



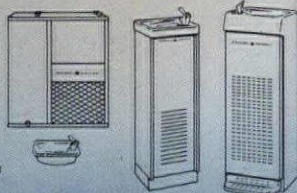
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General Contractor: C. A. Lehman & Sons, Inc., Fort Wayne, Ind.;
Panels By: Masolite Div. of General Dredging Co., Inc., Fort Wayne, Ind.



The stunning new Fort Wayne Public Library is another impressive example of the design latitude enjoyed by architects who work with precast concrete panels. New vistas of form and color are suddenly theirs to command... new potential there to be explored.

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Library are made of Trinity White Portland Cement and Polar White Quartz aggregate. The whiteness achieved is elegantly uniform in tonal purity, completely devoid of the color variations so often found when using gray cement. The panels were lightly etched with acid to produce a delicate texture. The result is a building

that is as beautiful as it is practical... as aesthetically appealing as it is functional.

There's no question that white precast concrete panels are making an increasingly profound impression on today's future-oriented architects. And the most lasting of these impressions are being fashioned from Trinity White.

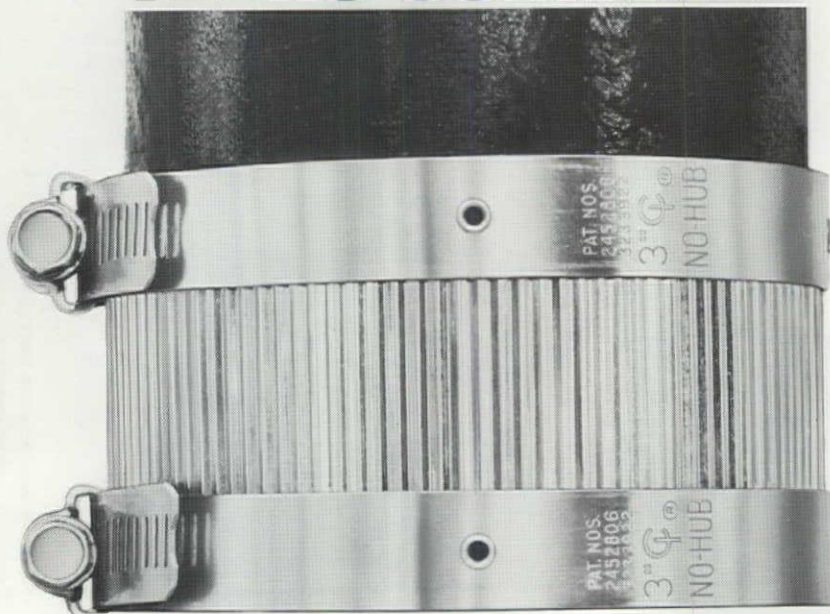
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practice flying during the battles of the Coral Sea, Midway, Guadalcanal and the Philippines. With commercial, single/multi-engine, land/sea, instrument/glider/instructor ratings, I have used the private airplane for 30 years. It is the only way to pass the freeway crowd.

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DON DAVIS, AIA
Long Beach, Calif.

Helping the Handicapped

EDITOR:

It has come to my attention that the March AIA JOURNAL contained a very fine article about facilities for the handicapped. The Committee on the Removal of Architectural Barriers of the Governor's Committee to Promote Employment of the Handicapped would be most appreciative if it could study the article with a view to expanding the program in Maryland.

I hope that you can send me eight copies of that issue. We are looking forward to working with local architects on several projects and would like to do some homework before our next meeting.

MRS. RUTH-ELLEN ROSS
Executive Secretary
Governor's Committee to Promote
Employment of the Handicapped
Baltimore, Md.

A Tribute to Bill Wurster

EDITOR:

A thank you to Richard C. Peters for his beautiful and scholarly article on Bill Wurster in May. Bill has been one of my dearest friends in the profession since I first met him in 1938 on the occasion of my first visit to the West Coast.

I had, of course, "met him" through his published works. So it was a renewed pleasure to see again the illustrations which recalled the many pleasures he has given us when his varied and most individual buildings have been published.

I shall always cherish the memory of an evening about 12 years ago, seated under the redwoods in front of the old house in Berkeley, looking over the lights of the city with Bill and Katherine, Mary Russell and my wife Louise, just

talking about his plans for having various, carefully selected younger architects build on the lower reaches of that property out in his front yard, as it were. I hope that this project turned out well as I have never had a chance to return and see it except at a party for the brainwashing experience of "Dr. McKinnon in search of creativity," and that was hardly the time or the place to inquire.

Having known and loved Bill through so many and rich experiences, I am sure that many of us in the profession are deeply appreciative of the article.

HARRIS ARMSTRONG, FAIA
Kirkwood, Mo.

The Coast of France, Anyone?

EDITOR:

Eight years ago when I was helping John Smith of the United States Travel Agency organize tours in Europe for the Institute, I knew most of the staff at the Octagon, for I once spent two months there.

But since then, as I subsequently started my own architectural practice in the south of France, I have lost touch with my AIA connections; and so I wrote to my old friend, Leon Chatelain (a member of one of my first tours) for your address.

The reason for writing at this time is that I am thinking of semi-retirement and hope to find a younger, energetic architect or firm to negotiate a partnership with me to expand my practice.

It may be of interest to note that I am the only British (or American) architect with a legal license to practice on this coast in an area stretching from Marseilles to the Italian border. I am also an associate of the Royal Institute of British Architects and a member of the French Ordre des Architectes.

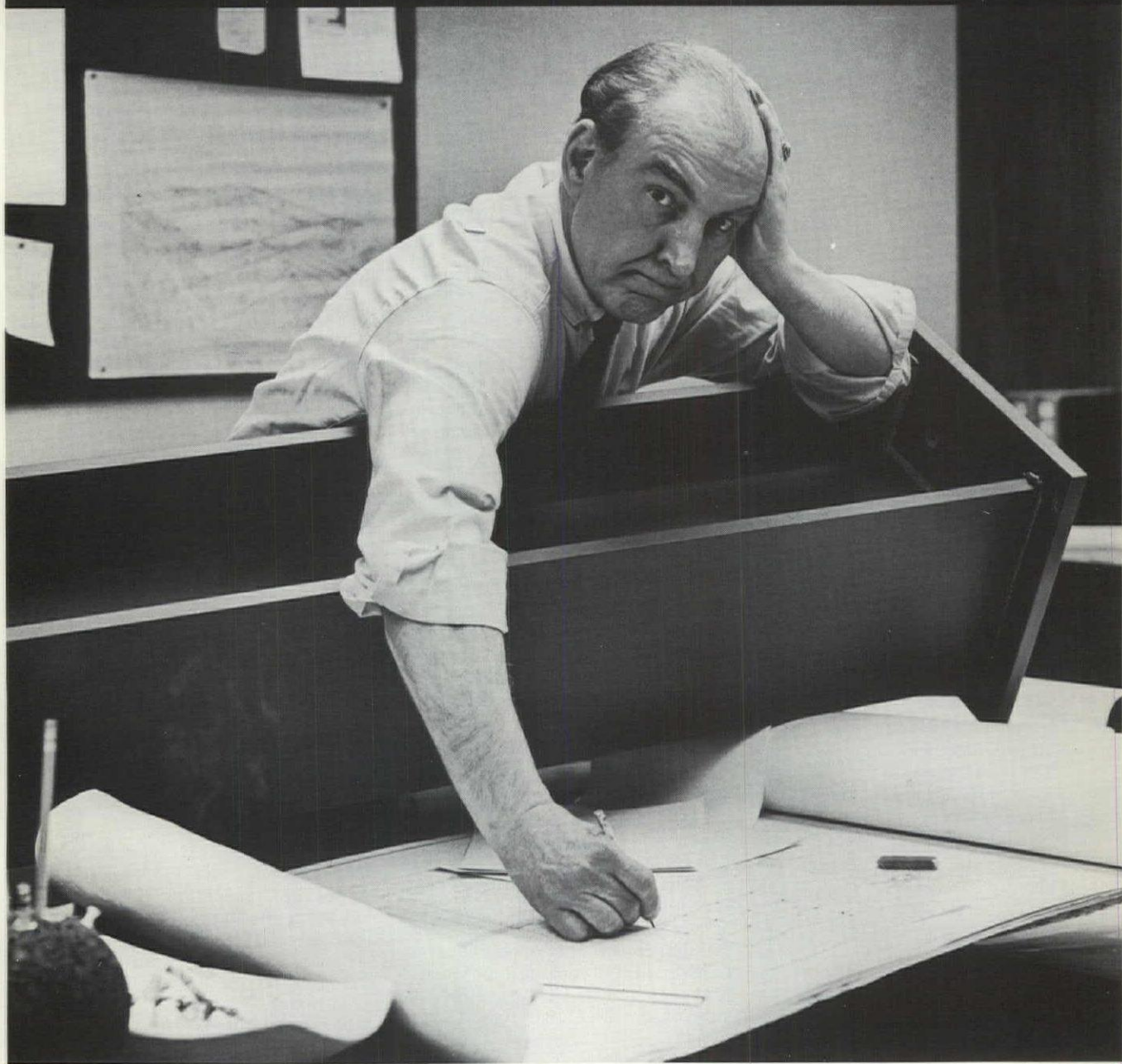
Vacation villages and yachting ports offer opportunities for imaginative development, apart from the usual villa jobs. And there are the climate, the sea, and the olive trees to boot!

RICHARD WALKER
Nice, France

Correction

Kennard & Kennard should have been credited in the July issue (p. 24) as the husband-and-wife architect team of Chevy Chase, Md., who won the 1969 Forest Products Industry Award for Wood Structure Design.

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Letters

Architects Awing

EDITOR:

James L. Haecker's article in the May issue was of great interest to me since I am an instrument-rated pilot and aircraft owner and do some flying in my business.

I would have to agree with most of the statements as I am certainly an enthusiastic flyer. However, I think that anyone "starting from scratch" should realize that an instrument rating is almost a necessity if the use of private aircraft in business is to be practical in most parts of the country. There are too many times when the weather will not permit a strictly VFR operation and making appointments becomes a problem. The instrument rating does not solve this problem entirely, but it does greatly help. Also, a large safety factor is added.

Total experience of 200 hours is required for the instrument rating as well as additional dual instruction, written examination and flight test. However, this extra investment of time and money should be considered by anyone who intends to be a serious flyer.

Contrary to the advertisements commonly found in the newspapers and magazines these days, learning to fly is not as easy as learning to drive a car, but it is a much better way to travel.

ALVIN L. FARNSWORTH, AIA
Lansing, Mich.

EDITOR:

I agree with Mr. Haecker 100 percent on the advantages of private flying. My perfect example is a project (hotel/motel, etc.) we are doing at Lees Ferry, Ariz. It is the last point on the Colorado River; you can hop on a rubber raft and shoot the rapids through the Grand Canyon.

From Long Beach, Calif., to Lees Ferry via a 200-horsepower Arrow, the 420 air miles take 2 hours 45 minutes. Via commercial air liner, with flight connections, it is an overnight trip. Via the private car, it is an 18-hour drive. Needless to say, the jobsite visits are made by private aircraft.

I am one of those lucky architects who acquired his flight training free as a naval aviator from the US Government. We had

Continued on page 102

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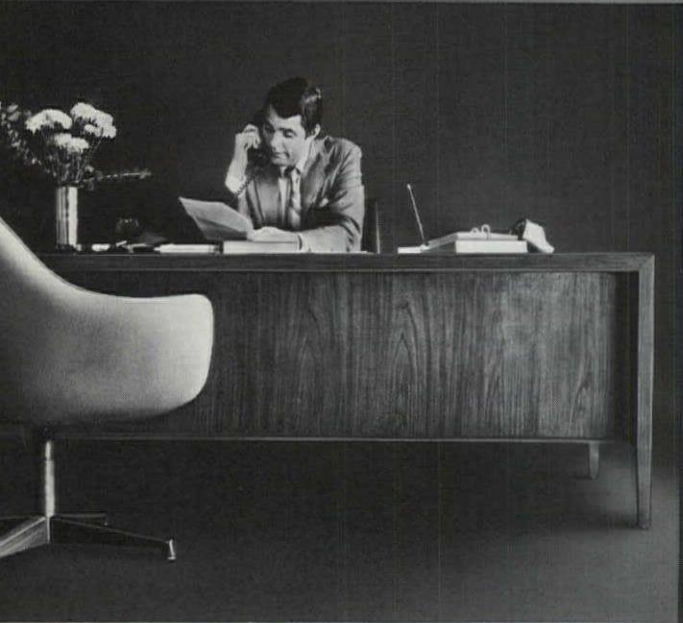
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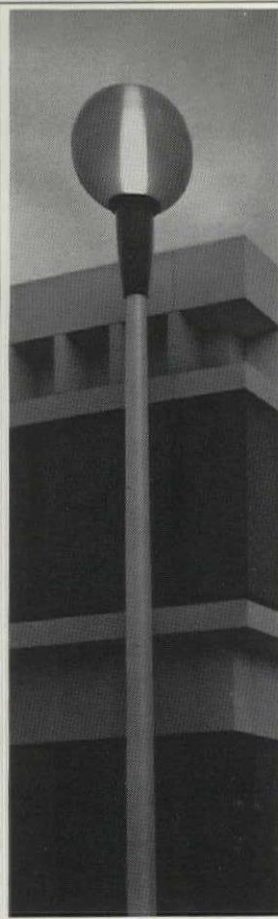


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Calendar

National

- Sept. 16-19:** Producers' Council Annual Meeting, St. Francis Hotel, San Francisco
Sept. 24-26: Conference on Precoordination — the Basis for Industrialized Building, National Bureau of Standards, Gaithersburg, Md.
Oct. 16-17: AIA Architects/Researchers Conference, Houston
Oct. 26-30: AIA/ACSA Teachers' Seminar, Miyako Hotel, Japanese Trade Center, San Francisco

AIA Regional and State Conventions

- Sept. 18-20:** Central States, Cornhusker Hotel, Lincoln, Neb.
Sept. 25-27: Pennsylvania Society, Hilton Hotel, Pittsburgh
Oct. 1-3: East Central States, Ramada Inn, Evansville, Ind.
Oct. 2-4: New Jersey Society, Chalfonte-Hadden Hall, Atlantic City
Oct. 9-11: Architects Society of Ohio, Commodore Perry Hotel, Toledo
Oct. 11-14: Northwest Region, Salishan Lodge, Glededen Beach, Ore.
Oct. 15-19: California Council, El Mirado Hotel, Palm Springs
Oct. 17-19: New England Region, Wentworth-by-the-Sea, Portsmouth, N.H.
Oct. 20-23: New York State Association, Nevele Hotel, Ellenville
Oct. 23-25: Illinois Region, Wagon Wheel Lodge, Rockton
Oct. 23-25: Middle Atlantic Region, Lord Baltimore Hotel, Baltimore
Oct. 24-27: Florida Association, Grand Bahama Hotel, West End, Grand Bahama Island
Oct. 29-31: Texas Society, Hilton Palacio del Rio, San Antonio
Nov. 9-14: Western Mountain Region, Dunes Hotel, Las Vegas

International

- Oct. 13-25:** UIA Assembly and 10th World Congress, Buenos Aires

Continuing Education

- Nov. 1:** Applications due, Fulbright-Hays scholarships. Contact: Information and Reference Services Division, Institute of International Education, 809 United Nations Plaza, New York, N. Y. 10017, or Fulbright Program Adviser.

Tours

- Sept. 14-27:** Mexican Architecture and Interior Design Seminar-Tour, meeting in Mexico City. Contact: T. H. Hewitt, P. O. Box 2292, San Francisco, Calif. 94126.
Oct. 7: Architecture and Garden Tour of Japan, departing from Los Angeles for 24 days with optional extension to Hong Kong and Bangkok. Contact: Kenneth M. Nishimoto, AIA, 263 South Los Robles Avenue, Pasadena, Calif. 91106.
Oct. 7: Architects' Trek to South America, departing from Miami for 21 days with optional excursions. Contact: United States Travel Agency, Inc., 807 15th Street, N.W., Washington, D. C. 20005. □

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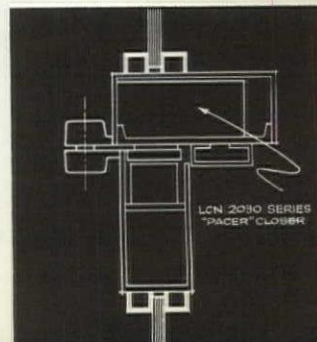


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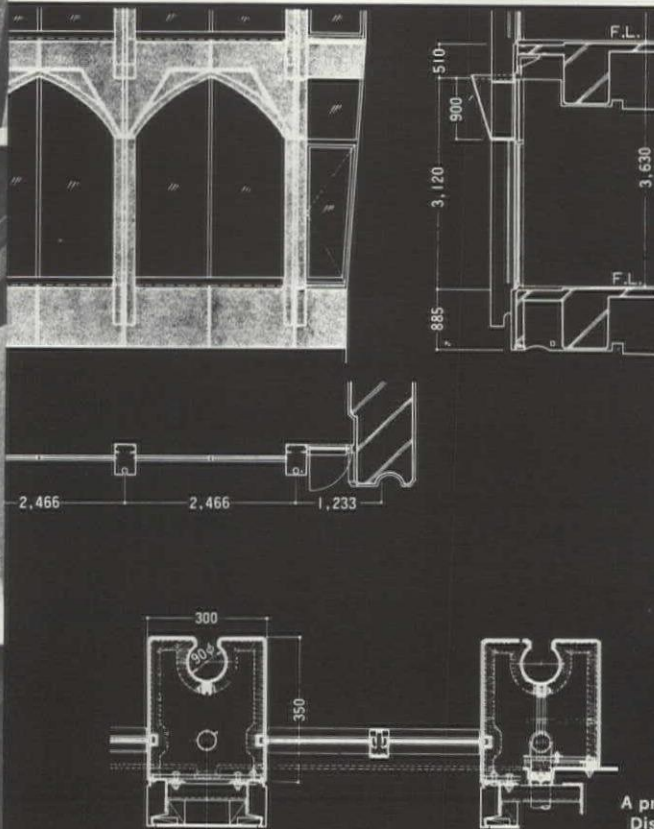
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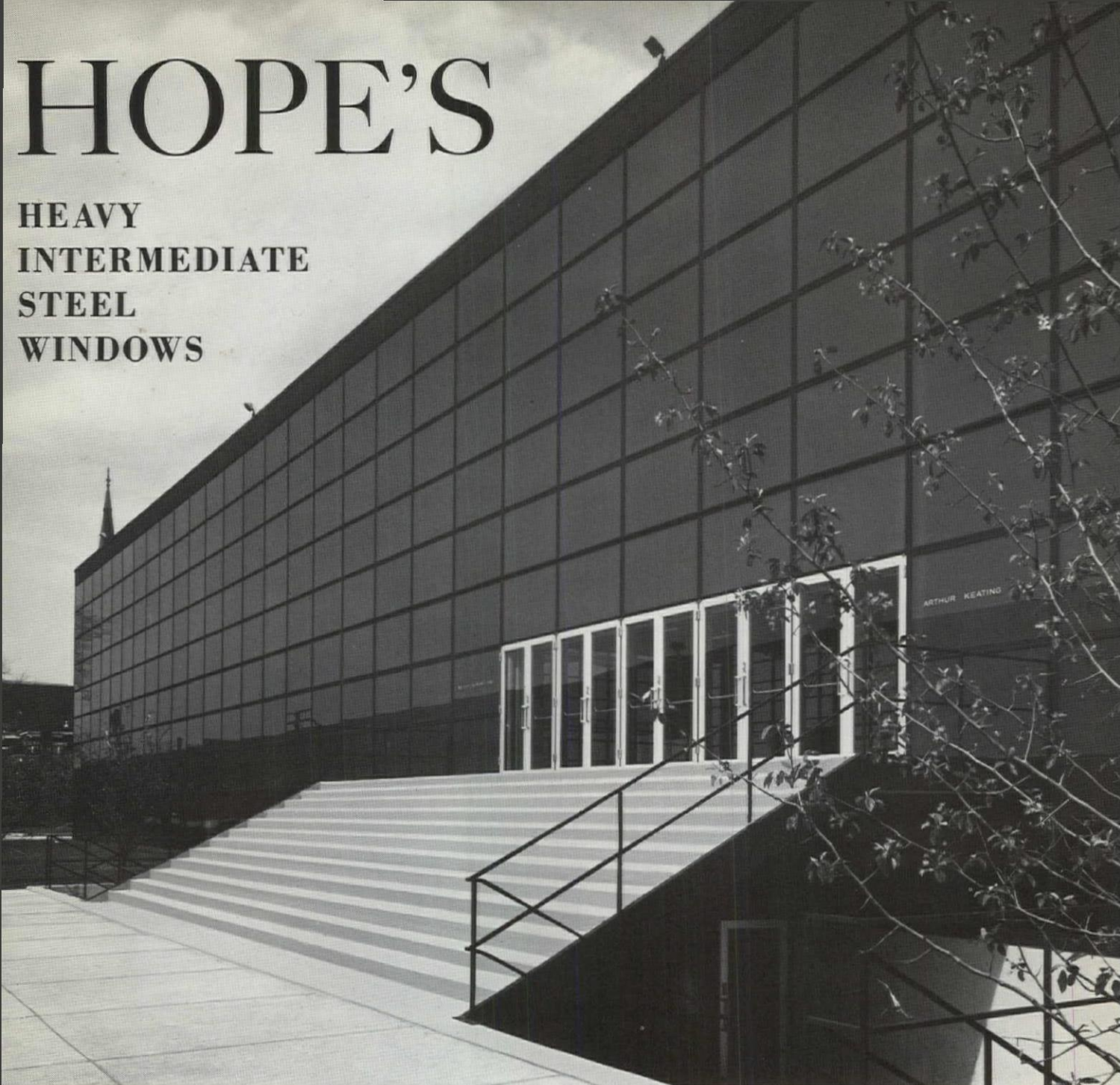


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ater buildings. According to his comments in the preface, he was told in New York that he was wasting his time traveling around the country, that the only place to study theater was in New York. Joseph did not heed this advice, however, and his visit became what he called "a breathless tour of investigation."

This is not a book about the theater in America, however. The principles it enunciates are more universal. The book provides a guide to the contemporary forms of stage: center, thrust, end and the variously related forms. There are chapters also on adaptable theaters; on multipurpose halls; on seating, sightlines and lighting; and on size, scenery and cost.

Although not primarily oriented to architectural design, the book will interest the architect. Not only will it provide him with a great deal of practical information that he can use in designing theaters, but it will also help him understand how the form of the theater affects everyone concerned with a theatrical production from playwright to designer to producer to actor.

Architecture in Michigan: A Representative Photographic Survey. Wayne Andrews. Detroit: Wayne State University Press, 1967. 1 Vol. (no paging) \$6.95.

This is a photographic survey of Michigan's architecture from 1837 to the present. Andrews says this is the first book to appear on the subject of architecture in Michigan. This is difficult to understand, for the book reveals unmistakably that "the architecture of Michigan has an ancient and honorable tradition" and that the buildings by the Saarinens, Wright, Kahn and others should make any state proud.

The Secular Use of Church Buildings. J. G. Davies. New York: Seabury Press, 1968. 305 pp. \$5.95.

Traditional use of church buildings embraces many functions other than worship, Davies outlines in this book. He shows that churches from the pre-Constantine era on down to post-reformation structures have been used for living and sleeping, eating and drinking, dancing and theatricals, storing and stabling, game playing and merry-making, legal proceedings, sanctuary, commerce, teaching, etc.

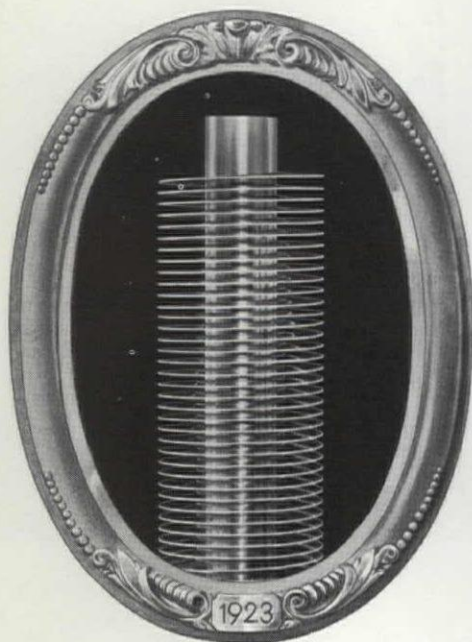
To ignore the secular use of

church buildings is to miss an important element in understanding their function, he believes. There is no dichotomy between the sacred and the secular, as Davies' fascinating study proves. Davies, professor of theology at the University of Birmingham, England, has written several books on the subject.

The drawings were selected and the exhibition prepared by Jean-Claude Lemagny of the Bibliothèque Nationale in Paris, where the exhibition originally opened in 1964. He is responsible as well for the informative and sensitive comments about the architects and their work.

It's a Small World—Till You Try Walking 'Round It: Our Hitchhiking Adventure. David L. Phillips. Boston: Branden Press, 1968. 149 pp. \$6.95.

A young Boston architect who went with a friend to many parts of the globe gives details about his impressions of people and places in this travelog. If you are under 25, the book will make you yearn to be in a sleeping bag under the stars in Finland. If you're older, the exuberance may be slightly exhausting. □



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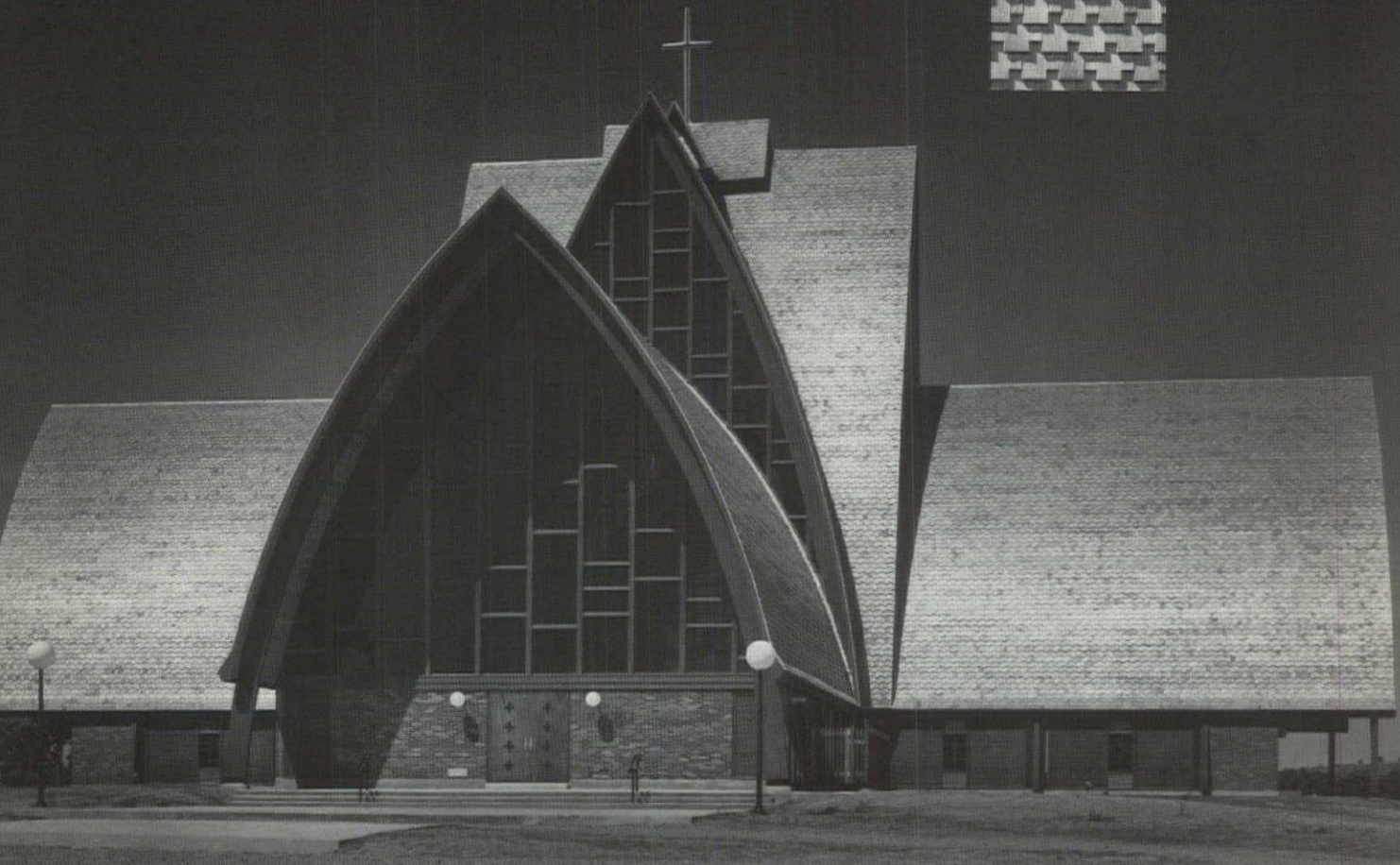
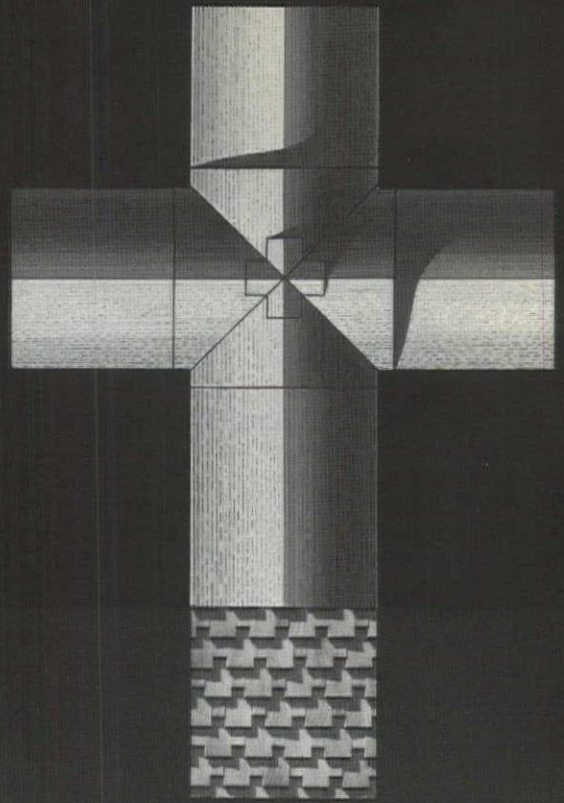
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Books

Costs of Health Care Facilities: Report of a Conference Convened by the National Academy of Engineering. Washington: National Academy of Sciences, 1968. 248 pp. \$6.50.

Like everything else, costs are spiraling for health care. As a matter of fact, medical care has risen at an even faster rate than general consumer prices. In 1966 the index of medical care prices rose 6.6 percent; the Consumer Price Index saw a 3.3 percent rise. In 1966 expenditure for health exceeded \$40 billion.

Among the reasons for the high cost of health care cited in this book are the following: Hospital construction is unduly expensive; coordinated planning is lacking; design is often faulty; economy through innovations is prevented by restrictive building codes; manpower is insufficiently used. The cost of service is affected significantly by the physical facilities.

With this fact in mind, the De-

partment of Health, Education and Welfare asked the National Academy of Engineering to convene a conference that would review design and construction practices and develop recommendations for at least the curtailment of rising costs through "better planning, more efficient design, and improved construction of health care facilities." Consequently, in December 1967, various persons from engineering, architecture, contracting, management, construction trades and unions came together with a common concern.

This significant book reports the conference. Problems were examined from many sides: 1) programming of services vis-à-vis facilities; 2) planning and design of facilities; 3) regulations and requirements related to building, plumbing and electrical codes, construction practices and site selection; 4) construction scheduling, materials and practices; and 5) operation and maintenance of the facility.

Both general and panel sessions were held over the two-day period. Formal presentation of papers, discussion sessions and formulation of conclusions and recommendations

were included in the panel sessions. A presentation on the relationship of information to technological alternatives and summaries of the panel sessions as well as of the entire conference were given in the final general session.

The book contains the conclusions and recommendations. "These deserve careful study, and no summary can do justice to their full scope and significance," states Chester P. Siess in his concise summary of the conference. The entire book should be read and pondered by planners of health facilities.

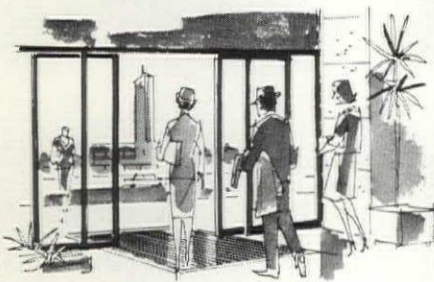
New Theatre Forms. Stephen Joseph. New York: Theatre Arts Books, 1968. 144 pp. \$6.25.

Before his death in 1967 at the age of 46, Joseph was one of the leading exponents of the theater in the round. He was a pioneer who put his theories into practice at great personal sacrifice. In this book he has stated his case both reasonably and provocatively.

The book had its origin in a study tour Joseph made of the United States, where he made a visual record with a camera of the new the-

Continued on page 92

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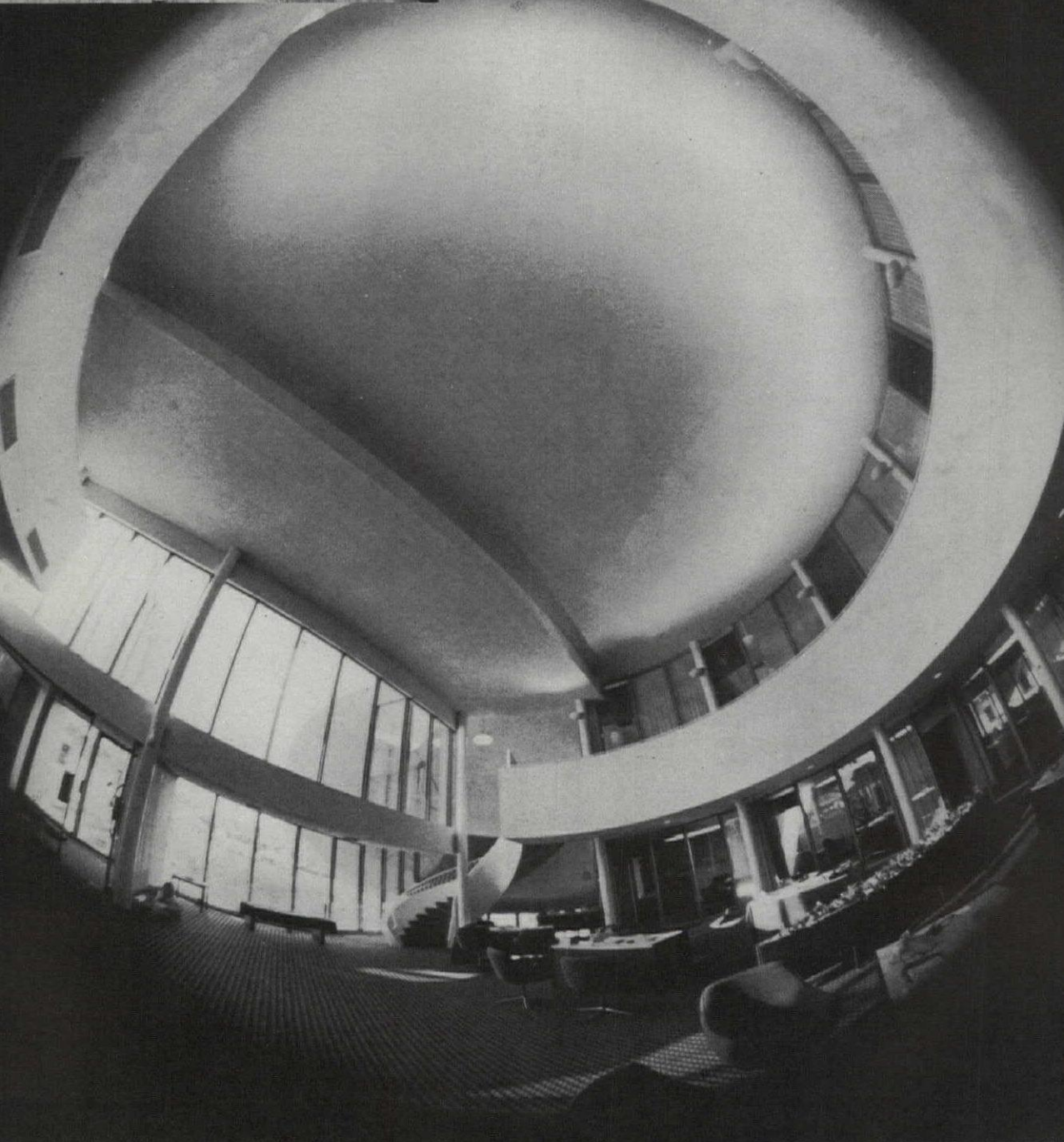
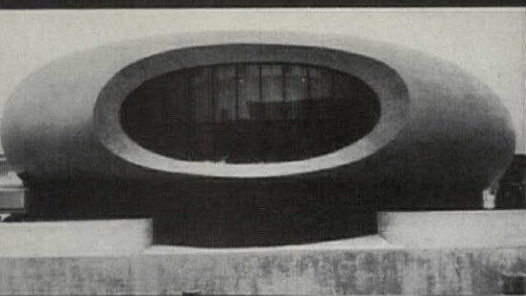
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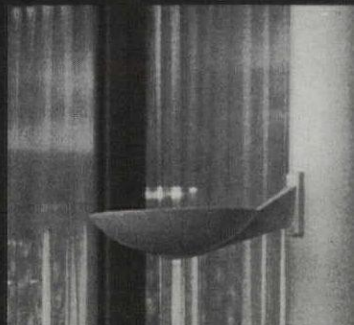


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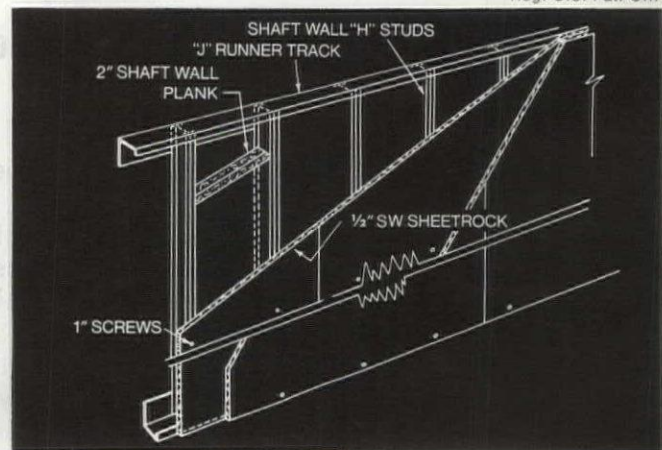
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Theater Facilities Survey

Arthur C. Risser, AIA, reports on results of the work in this field.

Architects who replied to the Theater Architecture Survey Questionnaire published recently in the *Newsletter* supplied information about 92 theaters. In addition to this material, the AIA Committee on Auditorium and Theater Architecture (CATA) has collected considerable data about other theaters as a result of the Institute's joint venture with the American Educational Theatre Association in the two Theater Architecture Exhibits.

The information from the *Newsletter* questionnaire has been assembled and is now ready to be punched into IBM cards for storage and retrieval. There are several categories in which desirable data

is incomplete or lacking. An attempt will be made to fill this in.

In preparation for storing the information, several decisions were more or less arbitrarily made. The United States was divided into seven geographic regions (North Atlantic Coast; South Atlantic Coast, Ohio and Pennsylvania; Gulf States; Central US north of Kansas; Central US south of Nebraska; Southwest; Far West and Pacific Coast including Alaska and Hawaii, plus separate regions for Puerto Rico and Canada). Each theater will be listed both by state and by region.

An outline was made of the kind of information believed to be of interest and help to architects who are planning and studying theater facilities. A program for preparing

the storage cards was then made. The Theater Survey Material Computer Storage Information stores information in the categories contained in the theater questionnaire. A copy of this appears here.

Experience with the storage system and the nature of the requests for information which are received may necessitate revisions in the proposed system.

A brief summary of some of the data submitted is given in the Summary of Returns table. This also illustrates the kind of information available.

As the committee continues work on this project, it may find it necessary to contact architects who have furnished material in order to clarify information or request additional data. □

SUMMARY OF RETURNS

Location — Geographic Area

1. North Atlantic Coast	14
2. South Atlantic Coast, Ohio and Pennsylvania	24
3. Gulf States	11
4. Southwest	3
5. Far West and Pacific Coast	17
6. Central US north of Kansas	18
7. Central US south of Nebraska	3
8. Canada	1

Theater Form

1. Proscenium	35
2. Proscenium thrust	4
3. Platform	24
4. Thrust open	8
5. Arena	10
6. Combination of forms and theaters where information is not complete enough for classification	11

Principle Form in 34 College and University Theaters

1. Proscenium	21
2. Platform	13

Fourteen of these 34 theaters have been constructed since 1964; five are proscenium and nine are platform theaters. The other 20 theaters were built before 1964.

Principle Use of Theater

1. Secondary School	13
2. College/University	46
3. Community	5
4. Civic	11
5. Professional/Commercial	8
6. Other	9

Included in this category are those theaters where information was not complete enough to place it specifically in one of the other groups.

THEATER FACILITIES SURVEY

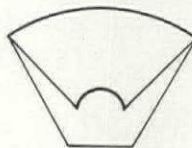
Theater Name _____
 Location _____ Year Built _____
 Architect _____
 Use: Secondary School _____ College/University _____ Community _____ Civic _____ Professional / Commercial _____ Other _____
 Theater Form (actor-audience relationship)



PROSCENIUM _____



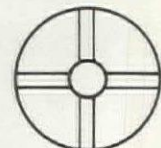
PROSCENIUM THRUST _____



PLATFORM _____

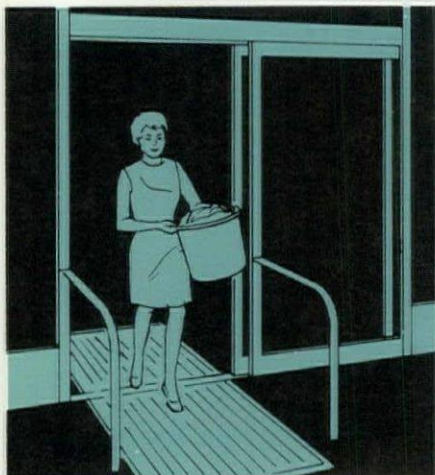
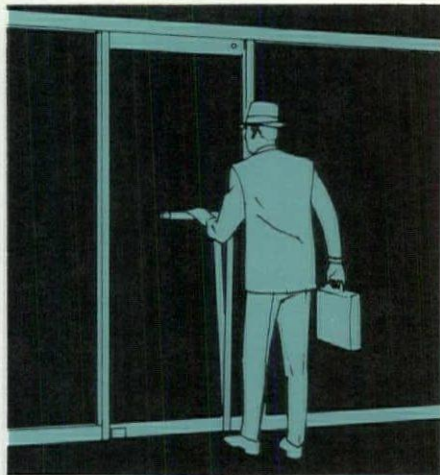


THRUST (OPEN) _____

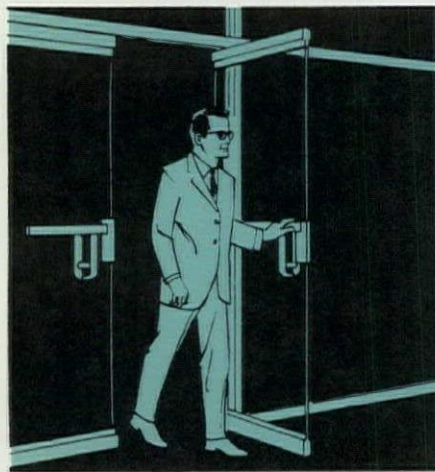
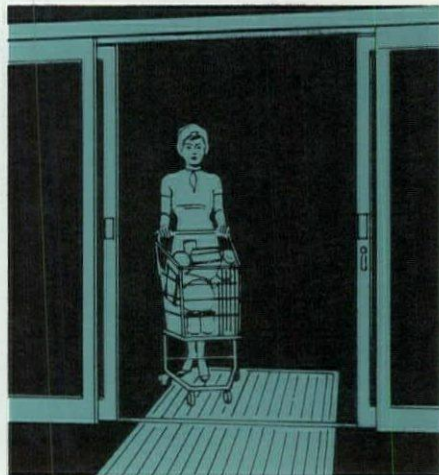


ARENA _____

Seating Capacity _____ Orchestra Pit _____ Size _____ Orchestra Lift _____ Size _____ Stage Size: Proscenium opening _____ Width between stage side walls _____ Depth front edge stage to rear wall _____ Platform stage size _____ Arena acting area size _____ Wing Space: Left _____ Right _____ Fly loft _____ Height floor to grid _____ Kind of rigging system _____ Number scenery lines _____ Number circuits in stage electrical distribution system _____ Number circuits in lighting control system _____ Kind of lighting control system _____ Scene Shop Size: L.D.H. _____ Costume Shop Size: L.D.H. _____ Number dressing rooms _____ Average Size _____ Storage: Floor area _____ Volume _____ Airconditioning: Auditorium _____ Stage _____ Workshops _____ Dressing Rooms _____ Lobby (foyer) _____ Lounge _____ Public Areas: Lobby Size _____ Lounge Size _____ Coat Check _____ Box Office _____



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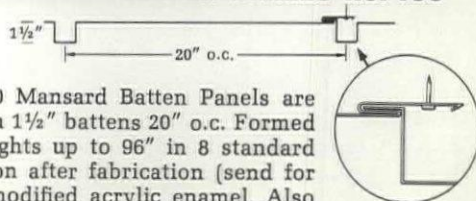
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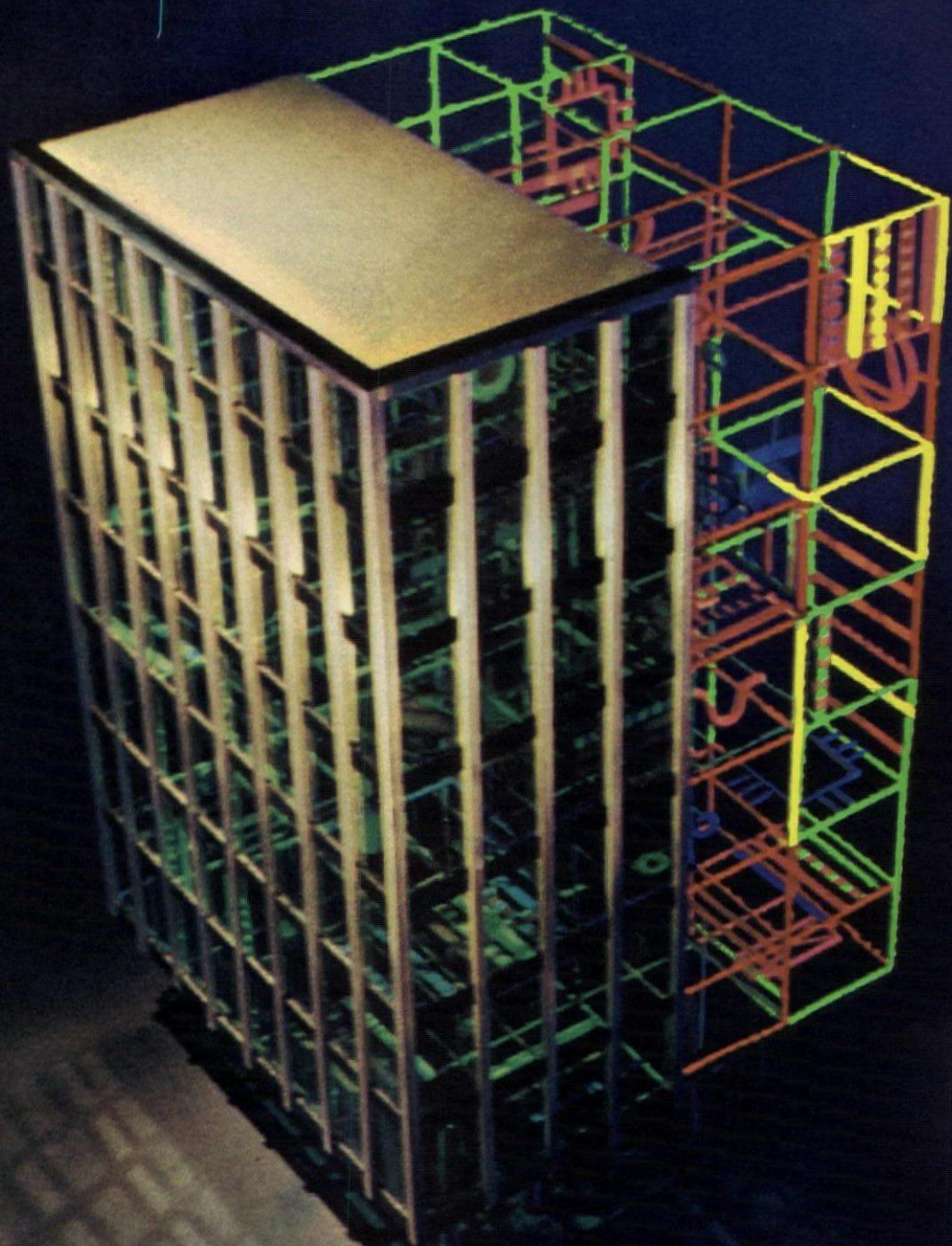
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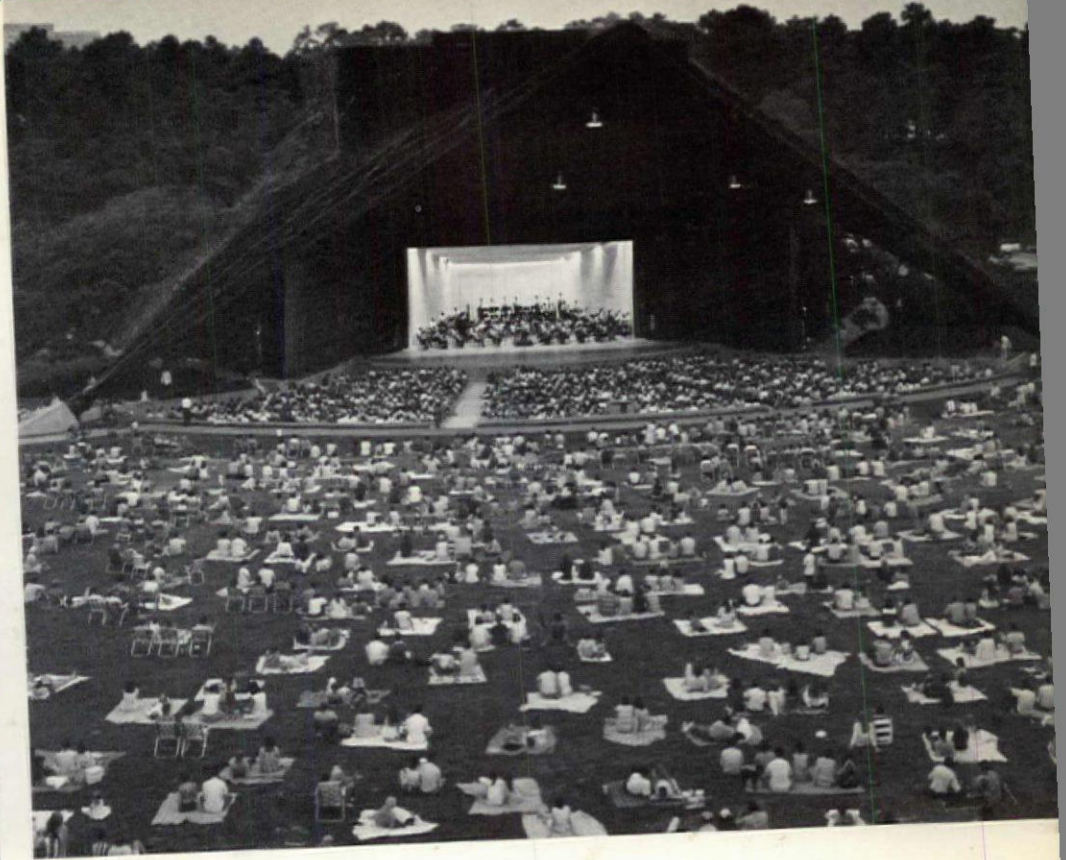
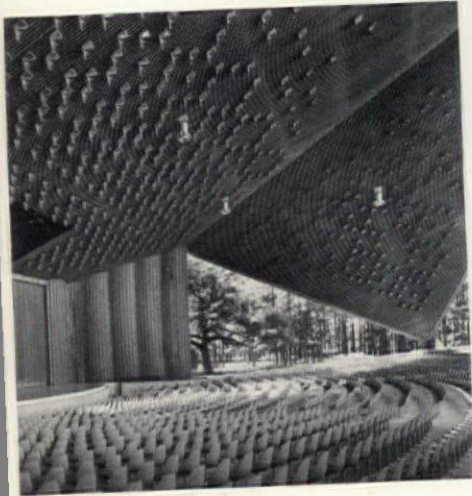
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Climatic conditions have a decided effect on the outdoor theater and most are found where summer evenings are generally pleasant. But now, architects and engineers have had some degree of success in providing comfortable conditions for the performers and for the audience seated under cover. The new Miller Outdoor Theater in Houston, Texas, is an example: Both its stage and auditorium are airconditioned.

In 1926, a prominent citizen by the name of Miller willed the city \$40,000 for a band shell, which was demolished to permit construction of the new facility. The name of the theater was passed on to the new structure, which is owned by

the City of Houston. Money for the \$1-million theater was provided through bond funds voted for the use of the Park Department.

The design criteria required a facility suitable for the annual series of summer concerts by the Houston Symphony Orchestra and for all other performing arts as well. A special requirement was that the two magnificent 30-foot diameter oak trees on the site be saved. The design scheme, by Eugene Werlin & Associates, was shaped by these two oak trees.

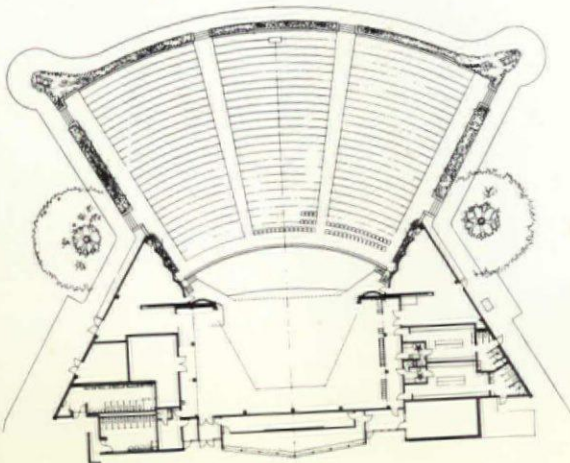
Weathering steel made possible a roof with a clear span of 195 feet; the height of the apex is approximately 76 feet above the finished stage floor. Both the 1,800

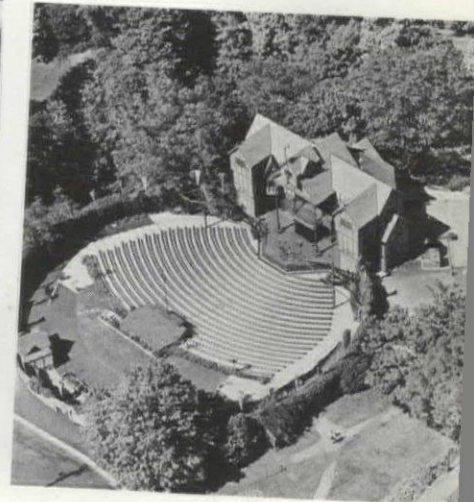
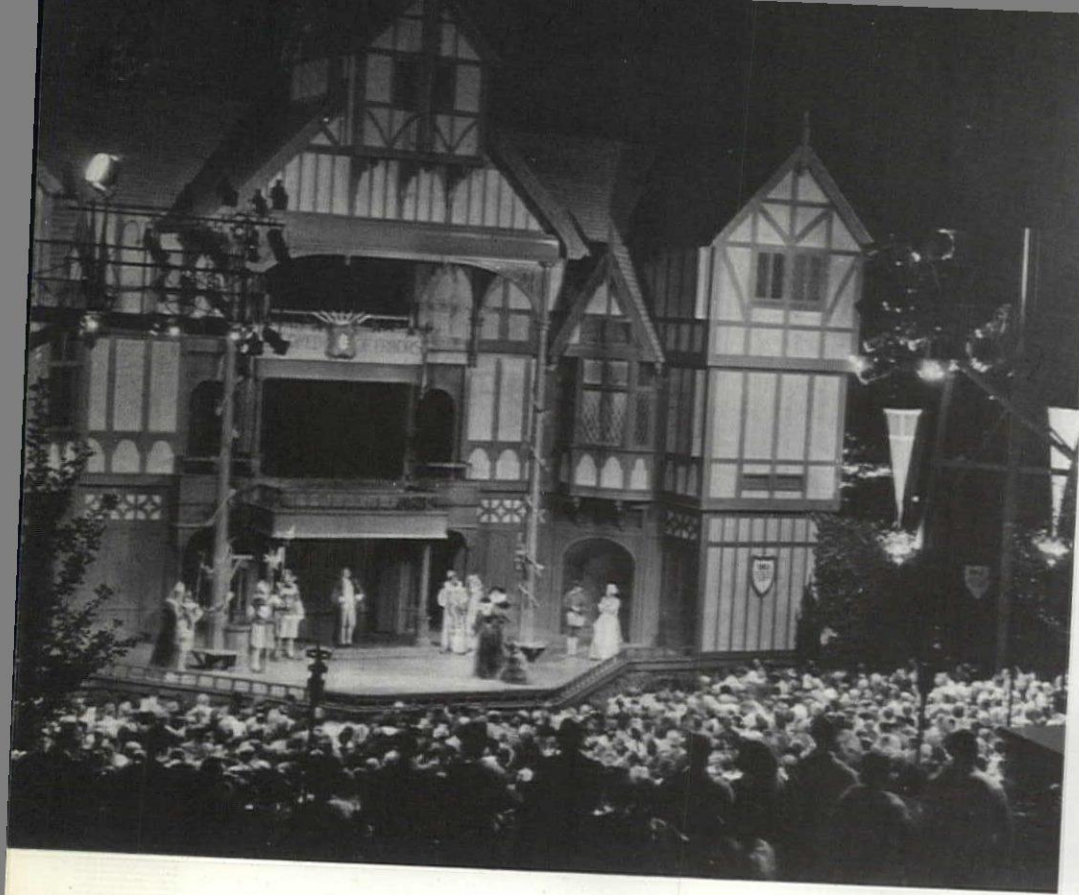
inside and the 8,000 outside viewers thus have clear views.

Attached upside down in a planned pattern under the ceiling is an acoustic dampener consisting of 750 fiber glass seats, miniatures of those in the audience.

The roof actually consists of three sloping planes with the roof decking fastened beneath the structural framing members. It rests on two main supports on the universal joint concept. The universal joints are 30-inch diameter hollow spheres to which the main framing members are attached by six claws at each support. These rotate on the sphere to resist the tremendous uplift created by several of the loading conditions. □

Miller Outdoor Theater has basic steelwork and paneling that oxidize to a brown, rust-protective film.





positioned to meet the back edge of the stage or the back edge of a large lift, which, besides being used for transportation, sometimes forms part of the stage. These stairs connect the stage level with the next lower level and are used for important upstage entrances through the back of the stage.

The \$3-million Santa Fe Opera was built with private donations, except for a contribution of \$80,000 from the National Endowment of the Arts.

Several universities in the US operate outdoor summer theaters. There are also summer Shakespearean festival theaters both in the US and Canada. The Oregon Shakespearean Festival Associa-

tion theater at Ashland, Oregon, is an entirely open-air facility.

Starting as a small civic event in 1935, this theater has grown into an organization which is renowned artistically, technically and educationally. Part of its success is probably due to community spirit as well as to the impetus given it by its originator, Angus L. Bowmer. It is one of the few theaters in the country operating "in the black" without subsidies.

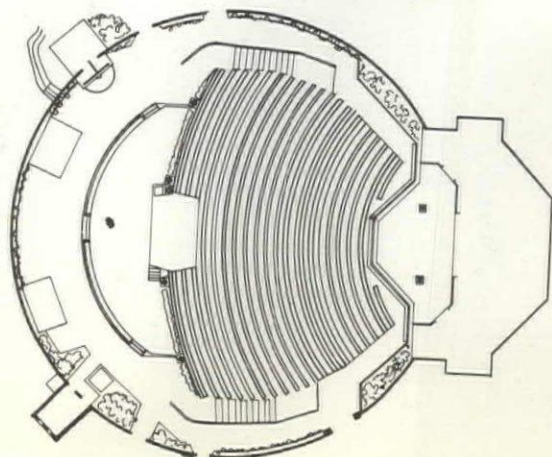
Through the years, the stage house structure and facade were altered and around 1959 a new theater, by Jack E. Edson, AIA, was completed. The design of its stage is based on the contract which Henslow executed for the

construction of the Fortune theater in England about 1599.

The stage facade is three stories high as specified in the Fortune contract. The three floors contain an inner stage and a penthouse with light-bridge and stage machinery. Costume and property storage and dance rehearsal rooms are in the rear portion of the building, costume and scene shop, actors' dressing rooms and a large rehearsal room are in a wing attached to the stage building. On a raised terrace behind the 1,140-person seating area, performers entertain before curtain time.

The Oregon Shakespearean theater has an approximate value of \$560,000, privately financed.

Oregon Shakespearean Festival Theater, with landscaped foyers, is reminiscent of the Elizabethan era.





The stage, which can accommodate various types of performing groups, has a 100-man orchestra pit across the front. The pavilion is of the "open end" design concept and until additional facilities such as rehearsal rooms etc. have been added, a truck entrance and parking area adjacent to the stage wing hold airconditioned trailers for ballet and opera companies.

One million dollars has been allocated to the project, of which about \$449,000 for the pavilion. The theater, which was financed by the Rouse Company (the site was a donation from James W. Rouse) is leased to the Washington National Symphony, which makes it its summer home. It is named

for music lover and philanthropist Mrs. Marjorie Merriweather Post, who has made large contributions to the National Symphony.

Blossom Center is designed for symphonic concerts; Saratoga, Garden State and the Merriweather Post pavilions have provisions for a variety of entertainment events. The new Santa Fe Opera, on a piñon-covered hill a few miles north of Santa Fe, New Mexico, is specifically designed for opera.

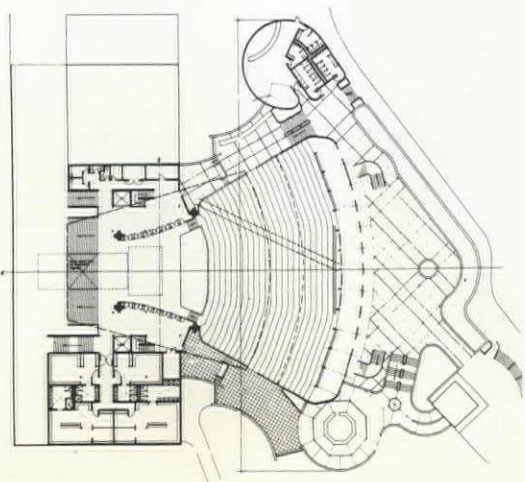
Owned by the Opera Association of New Mexico, the new facility, by McHugh & Kidder, replaces the original structure which was destroyed by fire during the 1967 season. The loggia and stage roofs of the new opera leave only

seven rows of seats under the stars, but the height and sweep of these roofs, the view over the wing and garden walls and directly through the open-back stage give a feeling of openness and empathy with the velvety New Mexico nights, even to the audience under the protecting roof.

Sight and acoustics determined the size and shape of the auditorium, which seats 1,500. The angles and curves of wing walls, the stage canopy, the garden walls and the loggia roof were selected to provide for well balanced sound. Amplification is used only for special sound effects.

An especially interesting feature is a movable stair which can be

Santa Fe Opera, with massive concrete walls and redwood accents, suggests the old Pueblo architecture.





used for symphonic concerts, may be removed for other forms of entertainment. To reduce traffic noise from the road, the bowl of the theater was dug deep into the hillside, the removed earth banked up behind the indoor seating area as a noise protector (and as a lawn for the outdoor audience).

One of the most recent additions to our outdoor theaters is the Merriweather Post Pavilion in Columbia, Maryland, by Gehry, Walsh & O'Malley. Located in a 40-acre park within the town among birch, beech and oak trees, the structure is pivoted on a north-east axis to protect the audience from prevailing winds and the setting sun.

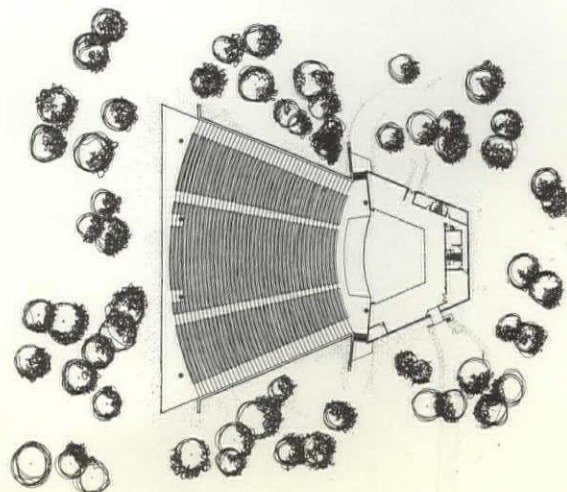
Suspended over the orchestra and extending 30 feet out over the audience is an adjustable fiberglass reinforced polyester canopy with humped, reflective surfaces. This makes possible the "tuning" of the house to accommodate various types of performances.

No amplification is used within the 3,000-seat pavilion. For the audience of 5,000 seated on the grounds surrounding, amplified sound is provided by five speakers mounted in the rear fascia. The distance between the stage and the grounds is 150 feet. Therefore, unimpeded amplified sound would arrive immediately. In order to make the amplified sound coincide with the natural sound, stage

sound is recorded on tape, delayed as required and then played over the speaker system. Actually, the speakers are used to reinforce, not override, the sound from the stage.

The fan-shaped seating area has two longitudinal aisles and is sheltered by a trapezoidal wood decking covered with gravel. This 35,000 square-foot roof is supported by six steel columns, four at the rear of the structure and two in front of the stage house. The 150-foot long span steel joists supporting the roof are exposed from below. An 11-foot fascia of unfinished Douglas fir extends down from the roof. Below it, the audience area is open on all three sides.

Merriweather Post Pavilion is of rough-finished Douglas fir, exposed steel I-beams and concrete.





forms a function similar to the Blossom Center. Although the structure concept of the pavilions differs, the general scheme of the two sites has a resemblance.

A wider variety of performances are produced at Saratoga, hence the stage is equipped to handle the conventional scenery used with musical comedies, dance performances and operas. The pavilion, which includes a balcony, seats 5,100. An additional 7,100 can be accommodated on the lawn.

Electronic amplification is provided for the outdoors, while no sound reinforcement is used within. An acoustical cement stucco canopy on steel framing extends 50 feet over the auditorium from

the proscenium arch, joining with the orchestra enclosure to form a sound projection chamber.

At present, the center is owned by the quasi-public Saratoga Performing Arts Center which is negotiating with the State of New York to be fully under state authority. The theater itself was privately financed at a cost of \$2.3 million. The \$1.5-million cost of associated site work was assumed by New York State.

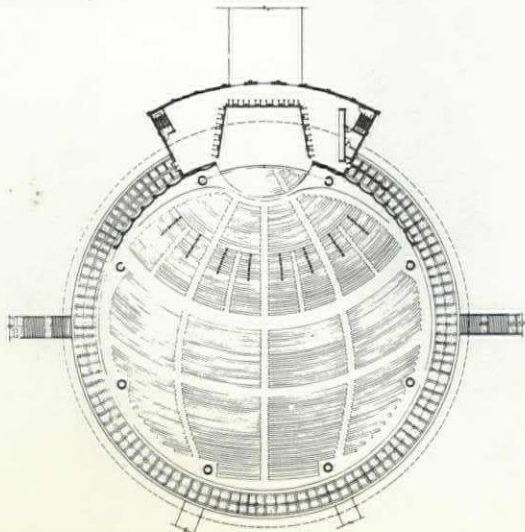
Using income from its turnpikes, the New Jersey Highway Authority built the \$6.75-million Garden State Arts Center at Telegraph Hill Park by the Garden State Parkway to give the public a home for all the arts. Edward Durell Stone & As-

sociates designed the opensided amphitheater with covered seating for 5,084. There is room for an additional 4,000 on the surrounding slopes.

The roof over the circular seating area is supported by fluted, white hollow concrete columns, cantilevering 30 feet out, 17 feet in, from these. The columns support a 9-foot-high box girder ring which in turn supports a 200-foot diameter compression ring. From this, 784 high-strength steel cables from 56 stressing stations extend into a small 25-foot diameter tension ring. The central concrete roof section is made of 224 pre-fabricated wedge-shaped panels.

The acoustical shell, which is

Garden State Arts Center, of cast-in-place white concrete, is in vast public picnic and recreational area.





behind the covered seating space. The trusses rest on a huge, inclined steel arch which bears on two massive underground footings. The arch is supported by 10 sloping tapered steel columns, held free of the pavilion walls. Arch and columns are of welded weathering

The author: Mr. Risser is chairman of the Institute's Committee on Auditorium and Theater Architecture.

steel. Border lights and spotlights are positioned integrally with the shell ceiling.

Although designed primarily for orchestra and choral use, the pavilion's rear and side walls are

movable to make room for other performing groups such as ballet and opera. The stage will hold about 200 performers; the orchestra pit has room for 110 musicians.

A large orchestra shell on the stage helps diffuse, blend and project sound to the audience. The enclosed volume of the pavilion and the roof members act as "micro diffusers" of sound waves; clusters of speakers concealed in the fascia of the roof may be used to reinforce sound to the lawn, which has capacity for about 12,000 persons.

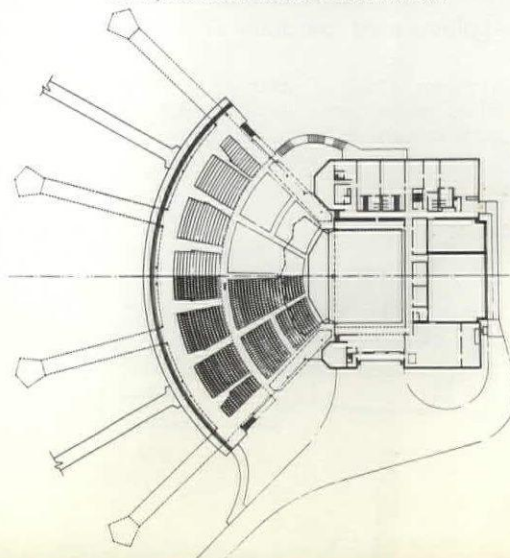
Service buildings are adequately screened and removed enough so that they will not create a noise problem. Ancillary facilities are

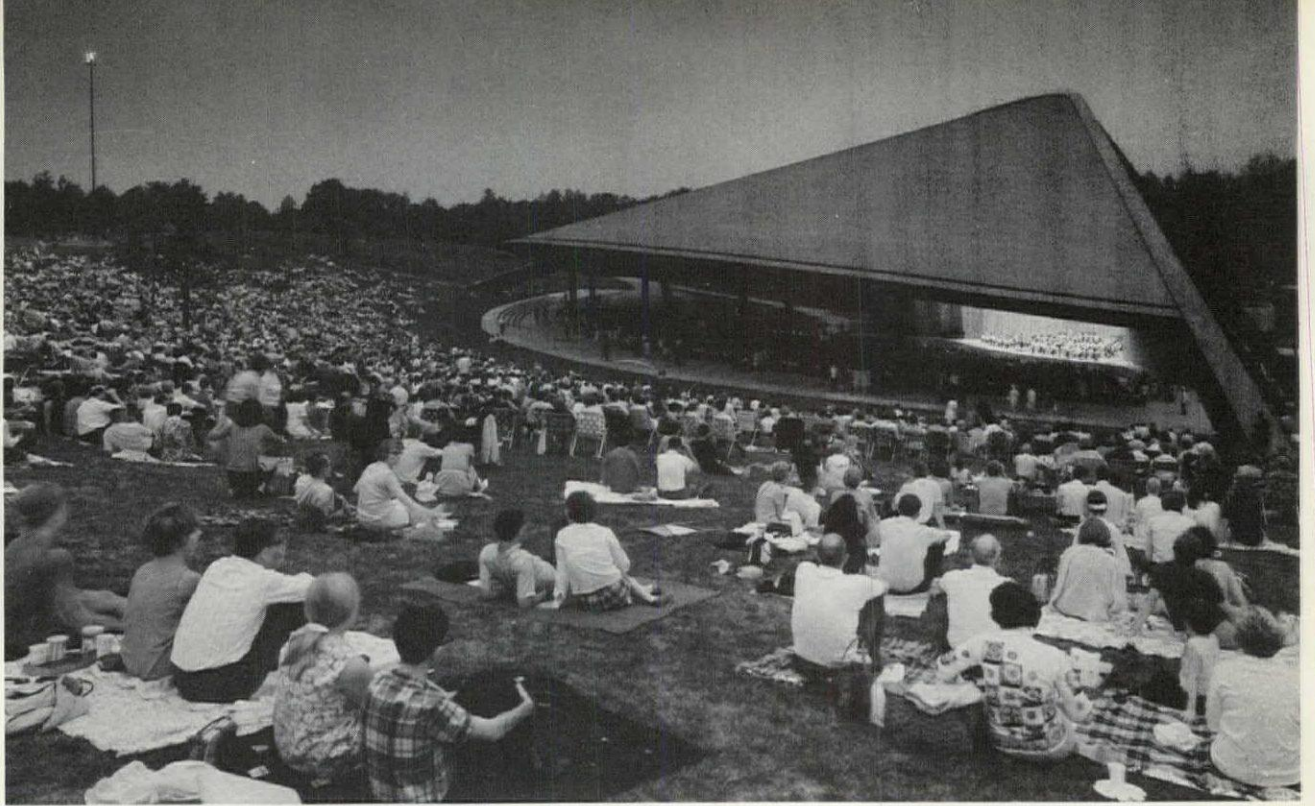
under and behind the pavilion, housed in a partly underground concrete structure, thereby sound-isolated from the pavilion.

The center, on a wooded bluff between Akron and Cleveland, was built to bring summer concerts by the Cleveland Symphony Orchestra to the people of this potential megalopolis. Owned by the Musical Arts Association, parent organization of the Cleveland Symphony, the \$6.5-million center was financed by private contributions and by the Ford Foundation. It is named in honor of a well-known Cleveland family.

The Saratoga Performing Arts Center in Saratoga Springs, New York, by Vollmer Associates, per-

Saratoga Performing Arts Center has prestressed plywood walls. Site is on 2,000-acre state reservation.





Al fresco Spectaculars

Outdoor theaters in the United States have increased in recent years for several reasons: There's the desire to escape from the city to a cool summer evening under the stars; there's the highway to ease that escape; and there's the growing interest in the performing arts — in some cases no doubt enhanced by the thought of a snack or a picnic on a dewy lawn. The random selection of outdoor theaters shown here — some of them formal, some not so formal — have highly varying pricetags but all have one thing in common: a very sophisticated mechanical system.

BY ARTHUR C. RISSER, AIA

The first US outdoor theaters were used primarily for musical events and were usually just a shell and a platform in front of which the audience sat. Names such as Interlochen and Tanglewood, the St. Louis Outdoor Opera and Ravenia come to mind.

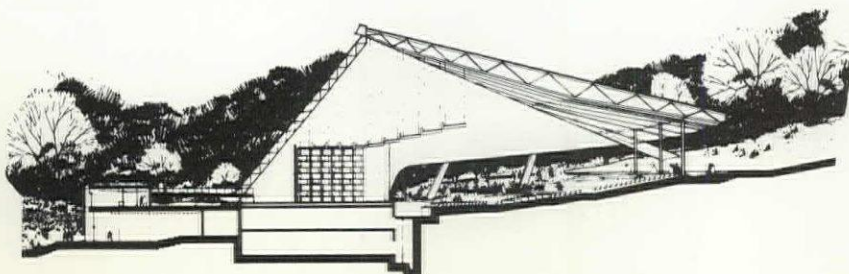
Summer theaters used by groups most often were renovated barns or old and seldom-used structures which accommodated both audience and performers. Some universities, however, produced plays in the open. Some were given in exceedingly simple environments, others made modest attempts to copy the Greek theater form with

the audience around a circular or semi-circular stage — a form which still serves as the basis for all contemporary theaters, indoor or outdoor.

Suggestive of the Greek plan is the Blossom Music Center north of Akron, Ohio, designed by Schafer, Flynn & van Dijk with Pietro Bel-luschi, FAIA, as adviser on sight lines and acoustics. But here, both performers and audience — there are 4,642 seats — are protected from the elements by a shell which could only have happened in the 20th century.

Twenty-one foot-long-span welded steel pipe trusses support the roof and cantilever out to provide a covered, curved promenade

Blossom Music Center is of unfinished cedar paneling; the roof has gray cement asbestos shingles.



nents of the total environment which are capable of allowing choice must be fully exploited. Before elaborating possible means, it may be interesting to investigate this function of choice.

Philosophically, it may reasonably be argued that the exhibition of choice reaffirms the self (*cogito, ergo sum* being the archetypal model). In an "other-ordered" total environment, an individual choice and the consequent action assume new significance. "People-centered planning recognizes the inescapable fact that every action shapes its own consequences and that deliberate choice, however tenuous its basis, is preferable to no choice at all," to quote Dr. William H. Ittelson. The ability to relate an action to a reaction through the first person is perhaps a small measure of freedom, but there is another aspect of choice which has relevance to creativity — both to the architect and to the patient.

Elements of Change

Individual man is potentially a creative person, although societal pressures rapidly decrease the exercise of such creativity with age. The architect, too, would not defer, in such an important decision-making process involving esthetics, to a nonprofessional and would prefer to impose his own standards of appropriate materials, proportion, scale, etc., on all of mankind. We encourage — with our progressive eye toward human development — creativity in the very young. In succeeding stages of life, we slowly deny the capacity and relevance of creativity and in its extreme stages attempt to apply it to meaningless tasks.

Another aspect of choice and the ability to change the personal environment is the fact that the individual, no matter what age, is a constantly changing organism. Everyone recognizes that the young gravitate toward a constantly changing cultural milieu. Although the rate and scale of the change may be different in the elderly, the desire to express a changing condition and disposition may not be.

The practical aspects of a patient's choice over his personal environment may seem at first an unrealistic ideal in the traditional context of the nursing home facility. It is impractical to allow completely individual interior decoration for each patient in terms of furniture and memorabilia. But it is possible to allow for a medium situation. Because physical limitations seriously limit the scale of personal possessions, other elements must be provided which function better in the institutional setting. The designer's decisions concerning style, form, etc. will limit such possibilities. It is not the physical reality but the meaning of an object to which one relates. That meaning derives importance from personal com-

munication between object and person. Choice may be the all-important key to communication.

Inevitably related to choice is the already mentioned function of change. Although change in its simplest application may merely consist of a relocation, it has more subtle implications in terms of environmental stimulation. If choice gives an almost intellectual gratification, then change of the environment may satisfy the psyche. Although a too frequent rate or scale of change may deny consistency or the sense of control realized through stability (relatedness), minor and comprehensible changes can do much to enliven an existence too full of routine. If the individual patient needs familiar surroundings in order to relate, he also needs a variety of environmental stimulations.

Sensory stimulation through change and control through the personal choice must be carefully studied in terms of the influence upon the personality. It is known from experiments with selected subjects that, in conditions of extreme sensory deprivations, hallucinations, perceptual distortions and mental impairment are evident. It is concluded by one experimenter that normal functioning of the brain depends upon a continuing arousal reaction produced in the reticular function, which in turn depends on constantly varying sensory stimulation. In further studies, this stimulation has been seen to be more important in terms of meaningful stimulation rather than changes in the perceptual field per se.

Avenues of Concern

Much work is necessary to translate in terms of applicability and feasibility the already existing body of information on visual perception, perceptual and social psychology in general into working elements of the architect's vernacular.

Some of the questions that need to be answered relate directly to the feasibility of the changes in the environment in terms of contemporary construction techniques. Some directions which may be taken indicate the ability of building technology to produce cheap and disposable units. This would allow a simple and fixed structural framework within which environmental modules could be placed. Visual illusions through the use of two-dimensional grids, patterns, etc., and the imaginative use of color can do much to alter environment further. At its highest potential, it is feasible that almost all of the senses be involved, at the patient's choice, to regulate the personal environment to his needs.

Today, the function of architecture is perhaps not to relate to a society which has become out of scale and beyond comprehension for many. In fact, its new importance may lie in providing psychological shelter from it. □

large our environmental studies for another five years. This permits us to increase the number of candidates for Master of Architecture and Master of Planning to bring additional visiting faculty to campus for several days at a time. This year we have invited four distinguished psychologists and architects for such visits.

In the summers of 1967 and 1968, special six-week institutes at the USC Gerontology Center attracted about 100 participants each from all over the country for nine intensive courses, one of which was an environmental design for the elderly, conducted by Noverre Musson, AIA, co-author of one of the few books in this field. Another institute course by this writer was on architectural implications of urban ecology. These summer institutes also operate under federal grants, aimed at increasing the number of trained personnel in the field.

One of our students and the author of the accompanying article, Hans Proppe (B. Arch. '67), now in his second year of graduate study, has had a paper published in the specialized journal *Gerontologist*—quite an accomplishment for an undergraduate. It demonstrates the particular combination of immersion in the literature and observation in the field which we try to promote. Underlying it as well are viewpoints discussed at length with mature faculty in the several disciplines readily available in the center headquarters, as well as with trainees struggling with similar problems in their own context, and with professional researchers with active projects under the center's aegis.

Our architectural trainees have attended national conventions in Florida and in Denver at center expense to report on their program and to participate in technical meetings. They are on their way toward becoming effective bridge builders between our profession and those who are faced with meeting the needs of this ever-increasing sector of our population.

PROFESSOR ERIC PAWLEY, AIA
*Preceptor for Architecture
USC Gerontology Center*

cently proposed (AIAJ, Jan. '67), the environmental unit must be flexible so that every need can find expression in some change.

The underlying principles of the current state of design, then, are based upon deeply entrenched design motives. The lack of concern for human needs is not so noticeable in the typical residential environment but the effect is more severe upon persons unable to personalize their space or ameliorate their sterile environment. The average individual homeowner is able to exercise choice over his immediate environment on many different levels and thereby express his need. If he is of a particular mood and chooses to leave that environment entirely, he may do so and derive the necessary stimulation. No matter how unconscious the choice, the individual is open to a range of involvements on all levels. For

the institutionalized elderly, that choice rarely presents itself.

If the major fallacy of modern design has philosophical roots in the technological approach to architecture, a new direction requires the architect's involvement with the social sciences. Although the architect may not be able to relate to each individual need, he can utilize data for an identifiable group for which he is designing. In planning nursing home facilities, he relies often upon the traditional and numerous "architectural checklists" which underline rather mundane and purely functional requirements for the facility. The checklist may sometimes be supplemented by the architect's intuitive sense of design and, of course, the administrative program.

Design Validity

One problem hindering a more comprehensive approach to design already alluded to is the owner/architect relationship which often echoes economic overtones. The problem of economics plays a most important role in the design of the proprietary home, and it is often argued, usually quite defensively, that "good design costs money." This may be a tenable position if there is no direct agreement between owner and architect on what constitutes good design. It is much more a question of the premise behind the design, what it is attempting to accomplish, than a question of the precise nature of implementation.

A more relevant aspect of the owner/architect association involves design validity. Depending on their competence and familiarity with the problems of nursing home design, the owner/architect team may produce a solution derived from any number of possible variables. A more comprehensive and logical design process would involve the participation of an interdisciplinary team, each member contributing the specialties of his discipline. A priority list needs to be evolved to determine the magnitude and relevance of each different requirement. By far, the single factor which can produce better design for nursing homes will be the education of the architect in the findings of the social sciences.

The preceding discussions on architecture have underlined some problems in current design practice. What are some alternative solutions?

In the institutionalized setting practicing group care, there are many elements relating to individual choice which are ruled out. Certainly, there can be only minor variations in the facility's total schedule of care since the primary orientation is toward efficiency. But if one determines that the freedom to make choices and express needs is an important aspect of psychological security, especially in a framework where it must constantly be denied, then those compo-

tutionalized elderly. The physiological disability of having grown older, although not necessarily debilitating in itself, produces a profound series of changes in the way of life for the individual. Milieu therapy may be achieved by recognizing the psychological status of the patient and then making the appropriate decisions in the design. There can be no doubt that the immediate environment has measurable effects upon its inhabitant, a point to which participants in the 1964 "Who Designs America?" conference at Princeton University* addressed themselves.

The Bauhaus Influence

Without sketching the entire history of the philosophy of modern architecture, it is of some relevance to investigate some underlying currents which determine many present architectural practices. The derivation of much of our modern architecture is still the result of the Bauhaus movements of the 1920s.

Although the influence of this movement is still very much in evidence today, it has increasingly come under attack from within and without the profession for its failure to relate to the needs of modern man. The functionalists' vernacular has developed into a "look at what it can do" attitude and consists of "assembling greater and greater groupings of brittle glass boxes where complete exposure and disclosure of the body and the intellect are thought to constitute a moral value," according to Charles Colbert, FAIA. Criticism was put into even stronger terms by a participating architect of the "Who Designs America?" conference, Laurence B. Holland, when he said that "the absolute negation of human value is being built into architecture."

The "anarchical reaction" to this sterility, as one architect termed it, has been the highly expressionistic and subjective work of the Brutalists or Neo-Sensualists. Although tremendously rich and powerful forms are evolved, they are equally idiosyncratic and based on the architect's sense of the revolutionary. In neither instance is there any proof that the architectural form evolved responds to the needs of society rather than to the personal whims of the architect.

Although the needs of society may not be readily objectified in purely empirical terms, the state and direction of man is verifiable if one but listens to the findings of the social scientists, as planners are learning to do. McLuhan's concept of the "tribal world" with a global involvement through electronic media follows an earlier existential appraisal of man in isolation. Whereas one concept implied the complexity of the world with

Architectural Implications of an Institute on Aging

A center which began in 1965 as an interesting exploration of a special field for environmental design — that of facilities for the elderly — has become at the University of Southern California an active program of advanced architectural study with a positive contribution to knowledge. It is by no means a narrow specialty, but the context gives an essential focus; and its scope results from the interdisciplinary nature as well as from the potentials for study tailored to the individual.

USC's Gerontology Center is under the direction of Dr. James E. Birren, formerly head of the gerontology program of the National Institute of Child Health and Human Development, a part of the National Institutes of Health in Bethesda, Maryland. In these few years it has become the largest such interdisciplinary center in the country, with preceptors and faculty in the fields of psychology, sociology, social work, biology, physical education/physiology, public administration and architecture. Presently, there are over 30 trainees under federal grants for work toward master's and doctoral degrees.

During 1968 the Gerontology Center was the recipient of a \$2-million grant from private sources, to be matched equally, for a new research and training building on the USC campus. Extensive programming studies are proceeding now under the direction of Louis E. Gelwicks, AIA, who has been at the center for two years as a visiting professor.

Three of our trainees are candidates for Master of Architecture, and we have some undergraduates heading toward that objective. The grant provides full tuition plus variable stipends of \$2,000-4,000. The environmental studies section of the original grant to the center is phasing out after four years, but the work has recently been encouraged by a new grant from a different government agency — the Administration on Aging — to extend and en-

which one is forced to deal, the other decries the absurdity of such an involvement. In both instances, however, it is the individual who is in danger of losing his identity.

The personal architecture of immediate environments must relate to the individual and be capable of expressing his existence and purpose. It becomes "the three-dimensional extension of our personalities," in the words of British architect Peter Cook. If the personal environment is to act as an extension of the self, it must necessarily acknowledge the changing condition of that personality. The environment must have provisions for whims, moods and aspirations as generated by other forces in the cultural setting. This implies a high degree of flexibility in the home, not in the traditional shopworn "functional" sense but rather, as Gideon Kramer re-

* Proceedings published in *Who Designs America?* Laurence B. Holland, editor, Princeton Studies in American Civilization, No. 6, Doubleday & Co., Inc., Garden City, New York, 1966.



Senior Citizen?

of nursing homes and other care institutions must, within reason, be laid out so that they are functionally and economically feasible. Traditionally, this has resulted in long corridors, uniform door locations, symmetrical spatial organizations, etc., all designed to fit only to the minimum requirements of the building codes. The physical facility has been streamlined to maximize efficiency of operation and maintenance, but the design has often neglected other equally important functions of the building.

The operation and primary responsibility of the facility, at least in nonproprietary homes, is directed toward the maintenance and, if possible, rehabilitation of the patient. His care and well-being should be not only a function of administrative operations and building budget but should also govern the design of the physical environment in which the patient must exist. This design conflict between staff, administration and patient, along with their concomitant functions, will be discussed more fully later. Even in extreme cases where efficiency of operation is essential (in large hospitals, for example), the designer often does not realize the doubly important therapeutic function of the patient room.

Immediate environmental aids such as color, lighting and texture should be consciously designed for the patient's benefit. Often, they are realized only in terms of utilitarian functions, and by habit the architect relies upon traditional and often irrelevant criteria to "decorate" the institution.

Spatial organizations are often totally unrelated to the function they are to serve. The entire transition from the public or large group space through an intermediate small group space to the private room should be a carefully designed sequence. Whereas a corridor system should be planned for what Dr. Humphrey Osmond calls "sociofugal" relationships (a space which encourages human movement but discourages formation of social groups), the smaller spaces, which should encourage interactions, should be "ana-social" (those which foster or build up social relationships). A traditional but needless conflict between efficiency and personalization of spaces occur at the point where the private room joins the public corridor. Usually there is a lack of smooth spatial transition between private and public space.

Frequently the idea of the institution as a homelike environment is mentioned as an ideal for the conscientious designer. The danger with a too literal interpretation is that the particular version of the home created may not relate to the residents' diversity of backgrounds. It is questionable whether any 80-year-old woman except Gertrude Stein would feel quite at ease sitting in her Barcelona chair staring at a Mondrian. A care facility consists of a range of interactions and functions. Some are extremely public and others completely private, each conducive to certain types of interactions and behavior. One might best approximate the home environment by allowing choice and providing a range of environmental possibilities.

Summing up these cause and effect relationships, one notices first the various changes which occur and the problems which arise for the insti-

What can be done to humanize the physical setting of the elderly subjected to involuntary environments, especially the private room itself — that last extension of an individual's identity?

BY HANS PROPPE

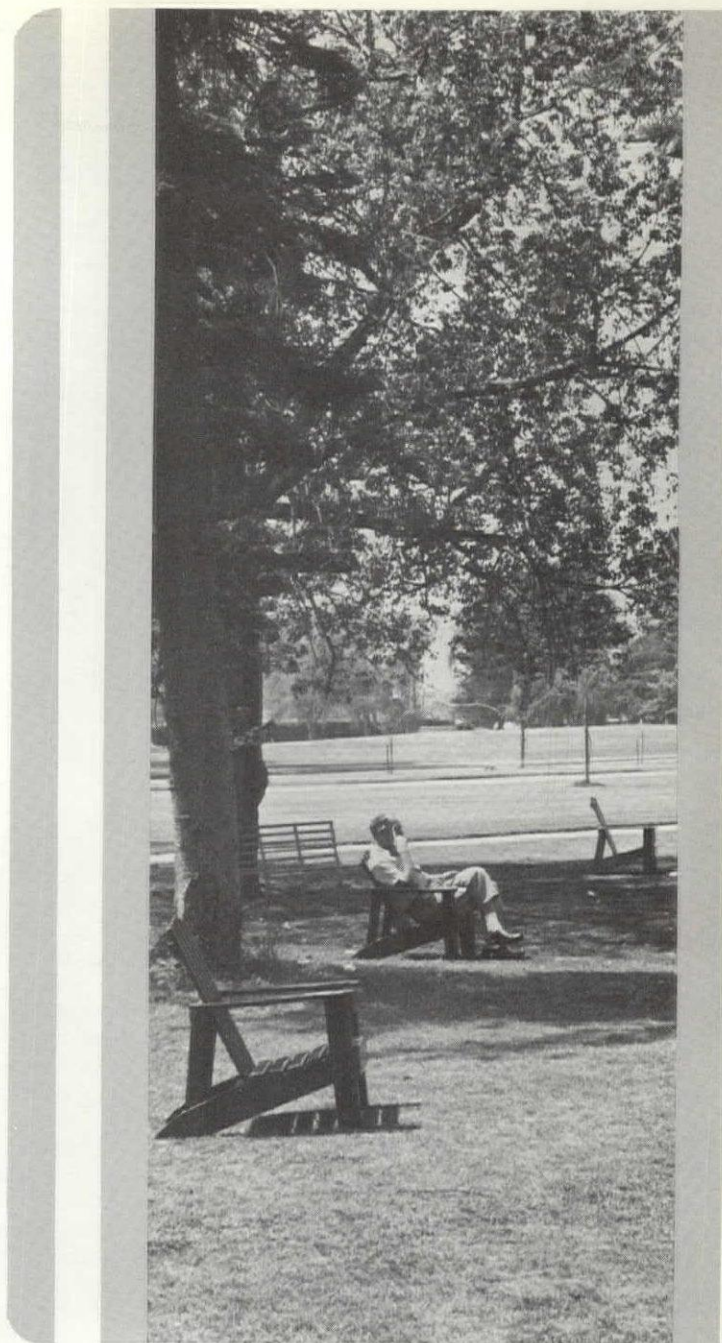
The primary components of the institutionalized setting are related to the psychological, physical and sociological conditions which contribute to the patient's alienation and withdrawal in the nursing home. The mere fact of institutionalization for care constitutes the basis for an inter-related series of potential problems.

Some of the contributing factors are an inevitable result of the total care concept. Although many consequences of institutionalization are unavoidable regardless of the effects upon the individual, there are others (the components of the physical environment, for example) which need not have such an effect and, when properly designed, may in fact be instrumental in relieving pressures and strains.

Many factors contribute to the deteriorating image of the self. The process of disengagement is a function of a number of forces acting on the individual and manifests itself at many scales. For instance, the intensity of the "personal space" or "life space" with which the patient surrounds himself is a function of the individual's psychological ability to extend himself into the particular social and physical environment. The loss of independence and the relegation of previously private functions to others results in a significant loss of privacy: It contracts and hardens the personal space boundary.

An equally significant change occurs in the effective life space, which is the extent of the world the person is willing to accept as relevant to his conduct. With age, life space constricts; with institutionalization of the elderly, not only does it decrease further but fewer types of interactions permit personal choice.

The often disputed disengagement theory of gerontologists Elaine Cumming, William Henry and others nevertheless illustrates the result of the components of care. Disengagement from the social fabric of society occurs when the older person can no longer relate socially or psychologically and gradually resigns himself to that condition. This disengagement of the institutionalized elderly reflects a loss of independence, loss of freedom of choice and privacy, in addition to the more general factors associated with the disengagement theory. The individual regresses and exists in a depersonalized and alienated world, which the young student of existentialism could not possibly romanticize.



Choice for the

This begins to indicate the importance of a careful understanding and consequent thoughtful articulation of the private room. The elderly person in a nursing home eventually spends more and more of his time in his own room, eating and sleeping, which is constantly invaded by "others" and is located within a highly organized, depersonalized system.

Another aspect of the care institution which contributes to the loss of identity has several extensively conflicting aspects. The physical plant

building program. The firm has no design responsibility.

In New York, the average age among staff members probably comes close to their fast-growing number, 28. Two of the firm's seven design groups are in this office which, Chuck Thomsen says, "offers a peek at what the world is like without the construction documentation albatross—and it's a better world." While New York has design, project management, planning and systems analysis capabilities, Houston produces its working drawings and specifications and provides the building type specialists who happen to travel widely and often.

Offices removed from Houston have, in CRS' experience, tended to "grow people." It is pointed out that anyone in a leadership position in the firm has served with two or more offices.

And there may be more offices to grow more people. To quote again from the goals statement: "Future design offices on the West Coast, Chicago, as well as a plan for worldwide affiliations could be programmed. Thinking might be along the lines of a CRS-Los Angeles, CRS-Chicago, CRS-New York, CRS-Houston or even a CRS-Beirut."

CRS is "conservatively" anticipating at least 500 employees by 1978 and a fee volume of \$16 million.

That's a long way from the ferry ride on which Caudill and Rowlett, both still in Navy uniform, conceived the idea for the firm. And it's a long way from the firm's first, part-time offices above an Austin grocery store.

The firm was later to move to the Texas communities of College Station and Bryan, respectively, before locating in Houston in 1959, arriving as the largest architectural office in town.

It is not with reference to Houston or any place else that CRS asserts it is "here to stay," however. It is an assertion made in terms of time and it is intended, along with a no-nepotism policy, to reassure staff members of continued opportunity, and to assure clients of delivery without discontinuity.

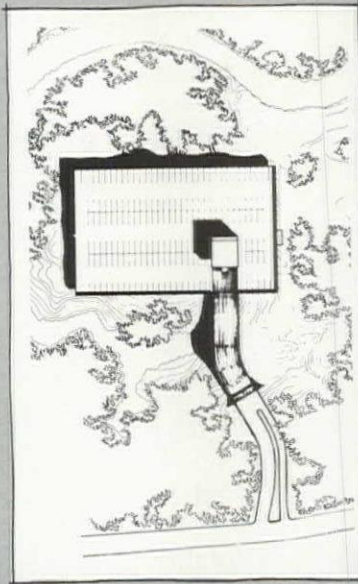
CRS' purpose, its partners say, is not to see how far it can get from that Austin grocery store. Its purpose, as they see it—and the purpose of all architecture—is people, people serving in architecture, as well as those who are served by architecture.

NEIL GALLAGHER

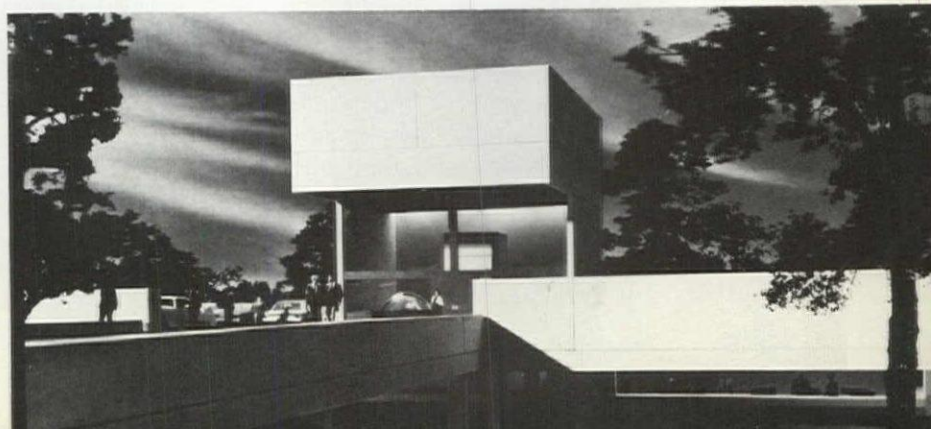
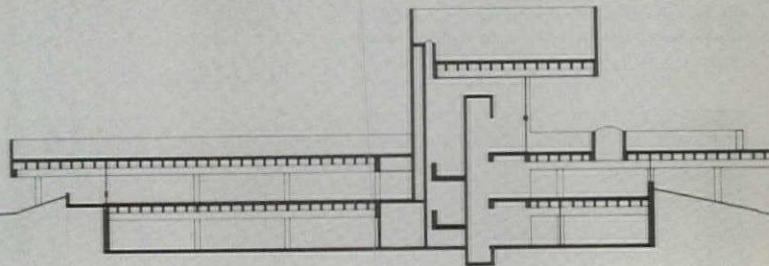
UNDER THE TRAY, 'MIX'

The office building CRS is scheduled to move into this fall is a great car tray resting over a glass box. The glass box is to permit staff a view of the dense rain forest that follows the Buffalo Bayou—"the last great natural building site in Houston"—and the car tray is to avoid the marring of that view. The latter is a roof parking deck which is connected with a service highway by a

level bridge, made possible by a 40-foot differential in topography. The partners will not reign in the concrete frame's prestigious corner and perimeter locations; these are "zoned" for the use of everyone. "We do these things because we believe in the team concept," says Caudill. "If we have chiefs, they are in the open." Interaction is another criterion of the new building's design. "We want the directors to have contact with the mail clerks. We want the interdisciplinary mix. We want the engineers to mix with the planners and the graphics people to mix with the estimators. We want to honor not so much what a man does but how well he does it," Caudill explains. Added to the emphasis on view, worth of task and interaction is one other consideration in



the interior design approach to the CRS Office Building—change. The basic furniture system is a series of movable panels which provide privacy and support working surfaces and storage components. The system, Herman Miller Action Office 2, is designed on the premise that changes in task, and thus in the space and facilities for that task, are certain to occur. Change, then, should be made gracefully. The system includes a drafting table designed for work in a sit-down position, which both brings the draftsman and designer off high stools and down to executive level and provides surface for desk and conference uses. While the plan is open, no bland loft spaces are intended. Strong contrasts are basic to the interior—rough concrete against polished glass, brick paver floors against soft carpet, etc. "Mix" is the key word, precisely as it is for easy personal relations and direct communication. The library and lobby are waterholes, the latter displaying CRS' latest work and its only bulletin board.

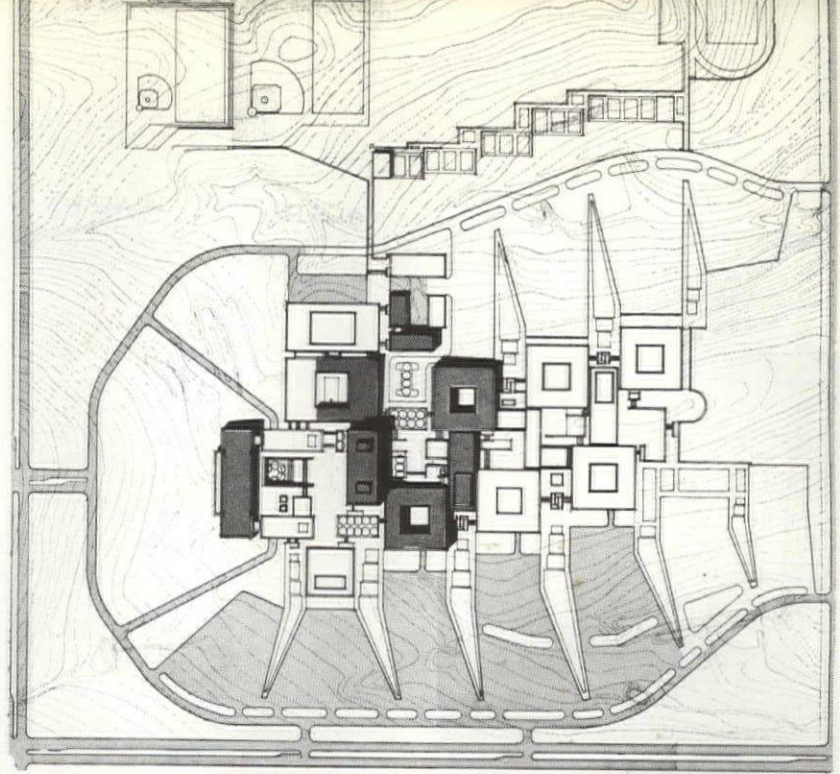


those closest to the technology readily allow that it may be the byproducts of the computer — not unlike the byproducts of research — that in the end weigh heavier. The mere use of the computer, they say, imposes a rigor and a discipline and stimulates a logic which has a profoundly beneficial impact on the practice of architecture.

Moreover, the use of a computer gives the firm a reputation for systematic problem solving — and this has been instrumental in obtaining new work.

The need for creative management and good personnel relations has mounted not only with the growth in work volume but with the dispersal of operations. In addition to the office in New York, the firm has offices in Hartford and Baltimore and an operation in Saudi Arabia. It will decentralize to whatever extent is necessary to meet project goals — “We’re project-oriented, not office-oriented,” is the gospel word in Houston.

“Being all in one location,” the firm has said in its goals statement, “is no assurance of unity.” Adds Bullock: “The firm would rather seek a unity of the whole in which anyone from anywhere in the organization can work with

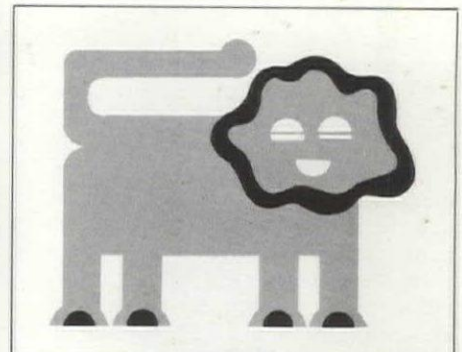
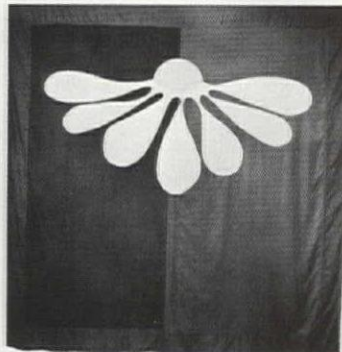
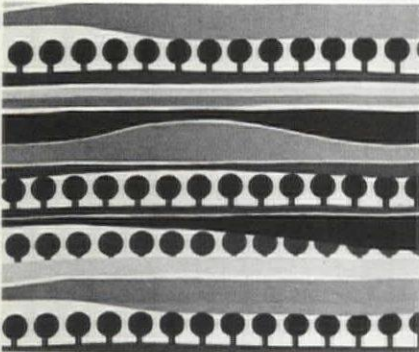


Linear-with-cluster development study for Pima County (Ariz.) Junior College.

other CRS personnel on a project team.”

In Hartford, CRS is sole architect for two of six schools in a \$45 million program and is in association with Hartford firms on the other four.

In Baltimore, the firm is serving as consultants to the city’s school board in an \$80 million crash build-in program. CRS competed against three other firms — management consultants, all — to win a 15-month contract to coordinate the



Happy graphics for Texas Children’s Hospital by CRS interior design; from left, drapery fabric, daisy wall hanging and tackboard companion; below, the Baltimore Mental Health and Retardation Center (Associates: Fenton & Lichtig).



ties, perhaps most notably those of the firm's design review board, of which Scott and Bullock are members. The board examines each project in schematic and design development stages and seeks high design quality not solely for its own sake but for its contribution to the firm's overall performance image.

CRS has become a large operation with a half billion dollars worth of construction under contract, a fee volume running over \$5 million and a staff of 287. As the operation continues to grow, the need for creative managerial control and communications techniques grows with it.

The firm is a partnership of 10 partners, eight of whom are general partners. Otherwise it is a corporation with the general partners the directors and major shareholders. The board meets four times a year and its executive committee once a month.

Paseur is secretary to the executive committee along with being vice president and general manager, the third person to hold the latter positions in the brief time it has taken the firm to pass through two office-size classifications—small and medium—and into large-office status.

The computer through information systems identifies problems for top management. A project reporting system, for example, has staff members reporting their time allocations by project on a two-week basis; the progress of jobs and the efforts they are eliciting can be measured against their fees and necessary adjustments made in the project flow.

In terms of control of the individual project, computer-aided cost estimating has brought estimates "close" to low bids on recent projects. The computer is said to be helping CRS' cost control even more than its cost estimating.

In any event, there is a continuing effort to reduce turnaround time. This does not, however, discourage the design review board, which includes the members of the executive committee, from rejecting the work of a design group and telling it to start all over. The message is conveyed through cool numbers rather than emotive dismay, this made possible by a triadic scoring instrument—form/function/economy—and a system of assigning judgmental number values to each of its three legs.

Much enthusiasm for the computer is to be found at CRS, yet

GOALS TO GROW BY

The board of directors of CRS one year ago approved a statement of 12 goals. What follows is a condensation both of these goals and the statement's preamble: Values are like the roots of a willow tree. They give life and stability to a flexible structure, allowing the tree to grow, to take on different positions. Values, like roots, give the pliability and viability necessary for a firm to grow in excellence if not in numbers. CRS values are rooted deep in the belief that a better architecture can help people live better lives and that a team of highly competent specialists is the best way to produce a better architecture; in the belief that individual professional growth and leadership are essential to the team concept, and that pioneering research is now, and always has been, the mainspring of CRS. In a sense, goals are commitments. In setting up a certain goal, we commit ourselves to go in a certain direction. And so it is with the following:

CRS is committed to the multioffice form of practice with total firm unity. Concentrated effort should be made to search for methods of unifying decentralized and diversified situations with special consideration given to the "circuit manager," revolving design board, etc.

CRS is committed to both socially significant architecture and great-example architecture.

CRS is committed to nonbuilding services—programming, surveys, feasibility studies, computer applications, research and planning. An effort to promote programming and research should be accelerated. CRS must have more superconsultants and nationally known experts.

CRS is committed to a diversified practice. Hardly any building type will be off-limits, for future schools will be mixed with housing, offices, stores and civic centers.

CRS is committed to a serious study of urbanization in keeping with the nation's effort to solve the problems of the inner city.

CRS is committed to setting up an aggressive recruiting program.

CRS is committed to a thorough personnel evaluation process. In order to judge individual performance, this is essential, especially in periods of fast growth.

CRS is committed to developing professional growth. The idea of a "CRS school" has been discussed for years. Now we must set one up in order to keep up with technological, procedural and even philosophical changes. In addition, a CRS sabbatical for professional growth must be established.

CRS is committed to making a profit and practicing architecture in a businesslike manner.

CRS is committed to further exploration and refinement of the design board and the separate design groups concept. Past performance indicates that design is improving and promotion is benefiting. The design board also has great worth as a coordinating device for giving unity to the separate and scattered design groups, but serious consideration should be given to returning to the broader scope of the quality control board idea.

CRS is committed to a spirit of openness—sharing CRS developments with all people, including the profession.

CRS is committed to the development of national leaders with the capability and dedication to make a significant contribution in all facets of architecture.

(A 13th commitment, on building systems, is in preparation.)

ELEVATOR DESIGN PROGRAM

COST DATA INPUT JAN 1967 - INCLUDES COPIT.
 COSTS ARE FOR PURPOSES OF DESIGN SELECTION NOT PROJECT ESTIMATING.
 INCLUDE A DECIMAL IN ALL ANSWERS.
 DONT USE ALPHABETIC CHARACTERS. DEPRESS EOF AFTER EACH ANSWER.
 ESTABLISH BASIC DESIGN CRITERIA. TYPE ANSWER AFTER EACH CRITERIA.
 IF YOU MAKE AN ERROR TYPE 9999. FOR NEXT ANSWER.

1. WAITING TIME (30. SEC MAX IS USUAL)
 25.

2. HANDLING CAPACITY (.15 X POPULATION IN 5 MIN IS USUAL).
 .125

3. BUILDING DENSITY (125. NET RENTABLE SQ FT PER PERSON IS USUAL)
 150.

4. ANTICIPATED FLOOR TO FLOOR DIMENSION (IN FT AND TENTHS OF FT, I.E. 12.5)
 12.5

ANTICIPATED GROUND TO 2ND FLOOR DISTANCE.
 20.5

5. TOTAL NO. OF FLOORS (INCL GND FL)
 8.

6. ZONES (TOTAL NUMNER).
 1.

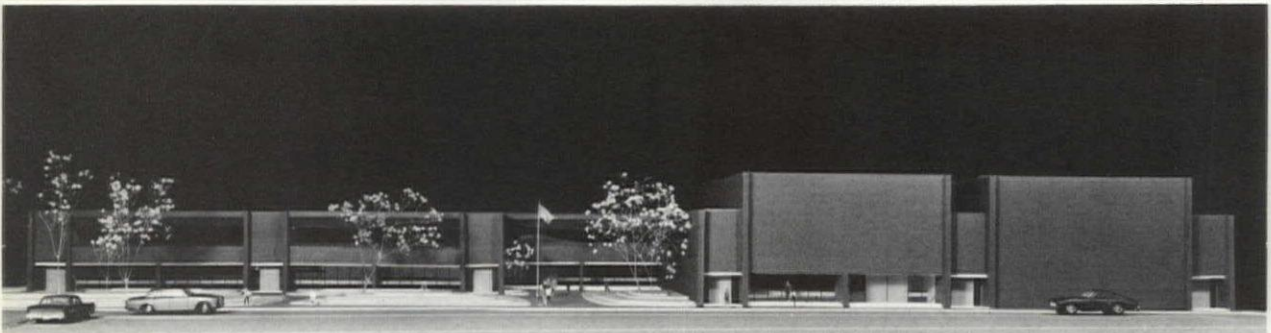
9. AVERAGE NET RENTABLE SQ FT PER FLOOR.
 14000.

THE LEAST EXPENSIVE SYSTEM WHICH WILL MEET DESIGN CRITERIA IS
 4 - 300 FOOT PER MIN 2000 LB ELEVATORS.
 THE ESTIMATED HANDLING CAPACITY IS
 0.19 TIMES THE POPULATION IN 5 MIN.
 THE MAXIMUM ESTIMATED WAITING TIME IS 23.8 SECONDS.
 TOTAL ESTIMATED COST = 124800.01
 OTHER SYSTEMS UP TO 50 PCT MORE EXPENSIVE ARE LISTED ON THE LINE PRINTER.
 IF YOU WISH TO CHANGE ANY DESIGN CRITERIA, INDICATE WHICH STATEMENT NUMBER
 IF NOT TYPE 10. DONT FORGET DECIMAL.

NO ELEV	SPEED	653. RENTABLE AREA =		98000.		COST	NRSF/ELEV
		CAPACITY	HC	WT-SEC	RTT		
4	300	2000	0.19	23.	95.	124800.	24500.
4	350	2000	0.20	22.	90.	131800.	24500.
4	350	2500	0.23	24.	99.	143800.	24500.
5	200	2000	0.19	23.	115.	138900.	19600.
5	200	2500	0.24	24.	124.	153500.	19600.
5	250	2000	0.22	20.	103.	147250.	19600.
5	250	2500	0.26	22.	117.	162250.	19600.
5	250	3000	0.29	23.	118.	177250.	19600.
5	300	2000	0.24	19.	95.	156000.	19600.
5	300	2500	0.28	20.	104.	171000.	19600.
5	300	3000	0.31	22.	110.	186000.	19600.
5	350	2000	0.25	18.	90.	164750.	19600.
5	350	2500	0.29	19.	99.	179750.	19600.
6	200	2000	0.23	19.	115.	166200.	16333.
6	250	2000	0.28	20.	124.	184200.	16333.
6	300	2000	0.26	17.	103.	176700.	16333.
6	300	2500	0.28	15.	95.	187200.	16333.

TOTAL SOLUTIONS EXPLORED = 270.

Elevator design program: Running the program at left gives the least expensive solution, top line above, followed by options running up to 50 percent more expensive than least expensive. The CRS library includes systems of programs such as the management control system and the campus planning system (this alone contains some 60 related programs), etc. The computer is used in economic feasibility studies, cost estimating, specifications, engineering and in such miscellaneous programs as the one shown here. HC is handling capacity; WT-SEC is waiting time in seconds; RTT is round-trip time; and NRSF represents the net rentable square foot area.



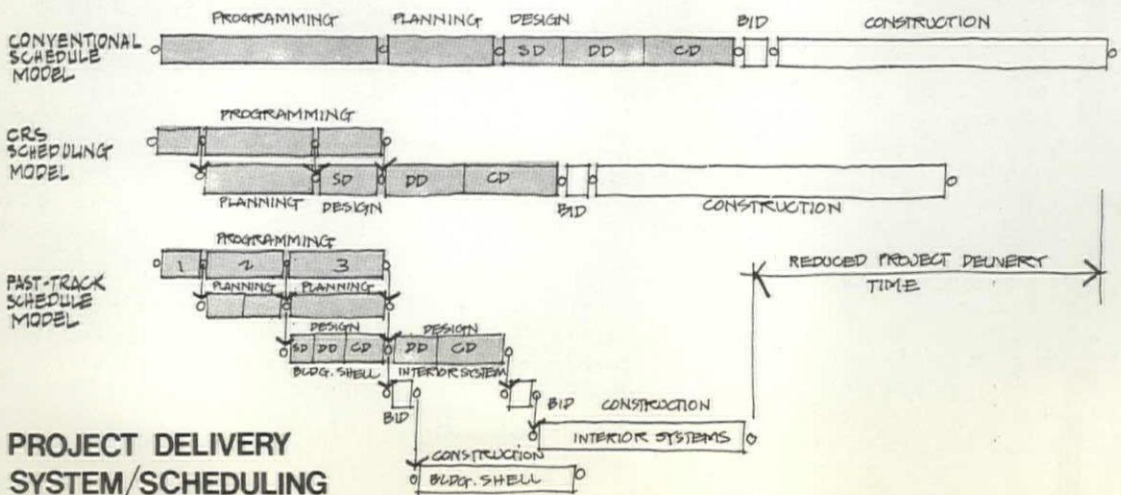
Waverly Elementary School in Hartford with open-plan units to house four classes of 25 pupils each in team teaching.

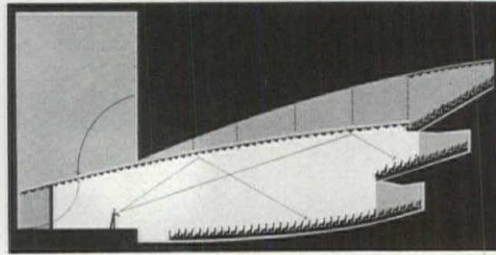
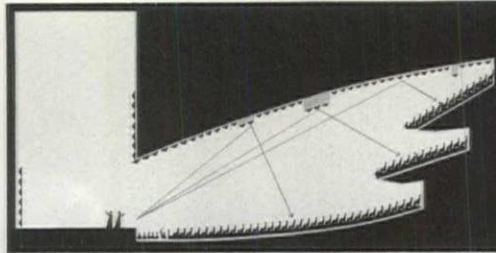
which are constantly updated as either the market or technology changes. An array of 10 subsystems having five alternatives apiece yields 30,000 possible combinations, notes the report. By adding three variations in the building geometry the range of possibilities goes to 90,000.

A 10x5-foot matrix is envisaged in the study, and it is explained that the hardware technology will be a matter of filling in the alternatives when the system is to be actually designed and engineered.

UBS must be thought of as a "comprehensive systems approach" to the delivery of a project," the report says. "In this sense, perhaps, it is universal as a system model. Every application will require model adjustments.

Thomas A. Bullock, AIA, is partner in charge of the study. William M. Peña, AIA, is special consultant and John W. Focke is project manager. Focke, 24, took over the assignment after having been with the firm for only six months.





Bullock has said, "is not a dirty word with us. We don't leave the welfare of the firm to indirect promotion alone. Frankly, we try to develop work among good clients; good clients increase the chances of good architecture and good architecture is what we think we're all about."

Rowlett, Scott, Bullock and Charles B. Thomsen, AIA, co-manager of CRS's New York office, share prime promotional responsibilities, highly organized efforts which include extensive analyses of marketplace potentialities.

Indirect promotion absorbs half the time of the vertical specialists who speak and write and develop contacts in their specialty areas. It is also a factor in other activi-

	PRE 1966	66	67	68	69
PLANNING	<7%	7	12	16	22
ARCHITECTURE		93	88	84	78

**FEE VOLUME:
BUILDING-NON-BUILDING SERVICES**

TYPE	EDUCATIONAL	COMMERCIAL	HEALTH	OTHER
AVERAGE % FOR 1959-69	85	5	4	6

**BUILDING TYPE
BREAKDOWN**

Negotiable programming relies on the premise that the building system is developed from user requirements and performance criteria and that it will leave net space requirements "negotiable" within a fixed gross area. Explains the report:

"Through the use of the building system every program requirement remains negotiable throughout the entire delivery process, and because of the inherent flexibility in the building system the functional organization of the interior remains forever negotiable."

Design procedures, the report says, must be analyzed as a subactivity of the PDS. The interrelationship of programming to design, it adds, is critical to the success of design decisions. As system buildings are introduced, design becomes specialized and even more vital to the success of the project.

Traditionally, there has been a break in the PDS at the point where responsibility transfers from the architect to the contractor, the report notes, then ventures: "Construction management could be a subfunction of the coordinating architect while still maintaining a competitive environment for subcontract bidding. Construction management is a necessary function of the architect to maintain continuity in cost, time and quality control."

Industry might participate heavily — on a competitive basis but with a guarantee of substantial mar-

kets — in the design and development of subsystems. Detailed performance specifications would form the basis of subsystem design; the interface of such systems would be the responsibility of industry, the report says.

Industry would take the place of the general contractor at bidding and would bid on the basis of unit and interface costs. The architect would manage the contract letting and fill the management role of the general contractor during construction. Nonsystem work would be let as a subcontract.

Fast-track scheduling, a technique which overlaps activities normally found in sequence, would give to the PDS a significant time/cost control mechanism and a scheduling flexibility not possible in traditional linear scheduling. As far as decisions are concerned under fast-track scheduling, each activity becomes a two-phased process involving conceptual decisions and detail decisions. There are several bidding procedures that fit fast-tracking, the study says.

The building system hardware must first be open; that is, it has to be a versatile collection of subsystems which are interchangeable, adaptable to variations in code, market and climatic conditions, and must be dimensionally and otherwise coordinated for "agglomeration" into a complete building.

The system developed in the study is divided into 10 subsystems, each having three to five alternatives

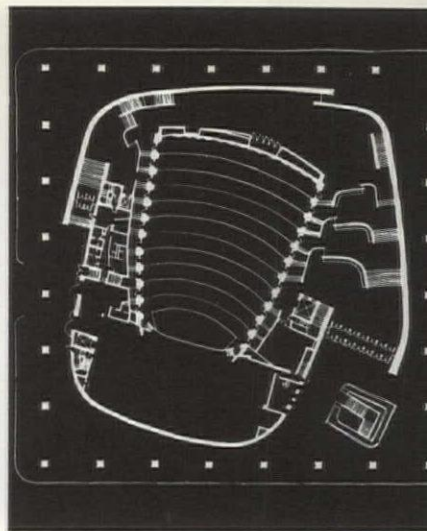
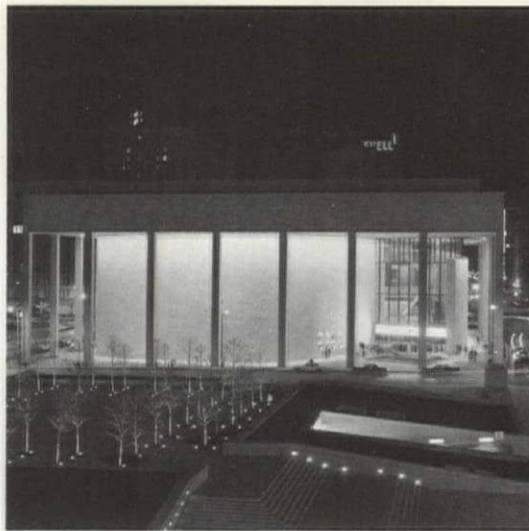
planning and other topics related to the role of architecture in today's society."

The CRS desire to publish was seeded in the field of education, a field with which the office has had considerable connection: Rowlett has a degree in education as well as in architecture and both he and Caudill were with universities when they established the firm, Rowlett with the University of Texas and Caudill with Texas A&M. Caudill until recently headed the School of Architecture at Rice University.

At the age of 26, Caudill wrote a little book called *Space for Teaching* which created an immediate stir and was to become a factor in the post-World War II school design revolution. This and writings to follow helped to move the firm into the limelight of educational facilities construction.

The lesson on the value of being published was plain as school and college commissions accrued; along with its work in health care facilities, commercial buildings and such projects as Houston's Jones Hall for the Performing Arts, CRS to date has done more than 600 containers for the educational processes.

While designing for the education of others, the firm has been aiming toward more education for itself, regarding in-house education so seriously as to look toward the creation of formal training courses with an educational ad-



Jones Hall for the Performing Arts, alive at night both inside and out, with radiant Richard Lippold sculpture in its grand lobby. Theater changes configuration to meet the needs of differing events with the touch of the finger.

ministrators responsible for the supervision of the program.

In the interim, brown-bag sessions are held in the drafting room every two weeks or so as one CRS device to further professional growth. But before professional growth must come recruitment — getting the kind of people referred to as "the right people."

University connections have been important to recruitment, and so has the firm's progressive image. But the firm believes recruitment and the holding of key personnel have been best served by its commitment to growth. The attraction

of the right people, as a matter of fact, is No. 1 on the list of reasons for its "expansionist" policy. What is a "right" person?

"We believe that to succeed in CRS," the partners have jointly said, "one must first be a good guy, and second know his stuff."

Growth means personal opportunity, one index of which is the fact that 18 associate partners have just been made owners — a near trebling of the number of partnerships-with-ownership which now stands at 28.

And it necessitates skillful promotion of the firm. "Promotion,"

ings, conferences and interviews, is to highlight and communicate important ideas about goals, institutional growth and site conditions, and to make inferences and decisions about needs and problems which client and architect representatives can carry back for further action.

The analytical procedure at CRS provides an envelope for decision making, and, as the report emphasizes, it is the client who makes the programming decisions; the architect merely assists.

In complex projects, programming becomes a distinct service that can be rendered separately in order to recommend what the client should build; it is a unique nonbuilding service that furnishes professional competence in problem identification, problem structuring, process management and information generation and communication. This is what CRS calls the second generation of programming.

The third generation grows from a changing market, changing as seen by the report in terms of time, cost and quality, and creating a demand for a compressed time schedule and greater control of cost and quality. Here, CRS programming is aiming at the reduction of overall project time while retaining programmatic depth, range and flexibility by responding to such procedures as fast-track scheduling.

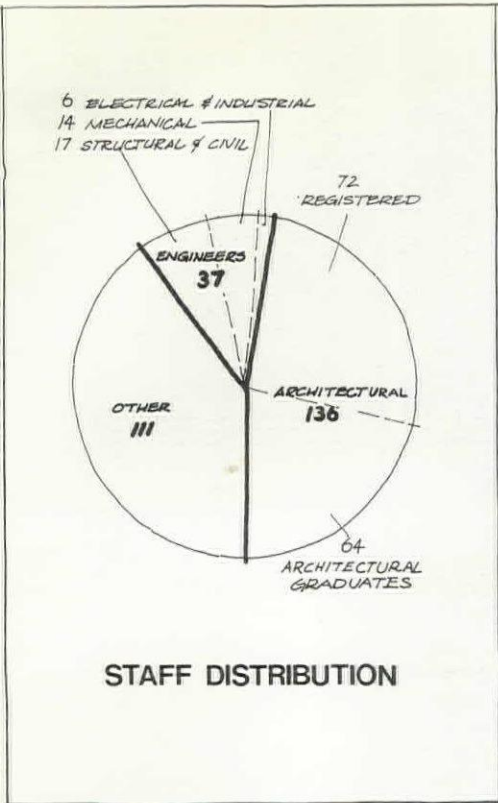
"We should look forward to the fourth, even fifth generations," the report concludes.

SYSTEMS WITH SOFTWARE

Universal Building Systems (UBS), a continuing research project of CRS, places particular emphasis on "software" under which an interim report on the study lists programming, planning, design and management procedures. "Hardware" is described as the technology to develop the physical building system.

The open-ended study applies the systems approach which is defined here as a way of viewing something — of seeing the problem solving process, for example, as a sequence of activities, interrelated and serving the ultimate objective of problem solution. The problem/solution sequence of architecture is seen as a Project Delivery System (PDS), and to the PDS, with its variables of people, process, communications and project, is applied a technique of systems analysis, model simulation.

The study is concerned with the integration of programming, planning and design in order to implement the building systems approach. The first of programming's three phases under UBS (short form, long form and detailed programming) precedes master planning, the second precedes schematic design and the third comes before design development of interior building systems. There is flexibility in time here, and thus emerges the concept of negotiable programming.



The technique yields a better feel of the site, of the region and of the people for whom the firm is designing. It has also given CRS a nonparochial outlook, indeed a national and even an international outlook. The firm has had projects in 36 of the states and 10 foreign

countries and has worked with well over 100 other architectural offices, sometimes in joint ventures but usually "in association" which it regards as a more professional way of collaborating.

Similarly, CRS is broad in terms of in-house specialists; among staff specialists are an urban affairs specialist, a systems analyst and a behavioral scientist who was also trained as an architect. Meantime, the firm is preparing for the day when economists, lawyers and practitioners of disciplines yet to be connected with architecture may be added to its staff.

As a matter of claim, CRS was founded on the belief that better buildings result not only from problem analysis but from research, and it is to be recalled that the previously mentioned "Problem Seeking" report numbered 18 in the firm's continuing series of investigations.

There is a two-way openness about this research, as there is an intellectual ventilation about the firm itself—ideas are free to flow in or out. Research findings are shared, and while there is some professional altruism in this, there are also some practical benefits to be enjoyed.

For one, the distribution of findings generates feedback. For another, an image of progressivism accrues to CRS with all the ad-

vantages in job-landing and recruitment that this implies. For a third, it is an approach which nudges staff members toward creative undertakings.

But if you are going to research and publish, publish well. That this is axiomatic at CRS is testified to by the publications themselves. Handsomely bound, beautifully printed and illustrated, they are often conversational, and sometimes almost chatty in their readable texts.

With the emphasis CRS places on research and publications, the announcement of several months ago that Stephen A. Kliment, AIA, was joining the firm in the new post of architect in charge of research and information was hardly a surprise.

Kliment, editor of *Architectural & Engineering News* since 1961, at CRS will "establish and coordinate a systematic program of research activities, both outside-funded and in-house," the announcement said, adding that he will "pinpoint short and long term research needs and seek to fulfill these with the use of existing CRS personnel and outside consultants. Kliment will develop a qualified, full-time staff of practice-oriented researchers."

Also under Kliment's direction is the "planning, coordination and production of CRS' continuing program of publications on technical,

PROGRAMMING GENERATIONS

CRS' approach to programming is cooperative, analytical and creative, according to the firm's recently drafted Investigation Report, "Problem Seeking."

Cooperation is required of client and architect who together form a single team. The analytical aspect stresses factuality, rationality and objectivity, and creativity comes to the fore in finding new combinations of ideas and in testing programmatic concepts and exposing alternate combinations.

Programming at CRS adopts problem solving's schematic and detail stages. This two-phased approach is aimed at controlling masses of data for application at the appropriate time—but it also has implications in terms of project delivery time. In the first phase, basic concepts are sought; in the second, refinements and fill-ins are made.

CRS programming undertakes a five-step method to 1) establish goals, 2) collect, organize and analyze facts, 3) uncover and test concepts, 4) determine "real" needs and 5) state the problem. The problem is the terminus, this being a problem seeking method that places problem solving in quarantine.

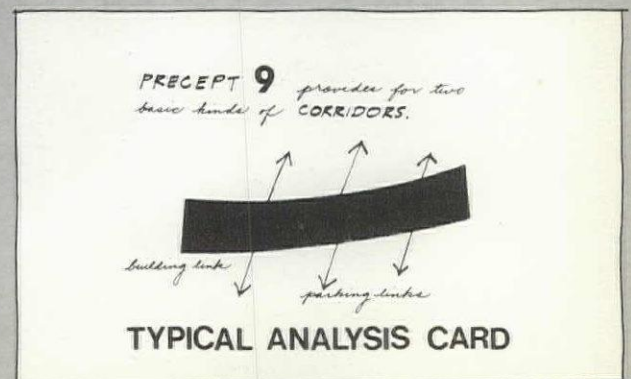
Since the facility is to solve problems of function, form, economy and time, these become basic considerations and are considered simultaneously at each of the five procedural steps.

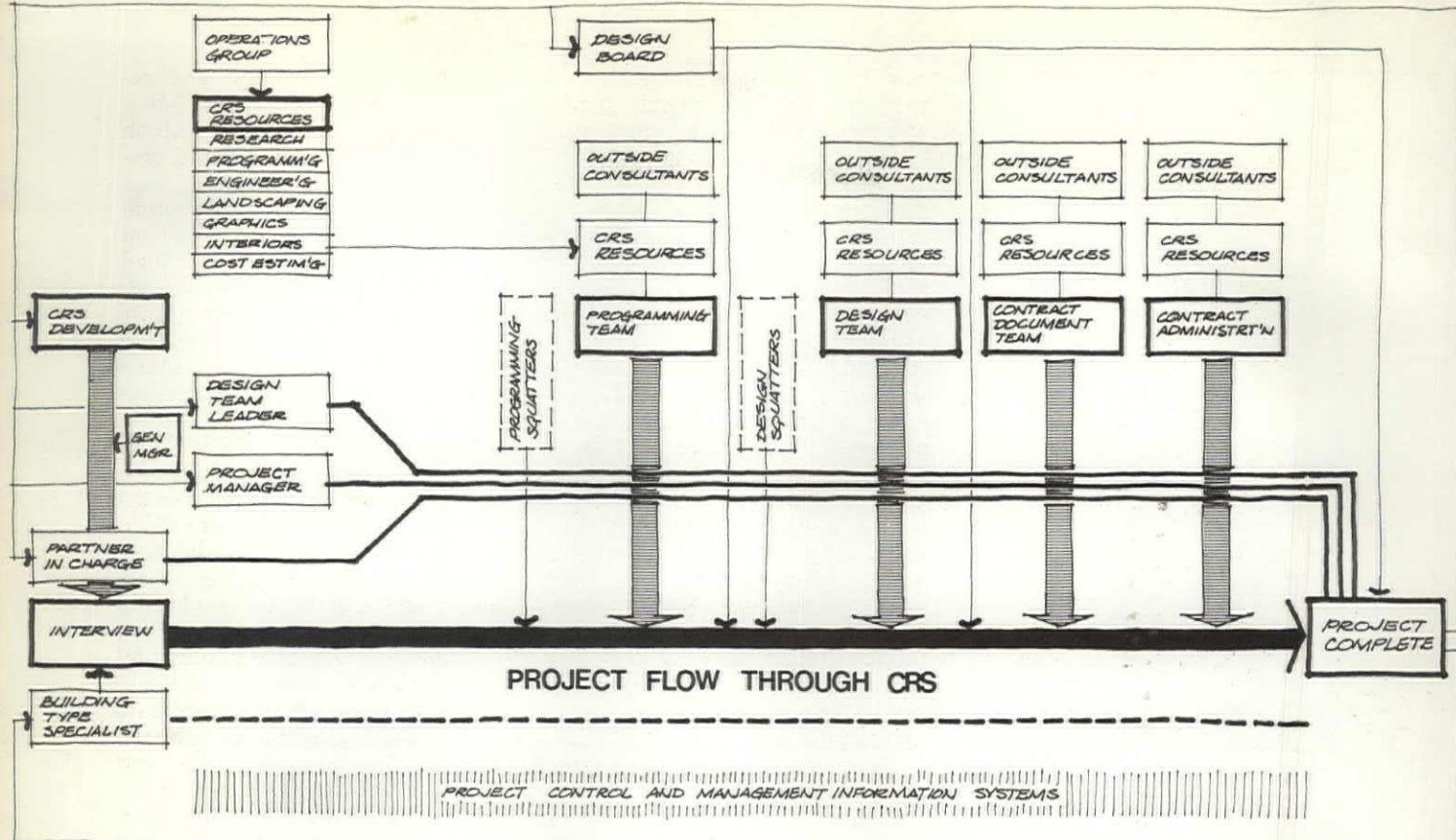
Process, then, is apart from content, and programmers have both a standardized method of analysis

for the former and a framework for the classification and documentation of the latter.

One of the prime requisites of effective programming is a high level of communication within the client-architect team, stresses the report, adding that many techniques can be used not only for communication but "to involve people." Such visual aids as the firm's analysis cards can prompt quick appraisal and understanding. Each of these 5x7-inch cards contains a graphic representation of a single thought.

Analysis cards are used in informal but intense on-site work sessions involving the total team and referred to by the firm as "the squatters." The real aim of these sessions, which usually last from three to five days and culminate months of informal meet-





design group, a partner in charge and the various internal consultants appropriate to the project type and its execution.

The kinds of vertical or "building type" specialists the firm has currently are architects expert in schools, community colleges-ur-

ban, community colleges-general, colleges and universities, health care facilities and urban design.

The horizontal staff includes designers, design developers, planners, architectural programmers, computer personnel, mechanical, electrical and structural engineers,

interior designers, landscape architects, researchers, graphic designers, specification writers, civil engineers, construction administrators and accountants.

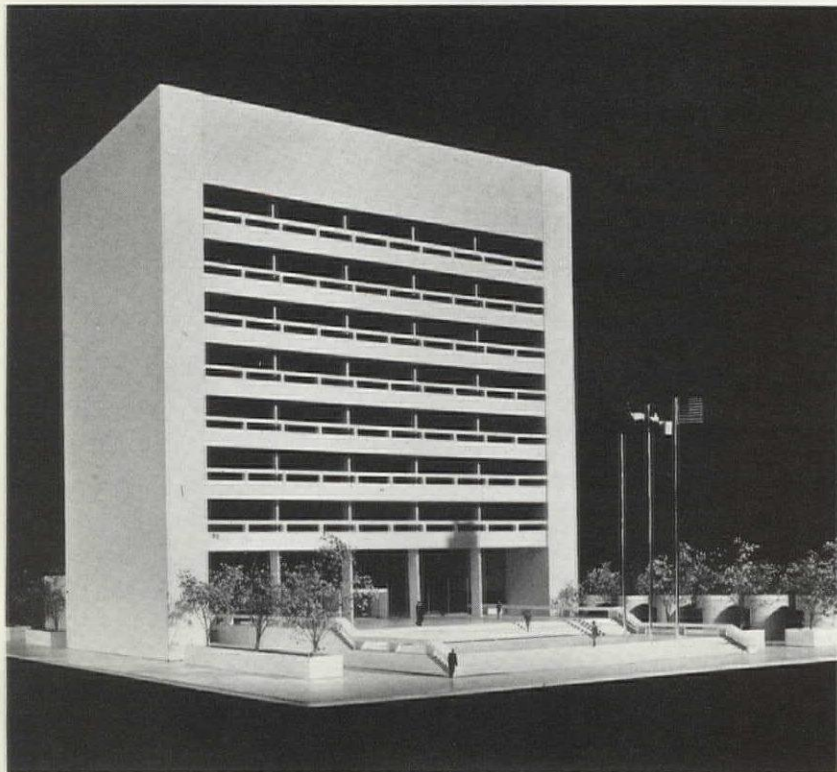
Vertical and horizontal staff constantly criss-cross in their work relationships and this requires adroit managerial coordination and a strong sense of team.

Another team aspect of CRS, this one elegantly referred to as the "squatters," brings the client/user into participation. The squatters technique had its origin early in the firm's 23-year-old life.

CRS' first big job happened to be 525 miles from the office and occasioned a number of trips back and forth with plenty of pretty sketches but nary a sign of progress. Summarily, a drafting board was tossed into the back of a car and off went Caudill, Scott and an associated architect to "squat" with the client until concepts could be hammered out right there in his own backyard.

It was a successful stroke both in terms of the job at hand and, more enduringly, for its revelation of a new way of working with clients, a way that now seems a remote forerunner of advocacy planning, and a way that has aided the conservation of time and money for both client and firm. Today CRS squatters will go anywhere to join clients in concentrated day-and-night sessions.

First Hutchings-Sealy Bank, Galveston (Associate: Thomas M. Price, AIA).





Four College Science Building in California, one of first before design review board (Associate: Everett L. Tozier, AIA).

test the results of real world options.

The firm's abilities with the computer have become so well developed that they have brought about the birth of CRS2, an autonomous corporate affiliate with a separate board of directors and its own officers (see box, p. 52). Well developed but not dominating, and for two reasons:

First, because the use of the computer has been kept in perspective; it has been deployed as an aid to architectural and planning processes and not as something for its own sake. "Play the useless game of following the numbers," someone said, "and you get into trouble." Second, because CRS is a kind of arena in which many forces are in suspended contention—this is the way the owners want it—and in which no one force is likely to dominate or even domineer for very long.

There is a push-pull between propensities, between systems and design, management and practice, process and product. "We want process-oriented people and we want product-oriented people, too," says C. Herbert Passeur, AIA, executive vice president and general manager.

CRS would have the architectural process include the "man on the street." The process then would have a better chance of giving him what is appropriate, and, adds Caudill: "We'd have a better process and a better product. It is wrong for the architect to play

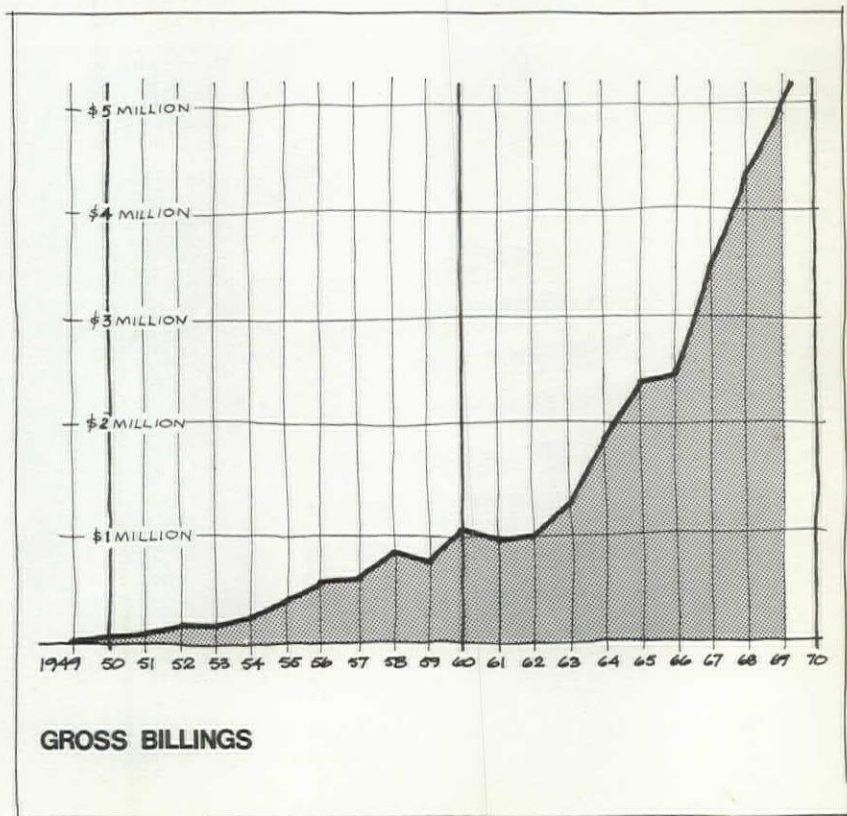
God in a project. But we'd better make darn sure we have creative, artistic people on that team, too."

CRS has seven design groups, each consisting of a leader and three or four other designers. It seeks to strengthen its design performance through directions rather than solutions. "Styles and frills" will decay but a sound direction or approach to design will remain, runs the firm's philosophy.

The search, someone added, is for a simple thing: "What do we really believe in?"

In support of the design groups is a horizontal/vertical system of specialists: those involved with design, technology and management and those concerned with a specific building or project type.

Project teams are typically made up of a team leader, who is the project manager, the leader of the



tainty on the expansion question. The growth commitment at CRS is total. And if it is to grow and prosper quantitatively, the firm is convinced, it must first grow qualitatively.

For example, CRS believes quantitative growth requires more than the meeting of high performance standards in traditional roles, that it also requires the furnishing of the kinds of services — most crucially for the present such non-building services as programming, planning and feasibility analyses — which clients are increasingly demanding. It knows, too, that it is in precisely such areas of practice that the “outside experts” are pinching hardest. It is to both accommodate clients and compete with the encroachers that the firm is engaged in furthering its non-building capabilities.

William M. Peña, AIA, who followed William W. Caudill, FAIA, John M. Rowlett, FAIA, and Scott into the partnership and who on the name-in-the-firm's title question answered that “three names are enough,” is credited by Caudill as being “the big guy in the firm, the guy who has given CRS strength through programming.”

Peña and John Focke have just produced the firm's Investigation Report No. 18. Appropriately called “Problem Seeking” — design is viewed as problem solving, programming as problem seeking — the report describes the firm's processes in determining what the client/user should build (if indeed he should build at all), along with the two-phase CRS approach of schematic programming and detail programming and its concept of programming generations. (It is treated separately on p. 55).

The investigation stemmed naturally from another steadfast principle of CRS' practice which holds that from thorough analyses come better buildings. It stemmed more pointedly from a declaration made a little more than a year ago by the general partners. This assertion, one of 12 goals to which the firm was pledged (a condensation of the goals appears on p. 59), says in part:

“CRS is committed to nonbuilding services: programming, computer applications, feasibility studies, surveys, research and planning.”

Computer applications are not something apart. For more than a year before CRS got its IBM 1130,

programs and attitudes were prepared; now, with little more than two years having passed since the computer's installation, every department of the firm has found at least one job for the equipment to perform. These are jobs which make it possible for the firm to practice better — but not necessarily any easier. In programming, for example, the computer, with its speed and ability to handle large amounts of data:

- Calculates space requirements, allowing for a continual updating of parameters, and enables the architectural programmer to generate detailed and accurate user requirements and to test parameter alternatives.

- Generates affinity circle diagrams and circulation frequency/load displays which facilitate analysis and the organization of very complex interrelationships.

- Performs in model simulation in which a real and complex system is described or approximated as a mathematical equation and in which changes in the values of variables are introduced and processed to determine their consequences — many sets of numerical data can be introduced swiftly to

MOVE-UP, SPIN-OFF MONTH



For CRS, last month was a memorable one. Eighteen associate partners became stockholders in CRS Design, Inc., a corporation established by the firm in 1957 after 11

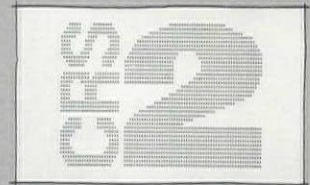
years of practice solely as a partnership. The partnership was continued, however, to accommodate the states that do not recognize corporate life for professionals. It is responsible for signing contracts, in return receiving 2½ percent of the fee for assuming liability and for expenses. Representing CRS to the outside world, it is made up of general partners Caudill, Rowlett, Scott, Peña, Bullock, Nye, Lawrence and Paseur, and partners Gatton and Williams. The general partners constitute the board of directors of CRS Design. Corporate officers are Caudill, chairman of the board; Bullock, president; Paseur, executive vice president and general manager; with the other directors being vice presidents. The day-to-day operation of the firm is the responsibility of Paseur



General Partners: William W. Caudill, FAIA; John M. Rowlett, FAIA; Wallie E. Scott Jr., AIA; Thomas A. Bullock, AIA; William M. Peña, AIA; Charles E. Lawrence, AIA; Edward F. Nye, PE; C. Herbert Paseur, AIA. **Partners:** James B. Gatton, AIA; Philip C. Williams, AIA.

Associate Partners: David C. Bullen, AIA, PE; Ralph C. Carroll, AIA; James Falick, AIA; Louis E. Finlay,

who has the backing of the board's executive committee — Caudill, Bullock, Scott. There are 36 key staff members who are associates and who are expected to become qualified for corporate ownership sometime in the future. Bullock believes the status and framework of the partnership will diminish and eventually vanish as the corporate professional firm is accepted by more states. A hint of this is in the firm's brand



new logo which, unlike the old one, the CRS tree, appears above the names of Caudill Rowlett Scott. CRS2 is a spin-off of CRS Design with its own stockholders and directors. No CRS2 officer is either a partner or director in CRS. CRS2, which also happened last month, is a group of architects, planners and systems analysts using the computer as a tool to solve problems in space planning. The firm offers developed computer programs for specific applications, as well as software development services for new applications as required by such clients as architects and planners, health and educational institutions, and housing agencies. Robert F. Mattox, AIA, 30, president of CRS2, headed CRS' computer operations.

AIP; G. Norman Hoover, AIA; James M. Hughes, AIA; Paul A. Kennon Jr., AIA; Brawley M. King, AIA; Franklin D. Lawyer, AIA; William F. Perry; Bob H. Reed, AIA, ASLA; Jack W. Smith, AIA; William T. Steely, AIA; Joe B. Thomas, PE; Charles B. Thomsen, AIA; Michael H. Trower, AIA; Robert E. Walters, AIA; Donald B. Wines, AIA.

Associates: The firm has 36.



PRACTICE PROFILE

Caudill Rowlett Scott of Houston, Hartford and New York, a firm that is willowy in the "ways" of practice, but stoutly rooted in the "whys."

Forward-Geared People and Processes

When CRS people write or speak they do so in short, down-to-earth sentences. Such plain talk, however, is often in the company of repeated allusions to various luminaries; and so it is not surprising that an engaging brochure describing the firm's work should contain a reference to one Leonardo da Vinci. What is a bit startling about this particular reference is that CRS, after acknowledging da Vinci to have been "quite a guy," lets it be known that were he around today "we'd like to hire him."

Mock deigning? Yes, perhaps — and no. No, because you suspect that the vigorous Houston-based firm of Caudill Rowlett Scott would try to corral a hale and hearty da Vinci. No, because you suspect that perhaps even now CRS could well have a budding latter-day da Vinci among its bright young men.

The genuine article, the da Vinci of old, might have made a good fit at CRS even as a generalist, in the sense of developing problem-solving methods and systems of general or universal application. A major involvement in systems, both as in "systems analysis" and "building systems," is in emergence at CRS today.

Da Vinci, however, would have to be a team player. The Renaissance man was fine for his time, but he soon would become lost amid the

complexities of today's practice, CRS believes. The only way to cope with these complexities and to produce what it calls "total architecture," avers the firm, is through "a team of strong individuals."

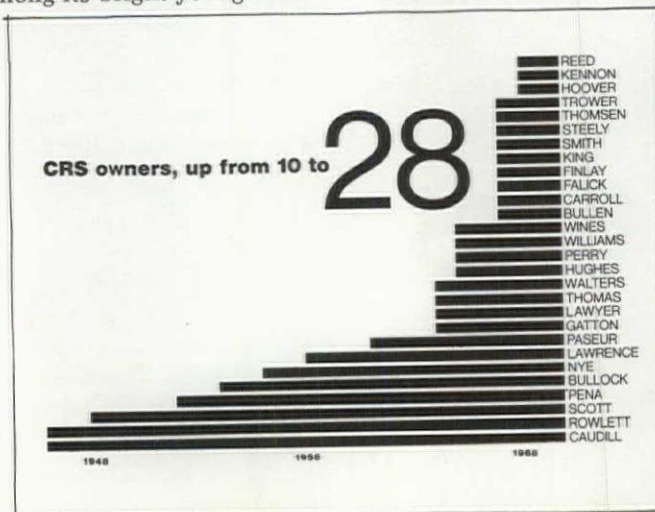
With the possible exception of its willingness to change as people and conditions change and its rigidly held notion that "architecture is for people," no trait or tenet is so fundamental to this complex firm as is the concept of team.

A superficial understanding of the nature of CRS yields an easy montage of schoolhouses, of which the firm has done hundreds; of on-site project teams or "squatters," for which it is well known; and of that handsome symbol, the orange tree, with which the firm is readily recognized.

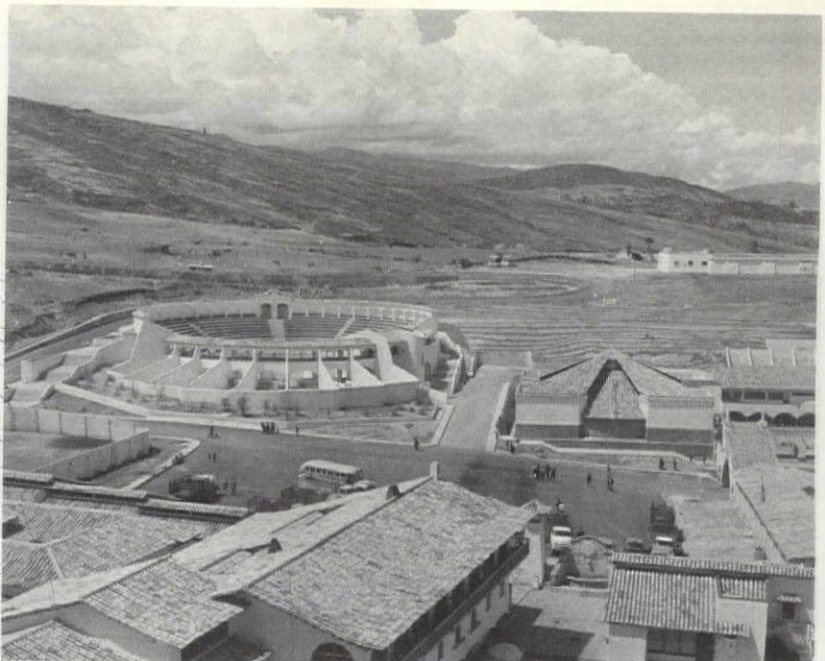
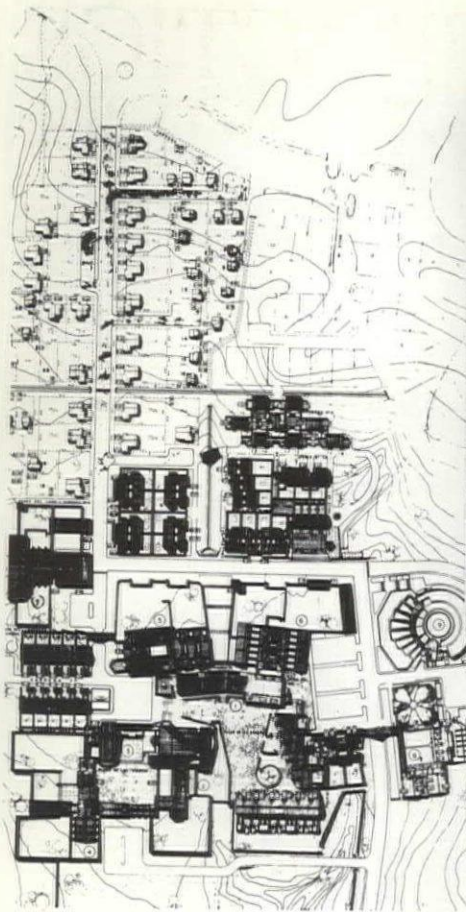
A closer look complicates the picture, and this is

due as much to the elusiveness of some CRS aspects as it is to the complexity of others. These mercurial qualities confront even CRS partners. Thomas A. Bullock, AIA, the firm's president, suspects that "there are things about CRS that none of us realizes." Wallie E. Scott Jr., AIA, a man who attaches great importance to intangible matters, would welcome anyone able to explain to him "the magic that holds this thing together."

But there is no uncer-



The CRS owners — bars indicate length of service with firm.



Plaza de Toros with the bull ring, the market and slaughter house (right) and homes (in the foreground). Tile is the only accepted roofing material in the city.

PLAN OF GUATAVITA

- | | |
|----------------------------|---|
| 1 City Hall | 8 Market and slaughter house |
| 2 Church and parrish house | 9 Coliseum (bull ring) |
| 3 Theater | 10 Cemetery |
| 4, 5, 6 Schools | All others, house of varying types and sizes. |
| 7 Hospital | |

areas. The cost was about \$1.7 million (27 million pesos), financed by the Bogota Power Company. The World Bank helped finance the dam-project.

Only 50 miles from Bogota and at an altitude of 8,800 feet, Guatavita, we expect, will be the heart of one of the major resort areas in Colombia. While it has always been a commercial center in the middle of a rich farming region, the old town was slowly dying as its residents were attracted to the richer life of Bogota. Today, not quite two years after completion, the new Guatavita is alive with activity.

The Guatavitas have warmly received this infusion of new life. Last summer, for example, the town had its first regular program of theater, concerts and other events for visitors. The tourist traffic has also spurred courses for residents in wood and metal working, jewelry-making and other artisan skills as well as the opening of a new school of music which now has 100 students — all learning to play the guitar.

Lake Guatavita, which is now 10½ miles long and nearly 1 mile wide, is quickly becoming a major recreational asset. It has already been stocked with fish; boating is in full swing.

The future of Guatavita seems bright. Its population downtrend has been reversed; in fact, there is not now enough housing for all who would like to make their homes in the new town.

To meet the demand for new homes for week-

ending families from Bogota or others who want to move from country to city, construction of 100 new homes will soon be underway. The town now has its first restaurant; a hotel is planned for the immediate future so that the daytime tourists will have a place to stay instead of having to return to Bogota each night.

Guatavitas and the municipal government have provided a firm footing for the city's future through the organization of a community corporation, the Corporacion de Vecinos para el Desarrollo Socio-Economico de Guatavita (Corporation of Neighbors for the Social and Economic Development of Guatavita), a public corporation which is managing the business activities for the development of the new town.

Our firm helps seeing to it that the future of Guatavita is not left to chance. New housing developments are already in the planning state, and the town council has taken steps to insure that the architectural and design harmony of the new town will remain.

The council has enacted municipal regulations that forbid the use of roofing materials other than tile and which regulate the colors used for exterior painting.

New developments and additional buildings are also planned so as to maintain the separation of automotive and pedestrian traffic, so carefully designed in the original town. □

BY JAIME PONCE DE LEON

How do you build a planned new town for 140 different clients, all of whom want to live in the same community but all of whom have different ideas?

This was the basic problem architects and planners of the new town of Guatavita, Colombia, had to solve. It arose when the Empresa de Energia Electrica de Bogota (the Bogota Power Company) started to carry out its plan to dam the Tomine River. The purpose of the dam — the Sesquile — was triple: to provide inexpensive hydroelectric power for Bogota, to put an end to the serious annual flooding in the Bogota River Valley and to provide water for downstream cities and farms during the dry season.

But behind the Sesquile Dam a lake would form, eventually flooding the old town of Guatavita. So, as soon as construction of the dam was underway in 1960, the power company began to plan the future of Guatavita with its residents, offering double the appraised value for each house in the old town and to construct a new house in the new town for that amount.

Out of 172 families, 140 preferred to remain in the area and voted to rebuild their town on a bluff above the old one.

After our firm was retained by the power company as architects/planners for the new Guatavita, we went through three schemes but still could not reach an agreement with the citizens on the design. With time running out, we decided that the only course was to sit down

The author: Dr. de Leon, a partner in the Bogota firm of Llorente & Ponce de Leon, directed the design and construction of Guatavita, Colombia.

with each family, work out individual plans and then incorporate these in the overall town plan. It took us six months, but we finally found a solution that the town council as well as the residents accepted.

Because each house was made to order, we had to develop 28 different basic plans, with houses ranging from one to six bedrooms and with or without shops and workshop facilities.

Many of the residents had seen Bogota's modern buildings with their glass and steel and brick and told us that this was exactly what they did not want. They liked their own old architecture with its thick walls, tile roofs and extensive use of wood. Our principal aim, then, was to avoid so-called modern architecture.

We developed a plan using the same construction systems and building materials as in old Guatavita but added modern lines. Architecturally, the most important thing was to give the town harmony. The new Guatavita has architec-

Trigger for Tourists

The building of Guatavita, in contrast to Brasilia, was undertaken in all harmony. It was an enterprise born of necessity when the citizens of old Guatavita, flooded as part of a power project, requested that their old town be replaced nearby.

The new town substantially exceeds the old town as a distinguished esthetic experience; it is like an enormous hotel with apartments off of street corridors. Homes, shops, etc., are all ordered and crafted in exquisite detailing.

But the social success of the new town can be challenged. The new Guatavita, although planned hand in hand with the citizens to accommodate their wishes, is a different town, a town with a purpose different from that of the old one.

Residents of the old peasant village found too little space in their new town for their animals; today, hardly any of them live in the new town except as servants and laborers. Herein lies the challenge: Is the new Guatavita fulfilling its promise? For today, no. For tomorrow, with the growing stream of tourists attracted by its unique beauty, yes. RICHARD SHARPE, AIA

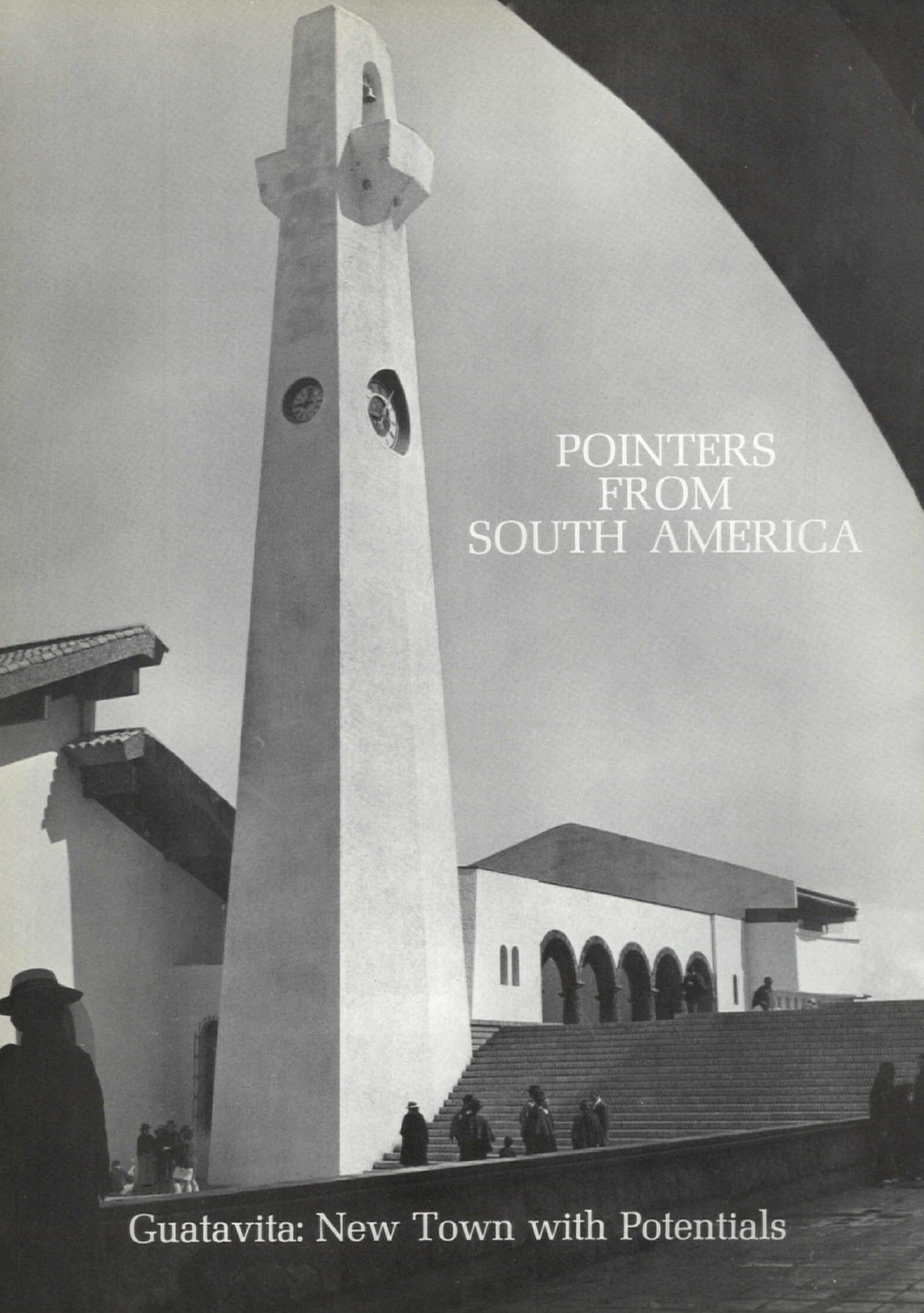
tural unity without the dreary sameness of most planned towns.

Another important component in the planning of Guatavita is the layout of its streets, plazas and squares. We developed two entirely separate circulation systems, one for people and one for motor vehicles. It is possible to walk through the core of town without crossing a traffic artery. These are all outside the core area and have bridges across for pedestrians.

Planned as a center for more than 17,000 people, Guatavita contains all elements and many facilities to make both town and region more self-sustaining, among them a municipal building, three schools, a church and rectory and a hospital. In addition, it has a structure almost unanimously requested by the residents: a bull ring. A Greek-style outdoor theater and a host of plazas and public squares provide attractive and functional places for recreation and entertainment — something new for Guatavitans.

A public market with both open and covered stalls is now a busy weekend spot as outlying farmers and artisans open shop to sell their products. The bull ring is constructed to double as an arena for cattle shows and sales.

Our experience proved that traditional architecture is still relatively inexpensive in Colombia. The new town, on about 53 acres, has more than 160 buildings with 129,000 square feet under roof and, in addition, plazas and public



POINTERS
FROM
SOUTH AMERICA

Guatavita: New Town with Potentials

masses livelier. Some structures are elevated from the ground, others intentionally squat, so that their restrained horizontality might contrast with the center of the city.

As for the administrative and collective part of the city, i.e., its monumental axis, it consists of different escalated levels: the greenery; the Plaza of the Three Powers; the ministries; the cathedral; the cultural center; the traffic center where the axis of the city cross each other on three levels; and the mound of the TV tower. This scaling into successive plateaus was caused by the moving of earth made necessary by the vast cross-sectioning at different levels. Unlike adapted cities, adjusted to the landscape, Brasilia created the landscape in the middle of the wilderness.

The geometrical orderliness of the blocks and the spaciousness of the monumental axis allow for the integration of the old Le Corbusier principles of a "radiant city." The Plaza of the Three Powers, open like La Concorde, is the only contemporary square comparable with the famous traditional ones in Europe.

The architecture of Brasilia has to us Brazilians a dear and special attraction: It has not broken loose from the baroque of our old colonial architecture. This without copying it, without even using its most characteristic elements, but just preserving its graceful unconstraint, without functional limitations, without ever fearing a curve, aiming at beauty as the only true function. The architecture, stripped of adornment and somewhat abstract, gradually and naturally becomes part of everyday life, private and administrative, thus giving the city a character all its own, attractive and charming.

I still keep in my heart and in my mind the emotion I felt on the day of inauguration of Brasilia. About half a million people rushed inland from all directions to be present at the great event. Thousands camped under trees or bridges, sleeping in the open or in their cars, anxious to witness the historic occasion, the crowning of a great collective effort aimed at national development. More than 3,000 feet above sea level and about 700 miles from the

coast we built our capital city where before there was only jungle.

I am quite aware of the cost of the struggle to transplant the heart of Brazil from its periphery to its center. But Brasilia is there today. The results have exceeded all expectations. Millions of people, attracted by Brasilia, are now settled in the interior of the country. Thousands of miles of roadways built by my government, connecting the new capital with the extremities of Brazil, now have new farms sprouting along them with thousands of heads of cattle and producing millions of tons of grain; there are scores of new towns with schools, hospitals and churches — in short, comfort, civilization and joy of living.

True, Brasilia has its problems, but they are the consequence of the contrasts consisting in a country with a recent tradition of an agrarian economy based on slavery and a rather belated and nonplanned industrialization which both have left those inevitable characteristics of a developing nation—a huge proletariat and peasantry submerged in ignorance and poverty, and a small, rootless socially irresponsible elite, traditionally fond of easy money, given to financial exploitation but not to investment. Just the moving of the capital could not do away with such fundamental contradictions. Powerful private interests take advantage of this chronically anomalous climate, and this is clearly visible in the shantytowns both inside and outside Brasilia. This does not mean that the city's urban plan or its architecture is faulty. There was not time to take the necessary social measures, to introduce an agrarian reform which would attach a man to his land, which would give him land and the appropriate means to fill it.

If that had been done, the land along the new roads would have been expropriated, and today there would be large agricultural cooperative societies which Brazil feels it needs. But, while still as poor as before, people are optimistic, aware of the greatness and richness of their land and hopeful that this land will belong to them some day. And the success of Brasilia has done its part in the development and encouragement of this spirit of optimism. □

Main business street has private duplexes on one side (left), stores on the other. All homes face front to front.



the most daring Brazilian undertaking of this century. Already, over 1 million people live along the Brasilia-Belém road alone, in improvised, self-generated towns, the fruits of progress, which is rapidly changing the face of the so far uninhabited interior.

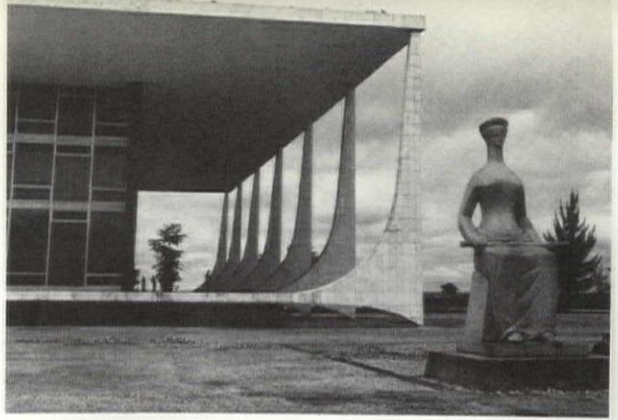
Brasilia today is a motorized city. Its highways, with distance-reducing overpasses and cloverleaf intersections, discipline traffic; it is a city without crossings and traffic jams. Costa's plan is conceived on three different scales: the collective or monumental, the daily or residential and the concentrated or gregarious. The interplay of these scales will give the city its definite and proper character.

The plan is shaped like a bow and arrow, with the two houses of parliament and parliamentary offices at the arrowhead, the railway station at the arrow base. Close to the latter are sites for light industry. Nearer the head, along the straight monumental axis (or arrow shaft), follow a municipal plaza, a sports center, a radio and television tower, hotels, an entertainment center, banks and offices, a trade center and a traffic center on three levels. Theaters, movie houses and stores will all be served by a dual system of side streets and little squares for pedestrians. They will be accessible to cars and buses through the traffic center and to trucks from the opposite side on a lower level.

This nucleus of urban activity was deliberately conceived in contrast to the free and peaceful spaces of residential blocks along the highway axis, or in the curves of the bow. These blocks, framed in a dense green strip of large trees, were first of all created to make the residential sections match the monumental scale of the rest of the city.

Each set of four of these superblocs has a common accessway to the service road contiguous to the highway axis and constitutes a "neighborhood" with its necessary components: a primary school, shopping, a club, etc. Churches, high schools, movies and retail stores are placed on broad strips which join the service and residential axis roads at intervals and are served alternately by one or the other. The pilot plan proposed — and this was the most important social characteristic — to join in each neighborhood the different categories of the present social order to avoid the stratification of the city into rich and poor districts.

The emphasis on the highway/residential axis is another peculiarity of Brasilia. Usually, modern highways stop at the gates of a city and get diluted in a tangle of streets and crossroads. In Brasilia the highway leads to the heart of town and goes on from one extremity to the other, south/north and east/west, without ever losing



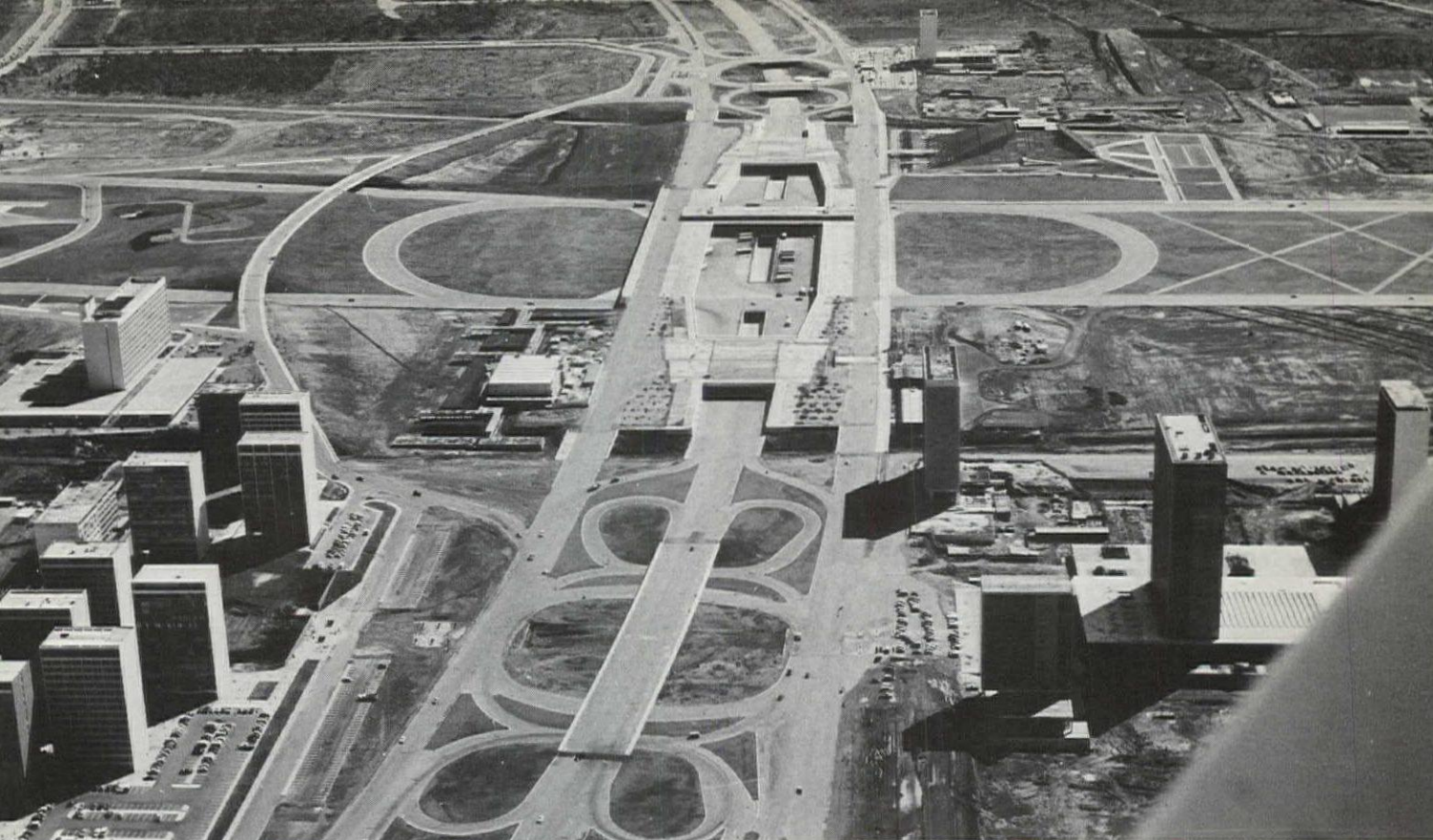
Planalto Palace, seat of executive power, and National Congress, both facing Plaza of the Three Powers; and the glass-walled cathedral, all by Oscar Niemeyer.

impetus because the modern layout techniques make traffic lights redundant.

In the residential blocks the opposite takes place. Forewarned by the restrictive character of the access, the motorist slows down instinctively and the car becomes naturally integrated, as if tamed, in everyday family life.

The secondary system of back and service traffic has a bare minimum of traffic lights and signals.

The different levels of the side streets of the highway axis, their gentle, gradual curvature and their adaptation in the north wing to the upward and downward sloping of the topography make the sequence of the great erected



Brasilia's three-story traffic center, where the highway axis crosses the monumental axis (running left and right).

over the great rivers. The vast plateau could be reached by air only, and only with difficulty at that.

The opposition took advantage of this to attack me violently, and a legend was fabricated according to which only air transport was used to build the capital. But when it became known that roads connecting Brasilia with São Paulo and Rio were being laid, my opponents regretted ever having supported me. Alas, it was too late.

To understand why they were opposed was simple: It was hard to leave the enchantment of Rio for the wilderness of the plateau.

At first, I'll admit, I was thinking in terms of an international competition for the planning of Brasilia, which I thought should be an expression of the latest ideas of world urbanists. Yet a quite understandable reaction from Brazilian architects made me give up the idea and instead have a competition among architects registered in Brazil only.

To judge the projects I set up a committee of three: Professor William Holford of England; Professor André Sive of France; and Professor Stamo Papadaki of the United States. Professor Holford pointed out to me the entry which he considered the likely winner. It was presented on a small sheet of paper with hand-drawn sketches. The other entries — there were 26 in all — were detailed and elaborate. The committee needed barely five minutes to declare the hand-drawn plan the winner. It was designed by Lucio Costa!

Besides Costa, I called in Oscar Niemeyer as architectural adviser. Years before, when I was mayor of Belo Horizonte, the capital city of my state of Minas Gerais, Niemeyer, who had just graduated as an architect, collaborated with me. He planned the urban and architectural development of the district of Pampulha, today an international tourist attraction.

On summoning Niemeyer I let him have a free hand with just one condition: His work, a hundred years hence, should convey to our great grandsons the greatness and the powers of conception of Brasilia's builders. They should be made aware that these builders were conscious of the future of Brazil as one of the most powerful nations on earth.

In the beginning everything seemed difficult. For example, we had to transport an electric generator weighing over 70 tons to the site. Halfway to its destination it sank in the middle of a great river. Four months went to extricate it, but when at last it was set on the plateau, illuminating the principal points of the town to be born, it was a day of giving thanks.

The incident made it clear that it was imperative to link the new capital with the rest of the country by roads. Consequently we laid out a road system radiating in all directions from the new capital, especially the Brasilia-Belém highway through almost impassable jungle to the Amazon port of Belém, and the Brasilia-Acre highway to our undeveloped western jungle areas — an enterprise which is now considered

has been, an evenly populated country. In some ways it resembles a series of islands with 80 percent of the population concentrated in the narrow coast belt in population nuclei not even properly linked to one another, communications-wise. Most of the rest of the population is in the hinterlands immediately behind these nuclei. The vast interior is — or was — almost uninhabited. To begin the development of this interior it was necessary to build an inland capital. Although the original plan to move the capital to the plateau was almost 150 years old, it had never been carried out.

For 10 long months the bill aroused impassioned debate. But changing their tactics suddenly my opponents resolved to pass it, being sure that it would never be fulfilled and that consequently, they might be able to use it as a political weapon against me.

Nevertheless, 10 priceless months had been wasted and I was worried. I had had enough experience to realize that if, when I handed over the power to my successor, Brasilia had not been consolidated as the capital of Brazil and could not function as such, the government would not stay there. Brasilia would become just a ghost town with skeletons of steel and concrete, attesting to the irresponsibility of someone who had tried, but failed, to transform a dream into reality.

As soon as the bill had been passed, I signed the new law. It also stipulated how to finance the building of the new capital through credit operations and from the sale of real estate in its vicinity. The cost of building Brasilia was thus not as high as my opponents would have it, even with the inflation in Brazil.

Had it been necessary to ask the congress for new laws or new credits to complete Brasilia, I would have obtained nothing. If my opponents had known that the building of the new capital would really be carried out, their opposition would have been quite ruthless. Soon I realized,

however, that a new bill was necessary: The constitution stated that congress alone could fix the date of Brasilia's inauguration.

That caught me unawares. I asked an opposition congressman — representing the state of Goiás, in whose territory Brasilia was to be located — to see me. I demonstrated to him what a great service he would do his state and Brazil if he presented a bill in the congress setting the date for the inauguration. This was in the year 1956 and not a single stake had yet been driven into the ground on the new capital's site. When the congress heard my suggested date, April 21, 1960, for the inauguration, they thought it was a joke and passed the bill. From that day on I felt that Brasilia was real.

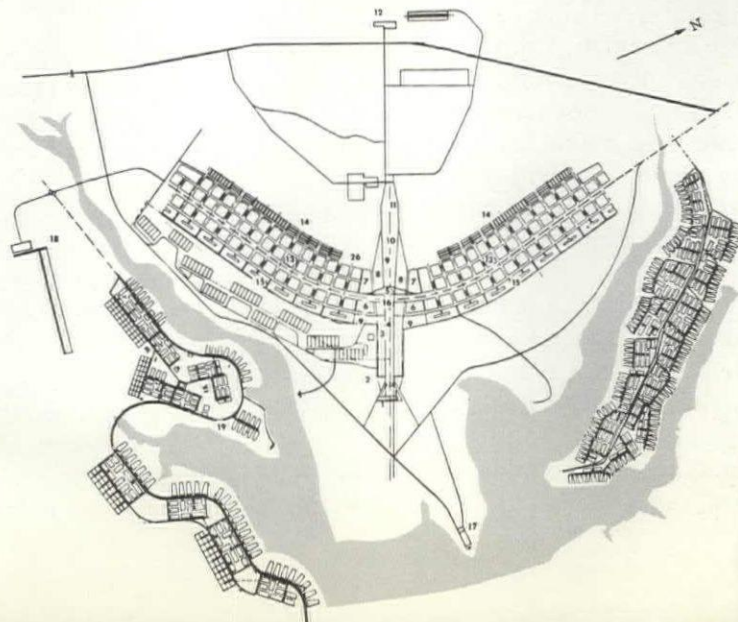
A few days later I visited for the first time the exact spot where the new capital was to be erected. Around it the plateau stretches away, limitless and silent as in genesis. The site had been carefully screened and investigated by the American firm of Donald J. Belcher & Associates, Inc., to determine soil fertility, water table, rain and wind, temperature and humidity, etc.

A makeshift runway had been laid on the virgin soil for our antiquated DC-3. I was seeing about a shelter to use temporarily during the initial building period when I found that some friends, although there were not even roads leading to the place, had brought in the necessary materials and built a seat of government, the crudest and simplest ever. It was the first presidential residence erected in Brasilia and still stands there, now with a plaque on it with this inscription: "Here, for the first time on the plateau, an electric light bulb was turned on."

Brasilia is the most recent of the 15 new cities built during the last 5,000 years to become capitals. All of them have been built near settlements, which have been their support. Brasilia is an exception. It is 760 miles from Rio de Janeiro and 690 miles from São Paulo. It had at first no roads leading to it; there were no bridges

PLAN OF BRASILIA

- 1 Plaza of the Three Powers
- 2 Ministries
- 3 Cathedral
- 4 Cultural area
- 5 Entertainment center
- 6 Banking and office areas
- 7 Trade centers
- 8 Hotels
- 9 Radio and television tower
- 10 Sports center
- 11 Municipal plaza
- 12 Railroad station
- 13 Residential sections
- 14 Family dwellings
- 15 Large living quarters
- 16 Platform and traffic center
- 17 President's residence
- 18 Airport
- 19 Private lots



Wherever I go, people ask me why Brasilia, Brazil's new capital, was erected in the middle of a wilderness, and how, in less than four years, it was possible to build and inaugurate it.

My answer is that it was imperative to build it; that it was a geographic, social and political necessity. More than that, it was Brazilian "manifest destiny." Its message above all is social, a protest against poverty, a cry against underdevelopment and at the same time against the noise, pollution and confusion of large "unplanned" cities and their human toll in terms of lost time and efficiency, alienation, dehumanization and mental and physical diseases.

In spite of this, Brasilia was born in the middle of debate, arousing right away the strong and backward opposition so frequently faced by great innovating enterprises.

I don't think I shall exaggerate if I compare the building of Brasilia, and the daring it required, to an epic. It was made possible thanks to the joint effort of thousands of Brazilians, to the united hope of millions. To erect it, legions of nameless men gathered, bringing in their hearts the fire of enthusiasm, in their souls something like the mysticism of the medieval workman who offered the effort of his entire life to construct a cathedral. Faith only set Brasilia on the plateau, like a cathedral in a wilderness, like a beacon of hope for the whole nation.

The building of Brasilia was the climax of my life as a statesman. After President Getulio Vargas' ousting and suicide in August, 1954, and a

The author: Dr. Kubitschek was president of Brazil from 1956 through 1960. His presidency was notable for economic developments and public works.

turbulent 17-month interregnum under three different interim presidents, I was elected by popular vote to the presidency in October, 1955, and took over on January 31, 1956. On February 9 there broke out a rebellion of a few Air Force officers. For a fortnight I did not leave the seat of government but concentrated fully on dealing with this seditious movement. I was afraid it might spread and make my carrying on with normal government activities impossible, so I hastened to send to the congress bills giving substance to the promise I had made to the people.

Among those bills was one already contained in the 1891 and in several subsequent constitutions of the Republic of Brazil, deciding that the capital should be moved to the central plateau of the country's interior.

To understand the necessity for this move, it must be realized that Brazil is not, and never

Engine of Development

The building of Brasilia is an illustration of a national urban policy with implications for both the domestic and foreign affairs of a country. Clearly, Dr. Kubitschek understands urbanization as a resource, how cities can generate the economic and social energies that will advance a nation's development. His statement has bearing on a number of concerns that confront the United States today.

As an agent of development, the city of Brasilia has worked wonders, as anyone knows who visits it today. Too many critics saw Brasilia too early, before it became institutionalized even in a small way. They found it a frontier town and not a city. Today's visitors view some of the most magnificent architecture of modern times. Any person who visits a school in one of the urban units will never mention the absence of institutions in Brasilia.

Far too many critics have written about the slums of the nearby Free Town and pointed out shabbiness in some of the construction of Brasilia itself. But they miss the point of Dr. Kubitschek's city. He had it built to cause change and induce development. He was so successful that the rural-oriented opposition pulled him down from the presidency to prevent the changes that Brasilia began to cause.

The US evolved differently from Brazil, its giant counterpart. The settlements that opened our West were transformed into cities slowly under the impact of entrepreneurs who sued the towns for economic gain. The towns, at the same time, produced social development.

There was never the same entrepreneurial spirit in South America; Dr. Kubitschek was faced with an undeveloped hinterland. It was in the true entrepreneurial tradition and with great imagination he thrust Brasilia into the wilderness.

America likes to believe that it thinks big. Yet, when James Rouse projects the city of Columbia, Maryland, people are perplexed at his audacity. For several years there was talk of an experimental city of one-half million in the wilds of northern Minnesota. Uninterested investors abandoned the project. Recently the National Committee on Urban Growth recommended the building of 100 new cities of 100,000 and 10 new cities of a million to take care of the urban problems of the US. These recommendations by a responsible committee were regarded as not only unrealistic but ridiculous.

Yet Dr. Kubitschek undertook the largest and most dramatic urban development of our time against all the forces marshaled by his powerful political opposition. Tragically, the last time I was in Brasilia I witnessed his monument being defiled. But Brasilia will prevail, and Dr. Kubitschek will be considered a hero of his country. JOHN OSMAN

Senior Fellow, Brookings Institution



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Comment & Opinion: The American Institute of Architects in its concern for "promoting the best interests of the United States abroad" has for many years maintained membership in the International Union of Architects (UIA) and the Panamerican Federation of Architectural Associations (FPAA). As with most international organizations, the intervening years have been filled with highlights and depressions. More recently, the enthusiasm shown by some AIA members in concert with colleagues from other lands holds promise for the rebirth of the two more vital and relevant societies.

Effectively serving international aspiration on the one hand and influencing the practice of the individual on the other has always been the great challenge. Ironically, in this past year, both organizations have undertaken studies containing new proposals for more effective structuring. The UIA, much like the United Nations, has sought to define its supranational duties on a worldwide basis, successfully providing neutral opportunity for the interchange of professional experience and knowledge within a variety of political vantage points. The FPAA, more accurately dedicated to the Western Hemisphere, seeks a greater involvement with hemispherical affairs in partnership with the many inter-American groups.

These commitments have for us potentially long-term consequences, both in terms of national interests and of individual practice. At all quarters the collective architectural societies of the world are seeking to define new relationships between their practice and society's needs. We are each trying to communicate more clearly and effectively and to focus on those relative issues that, among other things, widen the gap between client and user.

Considering the extraordinary limitations of the AIA Committee on International Relations, it is indeed remarkable that so few have been able to effectively participate in these functions to the successful degree that they have. The committee continually seeks to intensify participation and new programs as it simultaneously re-appraises that to which it is presently committed.

It is particularly appropriate to remind architects of this modest area of activity prior to the 10th UIA World Congress in Buenos Aires in October and in an issue of the AIA JOURNAL that turns its attention to the significance of planning principles in two new towns — one large, the other small — in South America.

RICHARD SHARPE, AIA

Chairman, AIA Committee on International Relations



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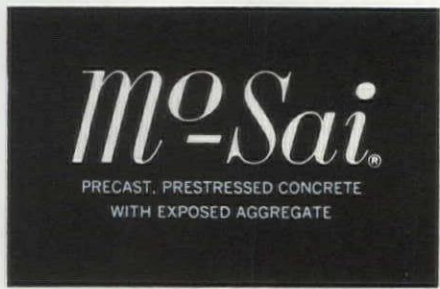
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Wausau, Wisconsin
Architects: Childs & Smith, Inc., Architecture-Engineering

Middle left: Hartford National Bank Building
Hartford, Connecticut
Architects: Welton Becket and Associates

Middle right: National Farm Insurance Company
Fort Worth, Texas
Architects: Grayson Gill, Inc.

Bottom: Torrington Manufacturing Company
Torrington, Connecticut
Architects: Marcel Breuer and Herbert Bechard

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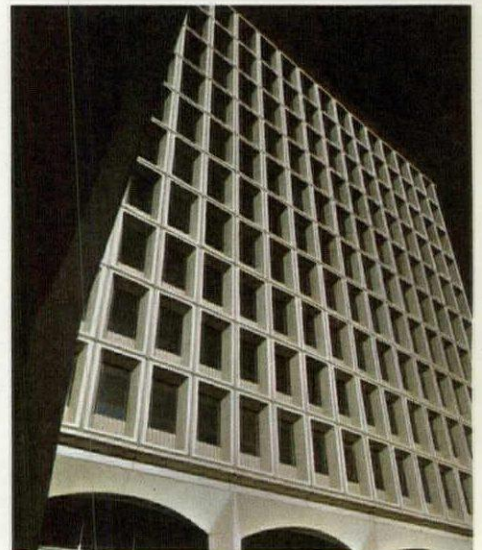


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VILLAGE PLAZA, Dearborn, Michigan.
Architect: Harley, Ellington, Cowan & Stirton, Detroit, Mich. Gen. Contractor: A. Z. Shmina & Sons Co., Dearborn, Mich. Precast Producer: Precast/Shokbeton, Inc., Kalamazoo, Mich.



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UNFINISHED BUSINESS

BY BAILEY RYAN, AIA
Chairman, AIA Committee on Public Relations

Call to Reorder National Priorities

In an unprecedented move the new Board of Directors, at the post-convention meeting in Chicago, passed a resolution calling for Convention Resolution No. 10, on National Priorities, to be published as a full-page advertisement in the *New York Times* and the *Washington Post*.

The board also indicated that copies of the ad were to be sent AIA component presidents with a request that they consider publishing quarter-page versions at chapter expense, in local newspapers with leading circulation and in state capitals.

Copies of the national ads are being sent to congressmen, senators and other leaders of the federal government. Chapters are encouraged to distribute copies of the ads they publish to their state leaders and others.

The full-page ads appeared in the nationally distributed edition of the *New York Times* on July 8 and in the *Washington Post* the following day. Response was immediate and enthusiastic. Telephone calls, wires and letters to the Institute indicated that it was "heartening to see a concerned, humane, professional group express itself in this manner."

As this is written, the lone negative response was from a State Department spokesman who was concerned that the ad might impair the department's relationship with other countries and encourage isolationism in the United States.

Typical of the many unsolicited, complimentary responses was that of Senator Alan Cranston (D-Calif.), who said:

"You have eloquently expressed the sentiments of millions of Americans and I want to commend you for this forthright position. You can be sure that I, along with many of my colleagues, will

be working hard toward those goals which we all share."

This advertising effort is but one example of the Institute's accelerated program of speaking out with positive recommendations on matters of national concern. The enthusiastic response from the public indicates that the image of the profession, which some have

described as a gentleman's club, a trade union, or a blueprint maker, is changing to an image of a profession that is vitally concerned with man and his environment.

AIA member individually and AIA component organizations can make a major contribution by participating in this and other comparable Institute efforts. □

It has become clear in both moral and economic terms that our nation can no longer afford or pretend to intervene in the political and military affairs of nations throughout the world, maintain a military and weapons establishment of unlimited size, explore the moon and, at the same time, rebuild our decaying cities, provide an adequate supply of housing, and finance domestic programs needed to solve pressing social problems.

THEREFORE, BE IT RESOLVED BY THE ARCHITECTS OF AMERICA THAT:

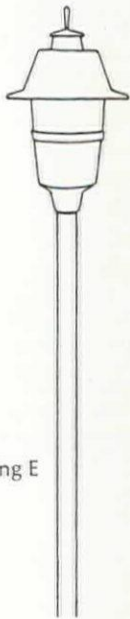
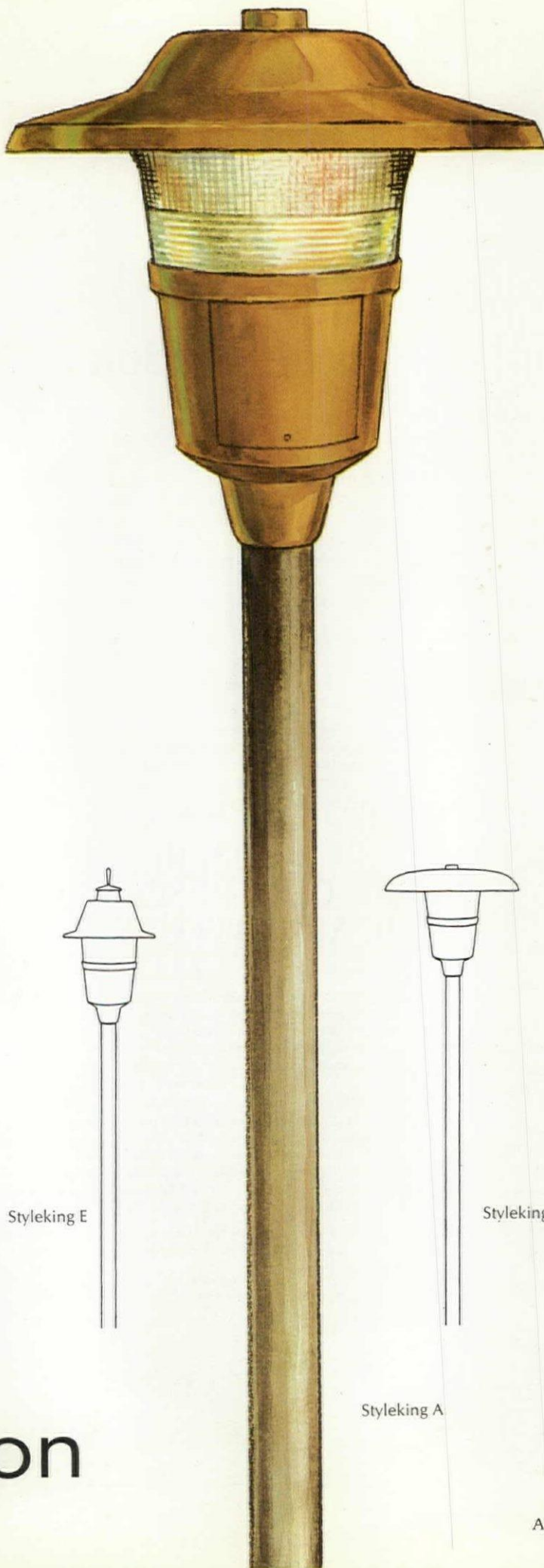
One. We call upon the President and the Congress to assume responsibility for a comprehensive reexamination and reordering of our national priorities, recognizing that we have neither unlimited wealth nor wisdom, and that we cannot sensibly hope to instruct other nations in the paths they should follow when we are increasingly unable to demonstrate that we know how to maintain a viable society at home.

Two. We call upon our leaders, at all levels of government, to recognize that an efficient and humane environment is basic to the maintenance of a harmonious and prosperous society and that the skills to produce it are well within our grasp. At the same time, we wish to remind our representatives that neither hope, time, nor technology will solve the problems that presently make urban life a dirty, difficult and dangerous experience. Only a wholehearted commitment of will and money will enable us to apply the skills needed to erase the shame of urban America.

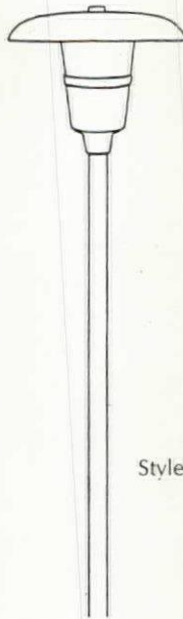
Approved and adopted by The American Institute of Architects at its annual convention in Chicago, Illinois, June 26th, 1969.

The American Institute of Architects
1735 New York Avenue, N.W., Washington, D.C. 20006

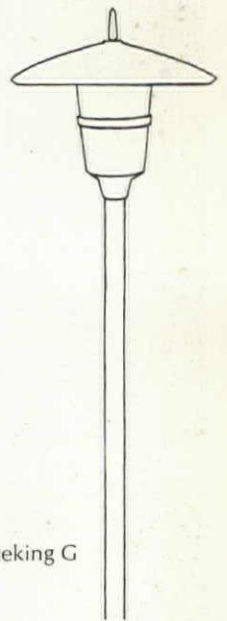




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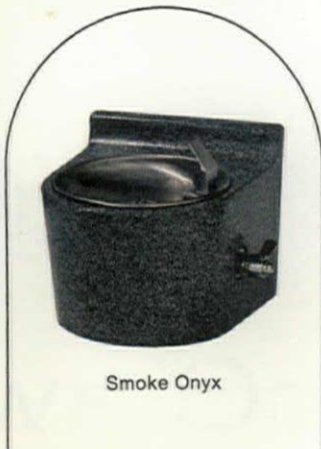
Model 90-C at right, 50-C below, available in all five colors. Ask about Haws remote chillers for hidden cold-water source.



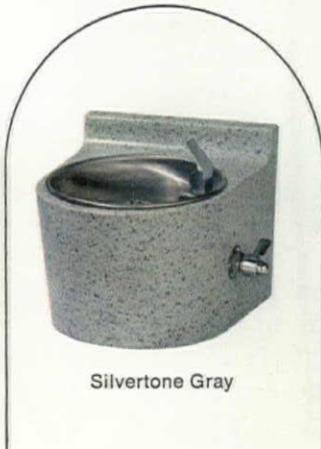
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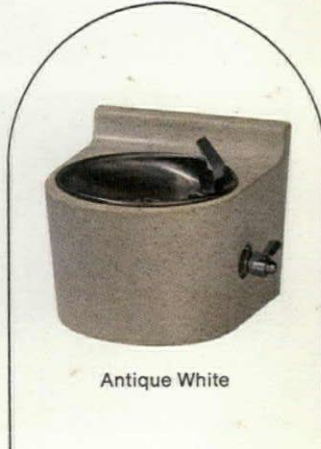
Smoke Onyx



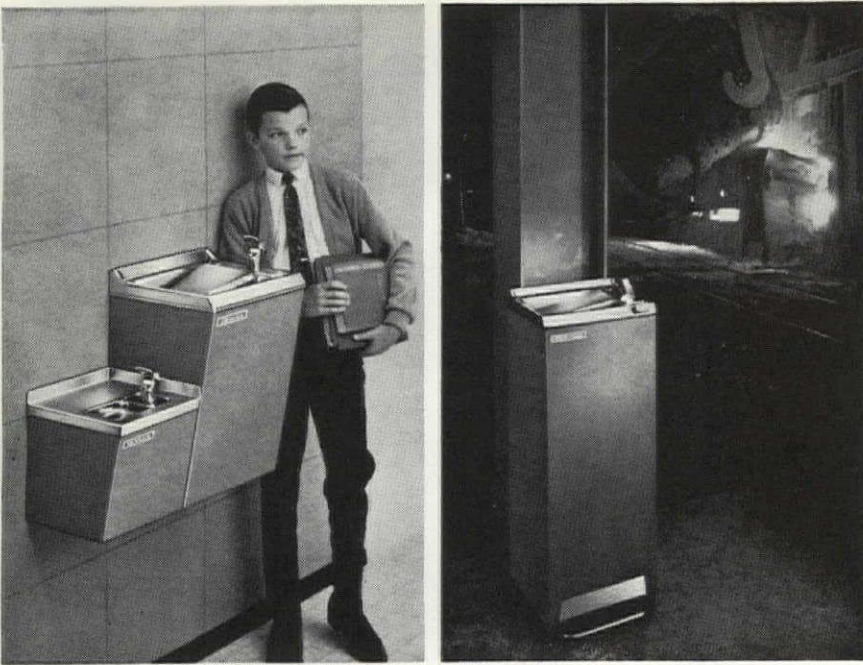
Silvertone Gray



Terra Cotta Beige



Antique White

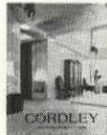


(Left) Cordley Water Coolers fit into a school like an "all-A" student; smaller companion fountains serve the little fellows. (Right) Heavy-duty model serves hot and heavy industry.

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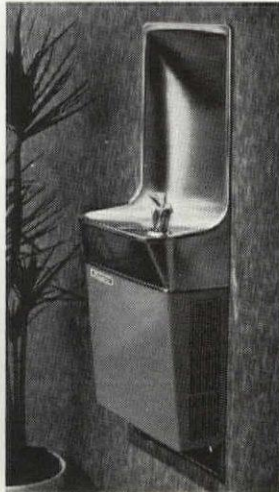
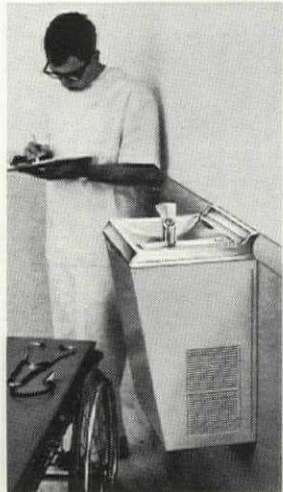
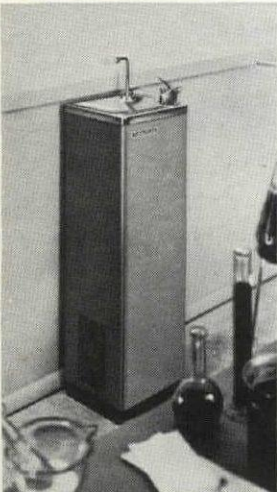
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plained that such action would provide money in meeting its responsibilities and at the same time put valuable land back on the city tax roles.

Charles A. Blessing, FAIA, director of city planning for Detroit, told the delegates that "the church of the future might be conceived as a year-round community, social welfare and cultural institution, reflecting the countless words that have been written about the new social responsibility of the church."

Dawn of a New Day: Speaking on the matter of design, Robert L. Durham, FAIA, past AIA president, said that his profession was concentrating on ways to combine texture and light for simple beauty in church buildings.

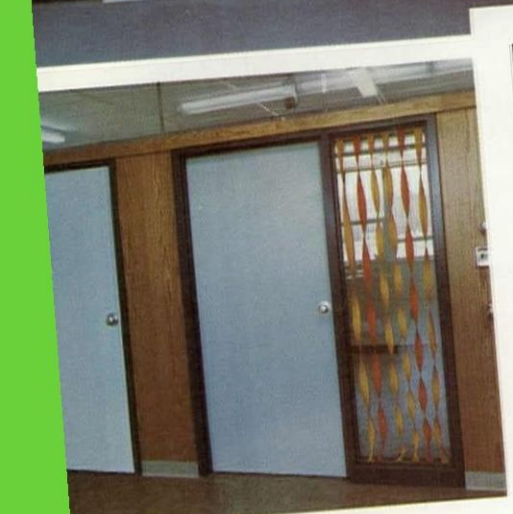
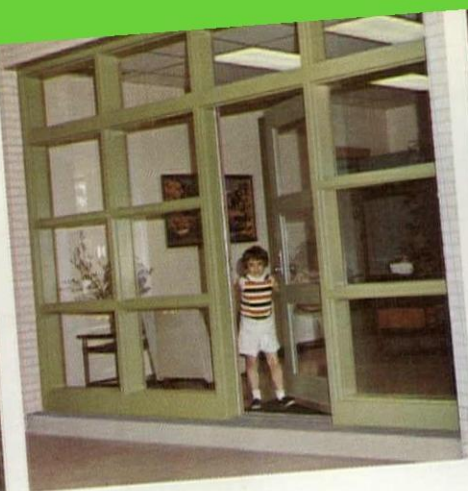
"We have come out of the phase of architectural exhibitionism, characterized by extravagant roofs and parabolic sides," he pointed out. "We used to study European cathedrals and come back trying to build little cathedrals; that day is over."

NECROLOGY

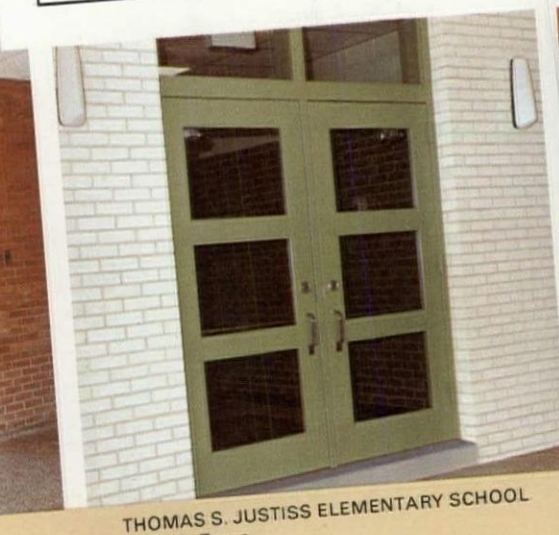
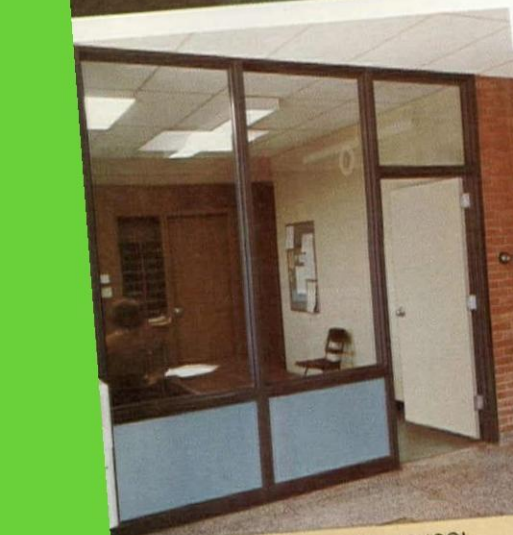
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Dual Use Is Key: Jurors George E. Kassabaum, FAIA, St. Louis, immediate past president of the Institute; Leon Brown, FAIA, Washington, D.C.; Jules Gregroy, FAIA, Princeton, N.J.; James F. Shivler Jr., engineer, Jacksonville, Fla.; and James E. Roembke, OCD engineer, looked for projects demonstrating both design excellence and employing effective and economical dual-use fallout shelter space.

"Dual-use shelter" was defined by A. Stanley McCaughan, FAIA, professional adviser to the awards program, as referring to a room or space having as its primary function an important peacetime use, but also capable of providing emergency protection from radioactive fallout.

"OCD has often pointed out that such dual-use shelter can be achieved at very low cost and frequently at no additional cost when planned as part of new building construction," the Washington architect said.

Thumbs Down in Baltimore: While the delegates to the AIA convention in Chicago voted down a motion advocating the Institute's complete withdrawal from any ac-

tivities connected with the program, both individual and collective voices of opposition were making themselves heard elsewhere.

The Baltimore Chapter AIA in a 46-7 vote resolved that its members are "opposed to any chapter involvement in the fallout shelter program, and we further urge that the national AIA oppose any activity in this program."

The Schools React: The MIT architectural faculty, at a meeting attended by a majority of its members, by resolution asked "the AIA to repudiate OCD's fallout shelter program and to discourage any further use of professional talent to design instruments of military policy."

The resolution commended the Yale architectural faculty for canceling the Nuclear Defense Design Summer Institute to be co-sponsored by the AIA and OCD and suggested that other schools do the same.

The Fellowships Go On: Meanwhile, OCD Graduate Student Development Program will provide assistance to 37 students for the 1969-70 academic year. This makes a total of 107 fellowships awarded since the program began in 1966 under the administration of the American Society of Engineering Education and supported by OCD.

Engineers Give Top Design Award to Virginia Job

First place in the Chief of Engineers 1969 Architectural Design Contest has gone to the Dispensary and Dental Clinic at Fort Myer, Va., designed by McCaughan & Johnson, Washington, D.C., under the supervision of the Norfolk Engineer District.

From a field of 16 entries, architect-jurors also picked three honorable mentions:

• Army War College Auditorium, Carlisle Barracks, Pa., by Haines, Lundberg & Waehler, New York,

for the Baltimore Engineer District.
• Shaw Air Force Base Composite Medical Facility, S.C., by Lyles, Bissett, Carlisle & Wolff, Columbia, S.C., for the Savannah Engineer District.

• Wheeler Air Force Base Chapel and Annex, Hawaii, by Hogan & Chapman, Honolulu, for the Honolulu Engineer District.

In selecting the Fort Myer project as best, the jury praised the "strong, powerful and yet calm exterior treatment to a building which houses complex functions. The restraint in the use of color and material results in a dignified and most pleasing simple statement, with the main entrance facade having good scale, and the other elements equally well handled. The arrangement of main corridors permits convenient access to the various services and clinics in the building."

Church Sessions Reflect Turmoil of the Times; Future Role Questioned

The social responsibility of the church seemed to emerge as the dominant theme of the National Conference on Religious Architecture, but there was little agreement among the speakers as to how to go about fulfilling that obligation.

Percival Goodman, FAIA, urged the 500 registrants at the St. Louis sessions to start designing buildings for hippie and radical youth rather than for the present power structure.

Said the professor of architecture at Columbia University:

"We have to ask ourselves who shall be our clients—those with long beards and long hair who look something like the disciples of Jesus or the Jewish patriarchs—or the others who have brought about war and air and water pollution.

"For most of us there isn't much question," Goodman continued. "We ask ourselves who has the money, and the power structure has the money. But the most serious question we must ask ourselves is who has the future?"

Tear Them Down: A Concordia Seminary theologian, on the other hand, suggested that churches in urban areas tear down their structures and erect office buildings on the sites.

Dr. William Danker, professor of missions at Concordia, ex-

Continued on page 34



Fort Myer Dispensary and Dental Clinic is cited for "its strong, powerful and yet calm exterior treatment in a building which houses complex functions."



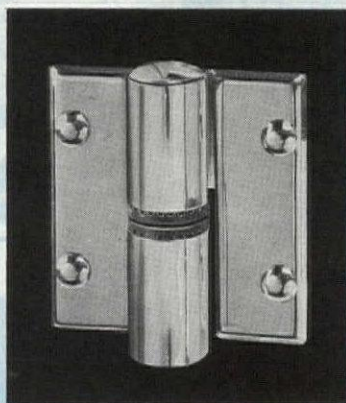
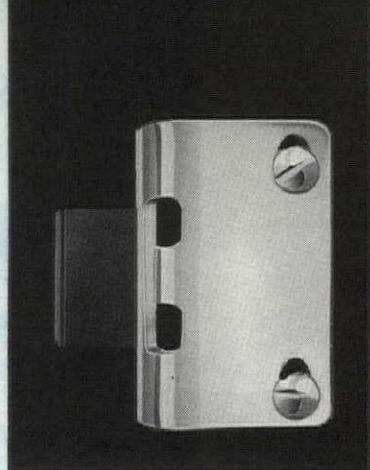
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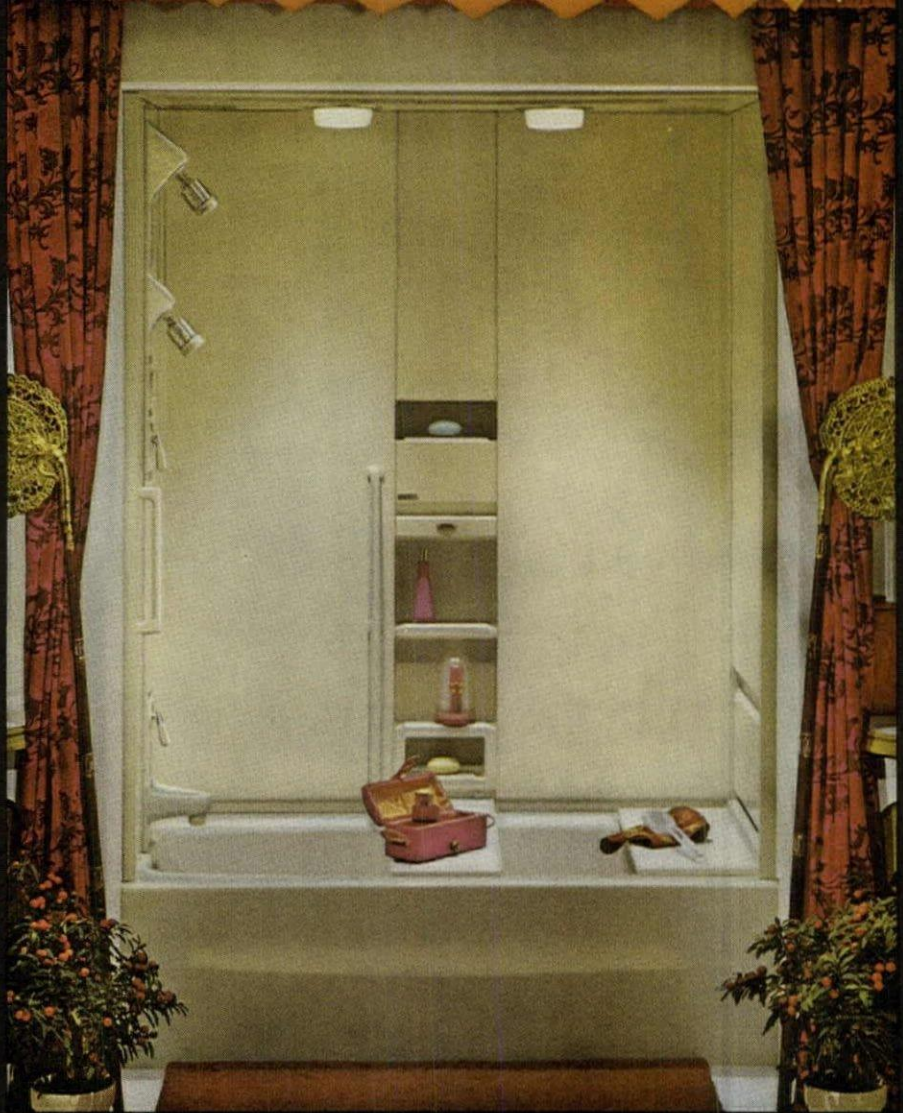
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Architects Look to UIA Congress in October; Students Plan Sessions

The Institute will be officially represented by seven delegates and as many alternates at the 10th World Congress of Architects in Buenos Aires this fall.

But an invitation to all AIA members and to architectural students as well has been extended by Daniel Schwartzman, FAIA, the Institute's representative to the Executive Committee of the International Union of Architects.

Prior to the Oct. 19-25 sessions,

the UIA Assembly will convene to consider a change in statutes and bylaws, the result of an in-depth study by an ad hoc committee chaired by London's Sir Robert H. Matthew, former UIA president.

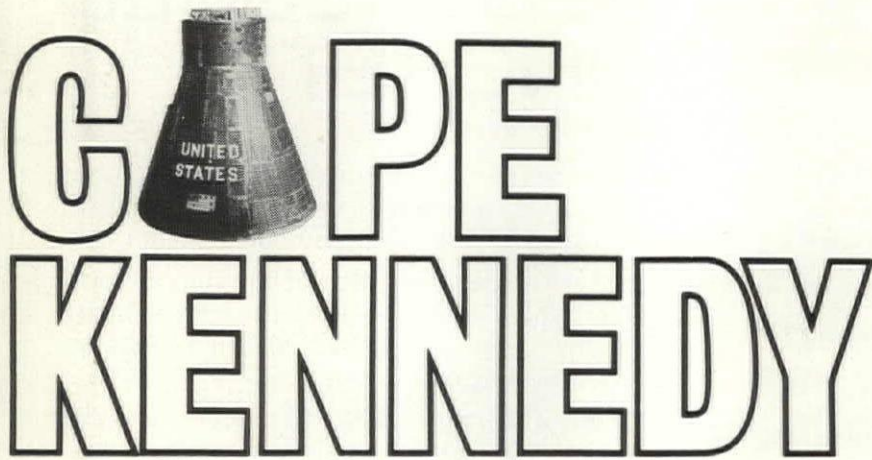
A post-congress meeting of town planners will take place Oct. 27-29 in Mar del Plata, Argentina. And an "Architect's Trek to South America," departing Oct. 7, will be held in conjunction with the Congress. (see AIAJ, April, p. 18).

The Student's Secretariat of the congress will gather young architects from all parts of the world Oct. 11-16, with "Housing of Social Interest" to be the main theme.

Now representing architects from more than 75 countries, the

UIA has, according to Schwartzman, continuous liaison with the United Nations in relation to housing, building and planning; UNESCO in relation to education and research; the World Health Organization in relation to health care buildings; and most other prestigious world groups in related fields.

Its principal work is carried out through yearly meetings of commissions and study groups in the fields of housing, town planning, recreational buildings, industrial buildings, schools, and professional practice made up of a limited number of members especially qualified in these fields. The Institute is represented on every one of these commissions and study groups, Schwartzman explained.



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Volpe Bars Federal Funds For Vieux Carré Highway

Federal funds for a riverfront expressway through New Orleans' Vieux Carré have been withdrawn by Transportation Secretary Joseph A. Volpe.

The Secretary's action in withholding the funds was expected to have impact in cities across the country which are involved in similar controversies over urban highways.

Opponents of the New Orleans expressway charged that it would inflict irreversible damage on the famed French Quarter.

Volpe refused to approve nearly \$30 million for 90 percent of the cost of the 3½-mile roadway, part of Interstate Route 310. He said an alternate site avoiding the Vieux Carré would be approved.

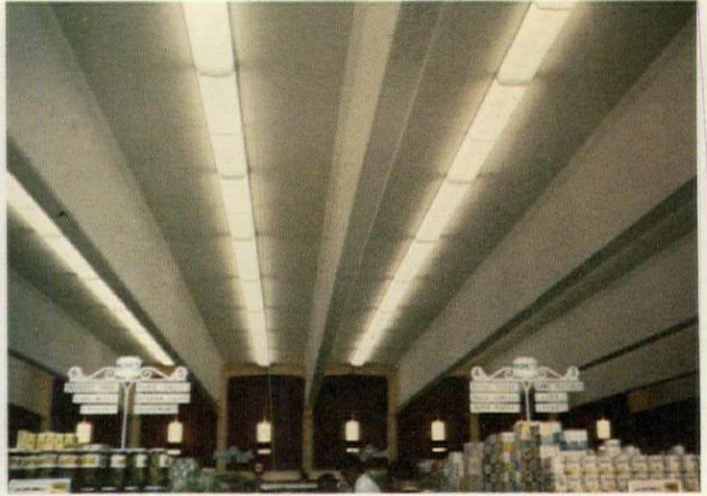
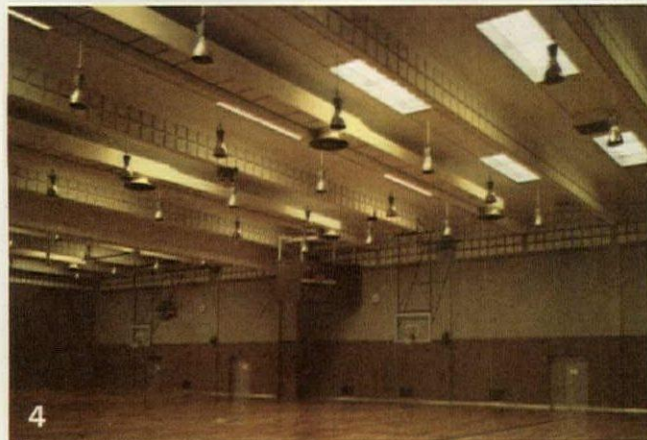
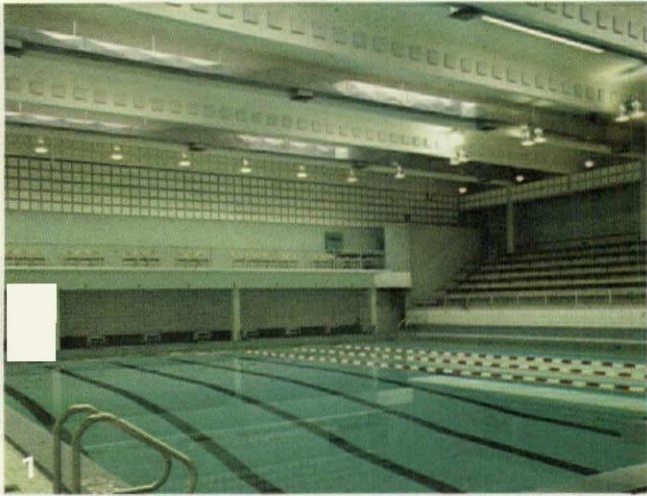
The action came shortly after the AIA convention which adopted a resolution in support of the Advisory Council on Historic Preservation which urged that an alternate route be sought for Interstate 310.

Fallout Shelter Awards Are Made as Opposition To the AIA's Role Grows

Seven projects incorporated in fallout shelters in their design have been honored in a nationwide architectural awards program conducted by the AIA — a role that is drawing criticism at the request of the Office of Civil Defense.

First Honor Awards have gone

Continued on page



ARCHITECTS: (1) J. ALFRED HAMME & ASSOCIATES; (2) HARRY PAYNE & ASSOCIATES;
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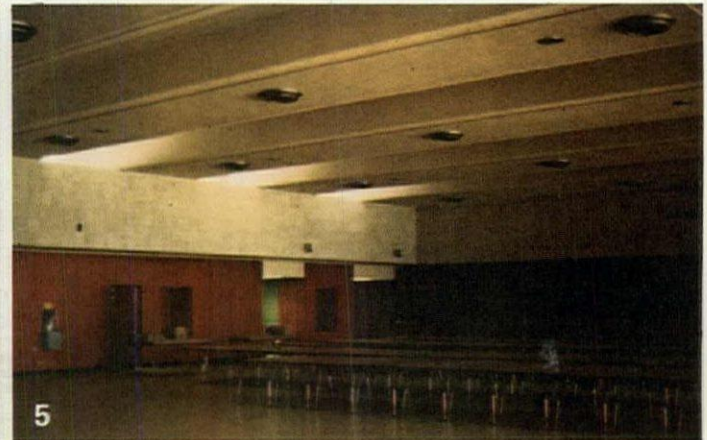
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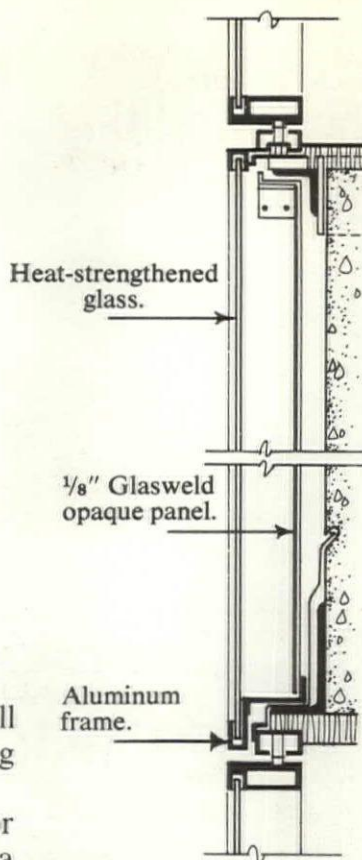
Why the upsurge in its uses? For one reason, Glasweld comes in a choice of 26 colors that retain their integrity for years on exteriors and in interiors. Regardless of the most rigorous climatic or environmental conditions.

In fact, Glasweld installed on buildings more than ten years ago still retains its original condition—a testimonial to the material's long "life expectancy." Indeed, the surface of Glasweld is comparable in durability to the best grades of exterior porcelain enamel and ceramic tile.

But durability and looks aren't everything. Equally important, Glasweld is easily and quickly installed. It's also simple to cut and drill. Only ordinary power tools are needed.

Glasweld is economical, too, when it comes to maintenance. It requires no painting or refinishing for at least 15 years. Cleans easily, too.

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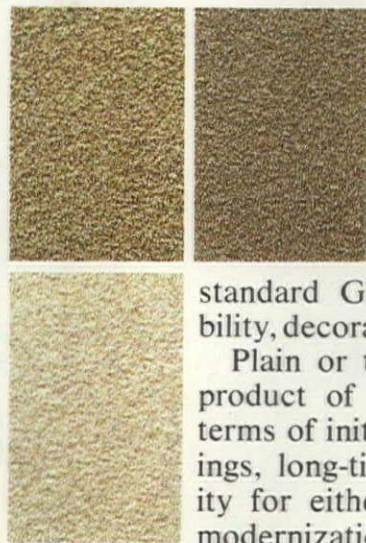


Section through Exterior Wall, New York Telephone Building.

Glasweld is also noted for its immense versatility. It has been widely used for curtain wall panel facings, fascias, soffits, opaque window inserts, balcony panels, and interior linings. Moreover, it is an excellent material for use in rooms—such as laboratories—that must be kept dust-free. Since Glasweld is virtually free from static buildup, dust will not readily cling to its surface.

New textured Glasweld.

In addition to standard Glasweld in a range of 23 colors, U.S. Plywood, recognizing that architects have many uses for textured materials, now offers new sand-surfaced Glasweld with a distinct textured appearance. The new textured designs of Glasweld include Rhine Sand, Moselle Sand and Champagne White Sand. (As shown at left.) And the aggregate is adhered with an inorganic bond.



These new textured designs retain all the qualities for which

standard Glasweld is noted: durability, decorative value, and economy.

Plain or textured, Glasweld is a product of unusual practicality in terms of initial cost, installation savings, long-time service and durability for either new construction or modernization.

For further information on Glasweld, call the Architects Service Representative at your nearest U.S. Plywood office or write:



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What's new about the new New York Telephone Building?



ARCHITECT: KAHN AND JACOBS

Among recent additions to Manhattan's skyline, one of architectural distinction is the 24-story building of the New York Telephone Company.

One of its unique features is the way in which black Glasweld® was incorporated in its window wall design. Glasweld was used as an opaque panel behind glass in the spandrel area. (See installation diagram on the next page.)

Why put Glasweld *behind* glass when it retains its look

of newness for years on exteriors with no protective cover at all? Because it enabled the architects to emphasize the verticality of window treatment—an element of design that greatly enhances the building's striking appearance.

This unique use of Glasweld exemplifies the versatility of the material or how—in the hands of innovative architects—it can be used to achieve distinctive effects.

hind the scenes by student and AIA leaders, was described by Rex W. Allen, FAIA, the Institute's new president, as the convention's most significant action.

It provides that the AIA Task Force on Equal Opportunity—since renamed the Task Force on Social Responsibility and now headed by a newly elected Institute vice president, George T. Rockrise, FAIA—"supplemented by a voting student social-concern

team, meet with the express purpose of establishing programs and an administrative structure for operating and disbursing funds."

Such a meeting was scheduled for late last month and was to take up, among other things, the question of collecting contributions and the programs to be funded. Weighing heavy in student concern, it appeared, are efforts to aid seven predominantly black and non-accredited schools of architecture, community design centers and black students of architecture.

Among more than two dozen other convention resolutions was one that was to occupy a full page in both the *New York Times* and the *Washington Post* (see *Unfinished Business*). The AIA board of directors decided in its post-convention meeting that the resolution, which calls for a "re-examination and reordering of our national priorities," be published in the two newspapers as full-page advertisements.

Officers Are Elected: Besides installing Allen, who took over as president from George E. Kassabaum, FAIA, the convention elected Robert F. Hastings, FAIA, as first vice president. Hastings, of Detroit, will succeed Allen with the start of 1971, the convention having adopted a bylaw which puts the terms of national office on a calendar basis.

For vice presidencies the delegates chose Francis D. Lethbridge, FAIA, and George M. White along with Rockrise. Rex L. Becker, FAIA, was elected treasurer.

Convention delegates heard and participated in a discussion on proposed changes to the Standards of Professional Practice.

The changes, touching on such sensitive areas as building contracting and contingency fees, were presented to the convention for discussion rather than action

September's AIA JOURNAL will carry a complete convention report.

and that was exactly the way delegates wanted it. They voted to have any action deferred for one year. Then, after full discussion among members, they can be presented for action at next year's convention in Boston.

Delegates supported a resolution backing bills in Congress to establish a national institute of building sciences. The proposed institute would evaluate the performance of building materials and techniques and work toward consistency in the formulation and administration of building codes.

However, they rejected consideration of a resolution calling upon the Institute to disdain "any official involvement in the fallout shelter program" of the Office of Civil Defense. But there was a considerable number of voices heard in support of the resolution. The AIA involvement concerns an OCD design program and design courses on the incorporation of fallout protection in facilities intended for peaceful use.

Continued on page 28



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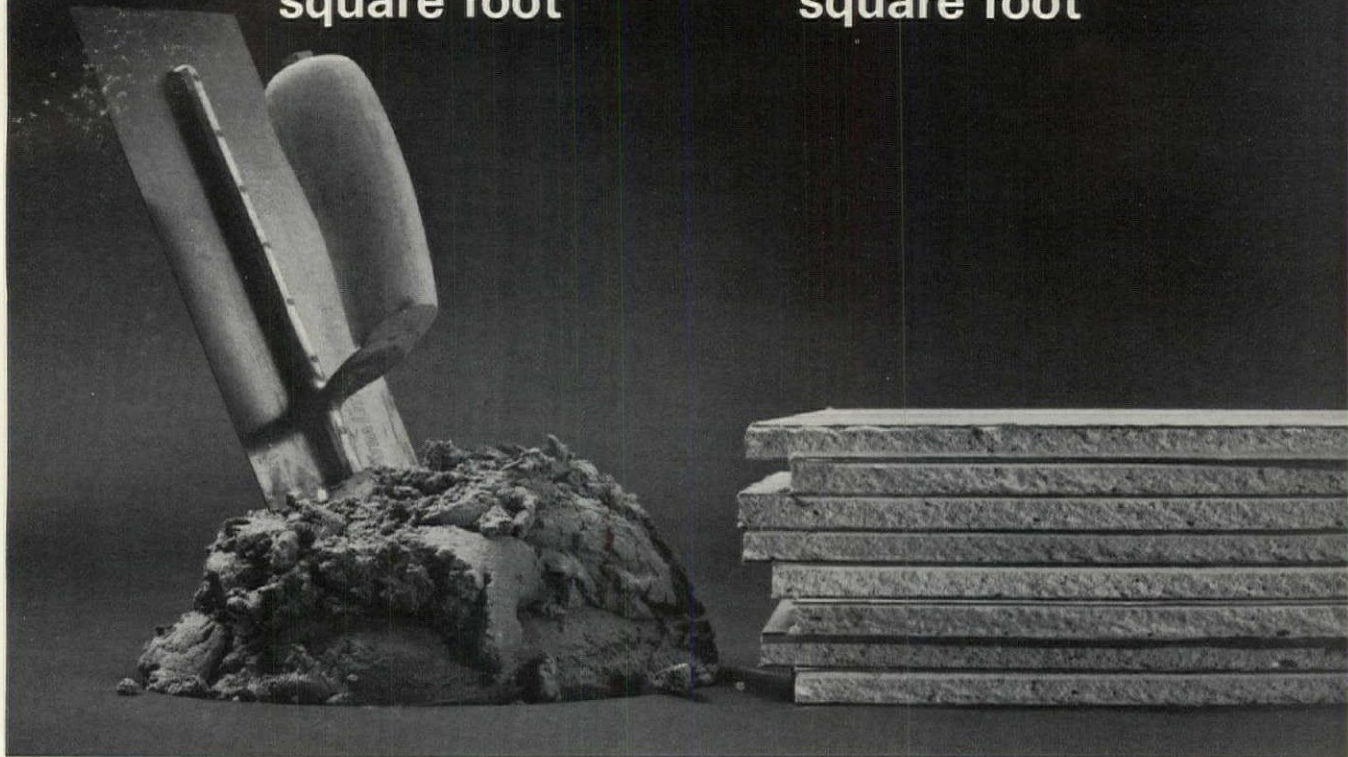
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Newslines

Call for Massive Funding For Social Program Gets 'Aye' Vote at Convention

The numbers were big. Total registration was nearly 5,000, the largest ever. But the most pervasive number in Chicago's Palmer House was 15,000,000.

Representing dollars, that figure was popped early in the joint convention of The American Institute of Architects and the Royal Architectural Institute of Canada as what architects might tax themselves to ameliorate the urban crisis and to make the disadvantaged less so. It remained on the tips of most tongues throughout the June 22-26 sessions.

In the end the issue proved as persuasive as it was pervasive. Virtually without opposition, convention delegates adopted a resolution which declares that there

must be "individual realizations of responsibility (for the nation's environmental maladies) in the form of economic commitments," and which calls for the creation of machinery to get programs started "in line with the \$15 million goal."

It was during a student-AIA officers "dialogue" session on the Sunday opening the convention week that the \$15 million figure arose. Taylor Culver, president of the Association of Student Chapters/AIA, in going after some kind of tithing commitment from the profession, struck a positive chord with the officers and a number of members, including Frank B. Hunt, AIA, San Francisco.

Rate Times Hours: "Ten percent is the answer," said Hunt, who then presented a breakdown that began with 10 percent of the work week, or four hours, which Hunt suggested could be contributed as either time or its monetary equiv-

alent—\$20, on the basis of \$5 an hour. The yearly contribution in either services or funds, then, would be \$1,000 from each participating architect. Estimating the number of participating architects—those who could, should and would make contributions—at 15,000, Hunt came up with the \$15 million total.

However, in the convention's second business session, Culver scrapped the idea of time contributions. The students had been thinking along lines that the least a man could do was give 10 percent of either time or money, Culver said, but then got to wondering: "Would we really want his time if we thought he couldn't really solve the problem? So we decided that we would keep him home." The delegates laughed good-naturedly.

The resolution, worked out be-

Continued on page 20

Replace 'Graveyard Oratory' with 'Fiesta' Says Gropius in Testament; Works Almost Until End at TAC Offices

"One must be always progressing to the future. Live longer—through endurance you may become somebody!"

Those words were spoken by Walter Gropius, FAIA, on the occasion of his 85th birthday a year ago May at a festive party on the Harvard University campus (see AIAJ, July '68).

Until just seven weeks before his death on July 5, Mr. Gropius had worked at the Cambridge, Mass., offices of the Architects Collaborative, the firm which he founded with a group of younger men in 1946 and which has been commissioned to design the Institute's new headquarters.

A truly modest man who received worldwide honors, including the AIA Gold Medal in 1959, he had, of course, become "somebody," and his influence today is felt far beyond the realm of architecture.

When Mr. Gropius was awarded a Doctor of Philosophy of Arts at the University of Illinois, Urbana, last year, Dean Leonard J. Currie of the College of Architecture and Art, Chicago Circle, put it this way:

"Skilled shaper of human environment, of cities and buildings

and artifacts to serve the spiritual and material needs of mankind; philosopher, teacher, beacon and guide for generations of students and practitioners seeking order and clarity of principle; environmental theoretician and strategist of the urban order; 20th century counterpart of the ideal Renaissance man."

Mr. Gropius established the Bauhaus in Weimar, Germany, in 1918, which he moved to Dessau in 1925. It was closed by the Nazis eight years later.

In 1934, he and his wife fled from Germany to England, where he entered into private practice as a partner with Maxwell Fry.

Mr. Gropius came to the United States in 1937 to join Harvard's Graduate School of Design as a professor of architecture. He became department chairman the following year, a post he held until 1952.

Through all the years he was always close to the drawing board, and his projects can be found around the globe, such as the University of Baghdad, Iraq, a personal favorite, and a satellite city named Gropiusstadt outside Berlin, one of the most recent.

In a testament written in April



1933, to be read after his death, Mr. Gropius declared:

"Cremate me, but ask not for my ashes. The piety for cinders is a half-way thing. Out with it.

"Wear no signs of mourning," he admonished. "It would be beautiful if all my friends of the present and of the past would get together in a little while for a fiesta—à la Bauhaus—drinking, laughing, loving. Then I shall surely join in, more than in life. It is more fruitful than the graveyard oratory."

The funeral was carried out according to his wishes as friends and associates joined his widow Ise, who carried a single, long-stemmed rose, in sipping champagne in the TAC offices.

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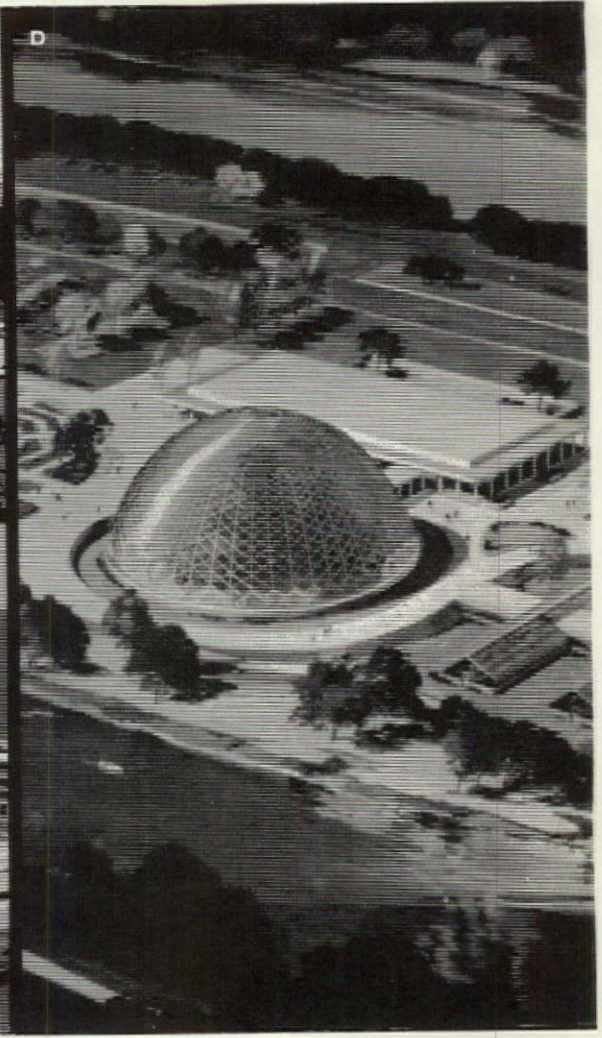
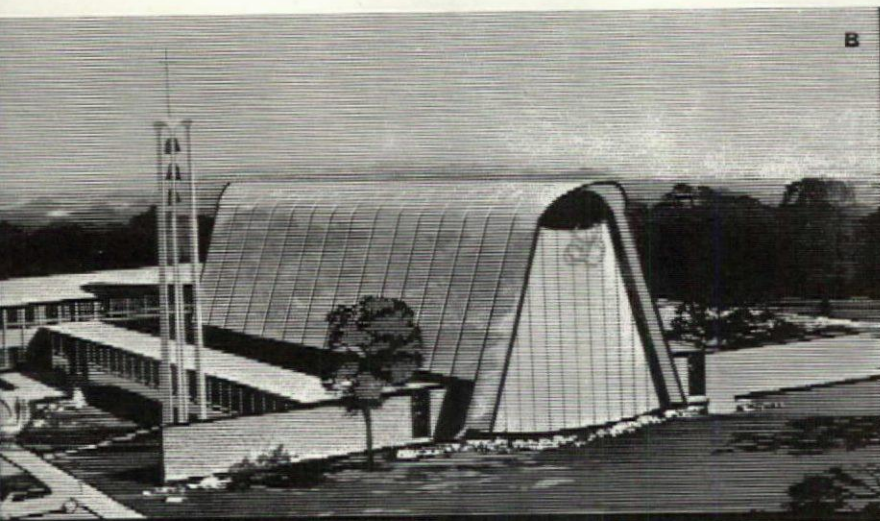
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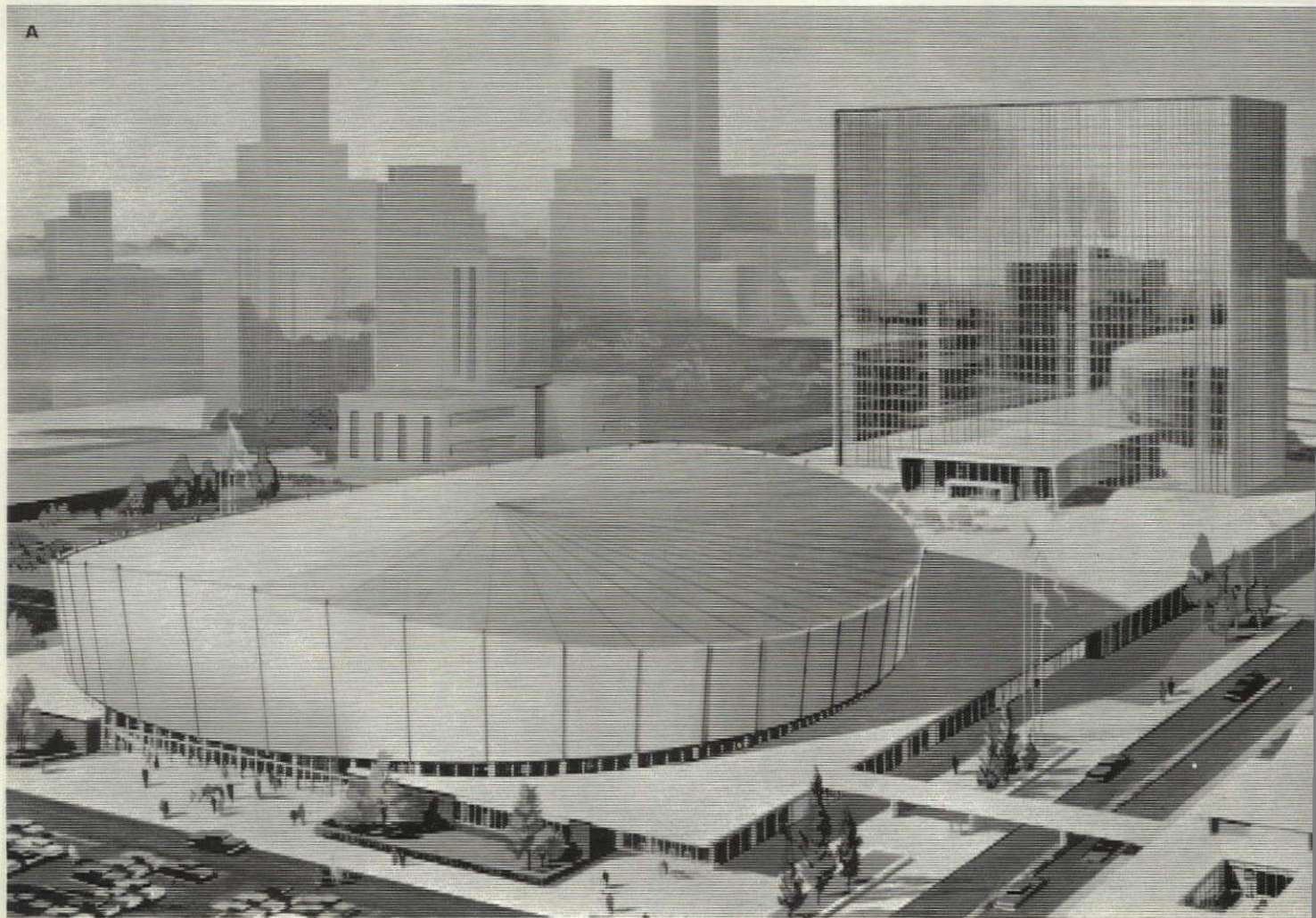
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Four new buildings for the Dayton, Ohio metropolitan area proposed by Brown and Head & Associates, Dayton. (A) Architect's conception of City Convention Center, consisting of a 50,000 square foot arena and 20-story, 250-room motor hotel. Lorenz, Williams, Williams, Lively and Likens, also of Dayton, were associated architects on the project. (B) Good Shepherd Lutheran Church, Washington Court House, consisting of 300-seat sanctuary, 20,000 square foot education wing, 3000-square foot administrative quarters. (C) City Transportation Center for rapid transit, bus, airline, and rail travelers, conceived for feasibility study. (D) Horticultural Center, including a 180 foot round dome for flower conservatory, single-story structure housing meeting rooms, green houses, and caretaker's quarters.







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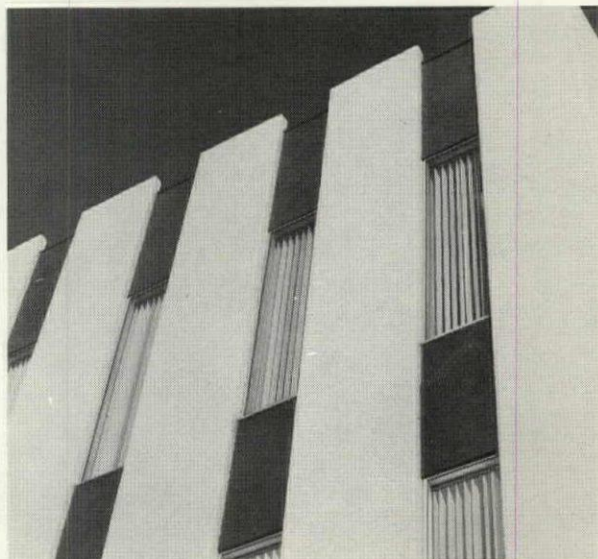
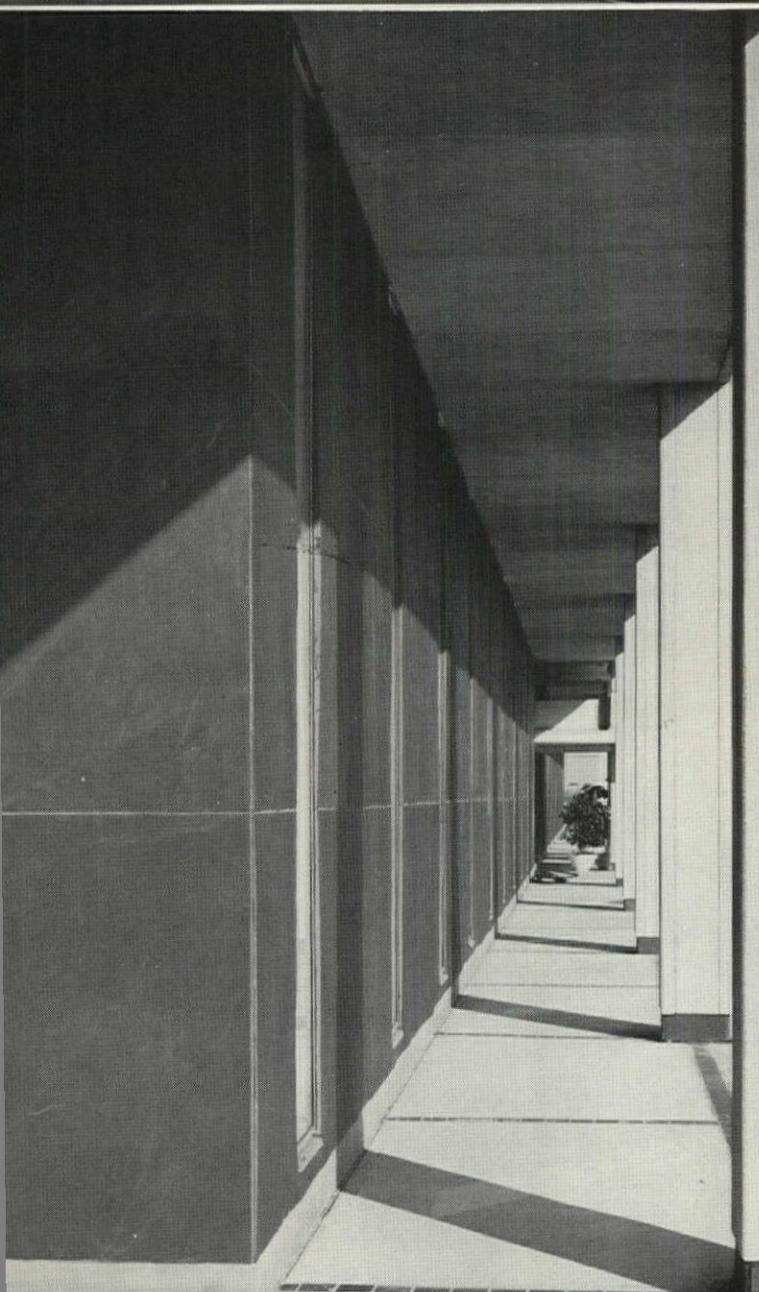


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Asides

Next Month: The 101st convention of the Institute, held jointly with its Canadian counterpart, was the biggest ever, as reported on page 16. While that story wraps up the news highlights of the June 22-26 sessions, the September issue will focus on the broader aspects of the entire program: major addresses, workshops and social events — the Great Train Shed Party had to be the greatest ever.

In addition, we will feature the first piece of architectural criticism written by an AIA member of another firm's work as developed in collaboration with the AIA Committee on Design; and since the subject is the Chicago Civic Center, it seems only fitting to include it in the Convention Report issue.

Off the Press: The 1969 edition of the Directory of Behavior and Environmental Design provides a biographical listing of more than 250 professionals in 34 disciplines concerned with research in that area. It is of particular interest to our staff since a survey made a few years back among the individuals listed indicated that the AIA JOURNAL is a chief source or outlet for environmental behavior research. The directory is available at \$3 a copy from the Research and Design Institute, P.O. Box 307, Providence, R.I. 02901.

And Out of Print: *The Potomac*, the report of the Potomac Planning Task Force which was reviewed in our November 1967 issue, is no longer in print, according to the Department of the Interior.

Back in the Office: The growing influence of office landscaping, the leadoff presentation in July, is reflected in this year's Royalmetal Student Design Competition. The program called for planning a general office for 12 people using the landscaping concept. The top \$500 award was given for a scheme by Richard A. Richards, a June graduate of the New England School of Art, Boston. R.E.K.

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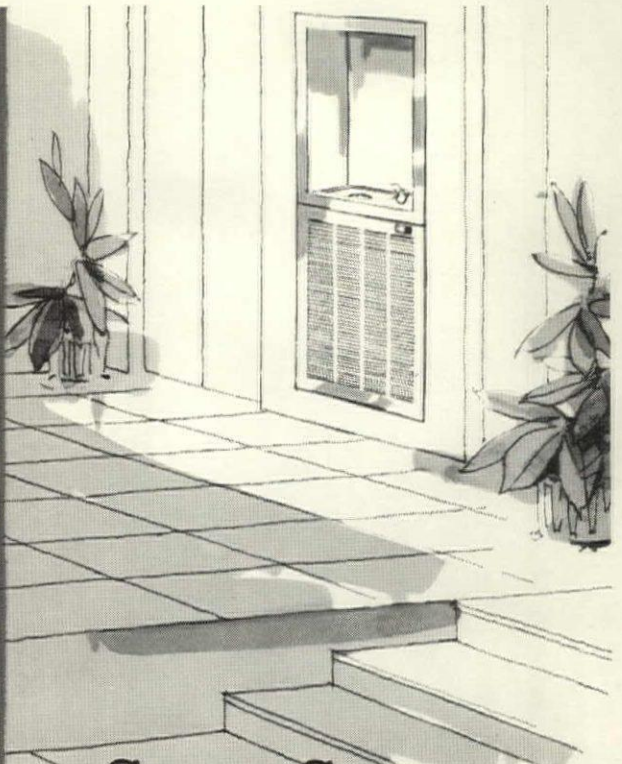
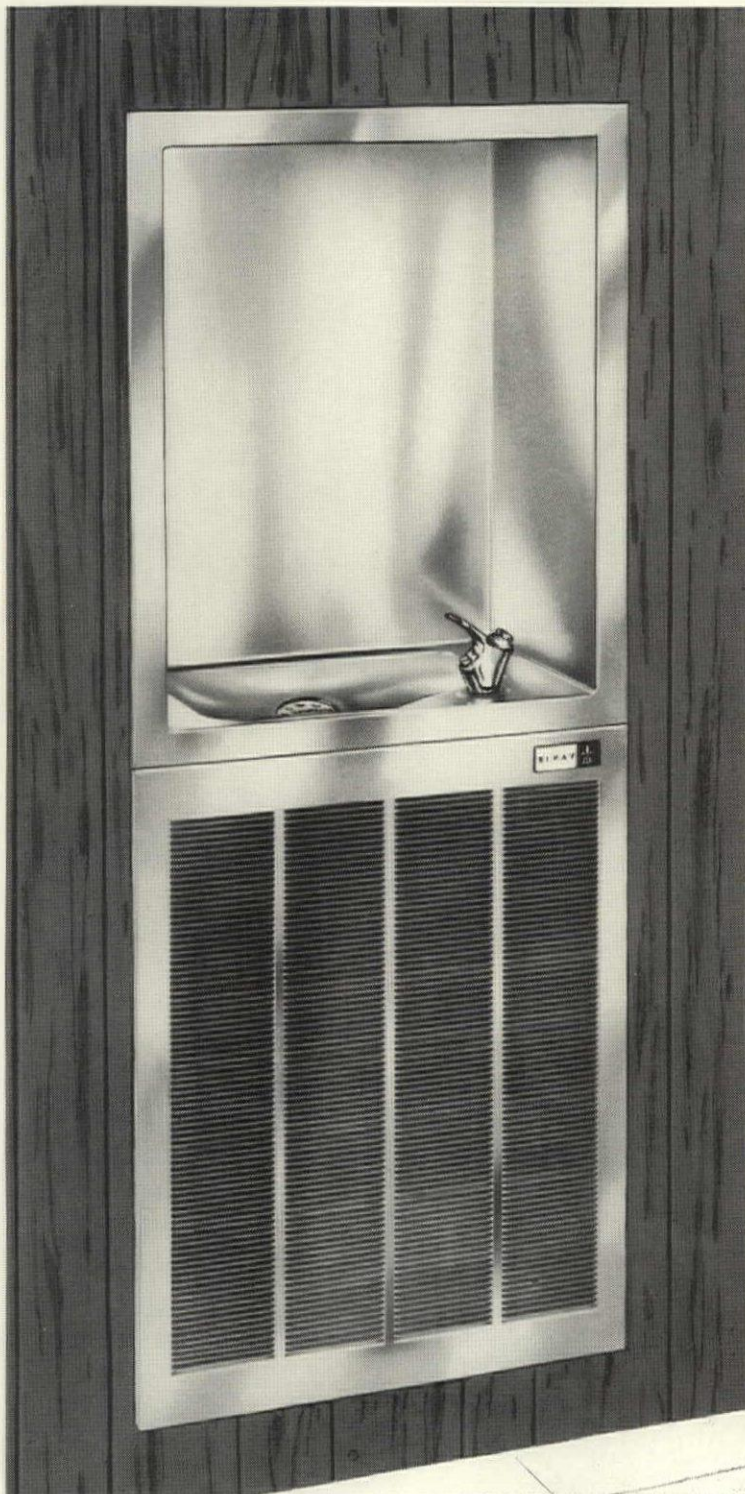
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Cover: Blossom Music Center north of Akron, Ohio,
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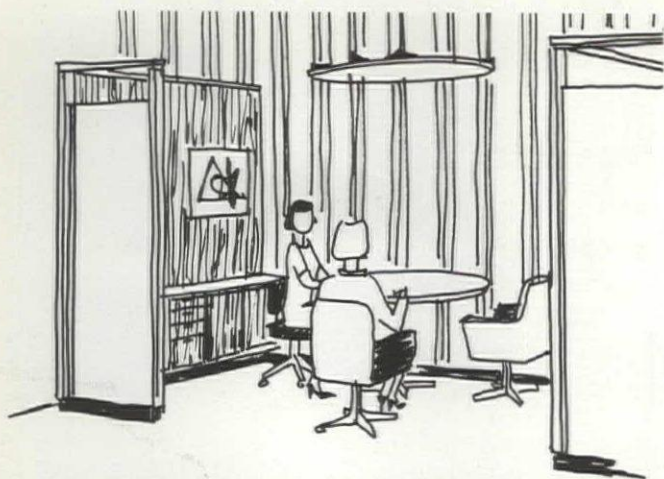
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ments. Wherever possible, we accommodated the behavioral requirements. When they were in conflict with the operational requirements, we made adjustments that seemed to be in the best interest of the overall project.

The furnishings of the new accounts offices illustrates such a compromise. This is where a prospective depositor makes his first, and most sensitive, contact with the association. Dr. Lasswell suggested that the normal barrier between customer and staff—a desk—be eliminated here in order to establish the feeling that the new accounts officer was allied with the depositor in working out his problems rather than acting as the agent of an impersonal corporation. The operations of this department are such, however, that flat surfaces for the signing of documents are essential. As a consequence, we introduced a round table in the cubicle which will accommodate a group who might open a joint account and still permit the individual who wants a conspiratorial privacy to shift closer to the attendant.

The examples cited here are indicative of the types of questions that were raised and our efforts to resolve them. It does not cover the full range of questions by any means. We were, in fact, greatly surprised that so many social-psychological issues could be identified in what is essentially a normal kind of architectural project. Our surprise does not mean that we have ignored the needs of the people we were providing facilities for in the past. On the contrary, we have labored hard to resolve their requirements as we understood them, but it is now clear that good intentions and intuitive solutions are not an adequate substitute for systematic investigation.

While this study resulted in many detailed changes in our schematic plans and affected our design solutions significantly, it did not lead to any unique physical forms or arrangements. The visitor to the building will find it difficult to identify any unusual features that can be attributed to the social-psychological factors' study, though he may conclude that the overall impression is

somewhat different. The one exception of department space with more than nine employees.

The division of space by a line of equipment—nowhere was an area so typical of these "imaginary" spaces. These "imaginary" spaces are a series of interlocking elements in almost all departments intended to provide a transition through the floor plan that the optimum individual can relate to and nine. Beyond this, into subgroups, and desires in the matter.

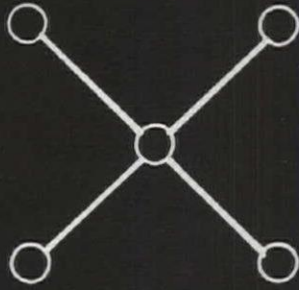
Based on this study, a systematic investigation can be of great value. While this was done with obvious weaknesses, it was extremely productive. In our experiments we were happy if a fraction of the study. Certainly the study is not as effective if it had been done before the process, before the changes had been made. However, is the full potential of the study because we have not taken into account the conditions it holds for.

The positive results are substantial. Not the attitudes of all the people were considered. Even the custodial staff was taken into account. The effect in clarification to the fact that quite a different approach to groups and establishments which a choice must be made.

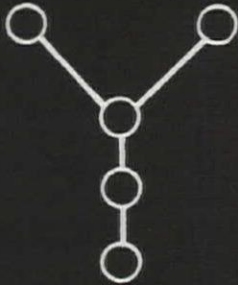
The behavioral architect's work is a better description of more factors to take into account. Conflicts to resolve. To some degree, by the design becomes clear.

One of the unmet needs was the increase in space involved in the project. Concerned with the architect is concerned for human use, the architect considered a developer.

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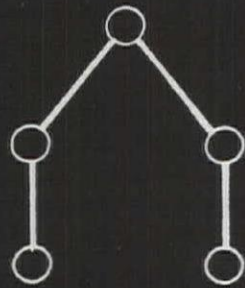
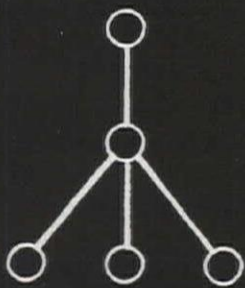
Wheel



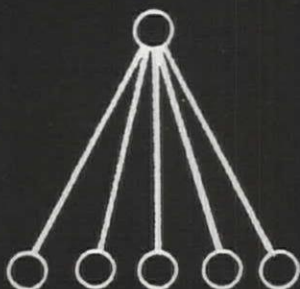
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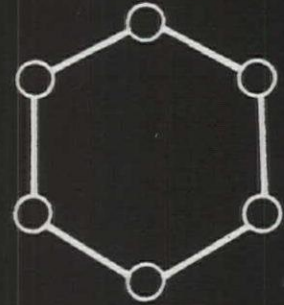
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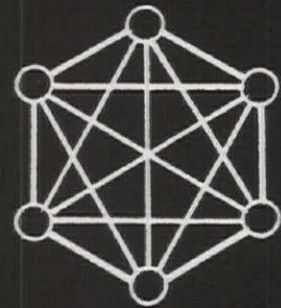
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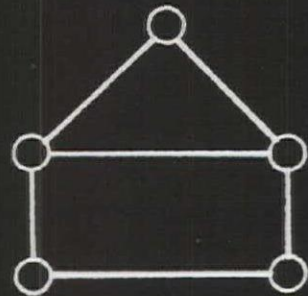
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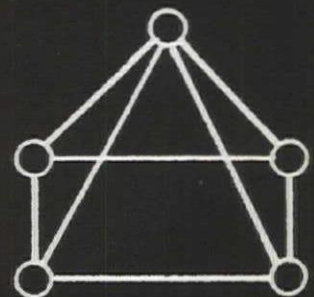
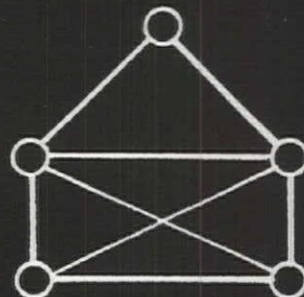
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Letters from page 160

because I had traveled extensively in Europe serving the French and US armies and later as a student.

Meanwhile, I answered the letter and received a reply from Wilfred Harman, then a novice at the Benedictine abbey of Fort Augustus, Scotland, who had trained as an architect at MIT.

Through Brother Harmon, whom I subsequently met at the budding Portsmouth Priory in Rhode Island, and my own connections in Boston and New York, I became acquainted with other young architects, sculptors, painters, laymen — all disturbed by the prevailing architecture at the service of the church. During 1927-28 we held a number of retreat-meetings at the priory working toward a "living" renewal of church art and architecture. To make a long story short, the 1927 JOURNAL letter started the ball rolling, with the two results I mentioned earlier.

MAURICE LAVANOUX
Hon. AIA
Editor, Liturgical Arts
New York, N.Y.

Tribute to a Photographer

EDITOR:

I would like to share a few thoughts regarding the presentation of this year's Architectural Photography Medal.

Julius Shulman has during the last one-third of a century become part of my past life. It is hard to conceive that all former sketches of architectural history depend, according to the Roman proverb, on stones: They were supposed to talk for themselves and forever: *saxa loquuntur*. This is more past, and bygone.

Film is of the stuff to talk! Which makes a man like Shulman an educator of millions who become—if not neighbors of momentous impressions, at least passers-by—while they page through a book, a magazine, a journal.

Thirty-three years ago Julius Shulman and I may have fought a little and agreed much less than in our latest years of cooperation. Too bad that life is short. But he and surely his work will survive me. Films are stronger, and good glossy prints are easier shipped than brute concrete and stainless steel—or even ideas.

RICHARD J. NEUTRA, FAIA
Vienna, Austria

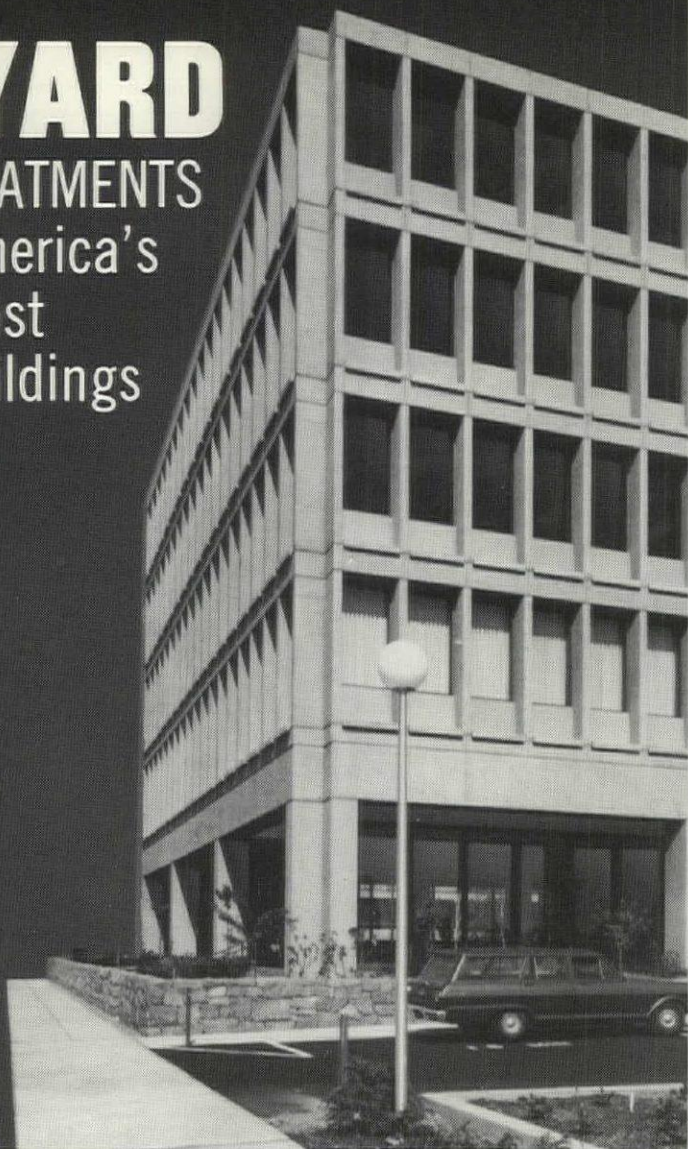
ED. NOTE: Mr. Neutra, whose firm of Richard & Dion Neutra has been designing projects in several countries, divides his time between Austria and the United States.

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nessmen, labor unions, civic and service organizations, and educators—insisted on good community design and sound planning for orderly growth and development.”

Such awareness and involvement have existed in the older and much slower growing cities of Europe, where for some time now the citizens and their elected officials have been vitally interested in the day-to-day architectural development of their community. This important book on an extremely important subject will greatly contribute to the understanding of the forces of architecture in socio-economic development of America and is of great value to all who really care about improving “a place to live,” not only for themselves but also for their fellowman.

The book makes an excellent gift, and it is very much to be hoped that it will command the attention of the members of the new Nixon Administration so that in the fateful years ahead architecture can again assume its rightful place in economic development for all—black and white. JULIAN E. KULSKI, AIA

History of Public Land Law Development. Written for the Public Land Law Review Commission by Paul W. Gates. Washington: US Government Printing Office, 1968. 828 pp. \$8.25.

About one-third of the nation’s total land area, or approximately 770 million acres, is federally owned. Some of this land is given over to national parks, wildlife refuges and other uses, but more than half of this amount, which has never left federal ownership, has never been dedicated to a specific use. It is “vacant and unappropriated” public domain land. What

happens to these some 385 million acres is important to all of us.

The Public Land Law Review Commission, authorized by Congress in 1964, “thought it advisable to have an intensive examination of every part of the public land laws” before reforms in land use could be brought about. The commission concluded that, if future problems are to be considered intelligently, the past must be studied. This present history of public land law development is intended “to serve as a background for all those considering future public land policy.”

Homes, Towns, and Traffic. John Tetlow and Anthony Goss. New York: Praeger, 1968. 272 pp. \$8.

This American edition of a work previously published in London in 1965 is revised in text. Although the “superstructure” is modified, state the authors, the purpose of the book has not been altered. “It is to examine how far town planning has gone toward its true objectives, which in our view are the welfare of man, his health, happiness and convenience.”

And they state in one sentence precisely what they accomplish in the book. “We have tried,” they write, “to outline the background, the pioneering ideas, the problems, experience and lessons of designing and building towns, concentrating on Britain as the main area for case study.” They begin with a consideration of the transport revolution and proceed from there to discuss pioneers and prophets in planning; to give a historical background to the motor age; to evaluate fourteen British new towns; to consider urban renewal and urban centers; and to set forth principles for the sake of better planning. The authors have a lively, readable style. *Continued on page 100*

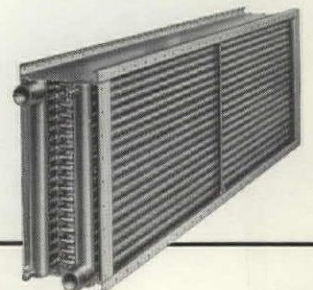


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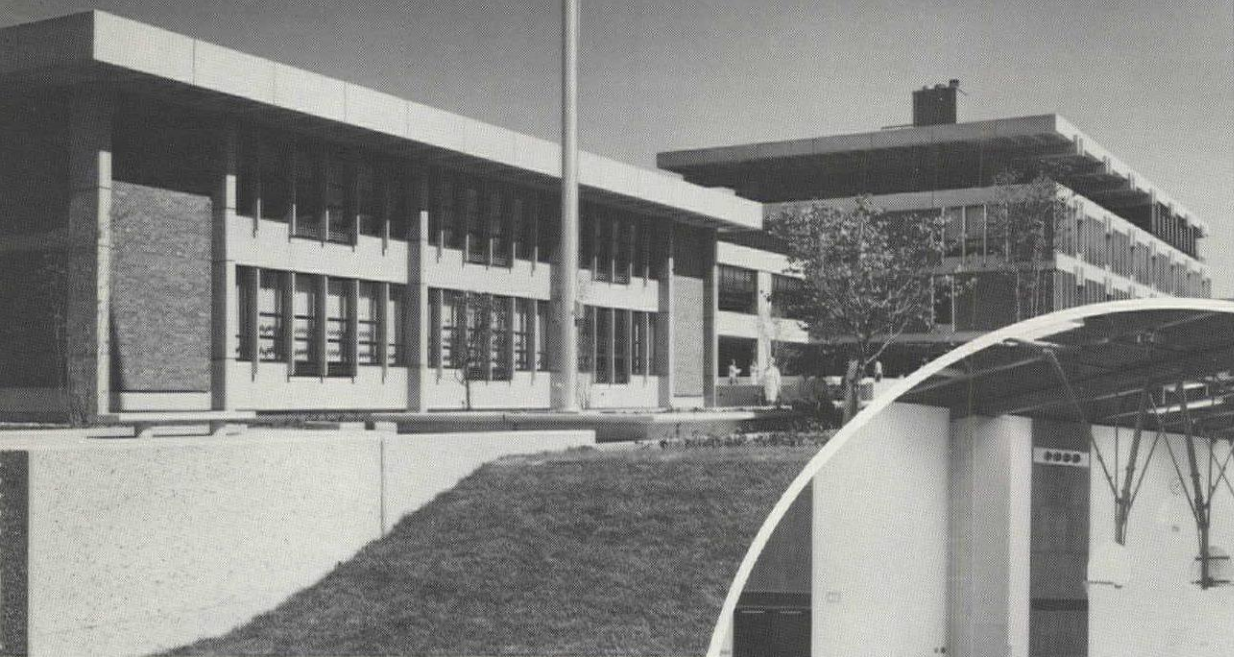
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Heritage from page 77

of the old Ramage printing press and is a special attraction.

Despite careful maintenance, the interior plastering had become so defective that the building could no longer be shown. The HMCS saw the necessity of more than a mere replastering job and asked us to undertake a complete restoration.

The major part of our work was aimed, then, at preserving the original structure while preventing further deterioration, including efflorescence which seemed to stem from a number of factors. Among them were capillary action due to porous coral foundations; surrounding soil which had been hard-packed through a century and a half and then drained toward the building; and the poor condition of walls and lack of gutters.

A new drainage ditch has been provided with deep gravel fill and a subdrain to a dry well. The coral foundation walls were too rough to install a membrane, so we built a masonry dam and filled the space between it and the existing foundation with molten asphalt.

The exterior will be protected with a Portland cement water-base coating which will simulate the appearance of the early whitewash.

The excavation for the drainage ditch was set up as an archeological project and was being executed by students from the University of Hawaii. Exploratory *pukas*, or holes, revealed pieces of broken pottery, early glass and hardware, hundreds of square nails, bits of slate, glass beads, an 1883 Kalakaua coin and a rare *ulumaika*, a stone disc used by the ancient Hawaiians in a game similar to bowling.

Another Honolulu group vitally interested in preservation and restoration is the Mayor's Historic Building Task Force, organized by volunteers in 1965. It came about as a result of a series of articles written by Nancy Dannick, now the group's chairman.

The task force presently is seeking to get official recognition of some 50-odd buildings. It also arranges exhibitions to stimulate public interest in local landmarks.

Another task force project has been the publication of a guide to what makes a building a landmark. In general, this follows the principles developed by the National Trust, but we have tried to make it meaningful for Hawaii's special history and culture in the hope that it will make the public increasingly aware of the islands' heritage. □



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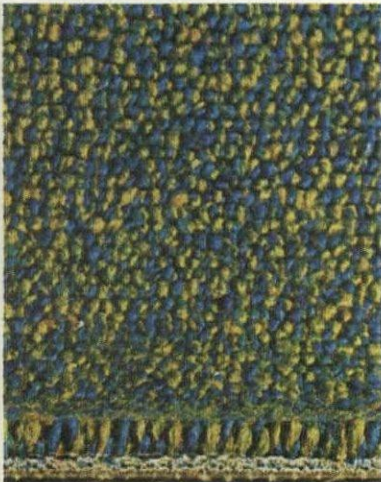
The special color magic of Spicepoint and Cimarron comes from a handsome blending of colors...eight in Spicepoint, four in Cimarron. The resulting tweed effect picks up and accents each color in the room.

Maintenance is no problem. Both carpets owe their great durability to the combination of a tough, tight-loop texture and a rugged, easy-to-clean fiber—Acrilan[®] acrylic.

Spicepoint and Cimarron are but two of many contract carpets you may select from. All specially engineered for heavy-duty installations. Cabin Crafts can offer you the fiber, the color, the texture, the price, the backing, *your* installation needs. And when you need it.

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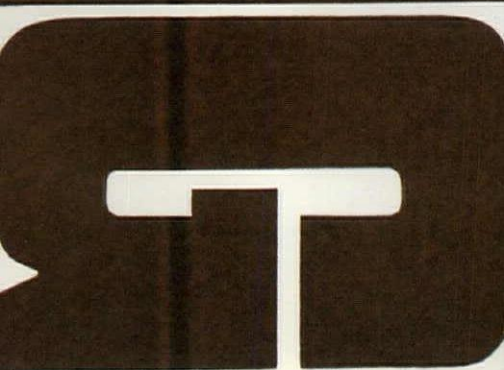
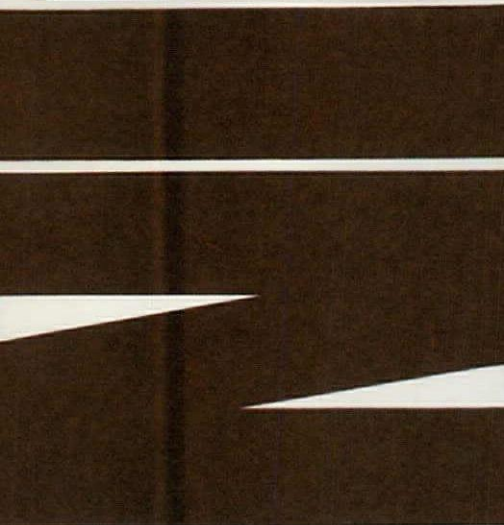
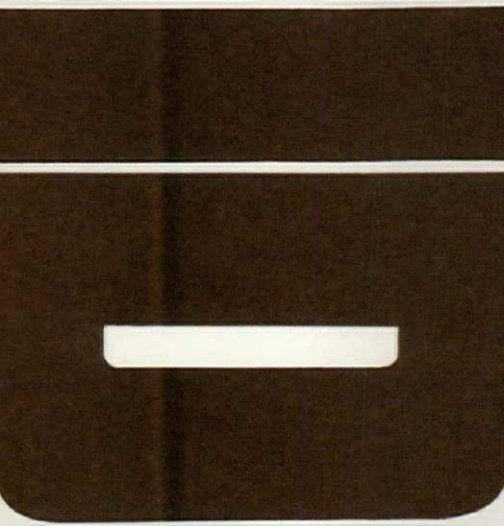
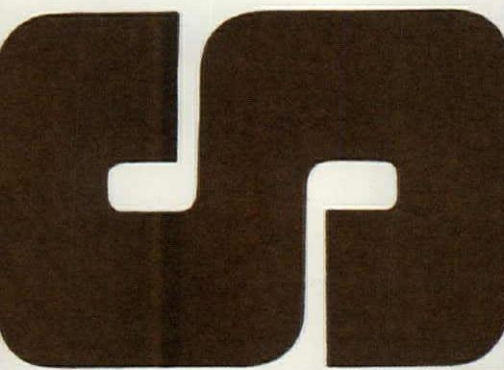
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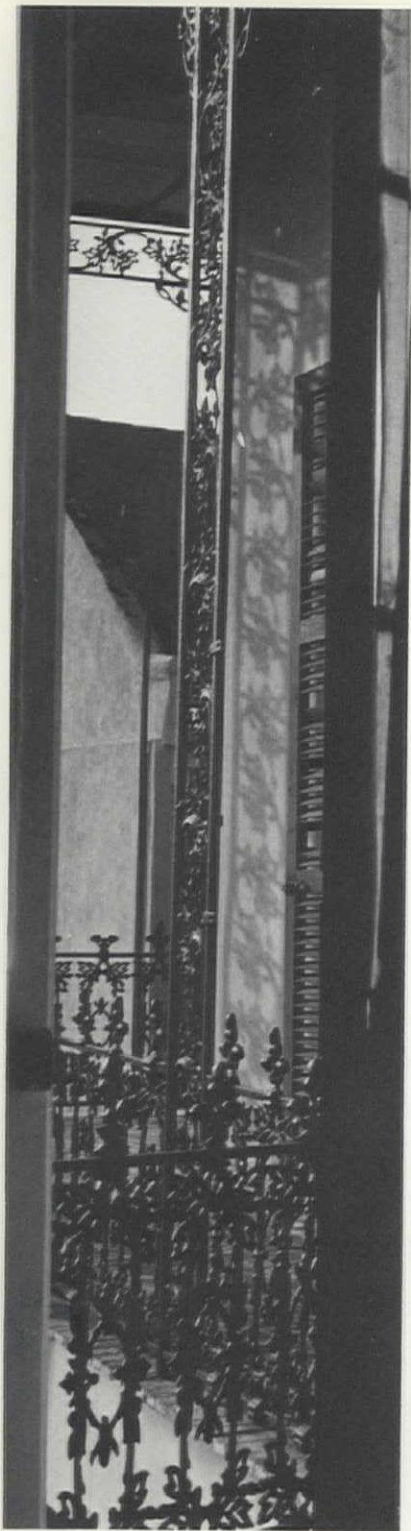
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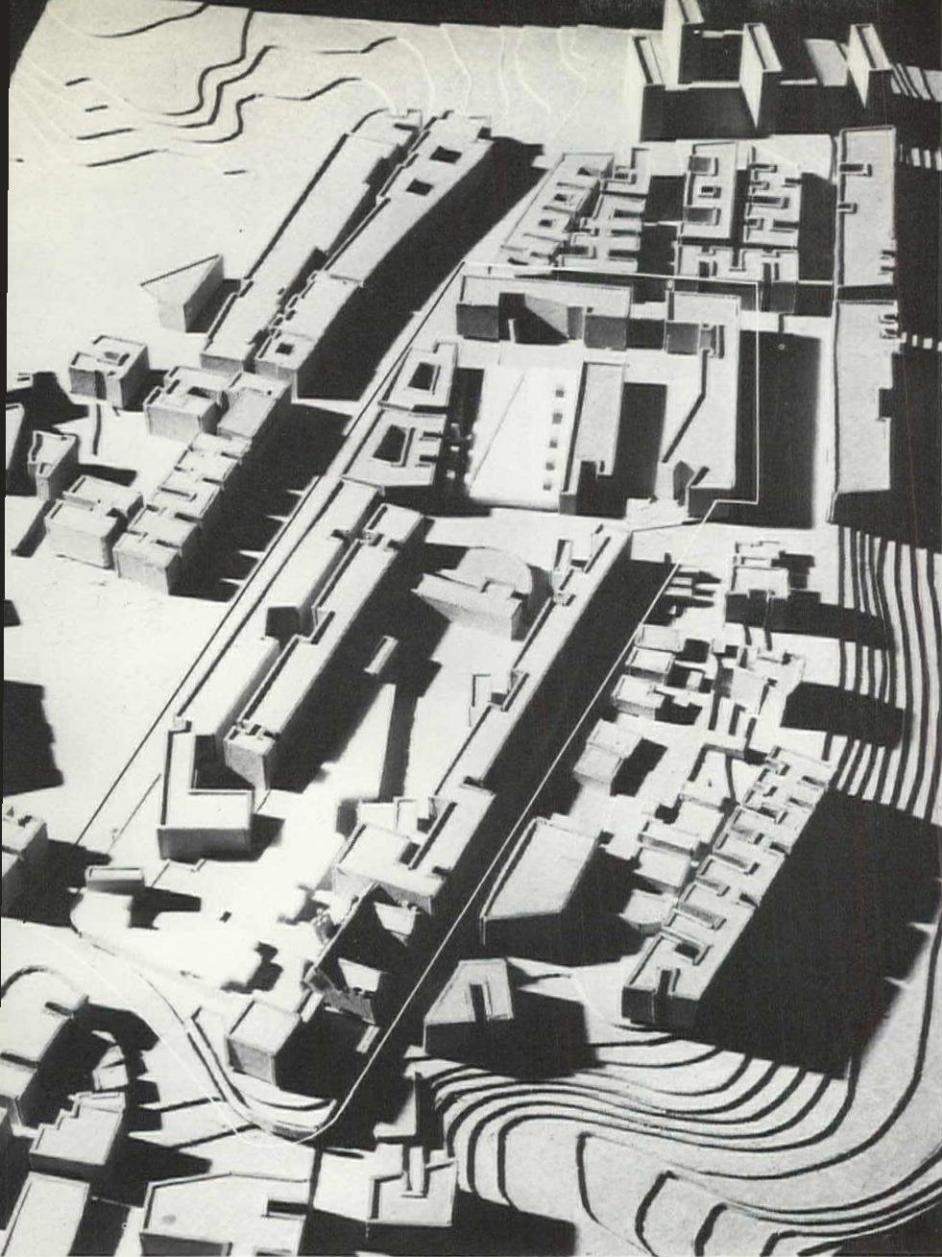




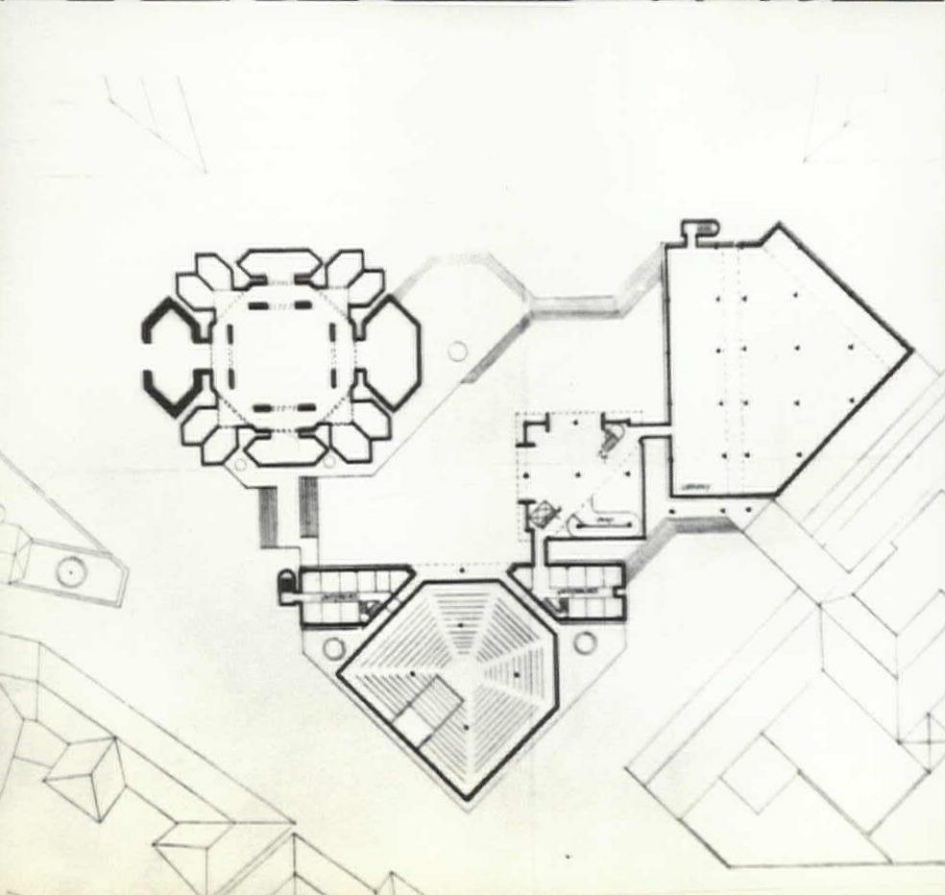
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BY BERNARD LEMANN

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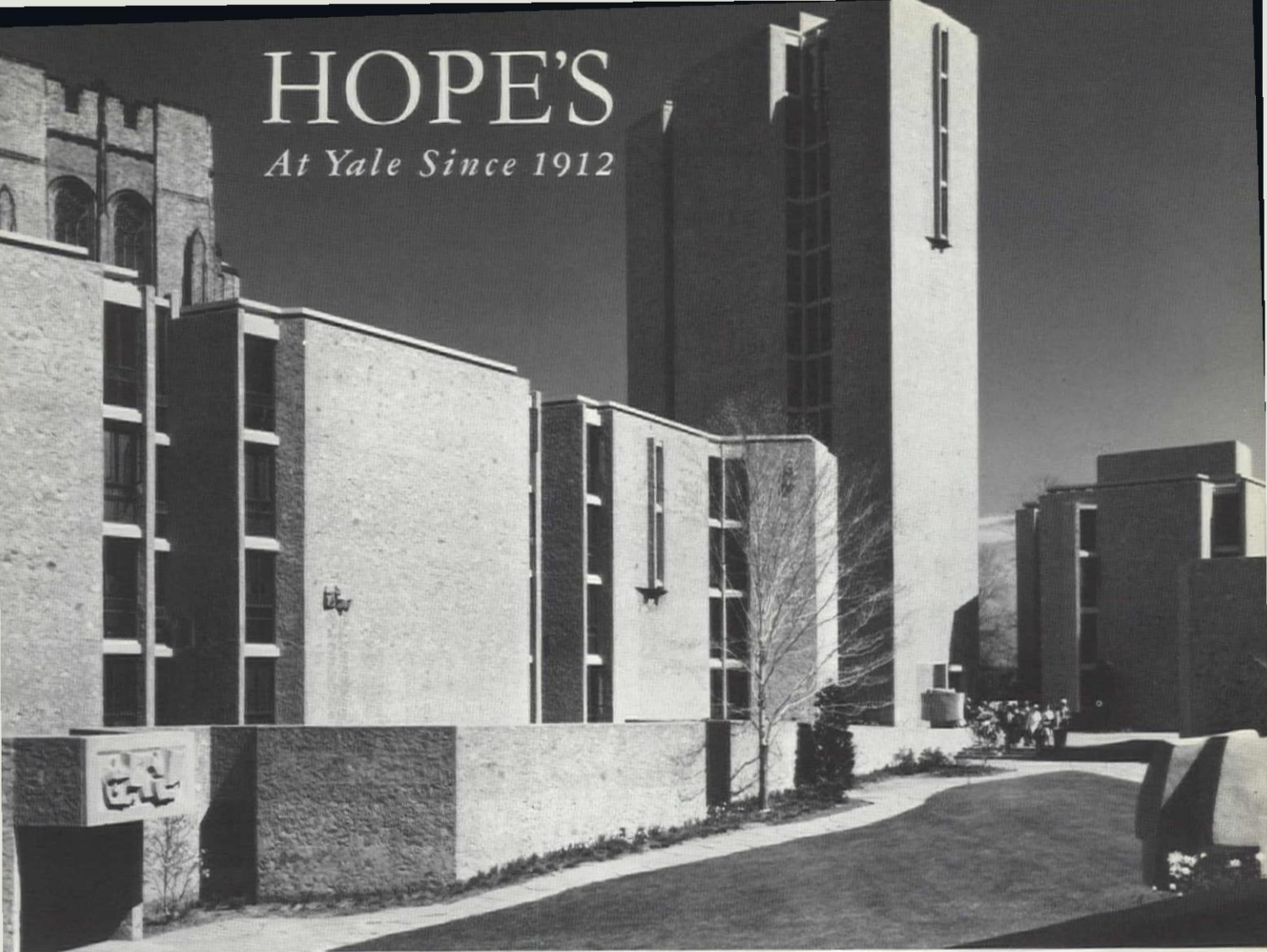


Photo by ©Ezra Stoller (ESTO)

1960 Ezra Stiles College and Samuel F. B. Morse College, Yale University, New Haven, Connecticut

For nearly sixty years leading architects and architectural firms have specified Hope's windows for the many styles of buildings at Yale University. A partial list of buildings at Yale in which Hope's windows were specified and installed is recorded below. We are proud of this record of continued confidence.

- | | |
|--|---|
| 912 Sloane Laboratory
<i>Architect: Charles Haight</i> | 1934 Berkely College
<i>Architect: James Gamble Rogers</i> |
| 912 Wright Dormitory
<i>Architects: Delano & Aldrich</i> | 1939 Sterling Hall of Medicine Ext.
<i>Architect: Grosvenor Atterbury</i> |
| 913 St. Anthony's Hall
<i>Architect: Charles Haight</i> | 1952 Art Gallery & Design Laboratory
<i>Architects: Douglas Orr and L. I. Kahn, Associates</i> |
| 923 Sterling Chemistry Laboratory
<i>Architects: Delano & Aldrich</i> | 1952 Accelerator Laboratories
<i>Architects: Saarinen & Saarinen, Douglas Orr, Assoc. Architect</i> |
| 924 School of Medicine
<i>Architects: Day & Klauder</i> | 1954 Edw. S. Harkness Memorial Hall
<i>Douglas Orr, Architect, Gugler, Kimball & Husted, Assoc. Architects</i> |
| 924 School of Forestry
<i>Architects: Delano & Aldrich</i> | 1955 Josiah Willard Gibbs Labs.
<i>Architects: Douglas Orr and Paul Schweiker, Associated Architects</i> |
| 928 Yale Record Building
<i>Architect: Lorenzo Hamilton</i> | 1957 University Theatre Library
<i>Architects: Davis Cochran & Miller</i> |
| 930 School of Medicine
<i>Architect: Henry C. Pelton</i> | 1957 Helen Hadley Hall
<i>Architect: Douglas Orr</i> |
| 931 Sheffield-Sterling-Strathcona Hall
<i>Architects: Zantlinger, Borie and Medary</i> | 1960 Mansfield St. Apartments
<i>Architect: Paul Rudolph</i> |
| 932 Payne Whitney Gymnasium
<i>Architects: Office of John Russell Pope — Otto R. Eggers & Daniel T. Higgins, Associates</i> | 1962 School of Art and Architecture
<i>Architect: Paul Rudolph</i> |
| 932 Library & York Dormitories
<i>Architect: James Gamble Rogers</i> | 1963 Kline Geology Laboratory
<i>Architect: Philip Johnson, Assoc.</i> |
| | 1967 Josiah Willard Gibbs Labs (Addition)
<i>Architects: Office of Douglas Orr, deCossy, Winder & Associates</i> |

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