile material for indoor and outdoor use, can be used as a plaster, stucco, mortar or paint. The manufacturer also says that *Plasterfast* can be nailed, sawed, hammered or drilled, and will not chip or peel. *American Vamag Co., Inc., N. Bergen, N. J.*

CIRCLE 310 ON INQUIRY CARD

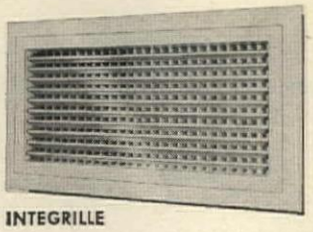
more products on page 230



AIRLINE



ROTOCORE



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* CONSTRUCTION
* APPEARANCE

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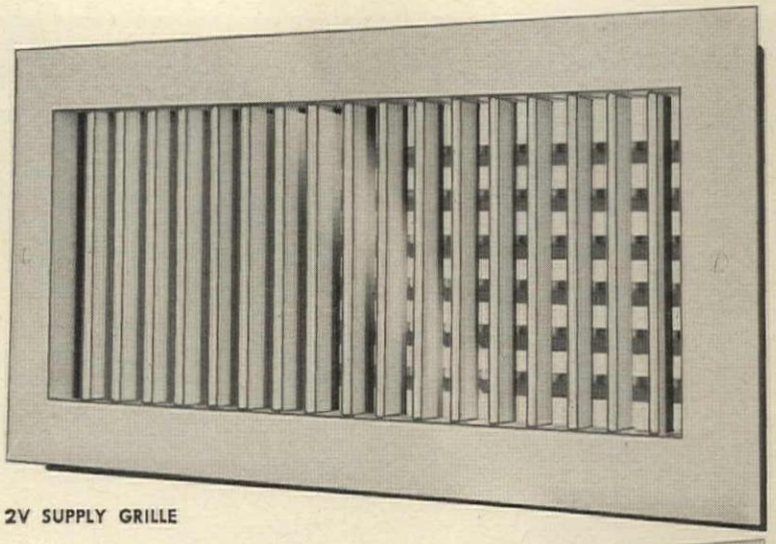
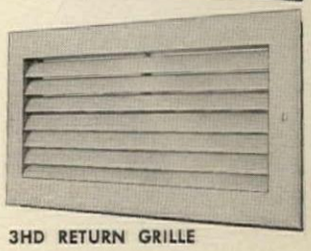
EQUAL? BETTER! ✻

For convincing proof, call your Waterloo Representative.

Or write Waterloo Register Co., P. O. Box 147, Waterloo, Iowa.



2V SUPPLY GRILLE



3HD RETURN GRILLE

Member of Air Diffusion Council

WATERLOO REGISTER COMPANY, INC.
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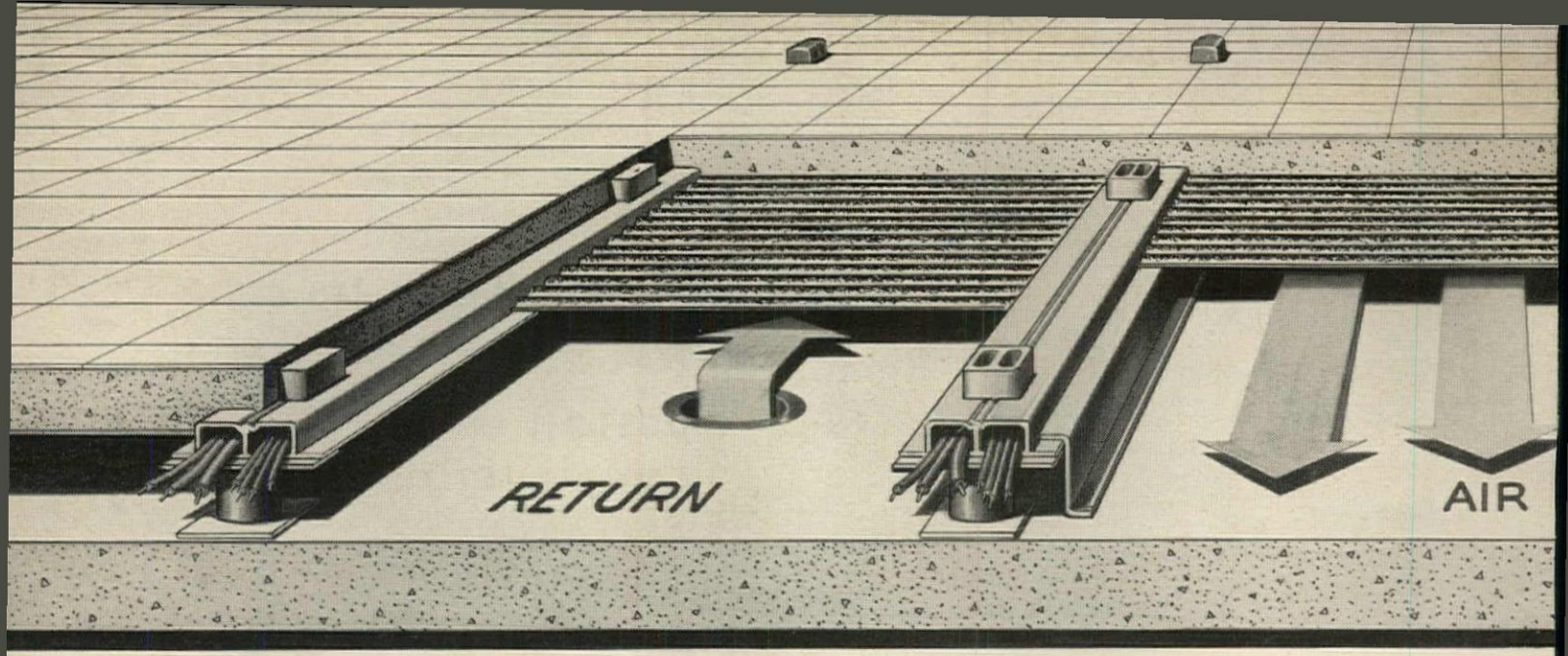


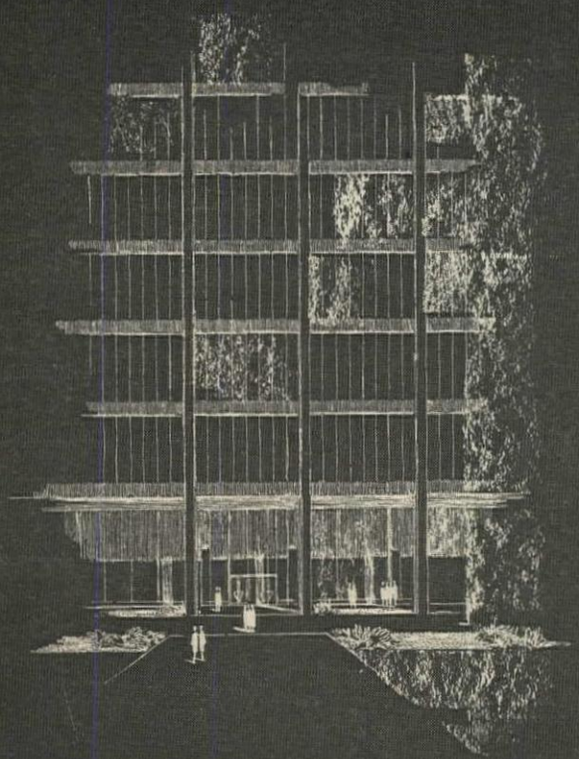
A-E Floor puts mechanical and electrical services

Granco A-E (Air-Electric) Floor combines air and electrical distribution in one compact in-floor system —coordinates the design objectives of the architect with the needs of the electrical, mechanical, and structural engineer.

Architectural Design Flexibility. A-E Floor is an architectural tool for the functional and esthetic design of space. The illustrations below are but a few examples of how this versatile floor system can help satisfy the many interrelated factors of building design, location, and usage.

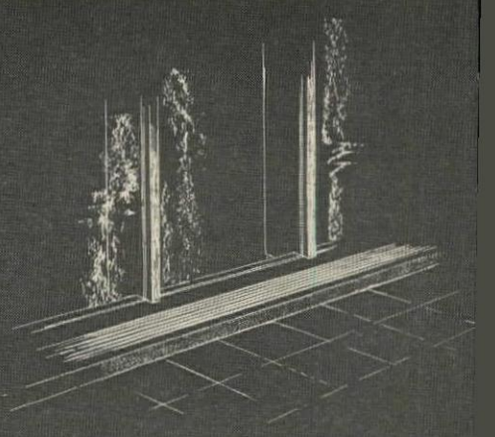
Mechanical, Electrical, Structural Flexibility. Electrical cells are blended with the A-E forming system above the plenum and provide complete flexibility. This also means that air and electric distribution designs do not conflict. A-E Floor is independent of the building structural system; can be used with any type construction.

Building Use Flexibility. Granco A-E Floor offers complete flexibility to economically provide for the

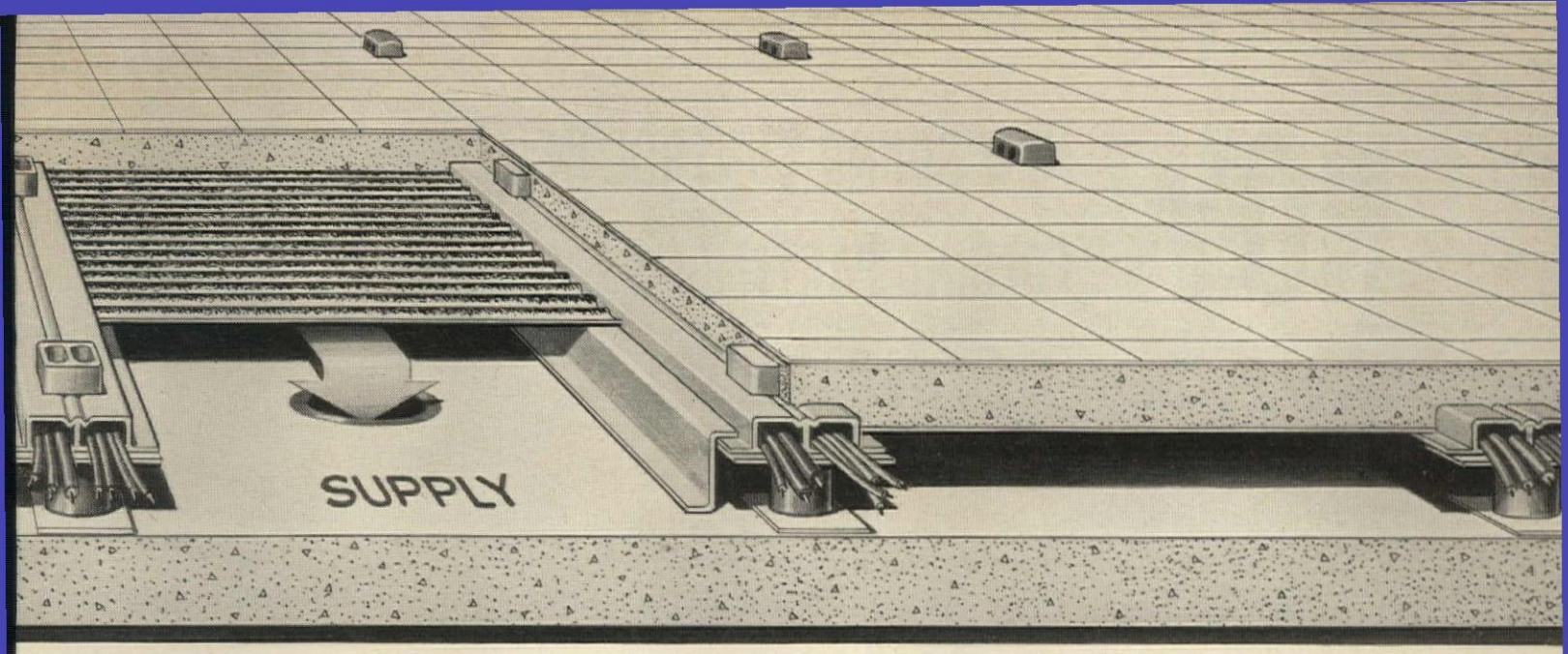


Benefits of the compact A-E system extend to complete freedom of functional design and esthetic expression in building exteriors.

Air distribution within the structure permits low sills and continuous grilles to serve large window areas.



Coordination of air distribution, lighting, and partitions is not a factor. Air and electric facilities can be readily expanded.



where they can't interfere with design flexibility

ever-increasing comfort and service needs of tenants. The plenum provides for present and future air distribution needs. It also satisfies the requirements of extra space that modern telephone and communications systems demand.

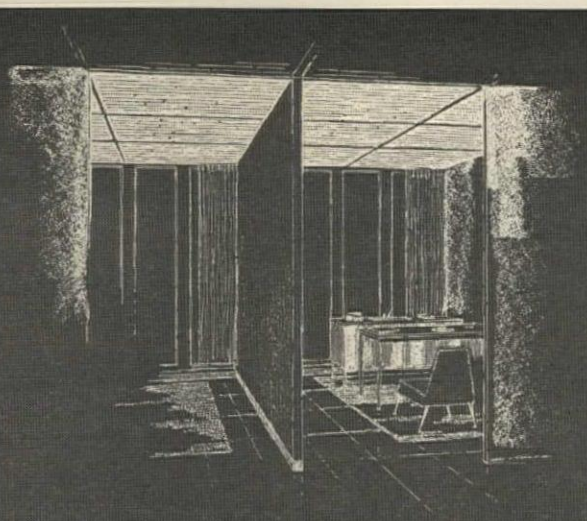
For more information, see our catalog in Sweet's or write for new A-E Floor product manual. GRANCO STEEL PRODUCTS CO., 6506 N. Broadway, St. Louis 15, Missouri. A Subsidiary of Granite City Steel Company.

A-E FLOOR

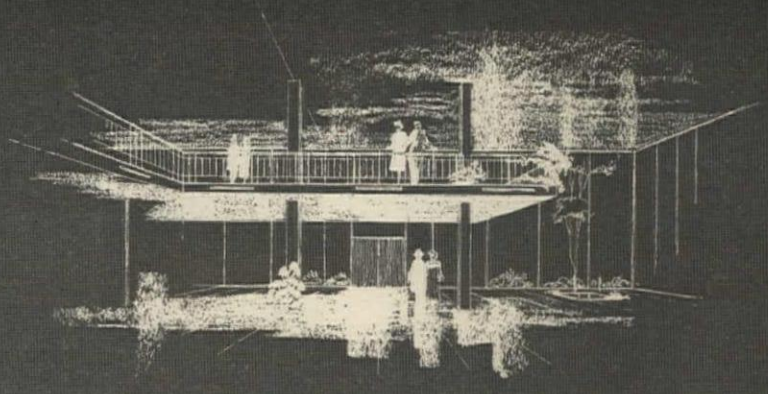
a floor system providing air and electrical distribution

GRANCO

an Francisco • Tampa • **DISTRICT REPRESENTATIVES:** Greenville, S.C. • Little Rock • Washington, D.C. GRANCO For more data, circle 109 on Inquiry Card



The A-E concept of designed space permits immediate occupancy; provides for luminous or exposed ceilings, large glass areas, movable partitions.

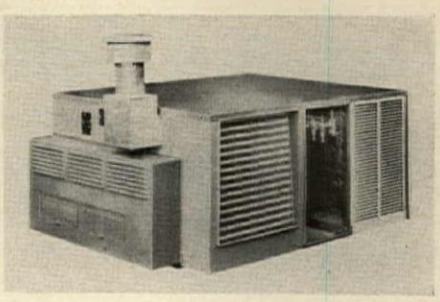


Compact A-E Floor is ideally suited to providing full services in mezzanine and cantilever floors.

Choice of cell spacing and cell capacity assures built-in flexibility for present and future power and phone requirements.

Product Reports

continued from page 222D



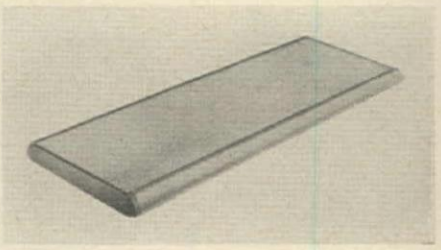
HEATING AND AIR-CONDITIONING UNIT

A new heating and air-conditioning package can be installed as a single, factory-assembled unit, or as separate furnace and air-conditioning units. When installed separately, the units can be as much as 50 ft apart, or the air-conditioning unit can be added at a later time. The units come in a wide range of capacities that can be match-mated to provide 14 different heating and cooling capacity combinations. *Gaffers & Sattler, 4851 S. Alameda St., Los Angeles 58, Calif.*

CIRCLE 311 ON INQUIRY CARD

FLUORESCENT FIXTURES

The QFCX7470 series of surface mounted fluorescent fixtures are especially designed to reduce direct glare and to produce high levels of illumination. These luminaires meet the basic criterion of the "scissors curve" of average brightness established by the American Standards Association in their latest "Guide for School Lighting."



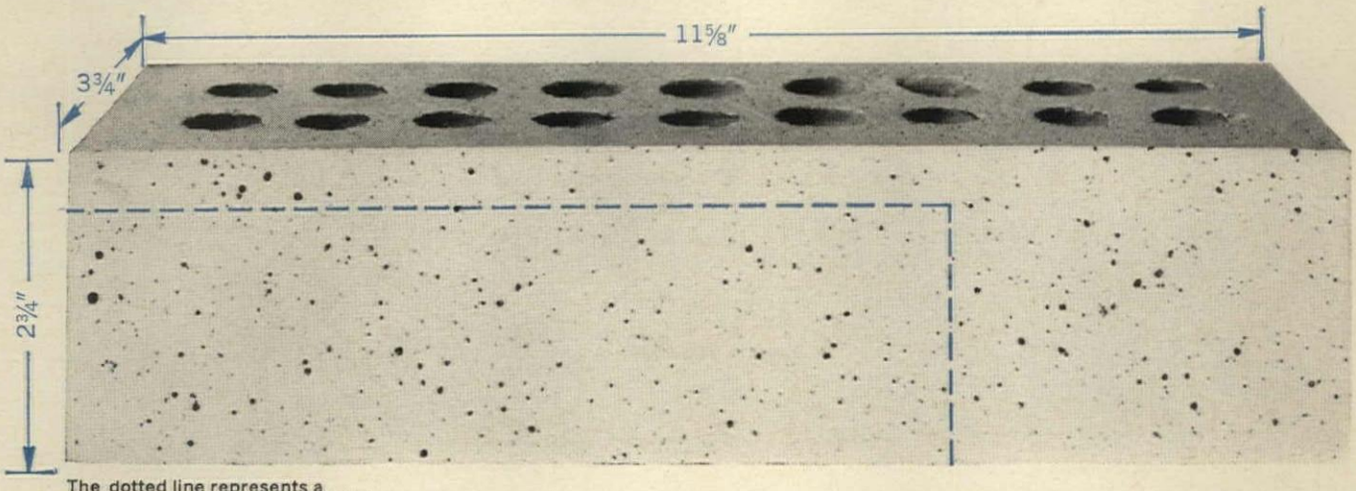
Side panels are 3 in. deep and the entire fixture is less than 4 in. in depth and is 17 in. wide. The series utilizes up to 3,100 lumen lamps. It is available only in the two-lamp, *Rapid Start* configuration. While classroom use is a primary application of the series, the luminaires are suitable for any area where uniform brightness control is important. *Sun-*

more products on page 234

a famous name

General Contractor:
Goodnor Construction Corporation,
Long Island City, New York

and a famous face



The dotted line represents a standard size brick (8"x2¼"x3¾")

team for merchandising impact!

The name, E. J. Korvette Department Stores. The face, HANLEY'S JUMBO NORMAN (11⅝" X 2¾" X 3¾") Duramic® Glazed Brick. Together they combine for stores that are both striking and economical.

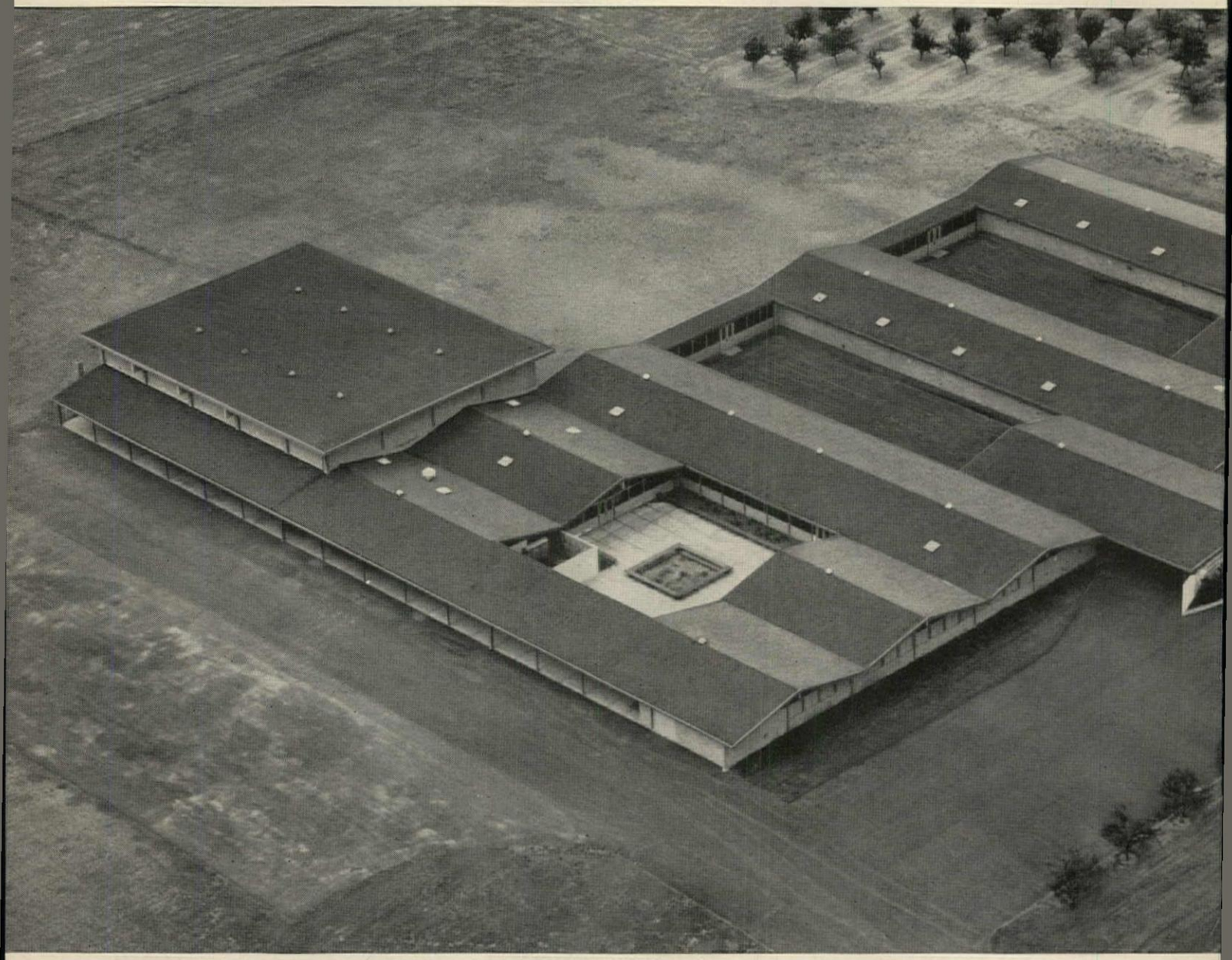
Architects specified this size because it lays up faster . . . cuts costs. Architects specified this glazed brick shade (824 white with black speck) because of its clean white appearance . . . maintains its original color and is self-cleaning because of the impervious glazed surface. Use HANLEY on your next project.

Korvette Stores using
HANLEY Glazed Brick
from New York to St. Louis

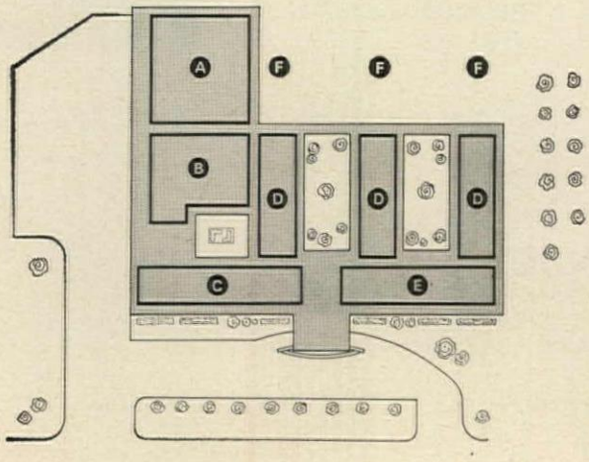
HANLEY COMPANY
One Gateway Center, Pittsburgh 22, Pa.
Sales Offices: New York • Buffalo • Pittsburgh
Distributors: Nationwide and Canada

For more data, circle 111 on Inquiry Card

Why architects talk to total school air



Mabel Rush Elementary School, Newberg, Ore. Superintendent of Schools: Loran A. Douglas. Architect: James C. Gardiner, A.I.A., Portland, Ore. Consulting Engineer: Omer T. Jacobson, Portland.



A. Auditorium and Gymnasium
B. Dining Room
C. Administrative offices
D. Classrooms
E. Library and special facilities
F. Future Classrooms

How a Trane Heat Pump and Unit Ventilators heat, cool and ventilate an all-electric school

Newberg, Oregon's Mabel Rush Elementary School is one of the nation's first to utilize an electric-powered, air-to-water heat pump as a source of heating or cooling.

The school consists of nine classrooms, administrative offices, a combination auditorium and gymnasium, library, cafeteria, and three special education rooms.

For lower first costs and greater operating economy, the air conditioning system provides cooling only where it's needed, when it's needed. For example, cooling moves with students from classroom to cafeteria or gymnasium.

Classrooms are equipped with TRANE Air Conditioning Unit Ventilators with Kinetic Barrier Action, the exclusive feature that provides continuous, powered ventilation and heating or cooling from room-wide air outlets. Result: a Unit Ventilator system that works with full effectiveness whether it's heating or cooling!

A central TRANE Heat Pump provides the heated or chilled water circulated to these Unit Ventilators.

Trane for conditioning requirements

Providing total air conditioning for the schools you design requires specialists in the related fields of heating, cooling and ventilating. With Trane you can get all your answers from a single source. Here's why.

OUR BUSINESS IS PROVIDING CLIMATES TO ORDER

TRANE is one of the very few organizations of manufacturing engineers with depth of experience in all the related fields of total air conditioning . . . in heating, cooling and ventilating.

As specialists in this science of heat exchange, we manufacture equipment that's designed together to work together for maximum dependability and efficiency.

That's why TRANE equipment is selected for many complex air conditioning applications. For skyscrapers, jet planes and subway trains . . . homes, hotels and motels . . . ocean liners and railroad refrigerator cars . . . for schools and universities of many sizes, shapes and styles.

THERE ARE MANY WAYS TO AIR CONDITION, OR TO PROVIDE FOR FUTURE AIR CONDITIONING. ONE WAY IS BEST WITH YOUR PLANS!

Call your TRANE Sales Engineer early in the planning stages. He doesn't limit you to just one or two ways to air condition a school. For TRANE manufactures broad lines of many types of air conditioning equipment . . . to meet any requirement in any school. There's equipment that cools, heats and ventilates from the start. There's heating and ventilating equipment that lets you add cooling later . . . easily and economically . . . without classroom remodeling or additional piping.

Working with your TRANE Sales Engineer, you're free to pick-and-choose from these product lines and base your specifications entirely on *what's best with your plans!*

RESEARCH AND TESTING... KEY TO PRODUCT LEADERSHIP

Modern conditioning of air is a complex science . . . and TRANE has a multi-million-dollar laboratory devoted exclusively to the science of heat exchange.

Here constant research and testing result in new designs and new techniques to produce the kind of quality equipment you want in the schools you design.

LOCAL TRANE SERVICE FOR THE SCHOOLS YOU DESIGN

With TRANE there's the added assurance of on-the-spot service available from TRANE Offices in 113 major cities. Trained, experienced Service Engineers are on call to assure equipment performance for the life of the school.

FOR GREATER SCHOOL DESIGN FLEXIBILITY, plus the air conditioning that's best with your plans, contact your local TRANE Sales Office. Your TRANE Sales Engineer will be happy to give you specific information on the complete TRANE lines of school heating, cooling and ventilating equipment.

It's Trane for total school air conditioning requirements.

CENTRAVACS® (Centrifugal water chillers)—hermetic to 1350 tons; open to 2200 tons • ABSORPTION COLD GENERATORS—hermetic design, 100 to 1000 tons • RECIPROCATING COLD GENERATORS—sizes to 150 tons • CENTRAL STATION AIR HANDLING UNITS—from 1200 to 47,000 cfm, 2 to 100 tons • PACKAGED AIR CONDITIONERS—2 to 60 tons • UNIT VENTILATORS—for steam, hot water, chilled water or electric heating, 2 heights, 28 and 32 inches • INDUCTION UNITRANE—16 models • WALL-FIN CONVECTORS • UNIT HEATERS • TORRIVENTS • FORCE-FLO HEATERS

TRANE

FOR ANY AIR CONDITION

MANUFACTURING ENGINEERS OF AIR CONDITIONING, HEATING, VENTILATING AND HEAT TRANSFER EQUIPMENT

The Trane Company, La Crosse, Wis. • Scranton Mfg. Plant, Scranton, Pa. Clarksville Mfg. Plant, Clarksville, Tenn. • Salt Lake Mfg. Plant, Salt Lake, Utah
Trane Company of Canada, Limited, Toronto • 113 U.S. and 20 Canadian Offices.

For more data, circle 112 on Inquiry Card

Product Reports

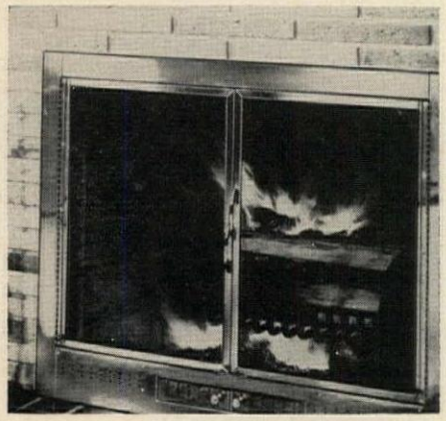
continued from page 230

beam Lighting Company, 777 E. 14th Place, Los Angeles 21, Calif.

CIRCLE 312 ON INQUIRY CARD

FIREPLACE ENCLOSURES

Thermo-Rite fireplace enclosures, of heat-tempered glass doors framed in solid brass, are available to fit any size or style opening. The enclosure mounts easily on two brackets hidden on the back of the frame. It attaches



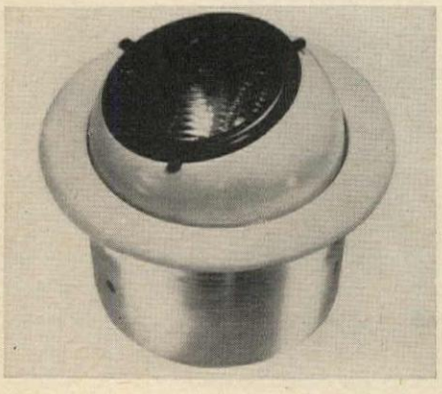
securely to the inside of the fireplace opening with no danger of marring the exterior. *Thermo-Rite Manufacturing Company, Akron 9, Ohio*

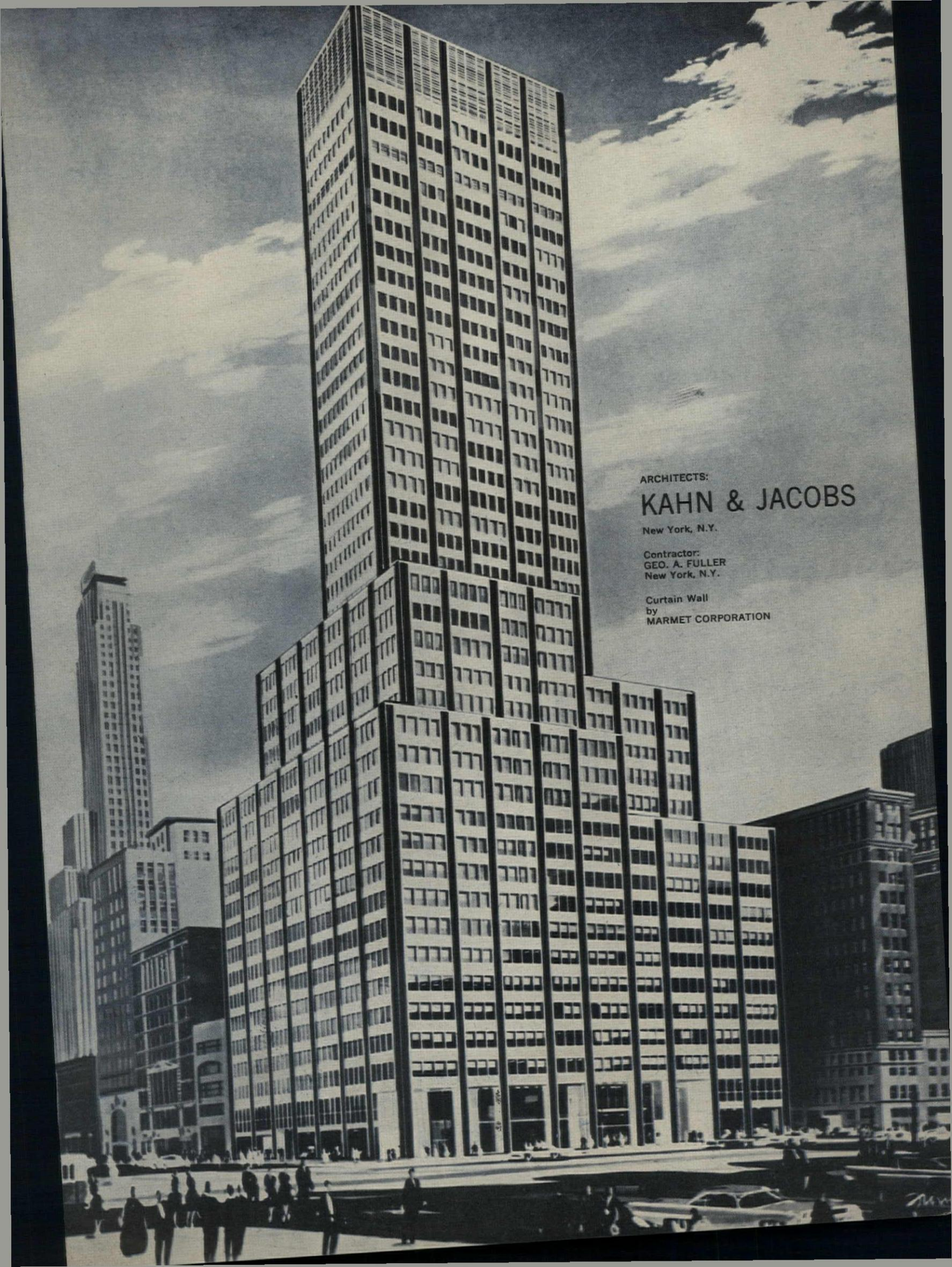
CIRCLE 313 ON INQUIRY CARD

RECESSED LIGHTING FIXTURES

A new line of recessed *Swiv-A-Ball* lighting fixtures consisting of five units—four of the "ball" type such as shown in the photograph and a fifth for use with a gimbal ring—are easily installed by a system involving a "quick-disconnect" plug-in wiring method. The line is offered in three decorator color finishes—matte white, brushed aluminum and brushed brass. *Amplex Corporation, 214 Glen Cove Rd., Carle Place, Long Island, N.Y.*

CIRCLE 314 ON INQUIRY CARD





ARCHITECTS:

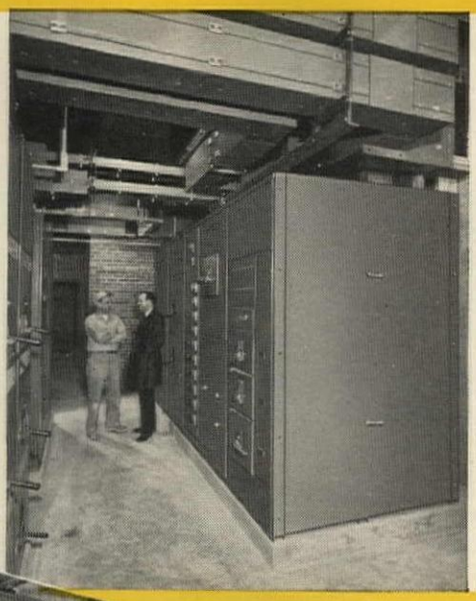
KAHN & JACOBS

New York, N.Y.

Contractor:
GEO. A. FULLER
New York, N.Y.

Curtain Wall
by
MARMET CORPORATION

electricity is distributed and controlled



RIGHT • Donald McGervey, Evans Electrical Construction Company, and George Fox, Square D Kansas City District Manager in switchboard room with main 480-volt switchboard in left foreground and main 120/208-volt switchboard at right.

BELOW • Boiler room installation shows main boiler room switchboard at left and emergency switchboard at right. If power should fail, a transfer panel would automatically cut in the emergency switchboard.

ARCHITECTS
Gentry & VosKamp
Edgar B. VosKamp
Partner in charge
CONSULTANT
James Hamilton
ELECTRICAL ENGINEERING BY
W. L. Cassell
Mechanical Engineer
ELECTRICAL CONTRACTOR
Evans Electrical Construction Company

• Charles Baughman, Evans Electrical Construction Company, and Edward Harvey, Evans' Construction Superintendent, at the start of a run of bus duct which distributes power from switchboard room throughout hospital. Nearly 1¼ miles of Square D duct, and ninety-six Square D lighting and power panelboards, have been installed.

EXECUTIVE OFFICES • PARK RIDGE, ILLINOIS

A *Complete* LINE OF ELECTRICAL DISTRIBUTION AND CONTROL EQUIPMENT

ADJUSTABLE SPEED DRIVES
BUSWAYS & WIREWAYS
CIRCUIT BREAKERS
CONTROL CENTERS
CRANE & HOIST CONTROL
DISTRIBUTION SWITCHBOARDS
ELECTRIC TRUCK CONTROL
HIGH VOLTAGE CONTROL
LAUNDRY CONTROL
LIFTING MAGNETS
LIGHTING AND POWER PANELBOARDS
LIMIT AND FOOT SWITCHES
MACHINE TOOL CONTROL
MAGNETIC BRAKES
METERING EQUIPMENT
MOTOR STARTERS
PRESS CONTROL
PRESSURE, FLOAT, & VACUUM SWITCHES
PUSHBUTTONS
RELAYS AND CONTACTORS
RESISTORS
SAFETY SWITCHES
SERVICE ENTRANCE EQUIPMENT
STAGE DIMMERBOARDS
STATIC CONTROL
STEEL MILL CONTROL
SWITCHGEAR & UNIT SUBSTATIONS
SYNCHRONOUS MOTOR CONTROL
TERMINAL BLOCKS
TEXTILE MACHINE CONTROL
TIMERS
UNDERFLOOR DUCT
VOLTAGE TESTERS
WELDER CONTROL

For more data, circle 114 on Inquiry Card

Office Literature

continued from page 204

GLASS

"Glass and American Saint Gobain" describes how plate, sheet, patterned and specialty glasses are produced and best used. In addition, a number of special products and processes are explained. *American-Saint Gobain Corporation, Kingsport, Tenn.**

CIRCLE 414 ON INQUIRY CARD

AUTOMATIC LIGHT CONTROLS

Two brochures outlining various uses of automatic controls for private and commercial establishments describe the added convenience, maintenance cost savings, and safety and protective benefits possible through use of *Intermatic* time switches and photo electric controls for lighting and other electrical equipment. *International Register Company, 4710 W. Montrose Ave., Chicago 41, Ill.**

CIRCLE 415 ON INQUIRY CARD

LUMINAIRES

The first of a series of bulletins on Gotham's lighting products presents cutaway drawings, coefficients of utilization and specifications for the company's recessed flangeless *Panelites. Gotham Lighting Corporation, 37-01 31st St., Long Island City 1, N.Y.*

CIRCLE 416 ON INQUIRY CARD

BOLTS, SCREWS AND NUTS

This 32-page special issue of Fasteners magazine is a comprehensive manual on locknuts, locking screws and bolts. The principles of operation, a product directory, and specifications as well as feature articles are included. *Industrial Fasteners Institute, 1517 Terminal Tower, Cleveland 13, Ohio*

CIRCLE 417 ON INQUIRY CARD

WEATHERSTRIPS

Photos and information on Southern's complete line of weatherstrips and thresholds, some of extruded aluminum with vinyl inserts, are contained in an eight-page folder. *Southern Metal Products Corp., 1775 Airways Blvd., Memphis, Tenn., 38114**

CIRCLE 418 ON INQUIRY CARD

ELECTRIC HEATERS

Specifications and advantages of the radiant and fan-forced electric wall heaters, convection and forced-air baseboards, radiant heating cables, bathroom heaters, infrared heaters and unit blower heaters are contained in a 16-page booklet. *Hunter Div., Robbins Myers, Inc., Memphis 14, Tenn.**

CIRCLE 419 ON INQUIRY CARD

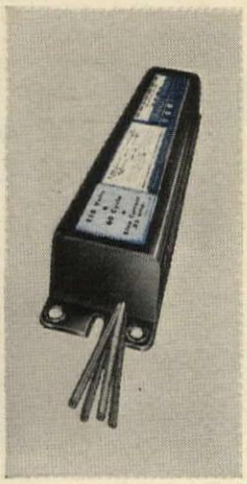
ILLUMINATION CALCULATOR

A pocket-sized illumination calculator which works on a progressive slide chart principle allows the user to determine in a matter of minutes the answers to many illumination problems. For example, it calculates room ratios and the number of lamps required for specific footcandle levels in a given area. All sizes and types of commercial fluorescent lamps are shown in its lamp lumen section, and a slide rule with C and D scales is included. *Benjamin Division, Thomas Industries Inc., 207 E. Broadway, Louisville 2, Ky.*

CIRCLE 420 ON INQUIRY CARD

**Additional product information in Sweet's Architectural File*

more literature on page 242



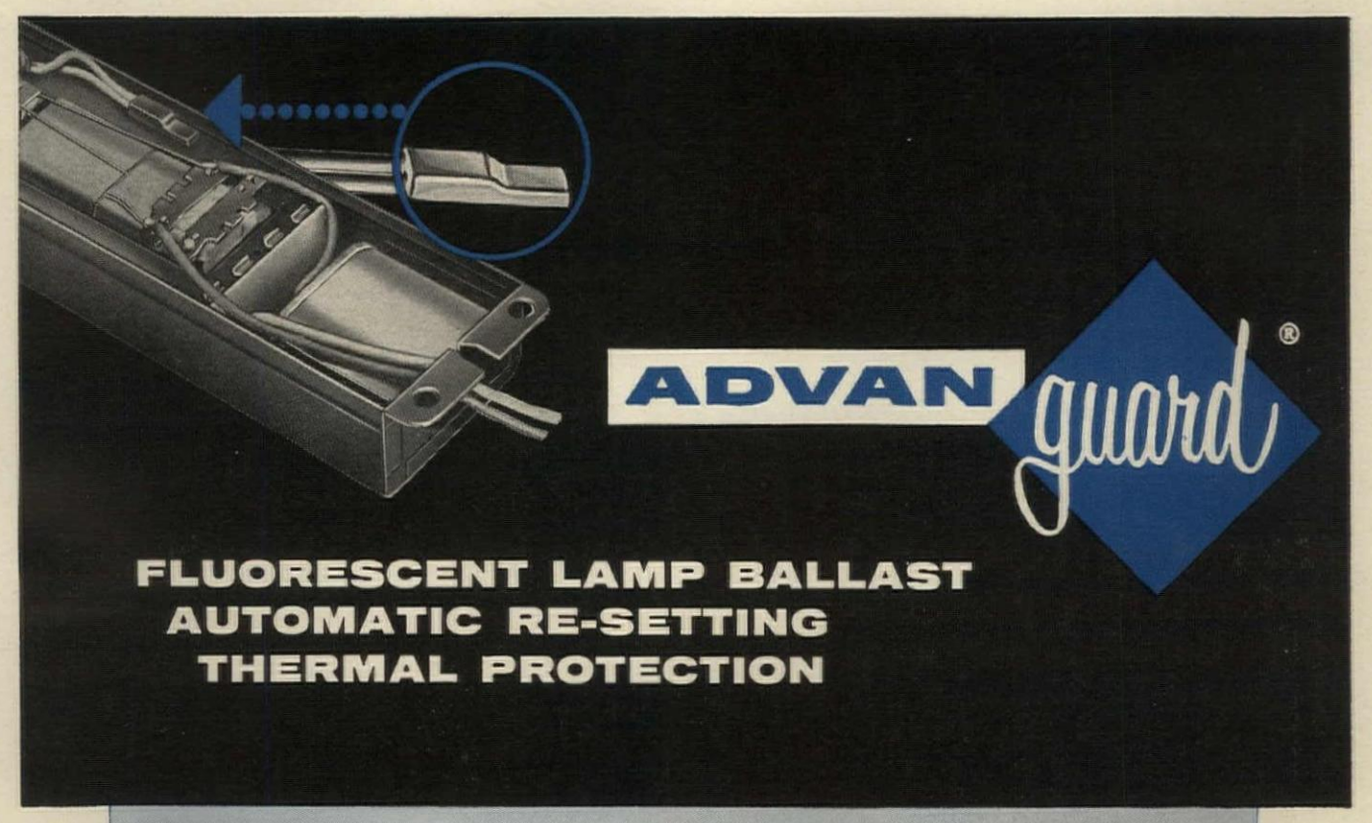
FLUORESCENT LAMP BALLAST

PROTECTION PRESERVATION

Only ADVAN-guard® . . . Advance Transformer Co's. thermally actuated automatic re-closing protective device, gives ballast protection with preservation. All other types of ballast protection destroy the ballast whenever the ballast operates at abnormal temperatures. Only ADVAN-guard® prevents premature ballast destruction.

ADVAN-guard® is sealed in the ballast housing and is preset to automatically "trip-out" whenever the Fluorescent Lamp Ballast operates at abnormal temperature. When heat decreases to normal operating temperature ADVAN-guard® resets automatically and the ballast resumes normal operation. If overheating continues . . . ADVAN-guard® protection continues . . . through this continuous protection the full life of ADVAN-guard® Fluorescent Lamp Ballasts is preserved . . . rated life of ADVAN-guard® Ballasts under normal operating conditions is 10 to 12 years.

Always demand ADVAN-guard® Fluorescent Lamp Ballast protection with preservation. End premature destruction and unnecessary ballast replacement labor costs.



"The Heart of the Lighting Industry."

ADVANCE® TRANSFORMER CO.

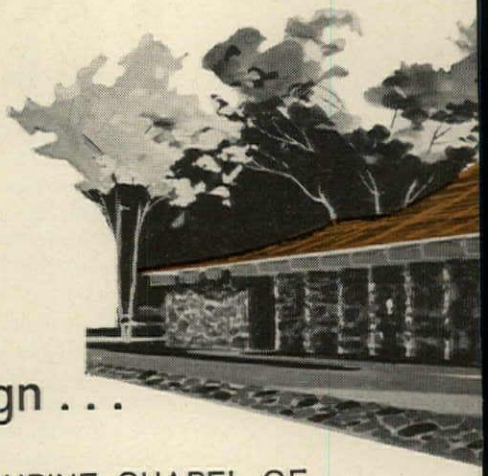
CBM CERTIFIED — WORLD'S LARGEST EXCLUSIVE MANUFACTURER OF FLUORESCENT LAMP BALLASTS

2950 NO. WESTERN AVE. CHICAGO 18, ILL. U.S.A.

Manufactured in Canada by: Advance Transformer Co., Ltd., 5780 Pare St., Montreal, Que.

For more data, circle 116 on Inquiry Card

MODERN COPPER

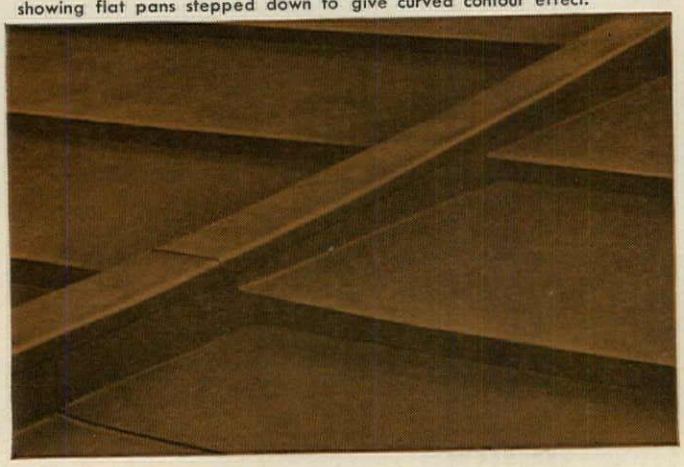


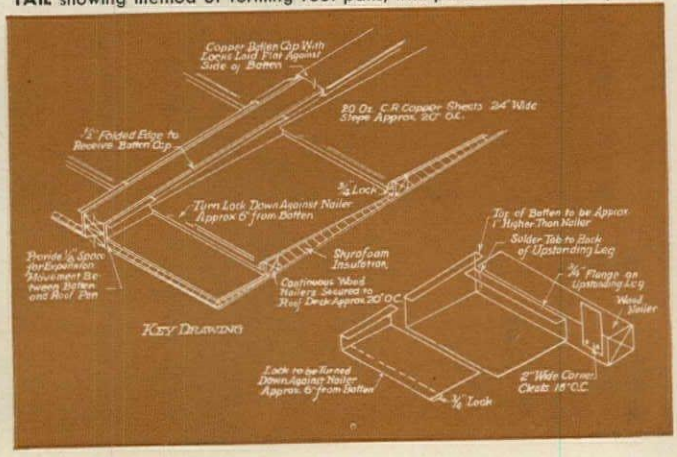
Revere Sheet Copper enables Architect to combine beauty and long life in a striking, modern roof design . . .

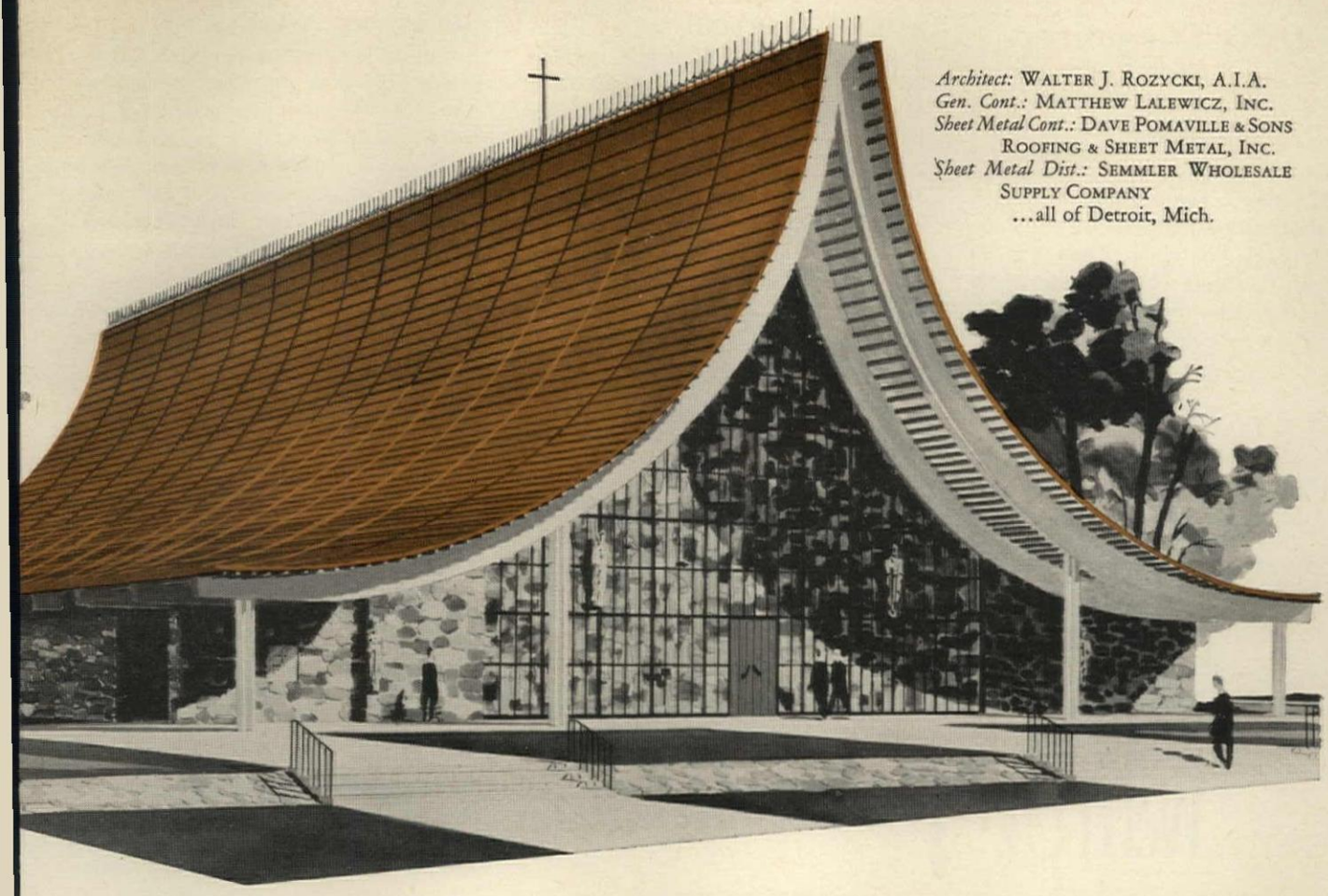
FOR SHRINE CHAPEL OF
OUR LADY OF ORCHARD LAKE,
DETROIT, MICHIGAN

(above) **VIEW OF REAR** of the Shrine Chapel. (below) **CLOSE-UP** of roof showing flat pans stepped down to give curved contour effect.

(above) **HERE YOU SEE** batten covers being affixed. (below) **ROOF DETAIL** showing method of forming roof pans, with pans and battens in place.







Architect: WALTER J. ROZYCKI, A.I.A.
Gen. Cont.: MATTHEW LALEWICZ, INC.
Sheet Metal Cont.: DAVE POMAVILLE & SONS ROOFING & SHEET METAL, INC.
Sheet Metal Dist.: SEMMLER WHOLESALE SUPPLY COMPANY
...all of Detroit, Mich.

In conceiving the design of this structure the architect, Walter J. Rozycki, visualized the bold, soaring sweep of the roof as the commanding element of the overall structure, both in size and contour. Said he, "Such a roof, without the use of copper and its characteristic design flexibility, would have been virtually impossible."

Other contributing factors in the selection of copper were its permanence, handsome appearance, and ease of fabrication. *And NOW—with the price of sheet copper the lowest in years, it pays to look first to copper.*

Mr. Rozycki's plans called for flat, stepped-down pans. While this is a novel method of sheet metal construction, Mr. Rozycki, in collaboration with the Revere Research and Development Department and Technical Advisory Service, worked out a technique which enabled the sheet metal contractor to install these pans using only standard tools.

Details of construction are shown in the accompanying illustrations. The 4″ x 4″ vertical battens are spaced 10′0″ on centers; the 2″ high steps running horizontally between the battens are spaced approximately 20″ apart. Horizontal roof pans are of 24″ wide sheets of 20 oz. cold rolled Revere Sheet Copper. A tapered layer of rigid roof insulation is laid between the horizontal steps.

All told, 35,000 lbs. of Revere Cold Rolled Copper were used in 24″ x 120″ sheets. The versatility and design flexibility of copper is abundantly evident in the unusual details and the final striking results.

For unusual and beautiful architectural effects, remember: "Design with Copper in Mind". Revere's Technical Advisory Service will be happy to work with you.

SEND TODAY for free copy of "Copper and Common Sense," Revere's 140-Page Brochure illustrating the design principals and techniques of sheet copper construction. Also free companion piece, "The Revere System of Copper Flashing," for the complete weatherproofing of masonry buildings. Address Dept. "P-4" at address below.

REVERE
COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801
Executive Offices: 230 Park Avenue, New York 17, New York
Sales Offices in Principal Cities. Distributors Everywhere.

For more data, circle 117 on Inquiry Card

Office Literature

continued from page 238

POOL EQUIPMENT

A new eight page catalog contains specifications, engineering drawings and descriptive material on the company's deck equipment, fittings, filtration systems and underwater lights. *Paragon Swimming Pool Co., Inc., Pleasantville, N.Y.**

CIRCLE 421 ON INQUIRY CARD

SCHOOL LIGHTING

The advantages of Encore's indirect lighting system, which utilizes 1,500 MA fluorescent lamps, are discussed in a 16-page brochure. The lighting guide also presents construction features, installation possibilities, specifications, illumination data and cost analysis. *Benjamin Division, Thomas Industries Inc., 207 E. Broadway, P.O. Box 1643, Louisville 2, Ky.**

CIRCLE 422 ON INQUIRY CARD

AGGREGATE PANELS

A full-color brochure contains photographs showing a number of applications of *Versa-tex* exterior and interior wall facings, floor and pool deck panels, stair treads and solar screens. Installation details and standard sizes are also included. *B. J. Lutz Company, 2500 Strong, Kansas City, Kan.*

CIRCLE 423 ON INQUIRY CARD

CENTRALIZED FOOD SERVICE

A portfolio of hospital kitchen layouts shows how the portable *Wheel-A-Way* centralized food service system is used in different types of hospitals. The layouts diagram the placement and the size of the conveyor belt, the set-ups of supporting equipment and patterns for efficient assembly work. Specific suggested model numbers and types of equipment are indicated. *S. Blickman, Inc., 536 Gregory Ave., Weehawken, N.J.**

CIRCLE 424 ON INQUIRY CARD

FIRE PROTECTION SYSTEMS

A new illustrated brochure explains exclusive protection systems for hazardous industrial processes when standard protective measures are not effective. Special material testing facilities, patented sensors and detectors, and a broad scope of significant applications are also described. *Fenwal Incorporated, Ashland, Mass.**

CIRCLE 425 ON INQUIRY CARD

QUARTZ LAMP FLOODLIGHTS

A new line of quartz lamp floodlights available in two sizes is described in detail in Bulletin Q. The bulletin includes information on mounting accessories and photometric data, as well as ordering information and specifications. *Multi Electric Mfg. Inc., 223 West Lake St., Chicago 24, Ill.*

CIRCLE 426 ON INQUIRY CARD

CONTROL VALVES

High-pressure and high-temperature control valves for severe service are diagramed and described in detail in a new catalog of 32 pages. Catalog 700.11 gives valve types, sizes, construction details and options for valve ends, actuators and positioners. *Republic Flow Meters Company, 2240 Diversey Parkway, Chicago 47, Ill.*

CIRCLE 427 ON INQUIRY CARD

**Additional product information in Sweet's Architectural File*

If this siding needs to be painted before 1978, we'll foot the bill*

This is a new, practically maintenance-free building material—

Weldwood PF-15 Siding (Paint-Free, 15-year guarantee!)

(PATENT PENDING)

PF-15 stands for a siding we guarantee will be Paint-Free for at least 15 years. But that's only half of the story. Under the finish of new miracle film, Du Pont Tedlar, is Weldwood Plywood. So, PF-15—like all Weldwood® Sidings—also has a guarantee for the life of the building*.

It's the combination that counts. Makes PF-15™ Sidings the best ever developed for residential and light commercial or industrial use.

The surfaces are a polyvinyl fluoride film called Tedlar**, developed by Du Pont. Our laboratory people say it's the most durable organic material for exterior furnishing they've ever tested. They've boiled it, scraped it, hammered it, frozen it. It can take a beating far beyond anything paint can endure. They've tried to dissolve it—even in paint remover. Nothing happens. They've smeared it with tar, oil, nail polish. And it's easily cleaned with solvents, soapy water or detergent.

Test panels of Tedlar have been exposed for years in all kinds of weather. But sunlight, extreme heat and cold, abrasive sandstorms, rain, salt air leave it almost totally unaffected. Because it has proved itself so strong, durable, and color-stable, we guarantee it won't need painting for at *least* 15 years.

It will probably last a lot longer. Du Pont has been giving it some brutal tests for over 20 years. And they say: "We predict Tedlar might last for 25 years or more. Ask us again in 1988."

Plywood is the best and most practical base for Tedlar in making sidings. →

**Du Pont registered trademark

Test panels have been exposed to the elements for years—do not chalk, craze, discolor, or erode appreciably. Tedlar remains amazingly tough and flexible.

Tedlar surfaces have been soiled by tar, grease, oil, and stains. A simple washing cleans them. Tedlar is unharmed by strong acids, alkalies, and solvents.

See for yourself how tough Tedlar is. Just try to tear a piece. Send in coupon on the back of this page for a sample. Tedlar also has terrific resistance to abrasion.

Weldwood PF-15 Sidings are available as Lap Siding, Flat Panel Siding, and, soon, Vertical Pattern Siding. Each comes in white, gray, green, beige, and yellow. Also available are matching accessories for a neat, weathertight installation.

Weldwood PF-15 (Paint-Free, 15-year guarantee!) Sidings mean superior construction as well as low maintenance

This happy marriage in Weldwood PF-15 Sidings gives your clients a long list of advantages.

Extremely low maintenance is probably first. No paint for 15 years—or more. An occasional hosing will remove loose dust and dirt. NOTE: If an owner should want to change the color of his house, Tedlar is an excellent base for paint any time after the first year.

In addition, your homes will be stronger and more rigid because of the inherent strength and stability of plywood. More comfortable because plywood is a natural barrier to heat and because there are fewer sidewall joints. More dent- and damage-resistant, because of the natural resilience of wood and cross-lamination—plus the extra protection from abrasion and scratching offered by Tedlar. Electricity poses no special problems—lightning, fallen power lines, installation of convenience outlets — because unlike metals, Weldwood PF-15 Sidings are *nonconductive*.

And here's how Weldwood PF-15 Sidings will save time, trouble, and money in construction. A contractor can install PF-15 in any weather that crews can work. When it's up, the walls are finished—no waiting for dry days to paint.

There'll be no call backs. The color is smooth and uniform, and it's on to stay. The siding is resistant to splits, dents, or warpage.

Add to this all the other advantages of plywood siding. PF-15 Siding can be installed directly on studs, eliminating sheathing. Siding is handled and installed in bigger pieces, cutting labor, waste, and overhead costs.

WELDWOOD®

PF-15 SIDINGS

(Paint-Free, 15-year guarantee)

United States Plywood, Dept. AR 9-63
55 West 44th Street, New York 36, N. Y.

☐ Please send me samples of Weldwood PF-15 Sidings and Tedlar film showing colors available—and detailed information about accessories and installation.

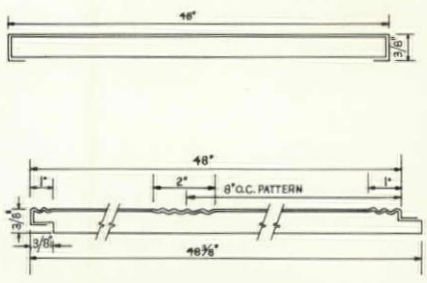
☐ Please send information about other Weldwood Guaranteed Sidings—textured for stain finishes, Duraply® for painting.

Name.....

Firm.....

Address.....

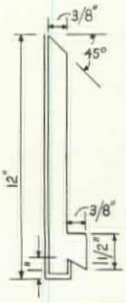
City.....Zone....State.....



PF-15 Flat Panel Siding (left). Tedlar covers face and long edges, and is returned about ¼" on back of panel.

PF-15 Lap Siding (right), showing self-aligning strip on rear of panel. Tedlar covers face and wraps around drip edge. Unique concealed-nailing, self-aligning system speeds installation.

PF-15 Vertical Pattern Panel (left). Tedlar covers entire face including the striations and is returned into the shiplapped edges.



***United States Plywood Corporation** guarantees WELDWOOD PF-15 SIDING against the need for painting for a minimum of 15 years. If, within 15 years of the date of installation, said Siding should require painting and United States Plywood Corporation is given reasonable written notice thereof prior to the commencement of the work, it will pay the cost of painting. This obligation is restricted to painting required by reason of deterioration of the finish of the Siding resulting from normal exposure. (It does not include such elements as destruction by physical elements.)

The Siding is further guaranteed against manufacturing defects and delamination for the "LIFE OF THE BUILDING" on which it is installed. Siding covered by this guarantee must be installed in accordance with established building standards. Should WELDWOOD PF-15 SIDING delaminate or prove to be defective, it will be replaced, or, at United States Plywood Corporation's option, it will reimburse the purchase price of the material.

Baptist Hospital of Miami

designed by
Sherlock Smith and Adams,
chose Remco Casework

- for its long life
- functional design
- good looks
- and they liked the job-site services that the Remco people always give.

r consistent quality and service call **Remco**

HOSPITAL CASEWORK

101 New Laredo Highway, San Antonio 11, Texas WAlnut 3-7731

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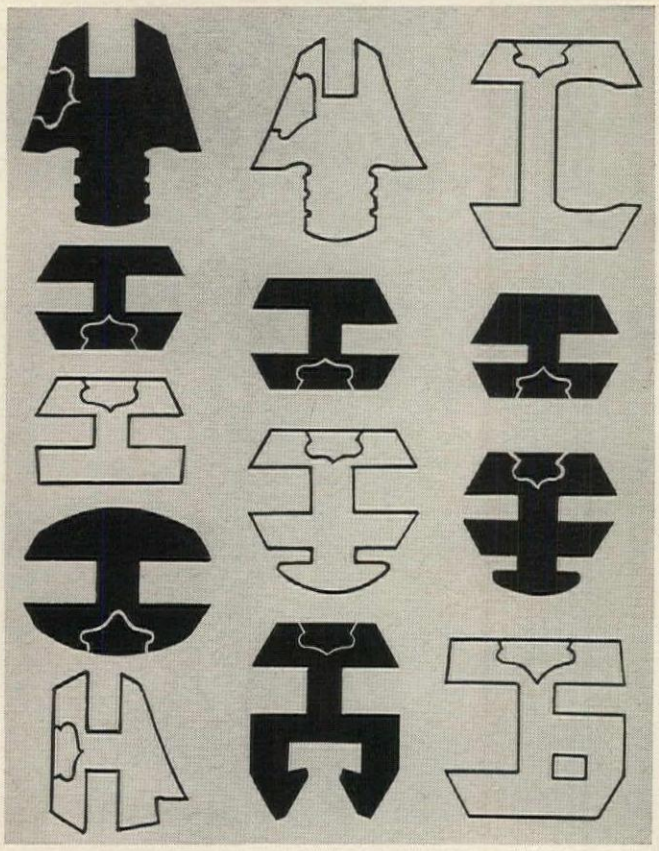
For more data, circle 121 on Inquiry Card

PIERRE LACLEDE BUILDING SEALED WEATHER-TIGHT WITH MALONEY GASKETS



Pierre LaClede Building, St. Louis
Architects:
Smith-Entzeroth Inc.
General Contractor:
Fruin-Colnon Contracting Co.
Glazing Contractor:
Pittsburgh Plate Glass Co.
Exposed Aggregate Curtain Wall:
Badger Concrete Co.

The muntin section, lower left corner, was used where the grey solar plate glass joins the "Spandrelite" glass panel; the section illustrated in top row, middle, was used for the other glazing. These are two of the many Maloney Gasket designs available to best meet the particular requirements of each installation.

Maloney Gaskets are compounded of DuPont Neoprene and are processed under strict quality controls through each phase of manufacture. The base material coupled with design and formulation know-how result in a seal which maintains its integrity under extreme conditions.

Brochure showing full-size sections, and giving complete information is ready for you — request your copy today.

Construction Products

F. H. MALONEY COMPANY

A Division of Helmerich & Payne, Inc.

P. O. Box 287 Houston, Texas 77001
Telephone: FA 3-3161 (Area Code 713)
Telegraph: 713 571 1243
Offices in: Los Angeles • Pittsburgh • Tulsa

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Totally new wood stain holds color even when exposed to strong sunlight!

Tonetic Wood Stain

by PRATT & LAMBERT

This new and exclusive Pratt & Lambert stain will hold its color on paneled walls, cabinetwork, trim, floors, window frames, sash and sills even though exposed to strong sunlight through glass.

Tonetic Wood Stain comes in a choice of modern pastel, fashionable medium and traditional dark tones to meet every decorating need. No shellac is required as a sealer. Apply the appropriate P&L varnish directly over this stain.

For color card, sample panels, complete information and recommended specifications, ask your P&L representative or write Pratt & Lambert-Inc., 75 Tonawanda St., Buffalo 7, N.Y.; 254 Courtwright St., Fort Erie, Ontario.

PRATT & LAMBERT-INC.

The paint of professionals for over a century

NEW YORK • BUFFALO • CHICAGO • FORT ERIE, ONTARIO

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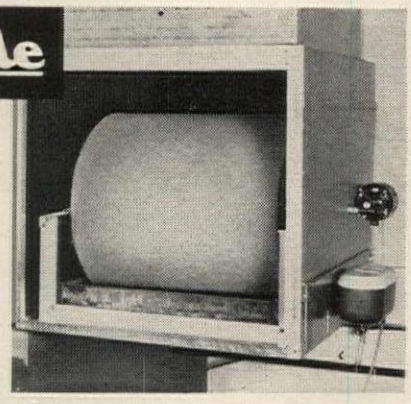
Skuttle



solves the problem of large humidity requirements

NEW DESIGN — ASSURES HIGH CAPACITY . . . POSITIVE OUTPUT

Dry, winter air has always been a problem during the heating season. Now, from SKUTTLE, comes the most efficient, economical method of supplying adequate humidification to large residences and commercial buildings . . . the SKUTTLE Model 160 DRUMATIC Humidifier.

The 160 is mounted in the warm air stream of the furnace. It utilizes a polyurethane evaporator pad on a motor-driven, spoked drum which rotates in a pan of water. Warm air is circulated through the rotating pad where it is moisturized and then forced through the duct system.

The water level in the pan is automatically maintained by Skuttle's single pivot float valve. The unit uses a 115 volt, moisture-sealed motor with graphite bearings to assure long trouble-free service. The usual water pump and drain have been eliminated, and there are no moving parts to wear or require servicing.

The Model 160 DRUMATIC humidifier is also designed to eliminate mineral dust in the air. Deposits form on the evaporator pad and, when filled, it can be easily cleaned or replaced. All "in-water" parts are stainless steel and the cabinet is non-corrosive, epoxy coated, galvanized steel.

The Model 160 has an output capacity of up to 7 gallons of water per hour*. *Maximum output requires a 100,000 BTU output furnace capable of 950 CFM @ .5 S. P.

Skuttle manufactures DRUMATIC humidifiers with capacities from ½ gallon to 7 gallons per hour.

SKUTTLE MANUFACTURING COMPANY
MILFORD MICHIGAN
In Canada: Wait-Skuttle Co., Oakville, Ontario

For more data, circle 124 on Inquiry Card

It is impossible to show this line completely on one page or even on several pages. This line has more than fifty years of research and workmanship behind it, and it is hundreds of different models of drinking fountains and water coolers long. But as long as it is, there has never yet been as hard a line for a fountain or a cooler to become a part of. That is because to become a part of the *Haws Line* a fountain or a cooler has to perform better, look better, and in every detail *be* better, than any other within its area of application.

HAWS
Since 1909

HAWS DRINKING FAUCET COMPANY
Fourth and Page Street
Berkeley, California 94710

Write for the new Haws Drinking Fountain and Faucet 64-page Catalog
... for Haws Electric Water Cooler 16-page Catalog
... and for Haws Safety 32-page Catalog

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"I have used masonry cement on my jobs for 30 years. And I've had nothing but good results."

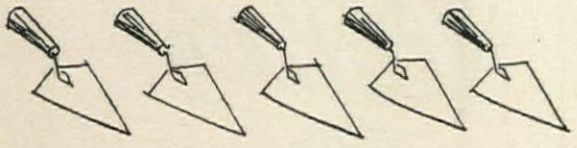
Wm. F. Nelson

Bill Nelson started his own mason contractor business in 1931. He is president of the Mason Contractors Association of the District of Columbia, of the Building Congress and of the Construction Contractors Council. His work includes the Mount Vernon Seminary and the Navy Annex in Arlington.

Equitable Life Insurance Co. main office, Washington, D.C.

IN THE WASHINGTON, D.C. AREA,

leading mason contractors endorse modern masonry cement



Today, more and more architects and mason contractors are choosing masonry cement mortar for beautiful walls of concrete block, brick, tile, stone or glass block. Masonry cement assures you mortar of the highest quality—uniform in strength, color and workability, batch after batch.

All the vital binder ingredients—portland cement, air-entraining agents, plasticizers, water repellents—come scientifically proportioned and blended in one bag. Workmen need handle only three components: masonry cement, sand and water. No guesswork.

All masonry cement produced by member companies of the Portland Cement Association passes rigid laboratory and production controls. Every bag meets specifications that cover mortar strength, soundness and air content, as well as time of setting and water retention.

To make your specification writing easier, send for a free copy of standard job specifications for masonry cement mortar. (U. S. and Canada only).

Portland Cement Association
Dept. A11-8, 33 West Grand Ave., Chicago, Illinois 60610
An organization to improve and extend the uses of portland cement and concrete

"Laying up walls
goes faster with
masonry cement mortar.
It spreads easier.
We get fewer cracks."

A Myron Cowell

A. Myron Cowell has been a mason contractor for 35 years and is well known for expert work throughout the Washington area. He is president of the Masonry Institute, Inc. and of Associated Builders and Contractors. He is an active member of the Washington Building Congress and the Home Builders Association.

Memorial Evangelical United Brethren Church, Silver Spring, Maryland

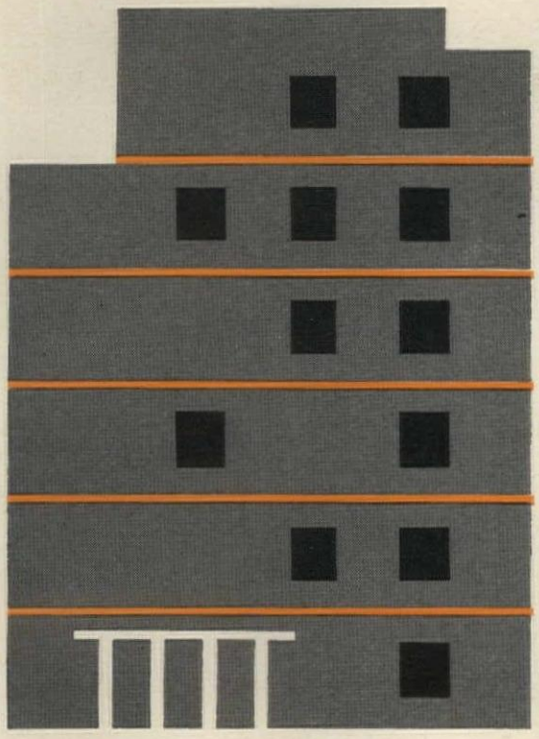
"Masonry cement mortar
gives greater uniformity.
Fewer complaints--
better job all around."

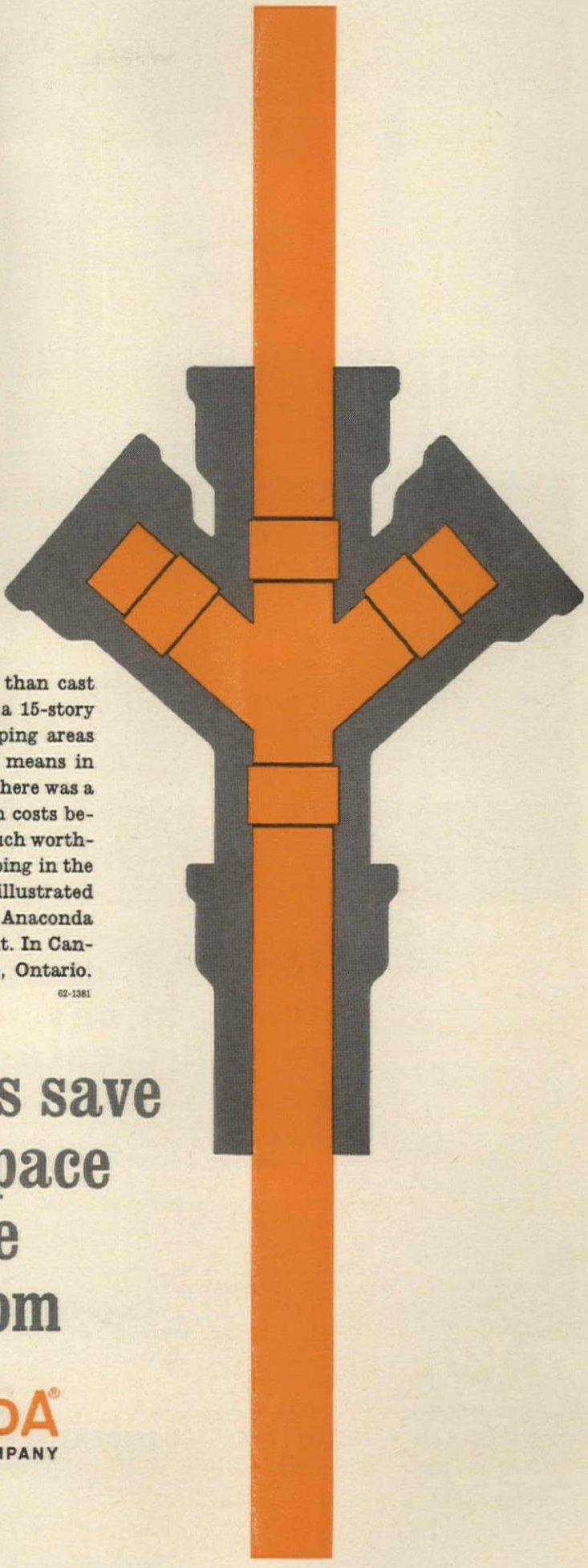
Anthony Izzo

33 years a mason contractor, Anthony Izzo is past president of the Masonry Contractors Association and of the Masonry Institute, Inc., and a member of the Washington Building Congress. Recent examples of his work are the Washington Hospital Center and the high-rise apartment building, the Towers.

Greenbriar apartment building, Massachusetts Ave., Washington, D.C.

For more data, circle 126 on Inquiry Card





Magic? No, copper piping! It installs in less space than cast iron. Specified for the sanitary drainage system in a 15-story hospital on the West Coast,* the space savings in piping areas amounted to 50,000 cubic feet. Think of what this means in reduction of all construction materials. In addition, there was a saving of approximately $40,000 in piping installation costs because copper handles easier, faster. You can pass on such worthwhile savings to your clients if you plan for copper piping in the blueprint stage. You're the key man. Send for illustrated brochure "Why It Pays to Specify Copper." Write Anaconda American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.

62-1381

*Location and architects' names on request.

Hospital architects save 50,000 cu. ft. of space without losing one inch of usable room

ANACONDA®
AMERICAN BRASS COMPANY

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A RŌWAY door belongs in any plan you create

RŌWAY Overhead Doors belong to any plan you may have in mind . . . and for several reasons. Obviously, strength, ease of operation and economy are important RŌWAY features.

What about the **appearance** of an overhead door when considering the plan you have created?

Does it enhance the style of architecture being used? RŌWAY will.

Does it fit in with your design? RŌWAY will. There are no restrictions, no contrasts, no eyesores when you specify RŌWAY Overhead Doors.

there's a RōWay for every Doorway!

COMMERCIAL • INDUSTRIAL • RESIDENTIAL

RŌWAY OVERHEAD DOORS

ROWE MANUFACTURING COMPANY
Department AR1163, Galesburg, Illinois

Find Your Nearest Distributor in the "Yellow Pages"

SEE OUR CATALOG IN SWEET'S

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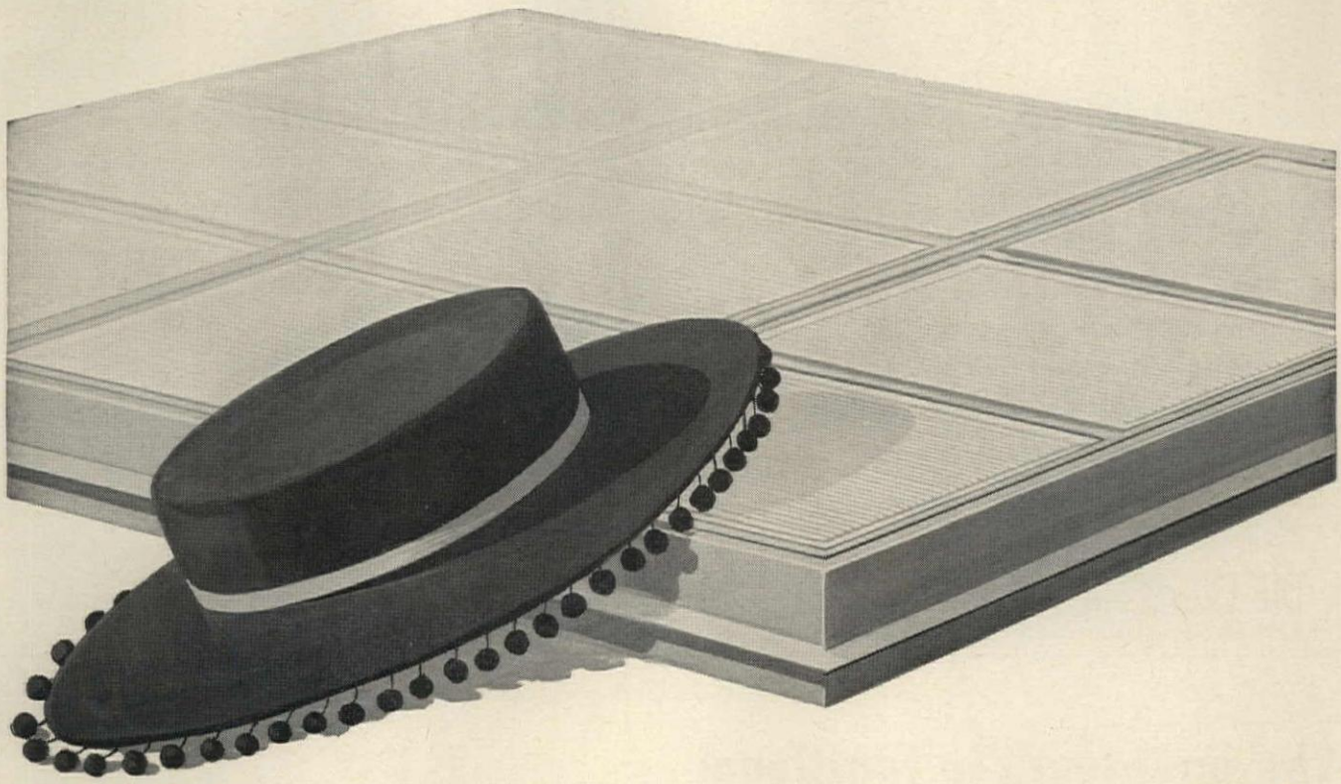
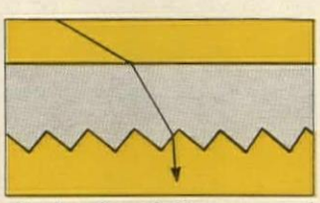
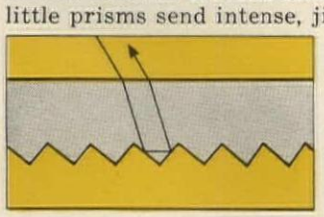


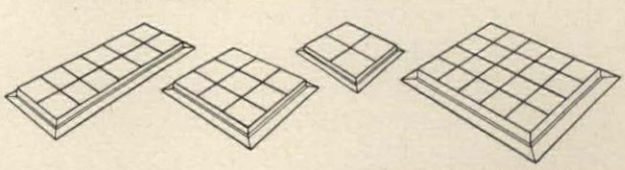
Tangential Tango



The tangent calls the tune when sunbeams dance down to pre-fabricated Toplite Roof Panels. Only light from the north sky and low-angled winter sunbeams are permitted to enter a room. Hundreds of artfully arranged little prisms send intense, jittery beams from the high summer sun back to learn good manners. By thus rejecting hot-dancing sunlight, Toplite Roof Panels provide soft, uniform light throughout the day, free from glare, bright spots, or shadows. They also reduce heat build-up, transmitting only about one-third as much heat as conventional skylights.



Toplite Roof Panels are dance-floor flat, not peaked or domed. Their low profile does not detract from the design of the structure. Installation is easy, done in jig time, with sizes attuned to buildings of all types. To get in step with this development, mail the coupon for complete technical information on the only skylight offering optical control of sunlight.



Research is our middle name

PRODUCTS RESEARCH COMPANY
2919 Empire Ave., Burbank, California
410 Jersey Ave., Gloucester City, N.J.

PRC

SEND FOR TECHNICAL DATA

Products Research Company, Dept. AR-1163
2919 Empire Ave., Burbank, Calif.

Please send me complete information about Toplite Roof Panels.

NAME_____

FIRM NAME_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

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Now! Get the facts on

SILENT GLISS

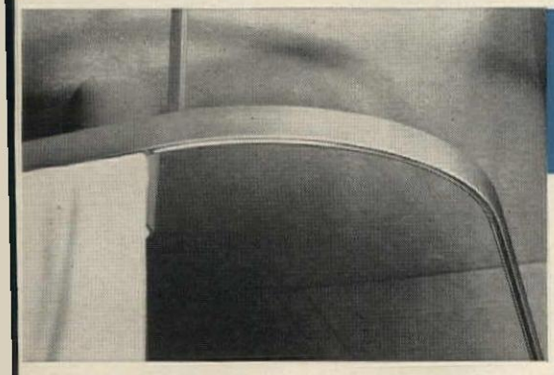
the silent drapery track®

Outstanding new concept in

CUBICLE TRACK

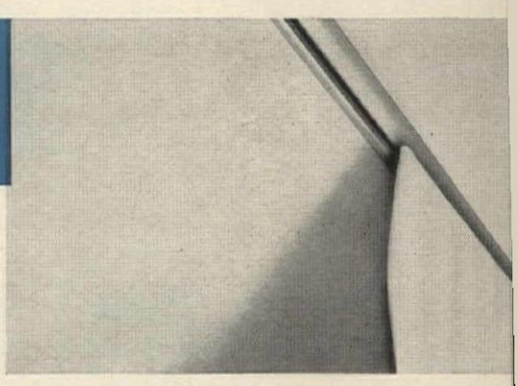
(with matching drapery tracks for windows)

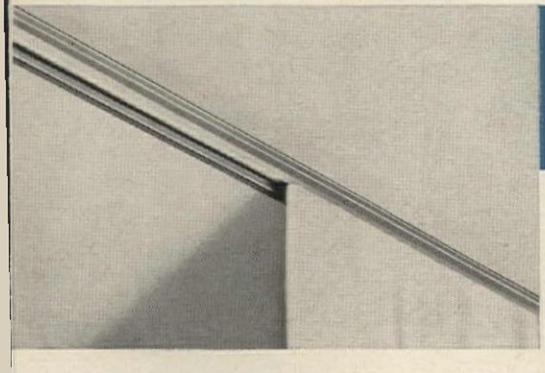
for hospital installation



Suspended Style Cubicle Track
Slim, light-weight, yet strong and rigid! Easily curved. Removable dust-cover insert for sanitation; no dirt-catching crevices.

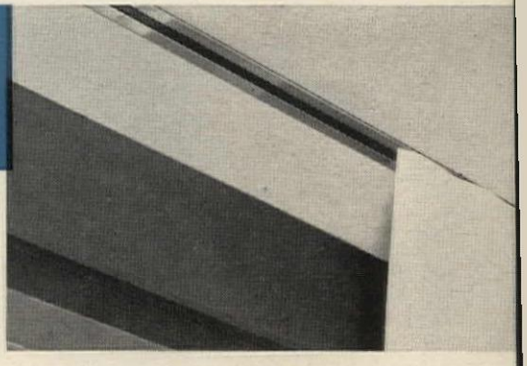
Invisible-Mount Style Cubicle Track
Features ingenious mounting levers which are attached to ceiling first, then swung out-of-sight to lock track in place. May be curved.





Double-Flange Style Cubicle Track
Extremely versatile. Easily mounted to ceiling with flanges exposed or covered by faceboard, tile, plaster, etc. May be curved.

Imbedded Style Cubicle Track
Available in choice of 1/2" or 3/4" recess depths. Wide flanges permit easy surface mounting before plastering. May be curved.

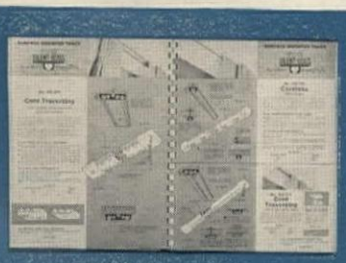


Now . . . the first radically different *major development* in drapery track, with a *complete line* for both cubicle and window use. • VIRTUALLY MAINTENANCE-FREE, because construction is solid anodized, extruded aluminum alloy with molded nylon fittings for long life and smooth operation. Cord traversing models feature separated, semi-enclosed channels which eliminate tangling and drooping; use *all-nylon* cord for maximum trouble-free service. • SANITARY, because design is smooth, streamlined, without dust-catching crevices. Anodized, polished track surface sheds dust and soil; nylon fittings and carriers are easy to keep clean. • VERSATILE. Complete range of tracks (surface-mounted or recessed ceiling models; also suspended style) . . . some easily curved. Choice of eyelet or sew-on nylon carriers for easy hanging. • NOISELESS. No rollers; no metal-to-metal "squeal." Silent, self-lubricating . . . virtually friction-free. Send for full information *now*.

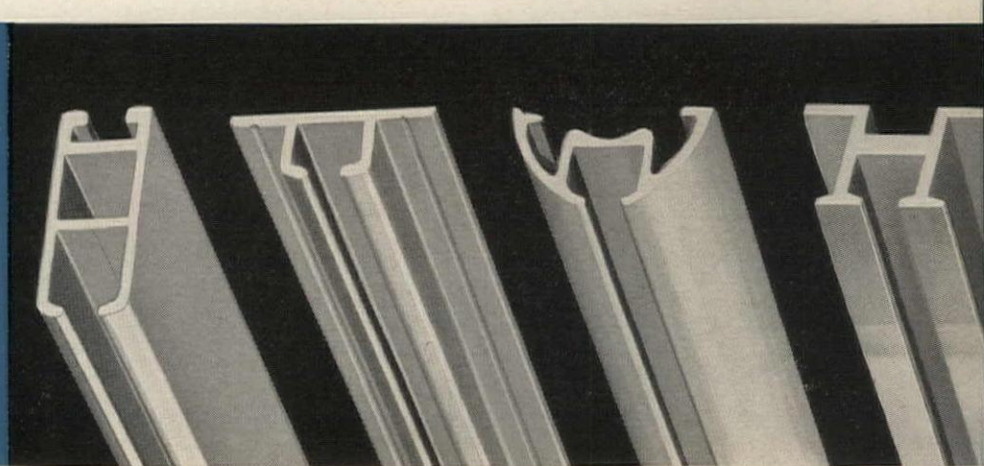
SILENT GLISS, INC.
Distributing Companies:
Angevine Co., Freeport, Illinois
Drapery Hardware Mfg. Co., Monrovia, California

THREE OF THE Newell COMPANIES

Manufacturers of Quality Drapery Hardware Since 1903



Write for the illustrated catalog shown here, with details on the COMPLETE LINE of Silent Gliss tracks for both cubicle and window drapery use. A request on your letterhead will bring it promptly. Address Dept. AR-11.



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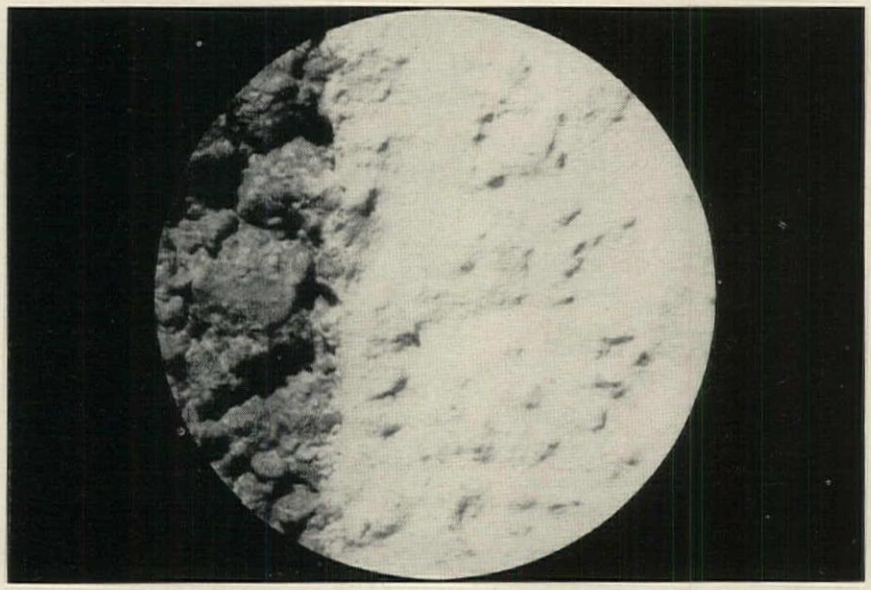
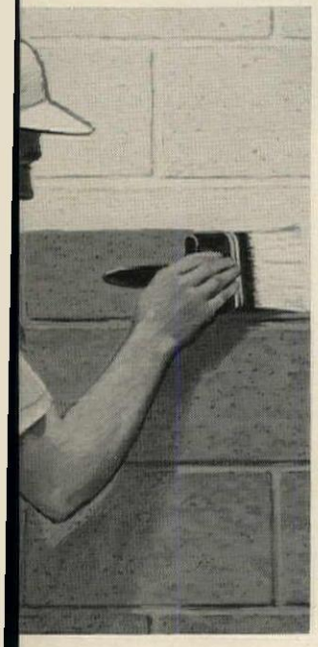
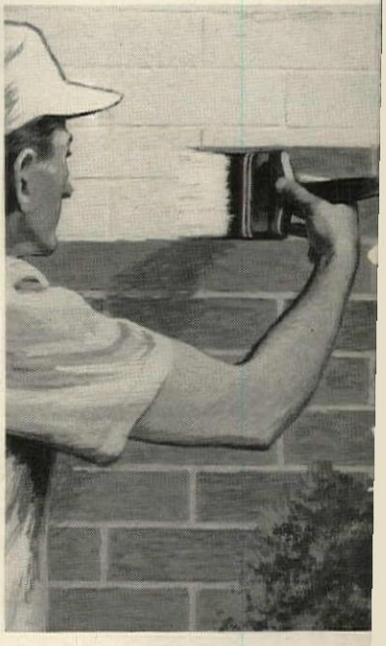
GLIDDEN

DISCOVERS A BETTER WAY TO FILL AND SEAL MASONRY—WITHOUT PINHOLES!

New Filler-Block-Sealer, in powder form, is a unique combination of reinforcing resin and select cementitious aggregates. Easily applied by spray or brush, it becomes an integral part of any masonry surface. No risk of improper curing because Filler-Block-Sealer *eliminates* wall wetting. Once applied, the coating doesn't revert to powder on aging in moist environment. It gets harder and harder. Gives masonry block a smooth, continuous, paintable surface. Finished jobs look better, last longer. Worth remembering, and specifying: "Filler-Block-Sealer."







See how Glidden Filler-Block-Sealer gives a continuous, pinhole free surface in the highly magnified, unretouched photo above. See the contrast between uncoated medium texture block, and the same surface filled with Filler-Block-Sealer. No cracks or voids. Total protection against water seepage.

For interior or exterior use . . . above and below grade. Structural and atmospheric moisture promote rock-hard curing. Develops completely filled, pinhole free, nonshrink surfaces with a minimum of labor. No mud cracking. Takes all types of finish coats. Can be tinted to pastel colors. *Resists hydrostatic pressure* and wind-driven rains. "Breathes" to allow structural moisture to escape. Apply over concrete block, poured concrete, clay building tile, brick, stucco, stone, plaster, wallboard, glazed tile, weathered asbestos shingles, porous clay or concrete roofing tile.

QUALITY Glidden PRODUCTS

THE GLIDDEN COMPANY

900 UNION COMMERCE BUILDING • CLEVELAND 14, OHIO
IN CANADA: THE GLIDDEN COMPANY, LTD., TORONTO, ONTARIO

For more data, circle 135 on Inquiry Card

For more data, circle 136 on Inquiry Card →

An Affinity for Striking Design and Practicality

Where the finest flooring is wanted, Ludowici's special shapes tile is used. It was chosen for Glenn Ford's home not only because it combines unsurpassed elegance and adaptability, but because it is in every way as practical as it is decorative.

Its textured surface reduces skids in areas that get wet. Maintenance is simple. Its non-fading, non-discoloring beauty endures. It pays for itself in extra years of service.

The practical advantages in Ludowici's genuine quarry tile make it attractive to even the most cost-conscious clients.

Available in red or fire-flashed colors; brushed or smooth texture.

For additional information, write Dept. R

LUDOWICI-CELADON CO.
75 E. WACKER DRIVE, CHICAGO, ILL. 60601
Manufacturers of quarry tile, the nation's largest producer of roofing tile and NAILON Facing Brick

The architectural application of tile creates a magnificent pool and patio area...makes the kitchen inviting... provides the delight of the unexpected on the stairway—all in the home of movie actor, Glenn Ford.

ARCHITECT:
Mathew Leizer, A.I.A.

TILE by LUDOWICI:
Rich, red Provence tile used in pool and patio area; on stair treads and lower level garden area. Rectangular, red quarry tile in kitchen.

Member:
Tile Council of America Inc.

TILE CONTRACTOR:
Fleishman Tile Co.

For more data, circle 137 on Inquiry Card

AWARD-WINNING SCHOOL PUBLISHED EACH MONTH BY THE NATION'S SCHOOLS

"The Nation's School of the Month" is the designation given each month to an outstanding school presented in The Nation's Schools, a magazine for school administrators published by the F. W. Dodge Corporation, a McGraw-Hill company. The schools are chosen by a committee of editors and consultants.

The awards are made on the basis of architectural design, planning and construction as these relate to the educational needs of the community in which the school is located. Award certificates are given to the school, the school district and the architects.

Each month attention is called to the outstanding characteristics, both architectural and educational, of the school. Construction statistics, including cost per square foot, are listed.

This regular editorial feature began in July with the Glenbrook South High School, containing twin schools—the Dwight D. Eisenhower and the Douglas MacArthur—in Glenbrook, Illinois. Architects were Nicol & Nicol, Chicago.

Memorial Senior High School in Houston, Texas, was honored in the August issue. Koetter and Tharp, Houston, were the architects.

Charles W. Lane Associates, Ann Arbor, Michigan, were architects for the September "School of the Month," the Waverly Junior High School in Lansing, Michigan.

October's award-winner was the Josiah Haynes Elementary School in Sudbury, Massachusetts. Architects were Haynes, Lieneck and Smith, Fitchburg, Massachusetts.

MASS TRANSIT STUDY CENTER

A manufacturer's center for research and development in mass transportation systems is also a resource center for engineers, architects, urban planners and others interested in this field.

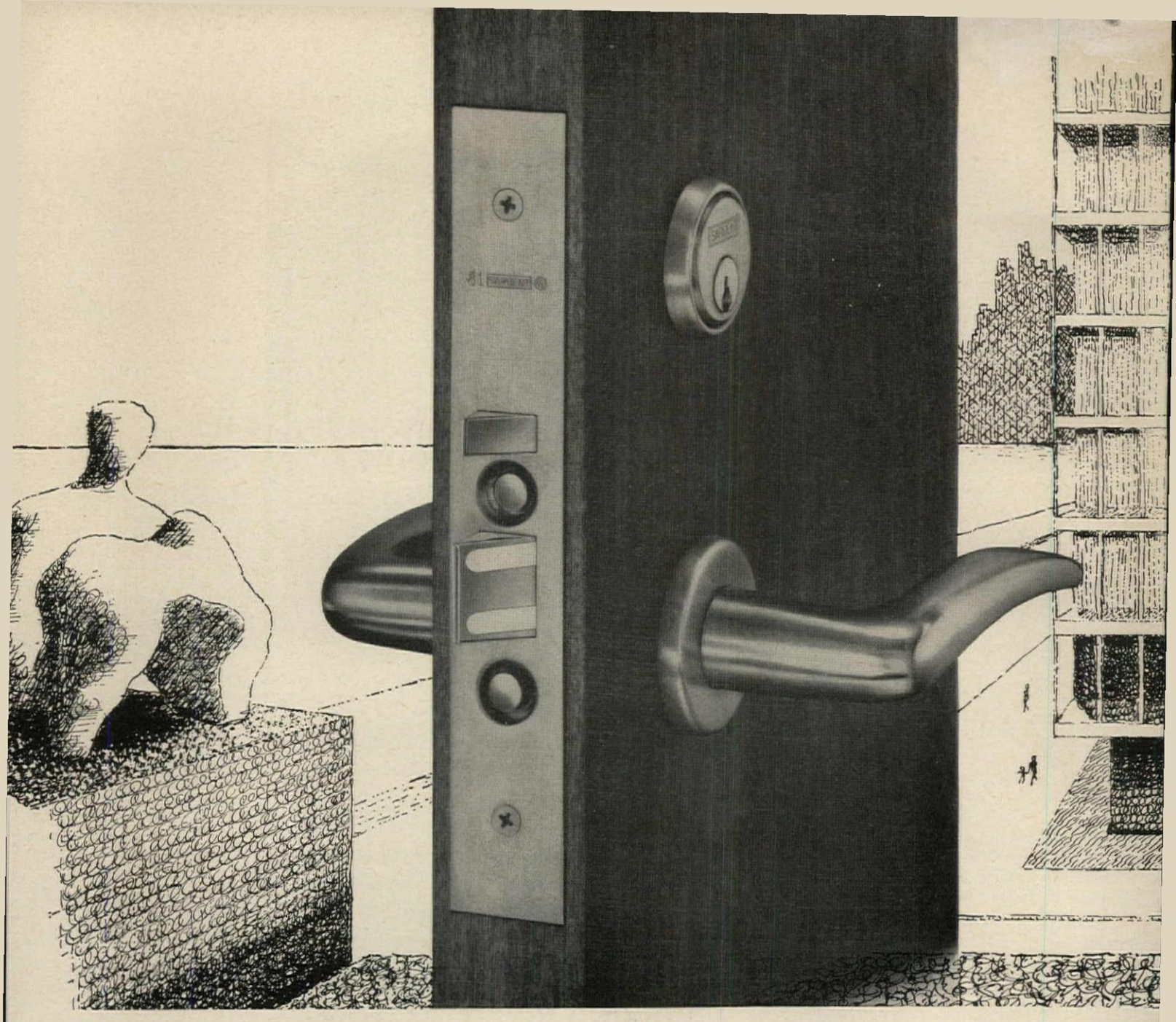
The WABCO Mass Transit Center combines the specialized knowledge and experience of three Westinghouse divisions—Westinghouse Air Brake Company, which works on braking and propulsion systems; the Union Switch & Signal Division, which specializes in automatic controls and communications equipment; and Melpar, Inc., which deals with computers and data processing.

Engineers and scientists at the center are studying the use of computerized traffic controls which could be used for all types of rapid transit and are also doing empirical research in other areas of transit operation. The center will do concept studies on any phase of rapid transit control.

The center's objectives are to provide information and advice about the reliability and feasibility of new components and systems as well as information about the status of new research in the field.

Inquiries about the center should go to Gene R. Schaefer, Director, WABCO Mass Transit Center, Westinghouse Air Brake Company, Pittsburgh 18, Pennsylvania.

more news on page 276



Dimensions of tomorrow . . . in today's locksets from Sargent

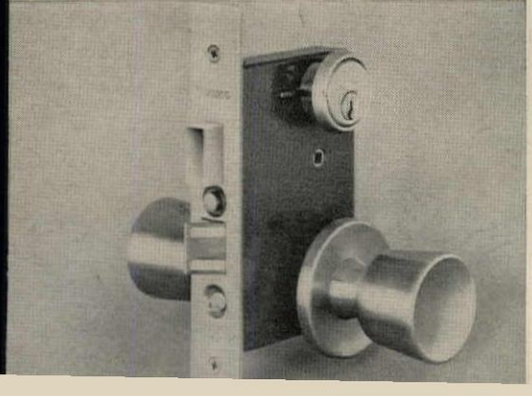
Here's a new twist on the old continental lever handle — a style resurgence which smartly complements contemporary architecture . . . it sets the fast styling pace for a whole line of sophisticated locksets from Sargent. MagnaLock, the T-zone, torque-resistant bored lock . . . IntegraLock, combining the best features of both unit and mortise locks . . . modern mortise locks with an endless variety of sculptured, screwless trim — all available in brass, bronze, aluminum and stainless steel — or colorful fired copper or DuPont Delrin® in lustrous finishes . . . one or more perfect for your type of structure.

In addition to these heavy duty locksets, Sargent also leads in the design and manufacture of quality, high fashion door closers, exit devices and other safety hardware — your single source of responsibility for all your requirements. See your Sargent hardware supplier, or write Sargent & Company, New Haven 9, Connecticut. In Canada, Sargent Hardware of Canada Ltd., Peterborough, Ontario.

SARGENT

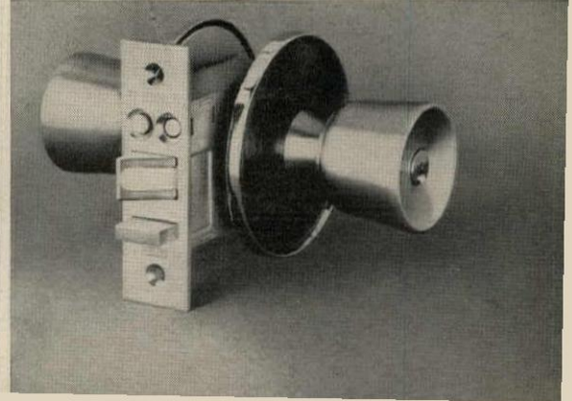
the newest fashion in a complete line of architectural hardware

Mortise Lock with screwless trim



MagnaLock with Delrin® knob

IntegraLock with fired copper rose



■ Architects utilized all of the superior design and construction advantages of monolithic reinforced concrete to create these new residence towers for the University of Pittsburgh. Through the use of monolithic reinforced concrete, they were able to reduce costs and minimize construction time to assure early student occupancy.

The three dormitory towers are set on a common three story pedestal and each tower is 88 feet in diameter. To give all students outside rooms, all of the mechanical functions of each tower are confined to a center shielded shaft which houses utilities, ducts, elevators, and toilet facilities.

On your next project, be sure that you investigate the many superior design and construction advantages of this highly flexible structural material.

New residence towers for men at University of Pittsburgh
Architect: Deeter & Ritchey, Pittsburgh, Pa.
General Contractor: Dick Corporation, Pittsburgh, Pa.

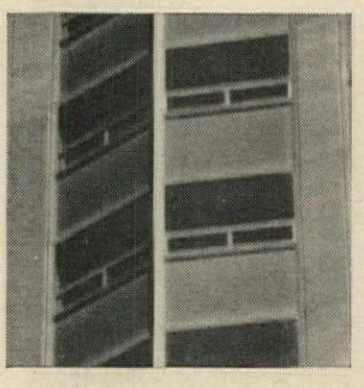
flexibility and lower COST win for monolithic reinforced concrete in Pitt Residence Towers

CONCRETE REINFORCING STEEL INSTITUTE

1-63

228 North La Salle Street • Chicago, Illinois 60601

This 46-story hotel opening June 26, 1963 is owned by Rock-Hil-Uris, Inc., a joint investment of Rockefeller Center, Inc., Hilton Hotels Corporation, and the Uris Building Corporation. Architect: William B. Tabler, N.Y. Consulting Architects: Harrison & Abramovitz, N.Y. Details on this LUPTON job are in the 1963 Michael Flynn Manufacturing Co. Curtain Wall catalog.



NEW HOTEL PAR EXCELLENCE GLEAMS ALOFT WITH LUPTON CURTAIN WALL

The New York Hilton at Rockefeller Center is a self-sufficient oasis, housing a full array of shops, services, and vast hotel facilities that are among the most advanced in the world.

Its ultra-modernity is reflected in the specification of LUPTON curtain wall . . . 335,000 square feet of it. Light gray anodized aluminum frames soaring panels of blue-tinted glass. The desired effect is achieved . . . a gleaming structure with towering vertical lines.

The choice of LUPTON also assured efficient, cost-cutting fabrication and installation. Builders could bank on speed, accurate fit, and economy. Plus "total responsibility" that sees every LUPTON job through all the way.

This thorough-going workmanship goes hand-in-hand with skill in curtain wall design. LUPTON can interpret and fulfill the most exacting creative demands . . . bring your architectural concepts to fullest realization. As for reliability, that's attested to by a solidly established reputation going back 25 years.

For further LUPTON advantages, see Sweet's Architectural File (sections 3 & 17) for the Michael Flynn Curtain Wall and Window catalogs. Talk to your local LUPTON man, as well . . . or write us direct.

LUPTON

Main Office and Plant: 700 E. Godfrey Ave., Philadelphia 24, Pa. **West Coast Office and Plant:** City of Industry (Los Angeles County), California. **SALES OFFICES:** San Leandro, California; Chicago, Illinois; New York, New York; Cleveland, Ohio; Dallas, Texas. Representatives in other principal cities.

Michael Flynn Manufacturing Company

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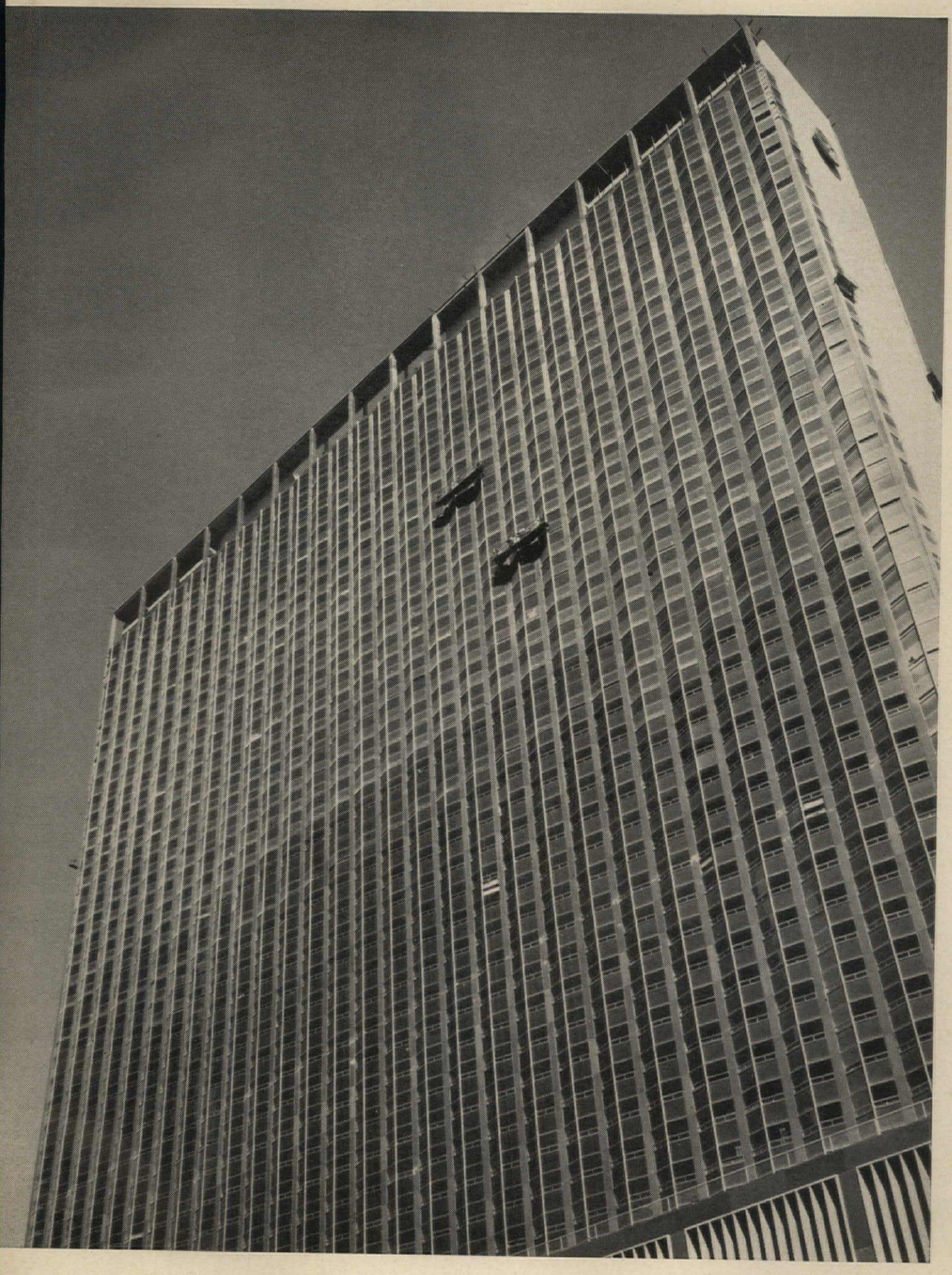
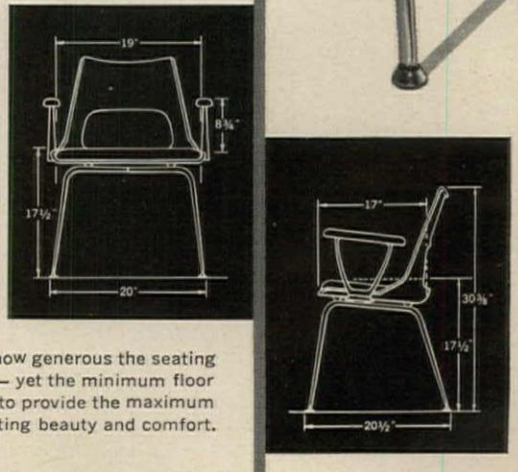


TO COMPLEMENT THE POPULAR CONTINENTAL SIDE CHAIR . . . KRUEGER INTRODUCES A CLASSIC COMPANION—

THE NEW *Continental* ARM CHAIR

An open invitation to create the new, the distinctive, in contemporary interiors for office, institution or residence. Krueger's uniquely designed CONTINENTAL Arm Chair and popular Side Chair feature a subtly sculptured fiberglass shell mounted on sturdy, yet slim-line tubular legs, or on a satin-finished pedestal/swivel base. Rigidly unitized "free form" arm design adds new functional style to the finest of contemporary settings. Ultra-smart colorings mark the CONTINENTAL as a featured accent in any decor. The unusually comfortable roomy shell in Mandarin Red, Ebony Black or Pearl White is a striking background for any of eight selected texture-woven fabric colors of the cushion-padded seat and arm rest. Though firmly secured, the seat is easily reversible.



Note how generous the seating proportions — yet the minimum floor space required to provide the maximum in seating beauty and comfort.

Write today for information on the complete Krueger line — on your letterhead, please.

Hostess **DECORATOR and CONTRACT Folding Chairs**

An absolute must for auxiliary folding chairs that fit so many applications and placements in your functional, decorating suggestions.

Another fine Creation by

KRUEGER

METAL PRODUCTS COMPANY / GREEN BAY • WIS.

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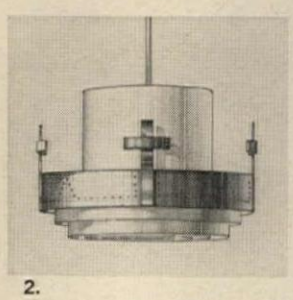
CUSTOM-BUILT ECCLESIASTICAL LUMINAIRES

Guth LIGHTING since 1902

Church Lighting

Beauty in Modern and Traditional Ecclesiastical Luminaires

1.



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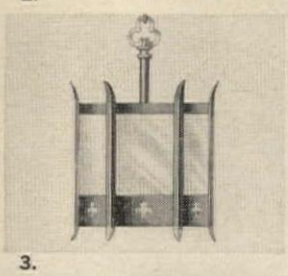

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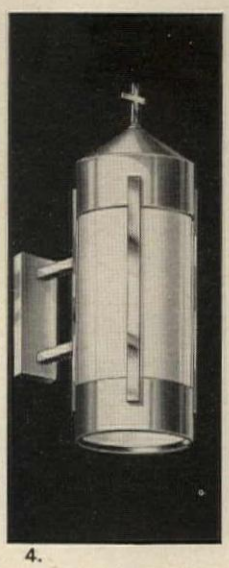

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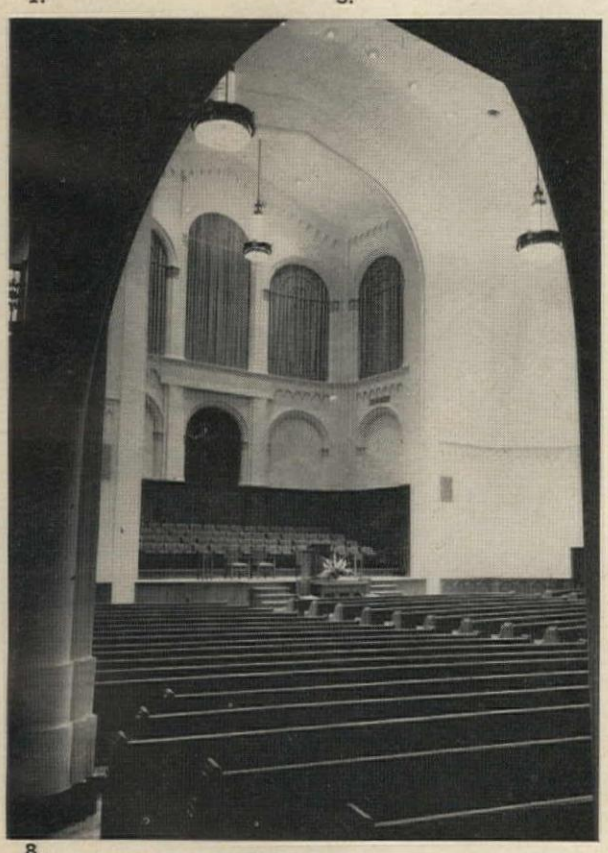

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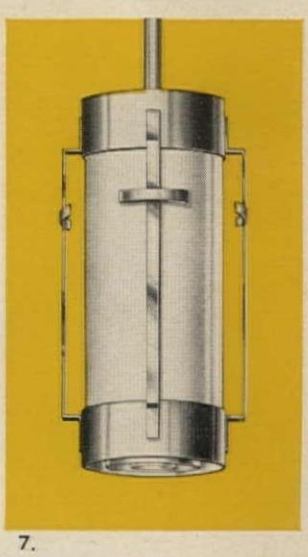

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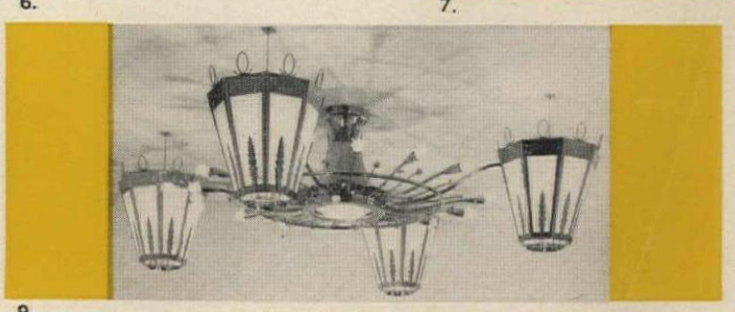

9.

1. Series S-92236 Made of steel with luminous Plexiglas cylinder. Finished Bronze or Silvan (Gold Cross). 4 light, 16″ x 26″ and 14″ x 22″ sizes.

2. Series S-82112-15 Made of steel. Finished Silvan and Gold, or Bronze and Gold. Opal Plexiglas cylinder (10″ to 14″ dia.) 4-light unit.

3. Series R-8060-61 Lantern made of steel and cast-brass. Finished Swedish-Iron and Gold, or Bronze and Gold. 3 light — 75-150 watt 13″ dia., 15½″ long.

4. Series S-77292 Entrance Bracket made of Bronze or Aluminum. Opal 9″ dia. Plexiglas cylinder. 2-50 and 1-100 watt lamps. O.A. Height 24″.

5. St. Augustine Church, Pittsburgh, Penn. **Series S-72826** Main Center 25-light, 68″ wide octagon fixture. **Series S-42498** Main nave 7-light lanterns. All units made of steel and glass. Finished Bronze and Gold.

6. Series S-50820 Entrance Lantern made of sheet and cast bronze metal, plated Bronze. Four 75-watt lamps, 42″ high, 22″ diagonally.

7. Series S-72447-49 Nave lantern made of steel with opal plastic or glass 10″, 12″ or 14″ dia. cylinder. 4-lamp unit finished Bronze, Gold or Silvan.

8. The First Baptist Church, Abilene, Texas. Combination **Series S-62884** 60″ dia. and **Series S-62885** 30″ dia. Fluorescent and Incandescent Romanesque fixtures. Units provide 3 stage illumination.

9. Series S-72900 Chandelier. 17 light (4-50/100W, 1-150W center and 12 star lamps). Unit 50″ x 50″. Made of steel and brass finished satin or polished brass. Crystal glass panels in lanterns with pierced design.

THE EDWIN F. GUTH COMPANY, 2615 WASHINGTON AVE., P. O. BOX 7079, ST. LOUIS 77, MO.

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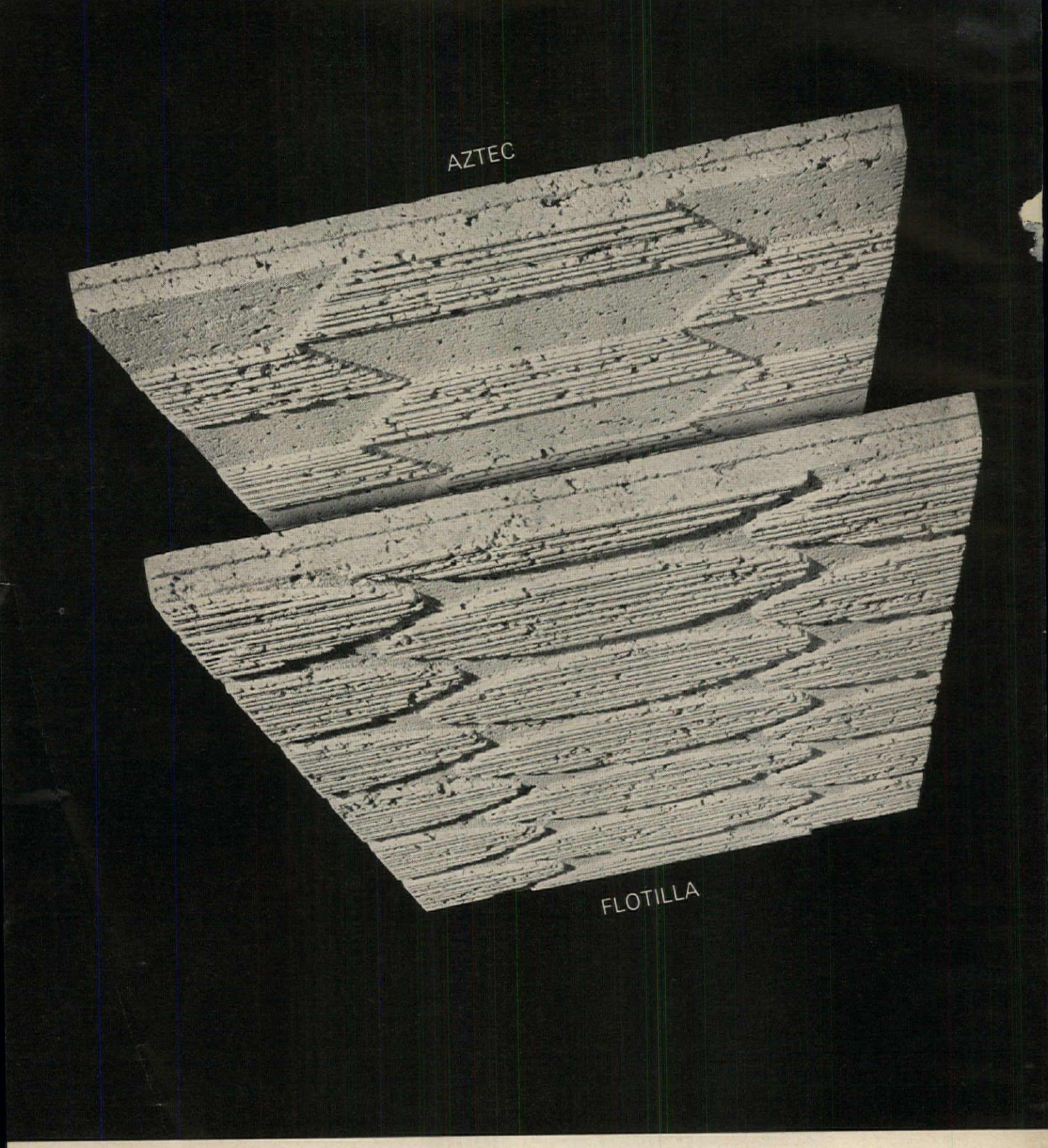
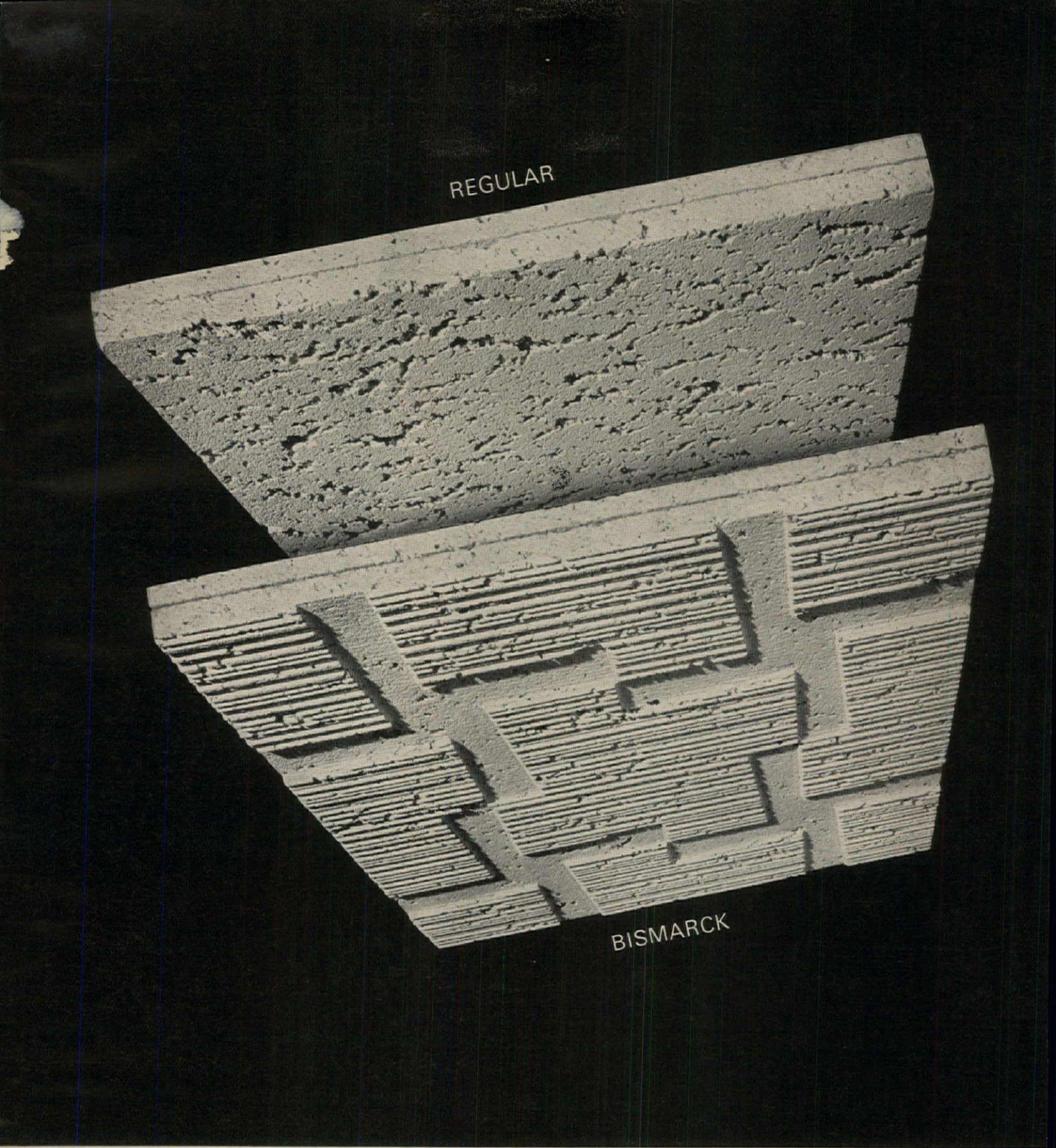


The Gold Bond difference: Exciting new patterns in Sculptured Travacoustic



With Sculptured Travacoustic's new Aztec, Bismarck, and Flotilla tile patterns, your ceiling design opportunities are practically unlimited. The three-dimensional surfaces catch the light, hold the shadows—make ceilings come alive. And sound absorption and attenuation are built right in. Noncombustible Gold Bond Sculptured Travacoustic tiles are rated Class A—can be cleaned or repainted, and readily installed in new construction or remodeling projects. Travacoustic is also available with a classic, fissured surface pattern, and with a foil backing for added attenuation value. We'd like to show you samples and supply technical information. Call your local Gold Bond® Representative. Or write to Dept. AR-113, National Gypsum Company, Buffalo 25, N. Y.

Gold Bond
ACOUSTICAL PRODUCTS

Gold Bond materials and methods make the difference in modern building

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HAWAII APPOINTS COORDINATOR OF STATE PLANNING

Hawaii has appointed Alfred Preis, A.I.A., of Honolulu, as its new state planning coordinator. In this post, he will supervise development of the state general plan within the department of Planning and Economic Development.

This department is a new one, created by a legislative merger, in 1963, of the state's separate departments for planning and for economic development. Dr. Shelley Mark, an economist, is director of the consolidated department.

Mr. Preis, a former president and director of the Hawaii Chapter of the American Institute of Architects, has won several chapter awards for design: for the memorial for the ship Arizona at Pearl Harbor; for the I.L.W.U. Memorial Hall and for the First Methodist Church, both in Honolulu.

In addition to his new duties, Mr. Preis will continue private practice.

R.A.I.C. NAMES FRED W. PRICE AS NEW DIRECTOR

Fred W. Price, of Ottawa, has been appointed Executive Director of the Royal Architectural Institute of Canada, John Lovatt Davis, R.A.I.C. president, announced recently.

Mr. Price, educated at McGill University where he received a Master of Arts (Education), is a former high school teacher. During World War II, he served with the Canadian Armoured Corps.

His business background has included service with the engineering and commercial departments of Bell Telephone Company of Canada and as manager of Information and Publications with the Research and Development Laboratories of the Northern Electric Company.

From 1959-1962 he was Executive Director of the Canadian Conference on Education.

Robbins Elliott, Mr. Price's predecessor, has left the Institute to become Director of Planning with the National Centennial Administration.

more news on page 286

TORGINOL
DURESQUE

SEAMLESS-RESILIENT FLOORING

CONTINUOUS FLOW OF SEAMLESS-RESILIENT FLOORING WITH PERMANENT BEAUTY

Recreational centers, office, apartment buildings, and homes now can be beautified with a permanent flow of wall to wall seamless beauty that will not collect dirt, moisture or germs . . . Torginol *Duresque* is a combination of scientifically prepared colored chips and liquid glaze that can be solidified over new or existing floors of wood, concrete, and most other firm surfaces. Torginol *Duresque* can be applied to exteriors as well as interiors and utilized as a coving and wainscot providing a monolithic tough thin wearing surface not attacked by most acids, alkalies or hydrocarbon solvents. Exterior *Duresque* is cushioned with Torginol's rubber-like substance, "Torga-Deck" that waterproofs and furnishes elaborate elongation characteristics.

This majestic flow of three dimensional permanent beauty can be obtained in any combination of colors and patterns giving the architect and decorator desiring uniqueness in flooring design . . . *design latitude.*

For further information, check the Yellow Pages for your nearest Torginol Dealer or write:
Customer Relations Department, Torginol of America, Inc., 6115 Maywood Avenue, Huntington Park, California.

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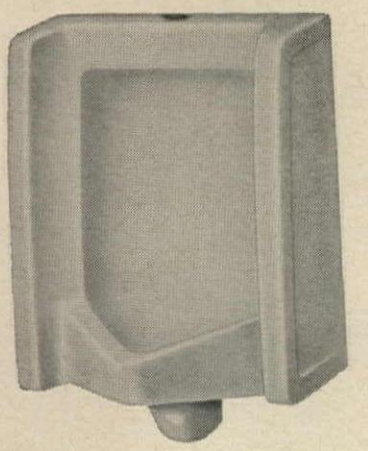
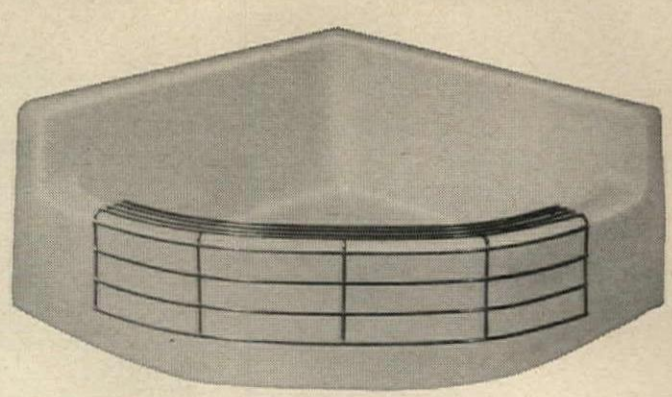


Sanitary maintenance is easier with the clean-lined vitreous china Washbrook urinal. Open trap—no strainer, no fouling areas. Washout action.



Dirt-catching under-sink areas are eliminated by the exclusive floor-mounted, corner-fitting Florwell service sink. Heavy cast iron; all exposed surfaces are acid-resistant enamel. Vinyl-covered rim guard is instantly removable for cleaning. Ideal for mop-truck use.

FOUR SMART NEW WAYS TO TRIM MAINTENANCE COSTS

Here are four new American-Standard developments you'll want to know about. Each meets a particular need better than anything previously available. They join a big family of specialized fixtures and fittings designed for rugged commercial and institutional duty. Fixtures are cast as single units, with no seams in the durable, scratch-defying surfaces. Fittings are non-corrosive solid brass, heavily plated with finest chrome. For information, call your American-Standard representative today. Or write direct to American-Standard, Plumbing and Heating Division, 40 West 40th Street, New York 18, New York.

American-Standard and Standard® are trademarks of American Radiator & Standard Sanitary Corporation

AMERICAN-Standard
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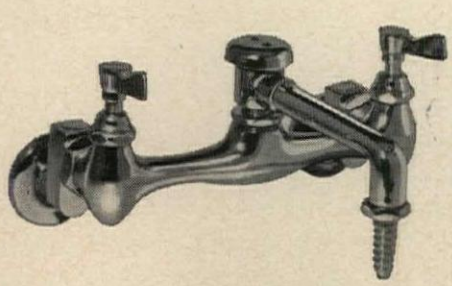
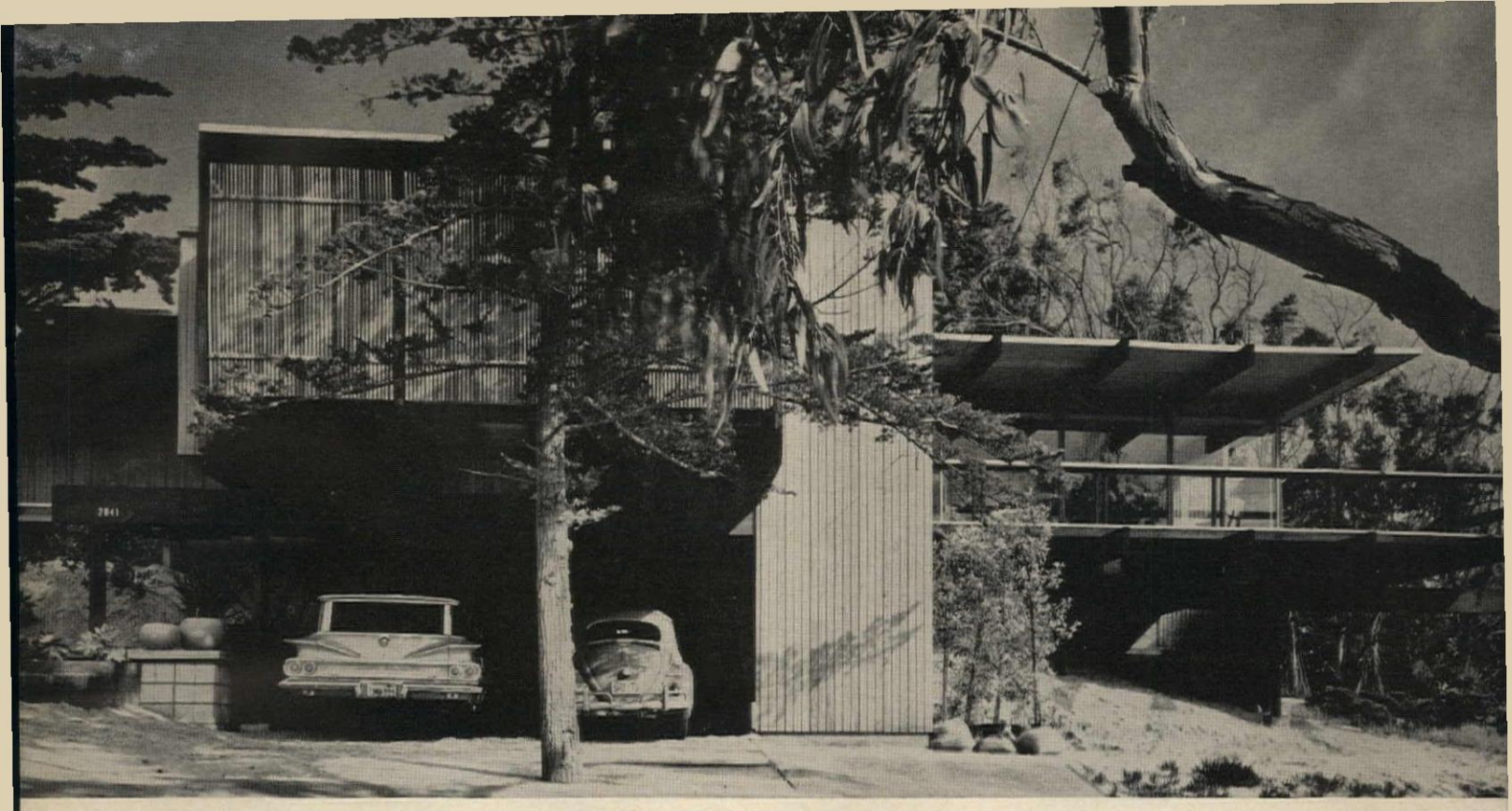


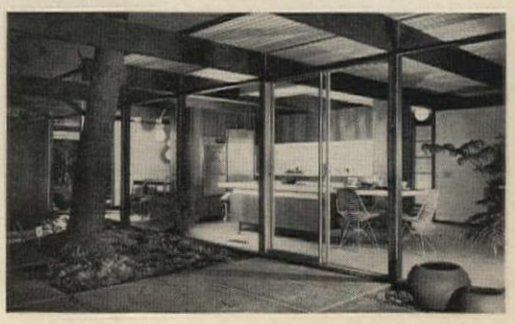
Backflow is effectively prevented with new built-in vacuum breakers, available in 24 fittings for laboratory, service sink and laundry-tray use. Solid brass, including handles; heavy Chromard plating. Only one moving part. Service-sink model is shown.

The shallow well of the Akron service sink reduces lifting effort. The wide, flat rims afford ample area for brushes, etc. Molded channels facilitate drainage with bucket in sink. Heavy cast iron, with acid-resistant enamel surface. Available with stainless-steel rim guard.

For more data, circle 148 on Inquiry Card



Home of Mr. and Mrs. Robert E. Jones, Del Mar, California one of the 20 fine contemporary Record Houses of 1963, honored by Architectural Record. Architects: Hester-Jones and Associates, La Jolla, Calif. Engineer: Harry F. Deardoff, San Diego, Calif. Contractor: Herbert Turner, Del Mar, Calif.



Architect uses Devoe Paints to sustain the design mood of his own home

It's significant, wouldn't you say, that when an architect designs a house for himself, Devoe paints are chosen. This winner of an *Architectural Record* Award of Excellence for House Design effectively realizes the owner's concept—"to rest the structure in an unobtrusive way on the sandstone and among the existing trees and landscape, utilizing natural materials." And that restrained harmony is further achieved by soft colors, including Devoe interior paints of off-white and raw umber.

When *you* design—be it home, school, commercial building—you must consider color, too. Remember, though, there is valuable assistance available to you and your color consultants: no matter what color subtleties you want to create, the "Man from Devoe" can help. He can draw on the full Devoe Library of Colors® system, with its more than 1000 shades, plus technical know-how and experience for just about any paint problem. There's no cost or obligation for the services of the "Man from Devoe". Just phone or write the nearest Devoe office.

DEVOE

DEVOE & RAYNOLDS COMPANY, INC.

Atlanta • Baltimore • Boston • Charlotte, N.C. • Chicago • Cincinnati • Cos Cob, Conn. Dallas • Denver • Detroit • Fresno • Honolulu • Houston • Los Angeles • Louisville • Milwaukee Moonachie, N.J. • New Orleans • New York • Philadelphia • Portland, Ore. • St. Louis Toledo, Ohio • Warehouses in all principal cities, coast to coast.

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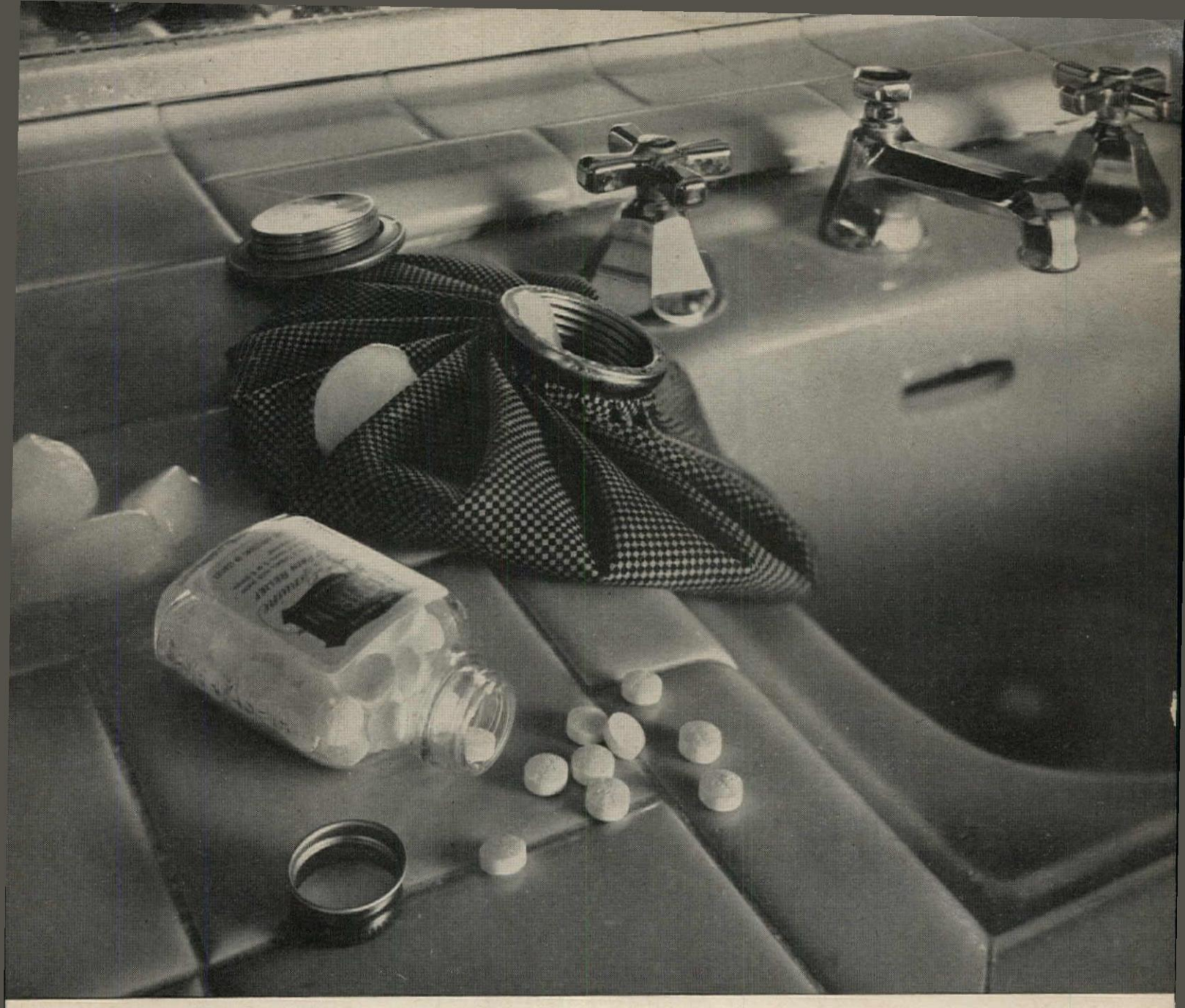

ARE DOOR FAILURES GIVING YOU HEADACHES?

Your BARCOL dealer can help you prevent the major causes of overhead-type door failure.

By analyzing door requirements, he identifies penalty your client would pay with inadequate, inferior-quality doors . . . justifies initial cost of door equipment . . . determines a firm, accurate budget figure . . . eliminates your headaches right at the preliminary planning stage.

BARCOL OVERdoor specifications are based on PERFORMANCE STANDARDS . . . documented evidence that these superior overhead-type doors will provide more efficient materials handling . . . more effective plant maintenance . . . more accurate temperature control . . . more convenient door operation . . . longer door life.

Yes, your BARCOL dealer is a door specialist who can save your client money . . . save you time and worry! He will work directly with you, or as your representative to your client. Call him or write us.

BARBER COLMAN

BARCOL

BARCOL OVERdoor COMPANY

SHEFFIELD, ILLINOIS

Subsidiary Barber-Colman Company, Rockford, Illinois

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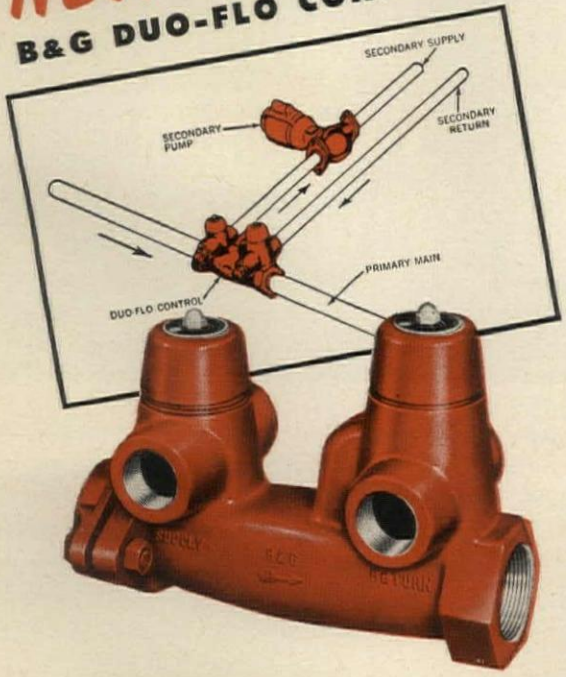
In this Chicago 14 unit apartment, the owners are well pleased with a heating system which provides genuine comfort for tenants at minimum fuel expense.

From left to right: Mr. John J. Limperis, co-owner, Mr. Kenneth Bauer, contractor, Mr. Benjamin Daidone, co-owner.

DUO-FLO HEATING / COOLING SYSTEM SAVES MONEY FOR OWNERS ...ASSURES COMFORT FOR TENANTS

NEW!

B&G DUO-FLO CONTROL



In primary-secondary systems equipped with Duo-Flo Controls, secondary zones are always controlled, even with high head pumps in the primary zone. Use of higher temperature drops permits sizable reduction in pump horsepower. Material saved includes 2 Flo-Control Valves, 2 shut-off valves, 2 or 3 tees and 6 nipples.

Multi-family dwellings are normally hard to heat with economy and at the same time provide comfort for all tenants. In such buildings, the Duo-Flo system, a method of primary-secondary pumping developed by B&G engineers, solves many problems encountered in establishing automatic temperature control.

The B&G Duo-Flo System permits simplified zone control of various building areas to assure proper compensation for the effects of sunshine, wind and occupancy needs. Not only does it improve comfort conditions, but prevents the fuel waste of overheating and can reduce circulating pump horsepower.

As practical evidence of Duo-Flo System value, Kenneth E. Bauer, Vice President of Atomatic, Inc., Chicago Contractors, says—

"In the past few years, I have installed several of your Duo-Flo Primary-Secondary Systems. In my opinion there is no better way to zone a hydronic system than with pumps. It may cost the building owner a little more initially, but in the long run he saves money and is assured of comfortable tenants.

"The low rate of service problems with B&G pumps is well known and the new B&G Duo-Flo Control obviously makes it easier to provide pumped zone control."

Send for complete information on B&G Duo-Flo Control

BELL & GOSSETT
COMPANY
Hydro-Flo DIVISION
Dept. HU-32, Morton Grove, Illinois

Canadian Licensee: S. A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto 16, Ontario

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● As you can see from this 77 model shown here, Von Duprin leadership in exit hardware covers design as well as engineering . . . and "the safe way out" is also the smart way out. Lock and hinge stile cases and other major components are drop-forged bronze, assuring lasting service and dependable operation in any opening. The 77, in bronze, or chromium finish, is also available with six color choices of tough vinyl fabrics—applied permanently to cases and/or crossbars. Write for free, full-color Bulletin 631, showing 77 rim, mortise lock and vertical rod devices that *look* best and *work* best in any opening.

VON DUPRIN DIVISION, VONNEGUT HARDWARE CO.
402 W. MARYLAND ST., INDIANAPOLIS 25, INDIANA

Von Duprin 77 Exit Devices

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Trust a cat to find the most comfortable chair in sight!

HARTER CRITERION

The one contemporary design that makes no compromise with comfort!

Now you can choose the luxury of genuine foam rubber seats and backs in a chair styled to blend with any office decor — modern or traditional, wood or metal. It's the comfortable new Harter Criterion.

Notice the unique cantilevered arms that offer man-sized legroom for big-chair comfort without wasting an inch of valuable space. No sharp angles to mar adjacent furniture. And Harter foam rubber comfort is enhanced by the added support of gently curved seats and backs.

Contact your Harter dealer today and ask him to demonstrate Criterion comfort. Or write for literature and the name of the Harter dealer nearest you.

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CANADA: Harter Metal Furniture, Ltd., 139 Cardigan, Guelph, Ontario
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NEW ZEALAND-AUSTRALIA: Morrison Industries, Hastings, N.Z.

For more data, circle 153 on Inquiry Card

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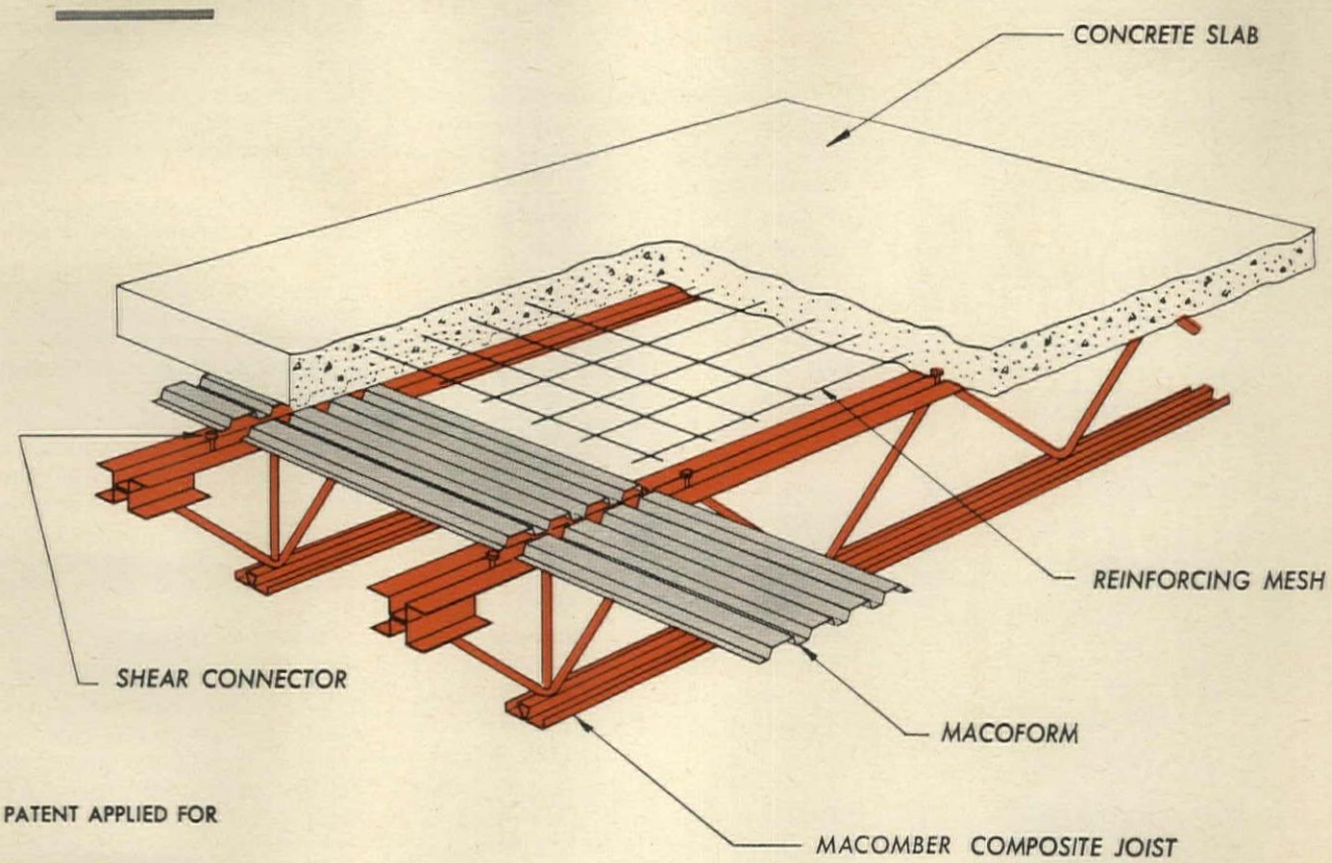

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A way to improve multiple story construction

(and reduce its costs)

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It's called the Macomber Composite System, because it combines steel and concrete into a structural member which functions integrally, utilizing the strength of open-web joists with the capacity of a concrete slab. The inter-action of the joists and slab provides a more rigid unit than steel and concrete acting independently. Developed around a special open-web joist, the system permits longer spans with shallower depths, reducing height per floor. More efficient use of materials with a reduction in total dead weight and labor costs, result in decreased building costs.

The Macomber Composite System is another new custom steel product from the expanding world of Sharon Steel. For technical brochure write Macomber Inc., Subsidiary of Sharon Steel Corp., Canton 1, Ohio.

MACOMBER INCORPORATED

CANTON 1, OHIO

SUBSIDIARY OF SHARON STEEL CORPORATION

For more data, circle 157 on Inquiry Card

AWARDS AND FELLOWSHIPS

Nominations for the 1964 eighth annual R. S. Reynolds Memorial Award are now being received by the American Institute of Architects, 1735 New York Ave., N.W., Washington, D. C., 20006.

The international award is given for the design of a significant work of architecture in which aluminum has been an important factor. The winner receives $25,000 and an original sculpture in aluminum.

The annual Arnold W. Brunner scholarship provides a $5,000 grant for study in an area which will contribute to the advancement of the architectural profession. Deadline for the 1964 award is January 15.

Each candidate is free to choose his subject for study. An outline of proposed studies, research and necessary travel is required.

Application blanks are available from the sponsor, the New York Chapter of the American Institute of Architects, 115 E. 40th St., New York 16, N.Y.

Applications for the fourth James Stewardson Traveling Fellowship are due December 1. The award winner receives $2,000 and must spend at least four months in foreign travel.

To be eligible, the candidate must be between 30 and 50 years old, and must have been employed for at least one year immediately prior to the application in an architectural office in the territory of the New York Chapter of the A.I.A.

Application forms can be obtained from the New York Chapter, A.I.A., 115 E. 40th St., New York 16, N.Y.

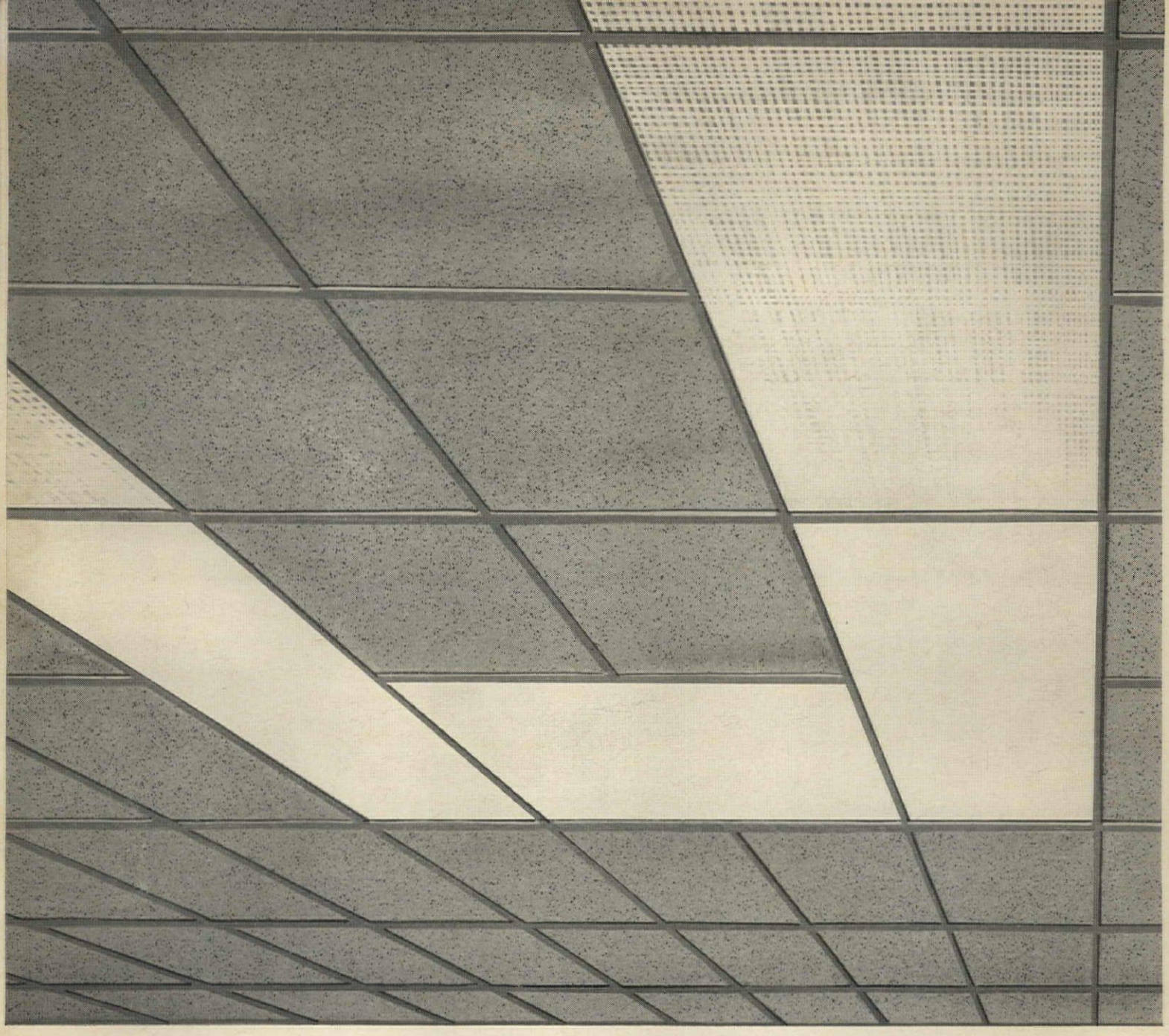
Rome prize fellowships (see the RECORD, October 1963, page 358): Applications for $3,000 study grants are due December 31. Information is available from the Executive Secretary, American Academy in Rome, 101 Park Ave., New York 17, N.Y.

CURRENT:

University College, Dublin: Buildings for classrooms, administrative offices and examination halls.

Registration closed October 17. Entries due June 1, 1964.

more news on page 294



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Now Wheeler offers you one of the smartest, most versatile architectural troffer lines in the industry: flange or lay-in type fixtures in a broad spectrum of shieldings to provide the maximum in functional design for any ceiling. Designed for clean, modern, row or modular pattern installations, Wheeler troffers are extremely graceful yet rugged fixtures that compliment any architectural style while keeping your lighting budget well within bounds. Limitless variety of shieldings for optimum brightness controls: plastic cube louvers (illustrated), acrylic drop dish, SL-23 clear QUIET TONE* polystyrene lens type . . . K-11†, Fiberglass Polarized Panels††, aluminum louvers and many others available on special order. Lay-in troffers and flange type troffers are available in all popular sizes in 2-, 3- and 4-light fixtures for use in all nationally recognized ceiling systems. For additional data, talk with your Wheeler representative or write directly to **E. Quintiliani, General Sales Manager.**

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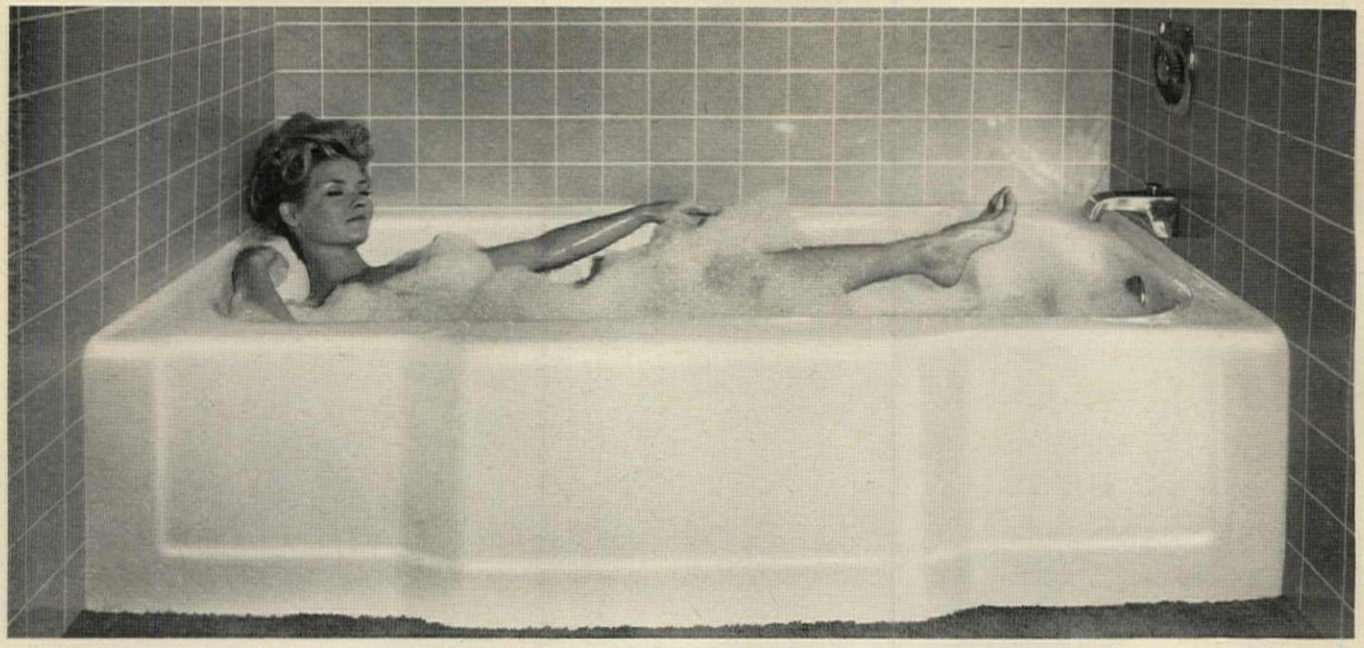
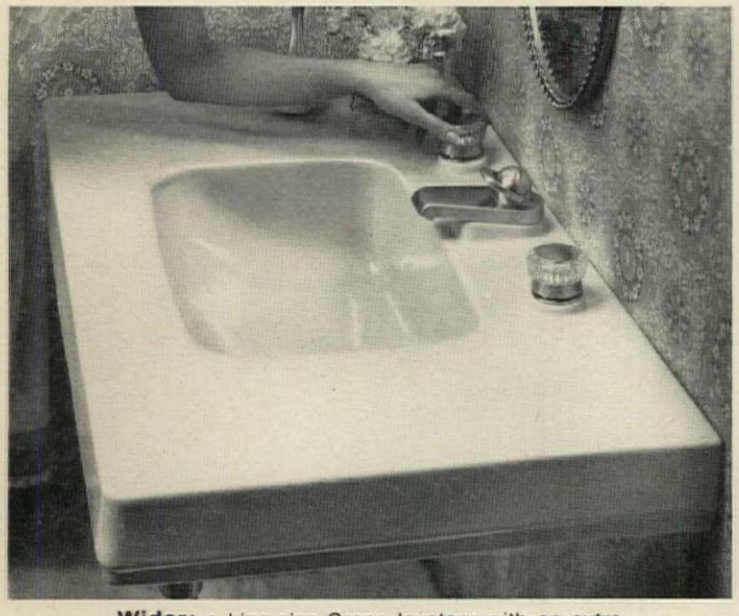


Longer: six feet of stretch-out comfort in a big Crane tub built for truly luxurious living.



Wider: a king-size Crane lavatory with an extra spacious top surface for toiletries.

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Planning an apartment? An office building? A motel (or hotel)? A private residence?

Or renovating any of these?

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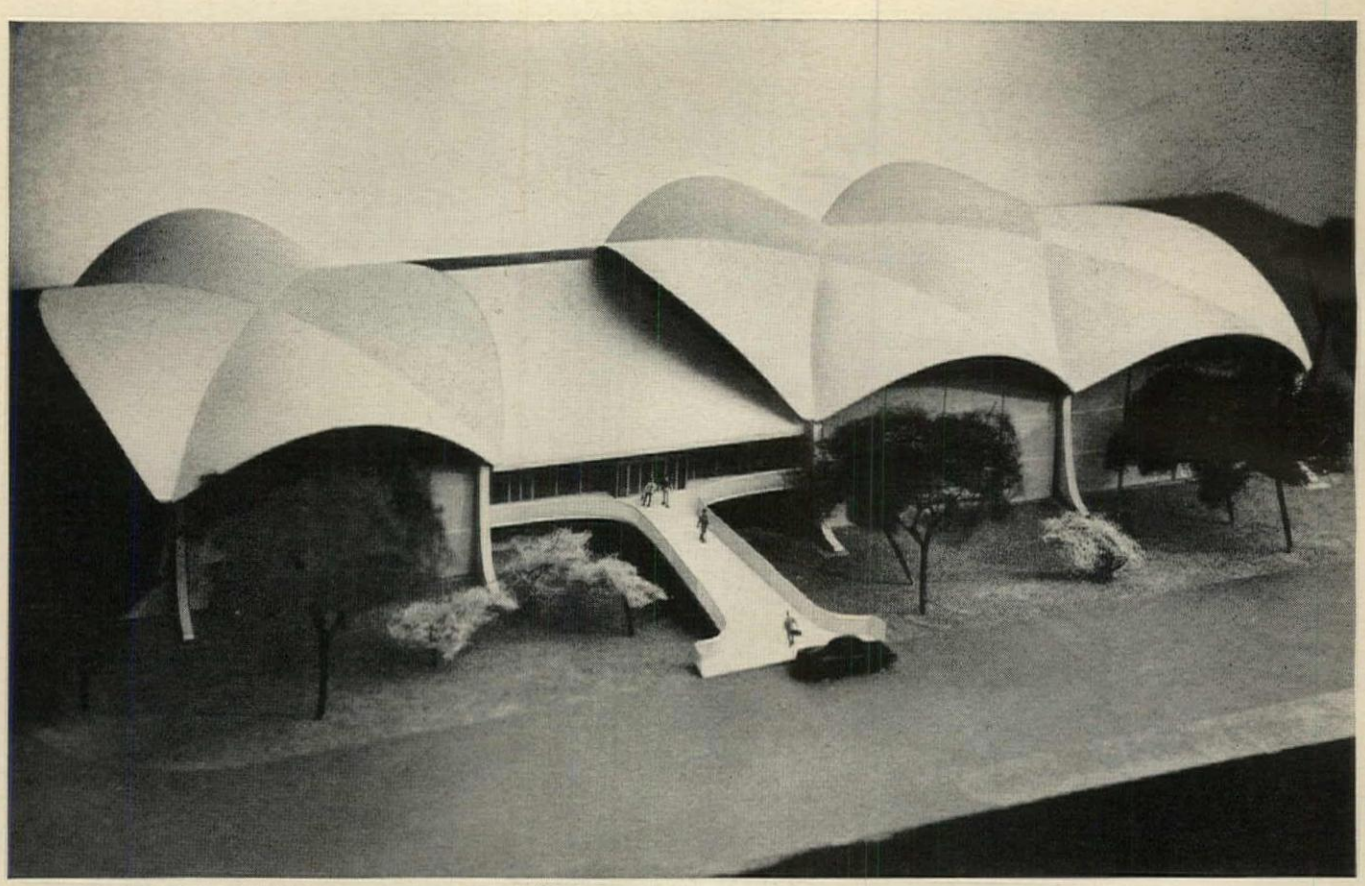
This is Redwood Acoustic Pattern A.
Also available in a plain pattern for ceilings, Redwood Acoustic Pattern B.

The redwood acoustic paneling shown is one of many Certified Kiln Dried products of these mills... WILLITS REDWOOD PRODUCTS CO. • ARCATA REDWOOD CO. GEORGIA-PACIFIC CORP. • THE PACIFIC LUMBER CO. • SIMPSON TIMBER CO. • UNION LUMBER CO.... which form the CALIFORNIA REDWOOD ASSOCIATION



CARLETON COLLEGE GYMNASIUM, NORTHFIELD, MINN.
To compensate for the thrust exerted by the roof at support points, the column tops of this dramatic new building are connected by post-tensioned tie cables supplied by Ryerson. This permits use of ties with relatively small cross-sectional area and makes it possible to apply the desired force very accurately. Since this building will be most frequently viewed from above (its site is lower than the rest of the Carleton campus), a handsome roof design was thought to be especially important. The intersecting parabolic groined vaults of the shell roof that resulted span a 6-lane Olympic swimming pool on the left and two basketball courts on the right. **ARCHITECT:** Minoru Yamasaki and Associates. **ENGINEER:** Worthington, Skilling, Helle and Jackson. **CONTRACTOR:** O. A. Stocke and Co., Inc.

NEW POST-TENSIONING APPLICATIONS SHOW

PARKING GARAGE, DAVENPORT, IOWA
Large column-free areas and low per-car-cost of this garage were achieved through a combination of several types of prestressed concrete construction in the framing. Columns are precast, conventionally reinforced concrete with built-in brackets at each floor level to receive precast tees. The tees are pretensioned to permit handling, then post-tensioned for live load and to provide a rigid-frame connection with columns. Slabs were poured in place, between and over tees, and post-tensioned for structural reasons and to create a crack-free surface. The latter feature prevents seepage of water and oil from cars through the slabs.
ENGINEER: De Leuw, Cather & Co.
CONTRACTOR: Priester Construction Co.

Here's one of the most efficient and versatile methods of structural framing available to you—cast-in-place or precast concrete post-tensioned by the Ryerson BBRV system.

This system permits longer spans at economical cost, provides good deflection control and often effects savings by reducing structural depth. And when you specify Ryerson post-tensioning you deal with one of the nation's largest suppliers of construction steels—a company with the resources and facilities to provide a complete service package. This includes:

Services for architects and engineers: Ryerson assists in feasibility studies on use of post-tensioning in specific projects. Provides preliminary cost data. Shares experience in structural design and layout. Furnishes details and specifications.

Services for contractors: Ryerson delivers shop-fabricated tendons, completely assembled and ready for placement. Also provided: equipment for stressing and grouting, technical job-site assistance, architect-approved drawings, stressing data and reliable labor estimates.

If you would like more information or help on a current project, call Ryerson or write to Box 8000-A, Chicago 80, Ill.

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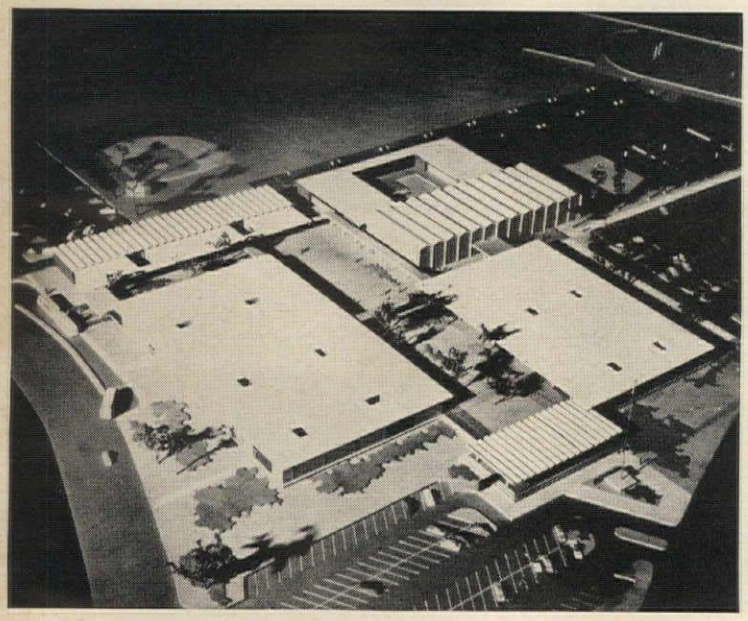
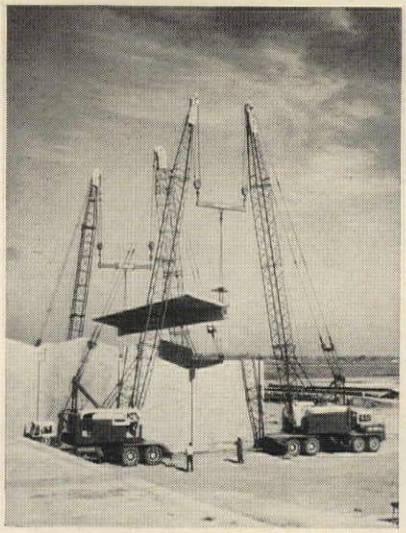
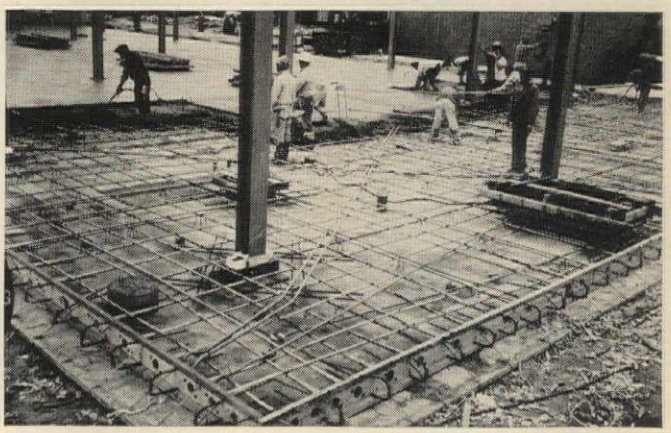
HIGH SCHOOL, CORONA DEL MAR, CALIFORNIA
All six major buildings in the complex making up this new school use Ryerson post-tensioning to achieve structures that are functional, esthetically pleasing *and* economical. The two flat-roofed buildings in the center (see model below) are one-story lift-slab structures with post-tensioned flat slab roofs of 10½" lightweight concrete. The larger slab measures 335' x 195' and was lifted in four sections. Bay size in both buildings is 34' x 28'. A third post-tensioned lift-slab structure (U shape at top center) uses 8½" lightweight concrete supported by WF steel columns. The three other buildings have sawtooth roofs formed by precast post-tensioned wing tees. (See photo at right.)
ARCHITECT: Blurock, Ellerbroek & Associates, William E. Blurock, Architect
ENGINEER: John Martin & Associates
CONTRACTOR: Nylin Hurd Construction Co.





ELEVEN TEES FORM THE ROOF OF THE GYMNASIUM
—each is 20-ft. wide, 101-ft. long, post-tensioned with two 40-wire tendons. Stem dimensions: 15" x 42". Here one of the units is lifted into place. 1-in. pour strips tie the tees together.

POST-TENSIONING TENDONS IN ONE OF THE TWO-WAY FLAT SLABS
—note wide tendon spacing and minimum of auxiliary reinforcing. This simplifies placement of utilities and pouring of concrete.



VERSATILITY OF RYERSON BBRV SYSTEM

N. Y. WORLD'S FAIR PAVILION FOR EQUITABLE LIFE ASSURANCE SOCIETY
Comparative cost studies on post-tensioning vs. conventional reinforcing in this structure showed the advantages of post-tensioning would cost no more. The 116' 6" longitudinal girders over the supporting columns are each post-tensioned with five Ryerson BBRV tendons—three 40-wire units, two with 28 wires. These girders span 61-ft. center to center of columns, leaving a 27' 9" cantilever at each end. They are L-shaped to support 13 T-beams which form the roof structure. The 94' tees combine pretensioning with post-tensioning by Ryerson. The pavilion exhibits will highlight population growth. A 45' map will record births and deaths as they occur in each state, and a huge illuminated sign will keep a running tally on total U.S. population.
ARCHITECT: Skidmore, Owings & Merrill
ENGINEER: Weiskopf & Pickworth
CONTRACTOR: Humphreys & Harding, Inc.

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That's perfectly all right—
it belongs to a CHF table.
CHF puts exquisite
craftsmanship from table-base
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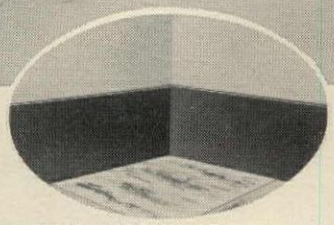
...MORE THAN JUST FOR KICKS!!



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On the Calendar

November

11-14 16th fall meeting, American Concrete Institute—Royal York Hotel, Toronto

11-14 56th annual convention, National Association of Real Estate Boards—Commodore Hotel, New York City

11-14 48th edition, National Hotel and Motel Exposition—New York Coliseum, New York City

11-15 International Conference on Permafrost—Purdue University, Lafayette, Ind.

13-27 1963 International Building Exhibition; theme "Industrialized Building"—Olympia, London, England

17-20 Annual meeting, Air-Conditioning and Refrigeration Institute—The Homestead, Hot Springs, Va.

18-22 10th National Plastics Exposition, sponsored by the Society of the Plastics Industry, Inc.—Sheraton-Chicago Hotel and McCormick Place, Chicago

18-24 Annual Convention, National Warm Air Heating and Air Conditioning Association—Americana Hotel, Miami Beach

19-21 1963 fall conferences, Building Research Institute—Mayflower Hotel, Washington, D. C.

December

9-10 White House Conference on Community Development—Sheraton Park Hotel, Washington, D.C.

11-15 20th Annual Convention-Exposition, National Association of Home Builders—McCormick Place, Chicago

January

20-23 13th Exposition, Air-Conditioning, Heating, and Refrigeration Industry, sponsored by the Air-Conditioning and Refrigeration Institute—International Amphitheater, Chicago

28-31 20th annual technical conference, Society of Plastics Engineers, sponsored by Philadelphia Section—Chalfonte-Haddon Hall Hotels, Atlantic City, N.J.

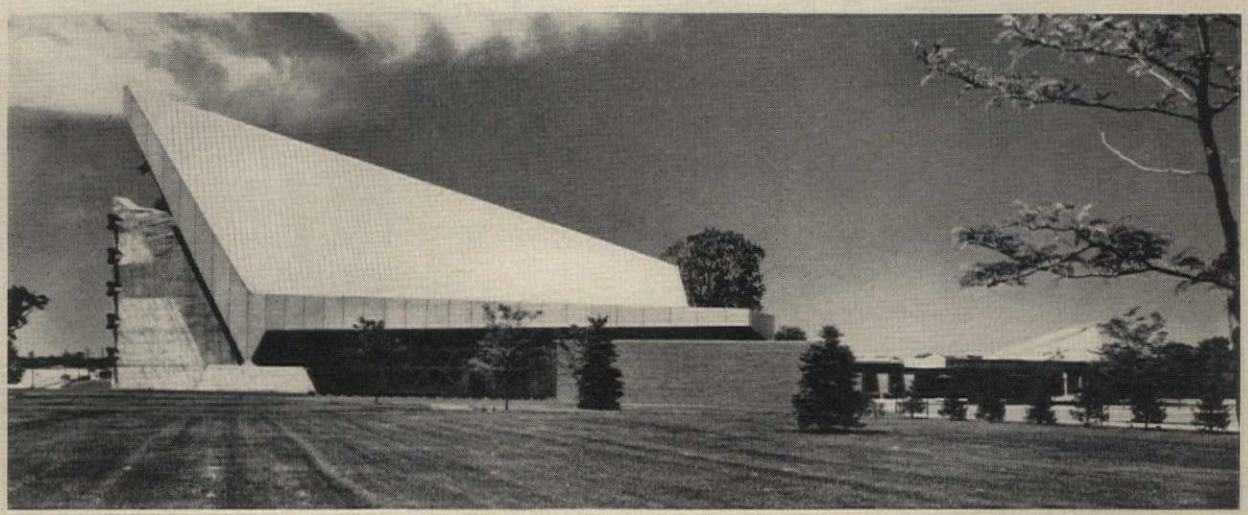
Office Notes

Offices Opened

Affiliated Architects have opened an office at 710 West High St., Lexington, Ky. Senior associates

continued on page 300

AN ARCHITECT LOOKS AT TERNE: Percival Goodman, one of the foremost living designers of ecclesiastical buildings, has this to say of the eighty thousand square feet of Terne metal roofing recently installed on Shaarey Zedek, the world's largest synagogue: "To be entirely frank, we had originally wanted to use a considerably more expensive material than Follansbee Terne. Now that the latter is in place, however, we are satisfied that no better choice could have been made. Terne not only afforded the widest possible latitude in form and color along with time-tested functional integrity, but it did all this at a figure well below preliminary estimates for a metal roof."



Congregation of Shaarey Zedek, Southfield (Detroit), Michigan
Architects & Engineers: Albert Kahn Associated Architects & Engineers, Inc., Detroit, Michigan
Associated Architect: Percival Goodman, F.A.I.A., New York, New York
Roofing Contractor: Firebaugh & Reynolds Roofing Company, Detroit, Michigan

Follansbee is the world's pioneer producer of seamless terne roofing

FOLLANSBEE STEEL CORPORATION
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Unanimous choice...

Precast Panels with Medusa White

Architects and engineers for these buildings chose precast concrete panels of Medusa, the original White Portland Cement to achieve units precast to their exact creative ideas in shape, texture and color.

This is possible because Medusa White is true white and non-staining—qualities essential for startling, ageless panel beauty. And again, its basic true whiteness with color pigments and colored aggregate accurately interprets any color theme. Medusa White is as strong as Medusa Gray Cement, meeting ASTM and Federal specifications.

May we send you more data?

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P.O. Box 5668 Cleveland 1, Ohio

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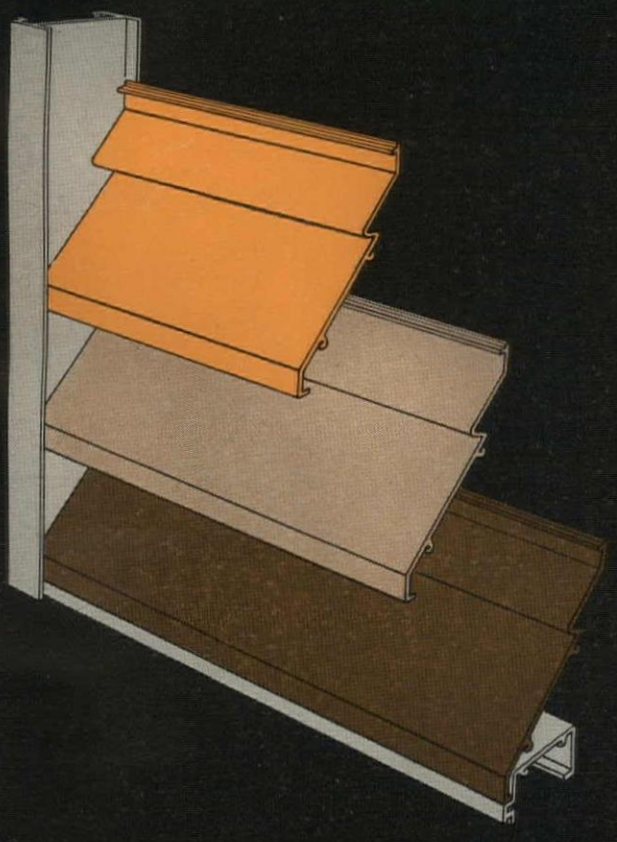
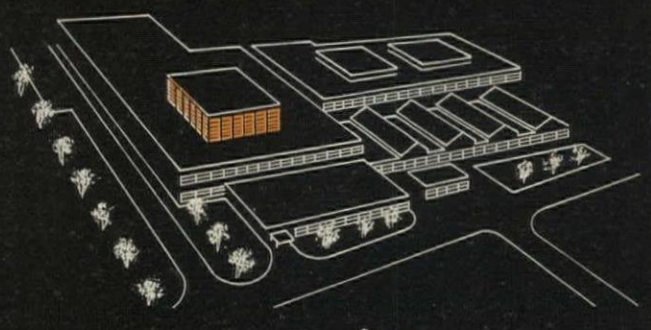
Finally–an architect's LOUVER





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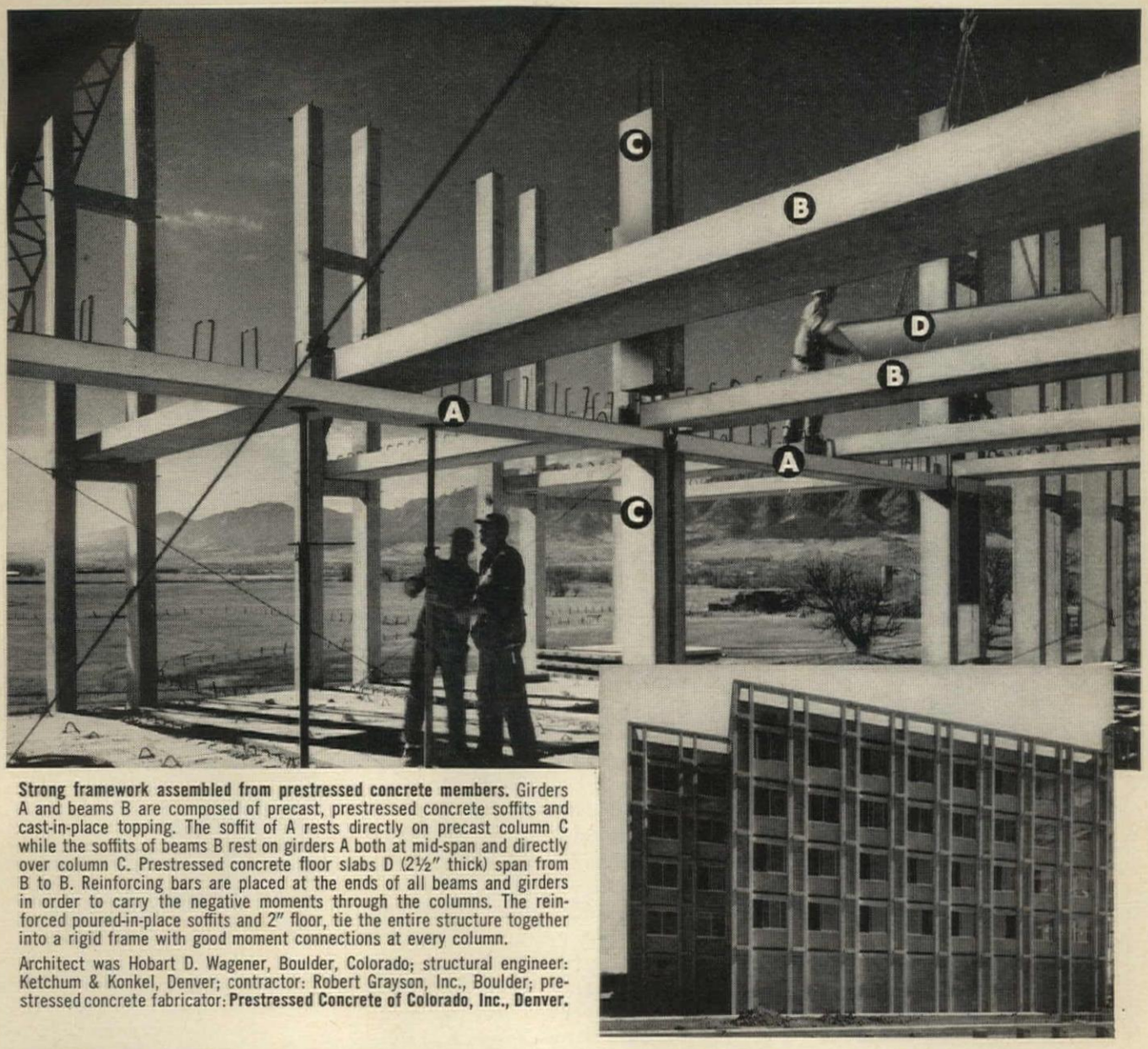


Strong framework assembled from prestressed concrete members. Girders A and beams B are composed of precast, prestressed concrete soffits and cast-in-place topping. The soffit of A rests directly on precast column C while the soffits of beams B rest on girders A both at mid-span and directly over column C. Prestressed concrete floor slabs D (2½" thick) span from B to B. Reinforcing bars are placed at the ends of all beams and girders in order to carry the negative moments through the columns. The reinforced poured-in-place soffits and 2" floor, tie the entire structure together into a rigid frame with good moment connections at every column.

Architect was Hobart D. Wagener, Boulder, Colorado; structural engineer: Ketchum & Konkel, Denver; contractor: Robert Grayson, Inc., Boulder; prestressed concrete fabricator: **Prestressed Concrete of Colorado, Inc., Denver.**

PRESTRESSED CONCRETE

permits unique framing for new building

CF&I-ROEBLING REPORTS: Technical Tower in Boulder, Colorado was erected in record time, thanks to a new framing technique that made extensive use of composite construction. All precast prestressed concrete members were erected and floors poured in less than three months during an extremely cold winter. Erection time for the 50,000 sq. ft. of precast members was only 6 weeks!

In addition to speeding erection time, prestressed concrete is fire resistant and is also a remarkable space-and-materials saver. The shallow structural depth—only 4½"—of prestressed concrete planking and poured-in-place floor permits increased floor-to-ceiling space and decreases the overall height of the building. An engineering-research atmosphere was created by the architects through the use of bold, vertical lines in the form of 62 foot precast ladder columns on the exterior of the building.

CF&I-Roebling, a leader in the field of prestressed concrete methods and uses, is qualified to answer your questions about this modern construction material. We can provide you with technical data or the name of a fabricator in your area, if you will tell us what type of structure you are planning. The Colorado Fuel and Iron Corporation, Denver 2, Colo.; Trenton 2, N. J. Sales offices in key cities.

9164

CF&I STEEL

CF&I-ROEBLING

PRESTRESSING WIRE AND STRAND

For more data, circle 173 on Inquiry Card

Office Notes

continued from page 294

are **Donald Q. Wallace, A.I.A., Charles P. Graves, A.I.A.,** and **John W. Hill, A.I.A. James E. Burris** and **John M. Stapleton** are associate members.

Cambridge Seven Associates, Inc., have established an architectural and design firm at 41 Church St., Cambridge 38, Mass. Principals are **Peter Chermayeff, Alden Christie, Paul Dietrich** and **Terry Rankine.**

Melvin Cohen and Associates is the designation of a consulting engineering firm which will specialize in lighting systems. The address is 5230 W. Jarvis Ave., Skokie, Ill.

Charles Colbert, architect and planner, has resumed full-time practice at 213 Bourbon St., New Orleans, La. 70116.

Joseph C. Laramore Jr., A.I.A., has opened an office for the general practice of architecture at 405 Third St., N.E., Charlottesville, Va.

Michael S. Molnar has established an architectural office at 341 Derrick Ave., Uniontown, Pa.

Sylvan R. Shemitz, lighting consultant and designer, has opened an office at 135 Orange Ave., West Haven, Conn.

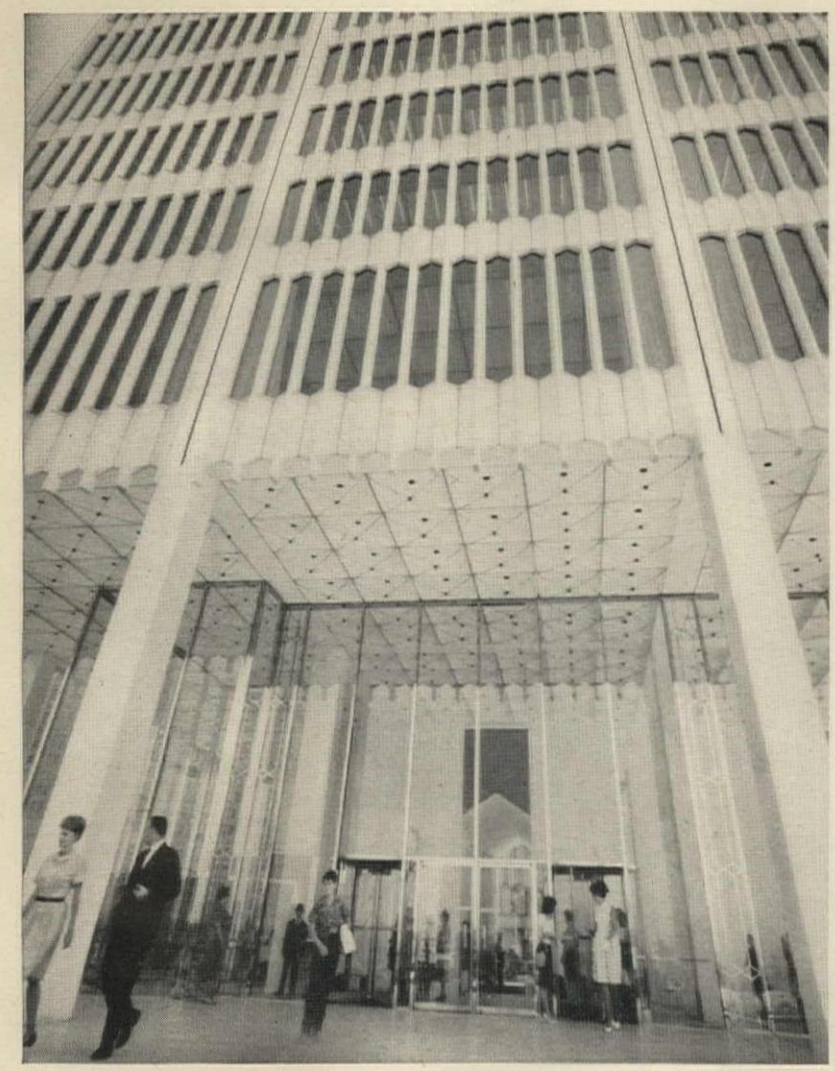
Yanow and Bauer, Consulting Engineers, is a partnership to provide service in mechanical and electrical engineering. Office is at 2155 Powell St., San Francisco 11, Calif. Partners are **Daniel Yanow** and **Herman Bauer.**

New Firms, Firm Changes

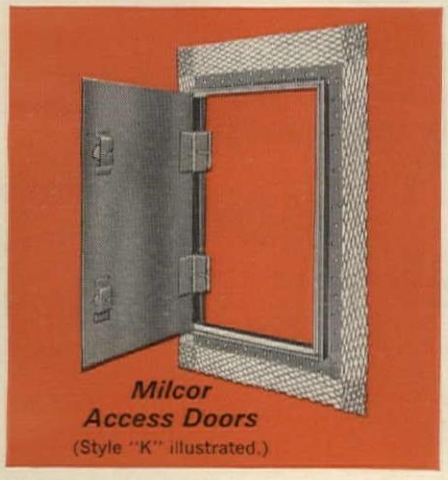
George C. Love has been named assistant chief engineer in the Houston office of **Boyay Engineers, Inc.,** 5009 Caroline St., Houston 4.

The architectural firm of **Brown, Chapman, Miller, Wright** has been dissolved. **Leon Brown** and **Thomas W. D. Wright** are practicing as **Brown and Wright, Architects. Grosvenor Chapman** and **Joseph Miller** have formed the firm **Chapman and Miller, Architects.** Both firms have offices at 1640 Wisconsin Ave., N.W., Washington 7, D.C.

Cochran, Stephenson & Wing, an architectural firm at 925 N. Charles St., Baltimore, Md. 21201, has named **Richard Donkervoet** as partner. The firm's name will be **Cochran, Stephenson & Donkervoet, Architects.**



In Detroit's 28-story Michigan Consolidated Gas Company shown here — and in buildings stretching across the Nation's skyline—Milcor Steel Access Doors provide service openings without encroaching upon design.



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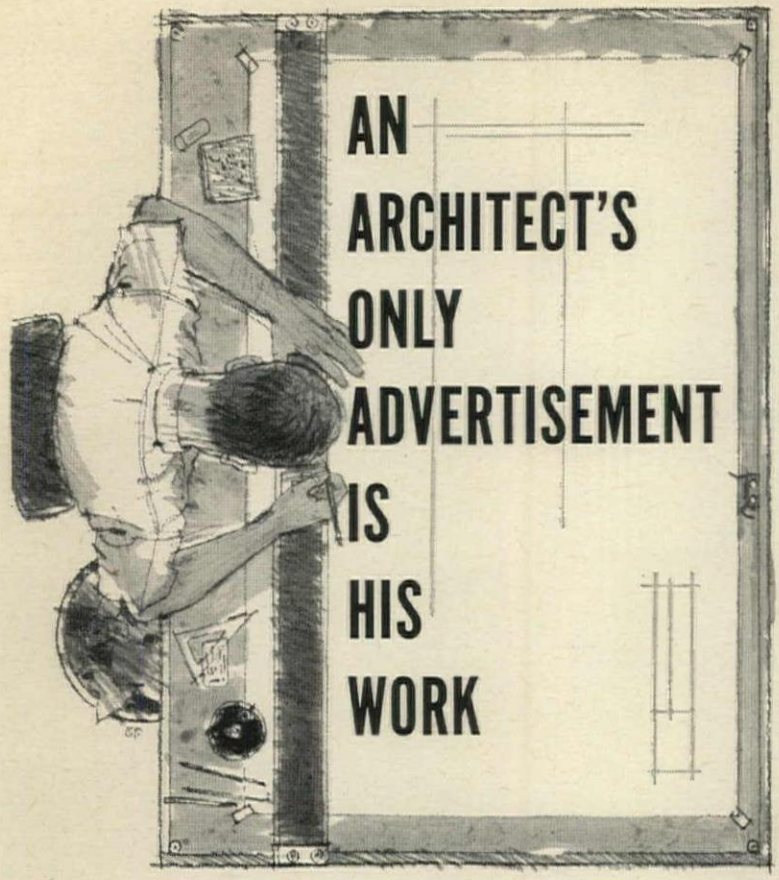

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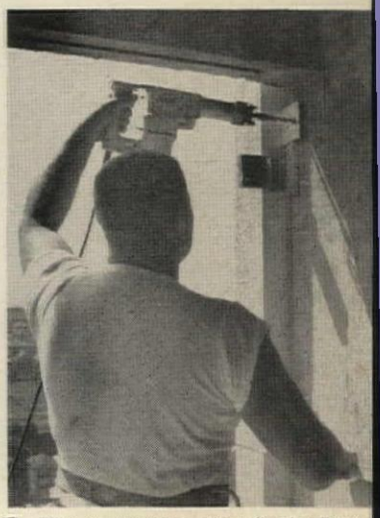
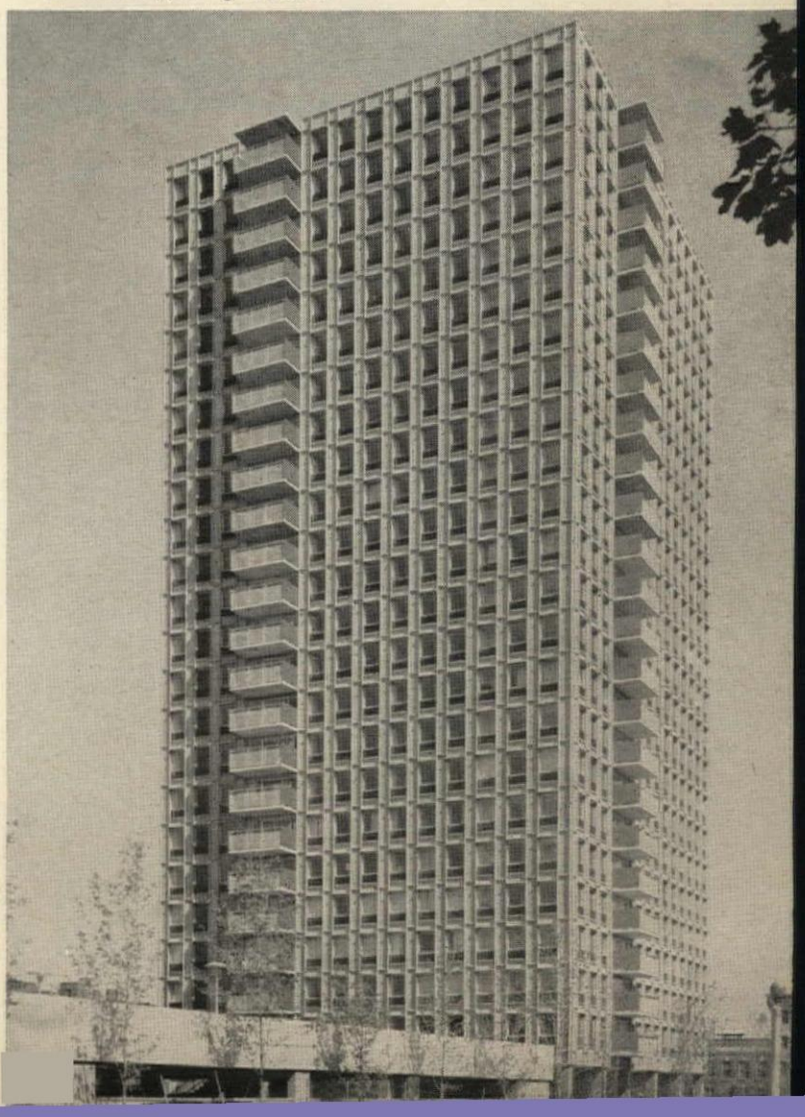


3 Bolt anchorage allow final adjustment of panel position.



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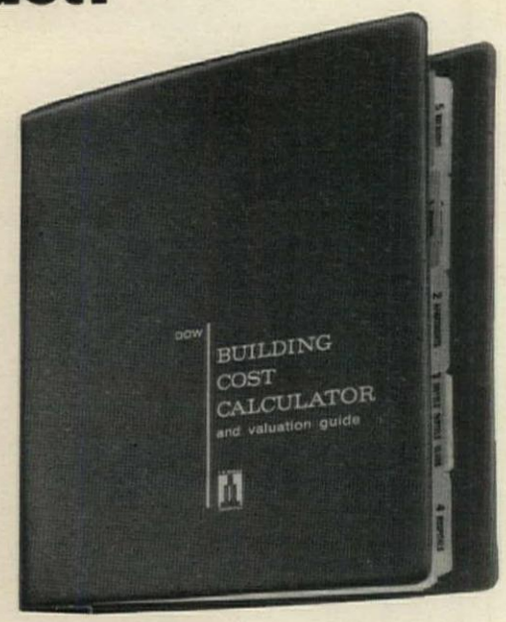

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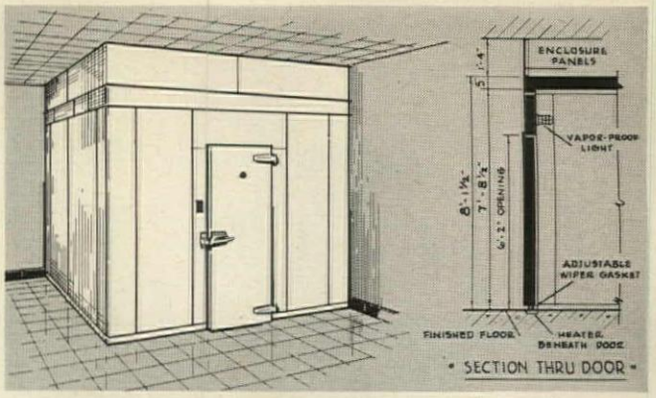

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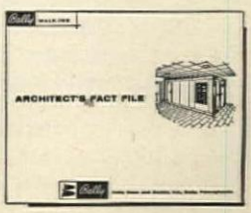

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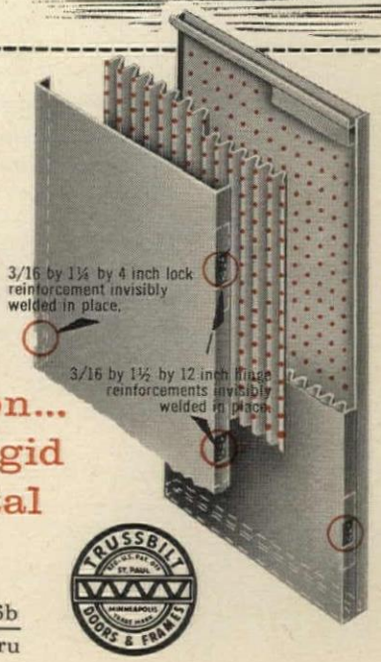

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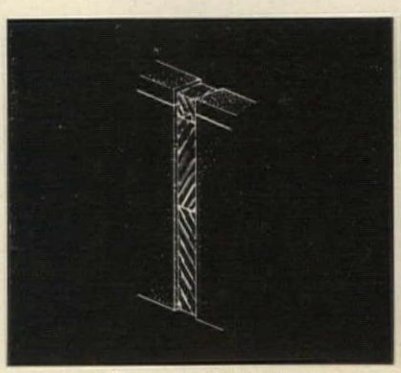

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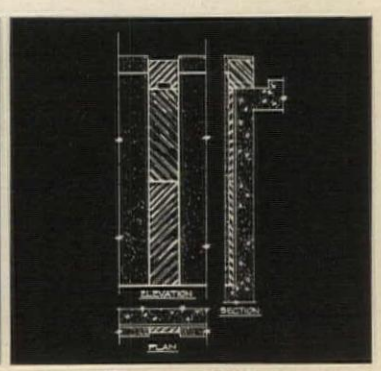

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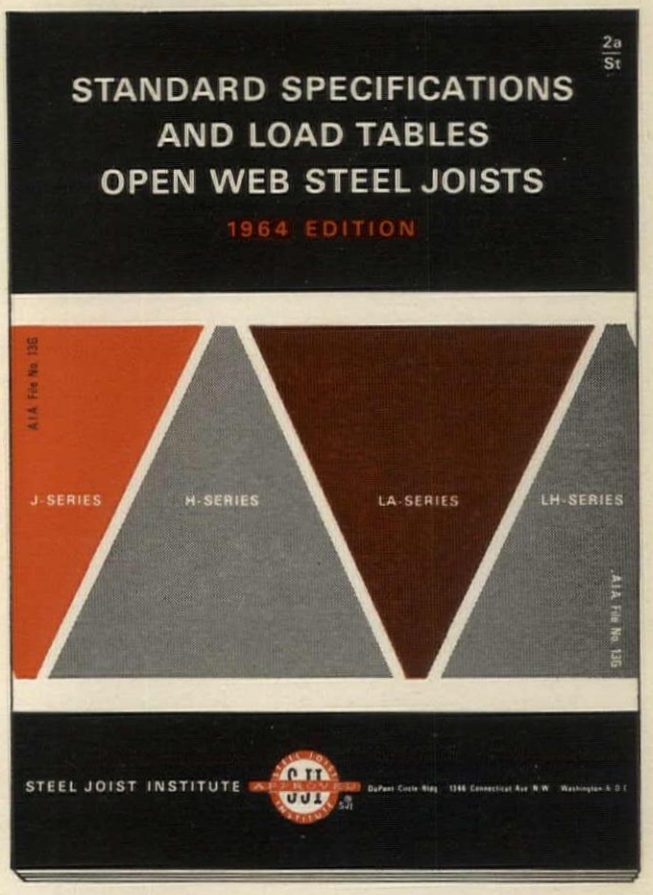

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