

# ARCHITECTURAL RECORD

The image shows a close-up, low-angle view of a ceiling. The ceiling is composed of large, rectangular panels with a light-colored wood grain. Several circular recessed lights are embedded in the ceiling, each with a glowing yellow center and a dark outer ring. A dark blue horizontal band runs across the top of the image, just below the title. The overall lighting is warm and focused on the ceiling details.

Y 1956

BUILDING TYPES STUDY  
BUILDINGS FOR  
THE AGING

**234**



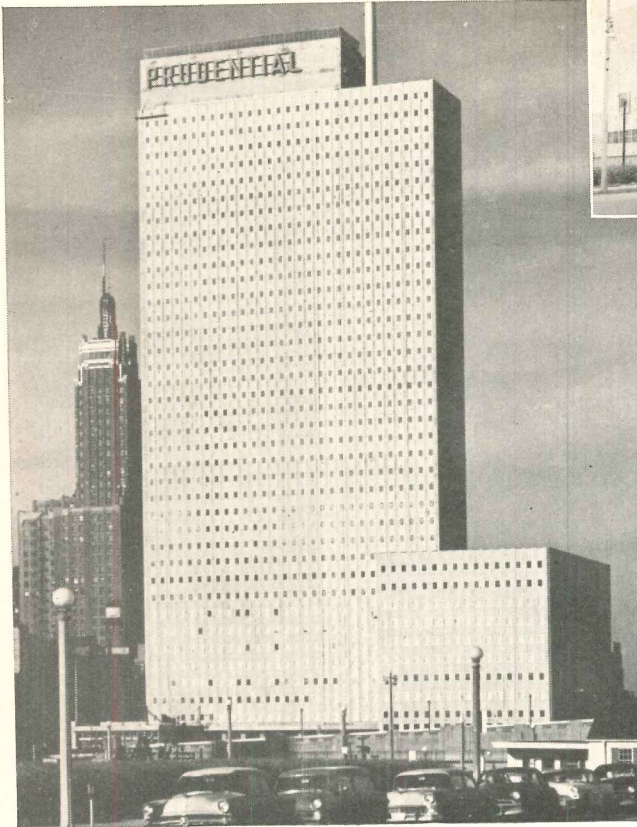
# PRUDENTIAL

INSURANCE COMPANY OF AMERICA



Left—Prudential Insurance Bldg., Jacksonville, Fla. Archt.—Kemp, Bunch & Jackson; Engr.—Reynolds, Smith & Hills; Contr.—Daniel Construction Co. Pozzolith Ready-Mixed Concrete supplied by Capitol Concrete Co.—all of Jacksonville.

Below—Prudential Office Building, Minneapolis, Minn. Archt. and Engr.—Magnusson, Tuttle & Setter; Contr.—C. F. Haglin & Sons Co. Pozzolith Ready-Mixed Concrete supplied by Ready-Mixed Concrete Co.—all of Minneapolis.



Left—Prudential Building, Chicago, Illinois. Archt.—Eng.—Naess & Murphy; Contr.—Geo. A. Fuller Co.; Pozzolith Ready-Mixed Concrete supplied by Material Service Corp.—all of Chicago.



Right—Prudential Insurance Co., Los Angeles, Calif. Archts.—Walter Wurde-man and Welton Becket; Engr.—Murray Erick Associates; Gen. Contr.—Wm. Simpson Co.—all of Los Angeles. Pozzolith Ready-Mixed Concrete supplied by Transit Mixed Concrete Co., Pasadena.



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# ARCHITECTURAL RECORD

May 1956 Vol. 119 No. 5

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COVER: General Motors Technical Center, Warren, Mich.; Eero Saarinen & Assoc., Architects. © Ezra Stoller photo

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# THE RECORD REPORTS

## P E R S P E C T I V E S

IN THE CAUSE OF ARCHITECTURE many architects daily endure many things, including contumely, but how mundane, how finite the accusations, how temporal the accuser! Wimberly and Cook of Honolulu report receiving a protest (from an engineer, by the way) on their contemporary design for a site near Honolulu's existing Civic Center which displayed none of these limitations. "If," the letter intoned, "you erect a Hawaiian Trust Building at King and Richards that is out of harmony with the Iolani Palace, the YWCA, the Federal Building and the Armed Services YMCA, you will be haunted by 8000 ghosts for 8000 years."

**A MATTER OF FACT:** Architect Julian Clarence Levi was telling last month about the time Auguste Perret was taken along on an Architectural League outing that started with a picnic lunch on the lawn of Philip Johnson's famous glass house in New Canaan. Afterwards, somebody asked the French virtuoso of reinforced concrete if he would not like to see the house. "Thank you," he replied, "I have seen it."

**FISHBOWLS AND BATHTUBS:** Fair warning to those who may be tempted to wonder aloud how employes will like working in the six-story "bathtub" below the plaza of Chase-Manhattan's great new project for lower Manhattan (see page 10) — decriers of the "fishbowl" as a place to work did not come very close to guessing how employes would react to Manufacturer's Trust's glass bank uptown. According to president Horace C. Flanigan, the main personnel problem created by the new bank is that of screening four times as many applications to work there as there are jobs. (The craftiest approach to employes buttonholed at random produces no different impression.) As for how the Skidmore, Owings & Merrill design (which by now has won almost as many awards as Lever House) works as a building

for business, Mr. Flanigan deposes and says that in the first year in the new building (diagonally across the street from the old) twice as many new accounts were opened as ever were opened in *any* Manufacturer's Trust branch in a single year. It ought to be added that public interest in the building is not only welcomed but skillfully encouraged: anybody interested can tour the building any day in the week, and the groups are accompanied by carefully trained guides who really know their subject. Final statistic: more than 5000 visitors took the guided tours during that first year.

**ANNUAL REPORT** (somewhat belated): Architecture gets no more shrift from the 1956 edition of *The World Almanac* than it did last year (AR, Feb. 1955). In fact, it's still not even listed in the index ("Law" is listed with two subheadings and "Medicine" with 23). The heading "Architects" leads, as last year, to "Associations" (the architectural ones are still Alpha Rho Chi, Scarab, the American Institute of Architects, the New York Society of Architects and the Architectural League of New York); "Awards" (this time noting the Architectural League of New York medals as well as the A.I.A. Gold Medal, craftsmanship Medal and Fine Arts Medal — and listing the winners of the 1955 awards); and "Noted" — i.e., the selfsame list of 25 American architects (none living). Being headed simply "American Architects," it might lead the all-too-unsuspecting reader to suppose the genus to be extinct, although it is true that the Almanac's "Noted Personalities" section appears wedded to necrology in all categories save two, "Operas by American Composers" (which admits both the quick and the dead), and "Actors, Actresses, Musicians and Singers," which appears to be entirely for the quick. Alas poor architects!

**AS FOR THE FUTURE**, among 5078 of

America's brightest youngsters — semi-finalists in the nationwide search for recipients of some \$3 million in scholarships administered by the National Merit Scholarship Corporation — 40 boys and eight girls indicated they will aim for careers in architecture. This approximate one per cent of the total compares with 45 per cent who hope to become engineers or scientists. Other preferences: teaching — 36 per cent of the girls; medicine and other health fields — 10 per cent of both boys and girls; business — 8 per cent of both boys and girls; law — 8 per cent of the boys, 5 per cent of the girls; arts and letters — 12 per cent of the girls, 4 per cent of the boys; religion and social service — 3 per cent of the boys and 4 per cent of the girls.

**FAREWELL TO A SYMBOL:** Announcement that the American Battle Monuments Commission had approved a Washington, D. C., site for a memorial to General Pershing led that city's *Evening Star* to note, perhaps wistfully, that "it has been pointed out that the World War I commander was probably the last military leader who could appropriately be portrayed in a monument on horseback." And in the same story to quote the Commission secretary (and soon-to-be A.I.A. honorary member), Brig.-Gen. Thomas North, as saying "that it is felt the day of the man on horseback memorial has passed." One possibility under discussion for the Pershing memorial General North said, would combine a figure of Pershing (a cavalry officer unhorsed!) with a simple memorial containing maps in some durable medium relating the accomplishments of Pershing's troops (a technique which is being used in the World War II memorials developed under the aegis of the Commission). "Many still recall," said the *Star's* account, "the postwar parade when General Pershing, mounted on a white horse, led the returning First Division down Pennsylvania Avenue." What, no jeep?



## THE RECORD REPORTS

### BUILDINGS IN THE NEWS

#### SPACE FOR PEOPLE: SUPERBLOCK SCHEME FOR OFFICE PROJECT CREATES A PUBLIC PLAZA

A \$15,000 plastic and aluminum scale model of the projected new head office building of the Chase Manhattan Bank and its Manhattan environs was on display last month in the main banking room at 40 Wall Street; and the main features of the scheme announced earlier (AR, February 1956, page 10) had been made public.

The open plaza to occupy some 70 per cent of the two and a half-acre site — or 98,000 sq ft, an area a third again as large, for instance, as New York's Gramercy Park — in the heart of the world-famous congestion of the financial district is, of course, the most stunning feature of the Skidmore, Owings and Merrill design. But it is not unremarkable, either, to hear that the bank will conduct most of its routine business with the public underground, in five floors *below* the plaza, or that the building to be erected on the northern portion of the site will rise 810 ft — 60 stories — without setbacks, providing on each floor from plaza to roof a uniform open space of more than 30,000 sq ft. Also to be noted is the fact that treatment of the two-block site (bounded by Liberty, Nassau, Pine and William streets) as a "superblock" could not have been considered without the cooperation of sympathetic city officials, requiring as it

does the closing to traffic of one block of Cedar Street.

Chase Manhattan president J. Stewart Baker stressed that the plan "represents a highly advantageous use of the bank's property from an economic viewpoint. The conventional approach of a setback building on one of the blocks in the site would result, considering the bank's needs, in less efficient space, a more costly type of construction and little or no room for expansion. In short, the loss of economic space involved in demolition for the plaza is compensated for by the space gained in the design of the building made possible by the plaza."

The tower will be a rectangular shaft 281 by 107 ft, with metal-sheathed exterior columns carrying "a major portion" of the building's weight. Thus each floor will have an unbroken sweep of usable floor space the full length of the building from the outside walls to the solid central interior core which carries elevators and other services. Bank officials believe that no other office building in the world has such large areas (as 30,000 sq ft) available on its upper floors. Four service floors will house air conditioning and heating equipment.

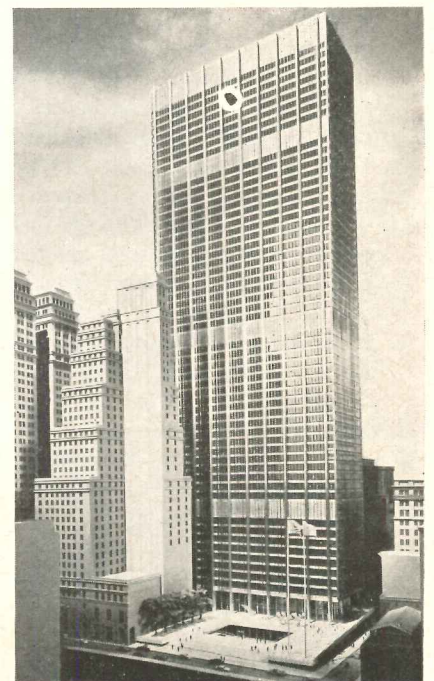
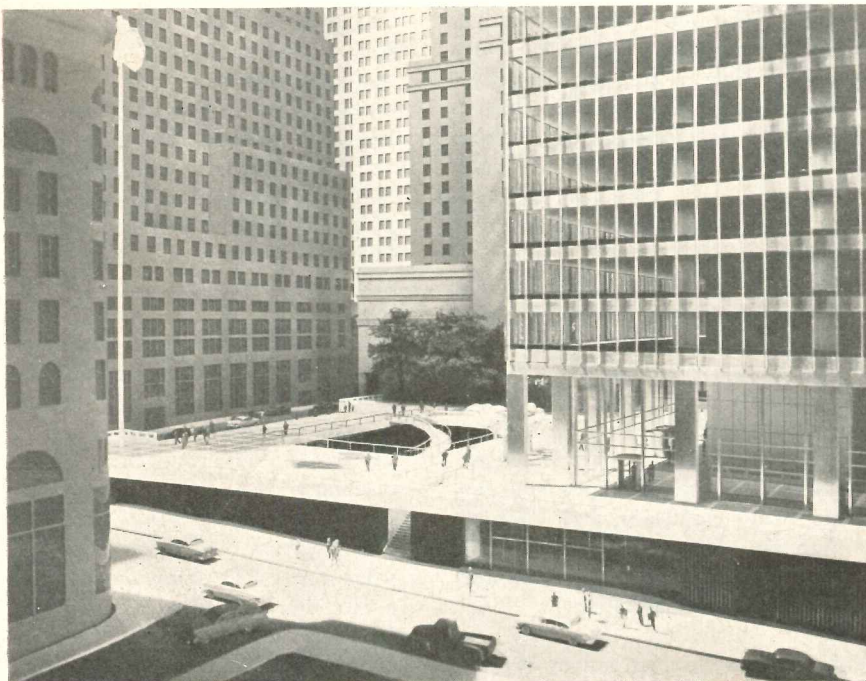
For the underground facilities, the entire site will be excavated to a depth of 80 ft and walled in to form what has

been described by Chase Manhattan executive vice president David Rockefeller as a huge "bathtub" — the bottom of the excavation will be 60 ft below the water table.

The main banking floor, with an area of 94,000 sq ft, will be directly *beneath* the plaza, which will take advantage of the eastward slope of the site to be at street level on the western (Nassau Street) side and well above it on the eastern (William Street) side. Thus there will be direct access to the banking floor from William Street (photo at left below). Customers will look out from this floor to a sunken pool in the center of the plaza.

Below the banking floor will be a floor devoted to a cafeteria and recreational facilities for the bank's 9000 employes, now scattered through nine buildings. The next two levels down will be occupied by two of the bank's largest departments, the check handling and stock transfer operations.

Cost of the project is estimated at \$75 million. Of a total of 1,700,000 sq ft of usable floor space to be provided, a million will be occupied by the bank and 700,000 rented. Completion of the building is scheduled in three years, of the plaza in five — most of the buildings now on the plaza site cannot be vacated till space in the new building is available.



Model by Theodore Conrad



## SPACE FOR PEOPLE: SUPERBLOCK PLAN EXTENDS CAMPUS OF MIDCITY UNIVERSITY

"A little vision of a future big city" is architect Wallace K. Harrison's description of the \$17 million new East Campus development for Columbia University planned by Harrison and Abramovitz for a superblock bounded by Morningside Drive, Amsterdam Avenue and 116th and 118th streets across Amsterdam Avenue from the University's present campus in uptown Manhattan.

The new project, for which a fund-raising campaign is under way, will cover all but the southwest quadrant of the superblock with a one-story complex of classrooms, kitchen, dining, recreation and parking space (overall view at left below), above which will rise three large new buildings — Faculty Office Building (1), School of Law (2), and Graduate Residence Hall (3). A landscaped deck or footbridge across Amsterdam Avenue — visible in center of (2) — will connect the new campus with the old at the same level as Low Memorial Library (visible at extreme left in large photo below). The bridge, to be 100 ft wide and 200 ft long, would span almost the entire distance from 116th street to 117th street.

To make possible the University's development of the new area, the City of New York has agreed to close the section of West 117th Street between Amsterdam Avenue and Morningside Drive and convey title of the land to Columbia. As part of the arrangement, Columbia will turn over to the city a strip of land approximately 20 ft wide on the southern side of West 118th Street between

Amsterdam Avenue and Morningside Drive to be used to widen that street.

Another preliminary to commencement of the new campus will be demolition of 25 buildings now on the site, including seven apartment buildings, four of them owned by the University. The president's house, the Faculty Club, one dormitory and Casa Italiana, the center of Italian studies, will remain.

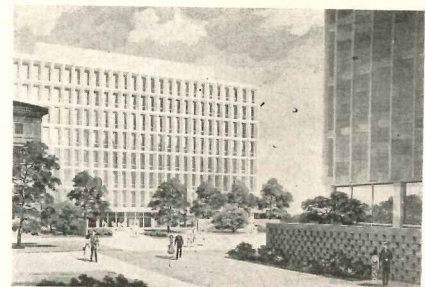
As for the new buildings, the School of Law and Library will be a nine-story structure with library space for 600,000 volumes, as well as classrooms and offices — to go up on the southwest quadrant of the superblock; the Faculty Office Building will be a nine-story building, to accommodate many faculty members who now use as office space rooms elsewhere on the campus that can be converted to classrooms — to be put up in the northwest quadrant of the superblock, with its own offstreet parking area for students and faculty; the Graduate Residence Hall, a 15-story, 742-room dormitory to house students of the Schools of Business and Engineering as well as those of the new School of Law Building — to be built in the northeast quadrant of the superblock.

At a press conference announcing the project, Columbia's president, Dr. Grayson Kirk, noted that "the ingenious architectural development of the superblock will appreciably enlarge the total usable land areas of the Morningside campus." Expressing appreciation for the cooperation of city officials which is making the superblock development pos-

sible, Dr. Kirk added: "It is also our hope and belief that this superblock, with its three striking and well-spaced buildings, will be a unique adornment to the city as a whole."

New York City Construction Coordinator Robert Moses, also present when the plans were announced, called the project "another one of those important and complex neighborhood improvements," developed to the planning stage "without friction" and another example of "New York growing, changing, being rebuilt."

Mr. Harrison, making the "little vision of a future city" comment, said the proposal to build the new campus above the street level is an example of how cities themselves might solve their growing demands for space, and felt city officials should be commended for their "courage" in approving the plans.



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(Continued on page 12)

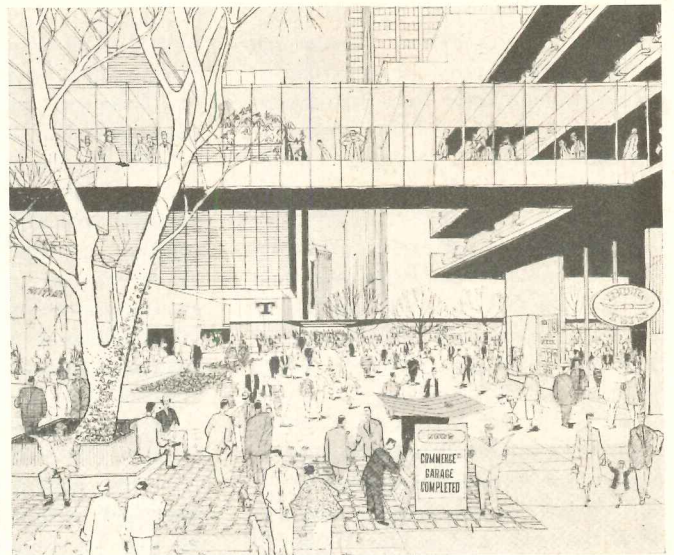
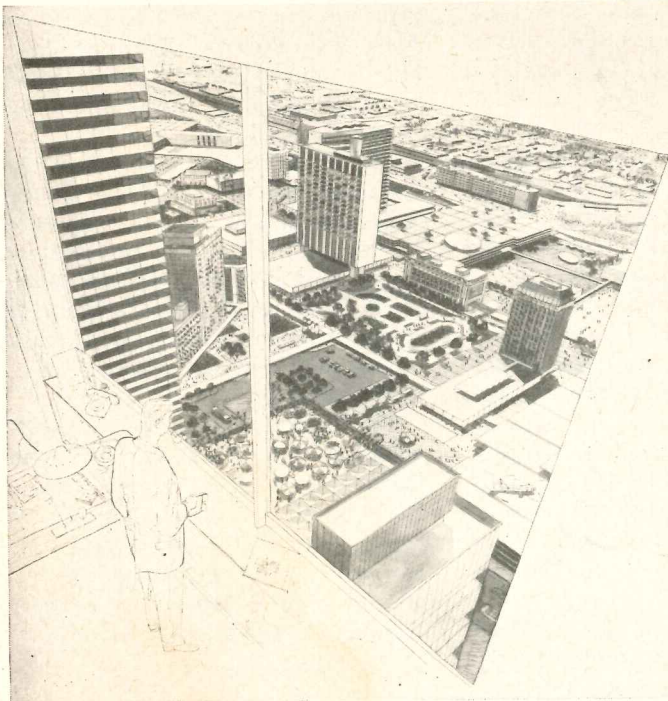


## THE RECORD REPORTS

### BUILDINGS IN THE NEWS

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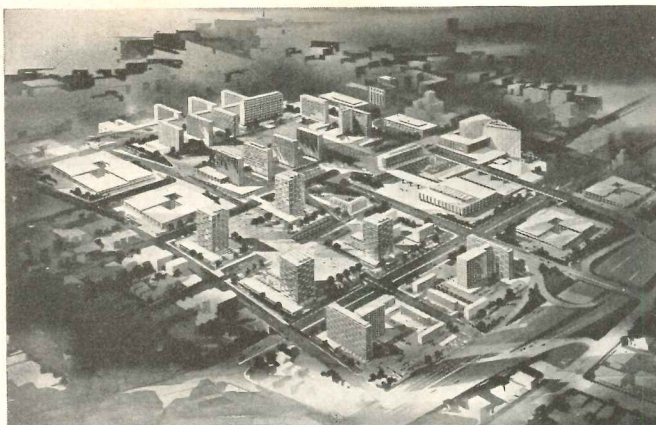
#### SPACE FOR PEOPLE: A CITY REPLANNED, AN AREA REDEVELOPED



**FORT WORTH TOMORROW:** A sweeping but minutely studied proposal for redevelopment of Fort Worth developed by architect Victor Gruen for the Greater Fort Worth Planning Committee would, in effect, turn the whole downtown area over to the pedestrian. Based on exhaustive research initially sparked by concern of Texas Electric Company for the future of

its Fort Worth investment, the chief recommendations of the plan are for: (1) a central business district of landscaped plazas and walls restricted almost entirely to pedestrians, though it would have provisions for ambulances and firetrucks and battery-powered shuttle cars; (2) underground freight delivery facilities in the business district; (3) a belt-line highway

to receive traffic from the city's freeways, and shunt it into "strategically placed" garages and air, bus and rail terminals; and (4) six multistory garages having "deep penetration" into the business district to keep walking distances to a minimum. The proposal, which has not yet been adopted by the city, envisages completion by 1970



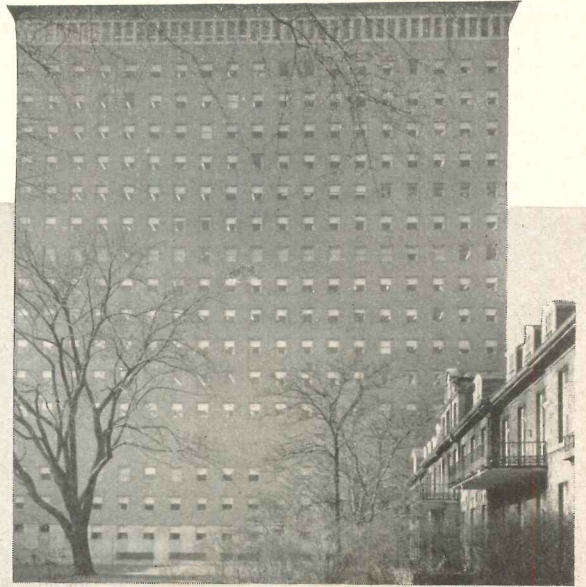
**BUNKER HILL, LOS ANGELES:** Another proposal favoring the pedestrian has been put forth by planners Pereira & Luckman, in association with Welton Beckel & Associates and the Donald R. Warren Company. Their plan for the redevelopment of the Bunker Hill Area in Los Angeles calls for the division of the hill

into three sections — one for housing, one for business and one for a cultural center, to contain a civic auditorium, a trade exposition building and a music hall. Each is to be built around a plaza and connected to the others by street passes for pedestrians. A system of depressed streets would also be covered with foot bridges

— at the top of the hill about 80 per cent of the street area would be covered. At an estimated total cost of \$150 million, the city will clear the land and private developers will build in compliance with the master plan. Renderings above show the overall plan (at left), and the civic trade plaza (at right)

(More news on page 16)





HENRY FORD CLINIC, DETROIT, MICHIGAN  
Voorhees, Walker, Smith and Smith, Architects

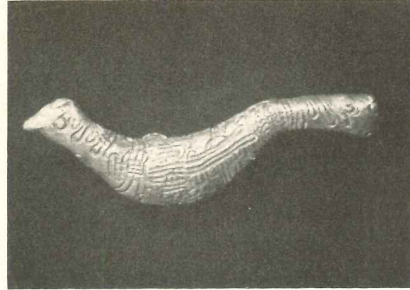
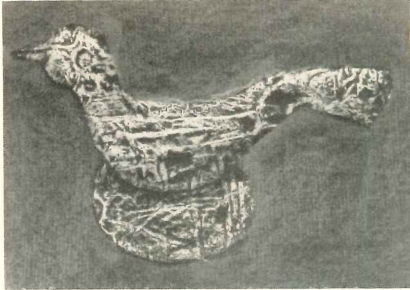
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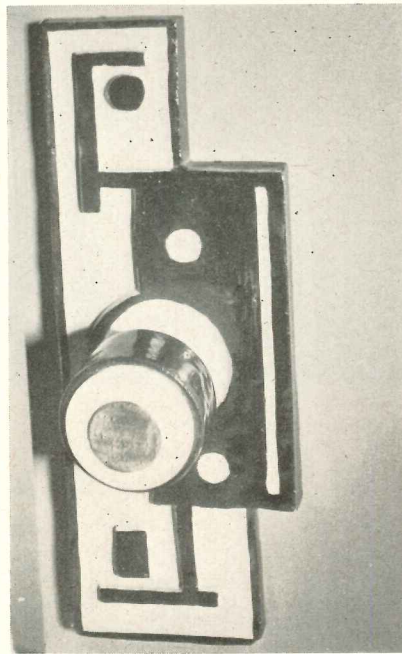
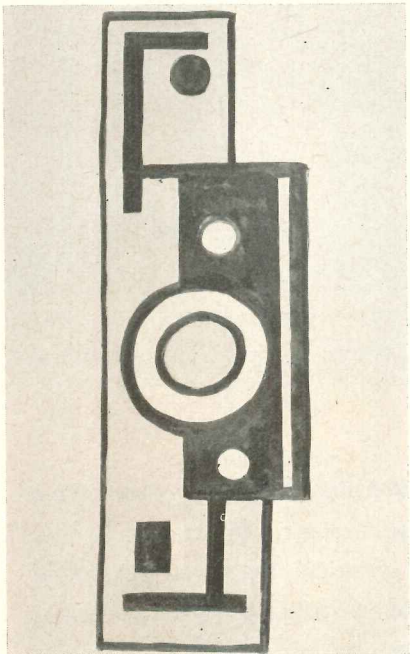
# THE RECORD REPORTS

(Continued from page 12)

## ART AND HARDWARE: A PROGRAM TO FUSE THE TWO



Mirko's drawing (left) for the bird figure executed in silverized antique bronze (right)



Fernand Leger's drawing (left) for the ceramic knob and escutcheon shown at right

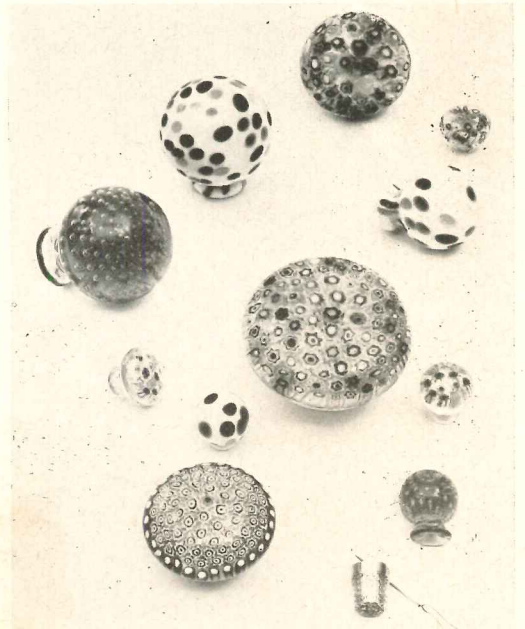
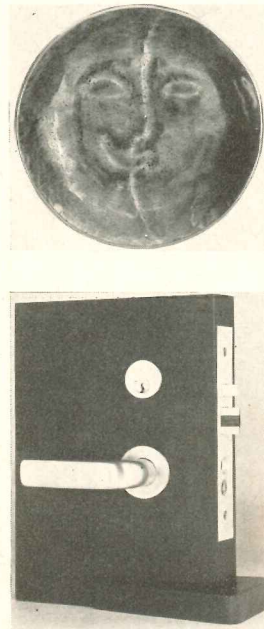
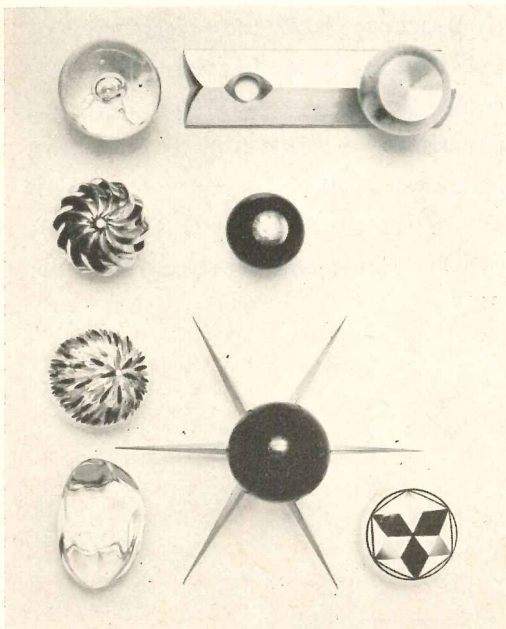
Remembering the doorknob, "forgotten Cinderella of decoration," Yale & Towne Manufacturing Company, makers of, among other things, doorknobs, has lately set up a new styling department, under the direction of Van Day Truex, "to overcome the conventionality of machine style." The styling department, in addition to contributing some new designs of its own, commissioned artists both here and abroad, as well as Corning Glass and Venini of Venice, to cooperate in developing a fresh approach to the problem. What they achieved ranged from the fantastical creations of the Italians Mirko, Andrea Spadini (see Moon, above) and Paolo De Poli to the simple handle by architect Philip Johnson of the U. S.

Besides the artists whose work is shown on this page, designs were also commissioned from Jacques Lipschitz, Isamu Noguchi, Abraham Lassaw and Theodore Roszak.

Pleased with the results of this effort, Yale & Towne are now thinking of the possibility of carrying out a similar program with architect participants, and perhaps following that one with a sculptor's program.

The designs will be on exhibit in New York from May 1 to 5 at the Wildenstein Gallery, may travel later.

Left: designs from Yale & Towne's styling department in marble, brass, crystal and ceramic; center, top: blue enameled door pull by Paolo De Poli; center, bottom: stainless steel lever handle by Philip Johnson; right: colored glass knobs by Venini of Venice





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CALIFORNIA: THE EMERGENCE OF A TRADITION

"The Californians love their country without affectation and without effort; they possess a greater potency of successful achievements in the arts than do the inhabitants of any other single section of the Union; and, best of all, they have shown an unusual power of cooperating either formally or informally to accomplish some purpose which is recognized to be good. They show an active and adaptable intelligence, that is, without being arbitrary and perverse in its exercise, and they may well reach some common sensible understanding about the sort of country house best adapted to their countryside." So said Herbert Croly, one of the RECORD's contributing editors, in December 1913.

The historical pattern of Californian architecture has shown an alternately

shifting preference for the Mission-Spanish tradition and for the more indigenous California bungalow "style," a contest in which the bungalow has generally prevailed.

Montgomery Schuyler, who visited Los Angeles in 1908, was, like most visitors, impressed by the Mission architecture, and wrote in December of that year, "The chimes of San Gabriel [see cut above] are celebrated in story, and for all I know in song. And the bell gable deserves to be celebrated architecturally. Like the rest of the building to which it is attached it is the most straightforward fulfilment imaginable of the actual requirements of the case. Such a fulfilment may be ugly, but it cannot be vulgar."

It was not the Missions, however,

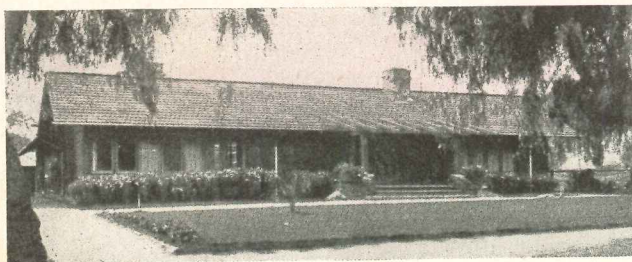
which most charmed Schuyler — he liked them more for their "lesson of quietness and moderation" than for the "technical 'style' they offer for direct imitation." "[Los Angeles'] chief charm," Schuyler felt, "is that of nature. If art will only get out of the way, that is all that one can fairly ask of her on this enchanted shore. But, 'where every prospect pleases' it is also pleasant to find that 'man' is less 'vile' than could fairly be expected of him. And that you really do find round about Los Angeles."

Two years before Schuyler got to Los Angeles, A. C. David, writing in October 1906 about some of the work of the Greene brothers, managed to discuss the regional trend already emerging as a tradition in California architecture

(Continued on page 324)

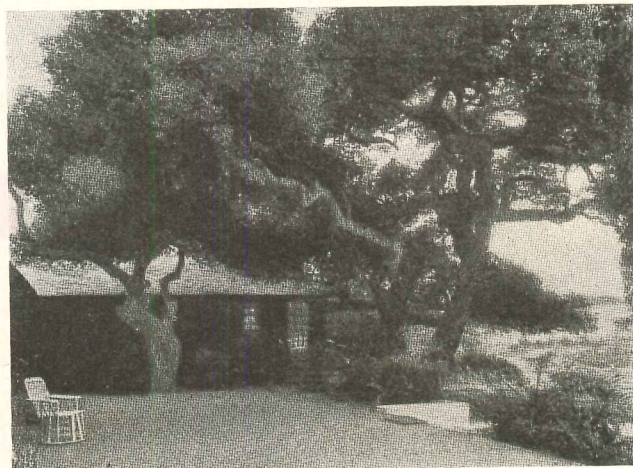
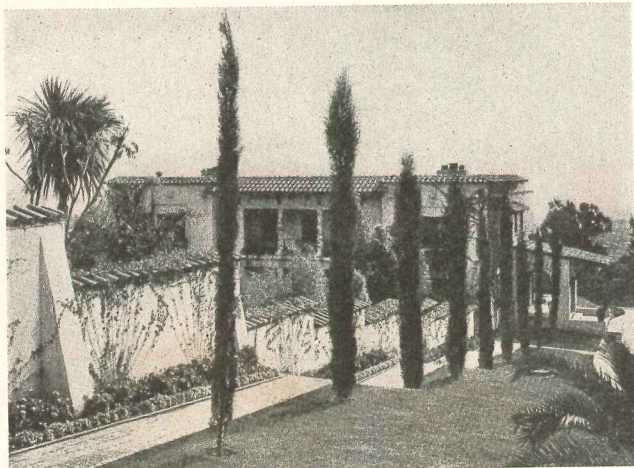


Architectural Record, December 1908



Architectural Record, October 1906  
Architectural Record, October 1914

In the line of development represented by the "California bungalow style" are the Hollister house in Hollywood (left) by pioneer architects Henry Mather Greene and Charles Sumner Greene, and the Frank Underhill house at Montecito (below, right), designed by the owner. The G. W. Wattles house, in Hollywood, was built, though rather freely, in the Spanish tradition; the architects were Myron Hunt and Elmer Grey



Architectural Record, October 1906



*The State of Construction*

The first quarter of 1956 wound up with new records in every department: the \$6.1 billion total of construction contracts awarded in the 37 eastern states as reported by F. W. Dodge Corporation set highs in all major categories — residential, nonresidential and heavy engineering. And the month of March alone produced the second highest total for any month in Dodge history. For details, page 396.

*Belluschi and Burri Given A.I.A. Journalism Awards*

For the third consecutive year, an article published in ARCHITECTURAL RECORD has won the year's major architectural journalism award: the First Award for "best article in a professional architectural magazine" in the Third Annual Architectural Journalism Competition sponsored by the American Institute of Architects. The article, which appeared in the December 1955 issue, was Pietro Belluschi's "The Meaning of Regionalism in Architecture." In the only other category of the competition open to architectural magazines, the First Award for the best photograph of an architectural subject published in a magazine goes to Magnum Inc.'s René Burri, of Zurich, Switzerland, for his photograph of Le Corbusier's chapel of Notre Dame du Haut, Ronchamp, France, published (page 167) in the October 1955 issue of

ARCHITECTURAL RECORD. There were no other awards to architectural magazines. Winners receive prizes of \$250 each as well as Certificates of Award. This was the second time the A.I.A. article award had gone to M.I.T.'s dean of architecture and planning for an article published in the RECORD — the first was for "The Spirit of the New Architecture" (October 1953). Of the six First Awards open to architectural magazines in the three years of the competition, RECORD publications have won five — in addition to those for the Belluschi articles and the Burri photograph, a First Award (last year) for Lewis Mumford's four-part article on Matthew Nowicki (June, July, August and September 1954) and a First Award (1954) for an Ezra Stoller photograph of Philip Johnson's Hodgson house (March 1953).

*More A.I.A. Honors*

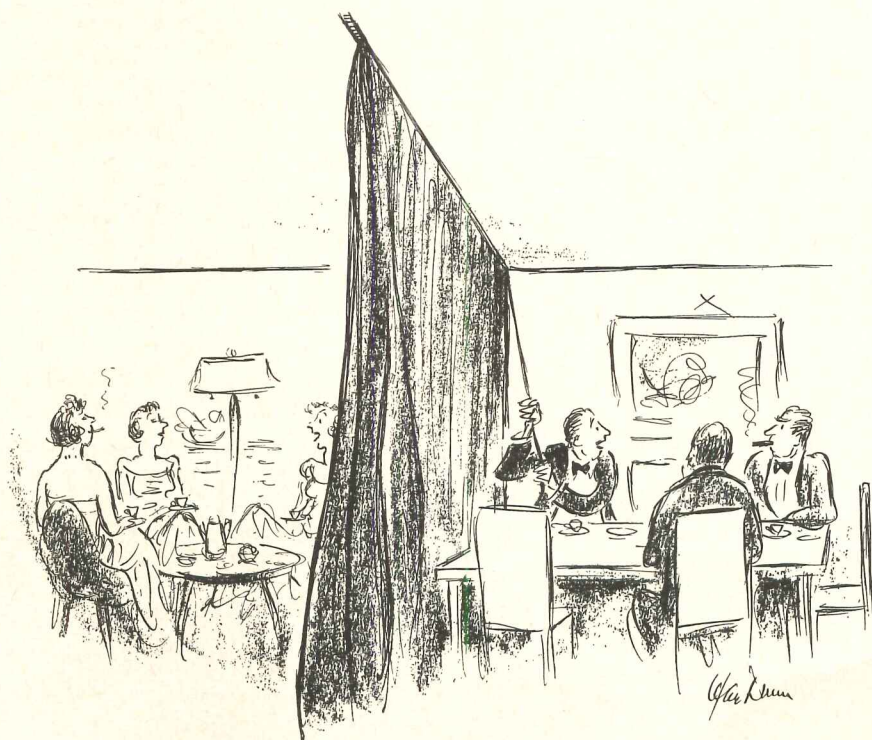
In addition to the Gold Medal, Fine Arts Medal and Craftsmanship Medal (AR, April 1956, page 21) and the Edward C. Kemper Award (March 1956, page 21), the honors to be awarded at this year's A.I.A. national convention include: *Honorary Membership* — Thomas S. Holden, vice chairman, F. W. Dodge Corporation, New York; John Frederick Lewis, president, Pennsylvania Academy of the Fine Arts, Philadelphia; Brig.-Gen. Thomas North, secretary, The

American Battle Monuments Commission, Washington, D. C.; and Leon Zach, president, American Society of Landscape Architects, Washington, D. C.; *Honorary Fellowship* — Jean Manoury, architect for the Chartres Cathedral, Chartres, France; Ernesto N. Rogers, architect and editor, Milan, Italy; and Gustavo Wallis, president, IX Pan American Congress, Caracas, Venezuela; *Citations of Honor* — Society of Architectural Historians and Nathan Harris, A.I.A., organizer and president, Far Eastern Society of Architects, Tokyo, Japan; "Award for Outstanding Service to Architecture by Non-Architectural Group, Society or Business" — *Fortune* magazine, "for its excellent articles on architecture and its relationship to business."

*— And the Convention*

"Architecture for the Good Life" is the theme, May 15-18 the dates, Hotel Biltmore, Los Angeles, the place — as nearly everybody must know by now — for the 88th annual convention of the American Institute of Architects. John Ely Burchard, dean of the School of Social Studies and Humanities at Massachusetts Institute of Technology, will deliver the keynote address; Clarence S. Stein of New York, architect and planner who will receive the 1956 A.I.A. Gold Medal, will make the principal address at the annual banquet following the presentation ceremony; and Mexican architect and planner Carlos Contreras will make the convention's closing address. Seminars on architecture for safety, integration of the arts with architecture and better design for houses will be major features of the program; also scheduled are round tables arranged by the A.I.A. national committees on Preservation of Historic Buildings, School Buildings, Architectural Specifications, Education and Office Practice. Seminar participants will include: (safety) Clinton Gamble, Fort Lauderdale, Fla., chairman of the A.I.A. Committee on Hurricane Resistance; John C. Thornton, Detroit, chairman of the A.I.A. Committee on Human Safety; A.I.A. Regional Director Austin W. Mather, Bridgeport, Conn.; Ulysses Floyd Rible and Cornelius M. Deasy, Los Angeles; (arts and architecture) architect John Knox Shear, New York, editor-in-chief of ARCHITECTURAL RECORD, Joseph L. Young, muralist, Garrett Eckbo, landscape architect, and Millard Sheets, painter, all of Los Angeles; John S. Detlie, Seattle; Dean Sidney Little of

(Continued on page 24)



— Drawn for the RECORD by Alan Dunn  
"Well, shall we join the ladies?"





Iowa Masonic Library, Museum, and Administration Building, Cedar Rapids, Iowa.  
 Architects: Hansen and Waggoner, A.I.A., Mason City, Iowa. General Contractor: O. F. Paulson Construction Co., Cedar Rapids, Iowa.

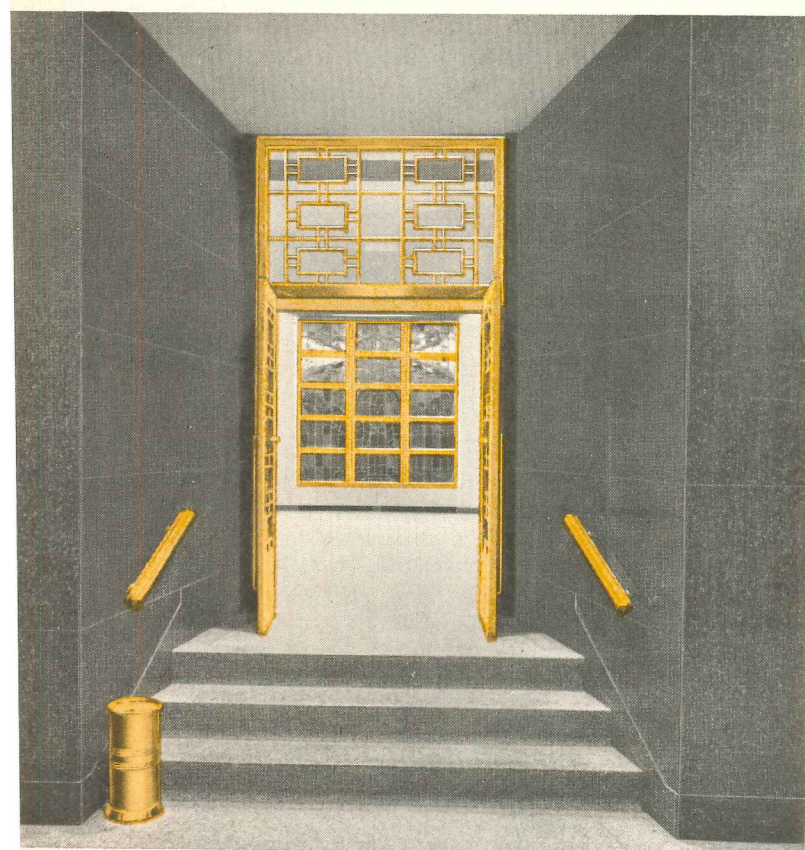
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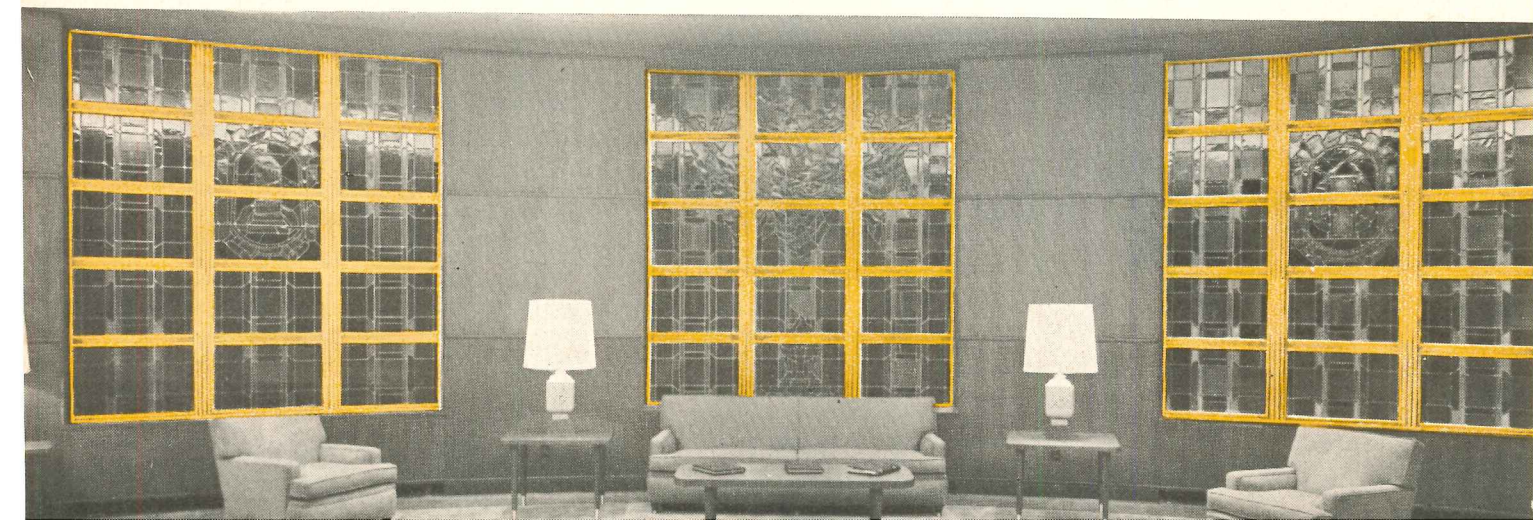
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▲ Entrance to "The Hall of Masonry." Beyond the all-bronze doors can be seen the bronze-framed windows at the back of the Hall.

▼ The "War Memorial Room" at the west end of the main floor.





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## THE RECORD REPORTS:

### MEETINGS AND MISCELLANY

(Continued from page 16)

#### LEAGUE, IN ITS 75TH YEAR, AWARDS ANNUAL GOLD MEDALS

The Architectural League of New York, this year celebrating its 75th anniversary, opened its birthday year with the 59th National Gold Medal Exhibition.

From a field of six accepted entries, in architecture, the League awarded a Gold Medal and two honorable men-

tions. One Gold Medal in mural decoration was given in a field of three, while a Gold Medal, a Silver Medal and two honorable mentions were awarded among the eight sculpture entries. The largest number of entries, 14, was in the design and craftsmanship category, in which a Silver Medal and three honorable mentions were presented.

The juries were composed of: for architecture — Walker O. Cain, (chairman), Gordon Bunshaft, Henry R. Shepley, Max Abramovitz and Ralph Walker; for murals — Lumen M. Winter (chairman), Allyn Cox, Helen Tread-

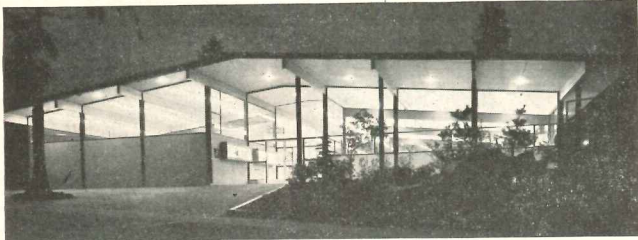
well, J. Scott Williams, Charles Baskerville and George Samerjan; for sculpture — Moissaye Marans (chairman), Edmond Amateis, Peter Dalton, Donald De Lue, Leo Friedlander and Vincent Glinsky; and for design and craftsmanship — Harold Bartos (chairman), Max Abramovitz, Harry Bertoia and Carl Otto.

Among other festivities which the League plans for its anniversary year, a dinner has already been scheduled for May 3, to be held in the Metropolitan Museum restaurant.

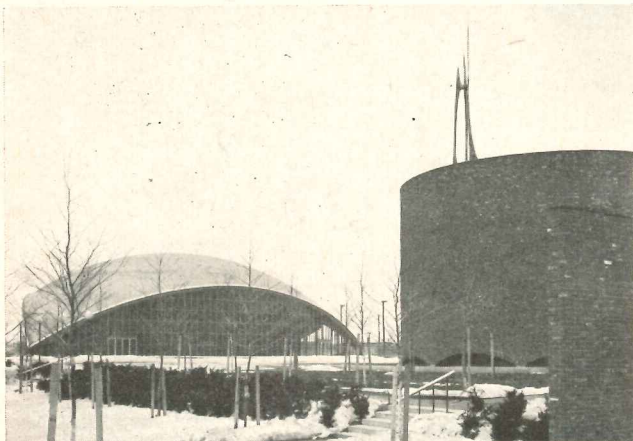
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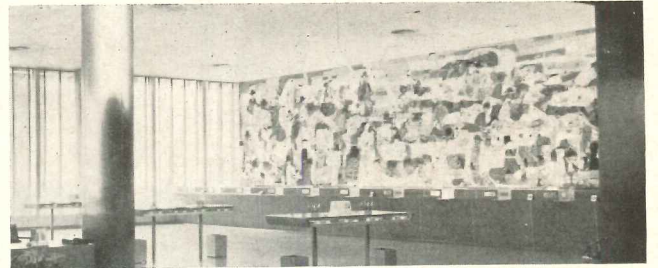
**GOLD MEDAL** in architecture: Olivetti showroom in San Francisco; Giorgio Cavolgeri, architect, and Leo Lionni, designer



**HONORABLE MENTION** in architecture: Northeast Branch Library in Seattle; Paul Thiry, architect



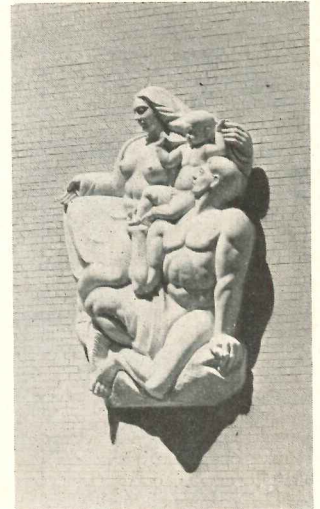
**HONORABLE MENTION** in architecture: auditorium and chapel, Massachusetts Institute of Technology; Eero Saarinen, architect, Anderson, Beckwith and Haible, associates



**GOLD MEDAL** for mural decoration: mural by Fred Conway, First National Bank, Tulsa; Carson & Lundin, architects



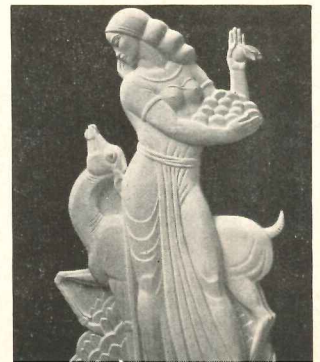
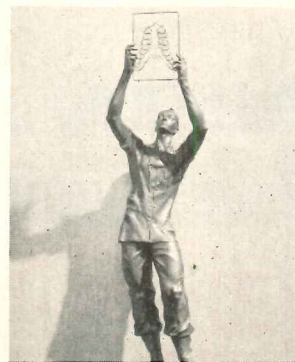
**GOLD MEDAL** in sculpture: bas relief by Marshall Fredericks for Beaumont Hospital, Royal Oak, Mich.; Ellerbe and Co., architects



**SILVER MEDAL** in sculpture: relief by Oronzio Mardarelli, State Insurance Fund Building, New York; Lorimer Rich, architect

**HONORABLE MENTION** in sculpture: Cornell War Memorial by Frank Eliscu; Coolidge, Shepley, Bulfinch & Abbott, architects

**HONORABLE MENTION** in sculpture: relief by Adolph Block for Garfield Restaurant, Brooklyn; Charles Shilowitz, architect





# savings by the use of lightweight aluminum walls!

**T**HE Detroit Edison Company selected light, strong aluminum sheet and extrusions for the outside walls of their new generating station at River Rouge, Michigan.

This unique, lightweight wall design allows an 8,000-ton reduction in total weight and reduces structural steel and foundation requirements—as compared to the 12" masonry curtain-type walls used in previous plants.

Another important reason aluminum was selected for this job is its high resistance to corrosion—especially necessary in the industrial atmosphere of the River Rouge site. Re-

sult: maintenance on the exterior walls is kept to a minimum.

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We will gladly share with you to the fullest our fabricating and engineering skills. Or for names of building products manufacturers who will be glad to work with you, contact the Kaiser Aluminum sales office listed in your telephone directory. Kaiser Aluminum and Chemical Sales, Inc., *General Sales Office*, Palmolive Bldg., Chicago 11, Ill.; *Executive Office*, Kaiser Bldg., Oakland 12, Calif.

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**THE RECORD REPORTS**  
**NEWS FROM CANADA**

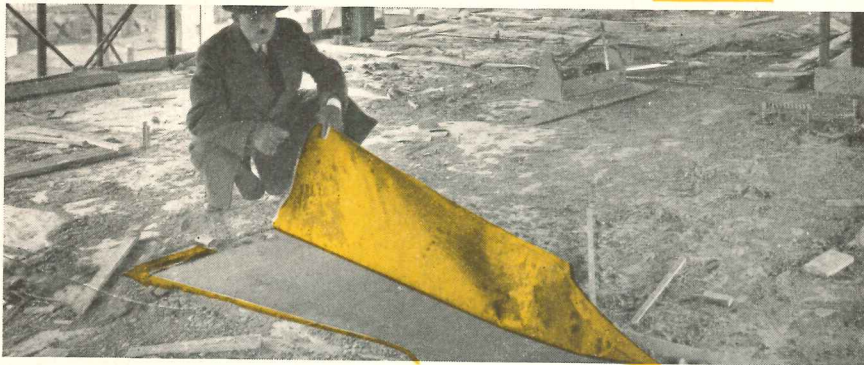
*(Continued from page 36)*

apprentices registered in the building trades "are too few even to replace those leaving the labor force, let alone meet the needs of larger construction programs ahead." The brief also complained of the lack of graduate and undergraduate courses for students planning to enter the industry: "University

courses in building construction, construction engineering and highway engineering are offered in other countries and it is believed that conditions warrant similar courses in Canada."

Commenting on the record of three serious steel shortages within the last ten years, the C.C.A. called for an increase in mill production "to overcome the shortages that have periodically retarded economic activity and to reduce our dependence on the U. S. for such a large proportion of our steel requirements."

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**B.C. ELECTRIC WILL HAVE NEW OFFICES IN VANCOUVER**

Scheduled for completion by February 1957, the new headquarters building for British Columbia Electric Company Ltd., Vancouver, will cost an estimated \$6.5 million.

The building, which will be 21-stories high, will have a concrete service core to handle elevators, air conditioning and an automatic mail conveyor. The exterior walls will be double-paned glass and enamelled steel.

Sharp & Thompson, Berwick, Pratt, of Vancouver, are the architects.



**ARCHITECTS IN ALBERTA NAME OFFICERS FOR 1956**

The Alberta Association of Architects has elected H. L. Bouey president of the organization for 1956. Other officers are W. M. Milne, first vice president; D. G. Forbes, second vice president; J. B. Bell, honorary secretary; G. R. Ascher, honorary treasurer; and K. C. Stanley, H. A. Henderson, H. L. Bond, T. A. Groves and J. McIntosh, councilors.

*(Continued on page 44)*



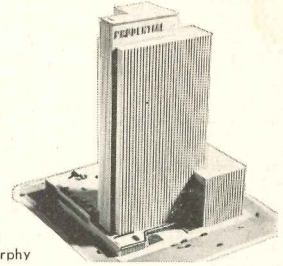
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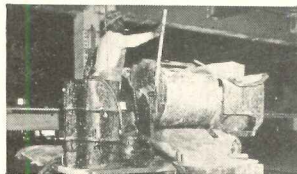
Wherever it goes Zonolite's high speed plaster "rig" is demonstrating that machine application is cutting plastering time more than half. And non-combustible Zonolite (applied to beams, trusses, walls, ceilings) is saving as much as 50% on insurance premiums. Zonolite machine plastering saves time, labor, money. Mail coupon and we will send you the name of the applicator nearest you already equipped with one of the remarkable plaster-placing machines for demonstration.



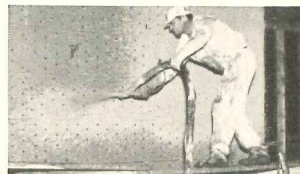
Prudential Bldg., Chicago  
Architects: Naess and Murphy

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homes are plastered and ready for sale in half the time, when Zonolite is machine applied. And Zonolite Vermiculite plaster finish puts your homes-for-sale in the luxury class...at 75% cost. No supply bottle-necks. Zonolite is always available from one of 40 Zonolite plants strategically located throughout America.



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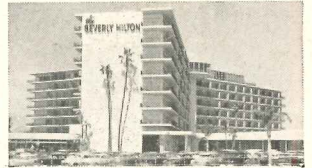
Zonolite means "best possible fire protection" and earns highest possible fire ratings. This machine-placement is enabling architects and builders to build greater performance into a structure faster and at lower cost. And Zonolite reduces deadweight—saves on steel.



Prudential Building. Zonolite Plaster machine-applied to beams for fireproofing.



Ford Motor Company Administration Building. 50,000 yds. of Zonolite Plaster machined on.  
Arch.: Skidmore, Owings & Merrill



Beverly Hilton Hotel, Beverly Hills. Zonolite Plaster Fireproofing. Zonolite Acoustical Plastic.  
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### ACOUSTICAL PLASTIC FIREPROOFING!

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Arch.: Marr & Holman

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### ACOUSTICAL PLASTIC SOUND-CONDITIONING

Wherever noise is a nuisance, Zonolite Acoustical has the coefficient required to "deaden" it—applies to any clean, firm surface, flat or irregular, by hand or machine. Right: Army Finance Center, Ft. Benjamin Harrison, Indiana.



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Right: First Security Bank Bldg., Salt Lake City.  
Arch.: Bank Bldg. Corp. of America, St. Louis



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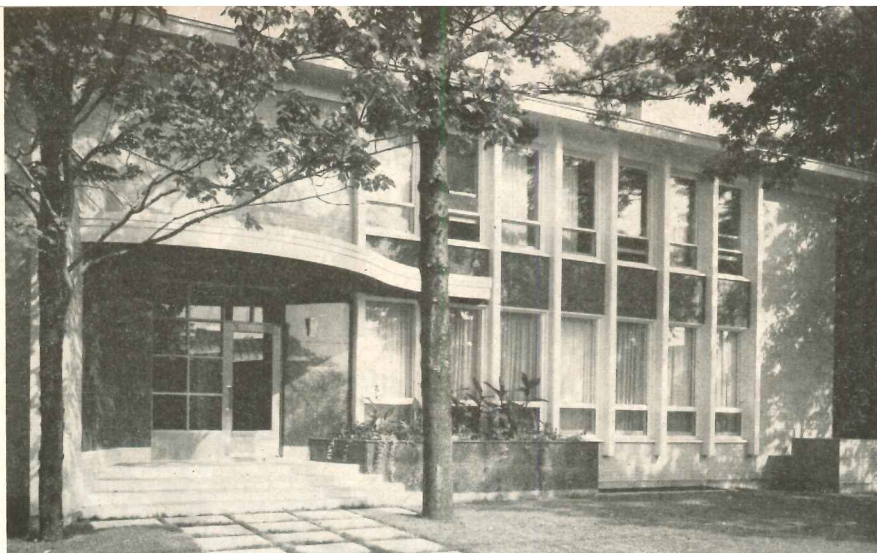


## THE RECORD REPORTS NEWS FROM CANADA

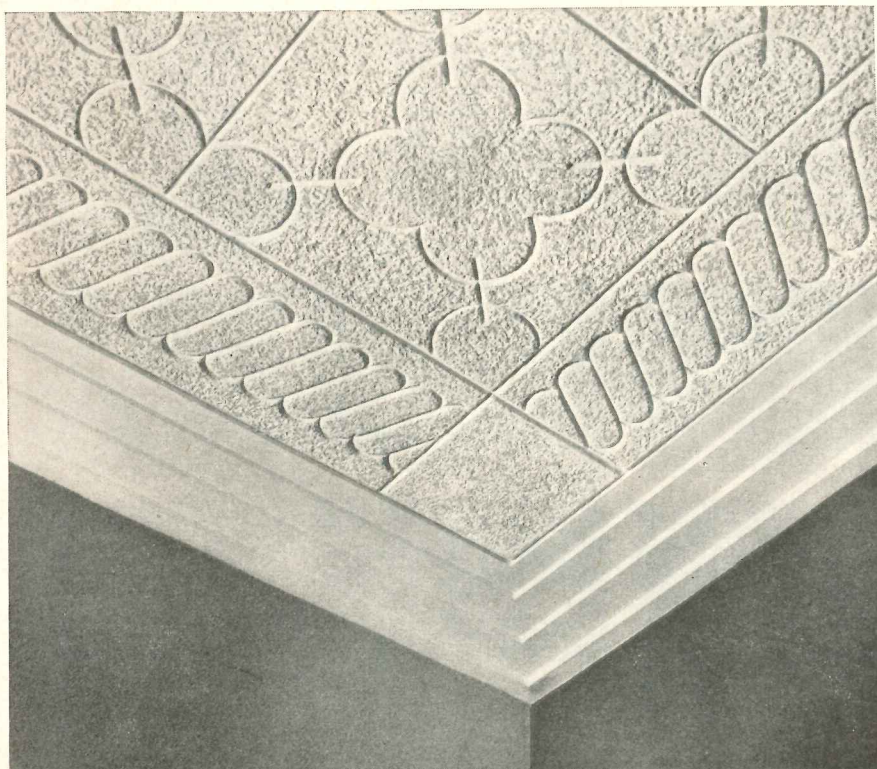
(Continued from page 40)

### TWENTY CMHC SCHOLARSHIPS TO BE AWARDED THIS YEAR

Twenty fellowships and bursaries to assist students studying community planning and housing will be awarded by Central Mortgage & Housing Corporation for the academic year 1956-57.



*The offices of architect Pierre Rinfret, Sillery, Que., were designed to defer to the residential section in which it is located*



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\*ACOUSTIC PLASTER offers you a chance to include Impressed Designs on ceilings or walls in your interior planning. Impressed Designs, first and most effectively used on KILNOISE Acoustic Plaster, can follow geometric, floral, emblematic or contemporary lines. You make the tracing, a skilled plasterer does the rest.

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The awards will include two senior fellowships for special studies or research in housing and residential development; 15 fellowships of \$1200 each for the study of community planning; and three bursaries of \$800 each for graduate students undertaking special studies in housing or urban development.

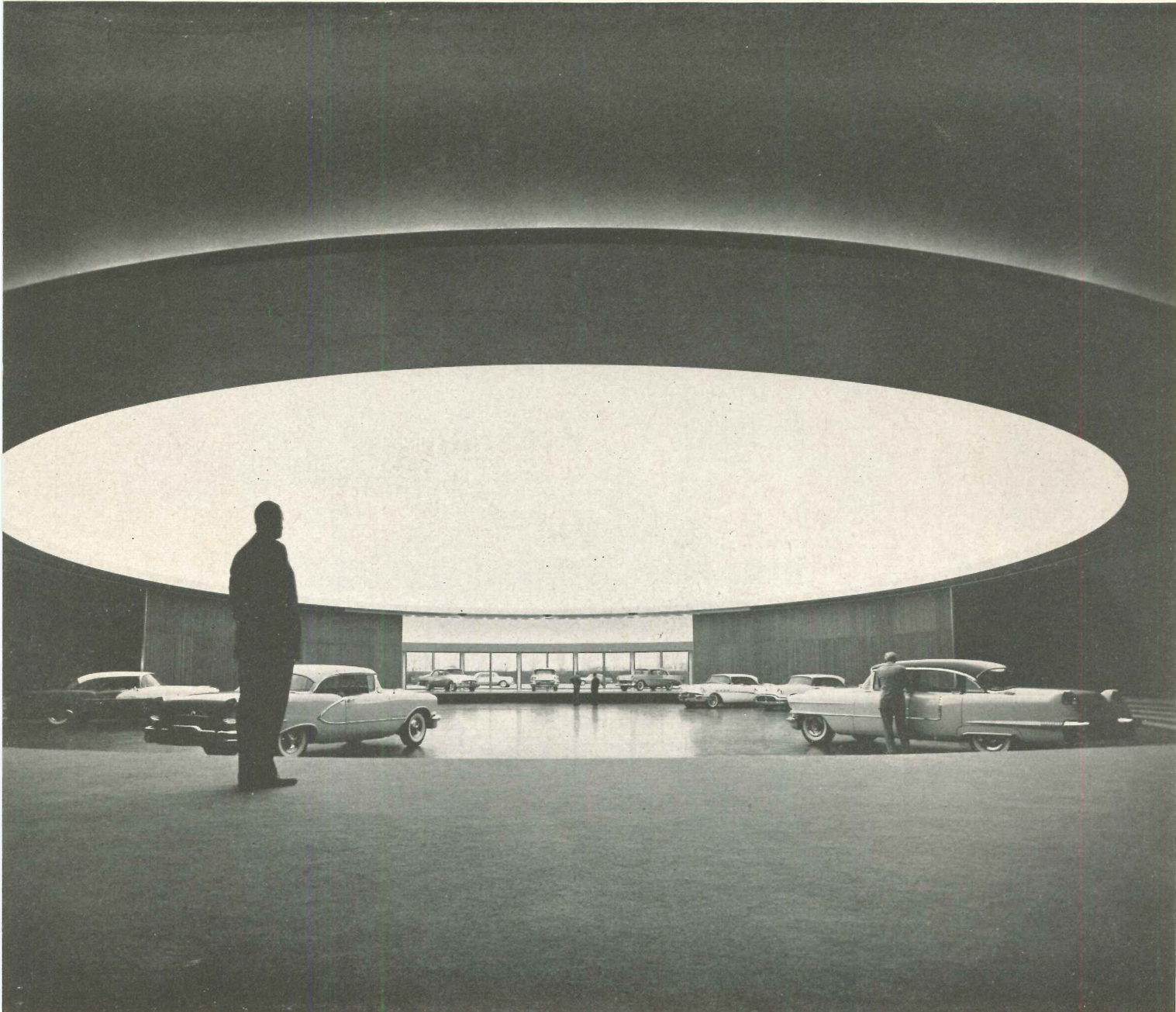
Information can be obtained directly from the chairman of the Advisory Group, Development Division, Central Mortgage & Housing Corporation, Ottawa.

#### NEWS NOTES

**The Manitoba Association of Architects** has moved to 966 Dorchester Ave., Winnipeg 9, Man. . . **PR in Quebec:** the public relations committee of the Province of Quebec Association of Architects has arranged for publication of a weekly construction page in the French-language paper *Le Devoir*. . . **PR in Ontario:** the Ontario Association of Architects sponsored a booth at the National Home Show, held in Toronto March 30 through April 7; the exhibit was built around material in the organization's brochure "The Architect — Who He Is and How He Can Serve You". . . **A 19 per cent increase** over 1955 construction can be expected this year for a total of \$6.2 billion in construction expenditures, according to the Federal Department of Trade and Commerce; details are contained in the white paper on "Private and Public Investment in Canada — Outlook 1956" . . . **Starts on new houses** financed under the National Housing Act rose to a high of 65,595 in 1955, a 30 per cent increase over 1954; total starts for Canada numbered 138,278. . . **The Baker Gold Medal** of the Institution of Civil Engineers, London, has been

(Continued on page 46)





Main display area, Styling Auditorium

GM Photo by Forynk

## A TOUR OF THE GM TECHNICAL CENTER INTERIORS

*General Motors Technical Center, Mich., Eero Saarinen & Associates, Architects  
Smith, Hinchman & Grylls, Architect-Engineer; Bryant & Detwiler Co., General  
Contractor; Argonaut Realty Division of GM, Field Supervision; Thomas D. Church  
& Edw. A. Eichstedt, Landscape Architects; Bolt, Beranek & Newman, Acoustic  
Consultants; Richard Kelly, Exterior Lighting Consultant*

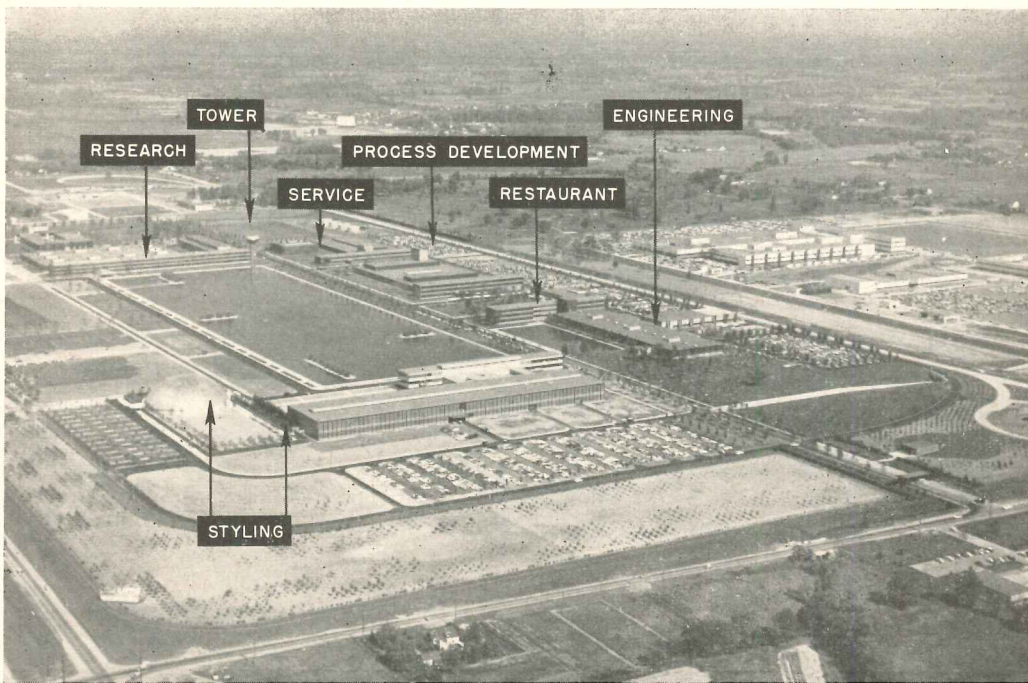
THESE PICTURES have been chosen as representative of the character achieved in the principal interior areas of the Center, due to be formally dedicated this month.

The **Styling Auditorium**, one of the most significant spaces, is covered by a double dome. The outer (structural) thin shell, of  $\frac{3}{8}$  in. welded steel plates, spans 186 ft, rises 65; supports the inner acoustical shell of  $\frac{1}{8}$  in. perforated metal, backed up by terraced layers of acoustic fill. 225 KW of light from incandescent and mercury vapor lamps provides 140 FC of almost totally diffuse illumination.



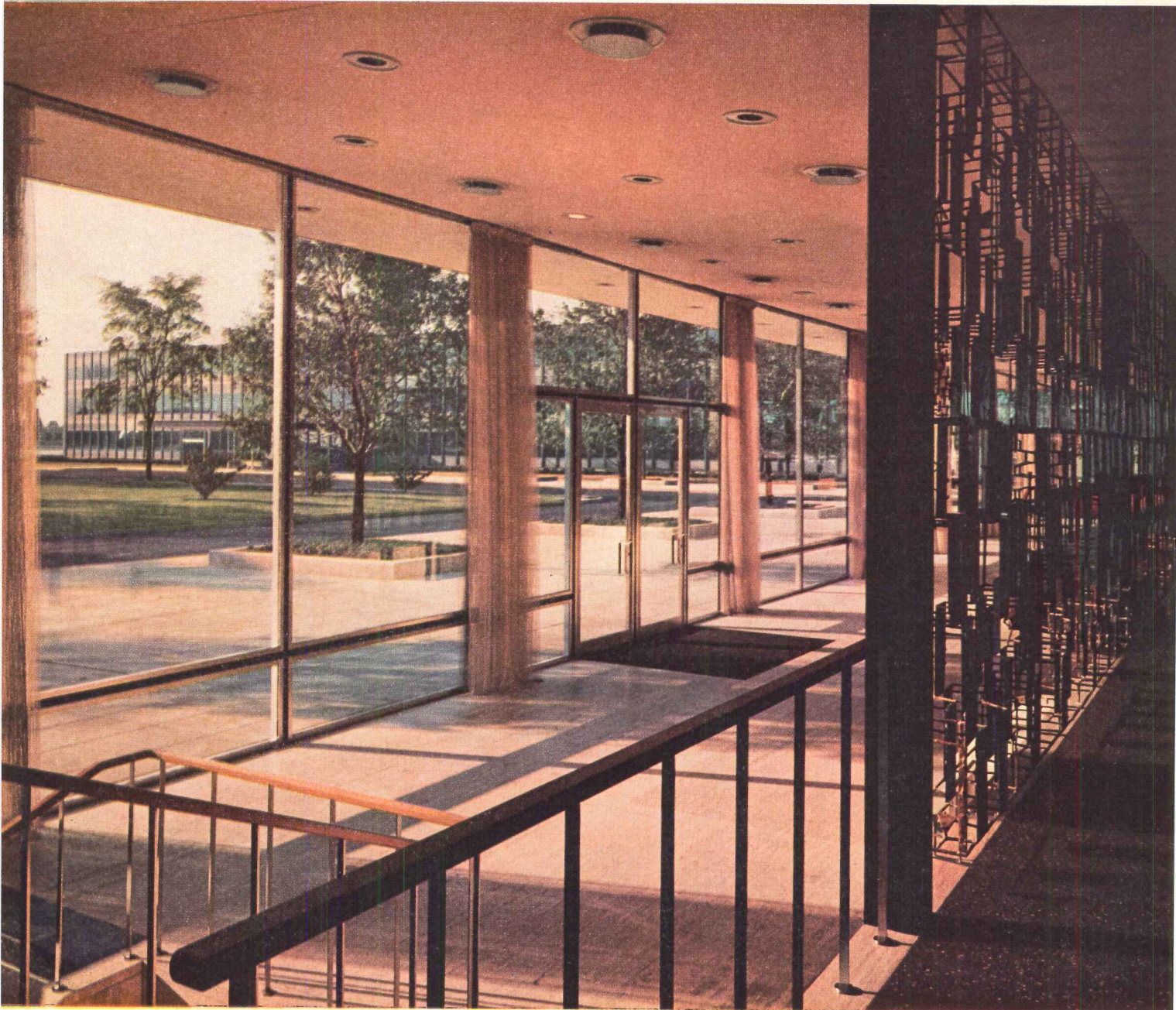
Lobby of Process Development Administration Building

© Ezra Stoller



GM Photo by LaRue





#### INTERIORS—GENERAL MOTORS TECHNICAL CENTER

**Lobby of the Process Development Administration Building** features architect-designed furniture, upholstered in white plastic and supported on stainless frames. The metal reception desk is of special design. Carpeting is a nubby-textured mixture of tan, beige and ivory, designed and woven by Marianne Stengel. A skylight between lobby and building visually separates these elements; accents the planting.

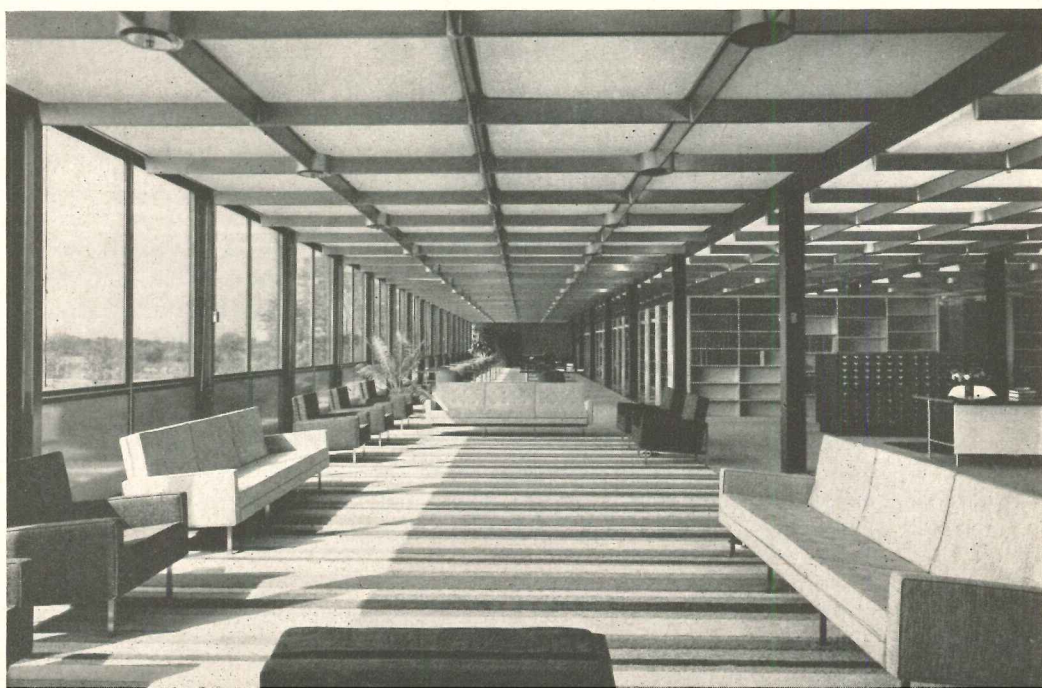
In the **Central Restaurant Building**, a decorative metal screen by Bertoia separates lobby and dining areas. The lobby floor and stair bulkheads are travertine, the handrail teak on stainless uprights. The dining area, raised for better view, is floored in black terrazzo. The glass curtains are natural color fishnet.



*Auditorium, Process Development Administration Building*



*Library, Research Administration Building*







#### INTERIORS—GENERAL MOTORS TECHNICAL CENTER

**The Process Development Auditorium** is essentially a freestanding acoustical shell of basswood set within a royal blue cube formed by fabric covered walls and carpeted floor. The shell works so well the PA system is used only for sound film.

In the **Research Library**, space along the outer wall becomes a series of reading lounges opening to the shelves. A color scheme of light and dark grays creates a serene atmosphere. The aluminum and milky-white plastic ceiling combines lighting, sprinkler heads, high-velocity air diffusers, and acoustical baffles.

This **Executive Office Lobby** combines an interesting variety of materials with taste; features a Marianne Strengel "rug within a rug" to define the waiting area.

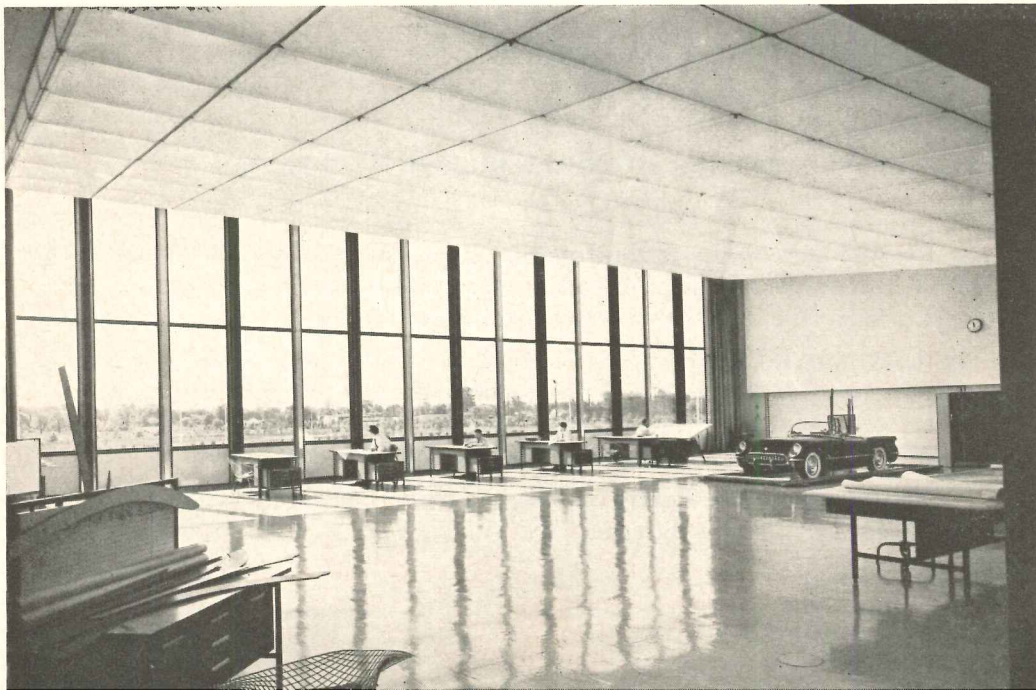


*Cafeteria, Styling Administration Building*

GM Photo by LaRue



*Typical Styling Studio*



© Ezra Stoller





#### INTERIORS—GENERAL MOTORS TECHNICAL CENTER

**The Styling Cafeteria** contains off-white table tops, black plastic chairs on chrome legs, orange plastic banquettes, and a floor of alternating 2 in. strips of cream and orange colored vinyl plastic. Glass curtains are natural color fishnet.

**The Styling Studio**, typical of the 16 in the section, is about 55 by 80; incorporates a large space for studying several mockups or actual vehicles. Four sets of sliding blackboards and corkboards — with a traveling seat — form the end walls.

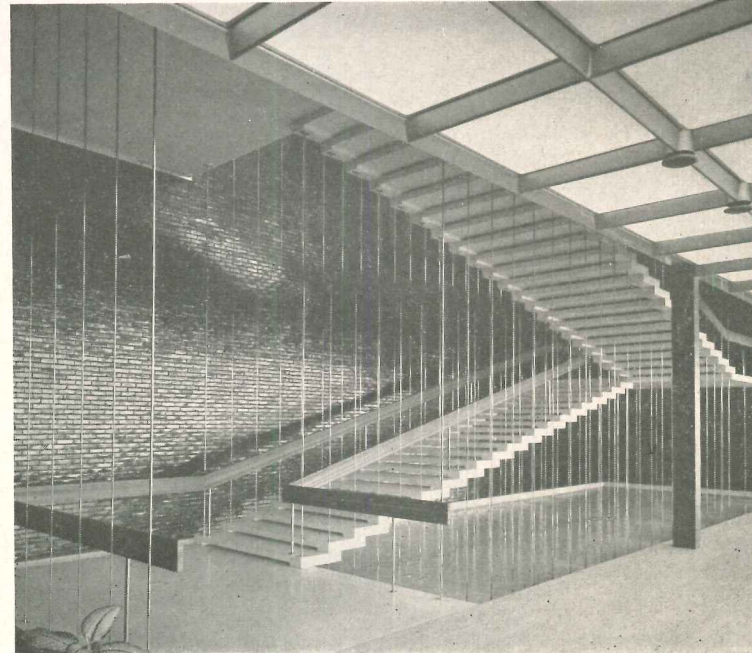
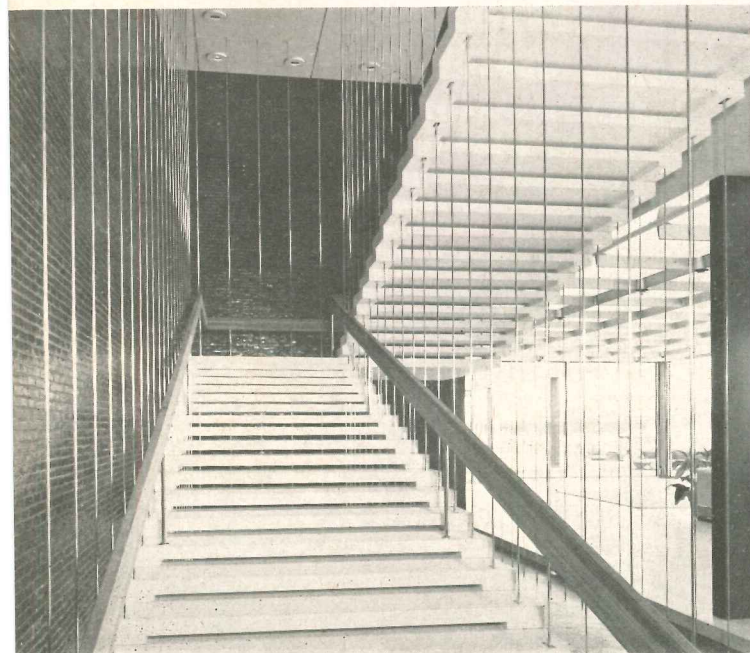
In the **Research Cafeteria**, the columns are matte black tile, the floor is white terrazzo, the walls are blue-glazed brick, and the cafeteria-line screen is made of 21 varieties of wood. Suspended ceiling baffles are aluminum, gold-anodized.



*Service Administration Building Stair*



*Research Administration Building Stair*



*Styling Administration Building Stair*

Top photos, © Ezra Stoller. Lower, GM Photos by LaRue

#### INTERIORS — GENERAL MOTORS TECHNICAL CENTER

**Important Stairs** have been treated as free-standing technological sculpture. That in **Service Administration** consists of travertine treads in metal pans, held by a continuous spinal beam of structural steel painted white. In **Research Administration**, the granite treads "float" in a converging double cone of stainless steel tension rods. Lateral stability comes both from shear blocks and from the compression ring formed by the stair proper. The **Styling Lobby** stair features white terrazzo treads slung within a vertical pattern of stainless steel rods against a black glazed brick wall. The floor and reflecting pool are of travertine; the handrail of teak. Blue underwater lights add color to the shimmer of the circulating water.



# ARCHITECTURE OF THE LOS ANGELES REGION

By *ARTHUR B. GALLION*

*Dean, School of Architecture*

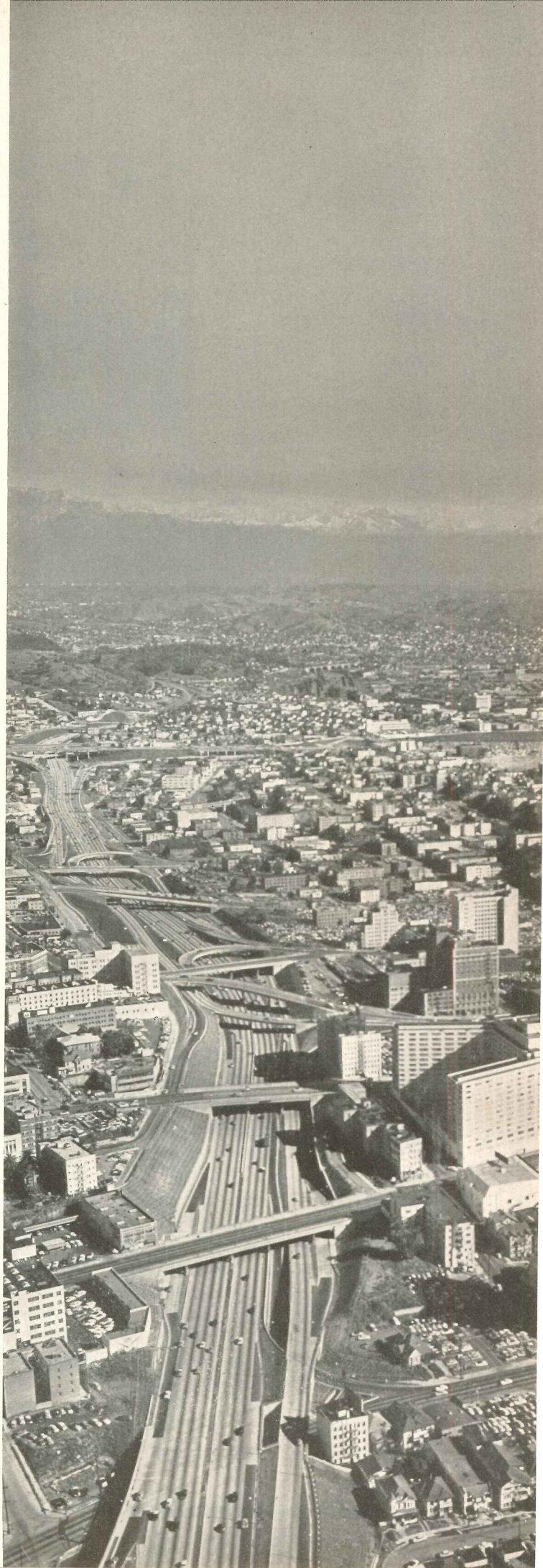
*University of Southern California*

A VISITOR ONCE REMARKED that Los Angeles was like a magic carpet — it could roll up and drift off overnight. That was many years ago. Since then three million people have occupied the city and a million and a half have settled in the immediate environs. The pace keeps on at an alarming rate. The intervening years have revealed the phenomenon of Southern California.

This valley is not naturally endowed with the lush verdure of the deep south, the majestic forests of the northwest, the black soil of the mid-west, the rolling green hills of the east, nor the magnificent topography of land and sea of its neighbor to the north — San Francisco. The site is a desert plain, washed by the sea on two sides, embraced by the mountains on the other two. The desert has a peculiar charm. Its strange fascination is unorthodox. Its rich resources do not readily yield to the human touch. It had to be conquered, and conquered it was. Courage and lust for adventure were needed to work this rugged terrain into a new land. Transformation of the desert called for imagination, and men of ideas and enterprise were invited to join. Water was brought from the high Sierras and the Colorado River 250 miles distant. A harbor was dug out of the sea twenty-five miles away. The desert soil gave forth an abundance. Agriculture became an industry. Oil spouted riches. The mild climate attracted throngs seeking excitement, opportunity, relaxation and retirement. Perhaps it is this background to which we may attribute the ready acceptance of new ideas in the region.

The pseudo-Spanish style, popular during the roaring Twenties, was not an indigenous expression. It introduced good taste to the melee of wild and flourishing expansion, but it was a form of eclecticism. The "ranch" house was quite another matter. It was native. Built of the soil on which it stood, shaped to the climate and the gracious living of the Spanish Dons, it fulfilled its purpose with charm and comfort. The Twentieth Century version of the "style" is an unhappy adultery of this tradition, but the region came by it honestly. Its successors were fakes, but the original was genuine.

The ranch house was an appropriate dwelling. It was squeezed into artificial forms by the forty and







Irving Gill, architect



Greene and Greene, architects



Frank Lloyd Wright, architect

## ARCHITECTURE OF THE LOS ANGELES REGION

fifty foot lots of later subdivisions, but the privacy of the patio provides a natural and becoming framework for graceful living. Land supervision forced modifications of the theme and new relationships in the economy induced variations in construction. The constant influx of people streaming in from all directions kept the melting pot of ideas well stirred. A variety of architectural forms emerged but the informal and intimate connection between the house and garden continues.

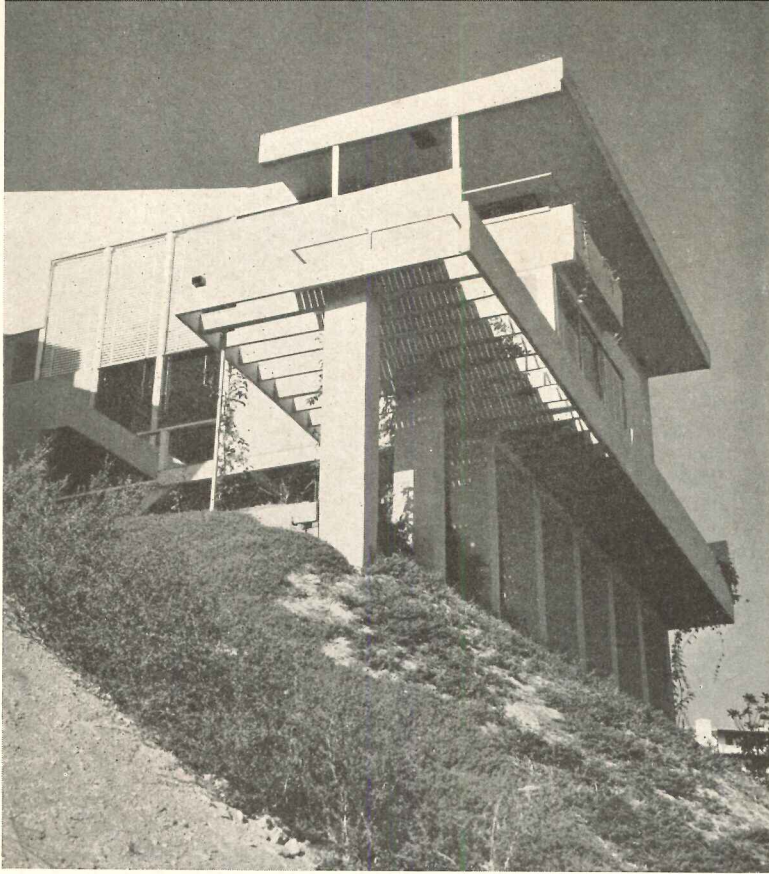
Much has been written about regionalism. The regional expression of the southwest can hardly be perceived beyond this intimate relation between enclosed and open, covered and uncovered, space. The climate and the informal habits of the people account for this more than tradition. The mixture of people in southern California has diluted the significance of tradition. The continuity which entrenches a tradition was broken with the dissolution of the great ranches of

the gay caballeros. A new tradition has formed, and a rather important one these days: a tradition of opportunity to compete with ideas.

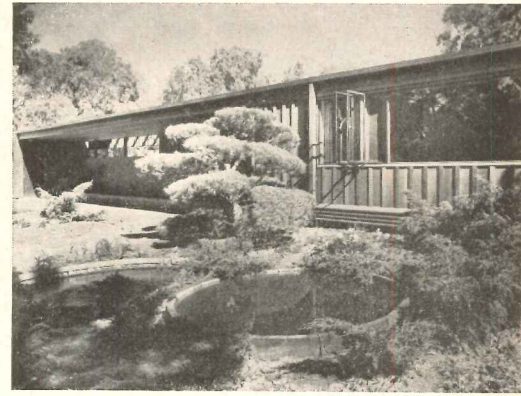
This is fraught with danger, the danger of too much novelty. Ample evidence is present in Los Angeles. Awful mediocrity in taste and assortment is abundant. There are times when change is too frequent, when the time for assimilation and maturity is inadequate. Variety then becomes a nervous disorder. Los Angeles is afflicted with this disease. Shrieking for special credit, a carnival of oddities in architectural form diffuses throughout the region.

But there is another side to this coin. There are men of ideas in many places and, though somewhat fewer, there are men willing to listen. But the places in which men are willing to build them are more rare. Los Angeles is one of these. If novelty is a heavy burden it is lighter than the intolerance and smug complacency which





R. M. Schindler, architect



Richard Neutra, architect



Richard Neutra, architect

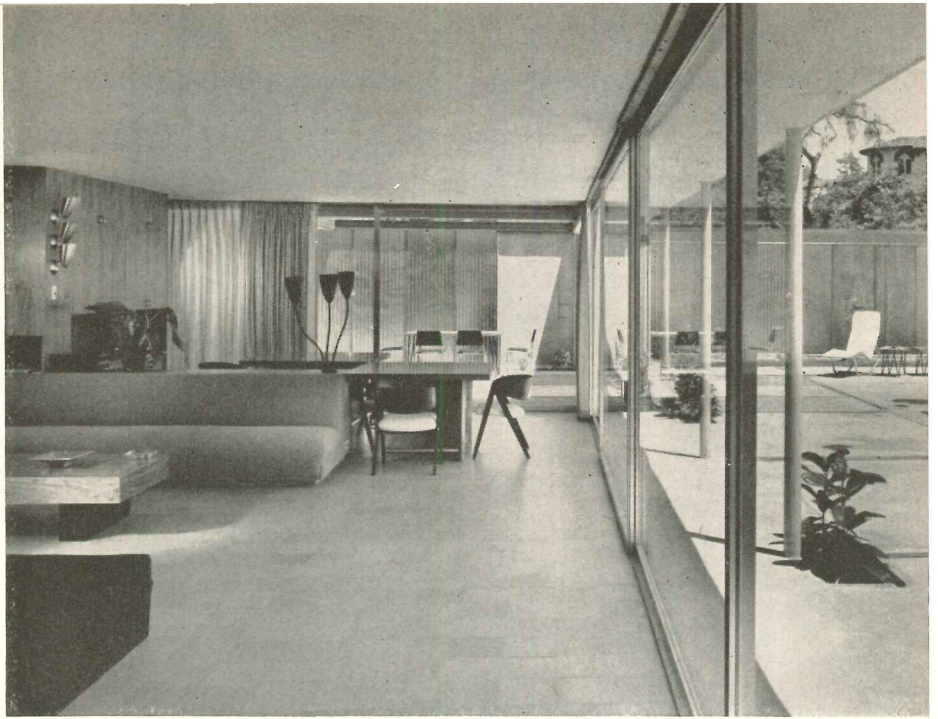
stifle creative expression. Far better it is to indulge in experiments with structure and form than the false security of the status quo. Important and exciting architectural forms have pierced the shallow film of novelty. The persistent variety of well-considered planning, thoughtfully organized structure, and sensitively arranged materials, attests to the genuine capacity of the talent at work in southern California.

Contrary to the usual assumption, however, it cannot be claimed that a regional expression has emerged. What is regionalism anyway? The term has acquired a magic significance associated a few years ago with the "international style." Is it not as nebulous, and as misleading? Places, like people, have distinguishing characteristics, but it takes all types to form a civilized age. Local characteristics were reflected in the periods of past international styles — the Greek, Roman, Gothic. But it was the main theme of each of these

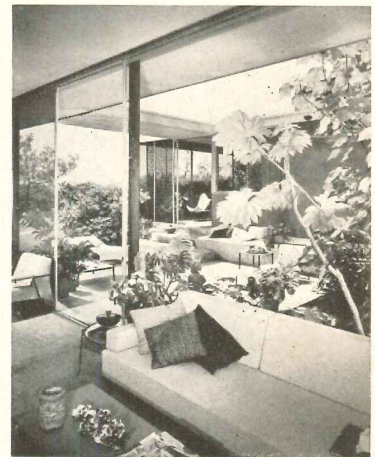
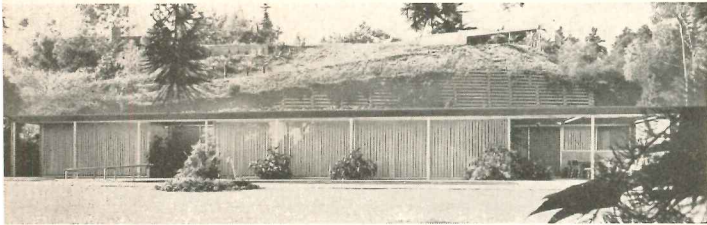
periods that pervaded the known world. Times are different, as are conditions, but we are in the process of forming the great theme of our era; the local color is but a part of the whole composition. Regionalism, as frequently defined, pretends to occupy a niche of special significance when it is rather an evidence of a greater harmony aborning in our civilization.

Southern California has provided an environment of freedom for expression which produced the remarkable achievements of the Greene Brothers and Irving Gill at the turn of the century; the distinguished work of Richard Neutra and Rudolph Schindler since the Twenties. Frank Lloyd Wright found a stimulus to his genius and many others have found opportunity for their talents over the years. There is little reason, however, to suppose that the architecture of these men fit this area to the exclusion of all others. The residential architecture of Quincy Jones, Whitney Smith, Craig





Raphael Soriano, architect



Raphael Soriano, architect

## ARCHITECTURE OF THE LOS ANGELES REGION

Ellwood, Harwell Harris or Raphael Soriano is not confined by its nature to the southern California region. Even the great controlling force, the climate, has lost its fierce grasp upon planning and design; the distribution of materials and equipment in our economic system has broken most barriers. Southern California offers variety of expression in its architecture. As the creative vigor of our age gains strength this variety will not be confined to a region. There is evidence of an affinity between regions already, and variety within each. It is the opportunity for expanding this harmony through fresh thought and activity which will produce the indigenous expression of our own culture. Let us make our history before we attempt to write it.

Los Angeles has served as a convenient testing ground in many respects. Not the least of these is the form of the urban environment. Other congregations of large population grew from the center outward in a steady

flow. As the inner core piled up the fringes spread; the urban form was a pyramid of building bulk and land values. Los Angeles still has its "downtown," but the extraordinary pressure of population movement to the region during the first quarter of the century caused an explosion over the countryside. Real estate subdivisions, which had been planted indiscriminately, blossomed into villages and thence into small cities. The variegated colors of wood and stucco spread across the landscape and punctuated another hopeful prospect for the future — the decentralized regional city.

The modern city has become a behemoth. The scale of the human being is lost. His identity has disappeared. He does not belong. The city is a place to make a living rather than a place to live in. The key to the door of this dilemma is the recovery of human scale in the city. Los Angeles may someday lose that scale but it has not yet disappeared. Despite the political complications,





Charles Eames, designer



Craig Ellwood, designer

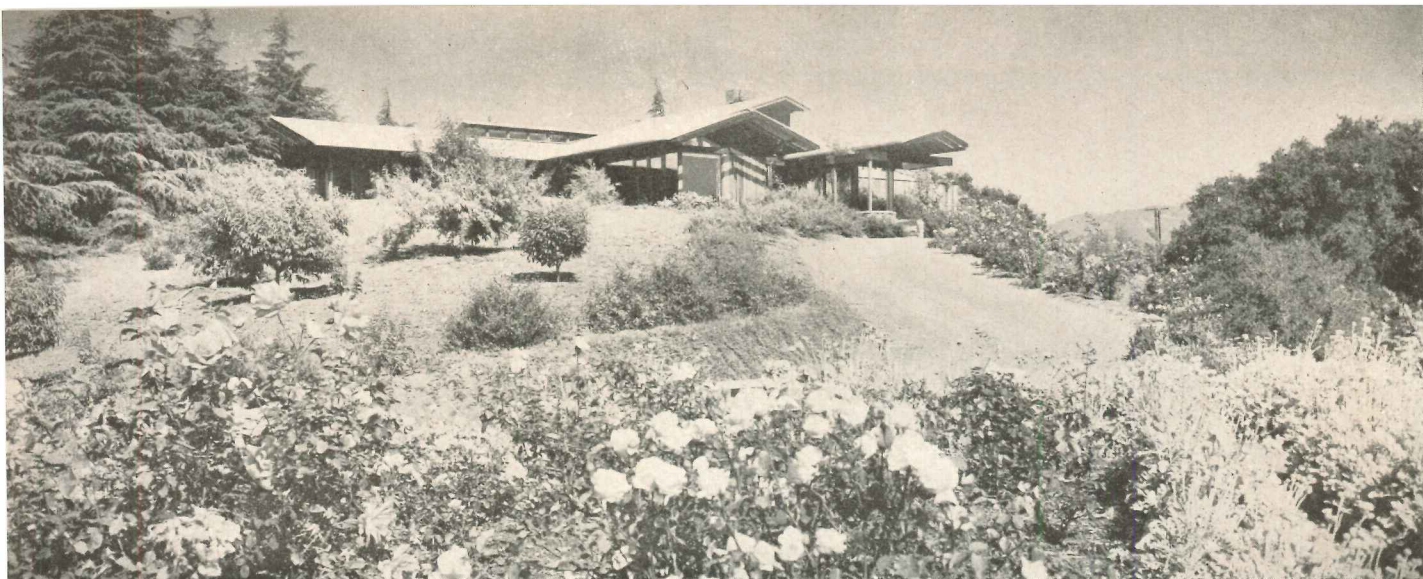
a jealous prerogative is asserted by the variety of separate communities that make up the region. The forty-sixth such community was incorporated as an independent city within the region this year. Each has its pride — not yet enough to admit its shortcomings, to be sure — but the people have a sense of belonging. Even those which have been absorbed within the big city boundaries persist in retaining a semblance of their identity.

This emphasis on human scale runs counter to the trend in the big picture of America. But perhaps we have not brought that picture into accurate focus. The prospect of the individual being engulfed by the tidal wave of a bigger and still bigger metropolis is not a pleasant one to conjure with. The problem of the future city, the central core of the city-dwellers' welfare, depends upon our ability to maintain the human touch, contact, scale, in the physical environment. The in-

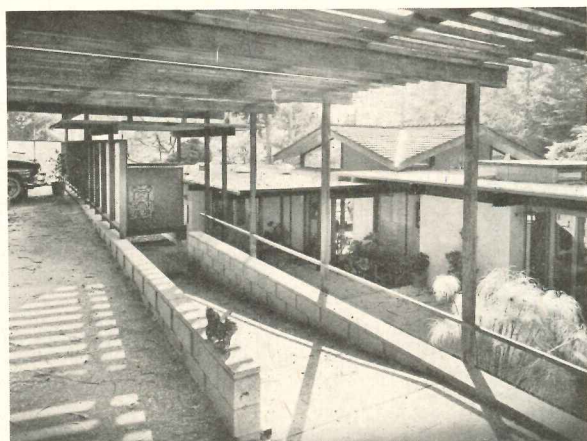
formal and independent, semi-rural and pseudo-sophisticated, condition of the Angeleno's mind may not be an unhealthy state of affairs.

From the center, the pattern of the region is one of undulating waves of low and high density. Developments like the Miracle Mile skipped from the city center over miles of undeveloped land in the Twenties. Clusters of tall buildings rose at one mile intervals, the intervening spaces improving spasmodically. The process has been disorganized and chaotic. The region is shapeless. It cries for order. Conventional mass transportation will not work. Vacant land is filling up with tracts of "no" and "low" down payment houses. The horizontal plane, once a desert floor, is now a waving sea of gravel and shingle roofs. The picture is as dismal as other great cities. But there is a difference. The city does not suffer from the horrible permanence that afflicts most cities. The heavy load of masonry piled high upon the





Harwell H. Harris, architect



Smith and Williams, architects



Quincy Jones, architect

## ARCHITECTURE OF THE LOS ANGELES REGION

whole surface of most cities is absent here. Wood frame and stucco offer less resistance to movement, to change. The appalling blight of the modern urban environment is a thick and heavy crust upon the land. The crust is thinner in Los Angeles. It can be more readily penetrated and scraped away. Replacing the old with the new is almost an obsession.

Congestion is horizontal rather than vertical, and the city is struggling to extricate itself from the traffic snarl. The city grew up with the automobile but the association has not been harmonious. The automobile spread the city over 450 square miles and linked it with its many neighbors over 1000 square miles. The density is too thin to support the familiar means of transportation — the surface and subway trains. The freeway dominates the scene. A new scale of space in the urban environment has opened up. A dynamic new urban form has moved into the city.

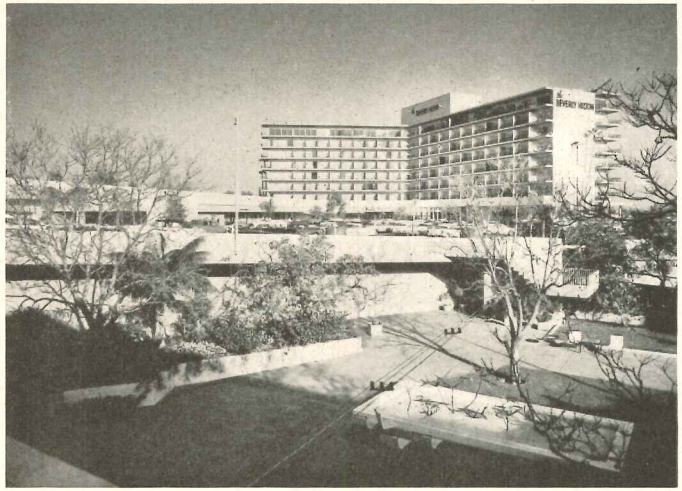
Visions of double- and triple-decked streets were once the dream for relief from the urban tangle. Neither they nor the subway struck deep enough at the underlying cause — excessive building space in proportion to circulation. The flying highways of the freeway system suggest a new direction. They are inadequate in number, location, and design, but they have opened up a new vista of the future city. It is not an easy matter to envision their promise while caught in the motionless traffic jam at the rush hour, but something was sorely needed to shock the urbanite from his lethargy in the archaic city streets. The freeway has provided that shock.

The restoration of space at the ground level may become the new crusade in city building and the design of the space enveloping buildings the new challenge. The visual drama of the great city of today is invariably impressed upon us from without, not from within. The

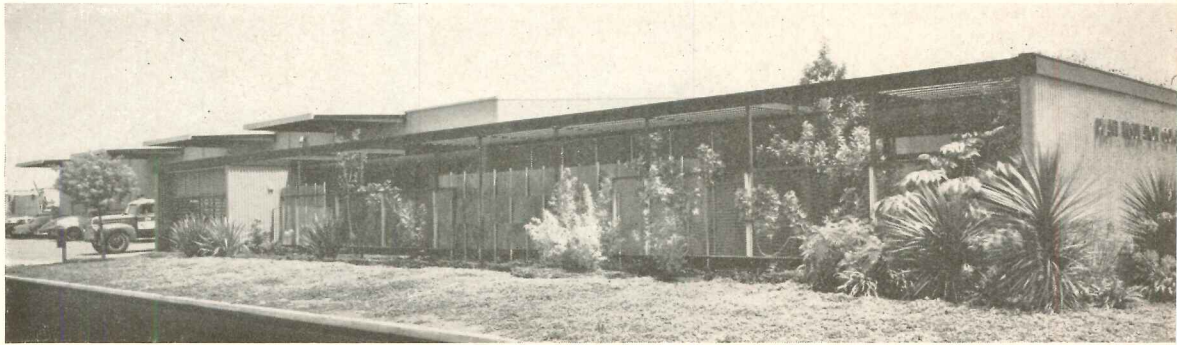




George Russell, architect



Wellen Becket & Associates, architects



Smith and Williams, architects

“skylines” of New York and Chicago are not experienced by the man in the street, they are the vistas captured from distant vantage points. Whether dressed in the fashion of modernity or tradition, the façadeism of the city street is oppressive.

There was a time when the initial step in the design of a building was the establishment of the major and minor axes of its composition. Now the first step is establishment of the “building line.” The necessity for a separation between public and private property has been exaggerated as cities grew, population increased, and land values rose. The “building line,” that phantom legal restriction from encroachment upon space reserved for public use, assumes a significance of increasing concern. Effectiveness of the device has been nullified by the increase in building height and bulk. Set-back zoning began too far above the street to compensate for the bloated burden. Street widening,

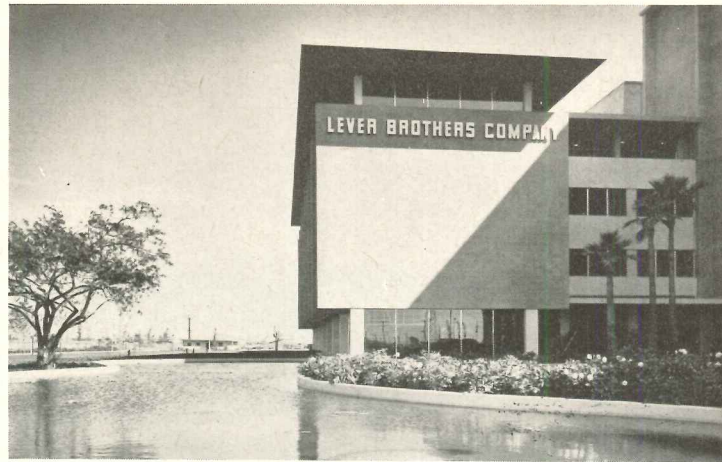
still a popular antidote, is a pretense. The ratio of building bulk to open space, circulation, light, air, and psychological elbow room has dissipated the original function of the public right-of-way. The city has become a huge bulk of building volume serrated by fissures. These canyon walls were dictated by the “building lines.”

The delight of ancient cities was the visual experience of three-dimensional form. Satisfaction of this sense is a deep yearning of the urban dweller. It is the attraction of large scale planning. Huge housing developments and regional shopping centers have returned the horizontal ground plane to the composition of forms in space. Recovery of this lost dimension in the urban environment transcends the economic advantages of large scale development. However, cities are not a series of large scale developments. Nor should we become dependent upon them if the enterprise we call free and





Welton Becket & Associates, architects



Welton Becket & Associates, architects

## ARCHITECTURE OF THE LOS ANGELES REGION

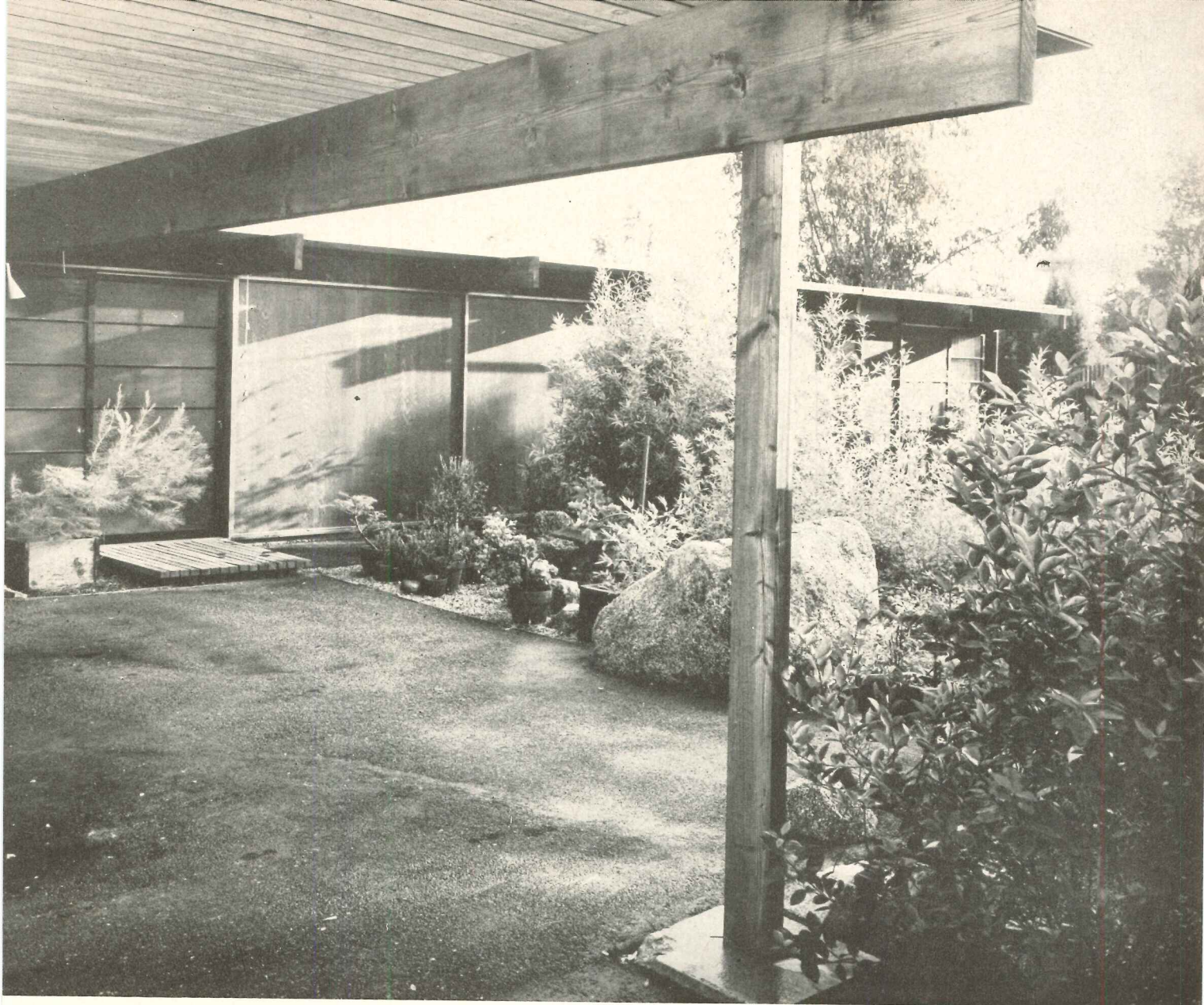
individual is to endure. The city is a composite of projects rising here and there as investment opportunities present themselves. Indifference to the urban welfare has squeezed the lots to substandard proportions, but the single lot continues to be the principle unit of land development. They are tied into blocks with the "building line." Lack of imagination mixed with varying quantities of greed, rather than the single lot, have produced the mediocrity of the city street.

Space is more illusory than real in Los Angeles but the cubical inhibitions of most commercial cities are relaxed. A three-dimensional character is vested in individual buildings with less effort than is customary in urban architecture. It is the plastic composition of form within the space of the property it occupies which distinguishes such a structure as the Prudential Building. Built on high-priced land, the building line was not the master of this plan. Perhaps the insistent demand

for automobile parking has forced the issue of space in Los Angeles. Factories have moved to the open fields, shopping centers form clusters of neighborhoods, and the freeways cut broad swaths across the town. It is the reappearance of attention to the form of individual buildings along the street, however, which offers the prospect for a regeneration of visual delight in the urban scene.

The southern California region is like a rough sketch for a city — a preliminary plan drawn with bold strokes. Some parts have been executed in detail but the whole plan has not taken shape. It resembles a series of vignettted suggestions awaiting further study and development. The fluid nature of the region leaves much to be desired, but it also provides room for much that may yet be achieved. The ever-present prospect for acceptance of a fresh proposal is a stimulus to the creative energy of those working in the region.





Julius Schulman

## HOUSE NEAR PASADENA FOR A FAMILY OF FIVE

*Residence of Mr. and Mrs. Eugene Weston, III  
La Canada, California*

*Eugene Weston, III  
Designer*





## HOUSE NEAR PASADENA

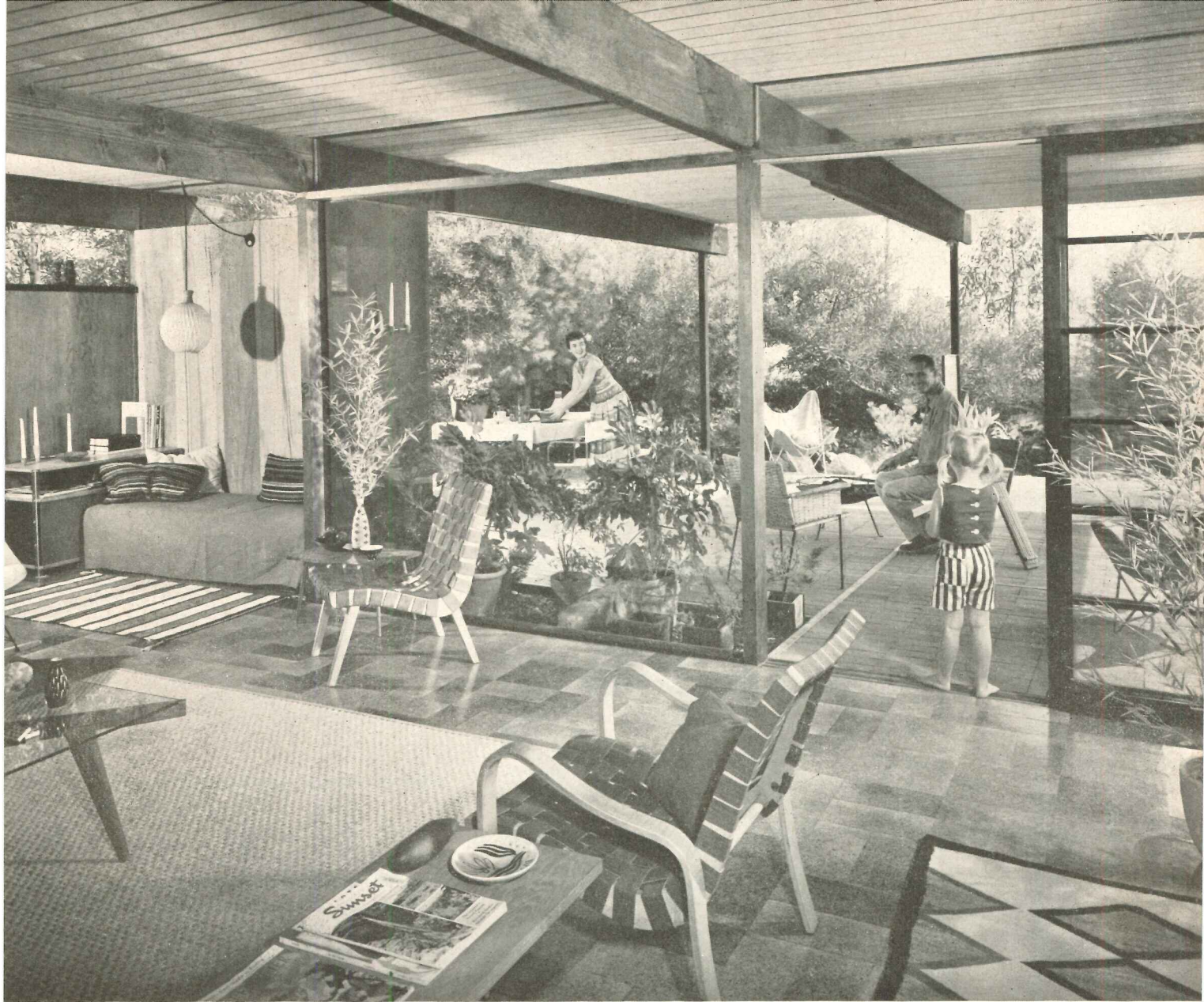
A LARGE COVERED PORCH on one side of the living room and an enclosed garden on the other stretch the 1450 sq ft area of this house into comfortable accommodations for a family of five. The apparent size of the house is increased also by several features of the plan: kitchen and living room are separated only by a low storage wall; most solid walls extend only to the beams, with glass above that height; the wall between two of the children's rooms was omitted to provide an indoor play area. Circulation is limited to the center of the house, with the children's rooms and bath forming a separate unit. Utilities are economically grouped in one general area.

The house is situated in a rocky canyon overlooking Pasadena. Primary glass areas face south for view and

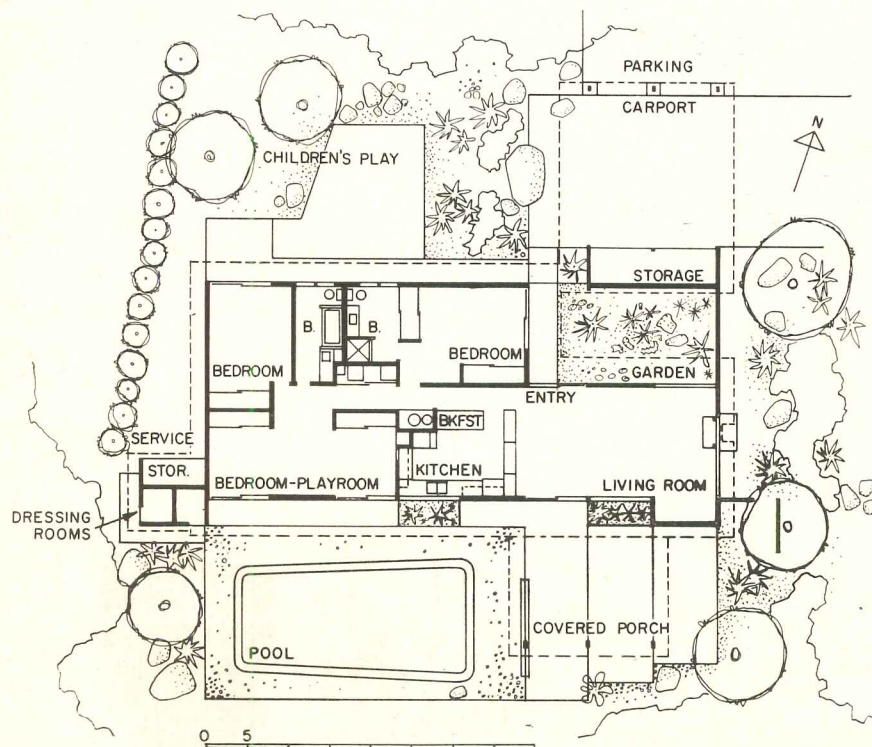
sun control, and there are no openings to the west (hot) side. Construction is post and beam with plank roof, on an 8-ft module. All interior and exterior walls are plywood (which has "proved very low on maintenance," the owner reports); floors are cork throughout "for color, resilience and warmth." Heating is floor-radiant, in deference to the children.

Indirect lighting was installed above all wardrobes to provide room light as well as light within the cabinets and to eliminate ceiling fixtures. Identical sliding units were used for all exterior doors, and in most rooms double as ventilation and light sources. Horizontal muntins in these doors permitted the use of light-weight glass to facilitate their operation — an important point for the children.

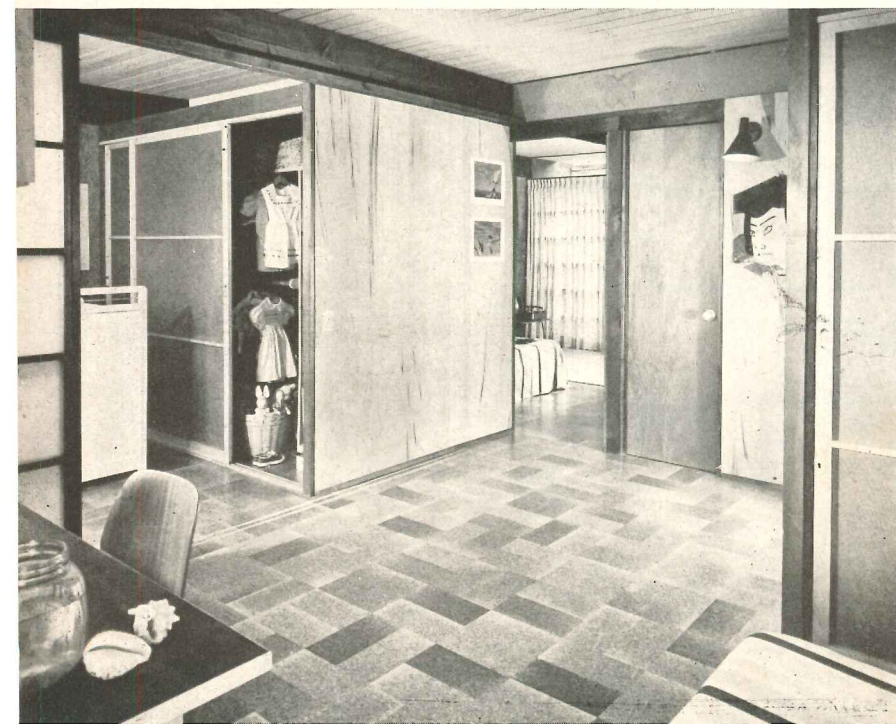




Julius Schulman



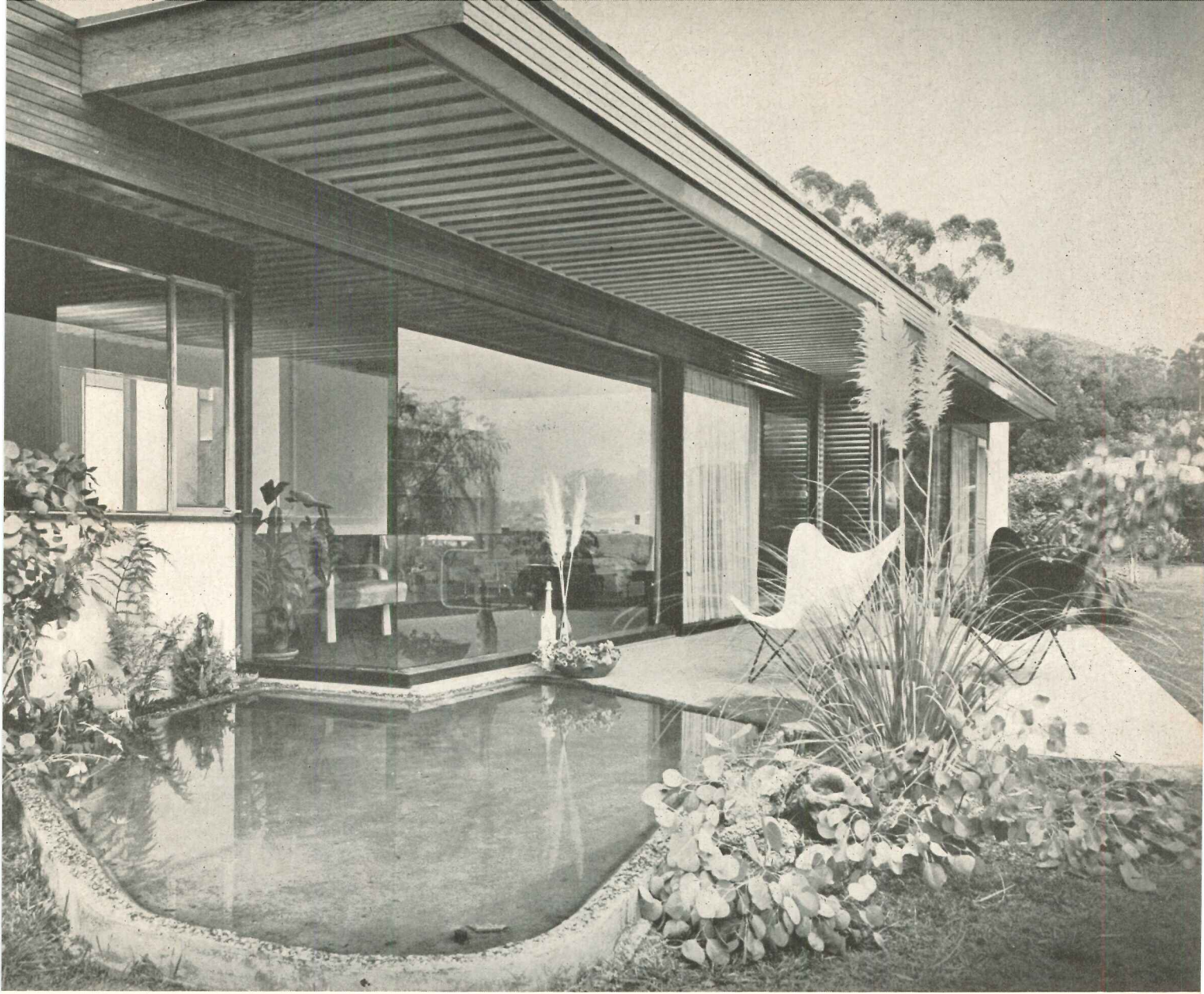




**HOUSE NEAR PASADENA**

*Entrance from carport and guests' parking area leads past enclosed garden which living room overlooks. Children's bedrooms open into large play area, and have excellent storage space for clothing and toys. All closets and cabinets have sliding doors*





Julius Shulman

## SAN BERNARDINO HOUSE PLANNED TO LOOK COOL

*Residence for Dr. and Mrs. Max Goodman  
San Bernardino, California*

*Richard J. Neutra  
Architect*





## SAN BERNARDINO HOUSE

COOL SPACIOUSNESS characterizes this house in the foothills of the Sierras where the summers are very hot and dry. Living room, den, dining bay and solarium are one large open area with curtains the only partitions. The feeling of uninterrupted flow of space which results, the architect comments, "is emphasized by the pattern of pinewood ceiling that continues, through glass partitions underneath, onto the roof overhang. From the couch in the solarium one's eyes roam to the end wall of the den, an expanse of about 55 ft, and through glass along the overhang about another 30 ft more. This sensation of space in a comparatively moderately sized house of 2700 sq ft comes like a joyous surprise."

The feeling of coolness produced by such openness of plan is heightened by two shallow reflecting pools, one

on either side of the house, and by the use of cool colors in the main living area (moss green carpeting, henna linen drapes, etc.)

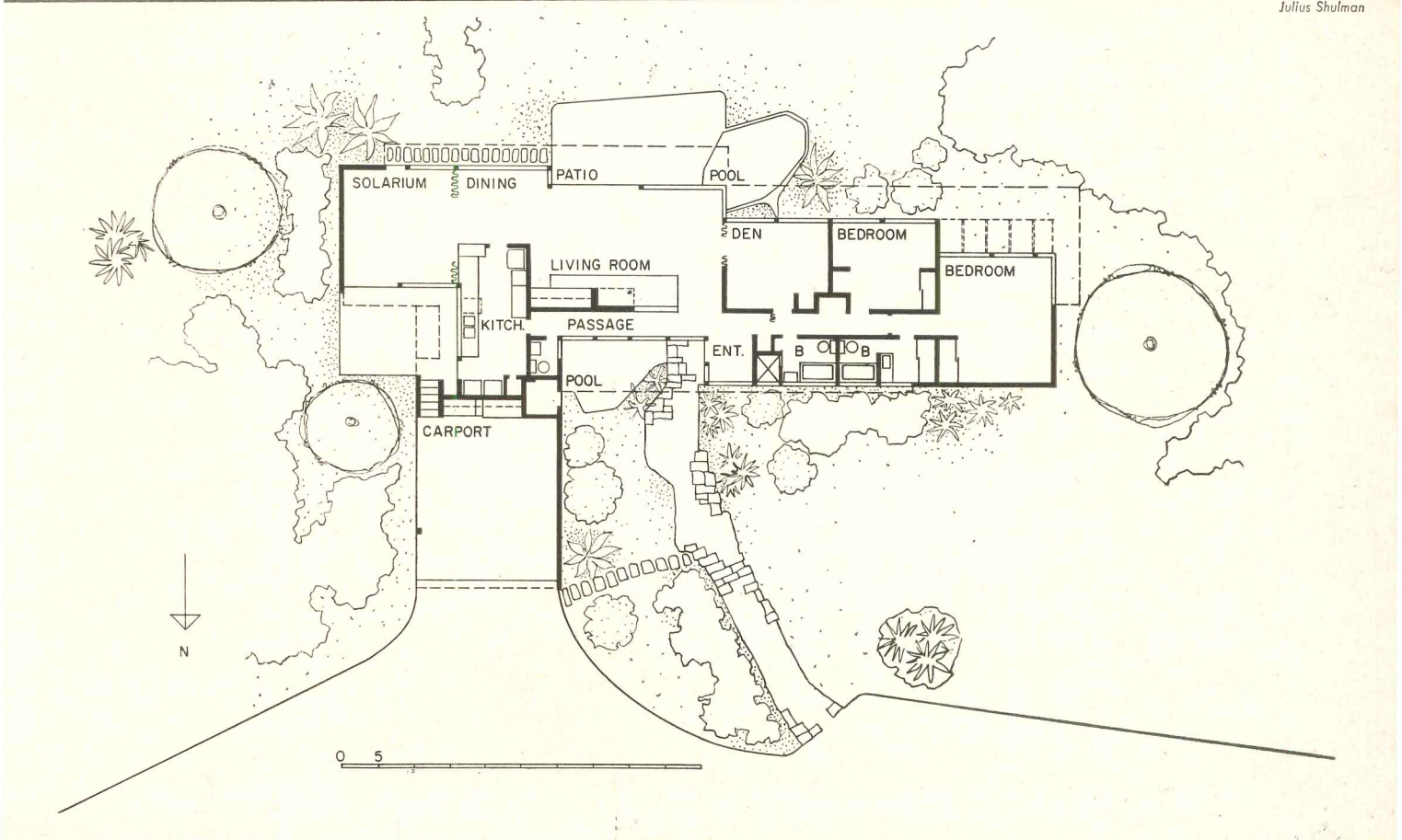
The house occupies a quarter-acre site relatively high above the town of San Bernardino, overlooking it to the south. On the north side of a large Eucalyptus grove "forms a backdrop and hides all other houses." Construction is wood frame on concrete slab; walls are plaster with occasional redwood areas on the exterior, partial birchwood paneling on the interior.

The owners, a busy pediatrician and his wife, have two small sons who use the solarium as their indoor play area. From it a sliding door opens to the play yard, easily supervised from the kitchen and protected from the driveway by the carport.

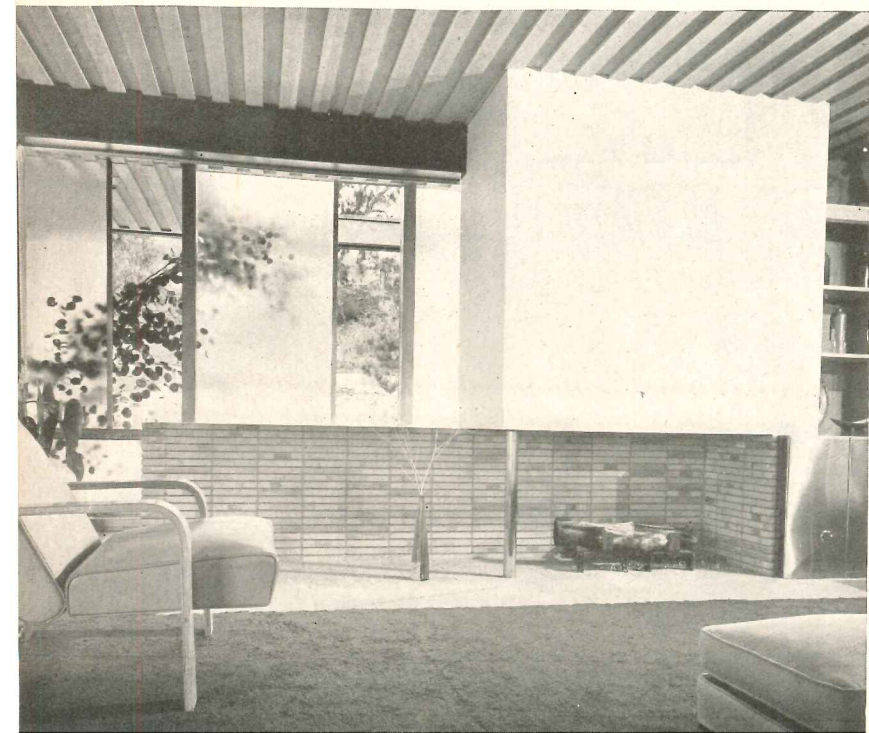
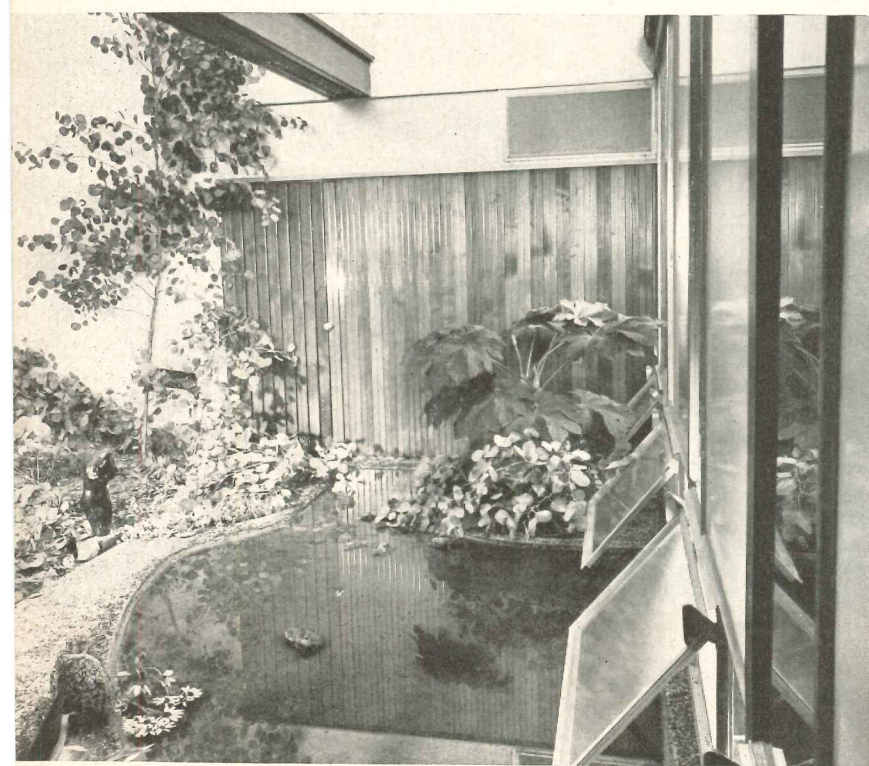
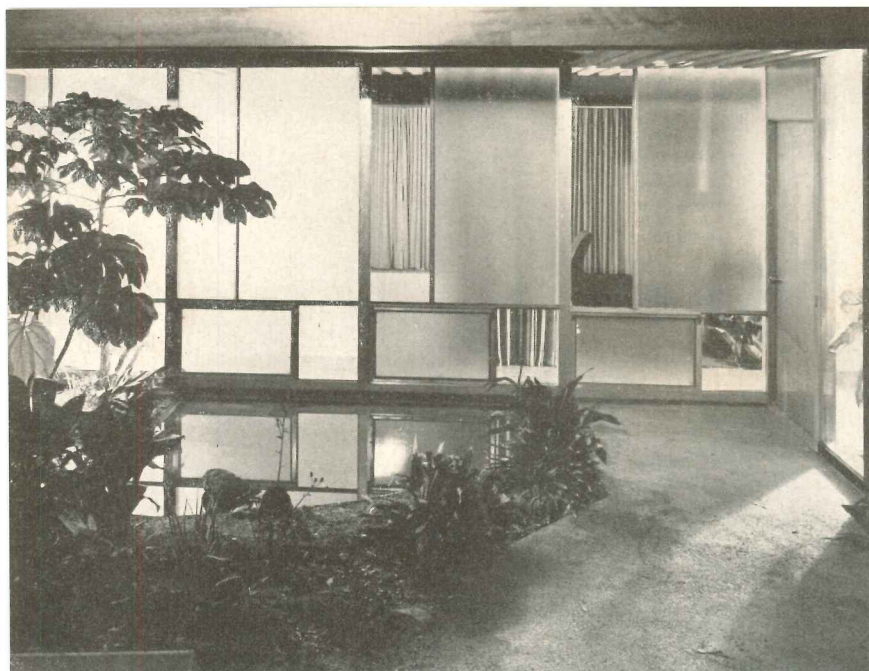




Julius Shulman





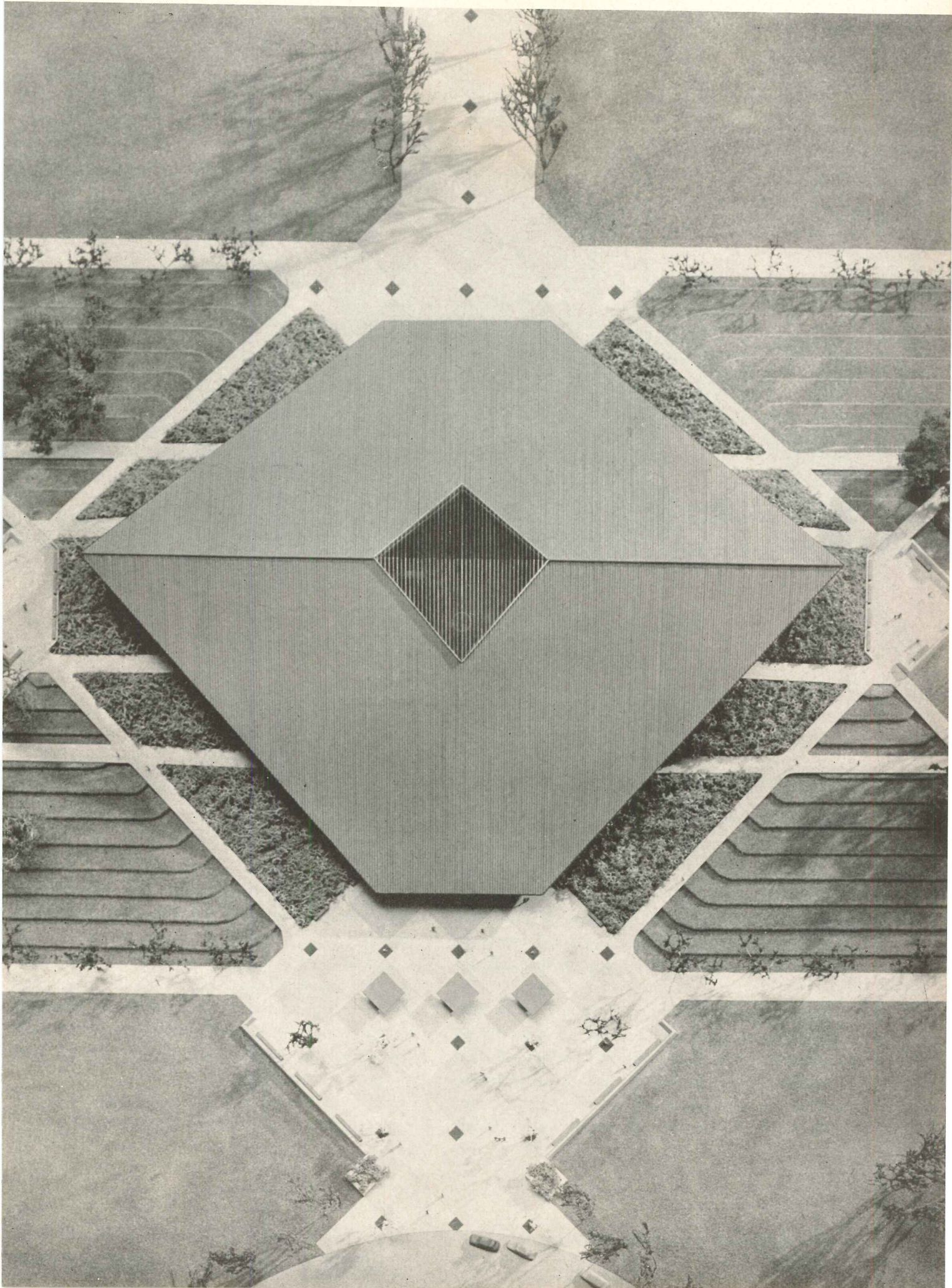


## SAN BERNADINO HOUSE

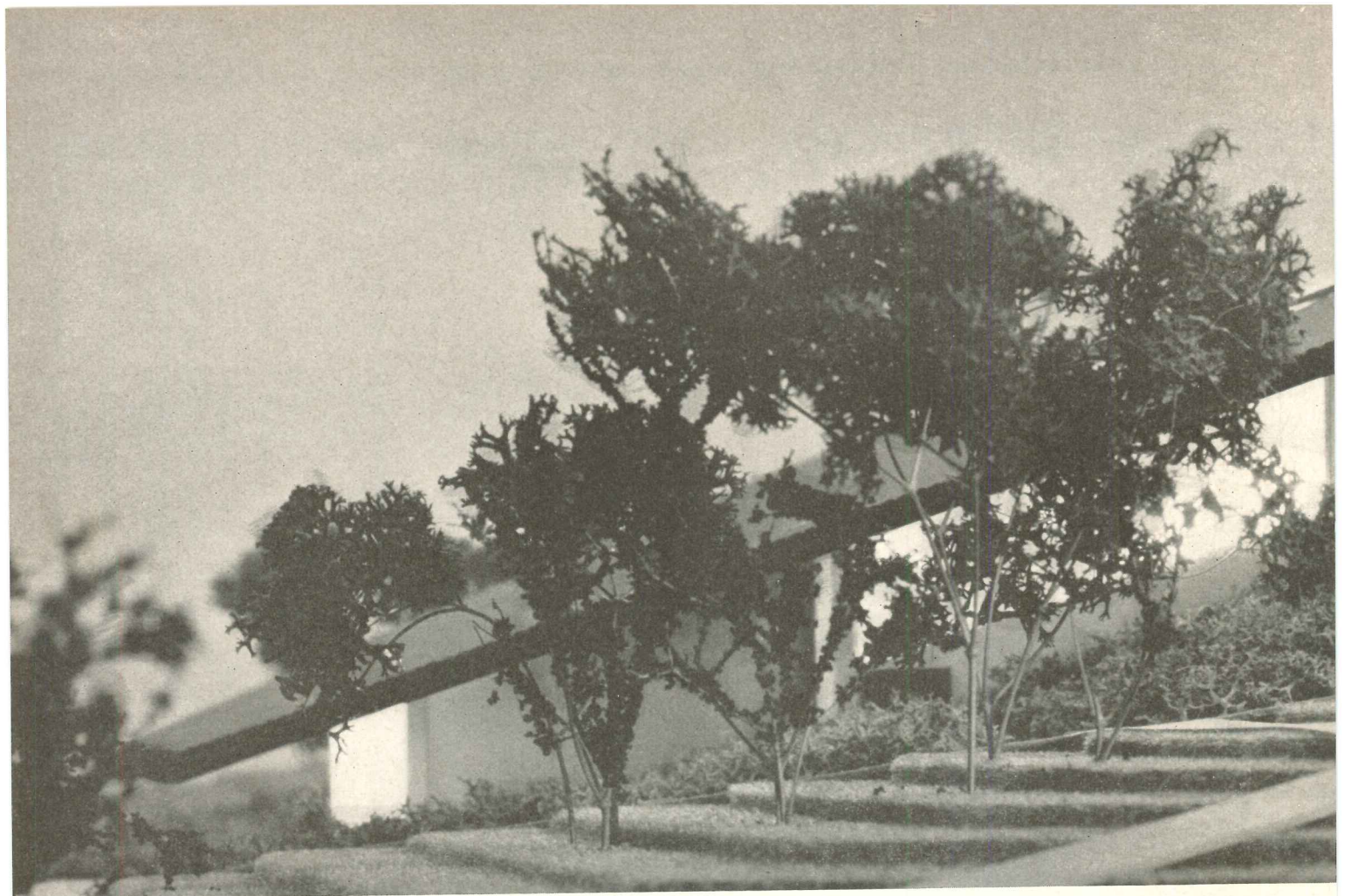
*Main entrance from driveway is up a winding flagstone path and past a small pool below a pergola that extends into the redwood wall of the carport. Passage from bedroom wing to kitchen has glass wall overlooking pool and is separated from living room by fireplace wall*



# AN INDOOR SPORTS PAVILION FOR STANFORD







## STANFORD UNIVERSITY SPORTS PAVILION

*John Carl Warnecke, Architect*

A SIMPLE SWEEPING red tile roof — chosen to harmonize with other Stanford buildings — shelters this 8000-seat pavilion for major indoor sports and university events, and provides the dominant unifying architectural element.

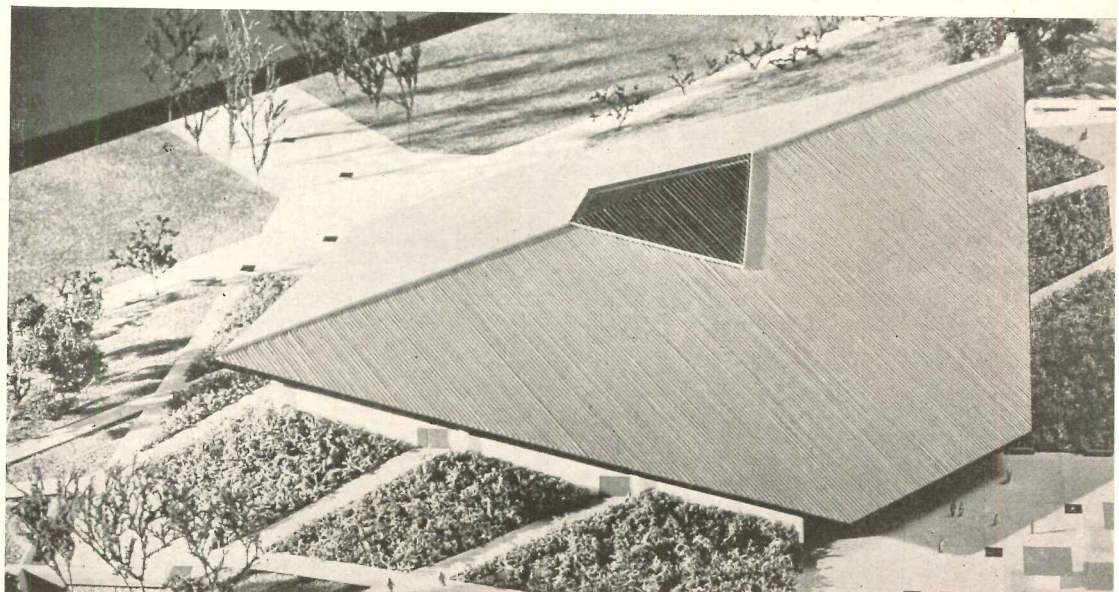
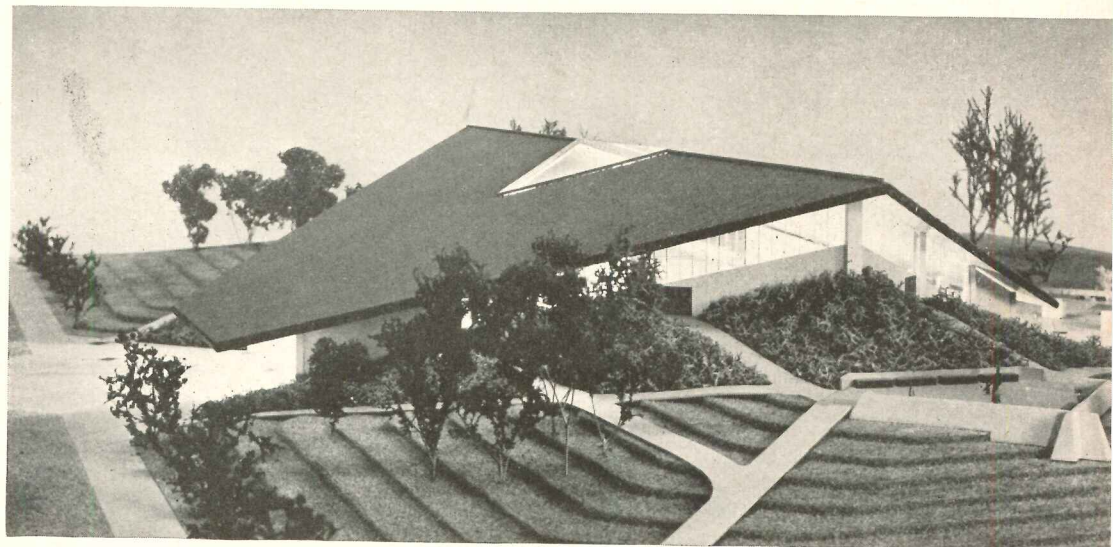
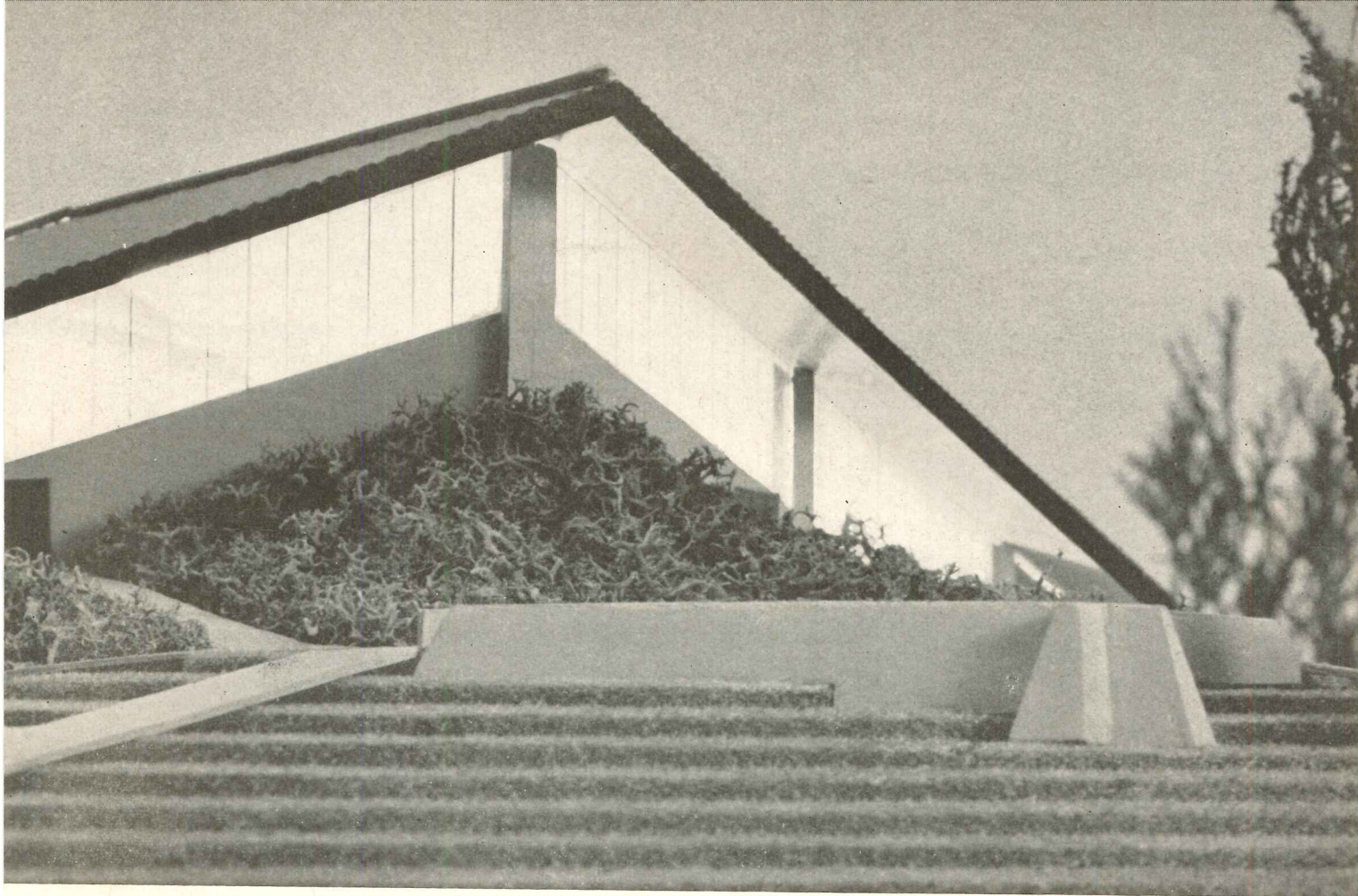
Point of departure for this program was the need for a non-interrupted playing area 110 ft by 165 ft, convertible from a single competition basketball court to three cross courts. Twenty-eight hundred folding bleacher seats permit this conversion. Organization of the space along the diagonals of the basically square

plan provides the greatest depth of seating at the most desirable places and eliminates dead, inaccessible corners.

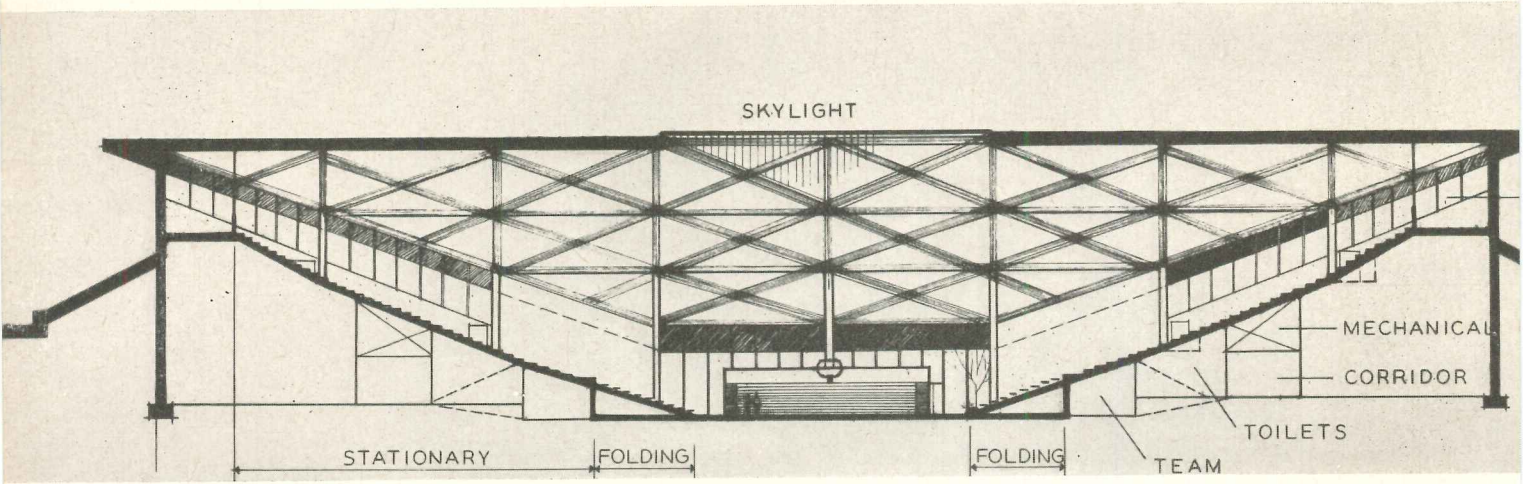
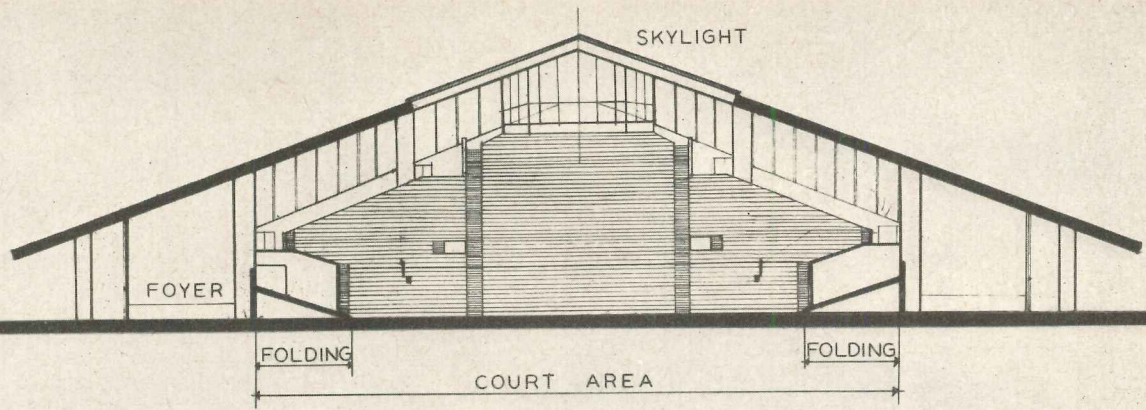
Excavated earth deposited against the building sides in slopes coinciding with the slope of the seating and with the slope of the roof, contributes an unusually strong visual unity while at the same time it provides both structural economy and easy exit-to-grade from the several seating levels.

Entrances to the pavilion are at opposite ends and are connected by a peripheral corridor which permits









**STANFORD UNIVERSITY SPORTS PAVILION**

direct access to the seats. The location of team and locker rooms and other adjunct facilities below the seating areas preserves the simple integrity of the single large space and makes possible its strong expression in terms harmonious with the existing campus architecture without making concessions inconsistent with the functions and structural methods of the building.

Basically, the structure consists of diagonal steel ribs whose supports are so located that they do not interfere with free vision from any of the seating areas. Exterior

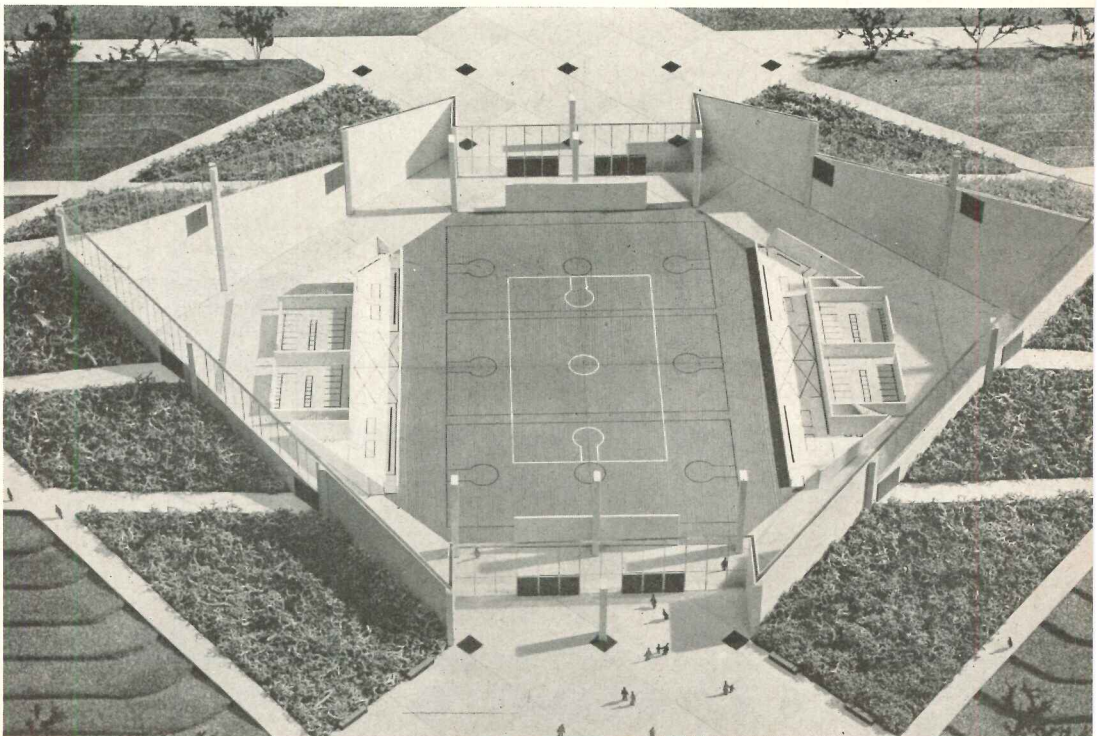
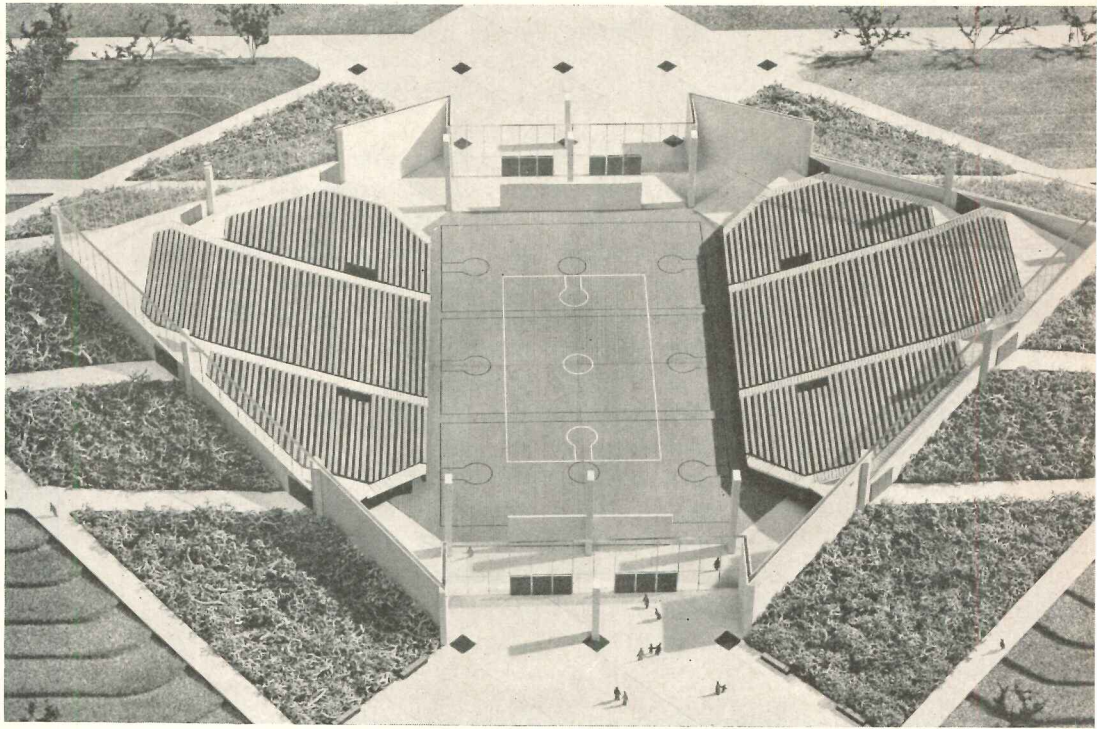
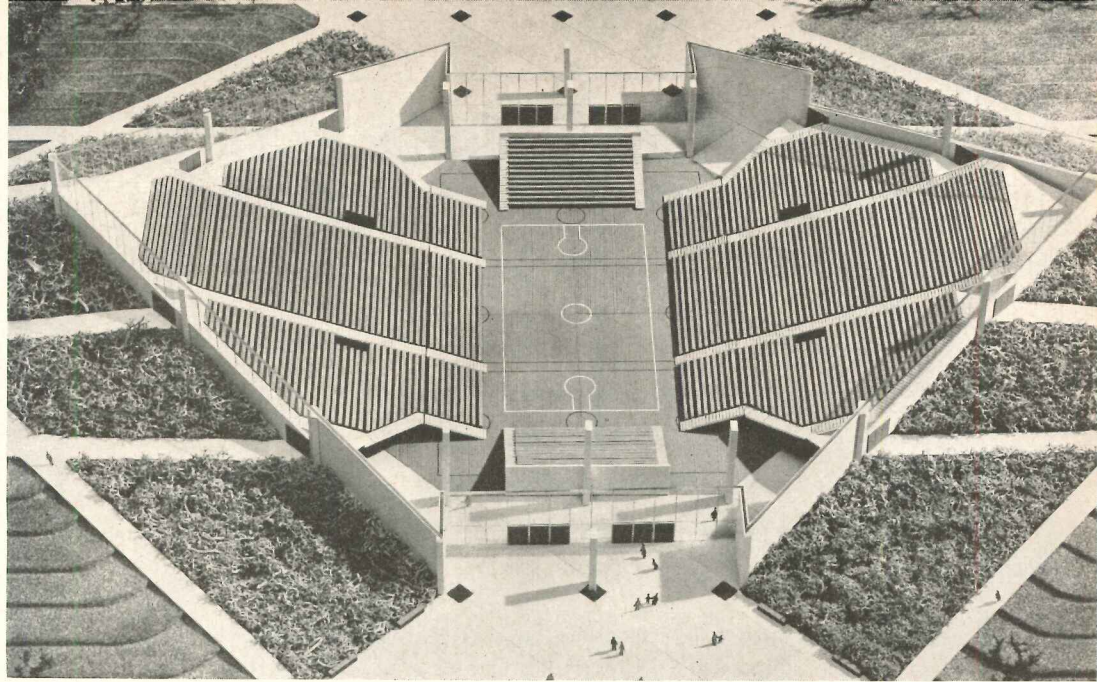
finish surfaces are easily maintained concrete, glass and tile.

The glazed diamond-shaped eye across the center of the roof ridge will admit a flood of diffused light into the interior during daytime use, and at night will provide an arresting accent at the center of the composition.

Taken all together, this building seems to have frankly faced the disparate requirements of its program, and has found a way of organizing its answers in a solution whose bold unity promises great satisfaction.



010





# FIRST UNIT OF A FOUR PART MASTER PLAN NOW FINISHED

*Fellowship Hall, Trinity Church — Presbyterian    Natick, Mass.*

*The Architects Collaborative, Architects*

*Bolt, Beranek E. Newman, Acoustical Consultants*

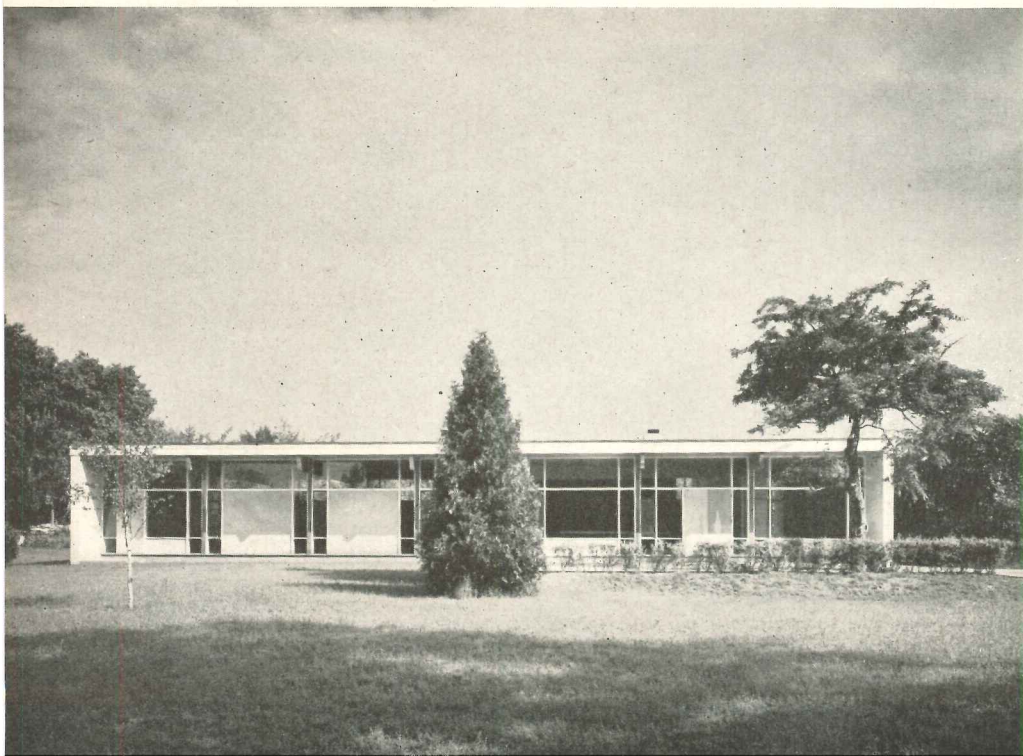
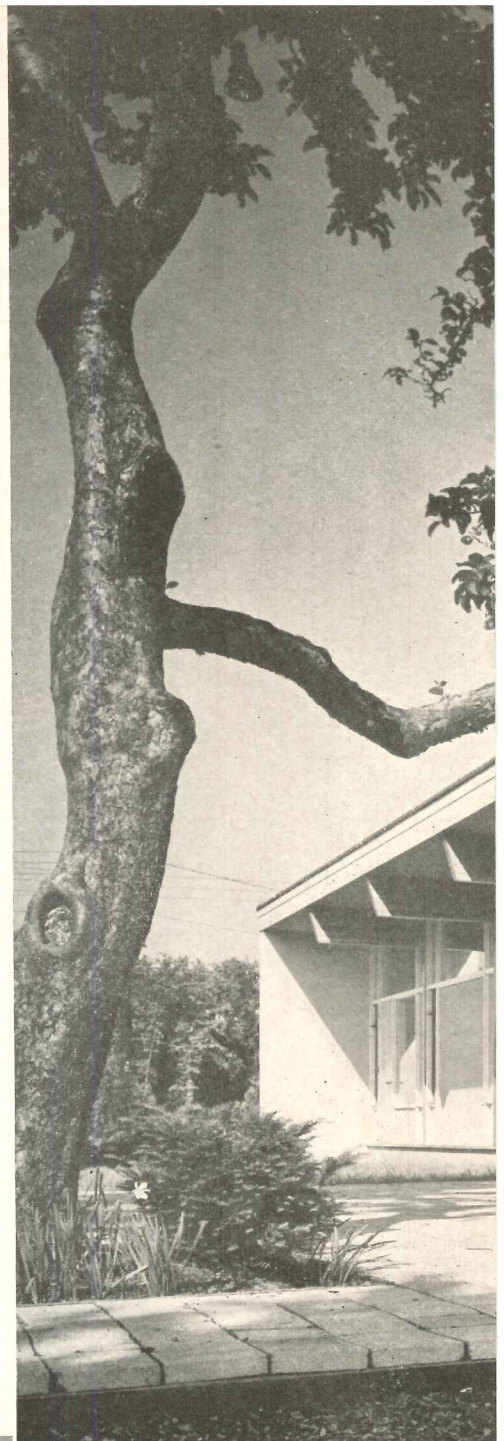
*Thomas Worcester, Inc., Heating Engineers*

*Stanley I. Phalen, General Contractor*

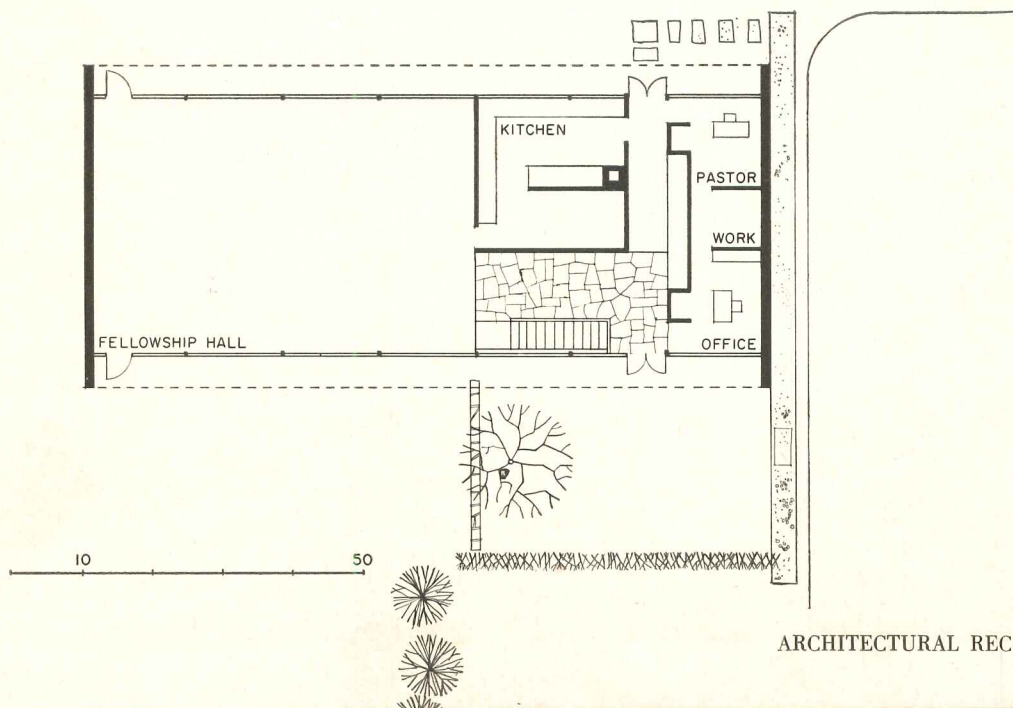
**C**ALLED FELLOWSHIP HALL, this building is the first completed unit of a master plan for a Presbyterian center consisting of four structures joined by covered walkways. The scheme manifests a four part concept of the Church life — fellowship, education, meditation, and worship. The site is a wooded five acres near a new residential development of 1000 homes, mostly owned by young couples.

The design is a pleasingly straightforward expression of function and structure, well proportioned and carefully detailed. The simple modular plan is arranged for easy expansion endwise. Four of the 17 ft bays are devoted to a multi-purpose assembly room which seats 225. The remainder of the ground floor is turned over to the Church office, pastor's study, kitchen, etc. The assembly space will serve for worship until the church proper is built; will also be used for suppers, socials, adult study groups, etc. The full-area basement will later be finished for youth activities, community functions, scouting headquarters, etc.

The basement and above-grade walls are of concrete block finished with acrylic resin paint. Ceiling panels between the laminated girders are sand finish plaster; floors are asphalt tile. Ventilating sash are steel casements; all glazing is 1/4-in. polished plate. The building is insulated by reflective type material and is heated by a forced warm-air system.





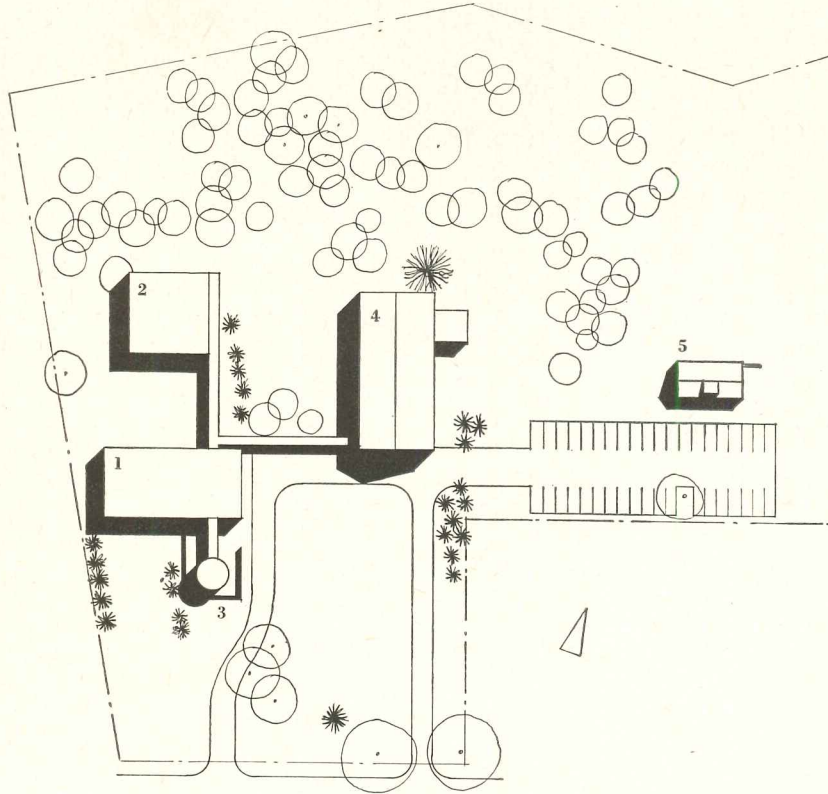




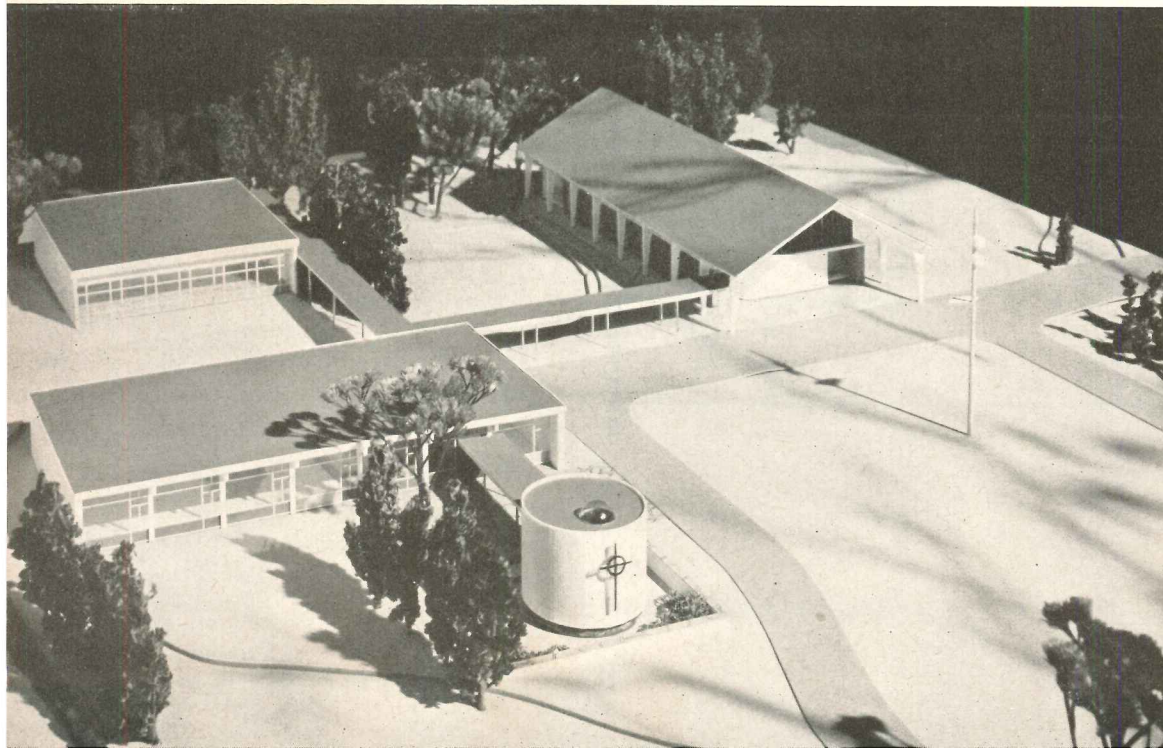
FELLOWSHIP HALL, NATICK, MASS.

MASTER PLAN:

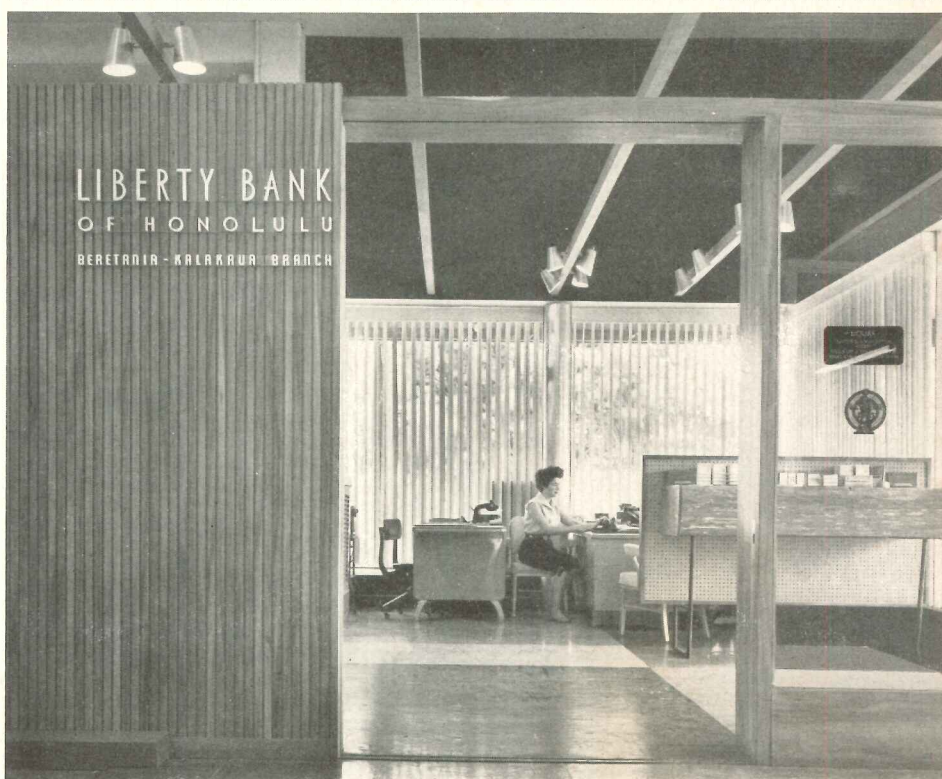
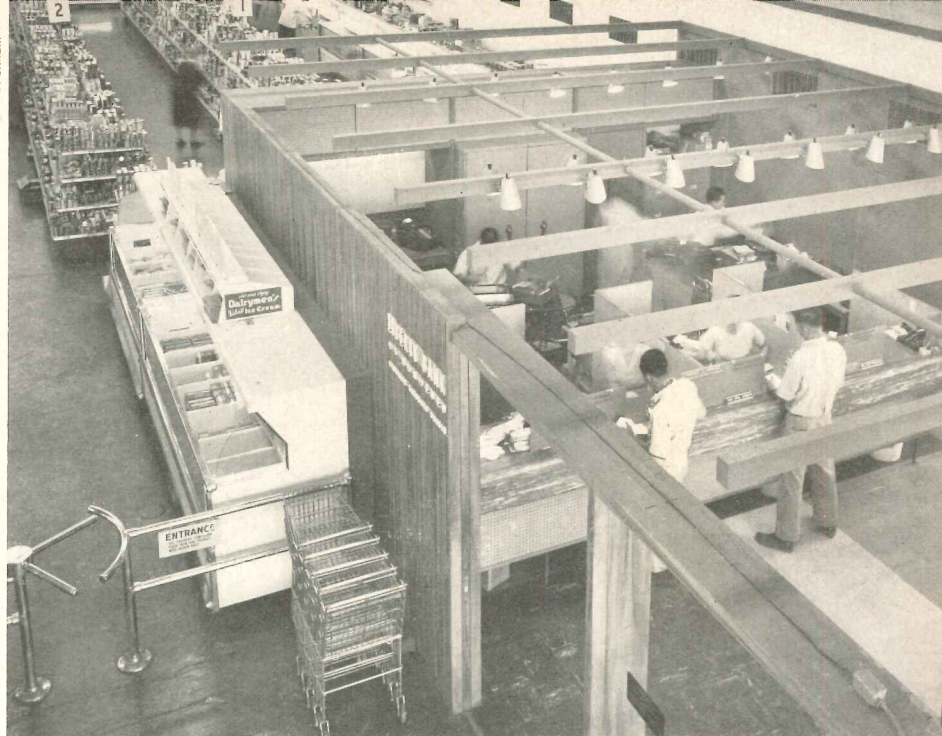
- 1. Fellowship
- 2. Education
- 3. Meditation
- 4. Worship
- 5. Parish House



The master plan and model photo show in physical form the four part concept of the Protestant Church life and its expression as a building group. Such a dispersion of elements offers advantages in orientation and site adaptation; offers also spatial interest.







## SMALL BANKS AN ACTIVE TYPE

### BRANCH BANK IN A SUPERMARKET

*Liberty Bank of Honolulu in the Foodland Supermarket, Beretania-Kalakaua  
Vladimir Ossipoff, Architect; Wayne F. Owens, Associate*

ARCHITECT OSSIPOFF says, "The establishing of a branch bank in an already operating supermarket was more in the nature of a service to the community than a business venture, although the bank did want to encourage possible patronage from this particular area.

"The design problem was thus one of maintaining a certain amount of friendly dignity (in contrast to the store operation) without creating a formidable atmosphere. The small investment of \$3600 has achieved its objective."





## BRANCH BANK IN A LARGE SHOPPING CENTER IN

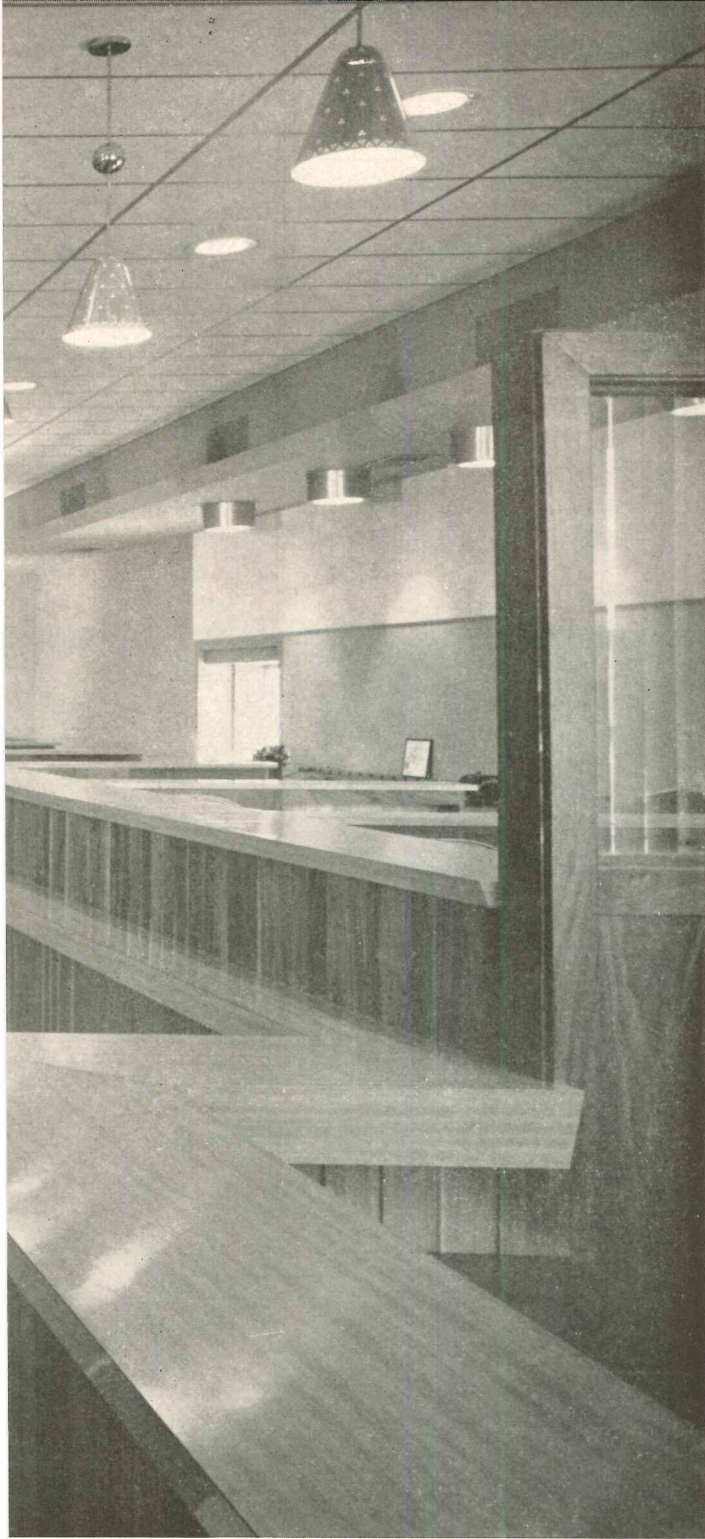
*Equitable Security Trust Co., Newark, Del.*

*Victorine & Samuel Homsey, Architects*

*Redding & Co., General Contractor*

CONCERNING THIS ATTRACTIVE branch office in a shopping center, Architect Sam Homsey says, "The problem was to develop a banking facility in a growing college and industrial community which would present a welcoming entrance as well as a light and cheerful interior for the customers. Our object in the design was to provide a generous, open public space and to locate officers' desks so the public would have the feeling they could be reached with ease. Since materials and colors were important in creating a cheerful effect, we used simple





## SMALL BANKS

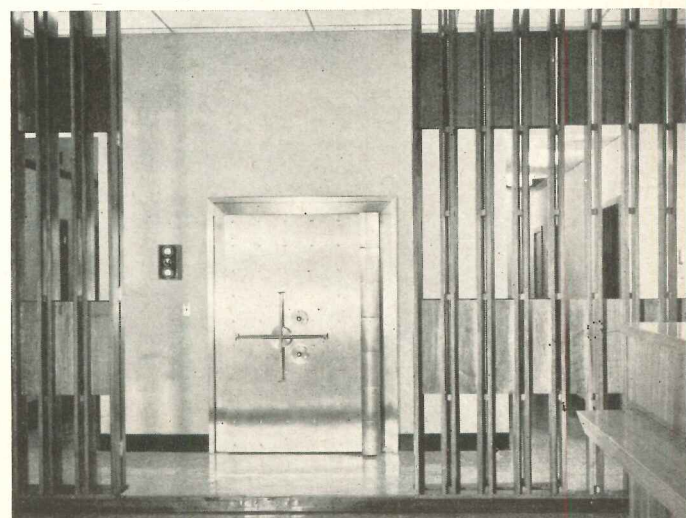
Joseph W. Molitor



## DELAWARE

rubber tile for the floors, colored burlap on the walls to help deaden sound, and natural walnut for the banking counter and check desks. The walnut screen at the rear — which serves to shield the coupon booths and their users — has opening sections which reveal the handsome vault door at night.

“The ceiling is finished with acoustical panels in two tones; general lighting comes from the over-all pattern of flush downlights and is supplemented by fixtures at each teller’s station and check desk.”





# SAVINGS & LOAN ASSOCIATION BUILDING FOR A

*First Federal Savings & Loan Association of  
Catawba County, Conover, N. C.*

*Clemmer & Horton, Architects;*

*James N. Sherrill, in charge*

*Robert E. Bush, Electrical Design*

*D. A. Rudisill, Mechanical Engineering*

ESPECIALLY NOTABLE for its interior, this inviting loan office received a merit award with special commendation at the annual meeting of the North Carolina Chapter, A.I.A., at Chapel Hill in January, 1955.

Architects Clemmer & Horton say, "The client had many preconceived ideas, all conventional. However, he placed confidence in us from the beginning, and that confidence grew as sound reasons for departing from a traditional solution were presented. Now — after occupying his building — he is pleased with the result."





## SMALL CITY

"Instead of the usual railing division between public and working areas, we suggested a more open, fluid arrangement in order to provide a friendly atmosphere. This idea was developed by the use of a mural, mobile, planting, placing furniture as space dividers, and by raising the tellers' screen off the floor."

All interior walls are red brick or oak; the dropped ceiling area is acoustical plaster painted dark blue-black. Floors are blue stone in public areas, cork in work areas, carpet in toilets.



Joseph W. Molitor

## SMALL BANKS





## A TWO-STORY DRIVE-IN BRANCH AND OFFICE

*Chautauqua National Bank, Jamestown, N. Y.*

*Member of the Marine Midland Corp.*

*Beck and Tinkham, Architects & Engineers*

*Paul B. Fleming, Mechanical Engineering*

*Paul C. Mehnert, Electrical Engineering*

ARCHITECT ELLIS W. BECK tells us, "The design for this branch faced the two-way problem of providing space for a time-loan accounting office as well as drive-in facilities for deposits and withdrawals. Also, some off-street parking was required, in addition to a clear traffic pattern for the drive-up windows.

"The 100 by 120 plot, located on the edge of the present commercial district, was limited enough that the ground floor area of the new building had to be held to a minimum. This was accomplished by dividing the





## SMALL BANKS

Joseph W. Molitor



## NEAR DOWNTOWN

time-loan department into two segments, with all interviewing and public contacts located on the ground floor and the accounting office on the second.

"The basement space is used for an employees' lunch room, lounge, and other social activities; also for general conferences. The south windows are shaded from the sun by extending the floor and roof slabs; the entire interior space is air conditioned.

"Although the community has been slow in adopting contemporary design, this bank has been well received."





# A LARGE CITY SUBURBAN BRANCH

*Manufacturers National Bank  
Joy Rd. & Stahelin, Detroit*

*Louis G. Redstone & Allen G. Agree,  
Associated Architects*

*F. H. Martin Construction Co.,  
General Contractor*

OF THIS STRIKING open steel design, Architect Louis Redstone says, "After building several experimental auto-banks wherein drive-up windows were in separate structures connected underground, this scheme — combining walk-in and auto-teller service — was adopted.

"The placing of the building on the plot allows maximum parking, a parking entrance, and auto-teller windows which are reached by means of a driveway that permits several waiting cars to line up without interfering with city traffic in the street."

SMALL BANKS





# For Older People —

## NOT SEGREGATION BUT INTEGRATION

By LEWIS MUMFORD



PROBABLY AT NO PERIOD and in no culture have the old ever been so completely rejected as in our own country, during the last generation. As their numbers have increased, their position has worsened. The breakup of the three-generation family coincided here with the curtailment of living space in the individual household; and from this physical constriction has come social destitution as well. Unwanted in the cramped small home, even when they are loved, and too often unloved because they are unwanted, the aged find their lives progressively meaningless and empty, while their days ironically lengthen. The years that have been added to their portion have come, unfortunately, at the wrong end of their lives.

Now the problem of housing the aged is only one part of the larger problem of restoring old people to a position of dignity and use, giving them opportunities to form new social ties to replace those that family dispersal and death have broken, and giving them functions and duties that draw on their precious life experience and put it to new uses. "Old age hath yet his honor and his toil," as Tennyson's Ulysses put it. The first step toward framing a sound program is, I believe, to examine the human situation as a whole, not to center attention solely upon the problems of destitution, chronic diseases, and hospital care. We shall not, perhaps, be able to care for the aged, on the scale their needs and our national wealth demand, until we are ready to put into the re-building of human communities something like the zeal, the energy, the skill, the dedication we give to the monomaniac production of motor cars and super-highways.

As things are now, the process of aging seems to go through three stages. The first, which begins around the age of forty-five, but may not be final for another twenty years, brings liberation from biological reproduction and increasing detachment from the active nurture of children within the family. For the sake of their own growth and independence, young people start at the earliest possible moment to live by themselves. Poverty or a housing shortage may prolong the two-generation family or even restore, in shaky desperation, the three generation family. But in general early marriages and early child bearing hasten the hiving off of the next generation.

Some time during this period of transition, those who have maintained a household big enough for a large family find their quarters empty but burdensome: for they are too expensive for their incomes, and even too large to keep clean, except at an extravagant cost in menial service. In cities, this leads either to a re-making of the single family house, if owned, into multiple dwellings, or to removal to a small apartment. This shrinkage of space is often accompanied by other losses, such as the breaking of neighborhood ties, the abandonment of a garden and a workshop; and that in turn brings about a further contraction of opportunities and interests. Mark the result: well before senescence has set in, even people in the upper income groups, in robust health, may find the orbit of their lives uncomfortably narrowing, in a way not adequately compensated by increased local mobility in the motor car and increased opportunities for general travel.

The second stage in senescence is that of economic retirement: withdrawal at the age of sixty-five, often enforced by benign pension provisions, from the active working life. Unfortunately our wide practice of automatic retirement often brings on a severe psychological crisis: but even if we showed greater flexibility in imposing retirement, still at some moment, early or late, this blow would fall. In addition to removing a worker from the main sphere of his life-interest and competence, it often halves his income or — as the recent Twentieth Century Fund report shows — cuts it down to a starvation level. At the same time, for those who have invested their energies too exclusively in their work, retirement tends to make their whole life seem meaningless. If at this moment, the community sharpens the crisis by weakening other social connections, too, it may psychosomatically aggravate the physical disabilities that begin to dog this period.

The final stage, that of physiological deterioration, is more variable than the cessation of reproduction or work. Whether the old are happy or bitter, active or frustrated, depends partly upon how long the period of health and vigor is in relation to that covered by the lapse of biological functions that leads to death. But also it depends partly upon how well the community's efforts are directed toward preventing minor impairments from turning, through lack of prompt and ade-





quate care, into major disasters. In any event, senescence proper brings about a gradual slowing down of the vital processes, the deterioration of bodily functions, eyesight, hearing, locomotion, fine coordinations, memory. With this goes a loss of self-help and with that, self-confidence. In the end this loss may necessitate institutional care, in a nursing home or a hospital. Since the cost of such institutional care, if prolonged over any considerable period, taxes heavily even the upper ten per cent of our income groups, every effort must be made, not merely to lengthen the period of active health, but to restore, through neighborly cooperation and friendly oversight, the kind of voluntary care that the three-generation family once made possible.

If we carry our analysis far enough, we shall find, I think, that the three phases of old age—liberation from reproduction, economic retirement, and physiological breakdown—demand a common solution. We shall also find that no present institution, certainly no simple architectural scheme, and no mere extensions of existing services, will supply that solution.

The main point I would make is that the transition from middle aged maturity to old age is a long process; and if we meet it imaginatively at the earliest period possible, instead of waiting till the last desperate moment, we can make the transition without a jar, and in some degree turn a crisis, full of cruel decisions and bitter acceptances, into a positive and fruitful phase of life. Even more, by extending active life on the upgrade we can perhaps shorten the period, now so burdensome, when it is on the downgrade. By contrast, the worst possible attitude toward old age is to regard the aged as a segregated group, who are to be removed, at a fixed point in their life course, from the presence of their families, their neighbors, and their friends, from their familiar quarters and their familiar neighborhoods, from their normal interests and responsibilities, to live in desolate idleness, relieved only by the presence of others in a similar plight. Let us ask rather by what means we can restore to the aged the love and respect that they once enjoyed in the three-generation family at its best.

Unfortunately for any such aim, specialization, mechanization, institutionalization, in a word, segregation, are the order of the present day: a meaningless, effortless, parasitic, push-button existence is now put

forward as the beautiful promise of an advanced technology, indeed, the ultimate goal of our whole civilization. If those terms were actually final ones, I, for one, should hardly be concerned with the fate of the aged; for it should be plain that a whole society that can conjure up no better goals is already moving swiftly toward early euthanasia, or at least toward mass suicide. If we wish something better for ourselves, we must be prepared to put forward a program, at every phase of life, that challenges many of the dominant habits and customs of our society and moves boldly in a contrary direction.

At some point in conceiving a good habitat for the aged, we must of course come to an architectural solution; but we must not for a moment imagine that the architect himself, even when backed by ample financial resources, can provide the answers that are needed, or that beauty and order and convenience alone are sufficient. One of the most generous quarters for the aged I have seen is the old Fuggerei in Augsburg, built in the sixteenth century, composed of one-story row dwellings, giving privacy to each old couple, with a handsome fountain and a chapel. But this "city for the aged and poor" is set apart from the rest of the town; though it has beauty and order, it lacks animation; at best it is only a handsome ghetto. The objection against this solution was indignantly put to me by an old man in another comely quadrangle for the aged near Manchester: a modern building set in ample grounds looking inward on a spacious grassy close: also with a little chapel where the dead rested before burial. At first glance, the peace and beauty of this spot seemed "ideal"—but the inmates knew better. They now had, alas! only one occupation: remaining alive. When the bell tolled, it tolled not only for the departed: it ominously summoned those who were left. "All we do here," said my bitter informant, "is to wait for each other to die. And each time we ask ourselves: 'Who will be next?' What we want is a touch of life. I wish we were near the shops and the bus station where we could see things."

To normalize old age, we must restore the old to the community. In order to make clear what this means, let me assume that we have a free hand and can plan a whole neighborhood community, as one does in an urban re-development area in the United States or a New Town in Britain. If we establish the right relationships under such ideal conditions, we shall have a clearer view of what to aim for in situations where only a piecemeal solution is possible. We cannot have even a good half-loaf unless we know what ingredients should go into a whole loaf.

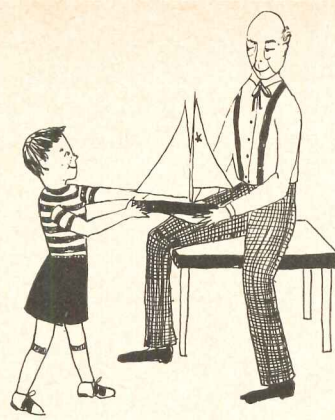
The first thing to be determined is the number of aged people to be accommodated in a neighborhood unit; and the answer to this, I submit, is that the normal age distribution in the community as a whole should be maintained. This means that there should be from five to eight people over sixty-five in every hundred people; so that in a neighborhood unit of, say, six hundred people there would be between thirty and



forty old people. Any large-scale organization of habitations for the aged, which upsets this proportion, should be avoided. And this brings us to the second requirement. For both companionship and easier nursing care, the aged should not be scattered in single rooms or apartments through the whole community; but neither should they be thrown together in one large barracks labelled by the architecture, if not the sign-board, Old Peoples' Home. They should rather be grouped in small units of from six to perhaps a dozen apartments. The old monastic rule, that one needs a dozen members to form a community, has had long enough trial to give one confidence in it as a rough measure: when there are less than a dozen, a single cantankerous individual may have a disruptive effect. When there are too many together, they bring on institutional regulations. As an old Navy man once pertinently remarked: There is freedom on a destroyer but not on a battleship.

But once a reasonable degree of closeness is established between small groups of the aged, there is much to be gained by giving them apartments on the lower floors of two- or three-story houses whose upper floors will be occupied by childless people in other age groups: there is likewise reason for providing a covered way or arcade, to make visiting back and forth easier in inclement weather, and to serve as a sheltered place for chatting and sunning at other times. This mixing of age groups within a housing unit primarily designed for the accommodation of the aged would make it possible for those past sixty-five, who found stairs difficult, or who wanted to be more accessible, to adapt themselves to their infirmities with no greater hiatus than moving downstairs.

Now it happens that the number of people over sixty-five in a community are roughly the equivalent of the number of children under six or seven; and in meeting the needs of both extremes pretty much the same conditions hold. Young children need special protection and bodily care; they must be guarded from wheeled vehicles; their difficulties in locomotion and coordination when under three make it desirable to avoid unnecessary obstacles and long flights of stairs. Even psychologically, there are parallels between the self-absorption of the young child and the tendency to withdrawal and inner concentration that mark the last phase of senescence. In a well-designed neighborhood unit, the aged should be able to go to any part of it, including the shopping area, the library, the church, the community center, without crossing a traffic artery; indeed, without if possible climbing a step. Someday, when our motor car production is designed to fill varied human needs, rather than the requirements of the assembly line, we will produce electrically-powered rolling chairs for the aged, which can go safely anywhere a pedestrian can go. That will lessen one of the serious handicaps of old age, if medical remedies for arthritis and feeble limbs remain ineffective. But until then, the ambit of the five-year-old child and the seventy-five-year old senescent is their normal walking



distance. Once these conditions are fulfilled in a neighborhood unit, a larger life would begin to open before the aged.

Now we are ready to re-build, in our ideal scheme, the other facilities and activities and services that were once performed, more or less effectively, by the three-generation family. And just as the young proceed with their growth through multiplying their contact with the environment and enlarging their encounters with people other than their families, so the aged may slow down the processes of deterioration, overcoming their loneliness and their sense of not being wanted, by finding within their neighborhood a fresh field for their activities.

But before such an environment can be created, we must challenge the whole theory of segregation upon which so many American communities, not least those that call themselves "progressive," have been zoned: zoned so that one-family houses and apartment houses, or row houses and free-standing houses, cannot be built side by side; zoned so strictly for residence that in many suburban communities one cannot buy a loaf of bread or a tin of tobacco without going a mile or two by car or bus to the shops. The pernicious effect of this kind of zoning was first adequately characterized by the Committee on Community Planning of the A.I.A. as far back as 1924, and time has abundantly proved all their contentions. Under our zoning ordinances, it is impossible to give either the young or the old the kind of occupational and environmental variety that both a superblock and neighborhood unit should have.

In a mixed community, however, many opportunities for service, both voluntary and paid, would open to the aged. Gardening is an occupation that can be carried on at odd hours, and that can be adapted to the strength and staying power of the old: when a community is well planned, with sufficient amount of parked and gardened open space, it makes greater demands for collective care than it can now often afford. Certainly old people with a turn for gardening should have a little garden plot of their own, too, to look after. Similarly other opportunities for handicraft should be met by the provision of workshop facilities; making toys, repairing mechanical fixtures, binding books, painting furniture would not merely provide older people with new forms of work: it would, even more importantly, give them the human contacts that a more restricted life fails to offer. Such little shops





would have a further educational value for the younger members of the community: indeed, they might be incorporated, with a separate entrance from outside, in a modern school, with great advantage to both the old and the young, who now too often miss the

precious experience of intercourse with their grandparents' generation. I know a small town where the carpenter's shop, situated in the old residential area, is the place where school children come to get little repair jobs done; and their contact with the carpenter himself is an affectionate and rewarding one. Such a program would be far more efficacious, psychologically speaking, than merely putting the aged to work on some monotonous specialized task, producing in quantity for the market, under factory conditions.

In addition there are other services that the aged can perform only in a mixed community, beginning with their most obvious service as baby-sitters. This again, at a dollar an hour, has become a prohibitive luxury even in middle class communities; and the hazards of leaving the young to the sometimes irresponsible care, if not criminal levity, of inexperienced adolescents only underline the desirability of enlisting the old in the same fashion as they would have been used in the three-generation family. In addition, there are many experienced old women, proud of their skill at baking a cake, or even cooking a whole dinner, who would think better of themselves and their life if they might cook and bake occasionally for pay. By having such opportunities, old age pensions and annuities might be made to go a little farther, with greater happiness for both the server and the served. To cause the aged to spend all their time glued to a television set is to damn them prematurely to a second childhood. Though these passive amusements have their place in the life of the aged, especially for the crippled and bedridden, there is little reason for reducing their lives as a whole to such a soporific routine. What the aged need is activities: not just hobbies, but the normal participation in the activities of a mixed community.

No single institution, however amply financed and humanely planned, could provide anything like the range of interests that a mixed neighborhood community would do, once age ceases to be regarded as a disease, best treated in an isolation ward. Still there usually comes a time in everyone's life sooner or later when he requires specialized nursing and medical care. The skillful organization of such care is the duty of the community as a whole; but some fatal inertia has kept our hospital services in an antiquated centralized pattern, and has prevented the creation of small nursing homes, close at hand for family and neighborly visitors, who could, if the hospital were conveniently at hand, take over no small part of the otherwise prohibitively expensive nursing service.

Even before active hospitalization there is need for a public organization of visiting nurses and visiting houseworkers, such as are now provided for on a national scale in England and likewise in certain individual American cities. Here again, by drawing upon all the resources of the community, a much more favorable situation can be created than the most elaborately equipped central institution can provide. I look forward to a day when a small nursing home, for illness and for maternity cases, will be part of the normal requirement of a neighborhood: perhaps as a direct adjunct to a medical clinic and a visiting nurse service. Only when these normal functions of the family are drawn back into the circle of the neighborhood community is there any prospect of our catching up with our needs without raising to a prohibitive height the present cost of institutional care.

Now we can put together these requirements for the aged. They should, first of all, be part of a normal mixed community, whether they become members of it at twenty-five or at seventy-five. Their quarters should be undistinguishable outwardly from those of other age groups; but they should be sited, as far as possible, where there is a constant play of diverting activity, near a shopping center or a school, so that their chance of being visited, casually and effortlessly, will be increased. Frequent visits, though short, are more refreshing than formal visits, tediously prolonged, that leave desolate intervals of loneliness between them. Many people would find their own family life replenished if the grandparents, though not under their feet, were near at hand; and above all, the young would be the gainers from this; for there are special bonds of sympathy between them and their grandparents' generation, through its very detachment, which often makes them far more ready to heed their advice than that of their own parents. Who can say how much delinquency and brutalized mischief in our American towns may not be due to the very absence of a warm, loving, reciprocal intercourse between the three generations?

Through their nearness to each other, in small units, personal contacts within their own group may easily pass beyond the pleasantries of daily intercourse, the hospitalities of a cup of coffee in the afternoon or a friendly game of cards or checkers or chess at night; it would also involve visiting each other when ill and performing little services for each other. Everything that makes the aged more independent, yet more confident of the fact that their presence is welcome, increases their capacity to love and be loved; and it is only, in the end, by providing an environment in which the gifts of love may be more easily interchanged, that old age can be kept from shrinking and drying till what is left of life is only a dismal waste. But to say this is also to say that there is no easy shortcut to improved care of the aged: to do well by them, we must give a new direction to the life of the whole community. If we fail here, we shall, in prolonging life, only prolong the possibilities of alienation, futility, and misery.



*Announcing*

# ARCHITECTURAL COMPETITION

THE NATIONAL COMMITTEE ON THE AGING of the National Social Welfare Assembly announces an open Architectural Competition for a Home for the Aged to include an infirmary and rehabilitation facilities. Administrative costs and prizes are provided through a grant from the Frederick and Amelia Schimper Foundation. The competition is being conducted in cooperation with ARCHITECTURAL RECORD and *The Modern Hospital*.

The purpose of the competition is to stimulate imaginative planning for a type of building rapidly increasing in volume and importance but relatively new to architects, and about which there is practically no reference material in the literature of architecture. If new buildings are to be truly functional, architects and those responsible for the care of the aged need to understand more clearly an emerging positive philosophy about old age as well as the current scientific, social, and economic trends, which affect the lives of older people.

The competition is an extension of four years of work by the National Committee on the Aging in improving standards of institutional care for the aged. Previous efforts have produced a series of three books entitled "Standards of Care for Older People in Institutions."

Chairman of the jury is Pietro Belluschi, Dean of the School of Architecture and Planning of the Massachusetts Institute of Technology. Other members are: Richard J. Adams, Architect, Montgomery, Ala.; Ollie A. Randall; Charles F. Wilinsky, M.D., Hospital Consultant, of Boston; William Wilson Wurster, Dean of the School of Architecture of the University of California.

The Professional Advisor is I. S. Loewenberg—Loewenberg & Loewenberg, 111 West Monroe Street, Chicago 3, Ill. Edward H. Noakes is Consulting Architect.

The competition was planned with the help of an advisory committee:

*Michael M. Dacso, M.D., Director  
Physical Medicine & Rehabilitation  
Goldwater Memorial Hospital*

*John J. Egan, President  
Hospital Industries' Association*

*Emerson Goble, Managing Editor  
ARCHITECTURAL RECORD*

*Frank S. Groner, Administrator  
Baptist Memorial Hospital*

*Everett W. Jones, Vice President  
The Modern Hospital Publishing Co.*

*Walter A. Taylor, Director  
Department of Education & Research  
American Institute of Architects*

*Wilbur Henry Tusler  
Magney, Tusler & Setler,  
Architects & Engineers, Minneapolis  
(Chairman, Committee on Hospitalization  
& Public Health, American Institute of  
Architects)*

*I. S. Loewenberg, Architect  
Loewenberg & Loewenberg, Chicago*

*Edward H. Noakes, Architect  
White, Noakes & Neubauer  
Washington, D. C.*

*Ollie A. Randall, Vice Chairman  
National Committee on the Aging*

*Dean W. Roberts, M.D., Director  
Commission on Chronic Illness*

*August Hoenack, Chief, Architectural &  
Engineering Branch, Division of  
Hospital & Medical Facilities,  
Public Health Service*

*Clifford Wolfe, Secretary  
Council on Hospital Planning & Plant  
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*Joseph Douglas Weiss  
Architect, New York City*

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*Some Current Attempts at***BETTER BUILDINGS FOR THE AGING***By Geneva Mathiasen**Secretary, National Committee on the Aging  
National Social Welfare Assembly, Inc.*

SOMETHING TO DO, and a place to live" — these are the two great needs that time puts upon all those who live into old age. At present, any older person who finds in his community the means of satisfying either of these needs is lucky. It is a safe guess that during the last half of this century, there will be no community in which the needs of the elderly are not reckoned with in a fair share of the building which is done. Not only will dwelling units be affected: steep flights of steps to church auditoriums will be eliminated; curb stones at street corners will be replaced by gently sloping ramps; grab bars may well become standard equipment in all public toilets; shops will provide places for customers to be seated while examining merchandise and alcoves for rest and possibly refreshments on every floor. The needs of older people in the community must be in the minds of architects and planners in relation to public buildings as well as private dwelling units.

*Numbers and Current Housing Status.* The number of people 65 and over in this country is increasing every day. At present, about one person out of every twelve is 65 or over; by 1975 the proportion will be one out of every ten. By 1960 there will be nearly 16 million people in this age group. How many of these will want or need new housing, no one can say. However, 1950 Housing census data revealed that nearly 30 per cent of the dwellings owned by this age group were sub-standard and 43 per cent of those rented were sub-standard. On the other hand, 30 per cent of the dwellings owned by those 65 or over had a value of \$10,000 or more.

These houses of higher value, however, are not necessarily suited to the needs of older people. Twenty per cent have seven rooms or more, and are often relics of a former day when families were larger, land and building costs lower, and large houses in vogue.

Probably the most striking feature of the housing census so far as older people are concerned, is the large number — nearly two thirds — who own their own homes. While the home often represents lifetime savings, it is not only a financial but an emotional asset. Many older people will go without food, fire, clothing, or medical care even to the extent of health impairment in order to keep their house. Since the necessity to relinquish it is usually brought about by illness, death of a spouse, or sharply reduced income, there is apt to be double trauma. Therefore, pre-retirement counseling by industry or the community suggests planning at an earlier age for the kind of housing needed for the later years and making a move, whenever the family is grown

and less space is required. Since the need for a smaller space is characteristic of very young as well as older families, there is a much larger potential market for the small house than is currently realized. Also, since many of the architectural features essential to the health and safety of older people are also convenient for younger people, the same type of housing may be suitable for both young and elderly families.

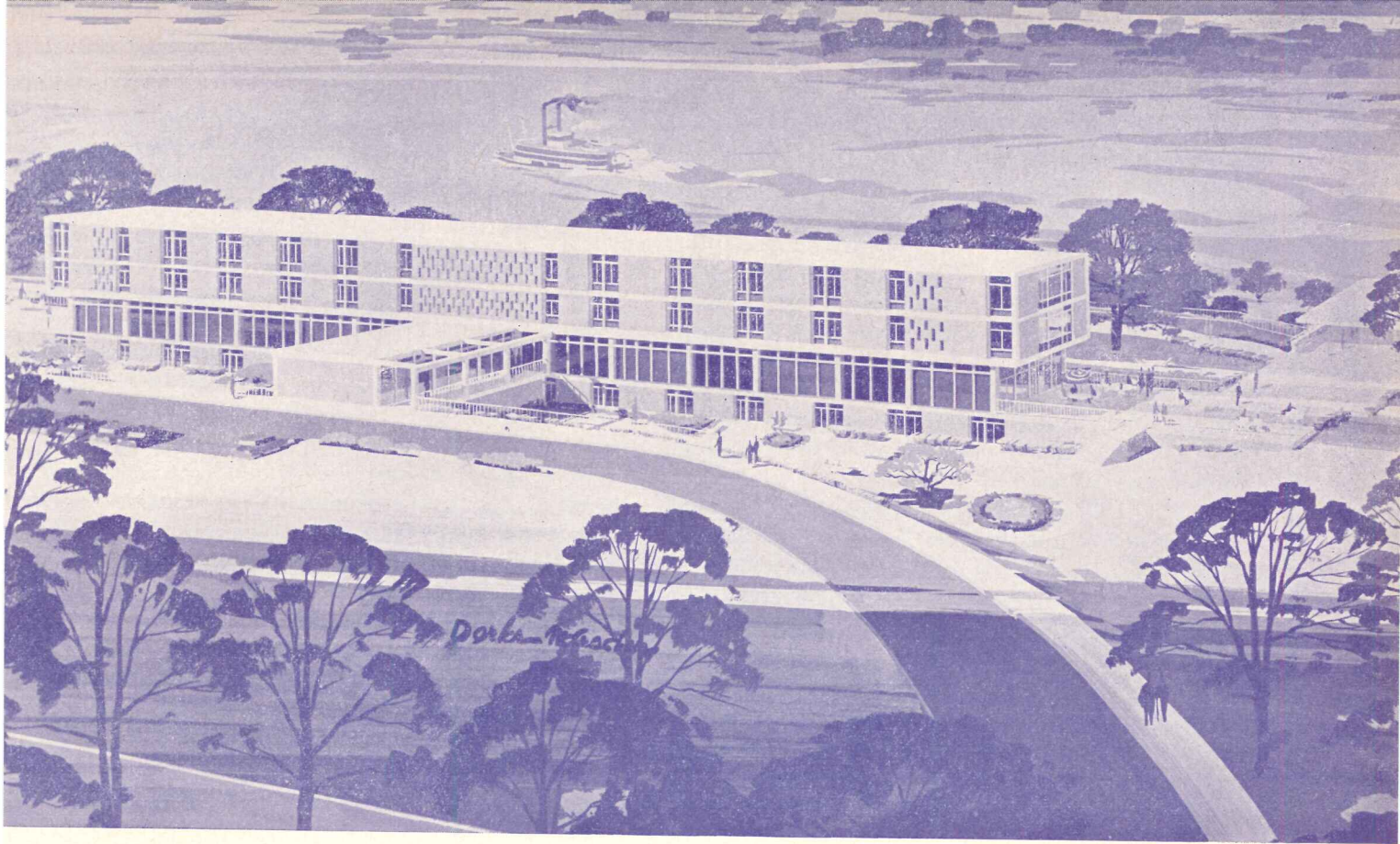
*Geographical Distribution.* Contrary to popular opinion, the aged are not concentrated in a few states with equable climates. The New England and mid-western states have a higher proportion of their population over 65 than do Florida and California. Furthermore, most elderly people prefer to remain in their own communities. The movement of younger people to the suburbs often leaves older people in the inner city of the metropolitan area, usually in sub-standard housing which tends to perpetuate slums. The high percentage of older people and their housing needs affects every state and community, though the specific needs may vary with the local population.

*Family Size and Sex.* The most significant fact is the large number of single people the majority of whom are women. Only about 44 per cent of those 65 and over in 1950 were married and living with a spouse. The rest of the aged — nearly three out of five — have no husband and wife households. More than half the women in this age group are widowed, and about one fourth of the men. While the older population in 1900 was about equally divided among men and women, in 1950 there were 90 older men per 100 women, and by 1975 estimates are that the ratio will be about 72 men per 100 women. This tendency points to an increasing number of unattached elderly women who will need living accommodations suited to their circumstances.

*Financial Status.* There is a tendency to equate age with low income. In 1950, nearly two thirds of all aged men had annual incomes under \$2000. On the other hand, aged men received ten per cent of all incomes between \$15,000 and \$25,000, and 18 per cent of all incomes of \$25,000 and over. While there is a great problem of providing good housing for older people at a price they can afford, there is a market for housing in a wide range of income groups. Furthermore, the income status of older people in the future will be greatly changed for the better with increases in Social Security benefits and the growth of industrial pensions.

*Health.* The National Health Survey showed that "On any given day, one in every seven men and women

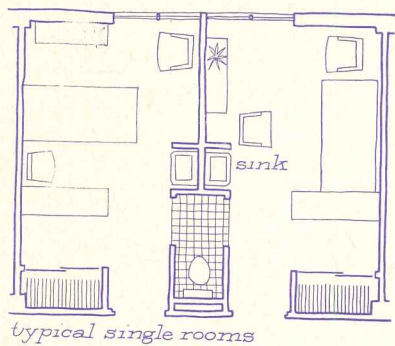




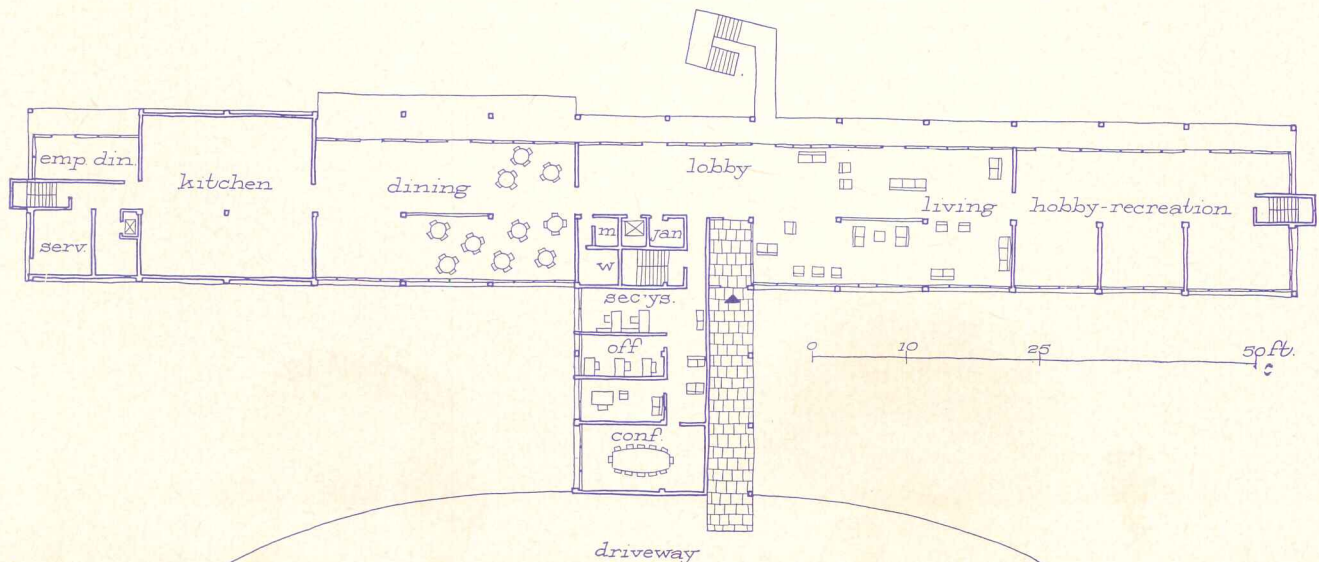
**GOOD SAMARITAN HOME FOR THE AGED**  
*St. Louis, Mo.*

*W. P. Manske; and*  
*Hellmuth, Obata & Kassabaum, Architects*

Now in final design stage, this building for the Evangelical and Reformed Church is to be located on a bluff overlooking the Mississippi. Due to a slope in the site, main entrance, living and dining rooms and the like will be on the second of four floors, bedrooms on the first, third and fourth. The fourth will also house extensive medical facilities and infirmary section. As now planned, the infirmary will have 25 beds, in a building to house 150. Each floor will have its own lounge area, sun room, sewing room and snack kitchen. Most of the residents will be in single rooms, each having private lavatory and sharing a toilet with the next room.



*typical single rooms*





aged 65 and over is disabled, and four out of seven of these (8 per cent of all aged persons) are disabled because of major chronic diseases or impairments." In a survey of the retired population of St. Petersburg, 36 per cent of the group said they had one or more chronic illnesses. However, nearly 62 per cent had not visited a doctor during the preceding six months, and less than 5 per cent had required nursing care during that time. At this point, it is important to take note of the tendency to speak of "older people," meaning those over 65, as if they were all similar in physical characteristics and needs. Individual differences, however, tend to increase, not decrease with age.

Dr. J. H. Sheldon, eminent British physician and President of the International Association for Gerontology, points out that old age can be most accurately measured in relation to the degree of independence retained, and in this sense "age" is more apt to affect the individual at 75 than 60. After 75, the infirmities of age are more frequent. Many more people live in institutions at that age or in the homes of relatives. This fact is of supreme importance in relation to housing, for architectural features alone may often mean the difference between independent and institutional living, — and it influences profoundly the kind of health facilities needed in a Home for the Aged.

#### *New Developments in Housing the Aged*

Suitable housing for older people is scarce, and even serious consideration of the need is very recent. In the past few years, there has been a great deal of talk and some experimentation. Every community that has surveyed the needs of its older people has placed high priority on housing. Actual experience, however, is spotty and widely scattered. The following examples may indicate trends and suggest further developments:

*The Individual House for the Older Person.* Many older people desire a small house situated like any other house in a normal community. Few of these have so far been built, in part at least, because of the difficulty of favorable financing for a one-bedroom house. There has been a strong belief that such houses have small resale value. Further experience, however, may well prove the falseness of this assumption. There is some experience in having such a small independent unit attached to the house of an adult child or other relative, the so-called "mother-in-law house." Proposals have been made, also, for duplex lifetime houses. One unit would be the small one-bedroom house for the early and late years; the other a three or four bedroom unit for the period of family life. At all times the unit not in use would be available for rental and provide income.

*The Retirement Village.* The typical retirement town is a planned community of 500–1000 housing units to provide living accommodations for retired people. In their simplest forms these are real estate developments containing small individual houses designed for sale, with a small down payment and monthly payments within retirement income. Often, though not always, they are several miles from a town of any size.

Some such communities make provision for grocery stores, drug stores, laundromats, etc. As these developments increase in number and competition becomes keener, other inducements are added. Some offer possibilities of employment in the shops, on the grounds, or in some light industry which may be established. Some offer to provide outdoor recreation areas and central buildings for working at hobbies or crafts.

Since current promotional efforts now indicate considerable building of this type, some observations about its desirability from the power of view of the older person and the promoter may be desirable.

*With some exceptions, the houses are planned with the needs of older persons in mind only in relation to size of family and retirement income.* They are small and low cost. One brochure advertises 1½ room houses, measuring 13 by 20 ft, for single people for rent at \$22.50 monthly; 2½ room houses for couples, 16 by 26 ft, at \$30.00 monthly. The brochure of a typical development for sales offers a two-bedroom house with carport for \$7000, a down payment of \$295, and monthly payments of \$55.

*There is real question about the desirability of isolating older people from the rest of the community.* There are obviously those who find no objection to this arrangement, since the houses are sold in considerable numbers. However, so far there has been too little housing available to older people to allow for much choice. Also, most of these developments are new, and their ultimate success cannot yet be judged. Most of these houses are purchased new during the early years of retirement when a couple is in fairly good health, able to maintain house and grounds, have a car in good repair, and a retirement income sufficient to provide for necessities. Ten years later the situation may be quite different.

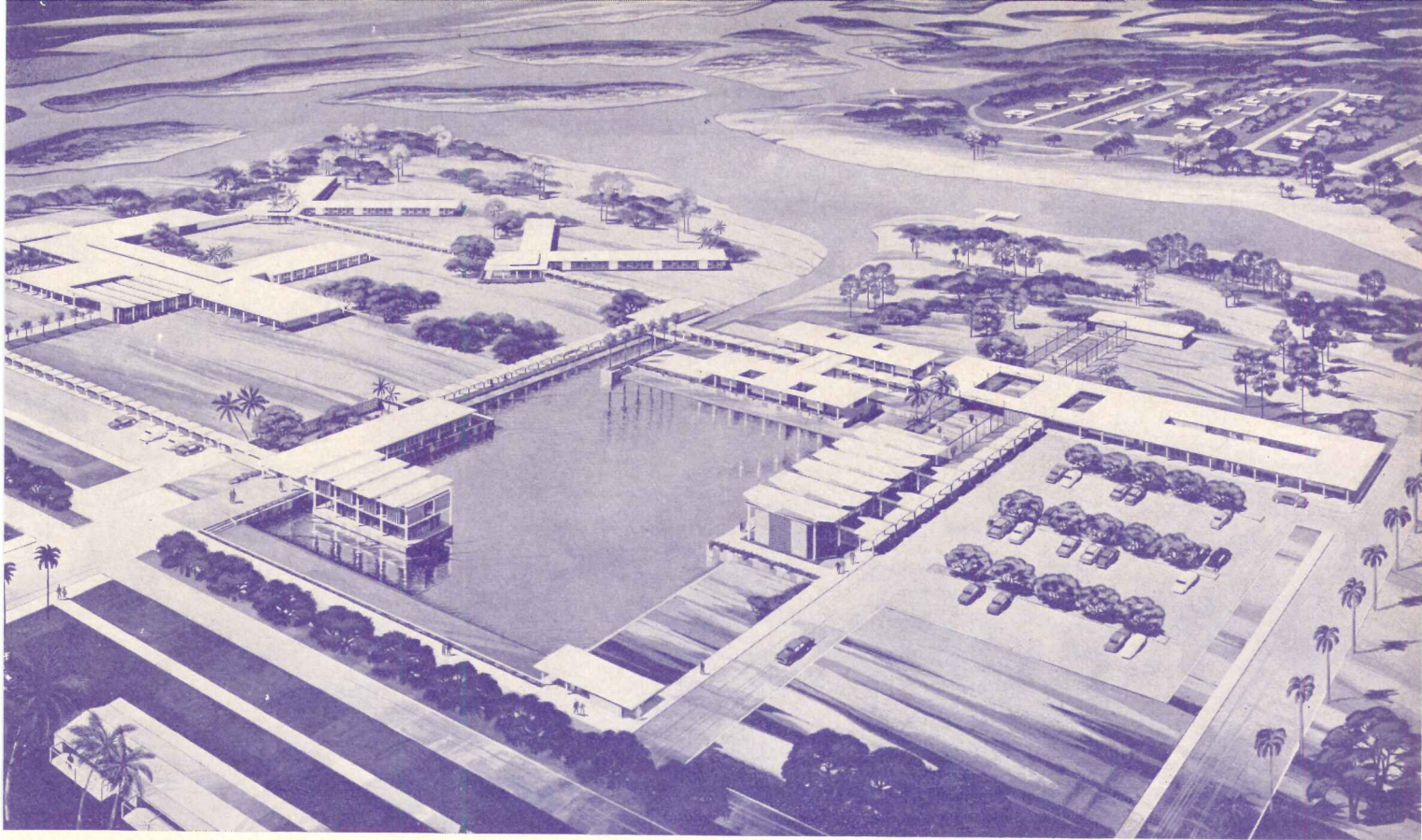
There is also the question as to whether these communities will continue to be popular as the original population inevitably grows older.

*There is seldom any provision for increased health and hospital facilities* either within the retirement village itself or the neighboring community commensurate with the potential health needs of so many older people. Those who promote these developments are apt to stress the health-giving qualities of the climate and care-free retirement life and resent any suggestion of the need to consider clinic and hospital needs.

The president of a real estate company which has built a retirement community of 800 families feels that too much emphasis is placed on health problems of older people. His experience "having housed aging people for the past four years" indicates, he says, that the need for doctors and hospitals is "no more than normal, and perhaps very much less."

Four years is not long enough to test the ultimate need. While it is true that medical achievements have enabled people to reach the later years with better health than formerly, and it is hoped this situation will continue to improve, it is not sound to plan long-range housing arrangements for the elderly without consideration of the health factor.





#### **SALHAVEN: RETIREMENT VILLAGE FOR UPHOLSTERERS**

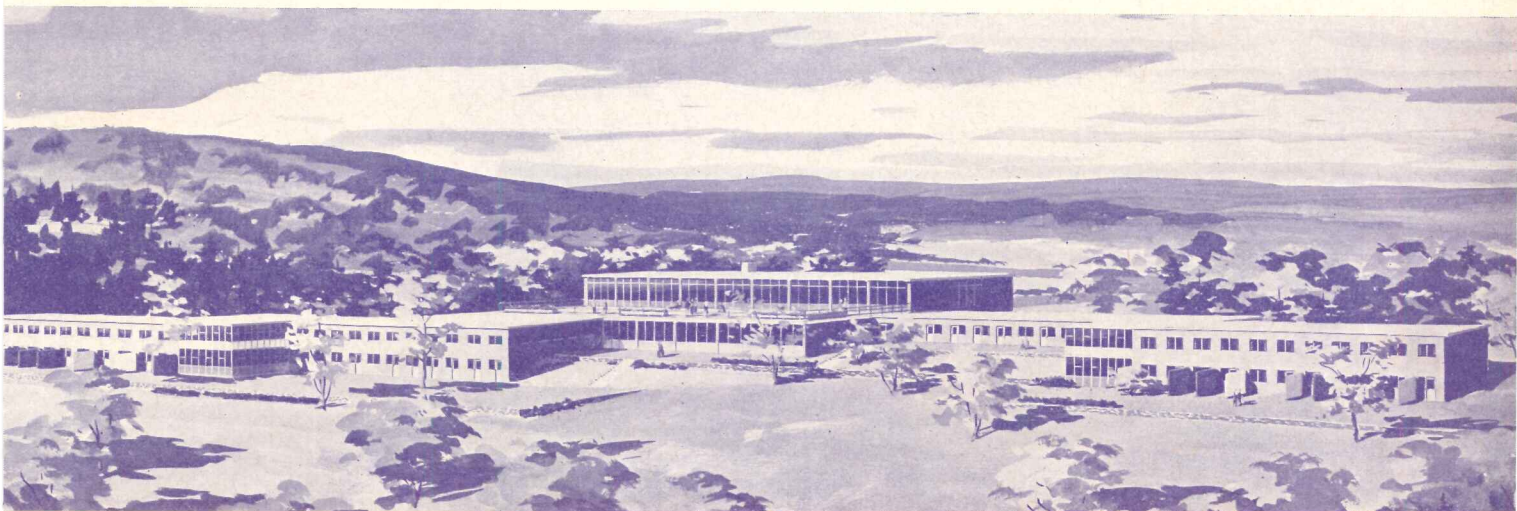
*Rufus Nims, Architect*

Now under construction near Jupiter, Florida, this scheme of the Upholsterers' International Union has been and will be much studied. It represents a new concept of the retirement village idea, complete with houses, apartments, hospital, crafts shops, stores, and a great variety of recreational and therapy facilities. There will also be a comprehensive program of adult education, and the concept points to maximum activities for retired (or convalescent) workers. If old people accept the idea of segregated life, Salhaven looks to be a fine place for it. At least it will provide a lively test for the thought that old people should have their own town planned almost exclusively for their own needs.

#### **PROPOSED INSTITUTION FOR THE CHRONIC SICK AND AGED**

*For West Orange, N. J. Kelly & Gruzen, Architect — Engineers*

Proposed for construction by the Jewish Community Foundation, this project calls for 250 beds, ancillary services, diagnostic and treatment facilities, administration, recreation, lounges as a self-contained home for the aged. Medical affiliation with large city hospitals is proposed.





## BUILDINGS FOR THE AGING

Salhaven, a community for retired members of the Upholsterers' Union at Jupiter, Florida, has recognized the significance of the health program by appointing a medical director and supervisor of nursing services before the project is opened, and making the convalescent hospital the first building to be erected. Cottages and lodges, designed for safety, comfort, and beauty will be available on a rental basis to retired members of this Union. There will be a central dining room for the residents of the lodges and any others who care to use it.

There will be a library and an adult education program offering opportunities for studying art, literature, history, philosophy, languages, current events, crafts and any other subject for which there is demand.

There will also be an upholstery shop where those who desire can work and add to their retirement income. It will be interesting to learn whether the advantages of this community will compensate for the lack of variation in both age and occupational interest to be found in a normal living situation.

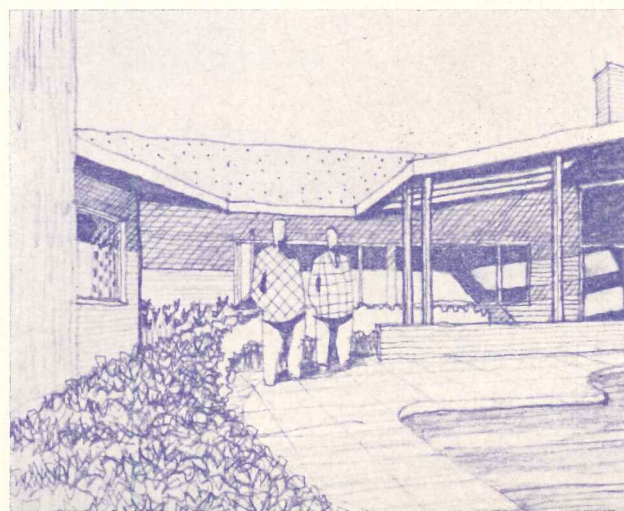
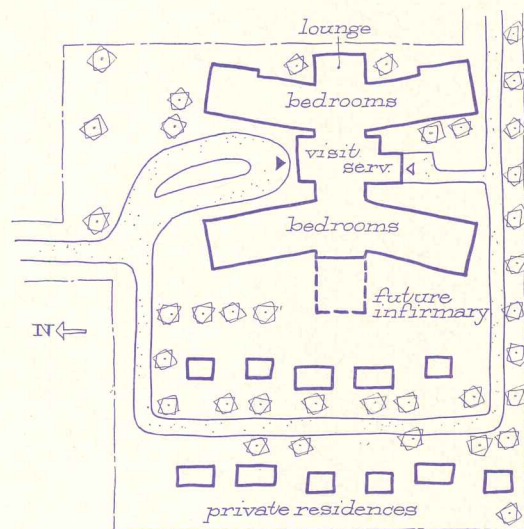
*Small Single Housing Units Within the Larger Community.* Cobbs Hill Village in Rochester, New York, is composed of 27 motel-type structures of one story, 21 of which are one-bedroom, five two-bedroom, and one a studio or efficiency. The Rochester Management Company operates them on a non-profit basis. A recreation room is provided and the services of a visiting nurse.

The Housing Project of Senior Center, Santa Barbara, California consists of 14 small houses adjacent to a Senior Center. It was built and is operated by the American Women's Voluntary Services to meet the needs of older people whose very small incomes made suitable housing unobtainable. Each housing unit has a sitting-room, bedroom, kitchen, bath, and paved porch.

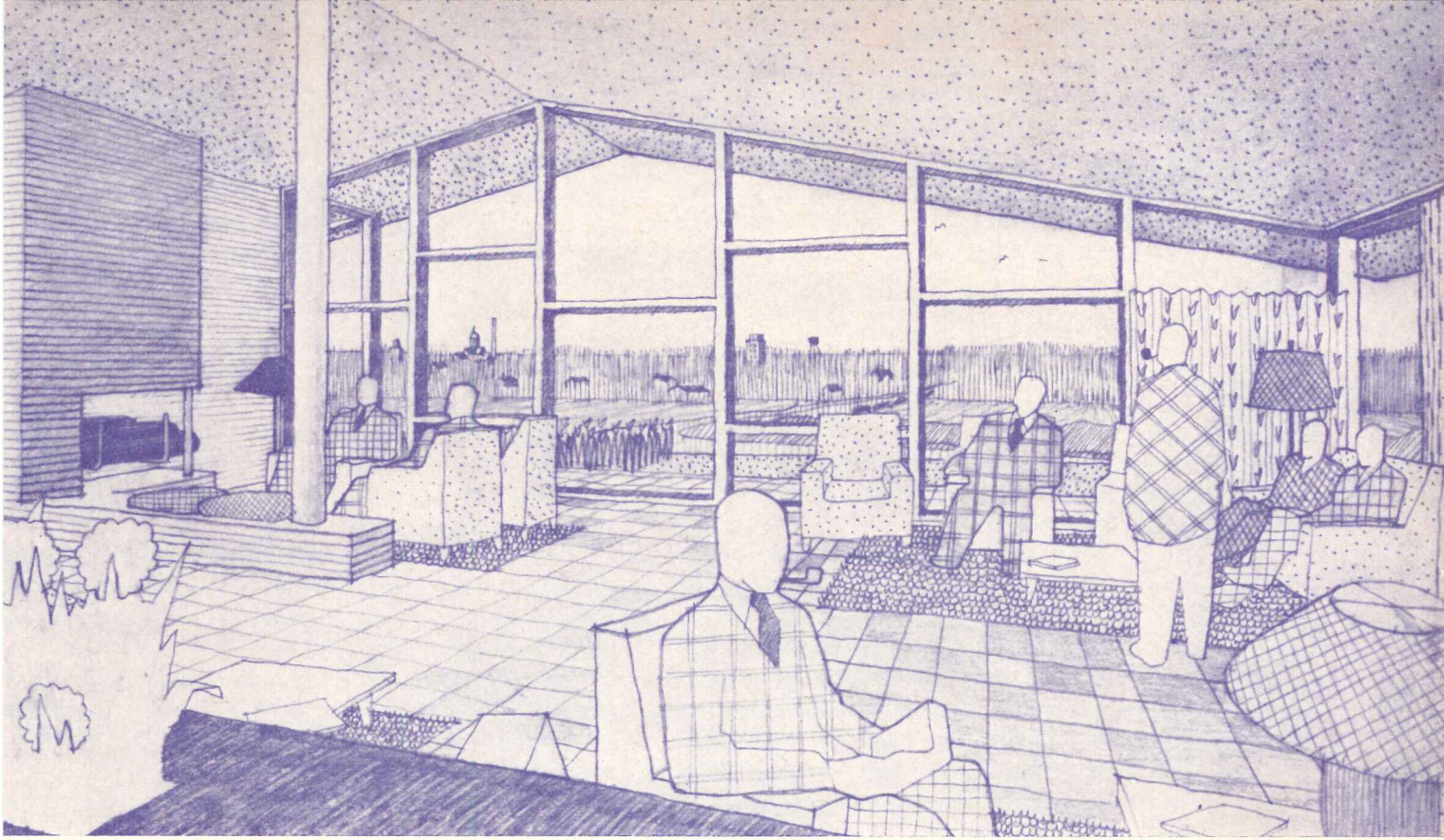
The Senior Center, which is open to the entire community, includes besides its large central room a kitchen, an enclosed patio, a laundry for the use of the residents, and a complete apartment for the hostess in charge of the Center.

The American Women's Voluntary Services has acquired land and plans to build 11 additional units. The cost of the new units is estimated at \$5000. The group has hoped to demonstrate that low cost housing for older people can be privately financed if investors are willing to accept a modest rate of interest on the investment.

*Apartment Houses.* The first apartment house for older people in this country was Tompkins Square House erected in 1929, through the gift of a donor, and is operated by the Community Service Society of New York on a non-profit basis. It is an elevator apartment house for elderly men, women, and couples of limited income who are physically able to care for themselves and participate in the life of the community. There are 44 single rooms and 8 two-bedroom apartments furnished or unfurnished, with cooking and refrigeration facilities. The bath is shared with two or three others. There is a non-profit cafeteria which each resident is required to patronize to the extent of \$15 per month to

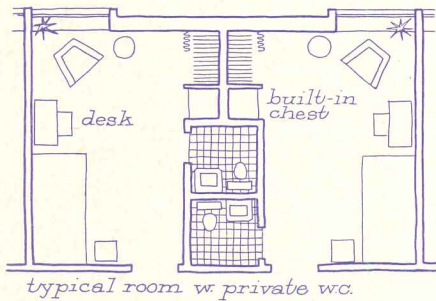




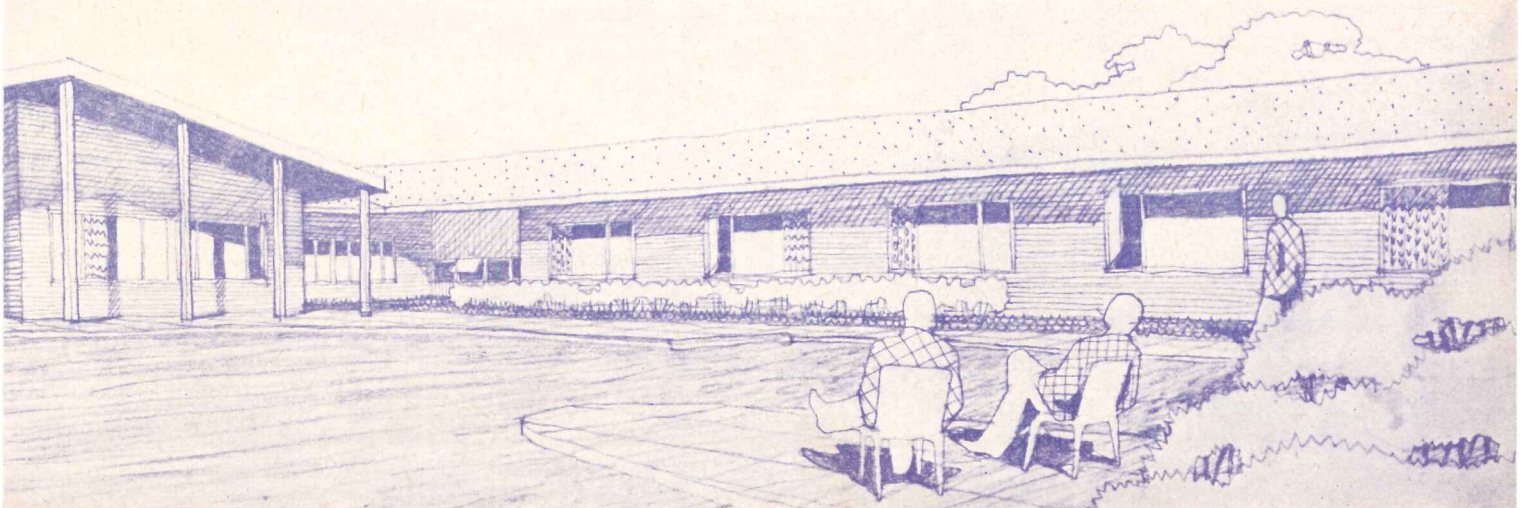


## SUNSET HOME, WINDOM, MINNESOTA

*Thorshov & Cerny, Inc., Architects*



It has frequently been said that a home for the aged needs, perhaps more than most buildings, the sparkle of progressive thinking in design, for its residents should not be looking backward, but forward. Here is a new home that obviously takes this view. It was planned primarily for residential purposes, with a mixture of one-bedroom cottages and hotel-type rooms in the main building. There is very little in first-stage plans for health facilities, but the floor plan shows nurses' stations so that nursing service can be instituted in any part of the building, and a special infirmary wing is planned for the future.





assure its operation. Also provided are a living room and a lobby on the ground floor, a roof garden, and a fully equipped laundry available to all residents.

The resident director is a registered nurse, who, with the assistant director, provides supervision of the house and residents. When illness requires bedside care, arrangements are made for hospitalization or nursing home care. Periodic cleaning of individual rooms is provided. Otherwise, residents care for their own rooms.

The neighborhood provides easy access to churches, libraries, parks, and shopping facilities. The rental figures are such that recipients of Old Age Assistance may live there comfortably. Although the building was originally provided free of cost and is tax exempt, the operation requires a subsidy.

In Omaha, a group of teachers made the first application for a cooperative apartment house under Section 213 of the National Housing Act, in 1949. Three years ago plans were started for another building for the retired teachers whose incomes are small. Present plans call for 156 apartments. There will be twelve individual units and two common sitting rooms on each floor. There will also be a large lounge, craft shop, and laundry. Meals will be provided as a part of the service and it is estimated that the entire cost will average approximately \$120 per month, including food.

The group plans to work out a recreational and cultural program based on the interests and needs of the residents.

*Semi-Institutional Housing.* There seems to be developing a new "twilight zone" in housing for older people which takes into account both the desire for independence and the potential need, particularly in the late 70's and 80's, of increasing amounts of protective and health care. These new plans call for a sort of "campus plan," with facilities for a wide range of living arrangements — from cottages or other independent housekeeping units to an infirmary. The plan allows residents to transfer from one type of facility to another as their changing situation may suggest. Many of these

developments are now being undertaken by national, religious, and fraternal groups who formerly limited their facilities to institutional care.

"Presbyterian Village," near Detroit, is typical of many similar projects. Presbyterian Village is just northwest of Detroit on a 38-acre site that is half wooded and half cleared. The site is surrounded by residential areas, a grade school and a golf course. Public transportation is readily accessible to the site, providing transportation into Detroit and the surrounding communities.

A planning committee kept in mind that various kinds of facilities were required to best serve the needs of the aged in their different changes of status and their varying economic states.

A similar development, Willamette View Manor, was recently opened near Portland, Oregon, under the auspices of the Methodist Church, based on experience with Pacific Homes in California.

The Congregational Church has a similar type of development within walking distance of the shopping center of Claremont, California. The community consists of residence halls with small apartments for single men and women and of small homes which are owned by their residents or by Pilgram Place. In addition, grounds contain infirmary and nursing home.

The Lutheran Church plans a Retirement Center in DeLand, Florida. Plans call for a central unit with kitchen, dining, and living room connected by covered walks with motel-type buildings for residents. Cottages to accommodate 2 to 4 people will also be built.

One area of the 20 acres of land within the city limits of DeLand will be set aside for cottages which may be built by individuals, but they must conform to the master architectural plan. It is planned that occupants of cottages may transfer to motel units more accessible to the central services if the need arises.

Similar projects are in the planning stages in several relatively small communities, though none has yet been actually constructed.

## *A Doctor's Counsel for Architects*

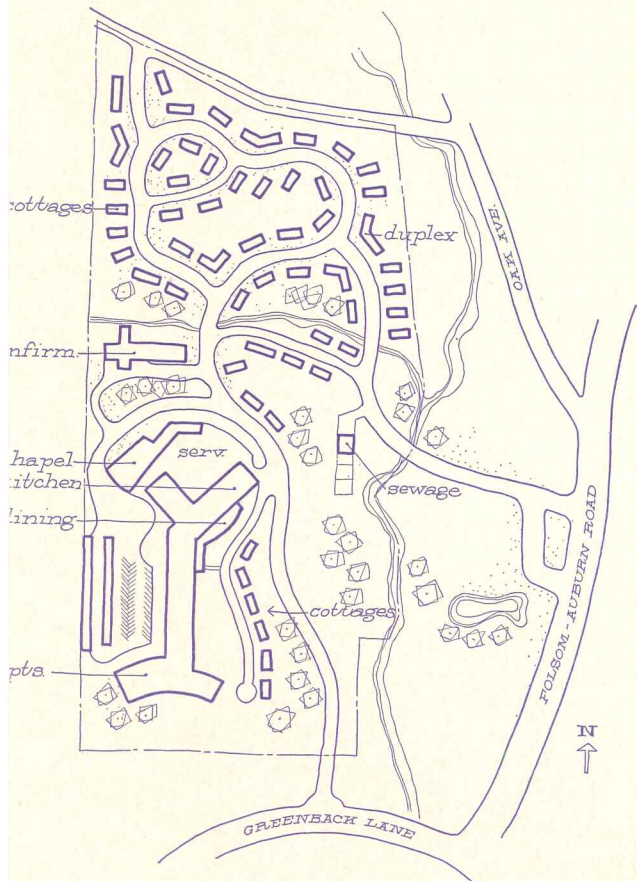
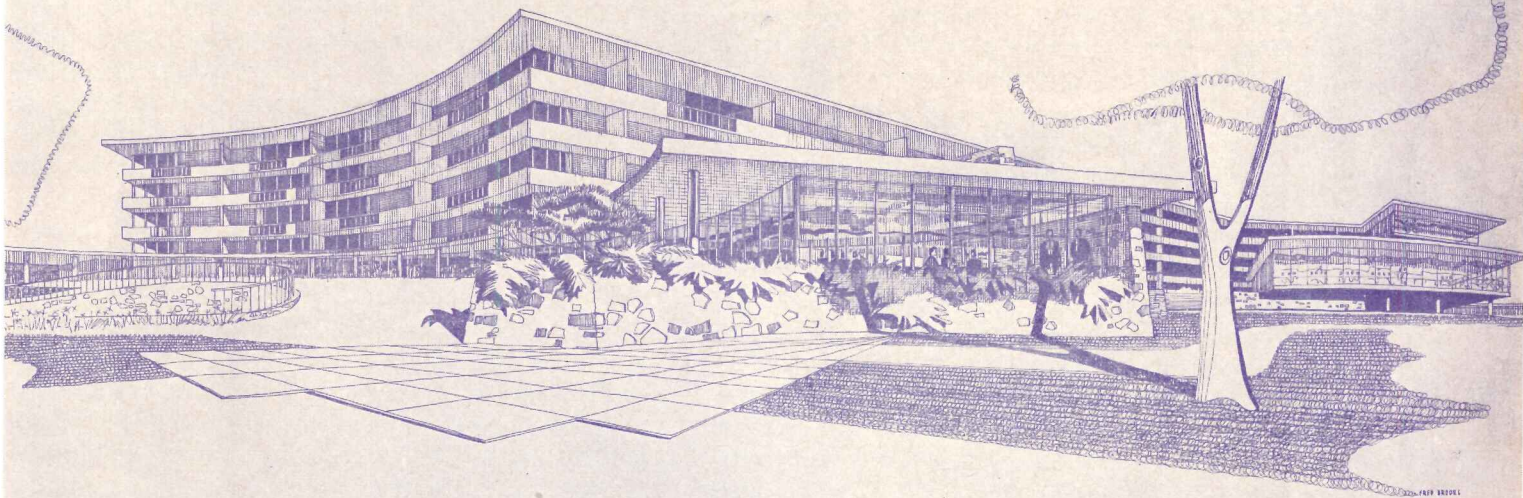
### MEDICAL FACILITIES FOR THE AGING

*By Frederic D. Zeman, M.D., F.A.C.P.  
Chief of Medical Services, the Home  
for Aged and Infirm Hebrews, New York*

THE OLD-FASHIONED home for the aged, whether under voluntary or governmental sponsorship, was satisfied to supply bed and board to its residents who were assumed to be in such a state of health that only occasional medical care was needed. Today, as a result of more intensive study of the medical and social problems of older men and women, the home for the aged has relinquished its passive attitudes and has developed

active programs of prevention and treatment to the point that it has come to be regarded as an intermediate medical facility. Maintaining the same high standards of medical, nursing, and social service practice as the general hospital and the hospital for chronic diseases, it is devoting itself more and more to the active care of the handicapped and disabled aged, since most workers in the field believe that able-bodied old people are best





## HEARTHSTONE MANOR, FOLSOM, CAL.

*Rickey & Brooks, Architects*

This lush-looking watering place is proposed with the theme "own your own home and retire with life care." Patently not for indigents, it plans for the ownership of a house or apartment and payment based on age for life care. "Life care" includes meals, laundry, some medicines, infirmary care but not to the extent, say, of major surgery. Says a press release, "Designers have sought a 'mellow, homey atmosphere' for elderly citizens by a combination of natural stone and woods with cheerful colors and easy-to-maintain finishes. The Manor will be of steel and reinforced concrete, including a lobby, kitchen, offices, lounge, dining room, shop, auditorium, chapel, library, hobby areas on each floor, terraces, and 200 apartments. Each apartment will have its own entrance, a bath with each bedroom, a pullman kitchenette, a colorful balcony with sliding glass doors and aluminum and porcelain enameled panel railings." Also, "there will be automatic sun-control devices, air conditioning, elevators, push-button conveniences and safety features throughout." So dawns a new day for the old folks.



maintained in the community in their own homes or in foster homes.

The differences between the modern home for the aged and the general hospital lie in the admission of residents for life and in certain specific limitations in the kind of care offered. Surgical cases, as well as those requiring elaborate diagnostic or therapeutic procedures are transferred temporarily to the general hospital. By this means the maintenance and duplication of expensive ancillary services is avoided and the costs kept down.

These considerations illustrate clearly that while certain medical installations are necessary, they will be far less complex than those of a general hospital. On the other hand, far more attention must be paid to recreational and occupational therapy areas, to the provision of closet space in the rooms, to safety measures, to the creation of a relaxed, congenial atmosphere, and to the development of flexible plans to take care of the ever-changing medical requirements of the residents.

Whether homes for the aged should be located in separate buildings on the grounds of a general hospital has been much debated. Administrators of hospitals argue for the ready availability of medical care, of diagnostic facilities, for reduced costs, for example, in laundry and heating installations, and for greater ease in management. This writer admits willingly that these are important considerations, but that where this plan has been followed, the old people, in competing for medical attention, have come off second-best. The pressing demands of the acutely ill lead to the neglect of the old people, who, in the minds of hospital staffs, professional and nonprofessional, present not only uninteresting but often disturbing problems. Stephen Paget in discussing hospitals spoke of the characteristic "*genius loci*." The spirit of a home for aged is totally different from that of a general hospital. The whole tempo is slower, the patient turnover is slow; the staff comes to know the residents intimately, and to participate happily in the unending battle against encroaching and accumulating years. The modern home for the aged is truly "patient-centered," not "disease-centered" as is the hospital. The physician entering the independently located and managed home for the aged automatically concentrates his thinking and his activities on the problems of old age, free from the distractions so common in general hospitals.

#### Size

A well-thought-out plan will provide opportunity of additional units and it is well to provide initial installations, recreation areas, heating, laundry, etc., of such dimensions as to take care of future expansion. As to the actual number of beds, 50 to 100 would seem to be a minimum and 400 to 500 to be a maximum. The desire for largeness as part of a competitive spirit on the part of board or staff members is to be deprecated, because somewhere along the line the "Law of the Dinosaurs" comes into action. Large installations lose the personal, intimate human touch that is indispensable to prevent

their becoming "institutions" in the unpleasant sense.

As to the proportion of beds for the severely handicapped or acutely ill to that for ambulatory patients with less severe disabilities, the planner must take into consideration the admissions policy of the organization. Even though an effort is made to screen out the individuals needing maximum care, time will surely change many from one class to the other. At least half of bed capacity should be devoted to those needing active medical or nursing care, or both, and appropriate provisions made for nursing stations and utility rooms. In a well planned home of moderate size, residents suffering from minor intercurrent illnesses can be taken care of in their own rooms.

#### The Medical Area

The activities of the medical department of the home are best grouped together for efficient operation. Included here are offices for the attending physician and the head nurse. The medical secretary's office may serve as a record room, and at times may also house a small medical library. In view of the tendency of most libraries to outgrow their facilities, a separate room is desirable, which may double as a conference or committee room. Examining rooms, with adjoining dressing rooms, should be large enough for a standard examining table, two or three straight chairs and a small table for instruments, and give enough space for physician, nurse, and patient to move about freely.

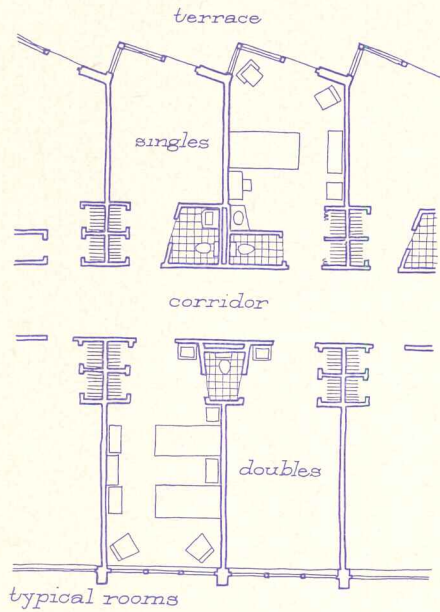
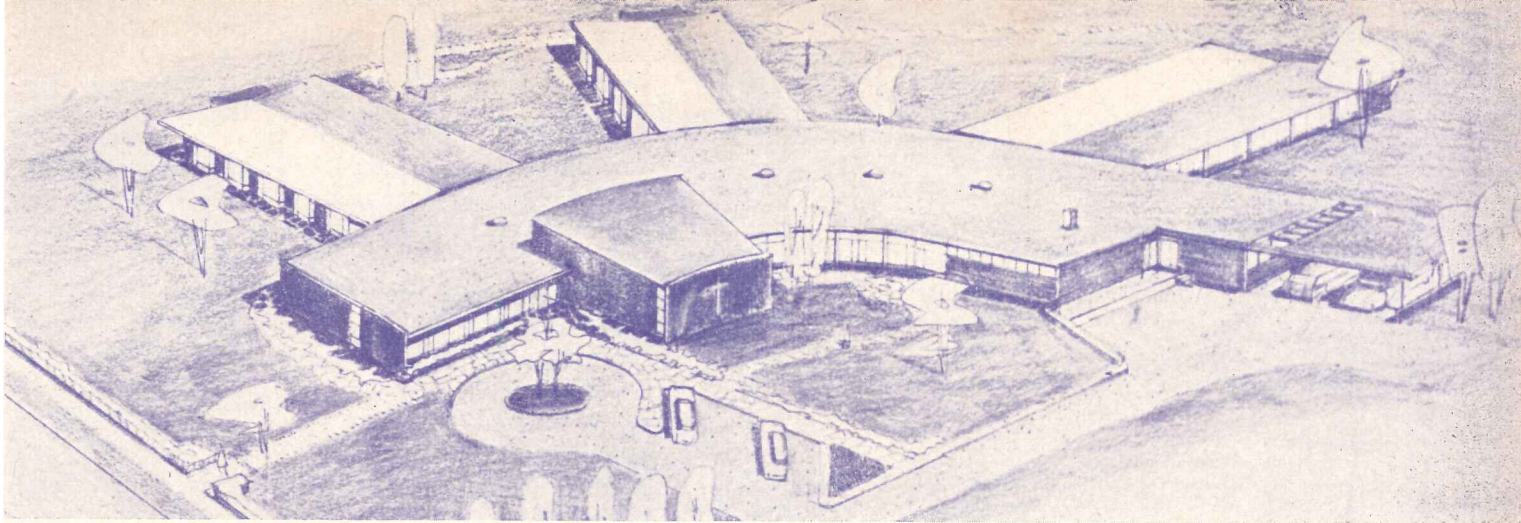
Separate offices, or workrooms, must be provided for the dentist and the podiatrist, both essential for health and comfort of the residents. A laboratory equipped with a chemical hood, and with gas, electric pressure and suction outlets, is essential for clinical studies involving methods of precision. A small room for electrocardiographic and basal metabolism studies is also needed. Space for storage of drugs is essential. In this area should be located the diagnostic X-ray equipment. This installation requires one room for equipment and another smaller one — as an office and viewing room for the roentgenologist. A toilet should be provided in close relation to X-ray room for evacuation of diagnostic barium meals.

The rehabilitation and physical medicine equipment may be placed in the medical area, or perhaps better, should be closer to the infirmary to facilitate movement of patients. This room will provide exercise facilities such as parallel bars, and a variety of mechanical devices, as well as whirlpool baths for arms and legs. Small cubicles should be available for massage tables and for electro therapeutic devices.

#### Recreational Area

The program of the modern home for the aged is essentially psychotherapeutic and has been described as a "total push" effort in which are integrated the efforts of physicians, nurses, social workers, and all other staff members in order to restore the self-confidence as well as the physical well-being of the residents. Organized recreational activities are part of this program





### MEMORIAL HOME FOR THE AGED

*Chicago, Ill.*

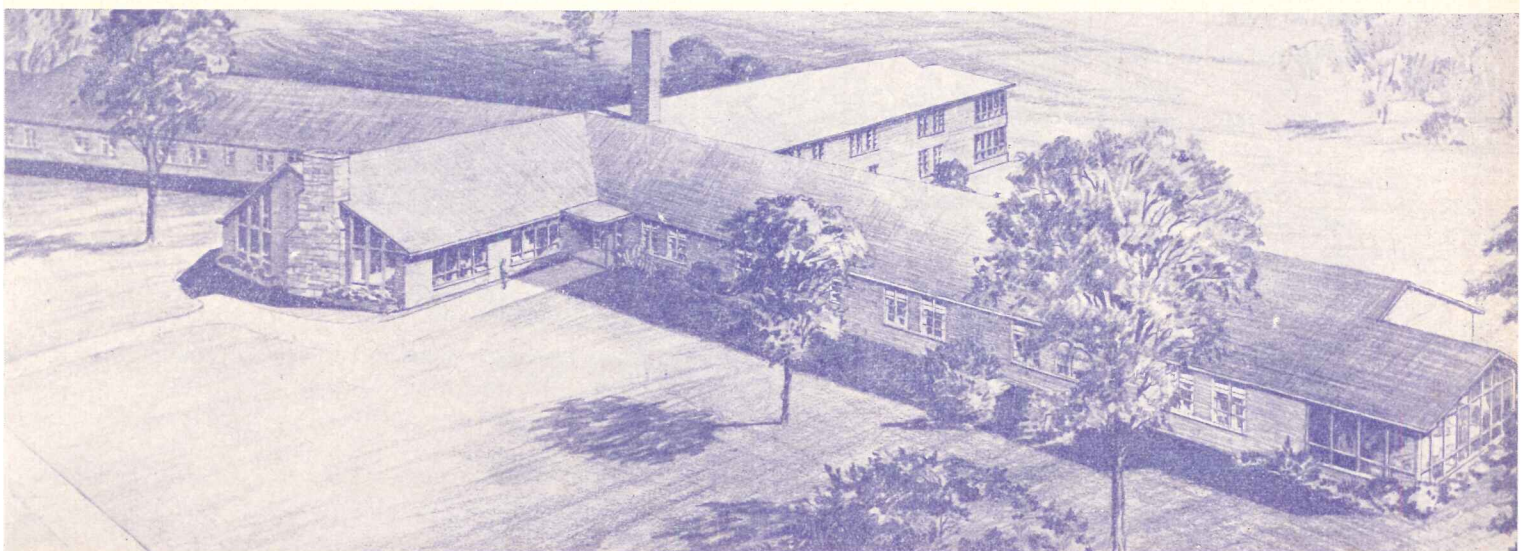
*Loewenberg & Loewenberg, Architects*

This scheme for a home for the United Lutheran Social Mission Society of Illinois proposes that two of the bedroom wings have sawtooth walls to provide light and view in two directions from each room. An outside door from each room would permit residents to step outside with maximum ease to enjoy lawns and gardens. The curving central section would have chapel, dining facilities, physical and occupational therapy, doctors' offices and treatment rooms. The building is planned for 35 residents, all in single rooms.

### HOMME HOME FOR THE AGED, WITTENBERG, WIS.

*Donald M. Schoepke, Architect*

While this is a rather large home it avoids institutional suggestions. All patient rooms, except in the infirmary section to the rear, are in one-story wings of generally residential appearance. Bedroom wings are angled slightly to prevent corridor vistas from becoming too long. Bearing masonry walls were used, with wooden roof trusses. Floor radiant heat throughout.





as are all the activities of the medical department including rehabilitation and physical medicine. Small parlors must be provided for visitors, for card games and for viewing television. A large sitting room serves many useful purposes, such as motion picture displays, meetings of clubs of the residents, entertainments, and for formal gatherings of the friends and supporters of the institution. Special sitting rooms should be provided on each floor of the residential area of the larger homes.<sup>1</sup>

#### *Safety Measures*

Accidents of all kinds take a high toll among the aged. Many are preventable by foresight on the part of the physician and the architect. Handrails, 30–36 inches high, must be provided in rooms and in all hallways. Non-skid flooring is essential, good lighting, especially night lights in baseboards, prevents many mishaps. Toilets must be provided with hand grips and call bells. Entry to these stalls must be possible by wheel chair. Bathtubs must be provided with hand grips, non-skid mats and a seat at one end for resting. Location of tubs at right angles to one wall, leaving free access on three sides, facilitates handling of infirm patients by nurses and attendants. Window sill should be high and casement windows of small aperture are advantageous. Sharp changes in floor level should be handled by ramps rather than steps. In general, stairways should be wide, of gradual slope, and provided with non-skid treads and handrails on both sides. In designing bedrooms, every effort must be made to arrange for unobstructed pathway from bed to bathroom. So often the older person arises from his bed, slightly dizzy, and uncertain, trips over a chair, table, or small scatter rug, and sustains a serious injury.<sup>2</sup>

#### *Infirmity Area*

Where residents requiring active medical and nursing care for long-term or acute intercurrent illnesses are housed, the installation more closely approaches general hospital specifications. Units of two beds are preferred although four-bed units are permissible in order to facilitate the work of the nursing staff. Each bed must have a bed light and a call bell. Doors to single or two-bed units must have windows to allow quick inspection by passing nurses. Nurse stations and utility rooms must be provided. Each floor must have one or two single-bed units near the nurses' stations for the moribund or noisy patient.

#### *Occupational Therapy*

The varied activities grouped under this heading require a small suite of rooms, each devoted to one or more special activities such as woodworking, basket-weaving, ceramics, leather crafts, painting, weaving fabrics and bandage rolling. An office for the therapist is needed, who will appreciate provision of display cases here as well as in the main entrance of the home. These rooms must be large enough to accommodate 6 to 8 men and women, working independently but nonetheless enjoying the benefits of group effort.

#### *Miscellaneous Considerations*

Planning must, as already emphasized, provide for future requirements in a liberal way. Too often, the space allowed will seem more than adequate on paper, and even in the first year of operation, only to prove later to be skimped and tight where changing conditions and increased admissions change the operational picture.

Kitchens, however centrally located in relation to the main residents' dining room and staff dining quarters, will rarely be able to send food to infirmaries warm enough for serving. Insulated heated food carts furnish convenient means of transportation, but pantries must be available on the floors for serving food from the carriers, as well as for preparation of special foods and liquid nourishments.

Many well-built hospitals and homes do not provide adequate or attractive dressing rooms and locker space for personnel. In a competitive labor market, these often overlooked considerations are all important. Rest rooms and sitting rooms help to make working conditions attractive.

Storage of wheel chairs in the infirmary area is a problem often overlooked. Standing about in hallways, they form accident hazards and add nothing to the beauty of the scene. Large, unlighted, unventilated spaces serve this purpose admirably.

Adequate storage space for supplies makes possible buying in quantities and thus reducing costs of operation.

Administrative offices for executive director and other staff members, as well as the social service department and the accounting division should be centrally located and should have their own waiting room.

Separate paths of circulation should be provided in planning in order to prevent business visitors encroaching on the sick area, and to separate the streams of visitors to different parts of the building. The medical department and the infirmary should enjoy privacy.

#### *Summary*

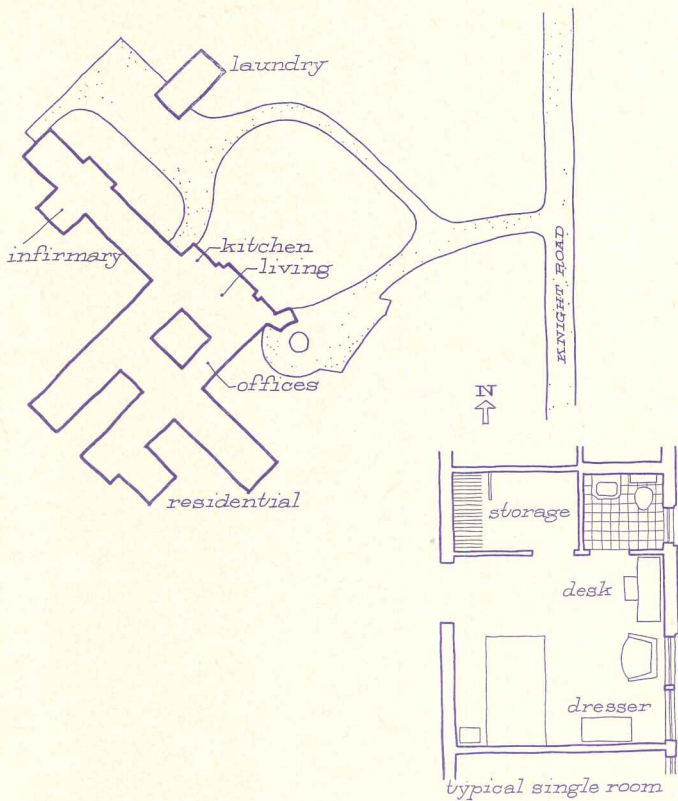
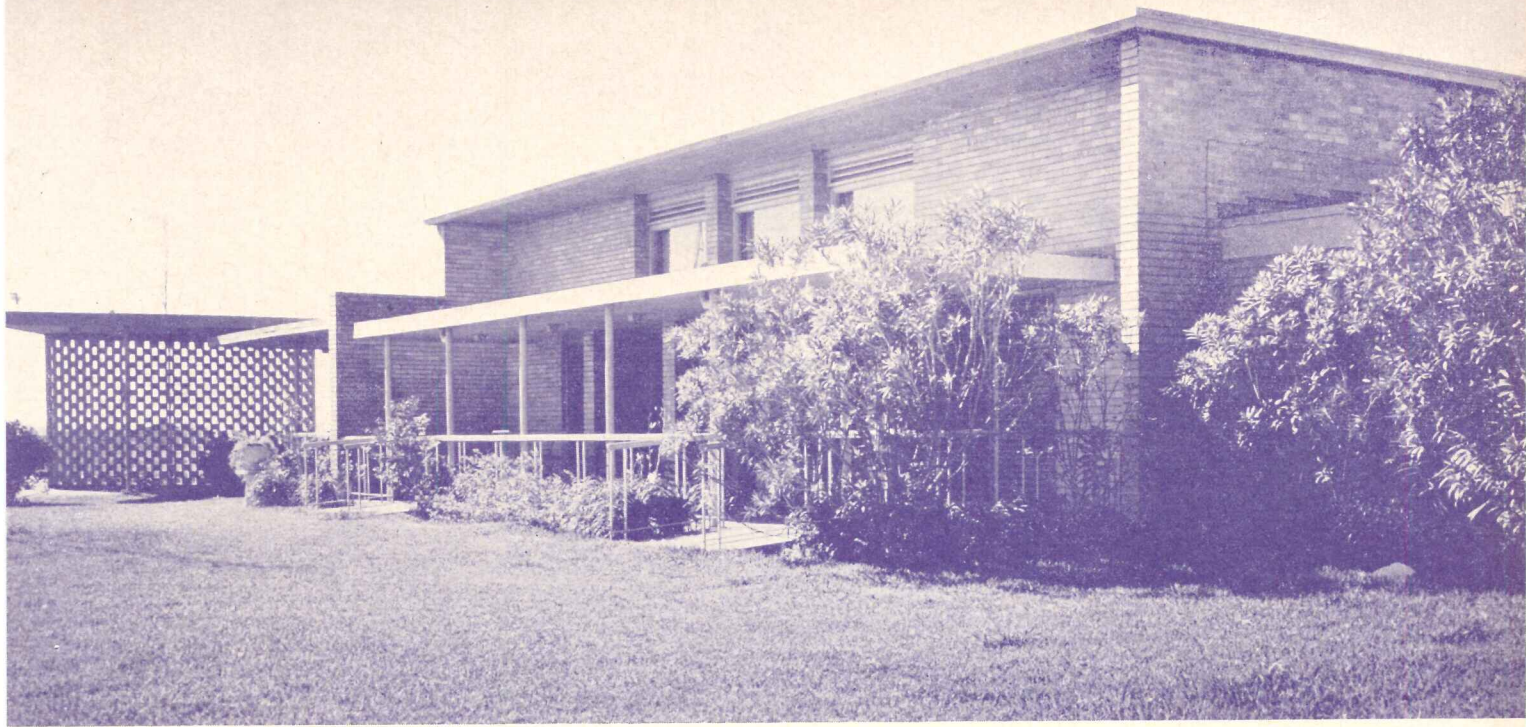
In discussing medical considerations important in planning a home for the aged, emphasis has been placed on the combination of facilities for medical care with opportunity for pleasant, relaxed living. Ample recreational areas make possible carrying out programs of value in promoting mental health. The differences between a modern institution for the aged and the general hospital have been pointed out. Stress has been placed on the prevention of accidents to residents by eliminating a variety of hazards inherent in certain types of construction. In short, a thoughtfully designed structure will facilitate and stimulate the functioning of an organization aimed at promotion of health and happiness in elderly men and women.

#### *References*

<sup>1</sup> *The Architect Looks at Housing the Aged*, 1953, Housing Research Council of Southern California, Inc., Pasadena.

<sup>2</sup> Zeman, F. D.: *Accident Hazards of Old Age: The Physician's Responsibility in a Program of Prevention*. *Geriatrics*, 3:15–25, Jan.-Feb., 1947.



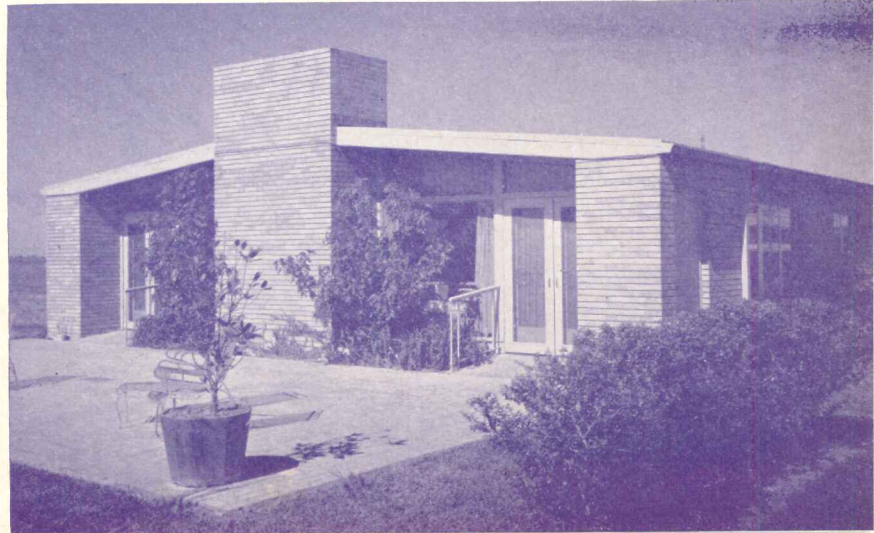
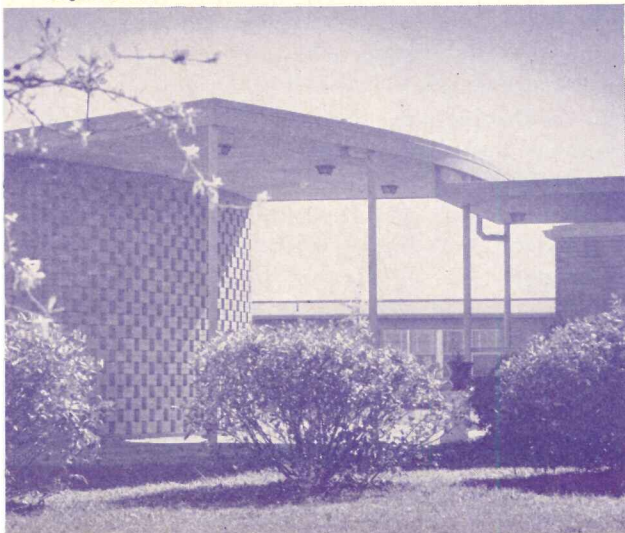


**HOLLY HALL, HOUSTON, TEXAS**

*Cameron Fairchild & Associates, Architects*

This home for the aged, sponsored by the Houston United Church Women, now has single rooms for 61 residents plus a 14-bed infirmary wing; its kitchen facilities were planned for an eventual population of 250. The site plan includes an addition to the infirmary wing and an added residential wing. Rooms are quite spacious; each has its own toilet and an exceptionally large storage closet, since most old people have a great accumulation of cherished possessions. The building sits 8 in. above the finished grade; all entrances are ramped. Ceilings are of mineral acoustic tile; floors cork. There are hand rails in all public areas, and bedroom doors are wide enough for beds to be wheeled through them.

Douglas Fairchild





## Changing Needs of Older People

### IMPROVED HOMES FOR THE AGED

By *Ollie A. Randall*

*Consultant, Services for the Aged*

*Community Service Society of New York*

WHAT ARE SOME of the factors making for a change in the attitudes, practices and programs in which older people are involved? First, there are too many older people for them to be cavalierly consigned to thoughtless and antiquated situations. Then, too, older people are no longer paupers in yesterday's meaning of that word. In spite of the low level of income among older people, it is increasingly true that practically no one need be without some cash income from some source or other. With social security payments reaching a new high in numbers and amounts, with pensions and annuities more common, older people are in a far greater number of instances in a position to finance more adequately at least a portion of the cost of their care in homes for the aged. This ability to pay, in whole or in part, makes for an entirely new relationship between the individual and those providing accommodations and service or care. The major difference is that the old person is, or should be, an active participant in the arrangement which is made. He is no longer "placed" by someone, against his will or without his knowledge, unless he is mentally incapable.

Not only does this change in the manner of payment make a difference in the feeling of dignity and independence for the individual resident, but it makes a great difference in the manner of financing the work of the home. It makes possible a change in rates as those changes are warranted. It also means there is a reduction in the philanthropic element. But mainly it places the management of homes somewhat more on their toes to see to it that their programs and services meet what residents want, need and should have and what the community is newly aroused to want for them.

It is here that the major differences in our concepts of living through the later years have occurred. It goes without saying that older people are among the beneficiaries of the many good things which accrue to all of us through the advances of medicine and related sciences — as well as of the years themselves. They are not only longer lived than their forebears; they are, in spite of common opinion to the contrary, as a rule much healthier. They remain vigorous and relatively able-bodied into their seventies and eighties. They continue active, taking part in the life of their communities when they are permitted to do so; they go on working; they carry responsibilities for themselves and often for others; they play; they follow their hobbies and avocations; they travel. They tend more and more to live by them-

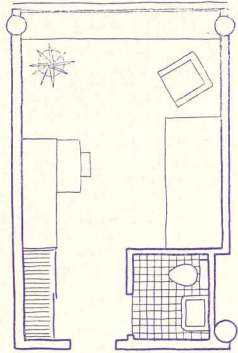
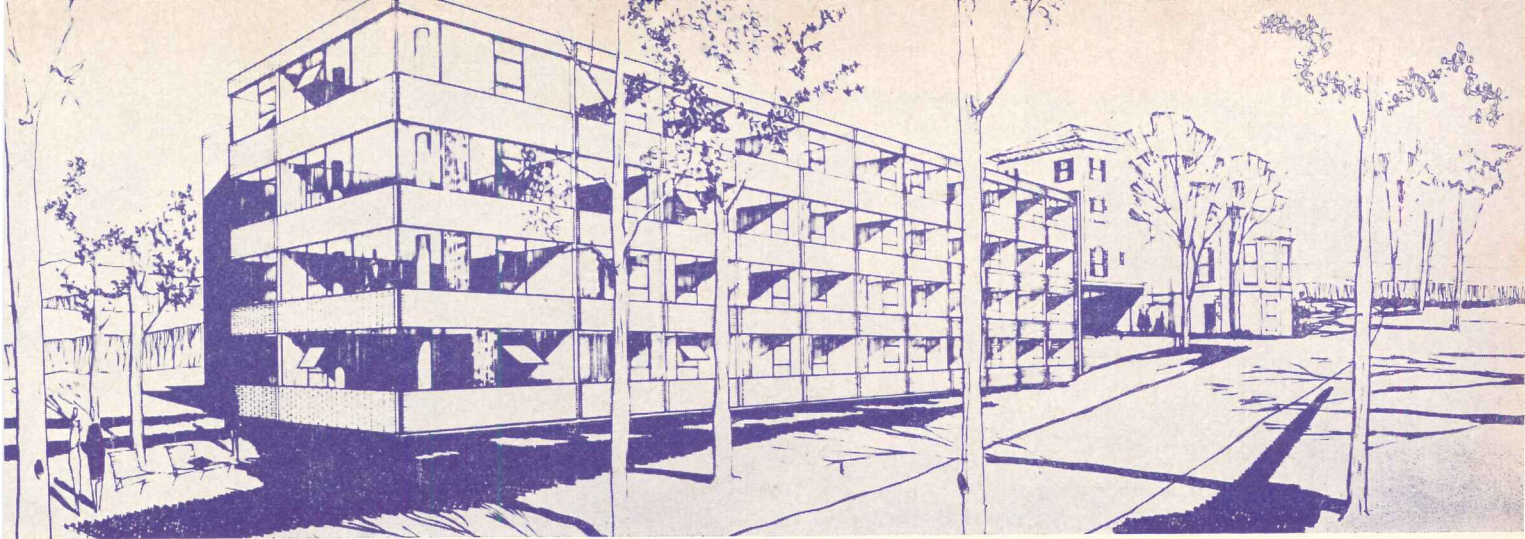
selves in their own homes, maintaining themselves on their limited incomes (the majority of them), until some disaster such as the loss of family or social contacts or a catastrophic illness drives them to seek the security of what is nowadays known as "sheltered care."

What then is the function of a home for the aged today — and what is it likely to be tomorrow? Today institutions house from 4 to 6 per cent of the older people of the country, using 65 as the beginning age, which is a great many people. At 5 per cent, this kind of living would account for some 700,000 persons — and most of us close to the situation are convinced that this is by no means the number of persons who could or should profit by living in such homes, provided there were enough of them and they were properly designed, built and managed. As the number of older persons continues to grow, so will the need for sheltered care. But the demand will be for persons of a somewhat different group with different needs from those which prompted people to ask for such a plan in years gone by.

A home for the aged is over and above all else a place to live. It means a place in which every resident has the opportunity to live to the fullest of his own capacity. With this as the goal — general as it sounds — we have all the opportunity we could want to use modern materials, modern design, and to give scope for those flights of imagination which in our modern world seem to need to know few if any bounds. The day has long since gone when we must confine ourselves to the accepted patterns of living or of places in which to live. If the newer ones of which architects, builders, engineers are justly proud, offer greater comfort and ease of living, are not older people the very ones who should have the advantages of space, controlled climatic conditions, light and air and a wide view of the world and the people in it? The outworn argument that older people cannot adapt to the new — that they are only content with the old — holds true no more than does any generalization for any group of human beings. As a matter of fact, older people willy-nilly have had to acquire a habit of adaptation to many changes — and rapid ones at that. This is a fact that most of us are quite apt to forget or overlook.

The home for the aged of the future must be a home, with all that connotes. It must be a place where "the heart is." No matter how fine, it is at best a substitute for the resident's own home, however humble and plain that may have been, but it can be so built, so designed, and so managed that the substitute may ultimately





typical room

**BAPTIST HOME, CINCINNATI**

*Proposed Addition to Baptist Home and Center  
Woodie Garber & Associates, Architects*

Need for infirmary rooms was one of the reasons for this proposed addition to an old home. The new wing of four stories will add 30 beds in a hospital section and 54 residential rooms. The infirmary portion is planned for conversion later to residential rooms should the older portion be replaced in the future. Each guest room is approximately 12 by 17 ft, with a large glass area.

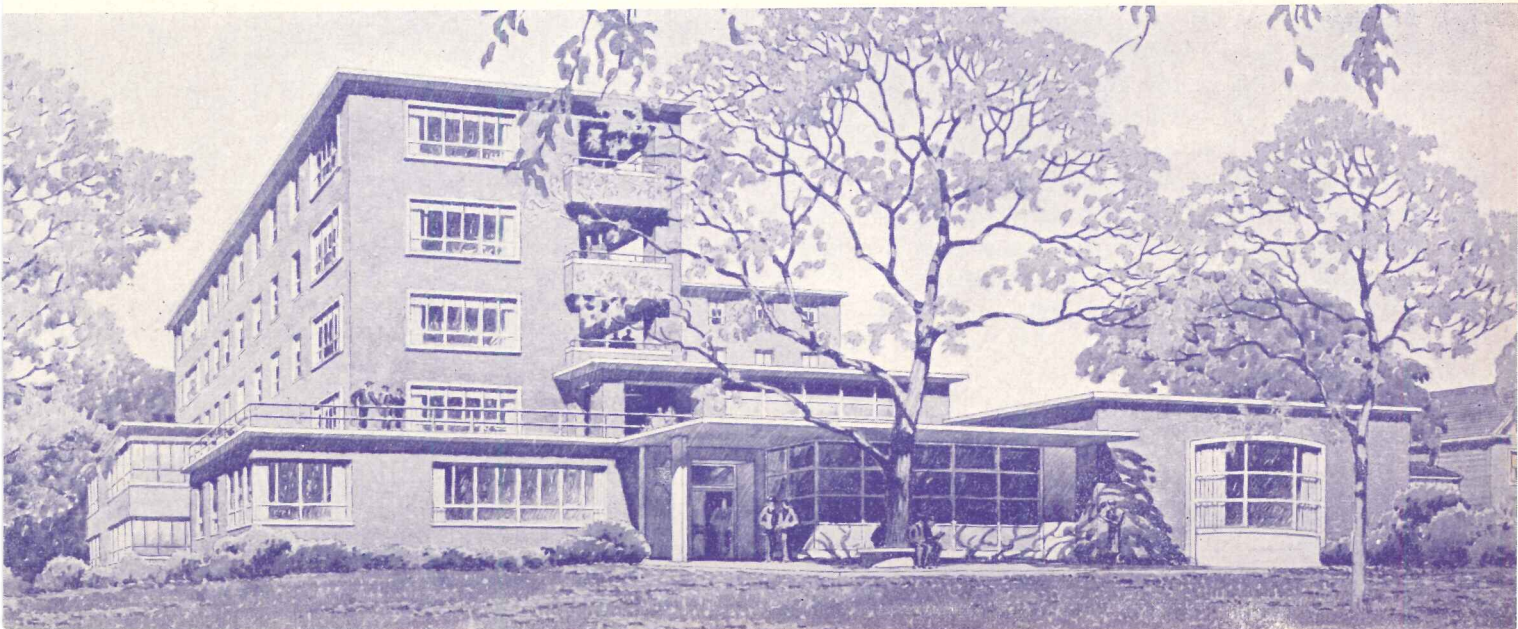


Loulen Studio

**JEWISH HOME FOR THE AGED**

*Rochester, N. Y.  
Benedict Ade, Architect*

Demand for care for the aged has so increased that this home has been added onto twice in six years. From 80 residents it has grown to 215, the latest addition raising the bed capacity by 64, mostly in double rooms.





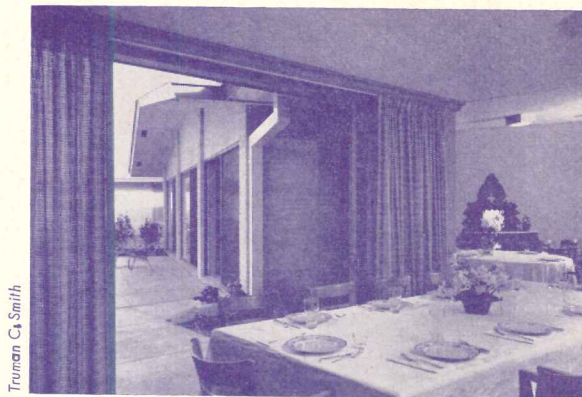
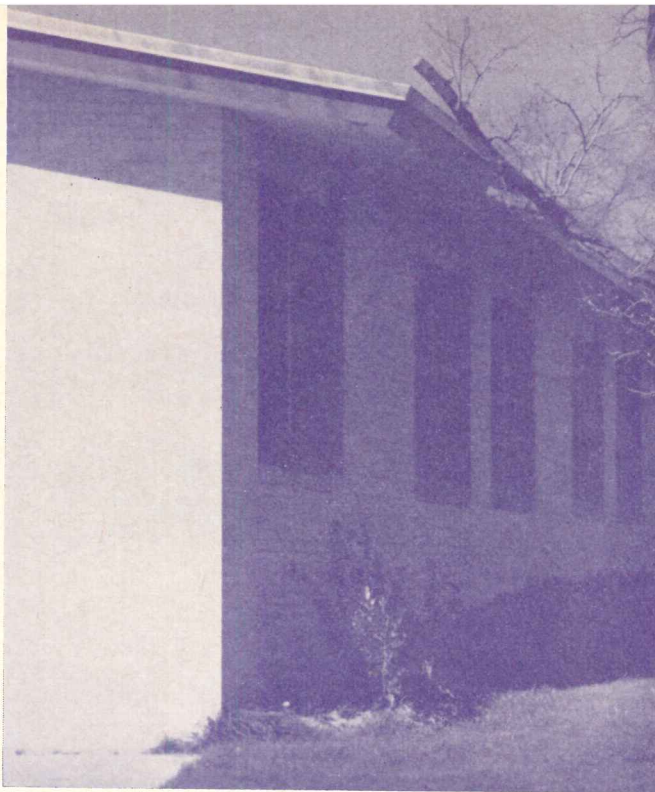
prove to be as satisfying as the home that has been left, if not more so, because of what it can offer in meeting a person's need to belong, to be useful, and at the same time to be somewhat sheltered from the stresses of community living with which he is no longer able to cope by himself.

The home must be so situated that it is accessible for the entire family, residents and staff, to those "goods and services" which the community provides for its citizens — the church, the school (adult education), the doctor, the clinic and the hospital, shopping, work, entertainment. It is not easy to give all this and still give space for some outdoor living and gardening for those whose circle of activity must be geographically circumscribed because of failing strength or crippling infirmities. But the sense of space, with the green of trees and shrubs and the colors of gardens, large or small, to give it depth and a feeling of freedom from confining walls, can be achieved even in city or suburban areas.

The home will need to provide not only the opportunity for living without a feeling of isolation in the city or town, but it must be so constructed as to provide a full life for those who will not be able to venture forth. The doors must open both in and out — to let the community come in to be a part of the life in the home as well as to permit residents to go forth. The home must invite friends and relatives to visit as they do to any family home. The living rooms, the recreation rooms for activity and entertainment and the auditorium for passive entertainment and for worship, the hobby rooms and workshops, the dining rooms, the library, must be pleasant but functional, so planned that they help rather than hinder the residents in the things they wish to do together or alone. The rooms of those residents who are well and able to get about should be single rooms, and double rooms only for couples who wish to be together. Perhaps rooms can be so planned that there will be a more flexible use of walls, which in our old buildings are such deterrents to good use of space because they are so difficult and expensive to remove or to change. Single rooms might become double — and double rooms ought to be capable of conversion into single rooms, as the constant shifts in the composition of the household dictate.

The home will house people older in years — on the average — or at least more of them in the upper age brackets than used to be the case. And the meaning of this for living and building is clear. There will be more and more of them who will need the protection of general supervision and watchfulness, and active nursing care in those illnesses more characteristic of old age than of the earlier stages of life. This too leads to the thought that the possibility of a flexible use of the building is of vital importance, for as more persons require nursing there will need to be space that can be used as an infirmary with an efficient use of space and of scarce nursing staff, without loss of the quality of hominess.

Admittedly this is a most difficult thing to do, but the emphasis here is on the "home," and no hospital



Truman C. Smith







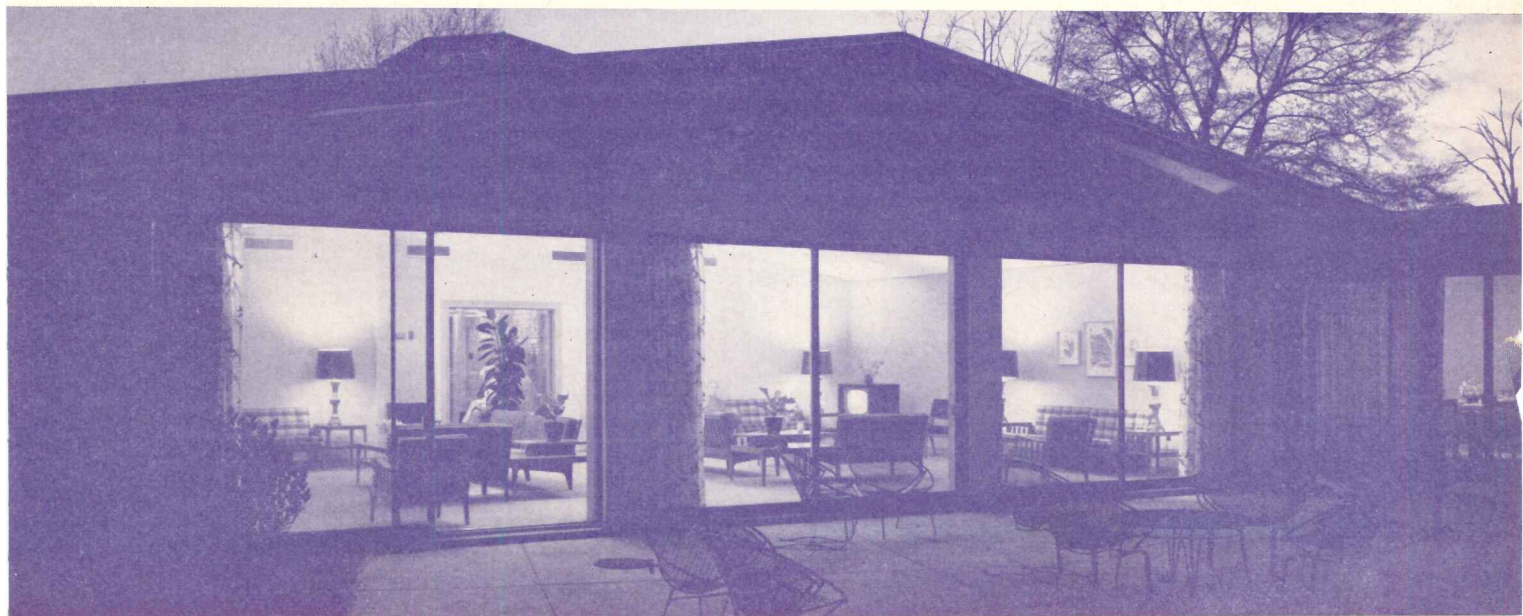
## SHREVEPORT HOME FOR AGED

*Neild-Somdal-Associates*

*Architects and Engineers*



A fifty-year-old home for the aged has just added these two new wings, containing 40 bedrooms. The rooms are for single occupancy, but can be used by two persons if need increases. The home does not have medical facilities since a large charity hospital is near by, but the new wings have bedpan sterilizers and utility rooms which can be converted into nurses' stations. It is largely a charitable home for residence, but future plans call for some cottage units and for activity buildings for crafts, shops, and so on. The new building is fully air conditioned with individual room controls for both heating and cooling. The decision to provide such an elaborate mechanical system was based on experience showing that in care of old people temperature control could provide more trouble or pleasure than any other factor.





can ever become a truly acceptable "home." With our new knowledge of older people — their wish to live and to serve and to have other daily occupation than breathing, eating and sleeping, we realize that even the infirmary must be so designed as to provide for diversion, for entertainment and even work for others, for patients singly or in groups. Patients are not bedbound so long as they were once, and their interests, even those who have withdrawn from the reality around them, can be directed to the world around them, to people other than themselves, and to a relatively high degree of creativity.

The whole setting must be one which stimulates those interests, which encourage optimism, and which makes it possible for staff to accomplish the daily routines of living with a maximum of efficiency and a minimum of unnecessary physical effort. There must be provision for rehabilitative therapy, but the whole atmosphere, derived from the effectiveness of design, must be conducive to a rehabilitative state of mind on the part of the patient, staff, and visitors alike.

It might be possible to sum up the home for the aged of the future as a place in which any one of us will be glad and proud to live so long as that answers our personal needs (and we cannot judge too accurately in advance what those physical and psychological needs will be); a place in which we can remain if that suits us, or a place from which we may return to the community refreshed in body, mind and spirit, if that too is what seems wisest and best; a place which supports us in our desire both to serve and to be served; a place in which as persons we have meaning to ourselves and to others; a place in which there is assurance of concern for our well-being and care in the event of illness; a place in which each new day is to be anticipated for the "something" of interest it will bring; a place which is so much a part of the community in which it is located that we too are a part of it; a place in which older people may truly be said to find themselves and to have the opportunity of demonstrating positively how fully life can flower in the later years under favorable conditions.

## *No Single Solution Covers Everything*

### THE NEW PROGRAM AND THE ARCHITECT

*By Walter K. Vivrett*  
*Associate Professor, School of Architecture*  
*University of Minnesota*

MEASURING THE OBJECTIVE and the program of the home for the aged by today's knowledges of group work and institutional effort, and measuring the physical environment by the architectural achievements in other institutional areas, the home for the aged with both ideal program and environment is, to all intents and purposes, nonexistent in the United States.

If the measurement of program is dropped, and only the physical environment, the buildings, are measured, the worthy-of-mention buildings are a paltry few. The home has plodded along with little or no help from architects and planners.

Of the more hopeful, and optimistic aspects of the institutional picture and of its work in behalf of the aging and the aged, three particular points stand out:

1. The tremendous strides in establishing both a philosophy and a service technique which the young profession of social welfare has achieved.
2. The general public consciousness which physical medicine and rehabilitative therapies have awakened.
3. The successful experiments in home care and in self care which have established techniques for meeting some of the problems of long term illnesses — particularly those from which we can convalesce, or which we may arrest.

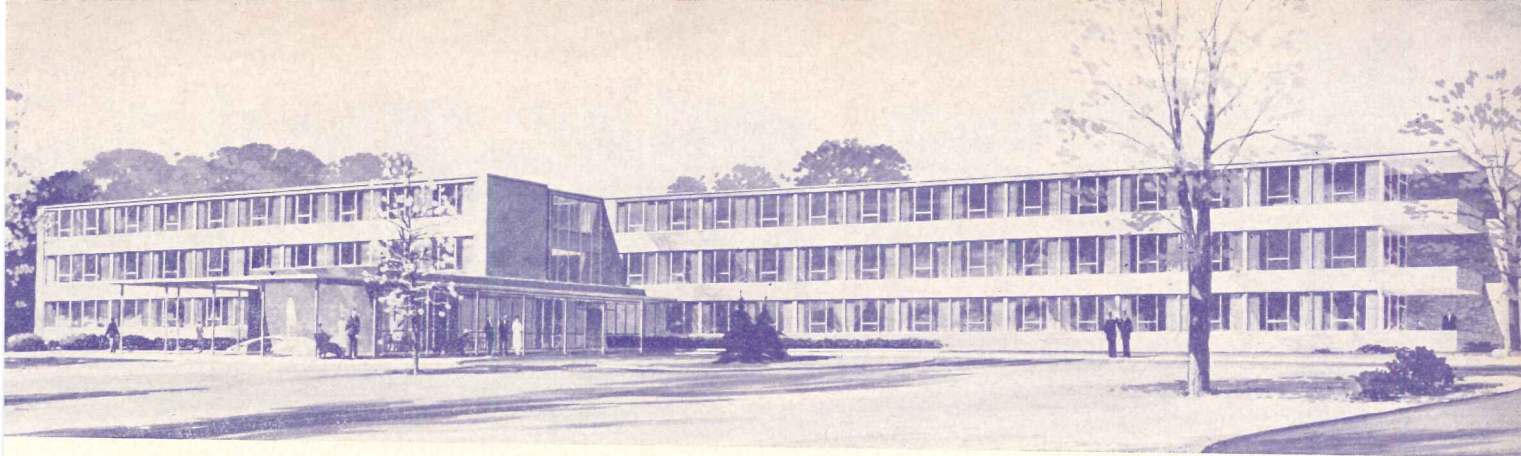
Today, the institutions for the aging and the aged are faced with several clearly identifiable, and sometimes paradoxical questions. These questions require, not exclusively, but certainly close coordination and participation by both architecture and planning:

1. How can institutions provide congregate, group living environments of a standard at least equal to that available in residential communities?
2. Can such congregate living environment be provided at a cost at least equal to, if not less than, the cost of living in the community proper?

Or, of a more architectural bent:

3. Can the physical environment in these existing types of institutions, or new types of institutions, be manipulated to perform the many tasks — psychological, social, and therapeutic — which the new philosophies of milieu therapy demand?
4. Even once the institution staff has accomplished a statement of philosophy and objective — a statement of the care and service to be performed (and this is no mean feat), will it be possible to develop appropriate architectural expression and form?

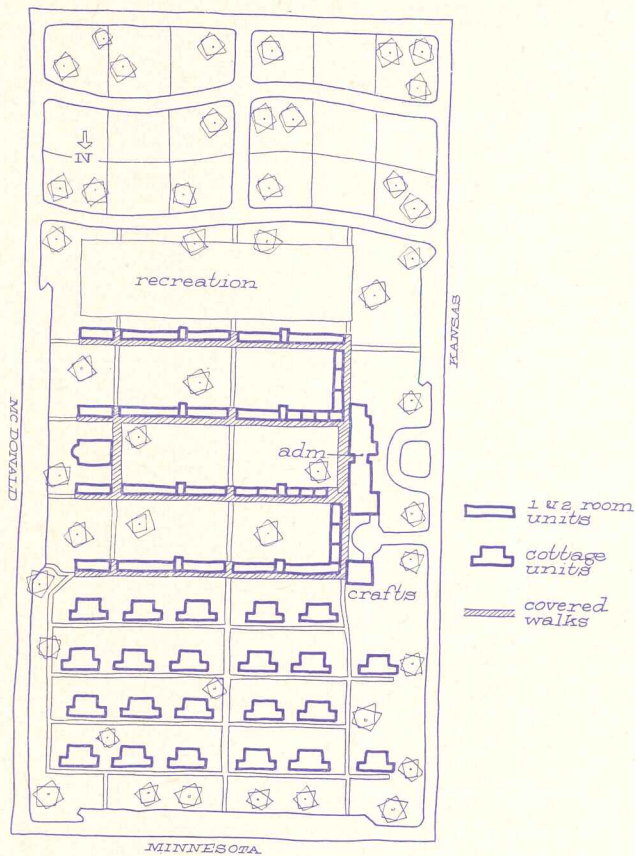




**ALLEGHENY LUTHERAN HOME, JOHNSTOWN, PA.**

*Hunter, Caldwell & Campbell, Architects*

This is a new version of a home already in operation at Hollidaysburg, Pa., by the Lutheran organization, and is almost identical with the one described in a letter from the administrator on pages 218 and 220, though much different in architectural character.

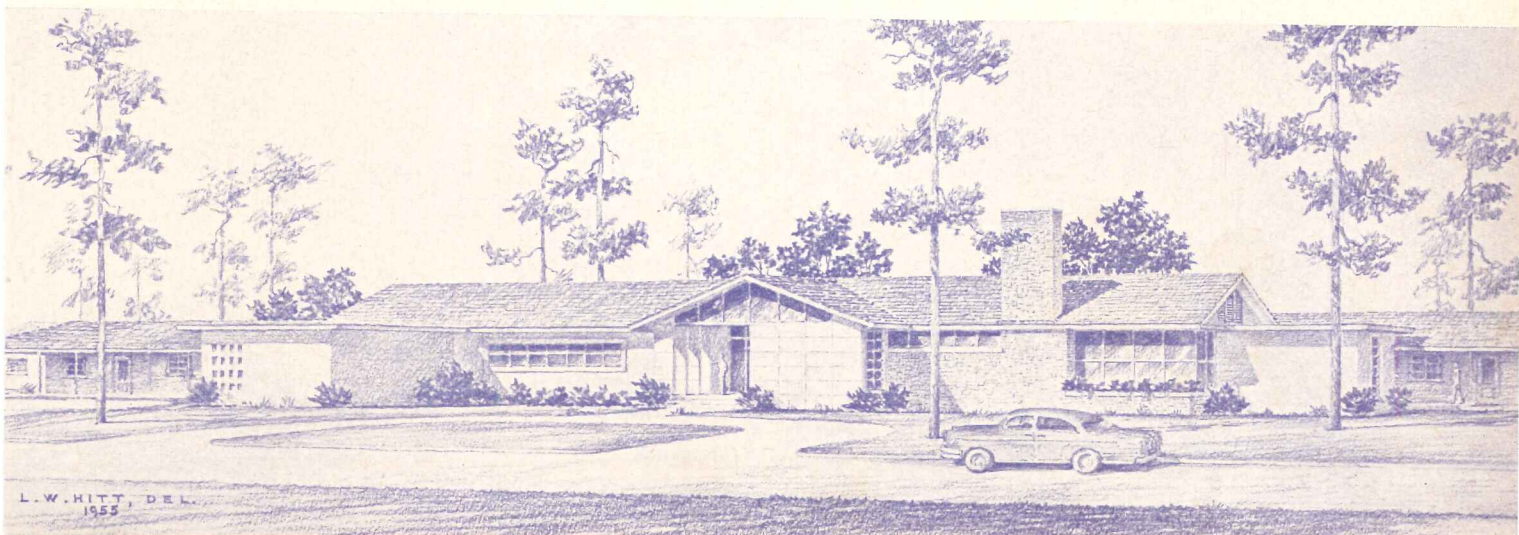
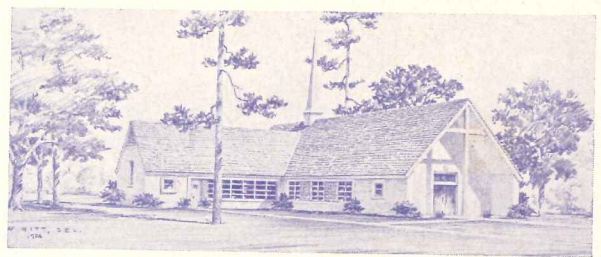


**FLORIDA LUTHERAN RETIREMENT CENTER**

*At Deland, Fla.*

*Jas. Gamble Rogers, II, Architect*

Plans for this retirement center call for 22 duplex cottage units for couples and four long single-loaded corridor apartment units with one- and two-room apartments. There will also be an administration building with lounges and dining room, and a church building. No infirmary is planned for the initial stage, but may be added as the need arises. The site is a large rectangle, 660 by 1320 feet, with twenty acres.





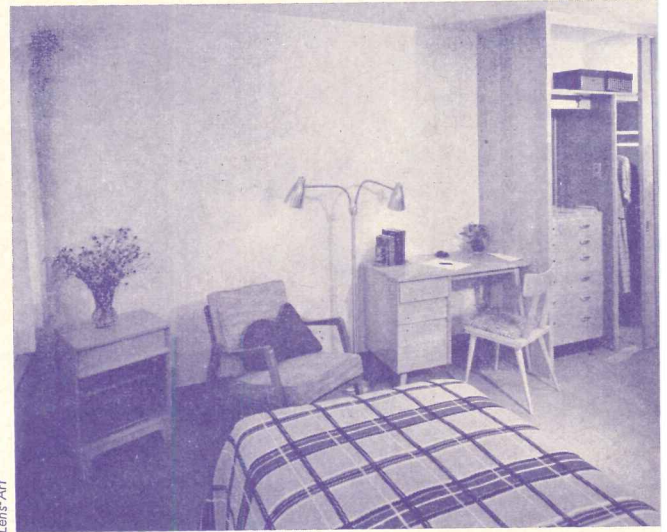
*The new environment of the emerging types*

The home for the aged is emerging as a new institutional complex in which the physical and psychological transition between the community outside, and the environment inside the walls is almost indiscernible. The objectives, the programs, and the physical facilities are ordered so as to encourage and make possible the continuance of earlier patterns of living, daily routines, personal care habits, self-expression in social contacts, and recreational activities, and, where necessary, introduce new ones. The institutional services are extended beyond personal care and semi-skilled nursing, to include preventive and intensive therapy and rehabilitative techniques.

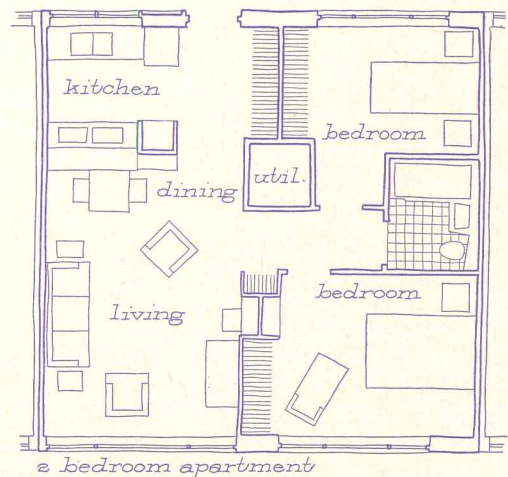
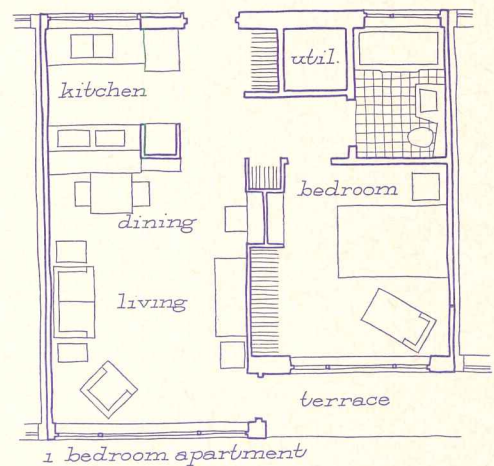
Group use spaces (lounges, dining rooms, activity-recreation rooms, therapy treatment spaces, etc.) are sufficiently flexible in design and construction to be easily adapted to the changing needs of group work. Institutional building committees have been induced to accept far too many poor packages in recent years — packages in which group use and treatment spaces were frozen in physical dimension and use by masonry walls and permanent construction. The real need here is for spaces which one can rearrange every 5 or 10 years, not just once in a 100.

Somewhat along the same lines comes the continued effort of architects as well as building committees to talk of economy and to slash away at initial investments in physical environment. As the home for the aged is becoming more and more aware of the part which physical environment plays in milieu therapy, there is less argument in favor of initial savings, and more argument in favor of environmental qualities appropriate to the objectives. Architects and building committee of the Presbyterian Village in suburban Detroit are indeed to be commended for their decision to provide the optimum environment despite the knowledge that "square foot costs" might be more than costs for the run-of-the-mill institution.

Outdoor spaces are developed — not just in sunny California or Florida but also in colder climates — so as to provide suitable spaces for the newer techniques of group work and programming effort. (Beware the frequent superintendent of the institution who says: "Our old people don't really like to go out doors even in the summer; the bugs bother them, or it's too far for them to go.") A part of this effort out of doors is specifically directed toward self-expression out of doors. Tomkins Square House in New York provides individual planting boxes on its roof terrace with equipment storage closet nearby; the result is that any summer morning will find one or two persons busily pruning, watering, and admiring the plants. Or at Senior Center, in Santa Barbara, where limited funds prevented too much organized landscaping, the individual resident and the climate favorable to lush growth have produced a wonderfully sensitive outdoor environment. One hopes that the management at Presbyterian Village will retract its requirements that residents garden only in the or-



Lens-Art







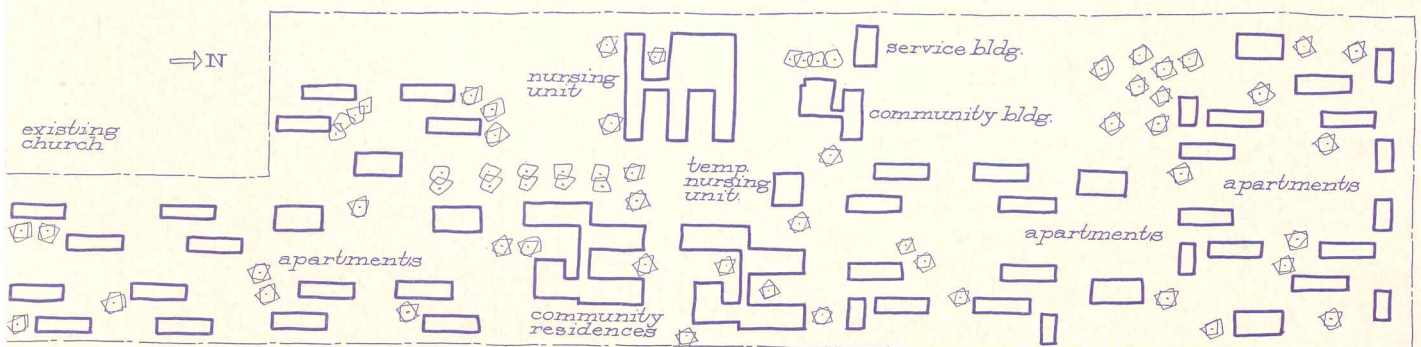
## PRESBYTERIAN VILLAGE, DETROIT

*Smith, Hinchman & Grylls, Inc.,*

*Architects and Engineers*



A major study of needs of the aged preceded the building of this pleasant home by the Presbytery of Detroit. It was decided that four basic building types would serve the aged in all of the statuses of their remaining years: individual homes for couples who could afford and could maintain them; one- and two-bedroom apartments for couples who could live independent lives; a community residence for those living alone; and a nursing unit for those needing care, but not hospital patients. The master plan calls for these types, plus the administration building, chapel and so on, eventually to house some 500 guests.





ganized plot on one of the sites, and encourage those residents in row houses to somehow express their individuality outside their kitchen doors.

The individual living quarters are designed so as to accommodate readily the full range of handicaps and disabilities which come with old age. Nursing care, use of wheel chair, and other aids are not precluded by design which thought they could not occur. Not just the present standard of community living, but the still rising standard of living (which the older generation of tomorrow will claim) is taken into account in order that the environment will not be outmoded before it is well occupied. Private or semi-private toilet and bath facilities are already requisite. Telephone, broadcast, and communication systems are considered. One might well speculate on further possible aids to self care, particularly of the pushbutton variety. (Why can one only get "power windows" on automobiles?)

The *recreational and activity center* for older adults — not too dissimilar to the youth center and frequently a part of the established community effort — is now an established institution. These are the centers which solve the problem of empty hours for the older adult of the community — the adult now retired, or widowed, or perhaps with so few friends left in the neighborhood. Typical of the refreshing environment being provided by these centers is Little House at Menlo Park, California. Here Peninsula Volunteers provide not only a program, but a staff to guide, and an appropriate environment in which to accomplish the program.

Occasional efforts have been directed toward occupational and vocational programs, in particular the sheltered workshops — sometimes functioning as a part of a home for the aged, sometimes as an independent type. In one instance, the spontaneous private effort of a few individuals has resulted in the exciting activity of Craft Village in St. Petersburg, Florida. Here, the small businesses of many retired individuals flourish.

*Private, individual living units* are becoming more and more in demand — either as part of the home for the aged, or as an independent type of building. The apartment, the apartment hotel, and the hotel adapted to the special needs of older persons — represents an environment closely akin to that which was enjoyed in earlier life. It is not surprising to observe the trend of older hotels being utilized in a number of ways:

The William Penn Hotel in Los Angeles (under private management) announced last year its plan "for happy living for the middle aged, the retired, the single business man or woman, couples, the young at heart and rich in years."

Casa de Mañana (Methodists of Southern California) and White Sands (Presbyterians of Southern California), both in La Jolla, are two of the many resort hotels which, as a part of their larger institutional organization, offer superior accommodations to well older persons of means.

The Boulevard Hotel of Miami Beach, rehabilitated under private initiative, now offers hotel living for older persons at low rates (beginning \$60-\$70 per month

for room and board) and further arranges for a large number of their residents to reduce this charge by a cooperative-work plan in the hotel.

Many institutions are taking a second look at the communities in which they operate. They are discovering that communities vary and, as a consequence, that their own institutional planning should be an integral part of the planning for total human services in the community. Such is the demand of the political, social, and technological era in which we live.

In Minneapolis-St. Paul, Minnesota, where there is almost no concentration of older adults in any specific area of the cities, but rather encouraging distribution of older adults throughout all communities, a coordinated effort is being made to plot community resources and potentials and to measure the sufficiency of these in terms of the older population which these resources and potentials must serve. In one community it may be determined that there is required an extensive institutional effort — including not only domiciliary, custodial, and nursing care, but also an out-resident center to meet the total needs of those yet able to remain in their own homes. In another community, it is visualized that only minimum additional effort and facilities will be required — merely the addition of a flexible space to be used by older adults for occupational and recreational activities.

In New York City, the Home for Aged and Infirm Hebrews cares for approximately 1000 persons intramurally in its institutional complex — Central House and a group of apartment residences in New York City, and Kingsbridge House in the Bronx. Extending its present extra-mural services, it proposes to reach an eventual 3000 additional persons living in the communities in which its buildings are located.<sup>1</sup>

In Jacksonville, Florida, Sidney Entman, Executive Director of the River Garden Home, states that the Jewish population has well-established homes and families in the community and that, for the most part, it demands of the institution services of a skilled and technical nature. On the other hand, Maurice Pearlstein of Douglas Gardens calls attention to the fact that the Jewish population, having migrated to Miami, Florida during very recent years, has definite needs for domiciliary and custodial types of care as well.

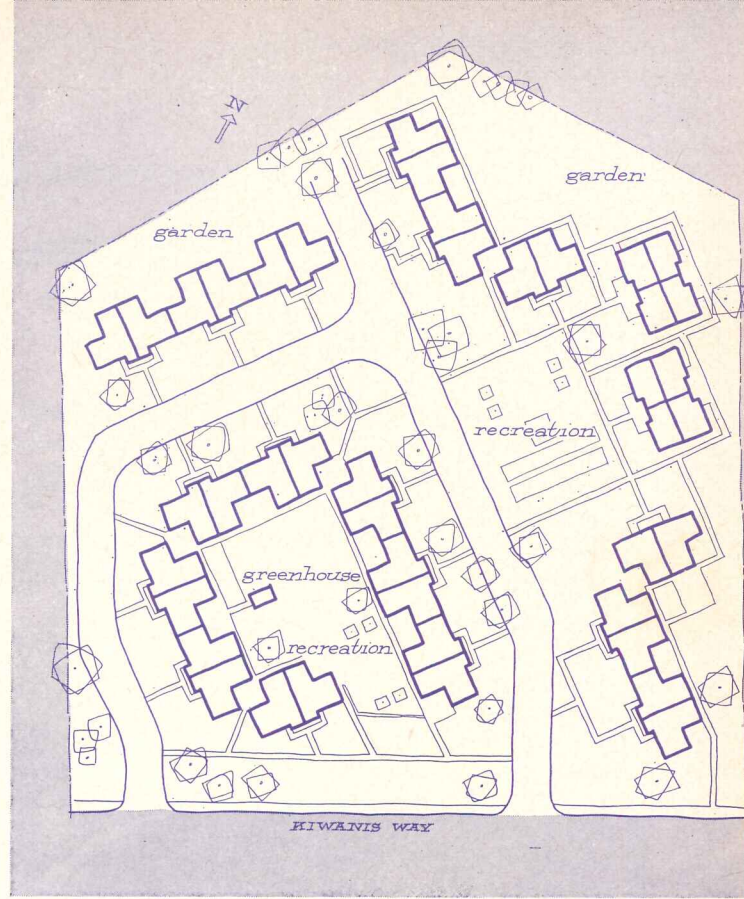
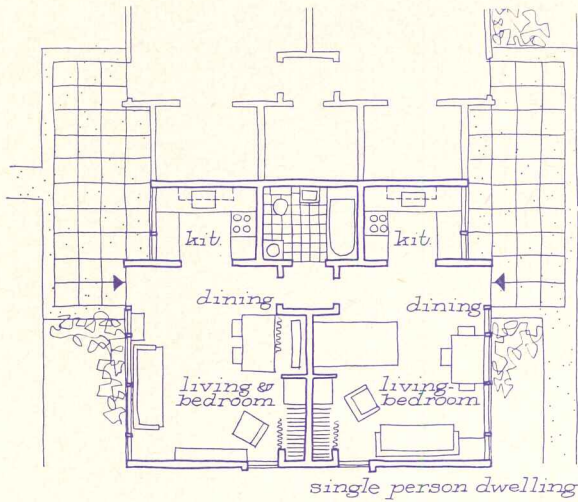
Institutions and communities are beginning to realize the potentials of a two-way relationship between the services of the institution and the community, and between the residents of the institution and the residents of the community. There is a growing demand to have the institution community supporting, as well as community supported.

If the architect and the planner is to serve most effectively in the community effort to provide the physical environment which is such an essential part of the milieu therapy, he must find ways to participate in the formulation of the statement of the problem. He is a part of the problem.

<sup>1</sup> See *Architectural Record Building Types Studies*, September 1954, pp. 193-197.



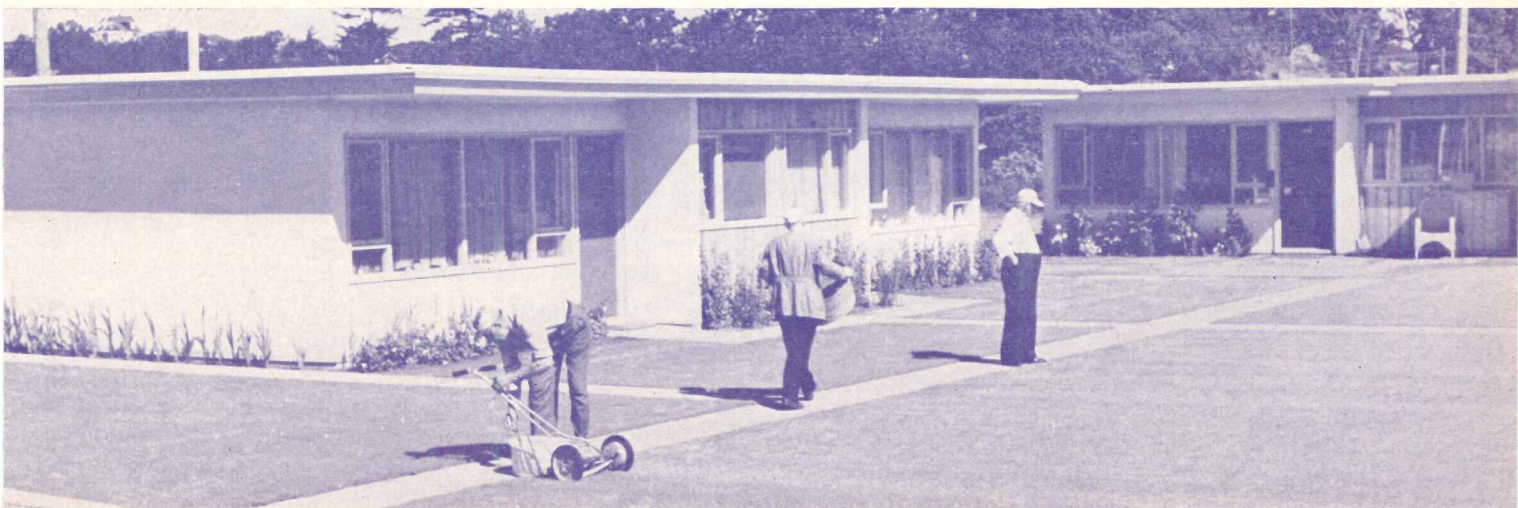
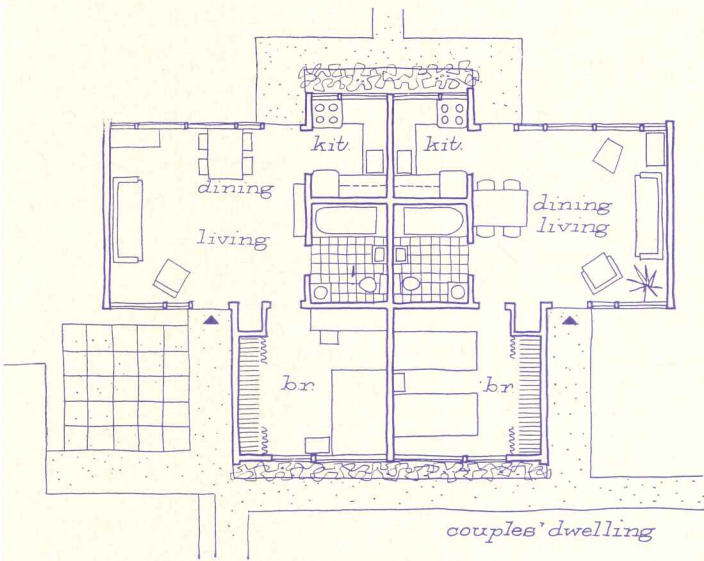
Fairfield Photo



**KIWANIS VILLAGE, VICTORIA, B.C.**

*Charles E. Craig, Architect, associated with  
Sharp & Thompson, Berwick, Pratt*

Old peoples' homes don't usually win gold medals for their architects, but this one did: the Massey Foundation Gold Medal for Architecture. The village was built to provide low rental housing for married pensioners unable to afford prevailing rentals. Accordingly there are 34 units for couples, plus 8 single units for survivors. Couples' units have living room, bedroom, kitchen and bath. Single units have bed-sitting room, kitchen, and bath shared with adjoining room. Landscaping plan gives plenty of scope for outside activities, including individual vegetable gardens as well as flower beds.





## *Superintendents' Comments on Planning*

### ADMINISTRATORS STRESS GROWING MEDICAL NEEDS

*Letters to ARCHITECTURAL RECORD*

THE HOME TO WHICH I was called as Pastor-Superintendent in 1940 had 57 guests at that time with a waiting list of 50 applicants. It now has 230 guests and a waiting list of 55 applicants. The facilities and services of the Home have been quadrupled in the past 15 years but a greater number of applicants await admission now than at the beginning of the period.

The average age of applicants in 1940 was 66 years. The average age of applicants now is 78 years. The average age of the guests in 1940 was 72 years. It is now 82 years.

Largely due to increased Social Security coverage and pensions, aged people delay their applications until their need of care compels application to homes of this type. They are much older upon admission, which means that there is an increased proportion of invalids among the guests. The increase in this institution is from 10 in 1940, or approximately one-sixth of the guests, to 85 now or in excess of one third of the guests.

Modern medication does wonderful things in prolonging the lives of the aged but it serves at best to keep them alive but not well, hence the great increase in long-time invalidism. Furthermore, it keeps the body alive beyond the mind, with the result of a great increase in senility.

Our enlargement program of the past 15 years included an Infirmary Building for 65 invalids, complete with diet kitchen, elevator, doctor's examining room, nurse's call system, and all facilities and equipment for the care of the ill in private rooms with wards for "in and out" patients. We were in error in our estimate of the proportion of invalids to well guests. We were in error in not providing invalid rooms apart from the other rooms and wards for the segregated care of the senile patients. It is our conviction that institutions planning to enlarge their facilities should plan infirmaries for the care of one third of their guests as invalids and separate facilities for the care of the senile.

*Robert L. Lang, D.D.*

*Pastor-Superintendent*

*National Lutheran Home for the Aged  
Washington, D. C.*

THE MAIN THING to say about the medical needs of older people is that anybody who starts a home for the aged is actually starting a nursing home. He may not think that he is but in a short time he will find that is what he has. There are homes which operate on the principle that people who become nursing cases will be turned out. But personally, I have no use for that type of home and that is not the way we operate. We do not pretend to give treatment. We give care and can give care under

any circumstances. People who need treatment are sent to the hospital for the period of time required. Special provision should be made always for the care of the senile.

*George W. Nelson  
Superintendent  
Presbyterian Manor  
Newton, Kansas*

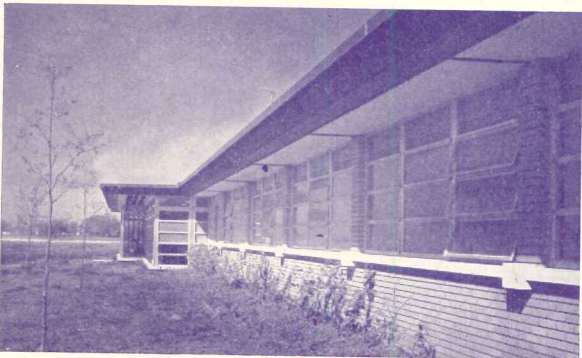
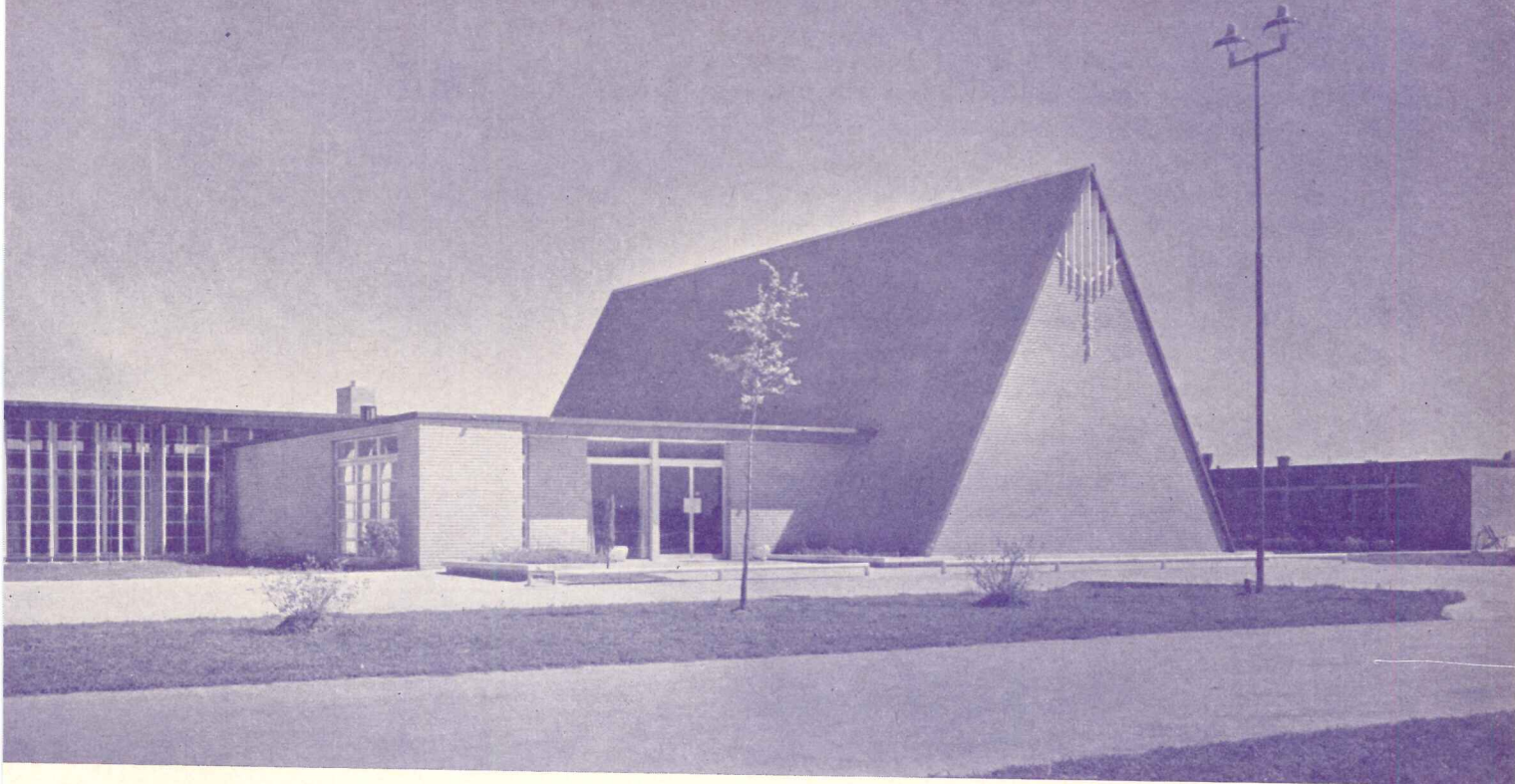
ONE OF THE FUNDAMENTAL problems in caring for the aged, as we see it, is to administer to their spiritual, as well as their physical needs. Therefore, it would seem to be imperative that the basis of a Home be that it is conceived and operated by a church group with private funds, rather than a state institution. This goes very far toward insuring the peace of mind of the guests, who, as the body wanes and the spirit waxes, are more inclined to be increasingly spiritually minded, and are more at home in the environment and atmosphere that the church alone can provide.

The entire concept of the project should be homelike, pleasantly light, cheerful and, we believe, if possible, with the character of a fine hotel. Inasmuch as most of the guests have more time on their hands than anything else, the occupation of that time, without undue strain on the physical and mental capacities of the guests, is of primary importance. We endeavor to keep our guests occupied and busy. They help with such light tasks about the home as suits their abilities. Insofar as they are able, they take care of the light cleaning and bedmaking of their own rooms.

In general, an orientation with rooms all facing one way with a single-loaded corridor helps provide an excellent atmosphere and character for the structure and automatically insures good ventilation and lighting. One absolutely essential feature which this provides is that all guest rooms have equal facilities and identical outlook, which eliminates controversy. We believe it to be essential that each guest have his own powder room, complete with toilet, sink and medicine chest.

Construction wise, first of all, it goes without saying that the building must be fireproof. The window sills for viewing should be of a height so that the guests can see out while sitting. Windows should have a hopper type vent. Heating should be over-adequate; handrailings should be provided along both sides of all corridors and stairways, and, as many guests insist on using stairways, they should be easy and have frequent landings for resting. Each floor should have a small sitting room or alcove with a good view where the guests on that floor may gather for conversation, games and other activities.





I. B. Lindenthal

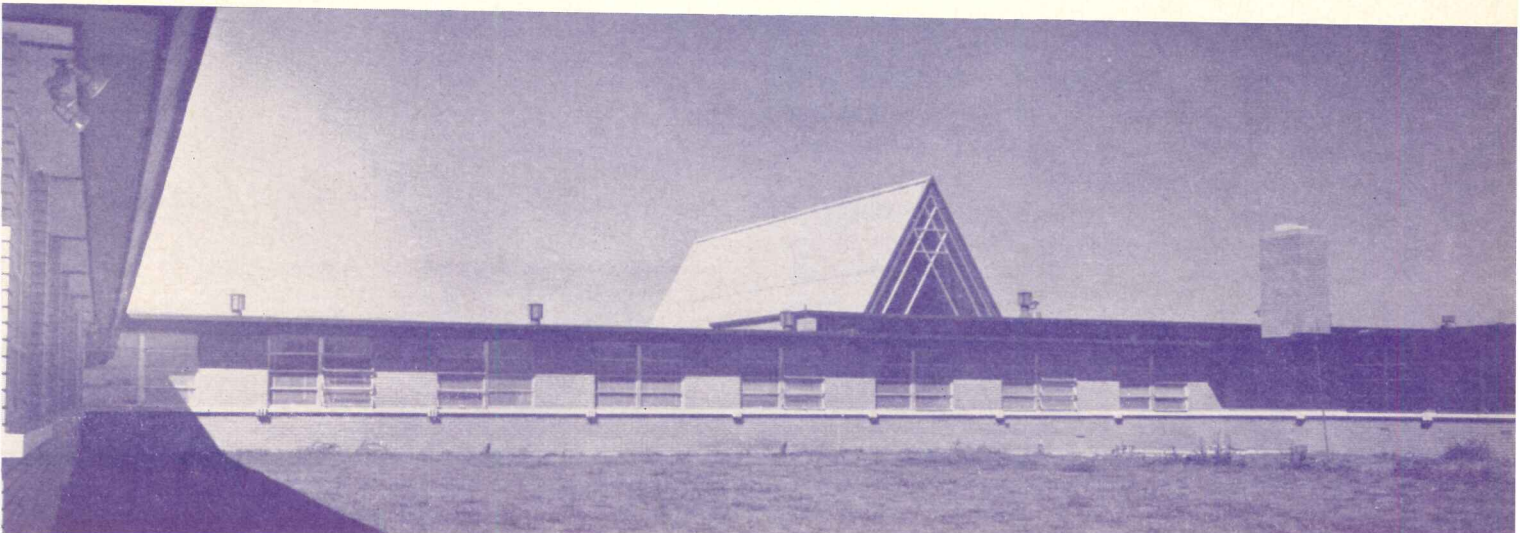
## HOUSTON JEWISH HOME FOR THE AGED

*Lenard Gabert, Joseph Krakower*

*Associated Architects*

*William J. Wisdom, Associate*

This home began with accommodations for residents in 32 bedrooms, each with private bath, plus administration facilities, lounge, library, music room, chapel, assembly room, dining, kitchen and service areas. Now being completed is a 17-bed addition to the hospital wing, and eventually the home will accommodate 96 residents.





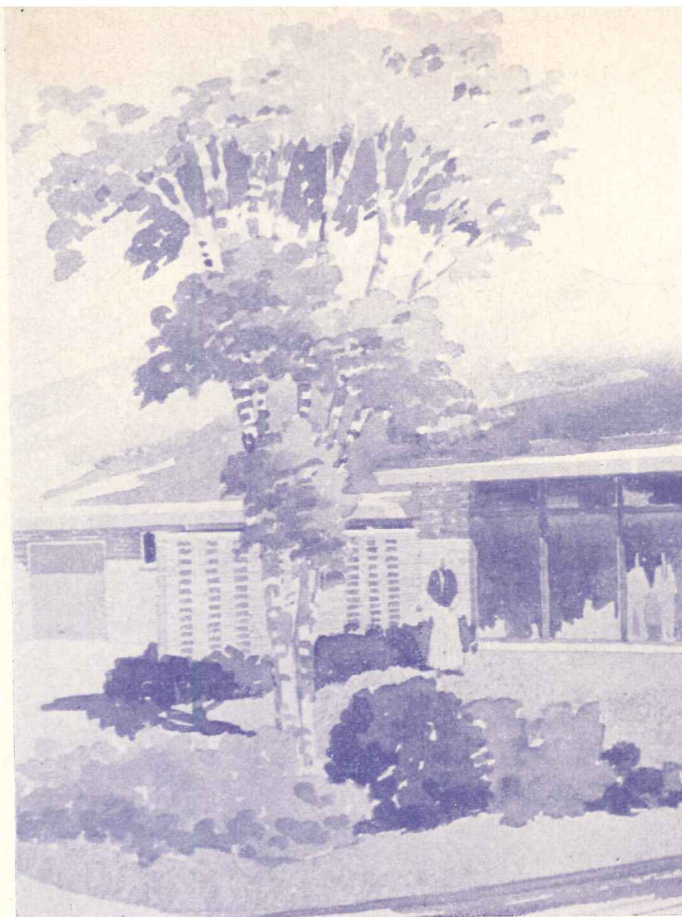
## BUILDINGS FOR THE AGING

Open porches should be provided with a type of railing that will shelter from the wind but not obstruct the view. Our particular institution happens to have wire glass railing in panels. Porches should be to the East and West so that the guests can alternate in morning and afternoon.

The infirmary for an institution of sixty odd should have about twenty beds and a full time, complete nursing room setup, including utility room, diet kitchen, nursing station, bedpan sterilizer and a raised tub so nurses will not need to stoop when bathing patients, and a bathlift to make it possible to get patients into the tub easily. In fact, the infirmary should be a self-contained hospital nursing unit.

We have found the high-low type, mechanically operated beds an absolute necessity. When the patients recover sufficiently to get out of bed, it should be a type that can be lowered to a standard height, or the convalescing patient requires constant assistance in getting in and out of bed.

*Luke H. Rhoads, D.D.  
Allegheny Lutheran Home  
Hollidaysburg, Pa.*

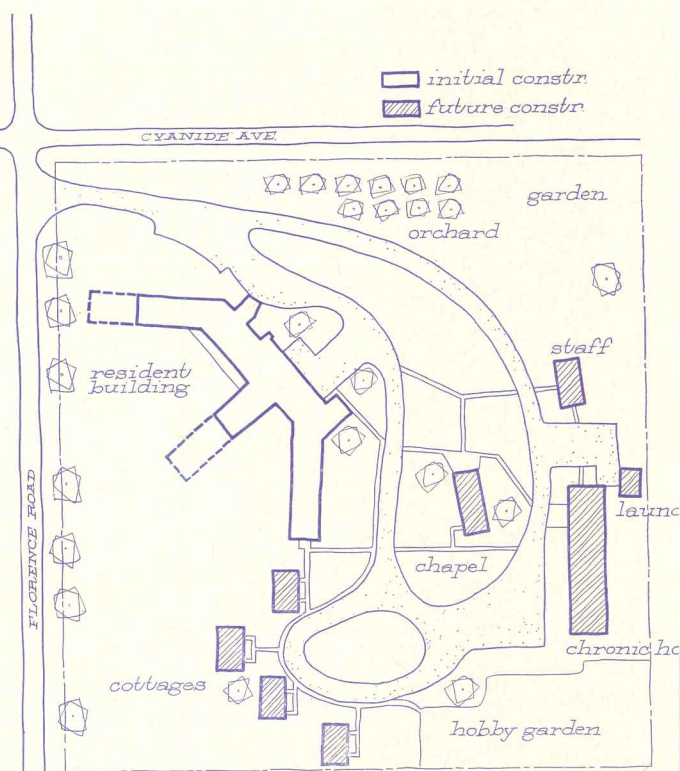


AN IMPORTANT QUESTION in the building of new homes is that relating to the number of single rooms which should be provided. While it is true that some older people prefer to have a roommate, we have found that the big majority would much rather have rooms to themselves. There is of course the cost factor involved in building a home with single rooms.

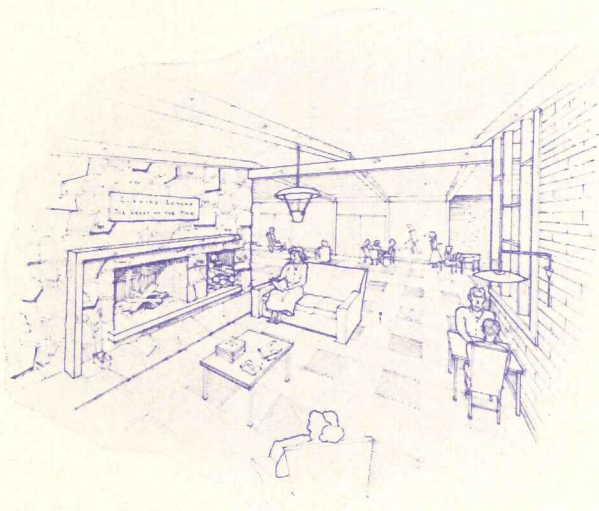
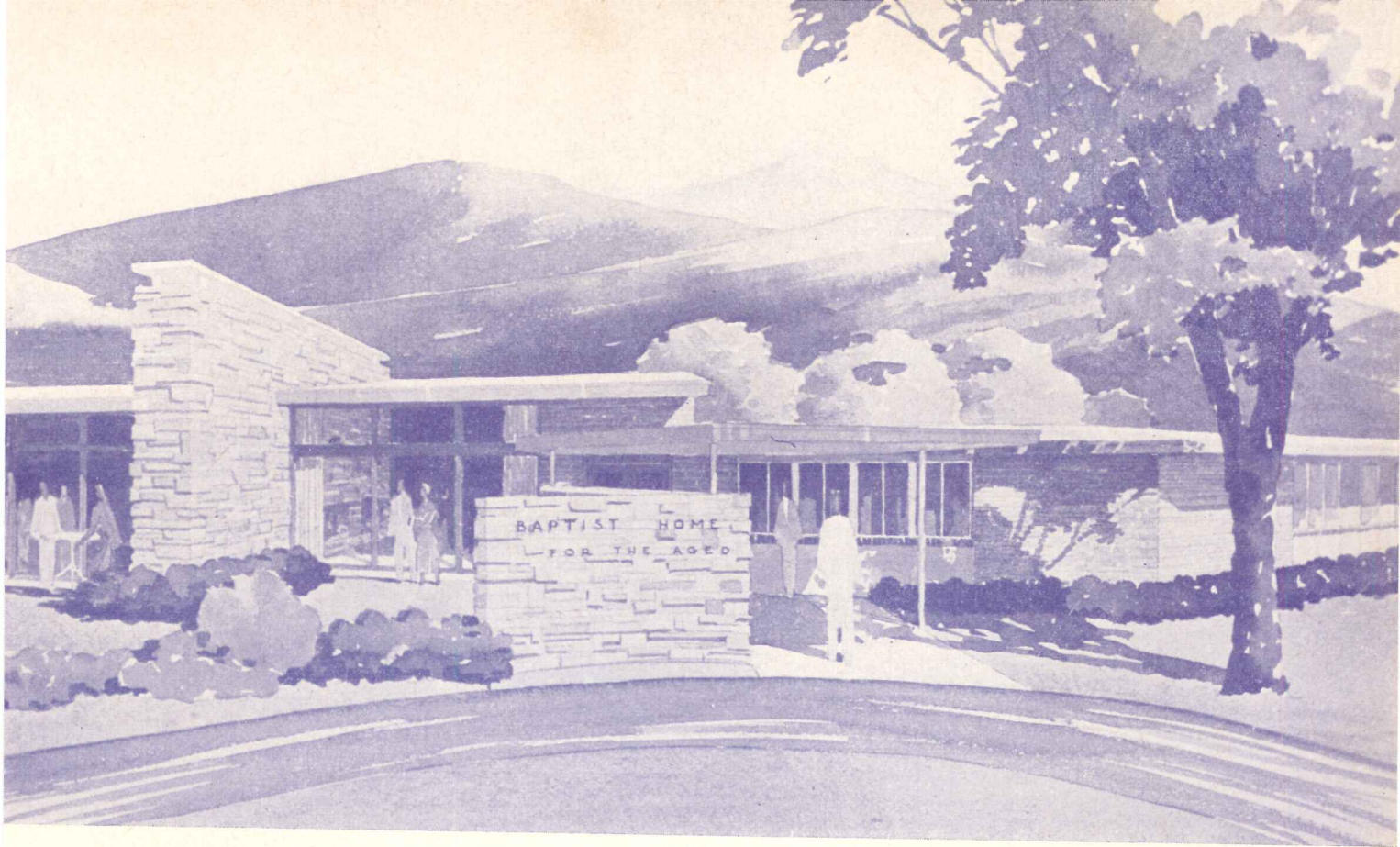
One of the striking features of our present structure is the fact that all of our rooms on the ambulatory side have doors leading out to the grounds. This makes it easy for the people to sit outside when the weather is nice or to go for a walk without having to go through other parts of the building. When I saw this on the blueprints, I wondered to what extent it would be a management problem. Actually, it has not proved that at all. It is necessary, however, to transfer to the other side those residents who have a tendency to wander off by themselves.

In caring for the medical needs of our people we have found that we have had to almost triple the size of our nursing staff, even though our population increased only about a third in the past three years. Because medications are so important in the treatment program, the position of the nurses' station must be carefully planned. Ours is in the center of the building, nearer to the ambulatory wing than to the infirmary side. We have an intercom and lighting system which provides for communication between the residents and the nurses in the station. Some of our nursing staff feel that it would have been better to have placed the nurses' station in the infirmary wing.

*Louis Newmark  
Executive Director  
The Jewish Home  
Atlanta, Georgia*





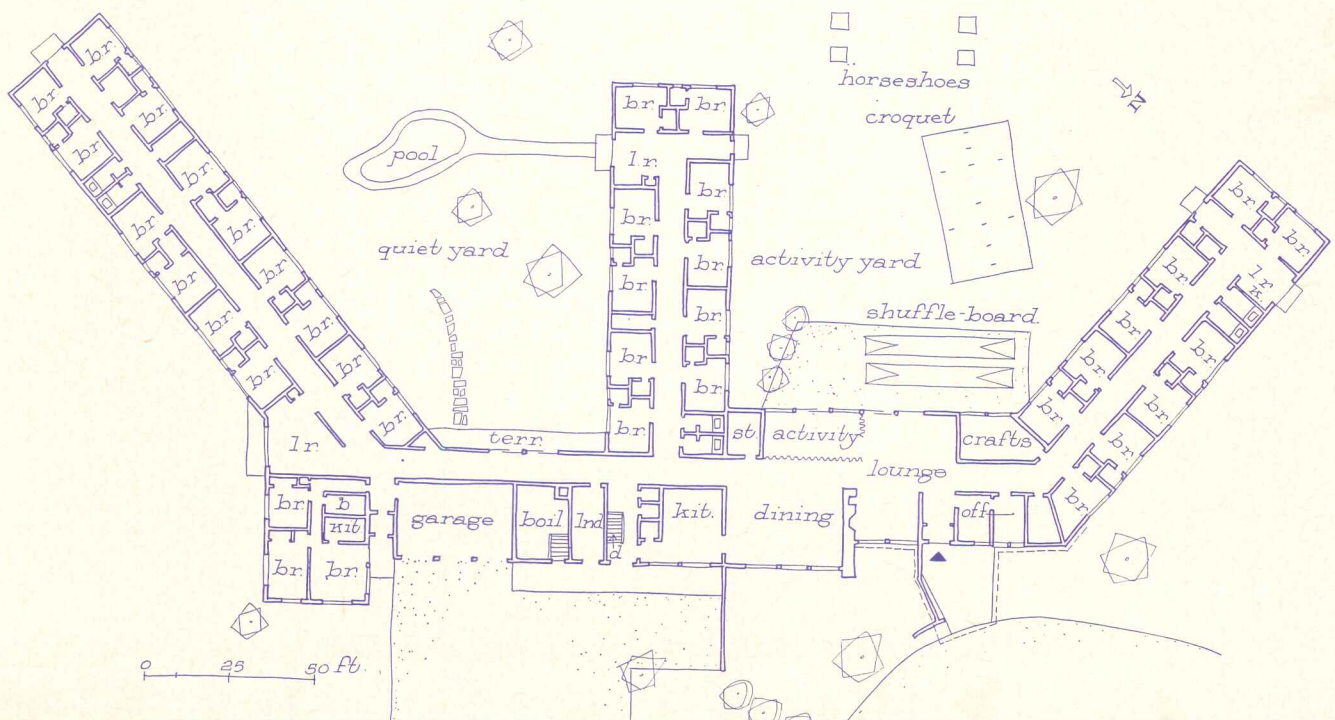


**COLORADO BAPTIST HOME FOR THE AGED**

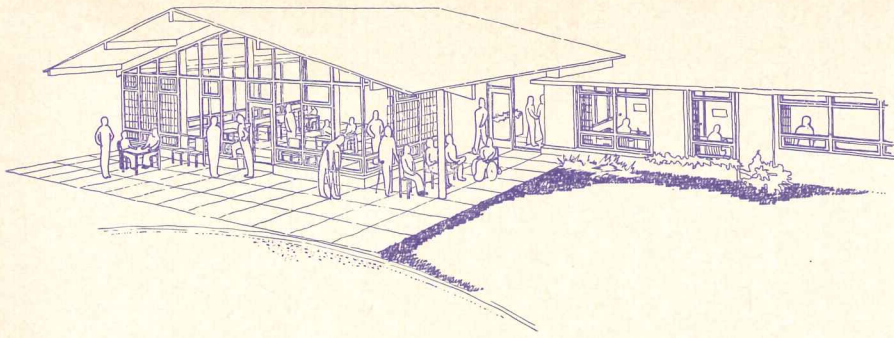
*Canon City, Col.*

*Harold R. Carver, Architect*

This home was designed around the idea that residential character was essential. Thus the three separate wings create smaller "communities" within the home, the wings being oriented for maximum view and warmth to each room. The splayed form helps provide privacy to each wing, also to form courtyards. Each wing houses 10 residents in normal occupancy. The architect writes: "It is recognized that need for chronic care will occur rapidly . . . next unit will be a completely separated chronic hospital."







## PLANNING THE NURSING HOME

*U. S. Department of Health, Education and Welfare*

**M**EDICAL CARE programs for the management of patients with chronic disabilities and long-term illness are directed toward restoring them to a state of optimum usefulness to themselves and to society. Although the availability of therapeutic facilities in the community is essential to medical care programs for many chronically ill patients, continued hospitalization in institutions that furnish highly specialized expensive care is not required in most cases. Yet such patients often require more care than can properly be given in their homes.

The nursing home is a type of facility which is emerging to serve this group. Based on present trends and the forecast for the future in the chain of medical care services, the primary purpose of the nursing home is to provide skilled nursing care for patients with chronic disabilities or long-term illness when hospitalization and intensive medical care are not indicated.

A definition of a nursing home which has had rather general acceptance is as follows:

A nursing home is a facility for the accommodation of convalescents or other persons who are not acutely ill and not in need of hospital care but who require skilled nursing care and related medical services.

In addition to coping with the medical aspects of long term care, the nursing home must be prepared to help the patient to meet his problems in a way which preserves his right to maximum self-determination, privacy of person, and personal dignity. Thoughtful planning is required to provide the necessary facilities, properly arranged, to carry out the complete programs of nursing homes as well as to safeguard the individuality and basic rights of the patients.

Unlike most patients in general hospitals, the patients in nursing homes are predominately long-term residents. They have left their homes for an extended period of treatment and to all intents and purposes have moved to a new home usually for a substantial period of time. The nursing home must not only supply the necessary medical and nursing care directed to the improvement and maintenance of health, but must be able to meet the patients' needs for affection, emotional security, social contacts, recreation, spiritual devotion, education, rehabilitation and congenial work or creative activities.

Homes with capacities of 25 to 50 beds are considered to be of the most practicable size. This range has advantages from the administrative viewpoint in that small units are easier to operate to give individualized service. Also provision of small nursing homes in rural communities serves to restrict the size of the area from

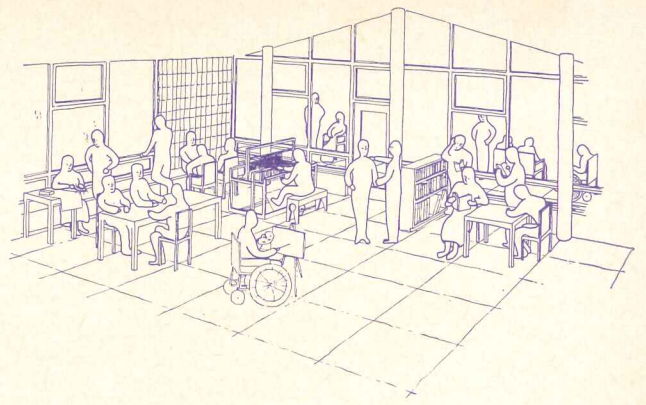
which patients are drawn, which will make visiting convenient and help the integration of the patient in community activities. Some larger homes will probably be required in areas of concentrated population. Regardless of the size initially selected, consideration should be given to the possible need for future expansion.

It is recommended that nursing homes be of only one story unless they are to be so large, or the site is so small, as to make this impractical. Several advantages are inherent in the use of the one-story scheme. Stairways and elevators are eliminated, the movement of patients, staff equipment and supplies from one part of the building to another is considerably eased, direct access from indoors to outdoors is easier and the danger from fires is considerably reduced. An informal, domestic character is much more readily achieved in a one-story building, and finally, one-story buildings generally lend themselves more readily to future expansion than multi-story buildings. (The planning requirements developed in this paper will apply, of course, to multi-story buildings also.) A ceiling height of 8 ft. 0 in. is generally considered to be minimum in patient areas.

It should be possible to minimize institutional character in nursing homes through open informal planning taking advantage of natural light, air, outlook and outdoor activities, and through the provision of generous areas for patients' living and recreation. Color, decoration, harmonious furnishings and landscaping, thoughtfully used, can be most valuable in achieving informality. Soundproofing, acoustical treatment, light and temperature control, agreeable lighting, comfortable furniture, and other amenities relating to the patients' physical comfort should be installed. In the larger facilities, provision of barber and beauty shop should be considered.

The use of wide corridors, introduction of natural light to corridors where possible, keeping corridor lengths short and eliminating dark or congested areas are all desirable. It is not considered necessary, as is the case in general hospitals, to keep visitors' and patients' areas and traffic isolated and to exclude patients from so many areas of the buildings. Since the idea is to make the patient feel at home, he should feel free to meet his visitors where he likes, to mix at will with other patients and the visiting public, or at least to observe without restriction their coming and going. He should be allowed the freedom of the building or grounds as long as it does not interfere with the actual well-being of himself or other patients, or seriously detract from





the efficiency of the operation of the nursing home.

It is important that the window sills in areas used by patients be low enough so that the view of the patient in the wheel chair is not interfered with.

#### *Ancillary Facilities*

The medical care program of nursing homes should keep pace with advances in medical science. The extent of facilities for these services will vary widely depending upon the administrative policy, affiliation with the hospital and other medical services in the community and the size of the nursing home.

A minimum of one multi-purpose consultation room should be provided. This room would be used by physicians for consultation with patients, nursing staff and relatives of patients. It may also be used by the nursing staff, visiting medical specialists, social workers, clergy and volunteers.

*Physical therapy* is an essential service in the treatment of some types of long-term illness and disabilities. As a minimum, massage, thermotherapy and hydrotherapy treatments may be given in the medical treatment room. This limited type of program would require a mobile arm, leg and hip therapy tank, infrared lamp, and other thermotherapy equipment as required by the program. A generous storage closet located adjacent to the treatment room should be provided for the storage of this equipment when not in use.

The patients' rooms, corridors and one of the day rooms may be used for physical therapy exercises. The day room which is used for physical therapy exercises may be provided with parallel bars (folding type 7 ft long), recessed in the wall so that they may be concealed when not in use. A mirror should be secured to the wall between the bars. An additional wall mirror would be desirable. Wall space and anchors may be provided for a shoulder wheel, shoulder ladder and pulley weights. An anchor in the ceiling may also be provided to secure a sayre head sling. A closet located adjacent to the day room for storage of equipment is desirable.

*Occupational therapy* of a functional nature is also essential in the treatment of some types of disabilities and important as recreational therapy for long-term patients. As a minimum, the patients' rooms, day rooms, and recreation room may be used for this type of therapy. Specialized major pieces of equipment would not be required for this kind of program.

The *recreation room* should be as centrally located as possible with respect to the patients' bedrooms. Loca-

tion near the lobby would be convenient for those patients who would enjoy viewing the activities in and around the main entrance. It would also be convenient for visitors and in many cases for supervision of the nurses' station. The recreation room should be ample in scale, well lighted and decorated, and arranged to serve the recreational and occupational needs of the various patients. It should also be convertible to use for religious services. It should look out on scenes of interest and activity and, if possible, have direct controlled access to outdoor recreational areas. An additional, smaller room would be desirable for those patients who like a less active environment than that found in the main recreation room. Cabinets and shelves for the storage of games, books, magazines should be provided.

It is recommended that the *dining space* for patients be located adjacent to the recreation room and separated by a folding partition. Dining space should be provided at the rate of 25 sq ft per bed for 75 per cent of the total number of beds. Provision of 25 sq ft per person is considered minimal for this type of patient. The nursing home program should reflect its attitude toward the use of the dining area. For example, if the best use of this space is to be made, patients will be encouraged to eat in the dining room as regularly as possible for reasons of companionship. The dining area can also be used for serving in-between-meal nourishments or afternoon tea to enhance the homelike atmosphere. If it is adjacent to the recreation room and separated by folding partitions, it can also be used for large group meetings such as chapel service, movies, or speakers.

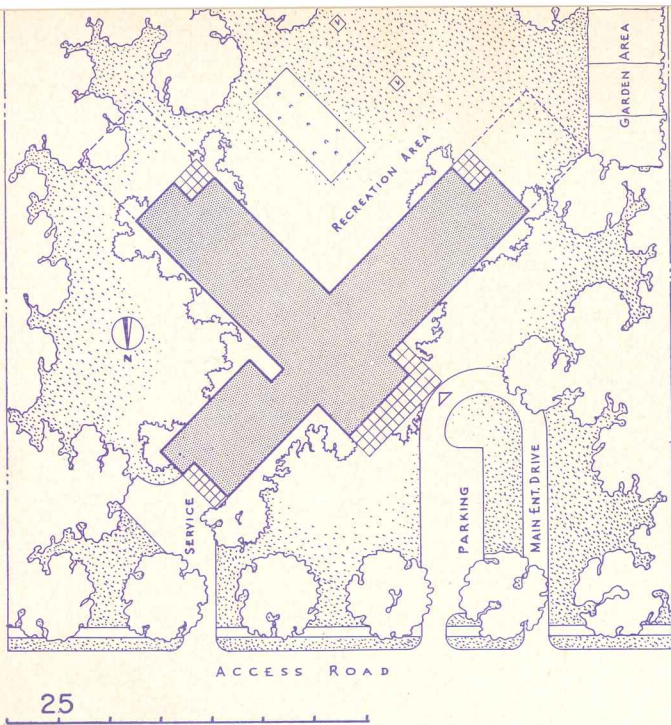
A staff dining room should be provided. Staff members, because they are in constant contact with their patients in a nursing home will benefit from having a quiet place of their own to eat their meals. They will eat in shifts and therefore the seating capacity need not provide for the entire staff.

The total area for recreation, occupational activities and dining should not be less than 50 sq ft per bed for 75 per cent of the bed count.

The *nursing unit* should be located conveniently for effective patient care and supervision by the nursing staff, ease of service from kitchen and storage areas, facility of movement between bedrooms and recreational areas and for patients' visitors.

The optimum size for a nursing unit in a nursing home, like that in a hospital, is about 25 to 30 beds. Forty beds are felt to be a maximum unless additional service facilities are provided. Consideration of factors





This study on the planning of nursing homes [extracted here] was made possible through the cooperation of many interested individuals and organizations who contributed unsparingly of their time and efforts. We express our appreciation to all the physicians, nurses, and administrators, to the staffs of the respective State Agencies engaged in health facilities planning and construction, to the national organizations in the nursing home and hospital fields; and to the staff of the Division of Hospital and Medical Facilities for their valuable contributions to this work.

Research and planning were done by our staff architects: Edwin B. Morris, Jr., Thomas P. Galbraith, Peter N. Jensen, and Wilbur R. Taylor. The presentation drawings and sketches were prepared by architects O. B. Ives and William W. McMaster, Jr., also of the Division.

John W. Cronin, M.D.  
 Chief, Division of Hospital and  
 Medical Facilities  
 Bureau of Medical Services  
 Public Health Service

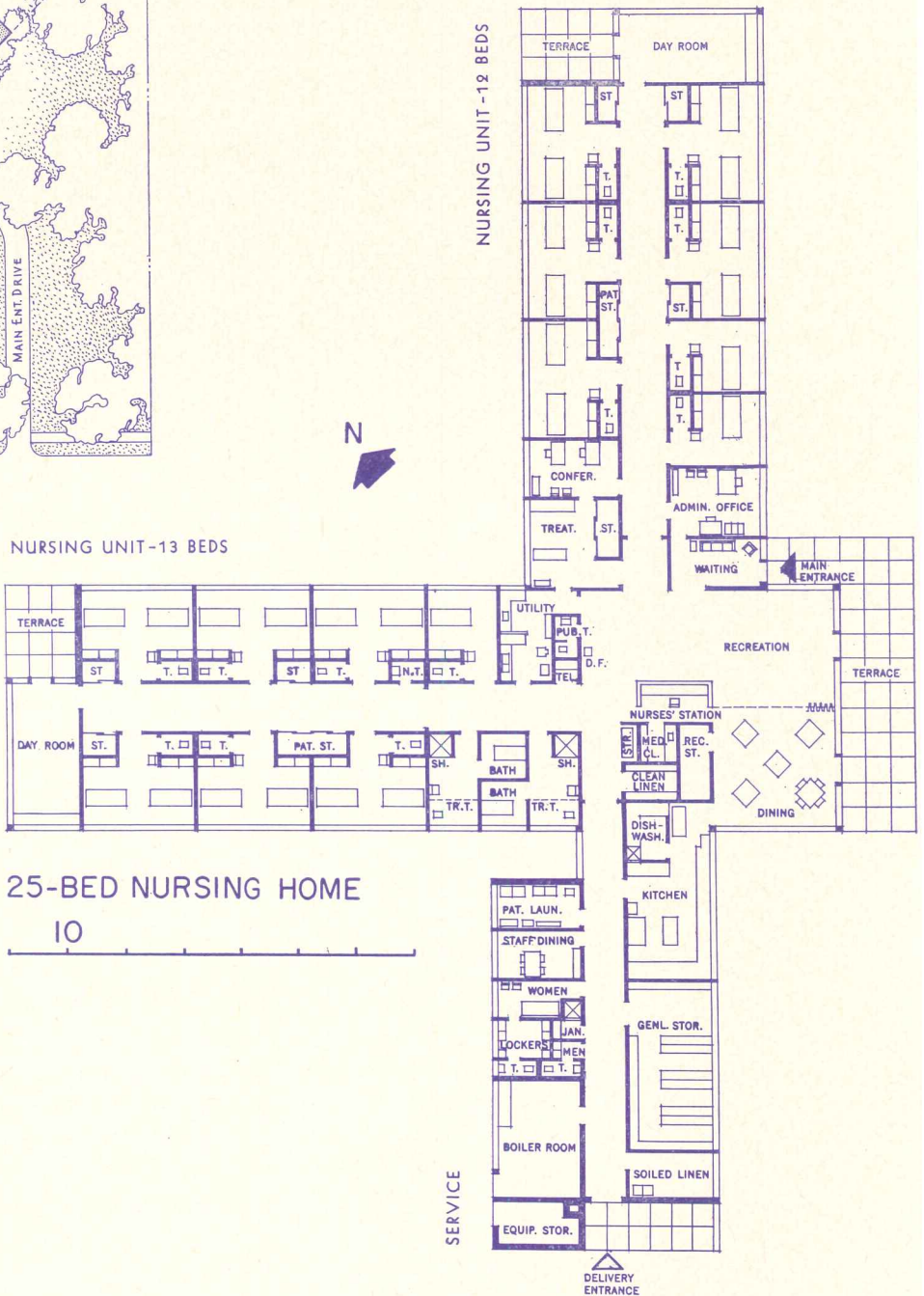
such as the type, sex and physical condition of patients, the number of patients that personnel can supervise and the length of the resulting nursing wing will determine the size of a nursing unit commensurate with the quality and quantity of service the nursing home should give. As in hospitals the distance of nurses' travel remains a critical factor in the efficiency of nursing care and should be kept as short as practicable.

It is the general feeling that patients' bedrooms should contain no more than two beds. Careful programming will determine individual home needs for an occasional bedroom for four. No ideal ratio of one-bed and two-bed rooms has been established. Two-bed rooms are adequate for the needs of most patients. However, one-bed rooms are needed for medical isolation and for

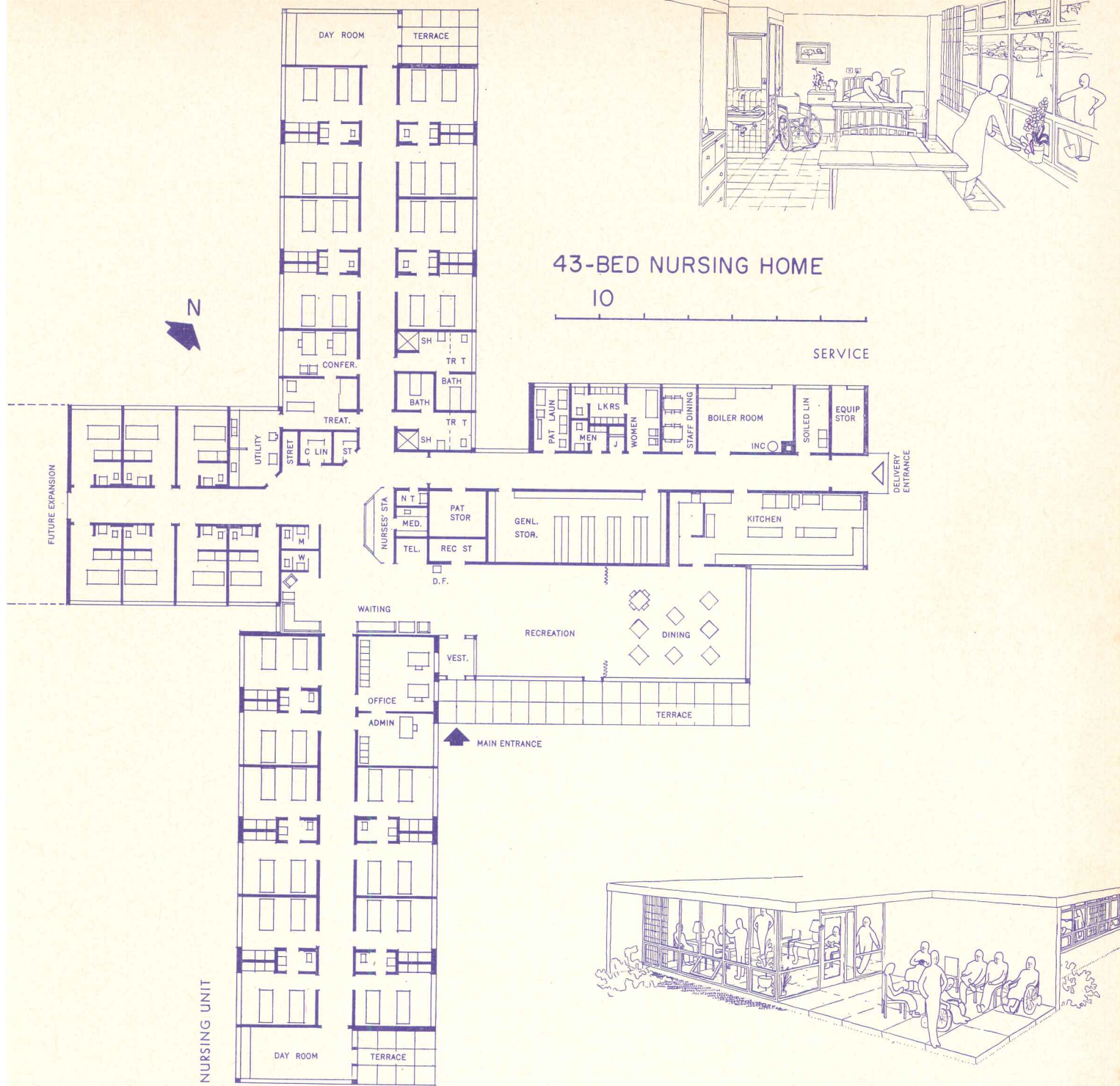
personality problems and at least two single-bed rooms should be provided in each nursing unit. The ratio for individual projects will be determined by such factors as types of patients to be accommodated, local demand for private rooms based on the economic status of the community and the need for flexibility.

It would be desirable to have one of the single rooms finished to provide maximum security and safety for the occasional disoriented patient. The room should be acoustically treated, and structural projections, sharp corners and exposed piping should be avoided. Detention screens on the windows of this room are recommended.

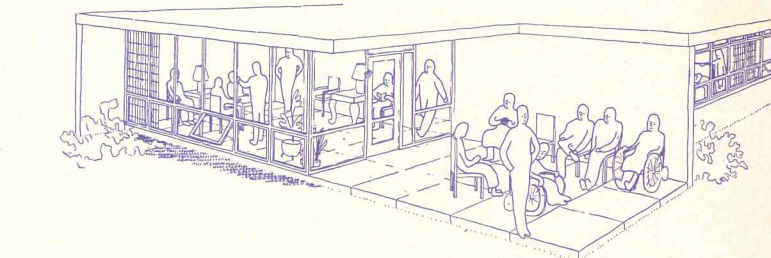
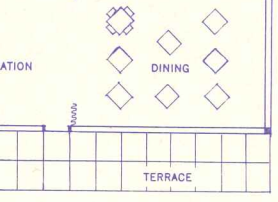
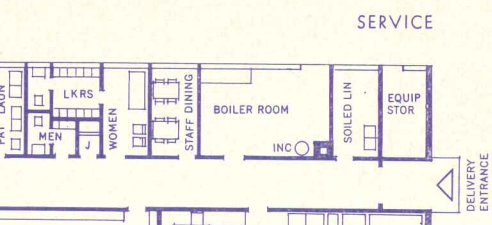
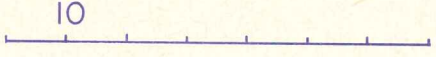
Nurses' call, night lights and outlets should be provided in all bedrooms. Telephone jacks in patients'







### 43-BED NURSING HOME



rooms are desirable and should be included wherever economically feasible. Gas outlets should not be permitted.

Minimum floor areas of 100 sq ft per bed in rooms with two or more beds and 125 sq ft in one-bed rooms should be provided. Beds should be placed at least 4 ft apart with a minimum 3 ft from adjacent walls, wardrobes or other fixtures. Doors to patients' rooms should be at least 3 ft 8 in. wide (3 ft 10 in. preferable) and should swing into the room.

It is desirable that all patients' beds be of the variable height type. Where cost prohibits, at least half should be variable height and the remainder of the standard convalescent bed height with Gatch springs.

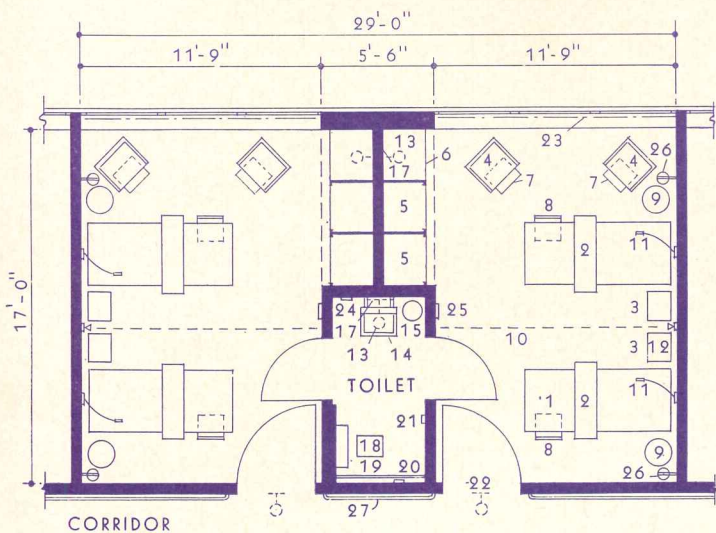
Each bedroom should have a lavatory to encourage

self-care and personal hygiene and for convenient use by the nursing home staff in care and treatment of the patient.

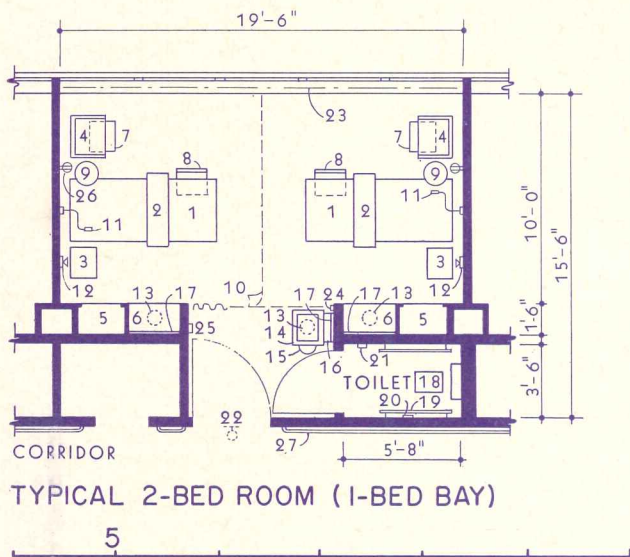
Lavatories used by patients should be set out on wall brackets 6 ft from the wall, 2 ft 10 in. above the floor and be wall connected to increase accessibility by patients in wheel chairs. They should be furnished with gooseneck spouts. Mirrors should be placed directly over the lavatories but may be angled downward slightly for the convenience of wheel chair patients.

Nursing home patients are long-term, are often up and active, indoors and out, for at least part of the time and tend to accumulate more personal possessions. They need more clothing than most hospital patients. To provide for these items, ample storage space is required





TYPICAL 2-BED ROOM (2-BED BAY)



TYPICAL 2-BED ROOM (1-BED BAY)

LEGEND FOR TYPICAL BED ROOMS

- |   |   |
|---|---|
| 1. High-low hospital bed  | 15. Waste paper receptacle  |
| 2. Over-bed table   | 16. Shelf   |
| 3. Bedside table  | 17. Mirror  |
| 4. Arm chair  | 18. Water closet with bed pan lugs and bedpan flushing attachment |
| 5. Built-in locker  | 19. Continuous grab bar   |
| 6. Built-in dresser   | 20. Paper holder  |
| 7. Ottoman  | 21. Nurses' calling station (push button type)                    |
| 8. Straight chair   | 22. Corridor dome light   |
| 9. Floor lamp   | 23. Sliding window curtain  |
| 10. Cubicle curtain   | 24. Duplex receptacle   |
| 11. Nurses' calling station   | 25. Night light, switch controlled                                |
| 12. Telephone outlet duplex receptacle and 1 phase, 3 wire, 20 amp, 125 V. receptacle | 26. Duplex convenience outlet                                     |
| 13. Wall bracket light, switch controlled   | 27. Hand rail   |
| 14. Lavatory with gooseneck spout and hot and cold water controls                     |   |

in the bedrooms. Locker space should be a minimum of 30 in. wide and 18 in. deep per patient. Clothes rods and shelves should be adjustable for the convenience of wheel chair patients. Sliding doors with locks are desirable on lockers. Additional drawer and shelf space should also be provided.

The provision of toilets adjacent to each patient's bedroom is recommended for the convenience of both patients and staff. Adjacent toilets have therapeutic value and also save the time of the staff in the disposal of bedpans and urinals. For this purpose a bedpan flushing attachment should be installed at each water closet.

At least one toilet, arranged to facilitate the training of patients in maneuvering from wheel chairs to water closets should be provided near the center of each nursing unit. Such toilets should be large enough (5 ft by 6 ft minimum) to accommodate wheel chairs and to provide room for staff members to instruct patients in proper techniques. Space is required in front and at least one side of the water closet for the movement of the wheel chair and instructor. If central toilet facilities are provided in the home, one or more of the water closets therein may be arranged for this function. Requirements for doors and kickplates are the same as for other toilets.

Central bath facilities should be located where most convenient to serve all patients. At least one bathtub and one shower for each sex should be provided for each nursing unit. Bathrooms should be large enough to permit maneuvering of patients in wheel chairs. Bathtubs should be set on the floor. It is recommended that the tub be accessible from both sides and one end for the convenience of both patients and staff.

Water at all fixtures which are used by patients should be thermostatically controlled to provide a temperature of not more than 110 degrees at the top.

Additional self-help equipment used for toilet and bathing activities such as seats, benches, tubs, mats, etc., is available commercially.

Emergency call buttons should be provided in all toilet and bathrooms.

Special devices and arrangements must be incorporated into the design of nursing homes because of the physical condition of the patients. Some patients will suffer from the ills and infirmities attendant upon old age, and others will have chronic ailments which limit or change their previous mode of living. The safety, comfort and convenience of these patients must be provided for.

Because of their feebleness and infirmities, it is difficult to evacuate patients in nursing homes and the need for adequate fire prevention and fire protection measures<sup>1</sup> cannot be overstressed. These factors should be considered as important as those which contribute to their comfort and care.

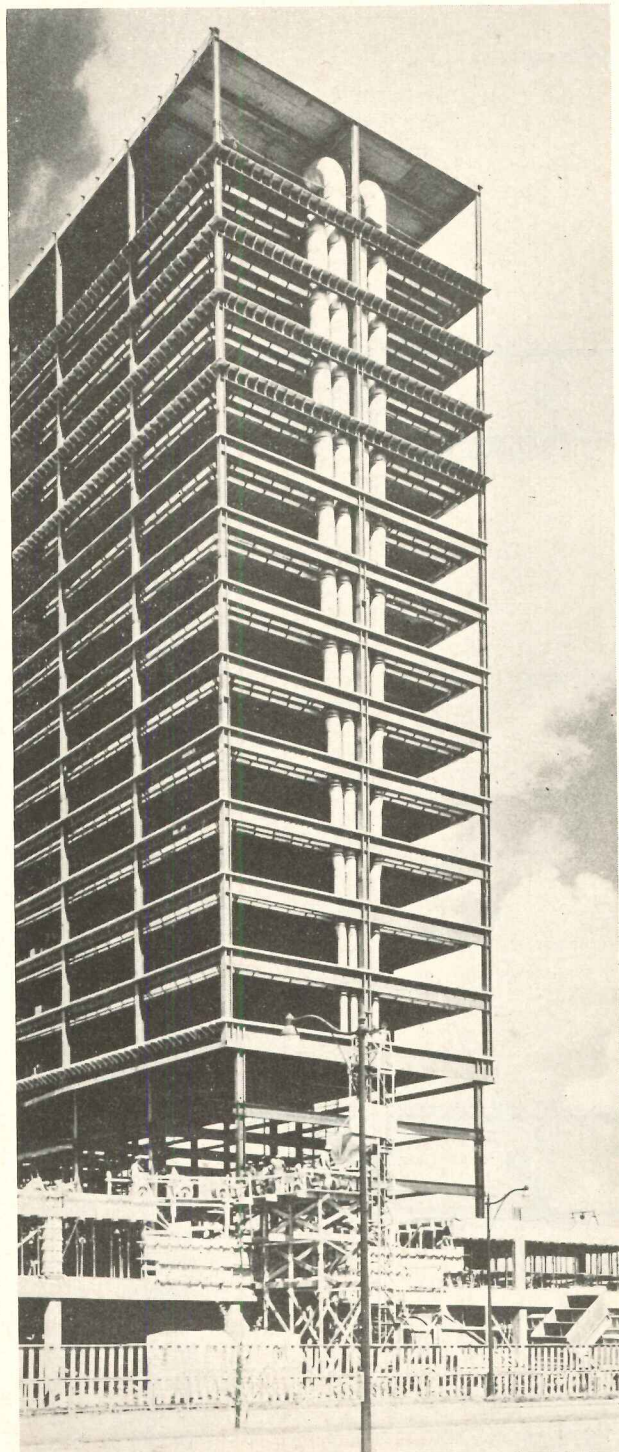
<sup>1</sup>For planning information on fire safety in nursing homes, see "Five Steps to Fire Safety" by Julian Smariga, *Modern Hospital*, May 1955.



# HIGH VELOCITY AIR CONDITIONING:

**Its effect on building design**

By *C. Milton Wilson*  
Anemostat Corporation of America



High-velocity risers send conditioned air from air handling equipment on the tower floor to branch ducts on each floor. System is zoned, dual duct. Medical Tower Building, Houston, Texas. Golemon & Rolfe, Architects

AIR CONDITIONING engineers throughout the country are gradually changing their design criteria and many architects are capitalizing on this forward step. Increasing use of high velocity air distribution is reducing shafts and furring spaces and cutting down floor-to-floor heights without changing ceiling height, in effect providing greater flexibility of design and reducing building costs. In addition, improved comfort is being obtained with the use of high velocity systems which are more quiet and more easily adapted for individual room control.

## WHY HIGH VELOCITY?

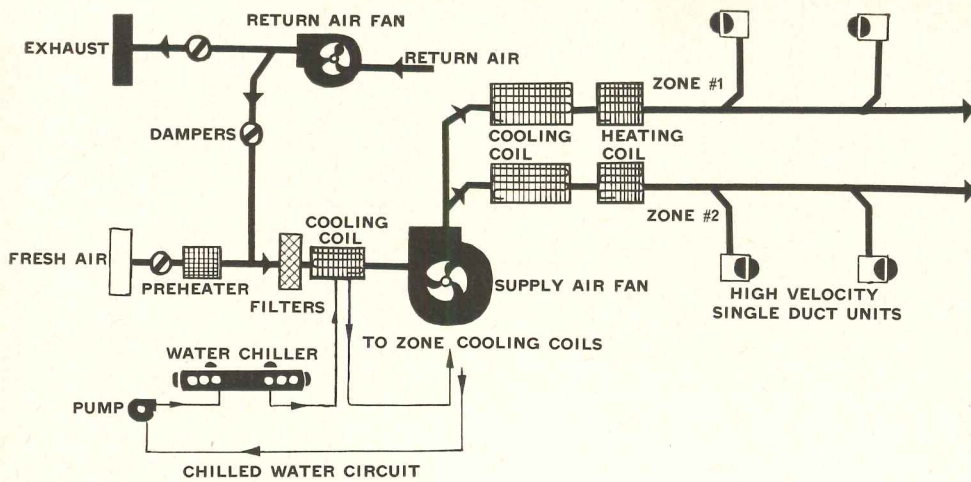
Impetus toward improved design of air conditioning systems stems from three principal sources: economics, demand for individual room control, and the trend toward more quiet systems.

**Economics.** Since 1930 the cost per pound of air conditioning ducts has approximately tripled, and the cost per cubic foot of building space has followed a similar pattern. Architects and their clients are intensely interested in mechanical systems which accomplish design objectives but use a minimum amount of costly space. Other factors which focus attention on the problem are the use of larger windows and plate glass walls and the increased intensity of electrical illumination. These introduce substantial heat loads which must be counteracted by the air cooling systems. The increased thermal requirements, which require larger, higher capacity air conditioning systems and the increased cost of space to enclose the mechanical components of the system, especially the air distribution ducts, are the principal economic factors to be balanced. They justify the trend in large buildings to use some type of high velocity air distribution.

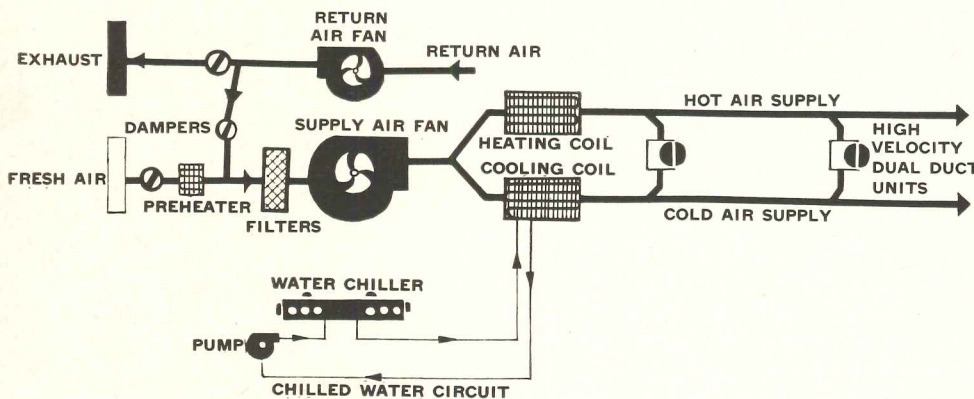
Economic analysis of an air conditioning system is an extremely complicated problem which is replete with important variables such as the size of the system, controls, type of occupancy, construction details, temperature differentials, geographic location and others. Furthermore, the analysis, to be logical, must be made on the basis of "owning and operating" because operating costs vary as well as the capital investment and its amortization.

At a recent meeting of the American Society of Heating and Air Conditioning Engineers, Mr. John Everetts, Jr.

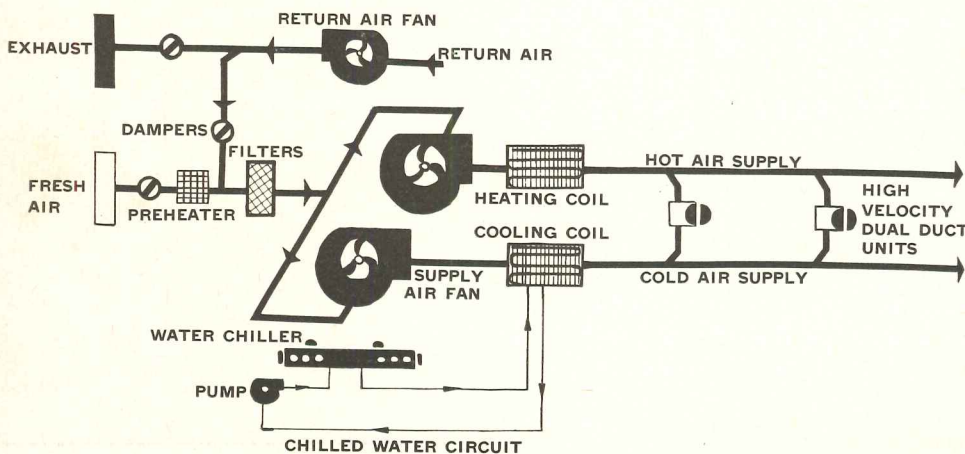




SINGLE DUCT ZONED SYSTEM



DUAL DUCT, ONE-FAN SYSTEM



DUAL DUCT, TWO-FAN SYSTEM

presented an analysis which showed that in office building construction, the high velocity system becomes less expensive to operate and own when the building construction cost exceeded two dollars per cubic foot. However, it is reasonable to expect this figure will be reduced because high velocity equipment is now being mass produced at lower costs and contractors are becoming more efficient in their installation methods. If other variables, such as individual room control and low sound level systems, are incorporated in the economic analysis, then the high velocity system is more economical than the low velocity type regardless of the cost per cubic foot of building construction.

In general, architects have estimated that in tall buildings the use of high velocity air conditioning systems allows floor heights to be reduced 8 to 10 in. without reducing ceiling height. This means approximately one floor of net rental space can be added for every 14 floors of construction without increasing the building height. Vertical shafts are reduced on an average of 25 per cent and the average percentage saving in metal is also 25 per cent or more as compared to low velocity systems.

Space in a building can be saved by increasing the temperature differential of the cooling air as well as increasing the velocity. For example, if the temperature differential of the cooling air is increased from 20 to 30 F, the area of all the supply ducts is reduced by one-third. Newly developed induction type diffusers can introduce air into a room at 30 degrees below ambient temperature without discomfort.

**Demand for individual room control.** Individual room control during both the heating and cooling seasons has become an important requirement. There are broad differences in the temperature preferences of people as well as in temperature and humidity requirements in various parts of the same building. Individual room control is extremely expensive and difficult to obtain in a conventional low velocity system. However, it can be easily accomplished with a high velocity system and without excessive costs or elaborate equipment.

**Trend toward quiet systems.** Although low velocity systems can be designed to operate quietly, they frequently become cumbersome and expensive. Velocities must be kept unusually low requiring large ducts and branches. Strategically located volume



controls and large quantities of sound absorbing materials must be installed in the ducts. In high velocity systems, factory made and calibrated sound attenuators are used, which can be selected to provide sound levels properly suited to the type of occupancy.

### BASIC SYSTEM DESIGN

Although the distribution and control of high velocity air is a complex technical problem, engineers now have the situation well in hand and practically all large new buildings are being designed with the air conditioning system designed for high velocity distribution.

To illustrate the opportunities open to the architect a brief survey of the principles of high velocity will be presented along with examples of various types of buildings where high velocity distribution has proved to be especially well adapted to the particular problems.

The basic high velocity systems are the single duct, zone control system; the dual duct, single-fan system and the dual duct, two-fan system.

**Single duct zone control system.** This is the most elementary type of system, and it is also the least expensive to install. In medium-size and small buildings this system can do an excellent zone control job. This system can be used also with individual manual or automatic controls which depend on volume control in the individual spaces. Because of the pressure in the air supply ducts, volume control can be used on high velocity systems without the serious unbalance problem which volume control causes in low velocity systems. The changeover from winter to summer conditions is more difficult than with dual duct systems because special summer-winter thermostats are required, and the air temperature may have to be shifted from hot to cold and vice versa until the season has stabilized. However, the automatic controls which are available today have simplified this problem.

**Dual duct single-fan system.** This is the most commonly used high velocity air distribution system. The thermodynamic principles of this system are not new, and it has always been considered excellent by engineers. With the advent of high velocity equipment the interest has been renewed with great vigor. The system is ideal for comfort conditioning where individual room control is a requirement. Individual control of temperature is feasible without an appreciable change in the

volume of air supplied to the room.

**Dual duct two-fan system.** This type of system is an interesting variation of the dual duct single fan system. When properly controlled, this system will show a slightly lower operating cost than other high velocity systems. The problem of "static unbalance" in this system is inherent, and, therefore, it is expensive to install. (Static unbalance is the condition of pressure variations at the units caused by variable flow in the two ducts of the dual duct system.) Numerous special control devices are necessary at the attenuator diffuser units.

### BUILDING TYPES

**Hospitals.** It is now possible to "climate" a hospital with room conditions which are most suitable to the healing and comfort of the various types of patients. Within the same hospital, various "climates" are reproduced for special conditions: operating rooms can be provided with humidity control to minimize the chance of an explosion of the anesthesia gases; infants' wards are provided with air most suitable for their well-being.

Low-cost hospital air conditioning is exemplified by the Vandalia Hospital in Vandalia, Ill. This is a single duct high velocity design with a manual control in each room and a simple corridor distribution system. Since double-glazed windows were used, the corridor type distribution and 100 per cent induction diffusers were satisfactory for both the heating and cooling cycles. The manual volume control provides means for adjusting the room temperature to suit the requirements of the various patients.

More accurate room control can be obtained by using the dual duct under-the-window type induction system. This system assures accurate automatically controlled temperature and at the same time maintains practically constant air volume. With the all-air system no coils, fans or drains are necessary and all induction or high aspiration effects take place on the inside and outside of the diffuser. No dirt deposits can be accumulated as the high velocity air acts as jets to keep the induction spaces and diffusers "swept clean."

The dual duct system can be used to supply groups of operating rooms where humidity control is extremely important. If a group of operating rooms is supplied from one coil and fan unit, the dewpoint control can be applied to a coil of a draw-through system with a

reheat coil in the hot duct. If high humidity rooms are supplied off the general system, spray type humidifiers can be placed after the high velocity attenuators, ahead of the diffusers, and controlled by humidistats in the rooms.

**Schools.** Architects and engineers are constantly striving to reduce the cost of school heating and ventilation systems and to minimize the cost and problems of maintenance. When high velocity systems are installed, all the air is handled by large, efficient fans and filters located in the main equipment room and distributed through small ducts to scientifically designed sound attenuators and diffusers. The ducts can be buried in the floor, run in corridor ceilings or under sun roofs, or furred in with columns.

High velocity air conditioning for schools offers the following advantages:

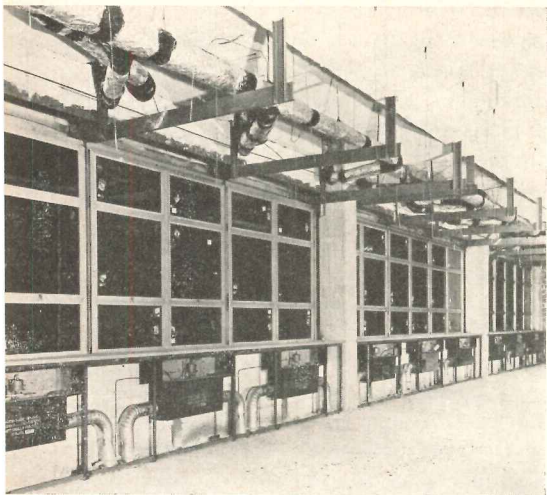
1. No openings with expensive flashings are required through the outside walls of the buildings. The elimination of the grilles unquestionably improves the external appearance of the school. In high velocity systems, fresh air is brought into the building through one large louvered opening at the fan room.

2. No trenches are required for steam, condensate or water piping. When air ducts are run under the floor they can be made of tile, pipe or fiber tubes. With the trend to one story and campus type buildings the underground high velocity system can be used to warm the slabs near the windows to eliminate the "edge" cooling there.

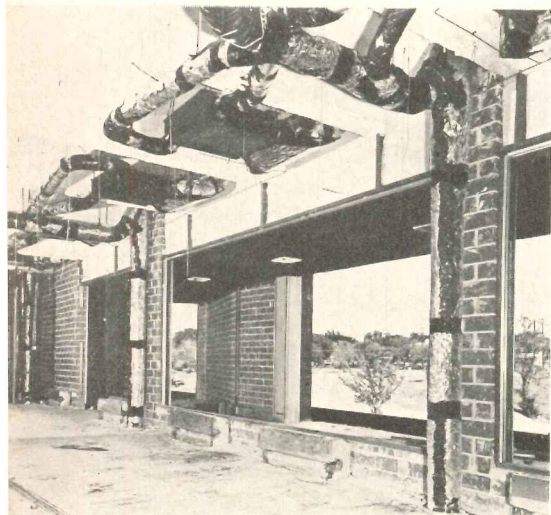
3. Some schools are now being designed for twelve months' operation or at least for future operation on an all-year-round schedule. In the southwest great emphasis is being placed on good ventilation with or without evaporative or mechanical cooling. The all-air high velocity school system is easily adapted to satisfy the condition which year round operation requires. An upstate New York school board has set up a specification for a new high school requiring year round operation and easily installed future air conditioning. The consulting engineer, after studying all methods, is now designing for this school a dual duct high velocity system. Space will be provided in the fan plenums for the future installation of cooling coils, and equipment space is being set aside to house the refrigeration machines.

4. High velocity systems are quiet because the fan and motors are not located in the classrooms.

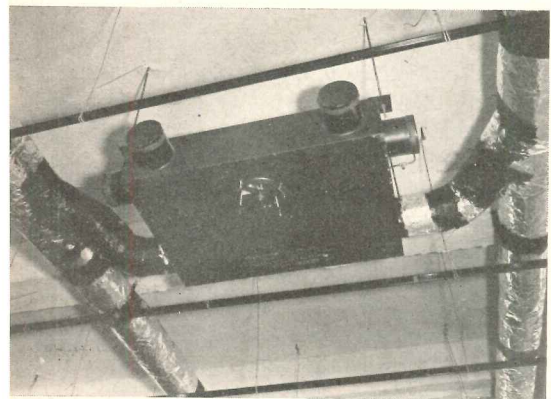




*Under-the-window high velocity units are fed from a dual-duct system in the USAA Building in San Antonio. Note ducts at top of photo which run to the floor above*



*Low sill heights on the bottom floors made it necessary to install velocity-sound attenuators under the ceiling for serving outlets set on the floor above*



*High velocity unit for velocity-sound attenuation has standard diffuser outlet in center plus four capped outlets for future flexible hose connections*

5. No piping for hot water or steam and return is required and problems of freezing, corrosion, and "unvented air" are eliminated.

**Office Buildings.** High velocity air distribution systems are now being used in low buildings as well as multi-story buildings up to the skyscraper class. High lighting loads and the interest in individual room control requires large, controlled quantities of cooled air which is supplied directly to the occupied spaces or which is partially induced through secondary coils supplied by cooled or heated water.

In office buildings, the air distribution system is divided into exterior and interior zones. The interior zones are relatively easy to control as they are not affected by solar radiation. The exterior zones, especially those affected by direct sunlight, require sensitive controls with positive and rapid response of the cooling system. When large glass areas are used, the solar load requires additional cooling. Here a solution to the space problem is high velocity air and the maximum practical temperature differential. It must be remembered that the sensible cooling effect in a space is a function not only of the quantity of the supply air but also its temperature. The duct space either in the shafts or hung ceiling spaces is decreased in direct proportion to the increase in the air velocity and the temperature differential below the ambient room temperature.

A number of variations have been developed for office building applications, for both the interior and exterior zones.

**Interior Zones — The octopus.** The "octopus" design, which is a feature of several New York office buildings, provides great flexibility when used with ceilings constructed of removable acoustical panels. High velocity air is brought to a sound attenuator volume control unit which has two to four outlets. The air is carried, at reduced velocities, from the valve-attenuator combination through flexible hose to supply diffusers, which are made with the same outer dimensions as the acoustical panels. If and when the space is subdivided or rearranged to suit tenant requirements, the ceiling panels and diffusers can be shifted to accommodate the tenant's preferences without shifting metal ducts, thereby obviating expensive alterations.

Attenuator boxes for this unit can be supplied with air from a dual duct system with a thermostat controlling one bay of a building. They can also be

supplied with air from a single duct system with automatic or manual control, or they can be supplied from a turbulator system.

**The turbulator system.** Essentially, the advantage of this system lies in the simplicity of control and the instantaneous mixing action to obtain a quick response and adjustment of the system to temperature changes. Turbulator systems are basically a new concept of an interior zone control which eliminates practically all the fan rooms on the intermediate floors of a building and the coil and piping systems which were formerly used to obtain the reheat control. Before this innovation, interior fan rooms were located throughout the building with one fan room usually serving three floors. These required fresh air intakes and a lot of cooling and heating coils and used expensive rental space. The high velocity turbulator technique eliminates most of these fan rooms as more than twelve floors can be serviced from one main fan room feeding up or down to the various floors, each of which is controlled by one or more turbulators depending on the zoning arrangement.

In a typical turbulator arrangement, air is carried upward or downward in two high velocity ducts. One duct carries cold air and the other carries warm air. The temperature of the air to be carried in the hot duct and the reheat load determine to a large extent the size of that particular duct. It can be noted that a turbulator is installed at each interior zone. The number of zones per floor depends, of course, upon the size of the building and the degree of zoning desired. A thermostat in the return air duct or averaging thermostats actuate the dampers on the hot and cold ducts at the turbulator.

Turbulators differ from standard dual duct attenuator-diffuser combinations in size and capacity and basic function. Dual duct attenuators seldom handle more than 1000 cfm and maintain predetermined temperature. Turbulators are built up to 15,000 cfm in capacity and although they control temperature they do not reduce velocity and do not have sound attenuating characteristics. Diffusers on turbulator systems must be provided with sound attenuating devices.

This system has additional flexibility which allows individual control of interior spaces when required. The turbulators can be by-passed and dual duct systems can be run wherever more accurate control is required. For example,



an interior meeting or board room does not have to be zoned into the turbulator system — it can be handled by dual duct units as individual "small zones." *Exterior Zones.* The problem of air distribution to maintain comfortable conditions during all seasons has increased in importance with increasing use of glass and skin type construction. Large and fluctuating solar loads must be rapidly compensated for by the air conditioning system. The flexibility and rapid mixing characteristics of the high velocity system can be applied to solve these problems in various ways depending on the accuracy of control required and the space conditions. Several practical schemes are described below.

*Under-the-window units.* For both heating and cooling, especially where heating is important, the under-the-window unit, in one of its various forms and with flexible controls, can do an excellent job. The units can be installed with either a vertical, top or slanting discharge. The units can be dual duct, single duct with automatic or manual control or zone control. The thermostats can be integral on the unit or they can be located on walls or columns in the occupied space. These units can be designed at extremely low noise ratings.

*Combination units.* In this system, which is proving economical for certain types of buildings, a single temperature controlled attenuator is installed in the ceiling of the occupied space and two or more induction units are supplied. Although this system is less flexible than a series of individual units, there is a substantial savings on controls and the system has special merit where very low sill heights are required.

*Side wall units.* In many installations high velocity units can be installed in interior walls to air condition the exterior zone. This method has been used successfully in hospitals, hotels, and office buildings. The type of units generally used are of the straight line 100 per cent induction type in conjunction with dual or single duct systems and with automatic or manual controls. This method is extremely economical for air conditioning existing hotels. Small high velocity ducts are run down corridors with the units set in transoms or in soffits near the bathroom.

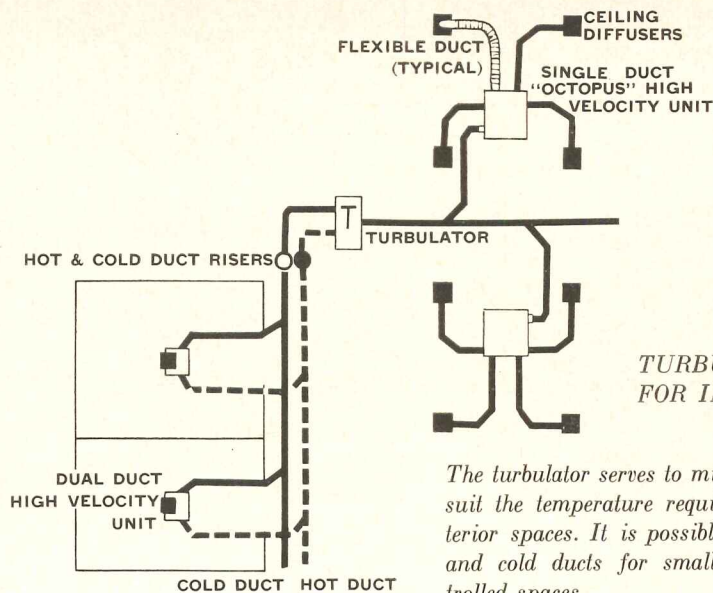
When installations of this type are used for heating in cold climates, under-the-window returns should be installed or supplementary radiation provided at the windows. In moderate climates, returns and radiation can be omitted if double glazing is used. In warmer cli-

mates, neither double glazing, under-the-window returns or supplementary radiation are required.

**Hotels.** The present trend toward 100 per cent air conditioning of hotels points up the advantages of high velocity air distribution for older buildings. Practically all new hotels are air conditioned, and managements of existing hotels are investigating the potential of high velocity for installation in buildings 20 or more years old. The small amount of waste space in guest room areas made 100 per cent air conditioning virtually impossible with conventional low-velocity systems. High velocity systems are being increasingly used for the following reasons:

1. The ducts are small and require a minimum of cutting and patching.
2. The work can be done quickly to minimize guest discomfort.
3. Properly designed high velocity systems are much more quiet than unit air conditioners of the window-box type and do not affect the external or internal appearance of the building.
4. The units in the rooms require practically no maintenance. There are no moving parts in the units such as fans or motors, and nothing to be cleaned such as coils, filters or drains. Although under-the-window units are being used in new hotels in the colder climates, this type of installation is expensive and difficult to install in existing structures. Furthermore, it often is not logical to rip out an existing heating system, but it does make sense to install a supplementary air system for the air conditioning.

The least expensive system to install is the single duct system. The side wall diffusers are supplied from ducts furred into the corridor ceilings. Vertical dis-



*TURBULATOR SYSTEM FOR INTERIOR ZONES*

*The turbulator serves to mix cold and hot air to suit the temperature requirements of large interior spaces. It is possible also to use the hot and cold ducts for smaller individually controlled spaces*

tribution can also be used with ducts run through closets.

Individual room temperature control is a necessity for hotels. This can be accomplished by any one of three methods, depending on the quality of control required. The first and best is a dual duct system with a thermostat which automatically controls a regulator at the valves in the attenuator. This type is considered the best because the room temperature is accurately maintained without a change in the quantity of air supplied.

Another type is the single duct automatic control system. This is an effective system but is based on volume control rather than mixing as is done by dual duct systems. However, the system is less expensive and the quality of the control is generally adequate.

A third type of control is the single duct system with remote manual controls. This system depends essentially on the zoning for basic control, but allows the guest in an individual room to vary the quantity of air supplied to his room to "trim" the system to his satisfaction. This is an extremely simple system to install and maintain. The manual remote controls can be installed for approximately one-fourth the cost of automatic controls.

#### EQUIPMENT DEVELOPMENT

High velocity systems, especially those employing high-temperature differential, are rapidly gaining engineering and architectural acceptance because they are fundamentally sound and satisfy the economic pattern of modern architecture. Most important, engineers have obtained experience in the design of systems to assure value and comfort for their clients.



# CLOSED-CIRCUIT TELEVISION

By Skipwith W. Athey

General Precision Laboratory Incorporated

The concept of closed-circuit television is widely understood. Not as familiar, though, are the various types of equipment necessary and their physical and electrical characteristics. At a minimum, the architect will need to know what sort of room conditions and wiring are required. Even more than this, after becoming acquainted with the potentialities of the medium, he will want to consider what effects it could have on space planning

TELEVISION — so much part of today's American home scene — is rapidly acquiring equal familiarity with industrial and institutional surroundings via the Topsy-like growth of its sister-system known as "closed-circuit." A clear understanding of what is meant by closed-circuit industrial and institutional television and how it is used should be acquired before specific problems of the medium are approached.

Closed-circuit television differs from broadcast television in much the same way that a telephone circuit differs from broadcast radio. In the closed-circuit system, pictures can be viewed only by persons with reception equipment linked to the specific closed television circuit. Typical installations may provide visual communication between a few rooms within a single building, or may stretch from building to building, even across the country.

**Applications.** In addition to making visual communication as easy as the telephone makes verbal communication, the system provides a positive, accurate way of *monitoring and controlling processes and machines*. In *surveillance applications* it can show instantaneously and continuously what is happening nearby, in remote areas, or places too confined for human observation. It also permits the *watching and controlling of dangerous operations* step-by-step — safe from extreme heat, fumes or radiation. From these facts, it is easily seen how the unique capabilities of the closed-circuit

medium fit into such diversified fields as industrial plants, hospitals, schools, banks, penal institutions and the like.

The architect will be concerned with closed-circuit industrial and institutional television (called from hereon, ITV) in two broad ways. He will be required first to provide for the physical installation of the elements of an ITV system to satisfy the requirements stated by a client. His concern here is with arranging for cable ducts, electric supply, ventilation, a clear sight from camera to object, adequate illumination on the subject and similar details. His second concern, larger in scope, will be with the possibility in some cases of a new approach to the use of space because ITV gives an opportunity for visual contact between locations not physically adjacent.

**Basic Components.** From the point of view of installation, the basic requirements of the ITV equipment are simple. Every ITV system consists of at least (1) a camera, (2) a camera control unit (sometimes called camera auxiliary unit), and (3) a monitor. The camera is usually about the size of a loaf of bread, but varies widely in shape from manufacturer to manufacturer.

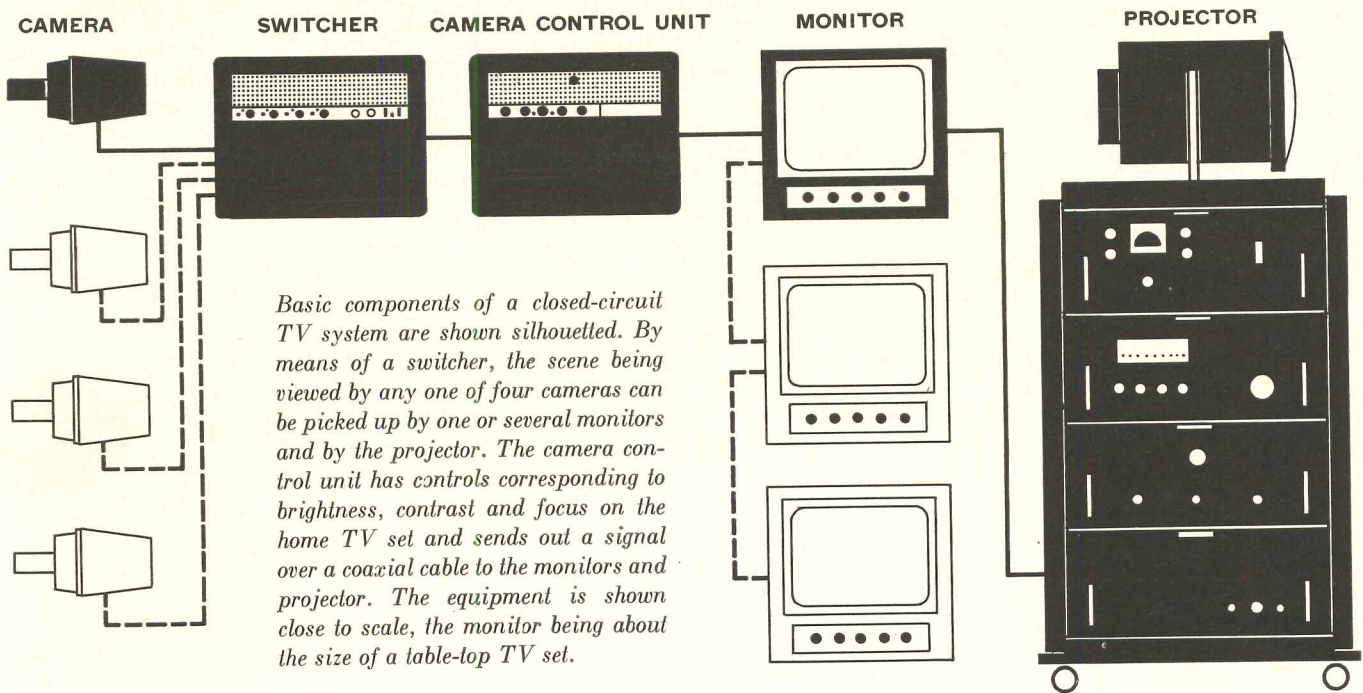
The function of the camera is to do the actual observation and to convert the picture into electrical signals. To keep the camera small, a minimum of electronic parts are included in its case, while the remainder of necessary elements are placed in the camera control

unit. The camera control unit supplies necessary electrical signals to the camera and processes the signal received from the camera into the final form needed for transmission to the monitoring point. It is equipped with controls which correspond roughly to the brightness, contrast (or "picture") and focus knobs of the home television set. "Monitor" is television jargon for the device containing the viewing screen. The camera control unit compares generally in size with an overnight bag, although sometimes it is absorbed into the monitor unit.

The monitor may be (1) a home television receiver of almost any screen size up to 27 in., (2) a commercial monitor unit with performance, ruggedness and reliability superior to that of the home receiver but of much the same size, or (3) a relatively small unit merged with the camera control.

For classroom, lecture, sales meeting, large-scale demonstration, or similar use, a projection television system may be used for monitoring. This is a device which projects a greatly enlarged picture onto a screen which may vary in size from 4½ by 6 ft to 15 by 20 ft. An angle up to seven degrees can exist between the optical axis of the projector barrel and the normal to the screen before the image becomes affected. If the tilt angle must be greater, the screen itself may be tipped to compensate. Even larger projection sets capable of producing picture sizes suitable for theatre screens are available, but are considerably larger and more difficult to install.





*Basic components of a closed-circuit TV system are shown silhouetted. By means of a switcher, the scene being viewed by any one of four cameras can be picked up by one or several monitors and by the projector. The camera control unit has controls corresponding to brightness, contrast and focus on the home TV set and sends out a signal over a coaxial cable to the monitors and projector. The equipment is shown close to scale, the monitor being about the size of a table-top TV set.*

**Camera, Monitor Installation.** The standard ITV monitor can be observed in ordinary room light without much effect on the picture. Where tonal rendering is an important part of the seeing task or where the ambient illumination is very high, some sort of light baffling or shielding is required. The projection set almost invariably requires careful control of room light, particularly for larger screen sizes. The price of viewing by a large number of people is that the group be in a partially darkened room. New developments in optics will make this less of a factor in the future.

The camera requires that there be only enough light on the object viewed to suit normal human observation. However, it does need protection from rain, from temperatures below zero and above 125 F, from corrosive fumes and from extremely intense nuclear radiation. Simple accessory housings are available as stock items from most ITV manufacturers to give the necessary protection for most extreme conditions. The permanent camera control unit poses no unusual installation problems and a portable version allows complete flexibility. The monitor is placed or built-in at any location which could be occupied by a home television receiver. Special monitors or monitor housings must be used if the use is out-of-doors or in any extreme environment.

**Wiring.** Between the camera and the camera control unit a multi-conductor camera cable about  $\frac{5}{8}$  in. in diameter is

required. A coaxial cable about  $\frac{1}{4}$  to  $\frac{3}{8}$  in. in diameter is used between the camera control unit and any monitors. Both these special cables are somewhat more heat-sensitive than ordinary electric wiring because of the nature of the internal insulation. Ordinary 115 volt "wall plug" power of about 150 watts is necessary for the camera control unit (this includes the camera power), and about 200 watts for the average monitor.

In developing a system for transmitting ITV images over any considerable distance, several possibilities must be considered. The camera control unit may transmit a signal of such form as to operate only a monitor unit and not a TV receiver. From an engineering point of view this so-called "video" transmission is simplest and produces the best picture quality. It is, however, limited to a maximum transmission distance of between 500 and 1000 ft.

For longer distance transmission without boosting — up to a mile under certain conditions — the camera control unit can supply a signal similar to that normally broadcast by a commercial TV station, and which can be tuned in only by a TV receiver (not a simple monitor). The signal used here is not broadcast by the camera control unit, but rather is sent along a coaxial cable to TV receivers. This type of signal can also be boosted, but with inexpensive units such as are used for community TV installations and for "fringe area" reception on home receivers.

For transmission from several miles

to several thousand miles, the common carrier facilities of the telephone company can be leased. Alternately, a microwave link can be used for distances up to 30 miles, or even more when conditions are favorable. A micro-wave link consists of a very short wave radio transmitter which sends a searchlight-like beam to a distant receiver. The micro-wave link works over line-of-sight only, but with suitable terrain this can reach up to 50 miles.

**What the Camera "Sees."** The seeing problem for an ITV installation is not complex. The camera must have an uninterrupted view of the object or area observed, and must include in its field of view only enough area to permit clear sight of the finest detail needed. The camera must not be bothered by lights or reflections shining in its "eye."

In ITV installations, the matter of the proper field of view requires more thought and planning than almost any other point. The nature of television is such that, although the home screen may appear to give pictures of adequate clearness for entertainment, a critical seeing task may be disappointingly handled by ITV. It is therefore necessary to limit the area the system is required to transmit. The ITV equipment manufacturer's applications engineer is the one best equipped to advise on the capabilities of TV for a particular job. He can indicate, for example, whether a single camera is sufficient to watch a certain industrial process, or whether



several cameras must look at limited portions of the process to give satisfactory results. He might suggest the use of some accessories with a single camera, as will be discussed below.

It should be noted that the distance from the object to the camera can be varied widely without affecting the size of the area transmitted. Lenses are available with a wide range of focal length. For example, a lens having 1-in. focal length will pick up an area about 45 by 60 in. at a distance of 10 ft. With a 6 in. lens, the same area will be picked up at 60 ft, and an area of about 7 by 10 in. at 10 ft.

**Adapting System to Job Need.** We have considered the simplest form of ITV system, a form which is nevertheless a powerful industrial and institutional tool. But every day, as suppliers of this equipment, we are asked if ITV can perform additional duties. Some of these can be done with the basic equipment, but others require more complex installations. Accessories are being developed every day to bring more and more unusual tasks within the abilities of the system.

The simplest "accessory" is not really an accessory — it is merely the addition of extra monitors. These monitors may run continuously so that persons at several locations can watch what one camera is viewing, or they may be switched on as needed. An example of this use is presently in service in a New York City bank. Each teller has a monitor at his station, while the camera and camera control unit are located with the records clerk at a central point. When a teller wants to check a signature or balance, he telephones the record clerk and turns on his monitor. The clerk locates the depositor's record card and places it in front of the ITV camera. The teller can then see a sample signature, current balance and other pertinent data. A bank with several widely scattered branches can thus centralize all depositor records.

If the reverse is desired, such as the viewing of many locations from a central point as for a guard system, a number of cameras can be linked by a "switcher" to a single camera control unit and the pictures relayed to one or more monitors. The camera switcher is a device of about the same size as the camera control unit, and usually has a limited number of input channels (up to four). More cameras can be switched by the cascading of additional switchers.

ITV systems have been suggested for

uses where a general view and a close-up view of the same subject are desirable. This may be arranged by fitting one camera with a wide angle lens and another with a telephoto lens. It also may be solved with one camera equipped with a two-lens turret, a device which switches from one lens to another on the same camera. A further alternative is the use of a vari-focal lens which can be controlled remotely to operate all the way from a wide angle of view to a telephoto close-up, staying in focus the whole time.

Other applications require that the sensitivity of the camera be varied remotely, as in an outdoor surveillance operation which must operate under floodlights at night, and also in broad daylight. A remotely controlled lens iris, usually combined with remote lens focus takes care of this contingency.

In still other cases, it is desirable to change the field of view of the camera by remote control. Several pan (movement around a vertical axis) and tilt (movement around a horizontal axis) devices are available to accomplish this. The entire plant security system of one large new shopping center is being handled by a series of such units. A few cameras on pan and tilt mounts can survey every nook and corner of a large store, permitting a great reduction in the number of watchmen assigned to patrol duty.

Most of the accessories listed need a few watts of "wall plug" power (seldom over 200 watts) and interconnecting cables. As a general rule for remote operation a control cable must be run to the point to be controlled. Space for the swinging of a panning and tilting camera in any camera housing, and ventilation to dispose of the few watts dissipated in camera control units, switchers, and remote control units must be considered. (Much ITV equipment has its own internal ventilating system and can dissipate its own heat by radiation and surface convection cooling in ambient temperatures of 125 F or below.)

Certain application requirements tie into the needs of the ITV equipment itself. For example, in a psychiatric ward, the camera must be housed behind a "one way glass" window and space for a pan and tilt unit must be considered, although such space is of negligible importance when a camera is mounted out in the open in a factory. In a prison, the camera must be in a tamper-proof enclosure, yet preventive maintenance, tube checking, etc., must be possible. For explosive atmospheres, conduit for remote control of complex accessories

may become a major problem because of the necessity of a complete seal of an explosion-proof housing.

#### **New Approach to Space Planning.**

This, then, is a quick review of what the architect may expect to encounter in designing or remodelling a building which will contain an ITV system. Let us consider for a moment the other aspect of the problem, the possibility of the architect's taking a new approach to space planning because the ITV tool is at hand. Following are a few examples of current and suggested installations.

In schools and universities, lectures and demonstrations can be simultaneously transmitted to a number of class areas with a saving in facilities and lecturers' time.

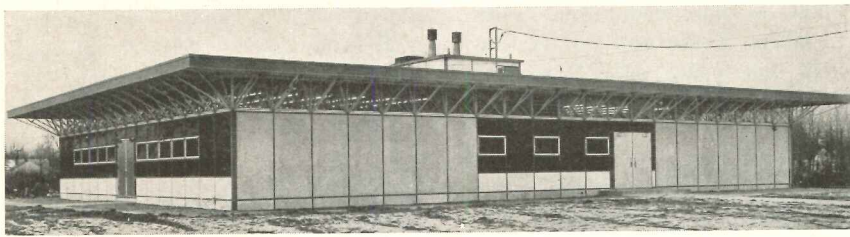
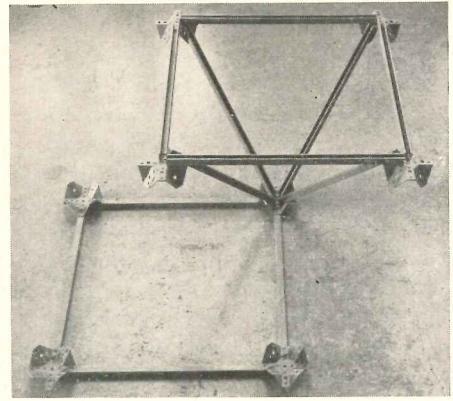
It is important to note that the use of ITV as a teaching aid integrated into standard teaching procedures does not imply the kind of operation usually referred to as "educational television." The ITV system needs no special studio, no cameramen, no directors, or miscellaneous technicians. It can be installed unobtrusively in any classroom, under the complete control of the instructor including the ability to cut the system in and out as desired. The simplicity and relatively low cost of ITV teaching aids permit more latitude in experimenting with the application of TV to the teaching process.

The observation room of the psychiatric research institute, usually fitted with a "one-way glass" window, now need not have a wall common with the patient's room. The observation room can be a doctor's office, a distant conference room or a classroom in another building.

The medical student need not sit in an amphitheatre 50 feet away from a six inch square area, surrounded by doctors and nurses, in which the surgeon is performing an operation. He can watch the operation on a monitor screen through the eye of an ITV camera two feet away from the operative field, perhaps hearing a lecture on technique in a distant classroom. (Or, if he is still in the amphitheatre he can at least see in detail what the surgeon is actually doing on the ITV monitor, while getting an overall picture by normal vision.)

Such uses for this adaptable closed-circuit television equipment are being uncovered daily — and the architect will be more and more concerned with the successful and attractive installation of the system's components as integral parts of his building designs.





*Research Laboratory at U. of M. is based on structural unit shown above. Pentahedron consists of standard interchangeable framing members; connecting plates, bored and stamped for outstruts and instruts; and nuts, bolts and washers. Left: First space-frame school, Hoover School, Wayne, Mich. (architect: Charles W. Atwood)*

## A REPORT ON SPACE FRAME ASSEMBLIES

"A SPACE-FRAME can be defined as a structural framework made up of elements so arranged that the assembly cannot be analyzed as a series of two-dimensional or coplanar systems but must be considered as an integrated non-coplanar system, i.e., one in which the forces act in three or more directions in space."

It is with this definition that the Engineering Research Institute of the University of Michigan introduces its report on a program of research and experimentation aimed at the development of a demountable space-frame system of building construction. The testing program, sponsored by Unistrut Corp. of Wayne, Mich., was known as Project 1975 and culminated in the design and erection of a new Research Laboratory for the College of Architecture and Design at the University of Michigan. In this space-frame building, a photograph of which is shown above and the basic components of which are pictured beside it, the members form the edges of alternating erect and inverted pentahedrons (square pyramids) whose bases create two parallel planes and whose sides create a series of tetrahedrons (triangular pyramids) which interlock with

the pentahedrons. The result is a network of zigzagging steel struts which distributes stresses so effectively that it can absorb loads far in excess of the strength of its individual parts. The design fulfills the original concepts of the program, which were:

1. That the system should be geared to industrial mass-production techniques, with emphasis on a minimum number of interchangeable parts. There are actually three components of the system: 4-ft struts which run horizontally at roof and ceiling levels and slant diagonally between them; connecting plates, each of which secures eight struts, four in its own horizontal lattice and four that radiate up or down from the opposing plates; and the nut, bolt and washer assemblies which tie the connector plates and the struts together.

2. That the structure should be simple to erect, with no single part so heavy or bulky that it could not be easily handled by one or two workmen. Actually the building was erected by students at the university. It consists basically of two space frames. One forms the floor framework, which measures 33 by 49 ft. The other is the roof framework, which

is 90 by 70 and overhangs the enclosed area. It is supported by two outdoor columns and by interior wall studs. The main features of the structure are that (1) it is flexible, because its interior walls can be rearranged or removed with ease; (2) it is expandable, because its roof can be extended in any direction and the living area enlarged below; (3) it is demountable, because its standard parts are literally bolted or snapped together; and (4) it is reusable, because it can be unbolted, carried to another site and reassembled to form a similar or entirely different building.

The University of Michigan report describes in detail and discusses findings and conclusions on tests conducted on five different structural arrangements which led up to development of the *Unistrut* system as embodied in the College of Architecture building. It is laid out in a most practical manner, with the text and illustrative material arranged so that they can be studied at the same time. It is available through the University of Michigan Press at \$7.50 per copy. A further study, on school construction using the framing system, will be published eventually as a separate report on Project 1979.



## TWO-WAY SLIDING-SASH CURTAIN WALL ENCLOSURES MILWAUKEE HOSPITAL

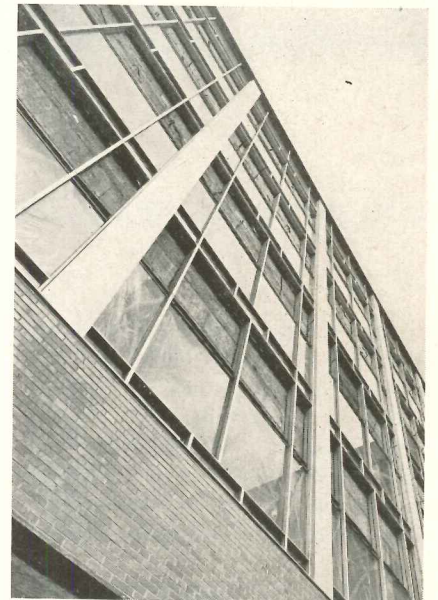
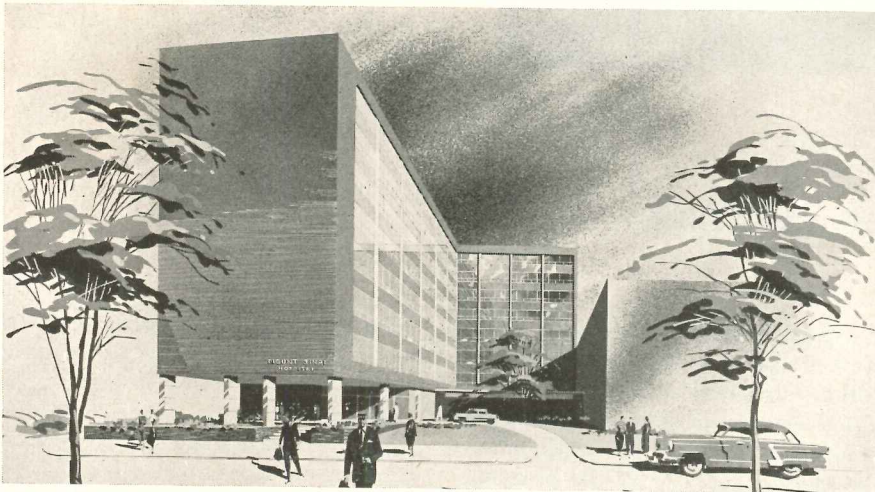
CURTAIN WALLS with a "new look" grace a 300-bed, six-story addition to the Mt. Sinai Hospital in Milwaukee. Designed for maximum flexibility and adaptability to a variety of wall patterns and materials, the new wall system—called *Gridwall*—is basically just that, a grid, in which the framing elements are of hollow, extruded aluminum. The mullions in this grid are split, with horizontal rails passing between them, as in a split rail fence. The space between the double mullion accommodates, in any combination, fixed insulated panels up to 1 1/8 in. thick, fixed glass up to 1 1/8 in. thick or bypassing horizontal sliding sash of 1/4-in. plate glass that will slide in either direction on

the horizontal grid rails for ventilation and ease of cleaning.

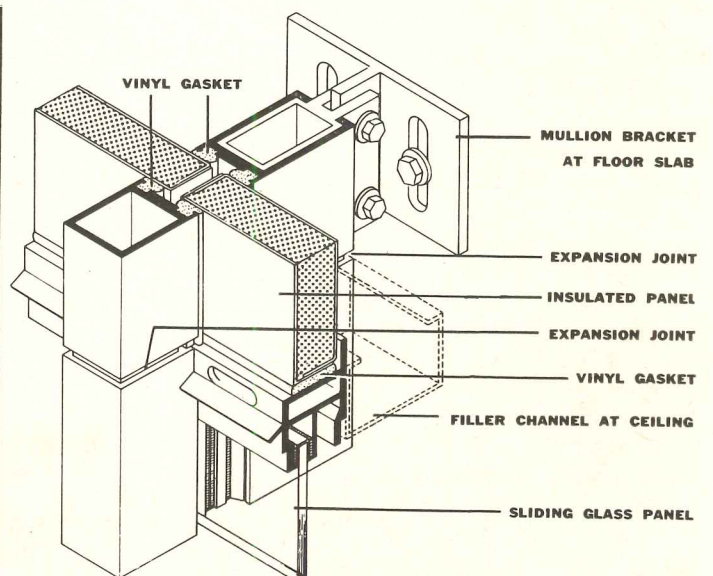
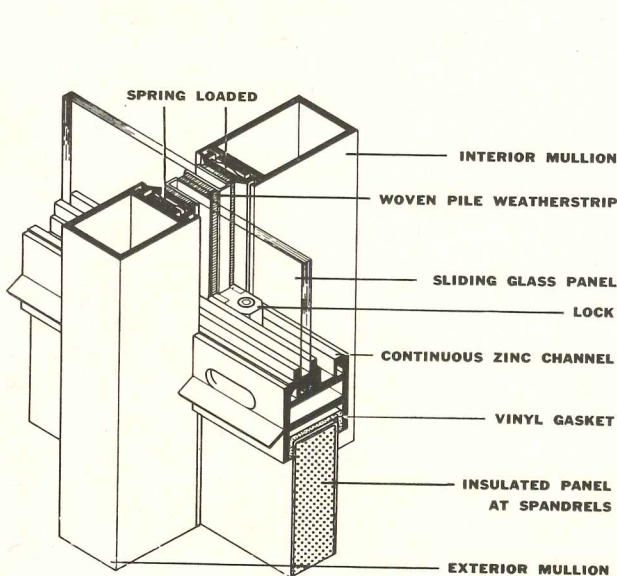
The wall system used in Mt. Sinai combines sliding sash and fixed structural glass spandrels of grayed turquoise. Other materials, such as porcelain enamel and glass mosaic, can be used for spandrels. As can be seen in the typical isometrics shown below, weather-tightness is ensured, when the sash is locked in position, by mohair pile weatherstripping which is clamped to the sash by a spring-loaded aluminum section housed in each half of the split mullion. Weepholes provide for drainage. Framing members of the grid are so constructed that, after installation, the metal can expand or contract without

danger of leakage at the joints. Joints are connected by means of insert lugs fastened to one frame member and slip-fitted into the hollow portion of the abutting frame member. *Gridwall* is produced by Glide Windows, Inc. of North Hollywood, Calif.

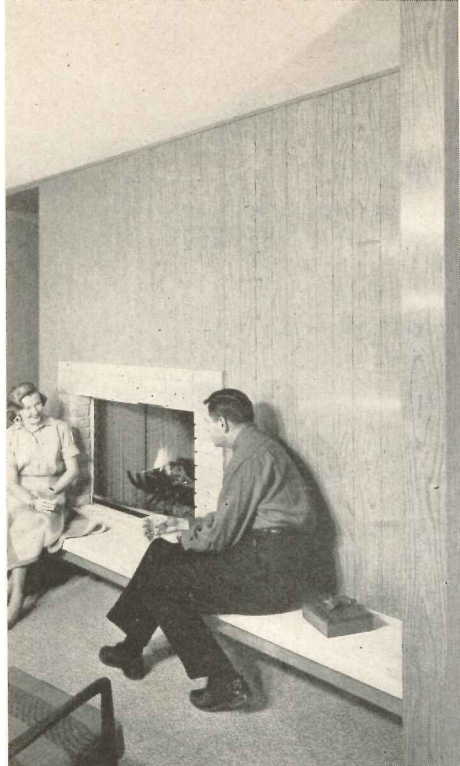
The new wing of Mt. Sinai is so designed that it can support six more floors. Completely air-conditioned, it includes a large auditorium for both hospital and community use and features an audio-visual intercommunication system, a pneumatic tube system and a conveyor-belt assembly type kitchen. A. Epstein and Sons, Inc., Architects & Engineers, of Chicago, designed the building. (More Roundup on page 248)



Sliding sash has been installed on exterior (right) of Mt. Sinai Hospital (rendering above). Structural glass spandrels not yet set over concrete block back-up. Isometrics below show sliding glass windows and insulated panels at stool line (left) and spandrel panel at floor slab anchor and sliding glass at ceiling line (right)







## VERTICAL "WOOD" PANELING WITH FORMICA

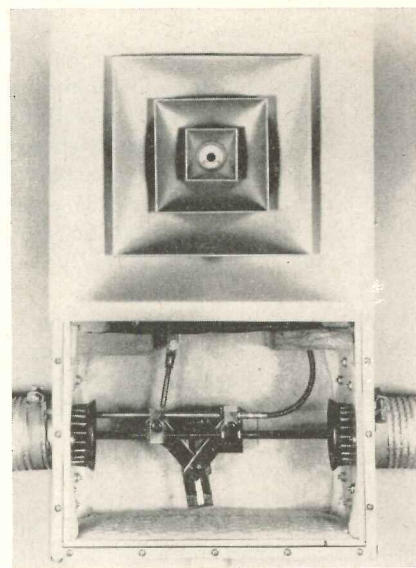
SPECIAL WOOD PANELING EFFECTS are now possible with *Formica*. A new quick-setting, high-bond-strength contact adhesive makes it possible for Formica sheets to be applied to vertical surfaces. In the interior illustrated at left, standard  $\frac{1}{16}$  in. thick *Formica Tawny Walnut* (No. 18-FC-22) flat sheets were cut into random-width planks and applied to a  $\frac{3}{4}$ -in. plywood backing, with contact adhesive spread on both surfaces. After cutting, the edges of the Formica were beveled with a standard

router bevel cutter. Each plank was installed using small wire brads as stop guides to create a realistic planked wall effect. A decorative seam can be obtained by wiping the open joints with enamel, Formica Seamfil or other coloring agent. Formica can also be cut into blocks and applied to vertical surfaces. Formica paneling features all the qualities of standard Formica surfaces, including low maintenance, resistance to staining, etc. *The Formica Co., 4614 Spring Grove Ave., Cincinnati, Ohio.*

## ATTENUATOR-DIFFUSER UNIT PROVIDES ROOM TEMPERATURE CONTROL

INDIVIDUAL ROOM CONTROL of temperature in dual-duct, high-velocity air conditioning systems, without changing the volume of air supply, is possible with the attenuator-diffuser unit shown at right. In this system, temperature is changed by mixing hot and cold air, supplied from a pair of risers or ducts, and discharging the resultant mixture in the occupied area. Thus, by maintaining the same air flow pattern and the same percentage of fresh air at all times, areas are kept at optimum comfort levels and occupants are not subjected to sudden shifts in air movement or quality. A proportional mixing valve located inside the attenuator chamber controls both the warm and cold air

supplies simultaneously. Temperature may be regulated by manual control, remote control or automatic room thermostats. The hot and cold duct outlets are opened and closed in inverse ratio, so that as the amount of warm air is *increased*, for example, the proportion of cold air is *decreased* by the same amount. In the set-up at right, the hot and cold ducts are opened an equal amount. The arrangement of concentric cones in the diffuser (which is removed to show the inside of the attenuator box) brings room air into the diffuser section, where it is mixed with supply air before being ejected into the conditioned area. *Anemostat Corp. of America, 10 East 39th St., New York, N. Y.*

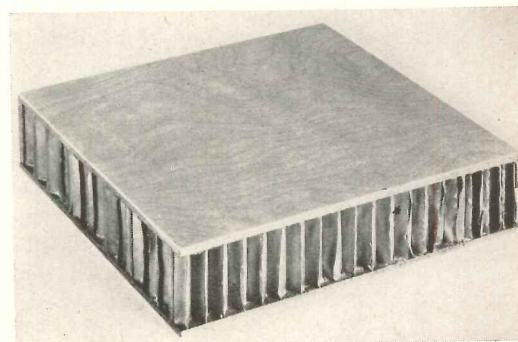


## LIGHT STRUCTURAL PANEL COMBINES PAPER HONEYCOMB AND PLASTICS

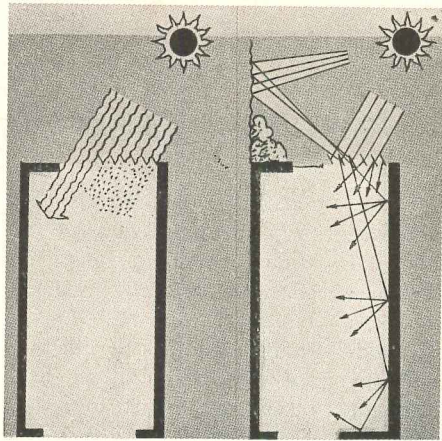
A STRONG YET LIGHTWEIGHT STRUCTURAL PANEL for commercial and residential paneling and furniture is composed of Kraft paper honeycomb, impregnated with phenolic resin for rigidity, sandwiched between *Conolite* plastic laminate surfacing. In some instances a firm plastic backing board is placed over the honeycomb, before *Conolite* is applied, to give the panel greater rigidity. The manufacturer states that an exclusive method has been developed

for making the panels in continuous lengths. *Conolite* surfaces, available in many colors and patterns, including wood grain, marble, dots and scrims, are said to defy alcohol and other liquid stains, resist scratching, chipping or marring, and withstand boiling water, acids, greases and temperatures to 350 F. *Continental Can Co., Honeycomb Div., 100 East 42nd St., New York 17, N. Y.*

(More Products on page 260)







### DAYLIGHT LOUVER PANELS

The Daylight Louver Panel is a formed, painted sheet of Plexiglas acrylic plastic which combines opaque louver slats, light transmission and weather closure in one continuous surface for the purpose of daylight control in buildings. Each panel is made of a single sheet of transparent or diffusing Plexiglas with a flat flange on each side for simple weather-tight erection. An 18-page booklet, well illustrated with drawings and photographs, presents engineering and operating information about the panels. Two of the illustrations, shown at left, indicate how the panels will control sun and sky glare and improve distribution of light (top) and how they will reduce solar heat gain inside buildings by reflecting a substantial part of the direct and sky-reflected radiation from the sun (bottom). AIA File 26-A-9. *Rohm & Haas Co., Washington Square, Philadelphia 5, Pa.\**

**Automatic Coal Heat for the Nation's Schools** is the title of a 62-page booklet which contains 28 case histories showing how modern coal utilization equipment has been installed in schools in 19 communities located in 28 states. *National Coal Association, Director of Market Promotion Dept., Southern Bldg., Washington 5, D. C.*

**Hot Water Heating Problems** as encountered in secondary schools for both shower and dishwater loads are discussed in a special file made available to architects and mechanical designers by *Fred H. Schaub Engineering Co., 2110 So. Marshall Blvd., Chicago 23, Ill.*

**Oxychloride Cement Flooring** is covered in two 4-page bulletins, one of which gives technical data and the other a description and advantages. AIA File 23-D. *Oxychloride Cement Assn., Inc., 1028 Connecticut Ave., Washington 6.*

**Steel Floor Armor** to prolong the life of floors is presented in a new brochure which shows both the application and installation of *Hexsteel* heavy-duty floor armor and *Floorsteel* flexible-type floor armor. *Klemp Metal Grating Corp., Dept. KL, 6601 So. Melvina Ave., Chicago 38.*

**Sound Systems for Schools.** This 8-page brochure pictures a number of communication elements for school systems, with sizes and descriptions. *Du-Kane Corp., St. Charles, Ill.\**

**Sealants for Building Construction**, including expansion joint construction, curtain wall paneling, window glazing and general caulking, are covered in a 4-page bulletin from *Presstite Engineering Co., 3798 Chouveau Ave., St. Louis, Mo.\**

**Fire Pumps.** Selection charts and a set of "typical" fire pump specifications are features of a new 36-page fire pump bulletin (No. B-1500) published by *Peerless Pump Div., Food Machinery and Chemical Corp., 301 West Avenue 26, Los Angeles 31, Calif.*

**Conductive Flooring** for hospital operating suites which is also said to be sanitary, easily maintained, attractive, comfortable, structurally adaptable, durable and economical are covered in a brochure from *Crossfield Products Corp., 140 Valley Rd., Roselle Park, N. J.\**

**Flexible Partitioning** in offices, factories, hospitals, stores, showrooms, etc., with *Vizupoles*, which are adjustable poles that can be positioned between floor and ceiling, is discussed in a 26-page brochure (Catalog 365) from *L. A. Darling Co., Bronson, Mich.*

**Commercial Water Heating Equipment.** A loose-leaf notebook offering information on *Burkay* water heaters is tabbed with the following sections: Spec. Sheets, For Restaurants, For Apartments and Motels, For Laundries and Laundry Stores, For Industrial Plants, For Schools, For Swimming Pools, For Car Washing, Installation Data, Miscellaneous Information and Sample Specifications. *A. O. Smith Corp., Permaglas Div., Kankakee, Ill.\**

**Air Handling Units** for commercial, industrial and residential heating and cooling are presented in a 40-page engineering manual (No. E.M.-G.5622) published as a reference guide for architects, engineers and air conditioning contractors by *Drayer-Hanson, Inc., 3301 Medford St., Los Angeles 63.*

**Precast Concrete Floors**, their design, structural details, and job specifications are covered in an 8-page booklet on *Flexicore Concrete Slabs*. Pictures of typical installations are included. AIA File 4-K. *Flexicore Company, Inc., 1932 E. Monument Ave., Dayton 1, Ohio.\**

**Conductive Tile.** *Conduct-O-Tile*, intended for use in hospital operating rooms and any other areas where combustible anesthetics are used or stored, is described in a 4-page folder (No. 506). AIA File 23a. *American-Olean Tile Company, 1000 Cannon Avenue, Lansdale, Pa.\**

**Incinerators.** A catalog and technical bulletin (AIA File 35-J-4) describing destructors and incinerators for apartments, hospitals, stores, homes, municipalities and the like can be had from *Morse Boulger Destructor Company, 80 Fifth Ave., New York 11, N. Y.\**

**Room Heating Problems** are discussed in a 16-page bulletin titled *Solving Modern Room Heat Distribution Problems*. The booklet describes proper radiator installations for various types and sizes of rooms. *Shaw-Perkins Mfg. Co., 201 E. Carson St., Pittsburgh 19, Pa.\**

**Modern Sheet Copper Practices** is a 112-page, spiral-bound book which contains a series of detail drawings in perspective, each with its own specification, and suggested practices for roofing, flashing, expansion joints, gutters, through-wall flashing, spires, domes, etc. Manual C-1 (AIA File 12). *The American Brass Co., Waterbury 20, Conn.\**

\* Other product information in *Sweet's Architectural File, 1956.*

(Continued on page 304)



DESIGN OF FOUNDATION DRAINS — 1

By Philip P. Page, Jr., Supervising Engineer, Seelye Stevenson Value & Knecht

An understanding of the problems involved in foundation drain design can best be had by studying the nature of groundwater. Groundwater is water in the pores of the soil, and as such it follows the laws of hydraulics. Its origin is rainwater, which seeps through the soil until it is stopped by some impervious layer. This layer may be at a very great depth. The top of this water in the soil is called the groundwater level. The water flows through the soil until it emerges aboveground in a body of water. The friction between the soil and the water flowing through it is overcome by building up a higher groundwater level away from the point of emergence. Therefore, the following points can be made about groundwater:

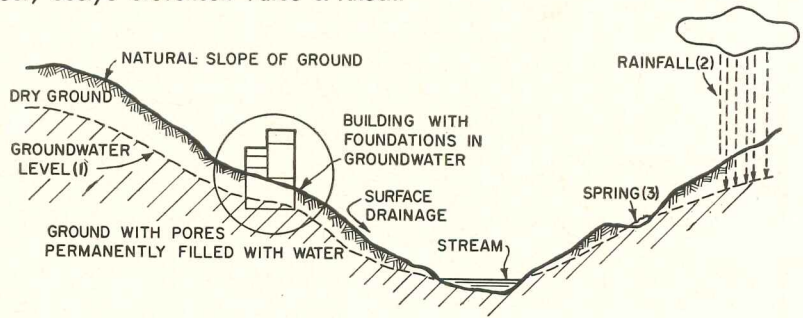
1. The groundwater level varies seasonally with the amount of rainfall.
2. The groundwater level follows the general contour of the land, but is closer to the surface in low ground and farther from the surface in high ground.
3. The direction of groundwater flow is always in the direction of the lower groundwater level.

Hydrostatic Head

Groundwater, following the laws of hydraulics, always produces a hydrostatic head or water pressure which at any point is equal to the depth of that point below groundwater level times the unit weight of water, 62.4 pcf. The effect of this pressure upon a building is illustrated at right. The earth pressure is reduced (from 240 to 100 psf) because of the buoyant effect of the water on the soil particles, but the total pressure is greatly increased.

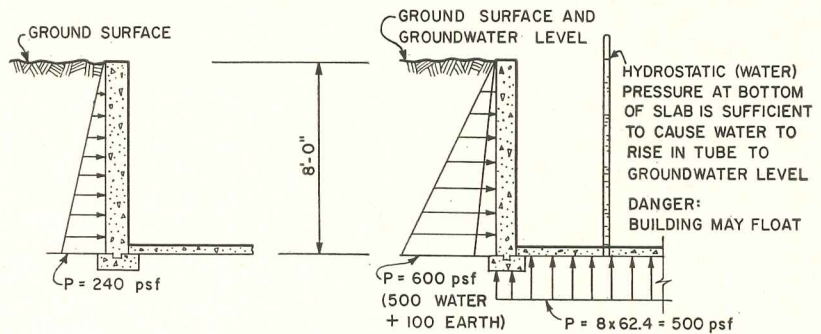
Purpose of Foundation Drains

Foundation drains lower the groundwater, thus preventing building up of a hydrostatic head against the walls or floor of a building with resultant leakage or structural damage. A drainage system should consist of footing drains of sufficient size and an adequate outfall or method of water disposal. The enlarged detail at right shows the basic elements of a foundation drain.



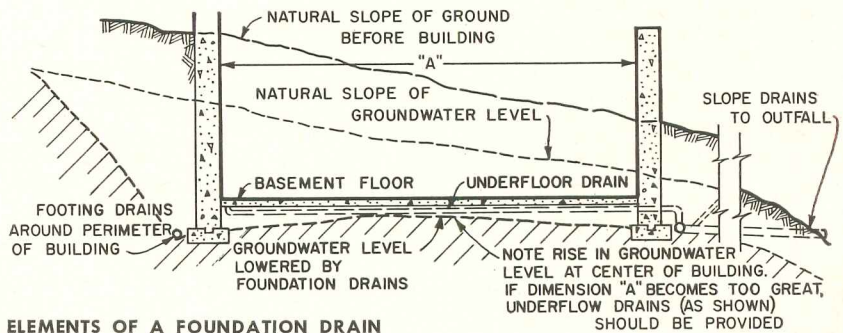
BASIC FACTORS AFFECTING GROUNDWATER LEVEL

- (1) Groundwater level tends to follow ground contour—deeper on hills, shallower in valleys.
- (2) Rainfall percolates through ground to recharge groundwater. Groundwater level varies with amount of rainfall.
- (3) Springs occur where local ground depressions place ground level below groundwater level.

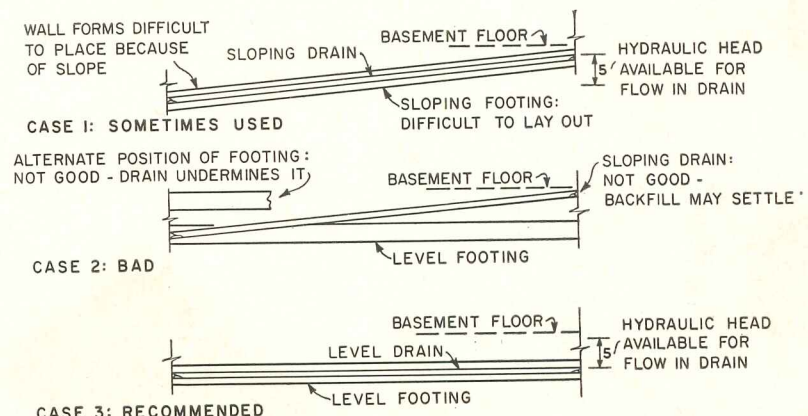


EARTH PRESSURE ONLY      EARTH PRESSURE PLUS HYDROSTATIC PRESSURE  
EFFECT OF HYDROSTATIC PRESSURE ON A BUILDING

Note: Waterproofing is not sufficient in itself to protect walls against groundwater unless they can take heavy earth and water loads



ELEMENTS OF A FOUNDATION DRAIN

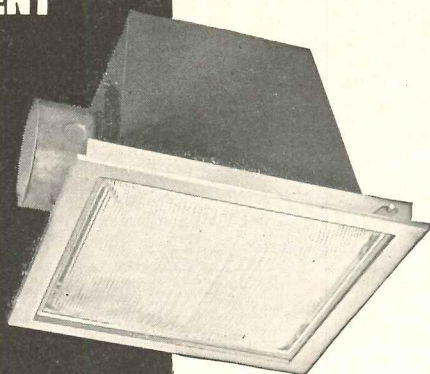


RELATIONSHIP OF FOOTING ELEVATION TO DRAIN



# NEW CURTIS SCHOOL CORRIDOR LIGHTING UNITS

## INCANDESCENT SQUARE RECESSED



A square recessed incandescent downlight that can be recessed into a 12" opening in any type ceiling construction.

This new Curtis recessed unit is for use with either 150-W, 200-W or 300-W incandescent lamps. A specially designed lamp holder plate permits easy adaption for correct positioning of these three different wattage lamps. The hinged door accommodates either a variety of lenses or a louver. Units pass Underwriters approval when installed singly or when grouped or patterned together.

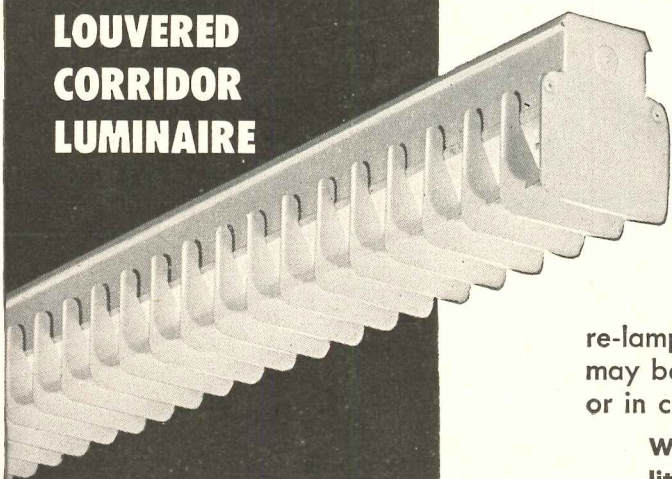
## PRINCESS CORRIDOR LUMINAIRE



A new completely enclosed Fluorescent Luminaire for 4' and 8' Rapid Start or Slimline lamps.

This completely enclosed luminaire is ideal for corridors and other areas where wide light distribution is desirable. The white plastic polystyrene plastic panels may be easily removed for cleaning or lamp replacement. Units may be installed individually or in continuous lines, close-ceiling or pendant mounted.

## LOUVERED CORRIDOR LUMINAIRE



A distinctive Fluorescent Luminaire, with attractive white enameled steel louvers for 4' and 8' Rapid Start or Slimline lamps.

This new Curtis all steel luminaire is finished white baked Fluracite enamel. It is a highly efficient direct unit designed to give 25° lengthwise shielding. The louver is hinged from either side for fast, easy re-lamping or cleaning without the use of tools. Units may be close-ceiling or pendant mounted individually or in continuous lines.

Write Dept. E3-CP for complete, descriptive literature on these new Curtis corridor units.

# CURTIS

**CURTIS LIGHTING, INC.**  
6135 WEST 65th STREET CHICAGO 38, ILLINOIS



DESIGN OF FOUNDATION DRAINS — 2

By Philip P. Page, Jr., Supervising Engineer, Seelye Stevenson Value & Knecht

Estimation of Infiltration

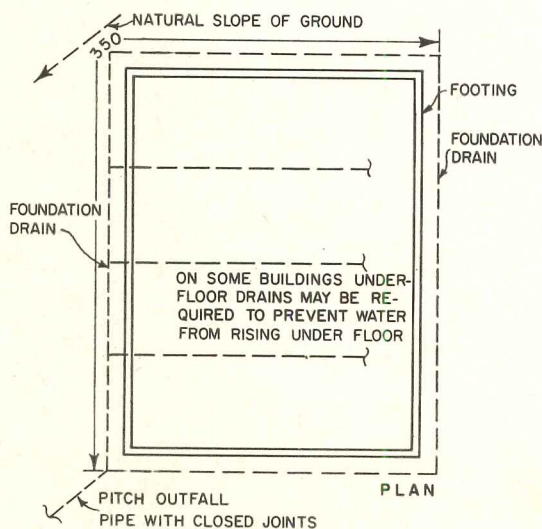
The amount of infiltration varies according to the type of soil and height of groundwater above footings. Clays have such a small flow of groundwater that nominal 4-in. drains are satisfactory for all but the largest installations. Silts have more flow. Sands and gravels can have such a heavy flow that pumping tests are required to determine the flow quantity.

Location of Drains

Drains are placed around the periphery of a building far enough below floor level to develop sufficient hydraulic head for drainage. The footing is always placed at least 4 in. below the invert of the drain (bottom of the inside diameter) to prevent groundwater flowing under the footing from washing out soil fines, with resultant settlement of the structure. For buildings covering a large area it may be necessary to place underfloor drains to prevent the building up of head in the center.

Selection of Size of Drain

Once the infiltration has been established and the plan of the drains laid out, the size of pipe and elevation of invert must be established. The nomograph at right can be used. The selection of the proper drain then requires an economic study.



Note: If gravity outflow is not practical or possible, a sump has to be used with a pump to draw out groundwater

Example

Given: Inflow of 100 gpm, established by a pumping test during excavation  
Length of drain—350 ft  
Friction factor for pipes— $n = 0.015$

Find: Underdrainage design required to keep cellar dry

Solution: Assume a 6-in. pipe. From nomograph, required slope for a 6-in. pipe and 100 gpm discharge is 0.0024. Hydraulic drop is  $350 \times 0.0024 = 0.84$  ft. Bottom of drain should be, therefore,  $0.84 + 0.5$  (thickness of floor slab) = 1.34 ft below surface of floor.

To adjust for  $n = 0.019$ , multiply inflow by  $0.019/0.015$  and then use nomograph.

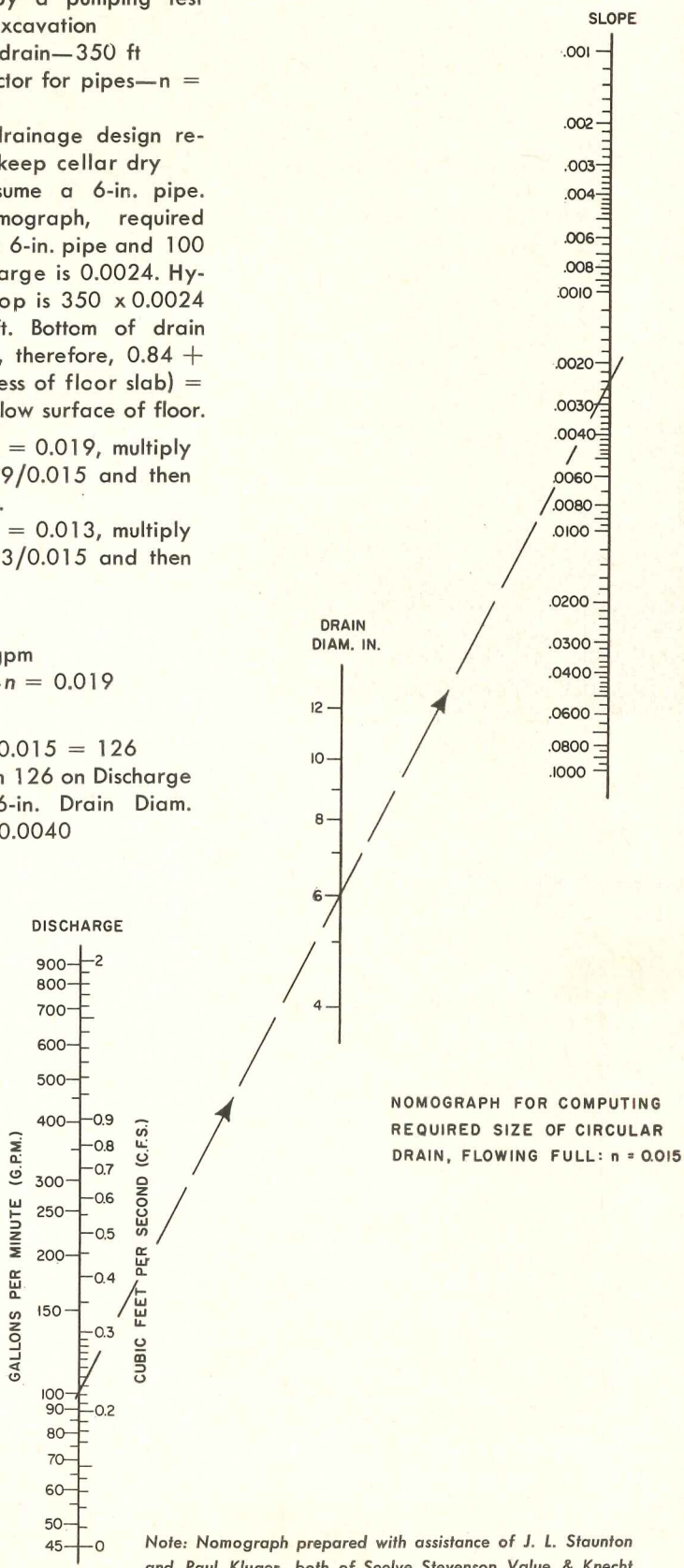
To adjust for  $n = 0.013$ , multiply inflow by  $0.013/0.015$  and then use nomograph.

Example

Inflow of 100 gpm  
Friction factor— $n = 0.019$

Solution

$100 \times 0.019/0.015 = 126$   
Taking line from 126 on Discharge bar through 6-in. Drain Diam. gives Slope of 0.0040





# Good Windows, Yes!

## — But A Bayley Specification assures you of MUCH MORE!!

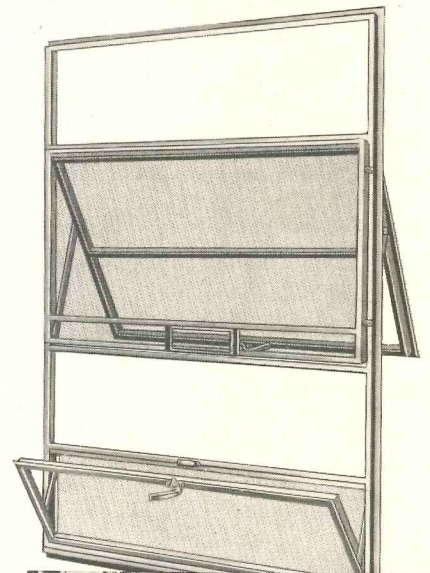
### Check these Extra Bayley Services

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Bayley Projected Windows in the St. Andrew Home, Chicago suburb. Architect, Leo Strelka, Oak Park, Ill.; Builder, John Gebhardt & Son, Chicago, Ill.



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DESIGN OF FOUNDATION DRAINS — 3

By Philip P. Page, Jr., Supervising Engineer, Seelye Stevenson Value & Knecht

Type of Drain

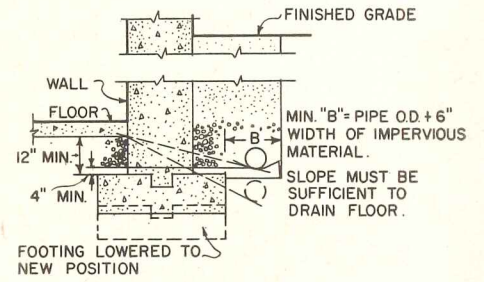
To permit the entry of water but prevent the entry of soil a reverse filter surrounds the foundation drain. This reverse filter consists of coarse gravel next to the pipe followed by layers of coarse and then fine sand. Porous or perforated pipe is preferable to open joint pipe. The table below shows the basic characteristics of the main types of pipe used. The pipe generally is laid level, without slope, to avoid the problem of sloping footing bottoms, as shown on Sheet 1. A footing seal of impervious material should be provided to prevent the flow of water under the footing. Perforated clay pipe which has holes only on the bottom should be laid on a gravel bed over the clay seal.

Outfall

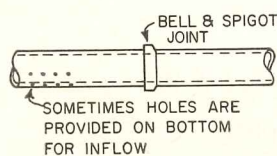
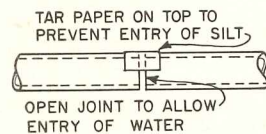
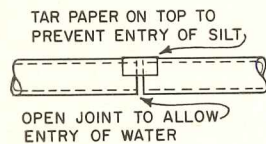
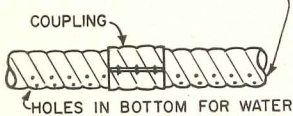
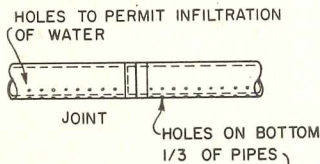
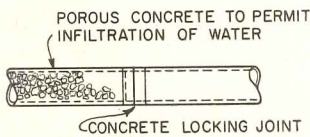
Disposal of the water collected in the drains must be given careful thought. Too often drawings simply

indicate an arrow to an outfall or a dry well. The outfall must be capable of taking the discharge without becoming surcharged. Generally the connection to sanitary sewers is prohibited by law and certainly is not to be encouraged. Dry wells should not be specified, for obvious reasons, when they would be below the water table. This would be like pulling a cork out of the hole in the bottom of a row-boat to let the water out. Dry wells are satisfactory, though, when they will stay above the water table and when the soil is permeable enough to dissipate the inflow.

Good outfalls consist of storm sewers or other drainage devices located at a lower elevation than that of the footings. Sometimes such an outfall is impossible to reach and it becomes necessary or more economical to collect the water in a sump and to pump out to surface drainage.



Slope is increased as pipe diameter is decreased, as can be seen in nomograph on Sheet 2. When drain is lowered to increase slope, footing must be lowered to stay below level of drain and thus prevent silt from being washed away from under footing. Selection of drain size usually depends on cost differential between small pipe, and therefore more excavation for lowering of footings, and more costly large pipe but less digging.



BASIC CHARACTERISTICS OF DRAIN PIPES

Type	n	Advantages	Disadvantages
Porous concrete	0.015	Freedom from silting, erosion and corrosion; easily laid; resists surcharge load	Most expensive
Perforated concrete	0.015	Same as porous	Expensive
Perforated metal	0.019	Freedom from silting; resists surcharge load	Possible corrosion; high n value
Open joint concrete	0.015	Strong; resists surcharge load	Joints may permit entry of silt, which clogs line; harder to lay; backfill must be laid with more care
Open joint clay	0.019	Least expensive; resists corrosion	Joints may silt up; high n value; more easily broken by careless backfill or surcharge
Vitrified clay	0.013	Low n value; best for runs to outfall; resists corrosion and erosion	Least effective entry of water



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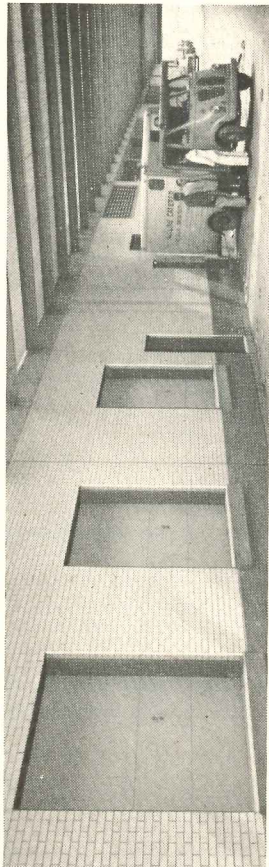
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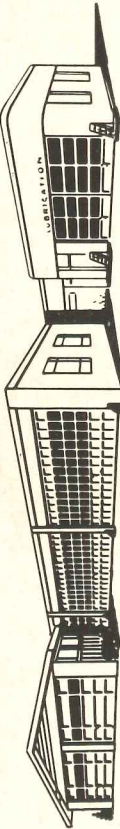
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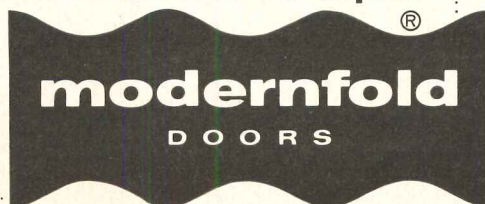
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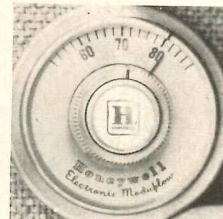
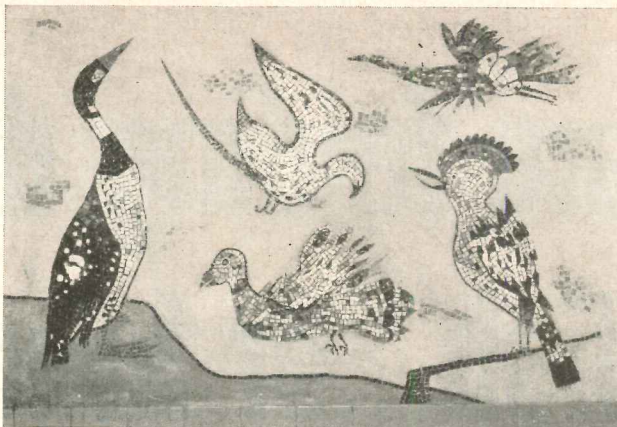


## THE RECORD REPORTS:

(Continued from page 28)

**SILVER MEDAL** in design and craftsmanship: mosaic panel by Max Spivak for Cerebral Palsy School; Michael Radoslovich, architect

**HONORABLE MENTION** in design and craftsmanship: thermostat by Henry Dreyfuss for Minneapolis-Honeywell Register Co.

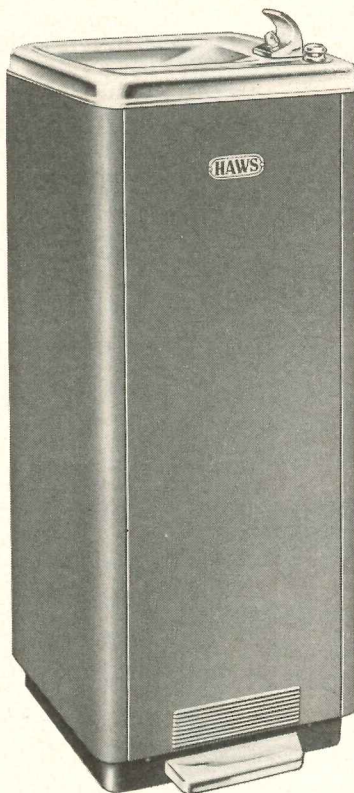


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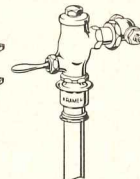
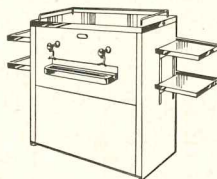
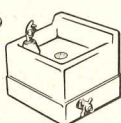
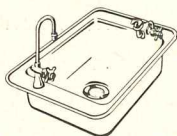
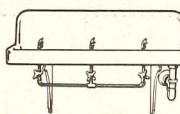
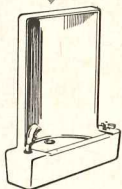
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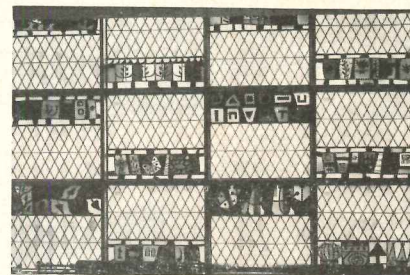
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**HONORABLE MENTION** in design and craftsmanship; stained glass by Henry Lee Willet Studios for St. John's Lutheran Church, La Grange, Ill.; Whitehead & Billman & Associates, architects



**HONORABLE MENTION** in design and craftsmanship; stained glass for Milton Steinberg House, New York, by Adolph Gottlieb; Kelly & Gruzen and S. Robert Greenstein, architects



## ON THE NEWS FRONT WITH STRUCTURAL STEEL



**Department Store in Miami**—The framework of this new Jordan Marsh store in Miami, fabricated from Bethlehem structural steel, has perfect vertical and horizontal continuity. All columns are in a straight line from the ground floor to the top and all beams are in a straight line from one side of the structure to the other. To save time in the field, the columns were fabricated in 60-ft lengths at Allentown, Pa., and shipped by rail to Philadelphia, then by water to Miami. The 1777 tons of Bethlehem structural shapes are held together by nearly nine miles of quarter-inch welds.

*Architects:* Weed, Russell, Johnson, Associates, Miami; *General Contractor:* Frank J. Rooney, Inc., Miami; *Structural Engineer:* Jorgensen and Schreffler, Miami; *Steel Fabricator and Erector:* Lehigh Structural Steel Co., Allentown, Pa. *Owner:* Bessemer Properties, Inc.

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# BETHLEHEM STEEL





# THE RECORD REPORTS: VIEWS OF CURRENT PERIODICALS

(Continued from page 348)

**INDUSTRIA**, Vol. 51, No. 11E (Sweden), asked a number of Swedish architects to select, for its English-language edition, choice examples of contemporary Swedish architecture — three of their selections are shown at the left.

In an accompanying article by Betty Burnett, some Swedish architectural requirements were described. Of the constant needs, Miss Burnett wrote:

"In this country, there is an inherited love of tradition, a desire to maintain the idyllic aura of cities, a craving for light and space quite natural to a people closed in by darkness during a long winter."

Some of the needs, however, are new. The country has felt the effects of an acute housing shortage since the end of the war — Stockholm at one time had



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Robbins Ironbound Continuous Strip Maple Floor in gymnasium. Unretouched photo, taken August 1955.

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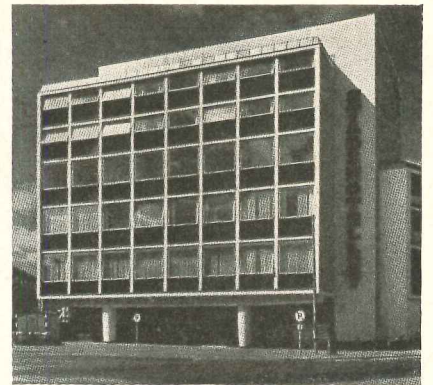
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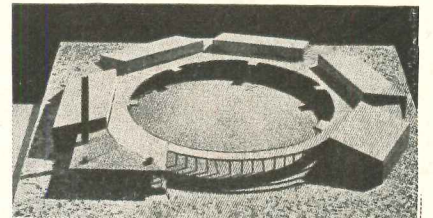
Reed City, Michigan

Ishpeming, Michigan

\* T.M. Reg. U.S. Pat. Off.



Above: hotel at Värnamo, in southern Sweden, was designed by architect Bent Jørgen Jørgensen, built of glass, cement and enamel panels



Grade school at Danderyd, near Stockholm, has circular corridor enclosed in glass on the classroom side; Carl Nyrén was the architect



Detail of a paper pulp factory at Östanfors, by Ralph Erskine, a British architect working in Sweden

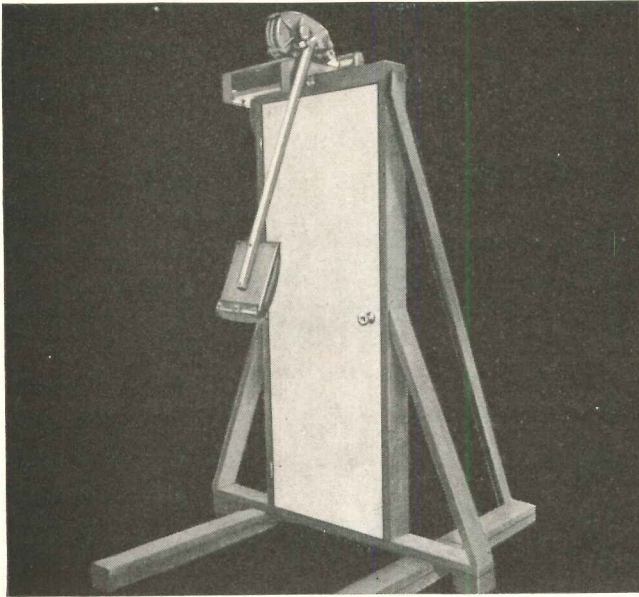
an official waiting list of 80,000 for apartments — and the major emphasis has been on housing construction.

Sweden has also begun to experience, like much of the rest of the world, the urban land pinch, and is having, in some cases, to relinquish her taste for horizontal building. "The popular prewar theory among architects and city planners, which carried over to the post-war years, was the long, low building for living as well as working," *Industria's* author said. "Now, as large suburban areas of three- and four-story

(Continued on page 356)

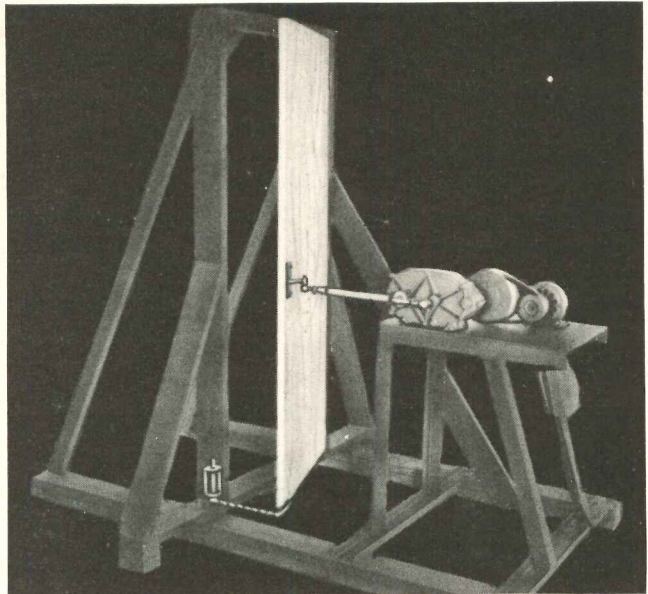


# ENDURANCE...*proved by torture*



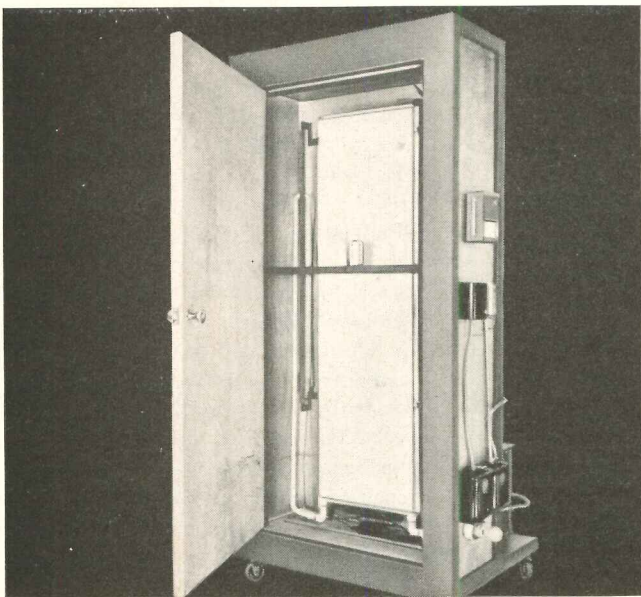
## Proved by 529,879 bangs

This pendulum banged a 35-pound weight against a Curtis New Londoner hollow-core door 38 times per minute. After 529,879 bangs, door was good as new.



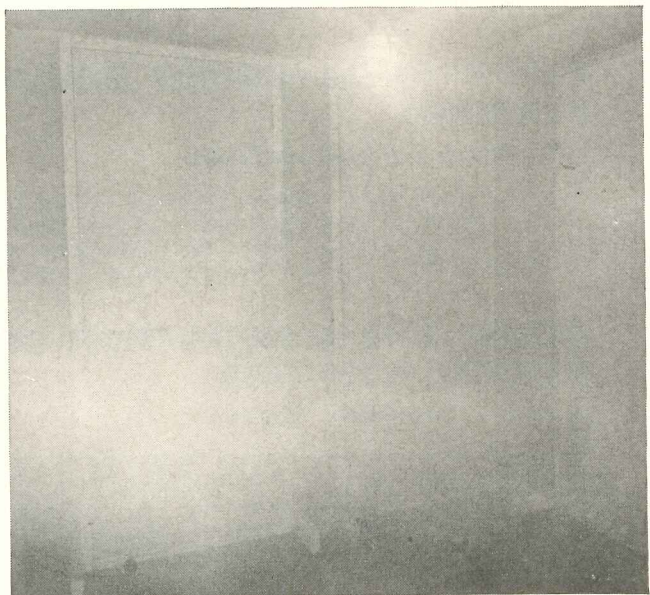
## Proved by 642,934 slams

Slammed 72 times per minute—the equivalent of a life-time of slamming—the Curtis New Londoner door came through this tough test unscarred—unmarred.



## Proved in chamber of horrors

Subjected to 166 cycles of temperatures ranging from 110° to 0° F., a Curtis New Londoner door showed no peeling of face panels or changes in dimensional stability.



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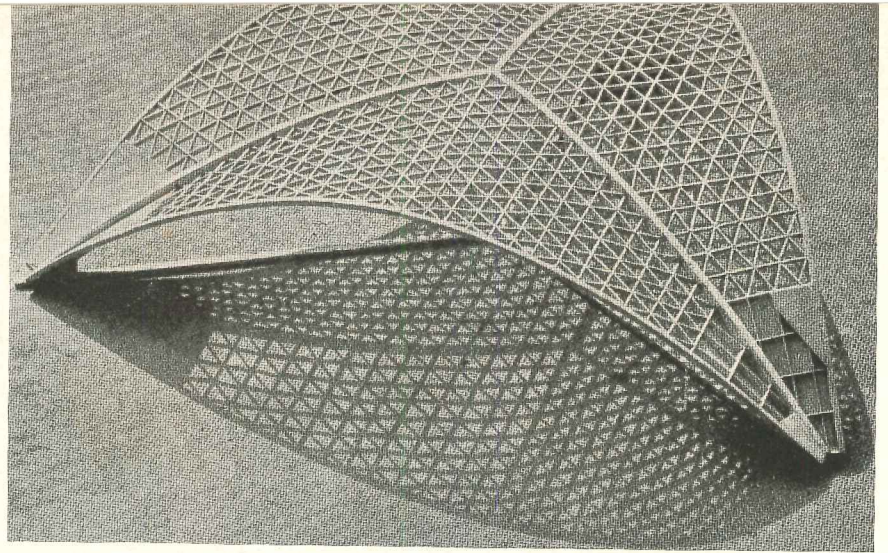
City.....State.....



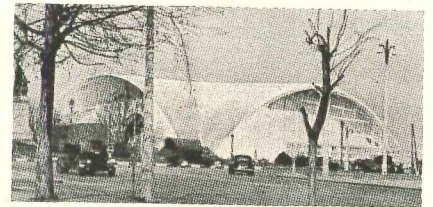
## THE RECORD REPORTS CURRENT PERIODICALS

(Continued from page 352)

apartment houses are beginning to crowd the city limits and the number of apartment seekers is growing, architects have been forced to reassess their theories. The demand now is for vertical buildings. There is a frenzied flurry of skyscraper dwellings (eight to 12 stories) once thought impossible for the Swedish family."



Above: model of the welded frame for the proposed industrial display center near Paris. Below: photomontage of the building as it will appear on the Place de la Défense



### DODGE Building Studies

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by the editors of ARCHITECTURAL RECORD

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**TECHNIQUES ET ARCHITECTURE**, November 1955 (France), carried a project story on *le Centre National des Industries et des Techniques*, designed by architects R. Camelot, J. de Mailly, B. Zehrfuss and engineer P.-L. Nervi. To be located at Puteaux, a suburb of Paris, the project is intended for permanent and special exhibits and as a center for French industrial associations and an industrial library.

The center will be composed of two buildings — a three-cornered vault covering the exhibition space and an administration building housing offices, a restaurant, meeting rooms and storage space. A hall to be built under one of the six avenues radiating from the Place de la Défense will connect the buildings. In addition to interior exhibition space, provision will be made for open-air display.


The structure of the vault will be of welded metal covered with a skin of aluminum. Its triangular shape was suggested by the shape of the site.

All of the buildings will have concrete foundations.

**ARCHITECTURAL DESIGN**, February 1956 (Great Britain), also reported an exhibition hall project, this one for "the only really great site left in London," the Crystal Palace site. The design of the London County Council, under the direction of architect J. L.

(Continued on page 358)





# GLASS TO PLAN WITH...

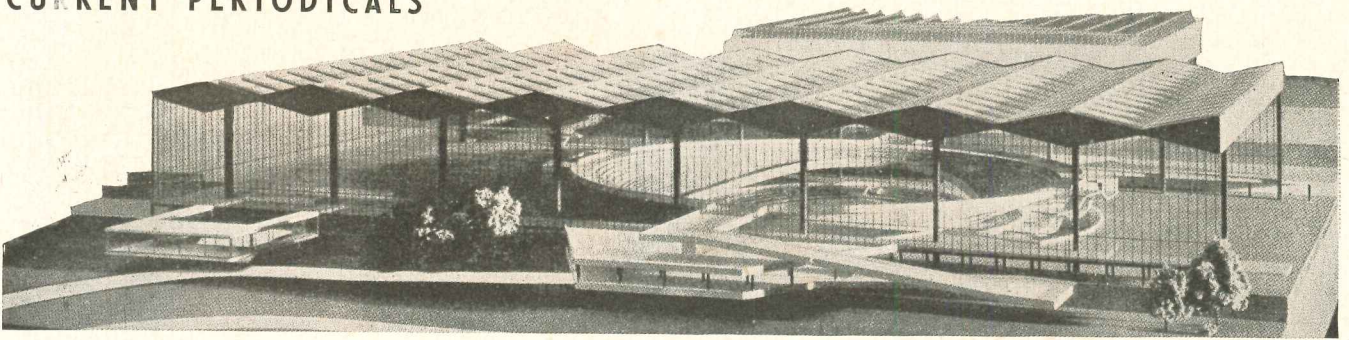


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(Continued from page 356)



# Fairhurst

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View shows **Unitfold Wall** in partly open position.



Wall opened. Folded units are unobtrusive at left. Coolidge, Shepley, Bulfinch & Abbott, Architects.

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Martin, fills the need, the editors of the magazine feel, of "an architectural concept worthy of [the site] and of the old structure, the first modern building."

Two units are proposed: a small hall and the large exhibition hall (model above). The large hall, which will be built along a ridge on which the original Crystal Palace stood, will contain, besides the exhibition space, an arena and amphitheater. To be 80 ft high and 1600 ft long, the building will have a roof span of 400 ft.

The exhibition hall is the most recent proposal made for the Crystal Palace site, for which the L.C.C. plans a major recreation center for South London, to include a National Youth Center, an outdoor theater, a riding school and a car racing track.

**MÓDULO**, August 1955 (Brazil), is the second edition of a bimonthly subtitled "A Review of Architecture and Plastic Arts." In this issue: a project at the University of Rio de Janeiro by architect José Souza Reis; the full text of a speech by architect Lucio Costa; and contributions from the "principal names in Brazilian architecture" — Roberto, Reidy, Artigas, Uchôa, Levi, Bernardes and Niemeyer. The magazine contains English, French and German translations, and is published at Avenida Presidente Vargas, 502, Rio de Janeiro.

**BYGGNADS-INGENJÖREN**, December 1955 (Sweden), "A Review of International Building-Technique and Building-Economy," contained feature articles on "the rationalization of the building branch" (efficiency on the site) and on a new Swedish modular wood block, as well as shorter articles on some new schools and on Japanese architecture. The English translation is brief and rather below the level generally expected from the Scandinavians. Offices are at Barnhusgatan 4, Stockholm C.