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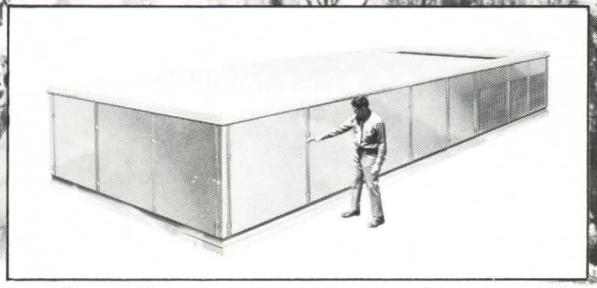

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Cover: The 22-foot high steel coil stair at the Broome County Cultural Center photographed by Nathaniel Lieberman.

THE ARCHITECTURAL FORUM: Published 10 times a year, combining Jan./Feb. and July/Aug. issues, at 130 E. 59th St., New York, N.Y. 10022, by Whitney Publications, Inc., subsidiary of Billboard Publications, Inc. EDITORIAL & ADVERTISING OFFICES: 130 E. 59th St., New York, N.Y. 10022. Telephone: (212) 764-7300. Sent without charge to architects registered in the U.S. and Canada. Qualified persons are invited to write the Circulation Manager on company letterhead, giving principal state of architectural registration, title and kind of work done. All others: $2 a copy. Yearly subscription price in U.S. and possessions, $14; 2 years, $26; 3 years, $36; Canada, $15 a year; elsewhere, $30. Send subscriptions with payment to: Architectural Forum, Subscription Department, 2160 Paterson Street, Cincinnati, Ohio 45214. Microfilm reels are available through University Microfilms Company, 300 North Zeeb Road, Ann Arbor, Michigan 48106—Tele: 313-761-4700.
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lame shielding concept proves feasible
ı exposed steel high-rise building.

prove that flame-shielding works,tests e conducted on a full-scale mock-up.

There's a new, econom- l way to fire protect exposed el. It's called flame-shield- and it eliminates the need cover exterior surfaces with eproofing material.

This new concept was ized in a high-rise office ilding for the first time in the e Liberty Plaza Building, w York City.

Months of elaborate test- resulted in the "Board of ndards and Appeals of the y of New York" granting ecial permission to use posed steel without con- ntional fire protection. The ts convinced them that me-shielding really works.

The flame shields, ached to the flanges of the andrel girders, deflect flame tward—away from the ders—preventing it from rling back onto the exposed el surfaces.

Spanning 47′6″, these andrel members consist of -inch-deep built-up steel ders with 14 gage steel eet flange shielding. The der, as a structural member, pports cladding, frames for ed and vertically pivoted ndows and a portion of the or construction. Cladding the column and flame elding for the spandrel flange is galvanized sheet steel while the spandrel girder steel is ASTM A36.

Spandrel girders, cladding and sash are weather-protected by a three-coat paint system.

New ideas invited!

A vast research program preceded the design of One Liberty Plaza. The architects were encouraged to delve into any aspect of architecture which excited them. The result is a building which incorporates many new concepts—and a fund of ideas for future use.

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Rental space increased by 10%

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LETTERS

CHRISTIAN SCIENCE CENTER

FORUM: I *have* to say: The plans of the Christian Science Center in your September issue on pages 26 and 27 are the most attractive illustrations I have ever seen in an architectural magazine.

GEORGE COOPER RUDOLPH
New York, N.Y. *Architect*

FORUM: The last two issues with articles on Pei's work in Boston and Kahn's buildings at Exeter were excellent, fine architecture with journalism to match.

EUGENE J. MACKEY III
Saint Louis, Mo.

FORUM: I must say you have put together an orderly, accurate, and stunning presentation in the narrative and photographs composing "Formed Up In Faith."

Of course, we at Christian Science headquarters are very pleased and grateful. As one who has spent ten years on this project from the word "go," I know the range and excellence of your description.

May I say the pictures leave me somewhat breathless. They are dramatically beautiful. Their composition, color, light, shadow, and all are a great credit to The FORUM, the architect, and Mr. Yukio Futagawa.

CARL B. RECHNER
Boston, Mass. *Development Consultant*

FORUM: Thank you for your splendid coverage of the Christian Science Center.

The cover and pictures throughout the article are thrilling—my hat really goes off to Yukio Futagawa. But the pictures only tell a small portion of the story.

It was your article, written with such skill and intelligence, which brought, the whole project alive for me. I felt I had an inside glimpse through your knowledge and viewpoint. Thank you, personally, for this piece.

My next step is to visit the Center this coming year. I shall do so far better informed because of your article.

Billings, Montana MARGARET MILLIS

ENERGY

FORUM: I would like to take this opportunity to commend you and Dick Stein for the long article you printed on the energy crisis and architecture.

I find this one of the most informative and significant articles that has ever been printed in the architectural press. It tends to crystallize a series of facts of which I had some awareness but did not see the full import until your article. My compliments!

NORMAN HOBERMAN, AIA
New York, N.Y.

FORUM: I believe that the Whitney group of publishers has made a contribution to the building industry by getting us together to discuss a very important subject, the conservation of energy. My concern, however, is that there will be no coordinated follow-up for our industry in conserving energy. If we could get positive action rather than a lot of talk I would be most grateful to you.

ARTHUR W. DIEMER, *President*
CC&F Property Management Co., Inc.
Boston, Mass.

FORUM: The Congress will be increasingly concerned with energy questions in the coming months. It is absolutely essential that Congress and the Executive develop a coherent and comprehensive energy policy for the years ahead. Energy conservation must play a significant part in any future program, and for this reason we must examine the relationship between architecture and energy demand.

I hope that you will send me any future issues of your magazine which touch upon issues of concern to the nation.

CHARLES McC. MATHIAS, JR.
United States Senator
Washington, D.C.

FORUM: I teach a graduate seminar here in Architectural Energy Management and find the July-August "Architecture and Energy" issue to be most timely and useful.

DAVID LORD, *Assistant Professor*
St. Louis, Mo. *Washington University*

FORUM: We have read with great interest your July/August 1973 issue containing Richard G. Stein's feature article on Architecture and Energy. There is no question that we need to do a much better job of designing and operating our buildings to make optimum use of the energy supplied to them. Much of the technology needed to do this is already available, and with the proper incentives new ideas will also contribute materially toward this goal.

However, Mr. Stein has made some statements in his report that are presented as facts which in our experience have been proven to be nothing more than fables.

In the section on electric heating (page 50) the author pursues his assumption that electric heating is wasteful of primary energy. This opinion is apparently based on the well known generating station conversion efficiency of approximately 3 to 1 on a Btu base. The author then assumes that the customers' utilization of raw energy would be more efficient at the point of use than through the electric generation process. Such assumptions are prevalent today and in most instances are completely incorrect.

Seasonal utilization efficiencies of flame type heating systems are much lower than most people seem willing to admit. Our 1973 metered energy studies of single family homes and apartments in our service area are evidence to support this conclusion. Total electric structures are not wasteful of raw energy. In fact, they frequently do a better job of energy conservation than combination systems. These conclusions are based on actual metered data—not on assumptions. The building structure and the living and working habits of its occupants seem to have a much greater influence on raw energy use than the form in which the energy is delivered to the building.

Mr. Stein's purpose in preparing this report is commendable. However, it appears that his advisors have not had access to actual metered data. In addition to our own studies of metered data I recommend an apartment study made by Kansas Power and Light Company and a copy of an empirical study of energy usage of electrically heated buildings compared with fossil fuel heated buildings prepared by Fred Nicholas, Consulting Engineer. Both of these metered studies confirm the results reflected in our own studies and refute the opinions contained in Mr. Stein's report alluding to electric heating as wasteful use of raw energy.

The failure to document statements reported as facts in this report and the very local geographical reference in which the report was prepared, in our opinion, destroys the credibility of the entire effort.

J. D. HAMPTON
Oklahoma Electric Co.
Oklahoma City, Okla.

MR. STEIN REPLIES:
The question of the basic efficiency and propriety of electric heating comes up again and again. The same documents and studies are made available in justification every time the question arises. The most familiar examples are based on comparisons involving actual energy usage. They have been laid to rest frequently but have more capacity to rise from the ashes than the phoenix.

One of these is the Nicholas Report which Mr. Hampton mentions. It was presented recently in the Public Service Commission's Consolidated Edison energy conservation hearings in New York. During cross-examination it was established that the examples had very little in common with one another. They are located in New York, Massachusetts, and Connecticut. They have different types of occupancy. Nothing was done to establish any similarity in construction or in usage. Different categories of usage were lumped together. What did appear as a pattern was that the use of steam-operated cooling equipment, absorption units, in general was extravagant in energy use. (In considering absorption units, the relationship to heat reclamation generation of steam as in total energy plants was also not considered.)

At the hearing there were further studies presented that were developed by engineers retained by Con Edison. These indicated that electric heating was more energy consumptive than fossil fuel heating. There was only one example noted where electric heating compared favorably with fossil fuel heating: where individually controlled electric delivery systems were compared with steam heating systems in which one thermostat established the heat level for a whole building, and where no provisions were made for individually turning on or off the heat delivery components as conditions varied.

There are similar logical fallacies in the other studies Mr. Hampton cites. For example, the Oklahoma Gas and Electric study, in general, noted higher insulation standards for the electric heating systems than for the fossil fuel heated systems. The studies were made for heating and cooling systems and for other energy use with no designation of the part of the fuel consumption actually used for the heating. One example, an all-electric building, uses less electricity per square foot for all purposes—heating, cooling, and miscellaneous—than another building that uses electricity only for cooling and miscellaneous (heating is by gas). Where there are individually delivered systems, such as individual electric heating and cooling units, it is reasonable to extrapolate from vacancy rate to establish total energy use. In central piped steam or hot water systems,

(Continued on page 8)


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BOOKS

TENSILE STRUCTURES. Vol. 1 Pneumatic Structures; Vol. 2 Tensile Structures. Edited by Frei Otto. The MIT Press, Cambridge, Mass., and London, England.

REVIEWED BY PAUL WEIDLINGER

The increasing acceptance of pneumatic and cable network-supported fabric structures has been accelerating due to technological improvements. The ephemeral quality of such tent-like structures is very much in tune with our times: Since we do not know what the near or far future holds, it is most appropriate that the buildings of our era be light, easily demountable and replaceable, and under a huge cover the subdivision of space itself remains flexible and adaptable during the brief life of the structure. It is not an exaggeration to say that the realization of this vision is largely due to the work of a single individual, Frei Otto.

The first volume of Frei Otto's "Tensile Structures" appeared in its original German version in 1962. The English language version has now been published and it contains, in addition to the above-mentioned first volume (on "Pneumatic Structures"), a second volume on tensile structures, that is cables and cable networks. I reviewed the German version in 1964, and stated: "It is perhaps not possible to evaluate the usefulness of this book and of the whole undertaking without taking a position regarding the probable future usefulness of these structures. Tensile structures in general, and inflatable structures in particular, represent a new development in building construction. If this type of construction becomes widespread in the future, the book will be hailed as a first significant contribution. On the other hand, if this direction turns out to be a dead end, or only a minor branch in future developments, the book at best will be classified as a 'straw in the wind.'"

Questions and issues raised ten years ago have, for all practical purposes, now been resolved. Pneumatic, that is air-supported, and tensile structures are part of the vocabulary of construction. Frei Otto's vision and perserverance has been justified and his work can now properly be hailed as a significant contribution to the art of building. I believe his ideas on this topic ("Das Hangende Dach," that is, "The Suspended Roof") were first published in 1954, but his work was started years before that. In this way, this book is the culmination of 20 years of compulsively persistent work in an area of architecture and engineering which is now increasingly accepted and applied by the industry and the profession. This fact is very relevant and one cannot properly review Frei Otto's book without taking into account his entire work and his, oftentimes, lonely advocacy over these last 20 years: In fact, the research which he performed and the ideas he has contributed are infinitely better than the book itself. This is understandable since Frei Otto is not primarily an author, but an architect and researcher of new ideas. Some of the critical remarks which follow must be taken in this context.

The second volume, which is the subject of this review, begins with a not too successful attempt at very broad classifications and general principles about structures, undertaken, presumably, to clarify the place of tensile structures in the gamut of other options which are available. There follows a brief, historical section mentioning many early examples, including suspension bridges. The remainder of the book consists of two parts, the first being a catalogue of surfaces which can be generated by cable nets, with numerous line drawings and photographs, and discussion of these forms.

The second part is written by Friedrich-Karl Schleyer, on the "Analysis of Cables, Cable Nets and Cable Structures." This is the technical, mathematical treatment of the geometry, state of stress, deformations and optimal properties of a large variety of cable networks.

It also contains a useful section on approximative solutions, which are very essential for preliminary design to be used before extensive analytical and numerical investigations are undertaken.

The strongest impression, of course, comes from the illustrations: An almost infinite variety of beautiful shapes and surfaces are shown by drawings, model photographs and photographs of executed structures. In this respect, the book has an enormous heuristic impact and one cannot help but be impressed and inspired by the richness of possibilities which exist in this area.

The best advice to the reader, probably, is to disregard the text; it dampened my enthusiasm, mostly because it manages to be both pedantic and imprecise and disorganized. It does not contribute much to the understanding of the illustrations, and I found that by examining the drawings and the photographs, many of the ideas and their underlying concepts become quite clear, but are frequently obscured by the author's attempts at explanations.

One of the merits of cable networks is the fact that the shape of the surface, as expressed by highly visible cables is almost self-explanatory, inasmuch as the cables clearly indicate the manner and direction in which the load is carried to its supports.

Some of the surfaces cannot have arbitrary forms and their shape and curvature is dictated by equilibrium conditions, and so they virtually explain themselves, to the interested observer.

The regrettable lack of clarity in the text is finally not very important. Mainly because of Frei Otto's basic contributions, there exists today a very large amount of detailed scientific-technical literature on the behaviour of cable networks, and the book would have become more useful by mentioning this, or even by attaching such a bibliography.

This is especially important since the book is silent on numerous crucial subjects, which must be taken into consideration in the design and construction of such structures.

The problem of the dynamic behaviour and the aero-dynamic and aero-elastic behaviour is hardly mentioned. Obviously, large-scale structures of this type should not be designed without meticulous attention to these issues.

Fortunately, there is an increasing amount of work on the problem of dynamics and the very important non-linear behaviour of cable nets under static and dynamic loading.

The reader of this book should be aware of the existence of this and other continuing researches if he wishes to design and build the tensile structures so eloquently advocated by Frei Otto.

Mr. Weidlinger, a structural engineer, is head of Weidlinger Associates, Consulting Engineers, based in New York.

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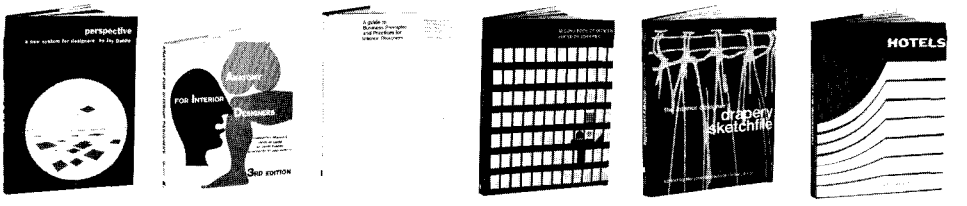

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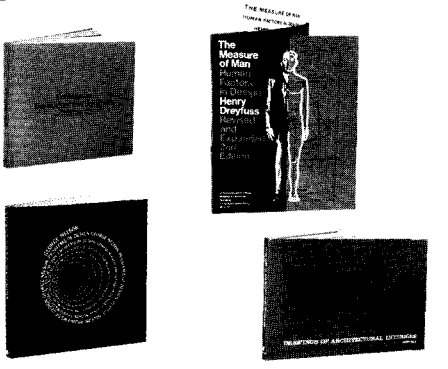

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LETTERS

(Continued from page 4)

the systems are generally on, whether apartments are rented or not. The use of the vacancy rate for such systems is questionable. Another high energy user among the projects compared has a central plant with a four-pipe heating and cooling distribution system. Nothing is noted as to the efficiency of the insulation for the various piped systems.

In the Kansas Power and Light Co. apartment study mentioned by Mr. Hampton, a house converted from combination fuel to total electric is analyzed. In three of the months in a year's comparison, actual consumption of electricity by the combined fuel house was as much as 65 percent higher than the electric usage when only electricity was available. In addition to the higher electric usage, gas was consumed in each of these three months.

The fact remains that the delivery of heat by electricity does not convert more than 25 to 30 percent of the original heat in the fuel at the generator into useful heat at the point of use. Even inefficient hydronic systems, unless they are so absurdly inefficient that they should not be tolerated in any case, will deliver anywhere from 50 to 80 percent of the heat being burned as useful heat in the spaces requiring it. There is a significant energy economy in using the fossil fuel directly for heating.

It is unfortunate that the discussion appears to take on a partisan slant. If the concern is actually conserving fuel, which is becoming less and less available, the greatest attention ought to be spent toward using all of it as effectively as possible. The resurrection of questionable and discredited statistics and comparisons doesn't help.

AIA HQ.

FORUM: Suzanne Stephens' taking-to-pieces of the AIA business in the October issue seems to be thorough and certainly is bold. As to the executed building, somebody ought to give them poplars, lots of them, to plant in front of it; did nobody foresee how the octagon would look, crouched under those tiers of fluorescent lights?

Also, the piece on Kahn's library was a nice bit of romantic writing. This all-out style is very unusual in architectural journalism, and I rather like it.

WALTER KIDNEY
Cleveland Heights, Ohio

KNIGHT CAMPUS

FORUM: The noise coming from mechanical systems which Suzanne Stephens noted shortly in her article about Knight Campus, Rhode Island Junior College (September, 1973) may be epidemic in buildings of that type. How bad is it in other megastructures such as McMaster University Health Sciences Center, Hamilton, Ontario or in Woodhull Medical and Mental Health Center, Brooklyn, N.Y.? Those buildings employ the horizontal interstitial space principle. It seems to me that this gives a straight shot for sound from one end of the building to the other, and downward. There should be a cure.

Detroit, Mich. ALAN MATHER

RIVERFRONT

FORUM: Your October Facets piece on the New Orleans riverfront proposal was correct; but the architects of this Stalingrad modern complex not only are erecting bureaucratic slabs, they have also destroyed existing buildings of sound construction and aesthetic merit.

The Southern Pacific warehouse stood on that site. It was taken down for the proposed development. The building, even in disrepair, was majestic. It enclosed a massive open area, and the building should have been incorporated into the complex as a commercial bridge space between the "riverfront" development and the industrial area directly to the west. The building was beautiful and usable and there was no reason for it to be destroyed. No reason.

HUGH S. KATZ
Assistant Campus Planner
The University of West Florida
Pensacola, Fla.

PHILLIPS EXETER

FORUM: I enjoyed your October article about the fine new Library at Phillips Exeter Academy, in Exeter, New Hampshire.

What I can't understand is why (page 27) you state that it is "near Andover, New Hampshire," when, in fact, Andover, New Hampshire (population 350) is over 50 miles away, is a very small, little known town, and is by no means as helpful in locating Exeter in readers' minds as, say, Portsmouth (population 26,000), Manchester (92,000), Concord (30,000), etc. New Hampshire. I find it hard to understand, but obviously am overlooking something. Best of all might be "an hour north of Boston."

Pittsburgh, Pa. JAMES A. FISHER
We got lost—ED.


LCN

FOCUS

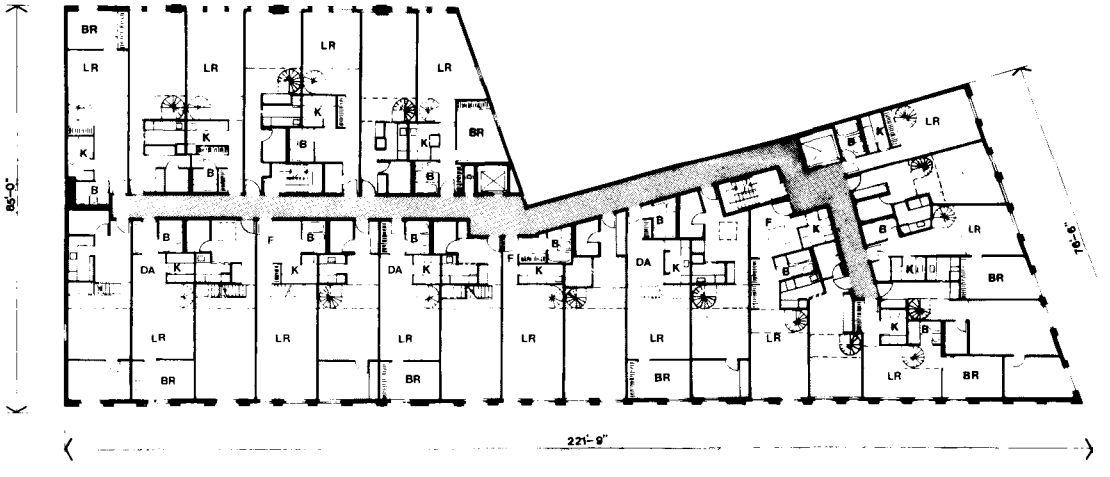
CAST IRON RECLAIMED

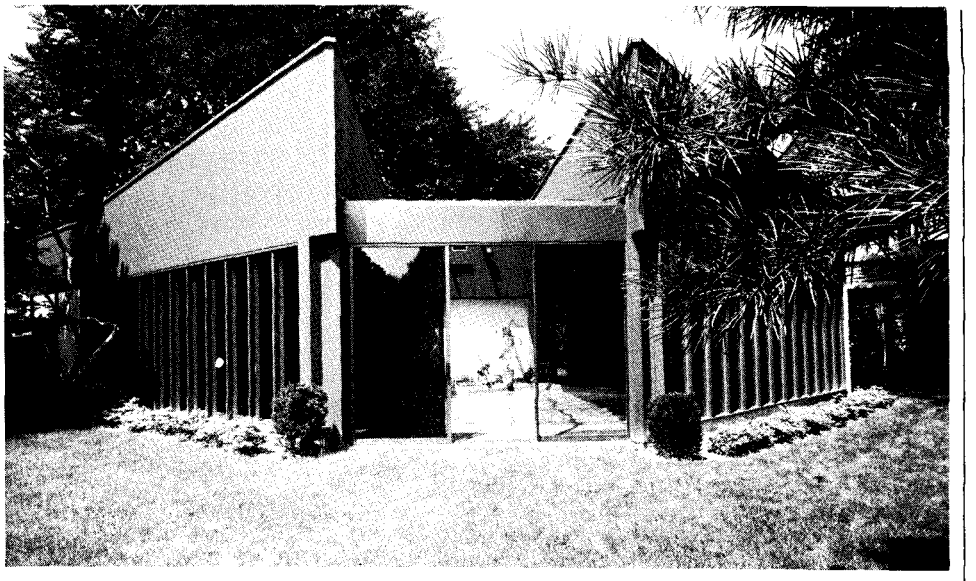
Old buildings, designated for landmark status or not, face one major dilemma: What do we do with them? Stephen B. Jacobs & Associates has come up with one answer, marking the first time private enterprise has conserved a cast iron building (the largest surviving in New York) for new housing. Without subsidies to renovate this 1868 commercial building, economics reared its surprisingly benign head as Jacobs found room for 144 dwelling units, plus ground floor space for commercial use, within the 17,000 sq. ft. seven-story shard.

The structure is typical mill construction—heavy beams and joists of timber with interior columns and facades of cast iron. An interesting aspect of the building involves the two facades facing 11th Street and Broadway. The original architect (unknown) designed the windows on 11th Street to match exactly. But on the Broadway side, he diminished the width of each window progressively one and one-half inches from the corner of 11th Street to the end of the building in order to quicken the rhythm on the pilasters.

These cast iron facades will be preserved intact, even on the ground floor, where concrete horizontal spandrels divide the cast iron pilasters. Inside, too, much of the original construction will remain the same, including the timber beams and the cast iron columns. They crop up here and there throughout the apartments. (He did insert some double height brick piers in the two levels of retail space, however.)

Two additional floors have been added: one created between the first and second story by dropping the first floor; the other added to the top, by removing the existing mansard roof, building to the top of the roof line with simple masonry construction. The second and sixth floors house studios with eight-foot ceilings while other floors are composed of duplexes with 16-foot ceilings and sleeping lofts. Shown in the seventh floor plan are a variety of design solutions, for awkward spacing, intriguingly modern, and yet well juxtaposed within the framework of the building.

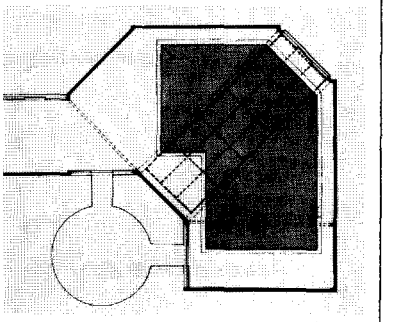


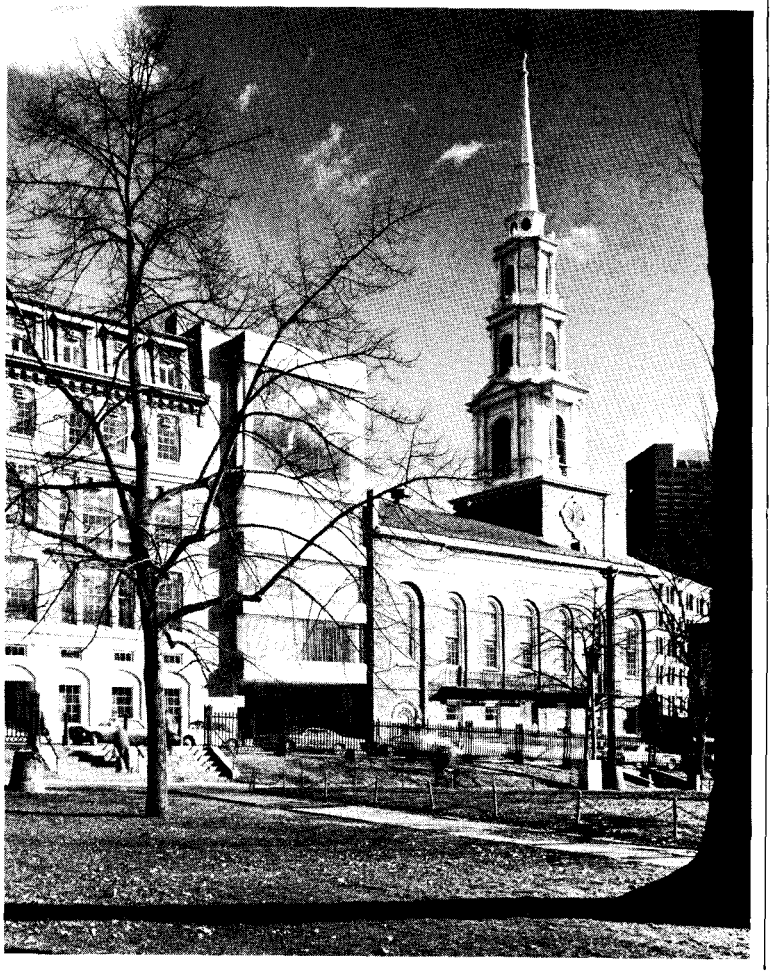


FROM THE HEYER BOARD

When architect Paul Heyer was commissioned to design an indoor swimming pool for a Tudor-style house in Pennsylvania, his primary consideration was to fit the new wing into its context through use of harmonious proportions and materials. Thus he chose a slightly pitched roof design, with white stucco and brown siding for exterior walls. The interior continues the ambience, with reused Philadelphia street brick paving the floor around the pool and the length of the gallery connecting the pool to the main house. Inside walls are surfaced with wood siding, painted white, while the ceiling's beams are exposed and stained dark brown. Bisecting the pool area is a 12-foot-wide skylight permitting sunlight to permeate the entire room.

The skylight spans an area between two 38 foot long box beams, seven feet deep, which carry heating ducts. The entire pool, warmed by the heat and by the sun in the cold months of the year, also opens out to the surrounding landscape in warm weather through 12-foot-wide sliding doors.





STAID IN PLACE

When Boston's Street Church decided to expand, it had to do so within a limited budget, and within a height in line with adjoining 1805 landmark. Stahl Associates, having built in line with historic architecture for years, was engaged to do the 22,000 sq. ft. addition, providing for managerial space as well as housing all Sunday school activities. The firm also did schematics for renovation within the original church which now awaits further funding.

The need for clearspan, flexible space in the 30 by 80 ft. addition, was solved by using concrete bearing wall and column structure so that partitions can be easily moved for varied room arrangements.

Because of the new corner's surroundings, brick and glass are the only exterior materials used. Even mullions in the lower floors are executed in frameless, butt-jointed clear glass. The two-story meeting room on the top floor required structural mullions. Exposed concrete with sand-blasted finish appears throughout the interior except for the ceilings, which are painted concrete.

Withal, the building is a simple, unassertive element in the Park Street scene, resting easy on laurels of design restraint.

(Continued on next page)

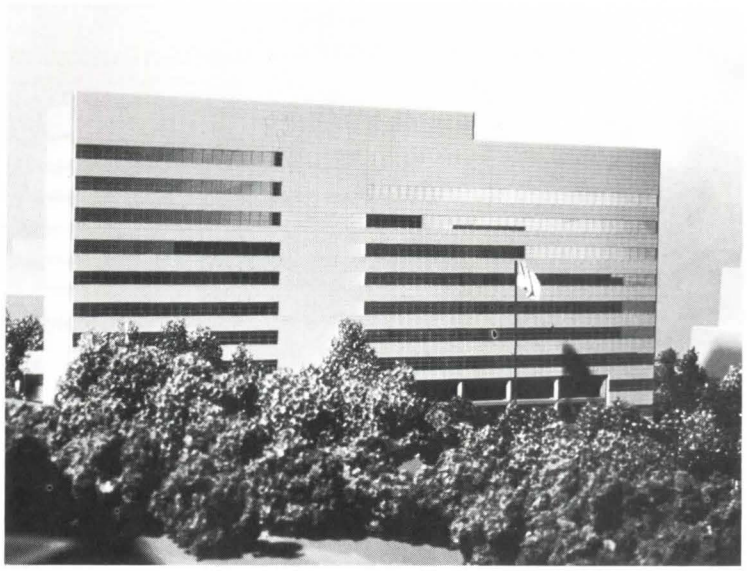
YEN FOR THE CURTAIN WALL

Housing the United States Embassy offices in Tokyo, Japan, has led to a new project for Gruen Associates. Since the old Chancery was too small for the various sub-departments, Cesar Pelli, design partner, called for the removal of the existing structure and has designed an office tower on the same three-acre site. Groundbreaking is set for July 1974, with completion 30 months later.

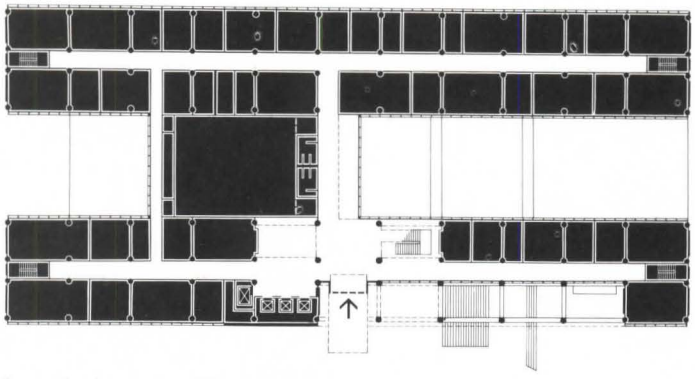
The new plan calls for a 11-story slab (45 ft. by 300 ft.), and a parallel three-story office wing linked by a one-story central area containing auditorium, terraces and garden courts.

Framing is cast-in-place concrete, painted a dark grey-brown. Epoxy-finished precast concrete panels, a lighter shade of the same hue, form the enveloping skin along with windows of brown reflective glass set flush in dark grey anodized aluminum mullions. The seemingly abstract grid imposed on the tight glass and precast concrete skin actually corresponds to the office modules within, as well as to story heights and window dimensions.

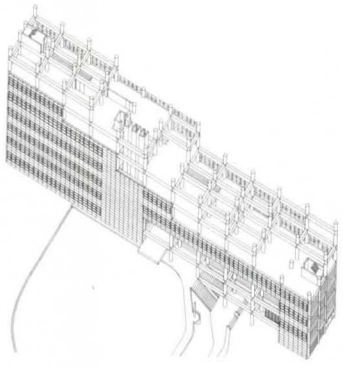
Mr. Pelli has played the curtain wall skin against the regular structural grid throughout the scheme, allowing the frame to be expressed on the building end walls and at the lobby entrance.



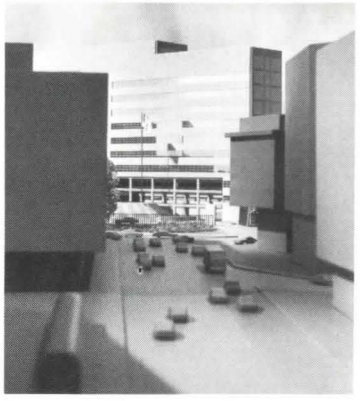
3 story office wing

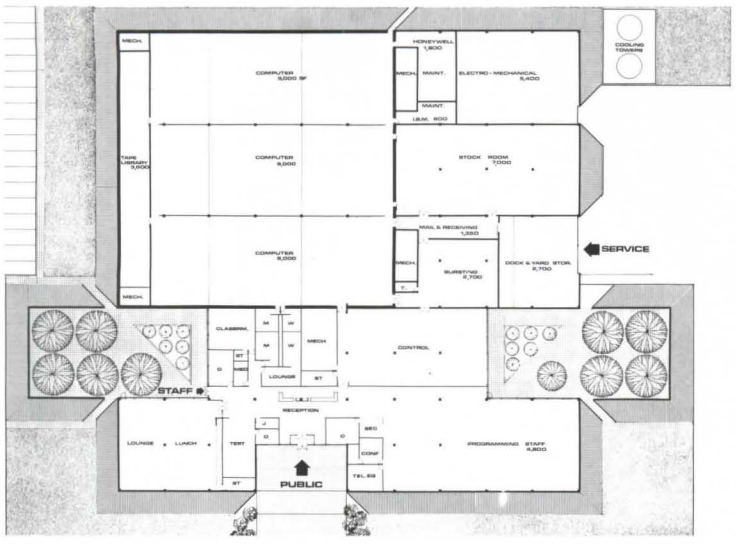


Schematic plan main office tower



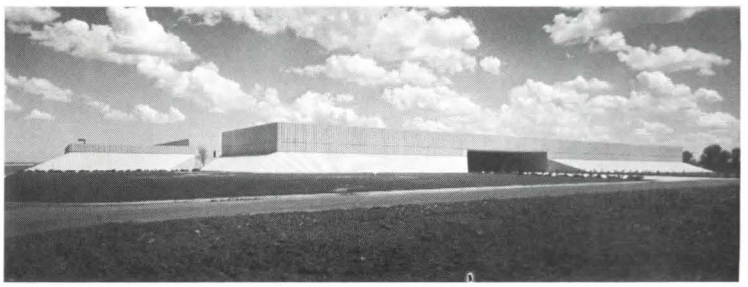
Isometric cut away main office tower

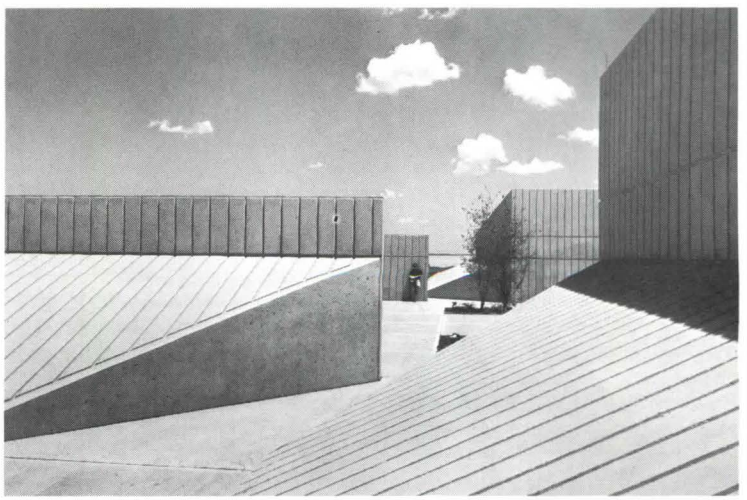




CYBO SURREAL

This computer storage center sited on the flat plains of Wichita, Kansas would be an obvious choice for Stanley Kubrick's next sci-fi film. The 75,000-sq.-ft. ribbed poured-in-place structure has an eerie massivity, owing to its one-story height and its angled perimeter walls that resemble earth berms concealing a nuclear reactor. (Actually they brace against tornados.) The plan reflects this protective inward-turning character. While the office space is pierced by two open garden courts, these too are bound on the perimeter by exterior walls. This setting, perfect for computers, was designed by Architects Schaefer, Schirmer & Associates of Wichita for Metropolitan Life's Western Computer Center.





PHOTOGRAPHS: Page 11, John Veltri (top left and right), Steve Rosenthal (lower left and bottom); page 12, Joel Strasser (lower right and bottom).

Photo by: Kee T. Chang, Chicago Association of Commerce & Industry

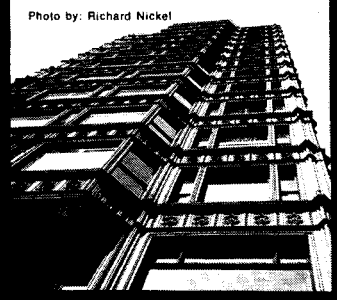
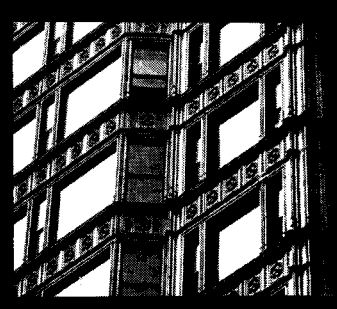
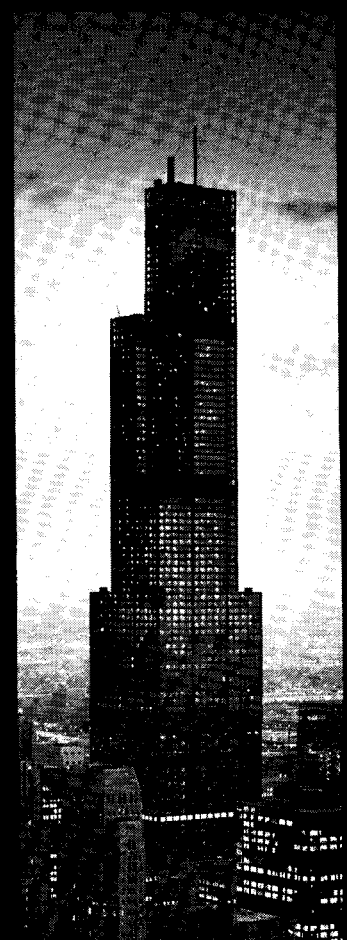


Photo by: Richard Nickel



CHICAGO



CHICAGO

Chicago, often referred to as The Second City, continues to be an impressive first in architectural innovation. It has been said that even its bad buildings are better than the best of most other cities.

The current activity of civic leaders in planning new communities in and around The Loop, embodies compelling questions concerning the revival of downtown areas across the nation. This question, plus the broader one of how architecture can elevate economic, cultural and social life will be analyzed in the January/February double issue of The Architectural Forum. In their approach, The FORUM's editors will examine how economics and esthetics have merged Chicago construction, both new and old.

Chicago 21

Also known as the Chicago Central Area Plan, Chicago 21 is a long-range, $15 billion, program for coordinating building in the area of The Loop. Sponsored by the Central Arts Committee—a consortium of major corporations—this program goes right to the heart of the question. The FORUM will evaluate the overall plan, assess the processes through which it was initiated, and offer an inside glimpse into the manner in which political and corporate interests reinforced each other.

Close scrutiny of the planning principles employed by the architects involved, in response to the challenge of restoring vast areas of downtown land, would prove of value not only to architect readers but to the business and financial community, as well.

The Sears Building

Now the world's tallest structure, this building of unquestioned technological brilliance, brings into question the role of tall buildings as social and urban elements. Moving beyond the exploration of structural principles and mechanical systems, The FORUM will deal with this human aspect—the impact of the building on the people who use and pass by it.

Of interest to the financial community is the genesis of the building—Sears' thinking in the initial phases, the crucial decisions made during the various stages of construction, the corporate attitudes and priorities the building asserts.

The Illinois Center

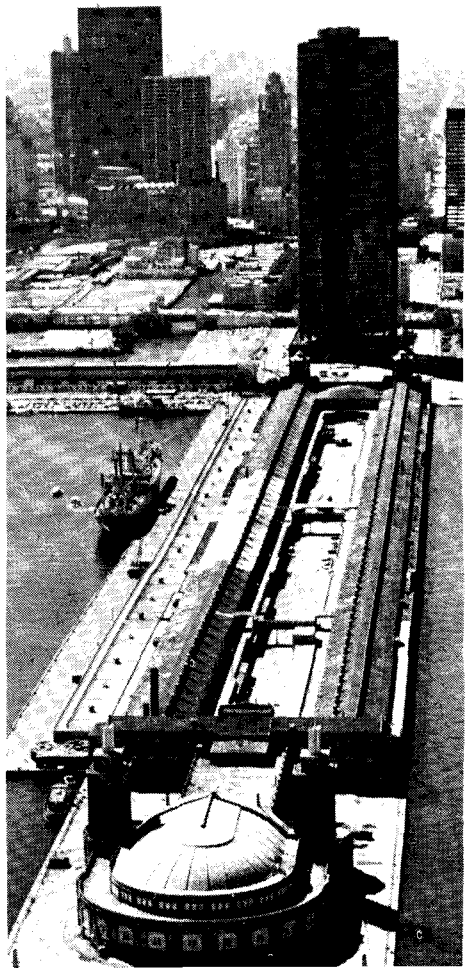
The result of a master plan from the offices of Mies van de Rohe and Solomon, Cordwell, Buenz, the Illinois Center is the largest and most expensive development in The Loop, to date. Still in the construction stages, the Center is meant as a magnet for attracting people into The Loop. Because of the funds involved, it demands critical appraisal from many standpoints, including the public and financial mechanisms employed.

Included in this section will be a study of the Standard Oil Building now nearing completion, designed by Edward Durell Stone and Perkins and Will.

The Pioneering Chicago

As one would rightly expect, this issue will include an article about Chicago's pioneering work in architecture between 1870 and 1910, a period when Chicago became the birthplace of modern architecture. Basic to this will be a study of a proposal by the U.S. Department of the Interior to create a National Cultural Park that would assure the survival and continued use of these vintage skyscrapers. Implicit in this examination will be a hard-nosed look at the economic, legal and zoning measures required to save these buildings and to renew them as viable elements in Chicago's ongoing life.

Photo by: Kee T. Chang, Chicago Association of Commerce & Industry



...where economics and esthetics merge

Additionally . . .

An illustrative history of the famous Chicago lakefront with a commentary on the controversy between the forces of conservation and construction. • Two architects of note, Harry Weese and Bertrand Goldberg, will be profiled through their recent work and a no-holds-barred account of their principles (and opinions). • The Miracle Mile—a look at the shopping showcase of Chicago along Michigan Avenue between the Chicago River and Lakeshore Drive with an analysis on the effect on the special charm of the area by new construction such as the Watertower Place. • Two old "New Towns" will be examined: one, the community of Riverside, Illinois, outside Chicago by Frederick Olmstead, the other by architect Solon Beman—the town of Pullman, on the southern fringe of the city. Both were among the first, cohesive, completely planned communities borne of nineteenth century big business. • A study of a work of one of the fine young firms in Chicago, Booth and Nagle. • And with considerable importance to all involved in architecture, an article exploring the eventful, multi-level Plaza of the First National Bank of Chicago, and its public affairs role in investing in much-needed urban rehabilitation programs.

Throughout The FORUM's Chicago issue will be a true forum—one in which the sources of design and the sources of dollars will meet and comprehend the dynamics of city building.

Photo by: Kee T. Chang, Chicago Association of Commerce & Industry

Photo by: Orlando Cabanban

THE ARCHITECTURAL FORUM
a unique editorial approach

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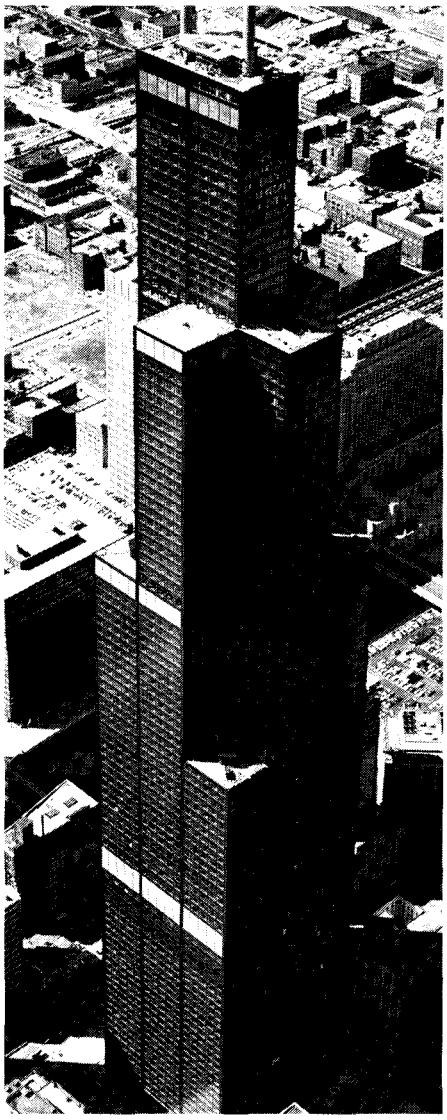

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Closing date for the January/February Chicago Issue is January 3, 1974.

The Architectural Forum
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FACETS

Borobudur Temple in central Java (Detail, left).

PRESERVATION

BOROBUDUR

One of the world's greatest monuments, straddling a Javanese hillside, may collapse in an avalanche of stones. Set among tremulous volcanic peaks, deluged by equatorial rains, the temple of Borobudur is cracking and crumbling; its neglect, tragic. According to Bernard P. Groslier, chief custodian of the Ankor monuments in Cambodia, Borobudur "is in all respects the largest, the most ancient and most beautiful monument in the Southern Hemisphere." He equates the Eighth Century temple with the finest architectural masterpieces in the Western World—Persepolis, the Parthenon and Pantheon, Chartres and Saint Peter.

Borobudur's beautiful, sculptured rows rise in square terraced steps, to a triumverate of three circular terraces, stacked concentrically, each ringed with bell-shaped stupas. Inside each stupa is a meditating Buddha.

Completed about 700 A.D., Borobudur must have taken decades to build, requiring tens of thousands of artists and laborers.

Buddhist in inspiration, it fell into decline when Islam became the reigning religion in Java about 1300.

Its defacement since then has, in part, been deliberate. Around the turn of the last century, eight wagonloads of statues and bas reliefs were carted off to the Siamese King Chulalongkorn (the one who knew Anna).

Borobudur's plight has not gone entirely unnoticed. In 1971, the Indonesian government gathered a group of experts, sponsored by UNESCO, to present a plan for stabilizing the monument's foundation. Gigantic in concept, it calls for the dismantling of the lower terraces and rebuilding them on a foundation of reinforced concrete. Statues will be cleaned and heads restored to those already decapitated. And an improved drainage system will be put in.

Experts think the program will cost close to $8,000,000. Indonesia has pledged $2.75 million. The rest will be raised by UNESCO.

SEATTLE

This report on Seattle, and the following one on the Wainwright Building, are by FORUM *Correspondent Carleton Knight.*

The re-election victory of Seattle Mayor Wes Uhlman in November means, among other things, that the city's innovative preservation planning and land use program will continue.

The preservation program, in particular, owes its success to a preservation-minded City Council working with the mayor. It has included allotting $600,000 from the city's revenue sharing funds for a preservation revolving fund and establishing a public corporation to buy, restore or rehabilitate and then sell historic buildings. The city has also established historic districts with city employees as managers, has approved a zoning ordinance to control land use around the city's new stadium and soon will put into effect a minimum maintenance ordinance requiring building owners to keep their properties in good condition. Finally, the city has committed itself to using $4.5 million of its revenue sharing for a housing rehabilitation program which, though not preservation in the older sense, will preserve the city's fabric.

Seattle's program is perhaps the leading municipally sponsored preservation effort in the country. But Mayor Uhlman does not see the program as being very involved or complicated. "It's simply a matter of commitment," he says.

This commitment has in the past been mainly in Pioneer Square (FORUM, April '73), roughly 18 blocks of dark, mostly stone or brick buildings on the southern edge of downtown. It takes the usual preservation forms—a historic district, landmark ordinances, public encouragement of private efforts—but more.

When the city needs office space, first priority is given to buildings in Pioneer Square. As Uhlman points out, the offices could go anywhere, but the city is committed to this area. Likewise, a city-planned neighborhood health facility and Indian center are slated for the Square.

In much of Seattle, as in most cities, the automobile is supreme. Not so in Pioneer Square.

Streets are being narrowed, not widened, by the installation of a tree-lined median. Lights and traffic signals are being replaced—not with the latest designs, but with reproductions of early ones. Occidental Avenue is closed to traffic—a brick-paved mall under construction. Sidewalks will also be brick. Early-1900's street furniture and drinking fountains will be installed.

The overall result—less air pollution from exhaust fumes, less noise from car horns and engines—is expected to further enhance the desirability (and economics) of the area.

What has happened to Pioneer Square in the last five years staggers the imagination. The assessed valuation has increased approximately 600 percent. Furthermore, says Uhlman, while building permits in the entire city were down six percent, those for Pioneer Square were up 800 percent.

The private effort in Pioneer

Square began in 1967 when one person bought and restored one building. She was Barbara Buck, publisher of *Pacific Banker and Business*, and the building was the old Baranof Hotel. A small triangular structure, it is now her magazine's headquarters, located at the foot of Yesler Way —Seattle's historic Skid Row— a few steps from the harbor.

In 1971, architect Ralph Anderson purchased the Grand Central Hotel, now the Grand Central Arcade—a multi-level complex of shops and offices. Occidental Park, a block-long open space behind the Arcade, was expanded by 7,000 square feet this summer following the condemnation of two dingy bars. The city funded and maintains the park, which is filled with Seattle office workers and tourists during every lunch hour. Plays and music are often performed and vendors sell everything from ice cream to art.

Today the entire Pioneer Square area is booming with new shops, restaurants like the Brasserie Pittsbourg and the Merchant's Cafe, galleries like Polly Friedlander's and offices. One building bought by Architect Bud Bergman combines offices, a restaurant, a store and a baby-sitting service.

The $600,000 revolving fund is expected to help continue this renaissance. The fund will be managed by the Historic Seattle Preservation and Development Authority which is empowered to receive public and private funds, sell bonds, lend and borrow money as well as buy, sell, restore, develop and rehabilitate property. The main purpose, as with most preservation revolving funds, will be to buy old buildings, fix them up, sell them and return the money to the fund to purchase more property.

The concept of such a public corporation was developed in the mayor's office by his legal assistant, Edmund J. Wood. He points out several advantages of such a corporation. "It is exempt from real and personal property taxes. Income is nontaxable for federal tax purposes. Gifts are tax-exempt and interest on the corporation's bonds is exempt.

Says Arthur M. Skolnik, the manager of the Pioneer Square Historic District for the city, "Until now preservation has been an emergency problem; with this source of funding, we will be able to buy and sell as well as make loans to owners for necessary work."

But preservation in Seattle involves more than just Pioneer Square. The city also established a public corporation to prepare a development scheme for Pike Place Market (FORUM, May '73). The U.S. Department of Housing and Urban Development is about to allocate more than $22 million in grants and loans for the project. The market, on a hillside overlooking the harbor, combines shops and open stalls with fishmongers, framers and craftsmen—all in one rambling structure.

There are other signs of the city's commitment to preservation. When fire stations vacate their old buildings for new ones, the old buildings are not torn down. They are recycled for other city agencies. Two have become neighborhood centers— the open bays where the trucks once waited now make excellent theater workshop space. When the Becker Kolum Synagogue congregation moved out of its building, HUD funds were used to adapt it into the Yesler Neighborhood Center. The domed sanctuary was converted into a theater and a day care center was added to it.

In a comparatively short time, the people of Seattle have seen what preservation can mean: "It's becoming the in thing," says City Councilman Bruce Chapman. "Businessmen are moving from new skyscrapers into Pioneer Square. They are finding out that old buildings can be moneymakers."

Even the non-believers are finding out—the hard way. In September, two businesses within the Pioneer Square Historic District were fined and ordered to comply with the historic district regulations concerning changes to a building's exterior. The businessmen said that the city had no right to approve or limit changes to a building—in both cases, large signs pasted on windows were what brought about the action. But two judges ruled that the city had a right to preserve the appearance of its buildings.

What will happen in Mayor Uhlman's second four-year term is anybody's guess, but preservationists across the country will be watching his city's innovative lead. One of his biggest jobs will be getting the Seattle banks committed to preservation. But given his track record so far, the Mayor's credit rating shouldn't be too hard to establish.

Restored Pergola, Pioneer Square, Seattle.

Grand Central Arcade, Pioneer Square.

WAINWRIGHT BUILDING

The National Trust for Historic Preservation has taken an option to purchase Louis Sullivan's Wainwright Building (1892) in St. Louis. The action postpones any possible demolition of the National Historic Landmark until after July 1974.

In a related development, the St. Louis Chapter of the AIA and the Landmarks Association of St. Louis jointly issued a 72-page report in November calling for the preservation of the building. They estimated the Wainwright needed $3 million in rehabilitation work including modernization of the lobby, improved elevators, a new heating system and the installation of air conditioning.

The report also suggested that the 10th floor could be turned into a restaurant or private club.

The Trust's move, announced by President James Biddle on November 14, marks the first time the preservation group has become involved in saving a major urban landmark.

"It is our intention during the period of the option," said Biddle, "to find ways of saving the building, the world's first modern office building. Obviously you can't turn it into a museum, and that's the last thing we would want to do. We want to see it put to use as office space.

"We hope to be able to serve as a catalyst—finding a sympathetic developer and providing adequate protection to assure the building's future."

The option is from building owners Sam Michelson and A. Samuel Wise. They bought the Wainwright 15 years ago from Washington University, but have actively sought another owner for several years because of increasing maintenance costs and the need for an extensive rehabilitation.

"Michelson was under tremendous pressure for a long time to demolish the building for a parking lot," said Biddle, "but his action in giving us an option shows that he cares about the building and is concerned for its future."

The Wainwright Building is considered one of the country's major architectural landmarks, having set the pattern for the skyscraper development. The 10-story building rests on a Missouri-red granite base. The first two floors are brown sandstone; above that the building is sheathed in brick with terra cotta panels between the windows. The 10th floor and cornice are done in ornately detailed terra cotta. All inside partitions are fireproof and provision was made so that they could be moved or removed at will—none loadbearing.

"This is an entirely new direction for the National Trust," Biddle noted, "but an entirely appropriate one as we approach our 25th anniversary in 1974. If we are successful, we will have contributed significantly to the renaissance of a downtown, which is one of the goals of historic preservation."

Anyone interested in helping develop the Wainwright Building should call James C. Massey, Director of Historic Properties, at National Trust headquarters in Washington, D.C. (202) 382-3304.

MONADNOCK SAVED?

Sullivan's Garrick Theater is a parking lot, so is his Stock Exchange. Hopefully the Monadnock has been saved from a similar ironic fate, ironic since we are running out of gas.

Designed by Holabird and Root in 1891, the Monadnock is the grand daddy of the upswept office towers fashionable recently. The design of its massive load-bearing walls was the result of Egyptian pylons having gotten into Root's mind according to Harriet Monroe, his biographer. With a bit of luck the great pylon will remain with us. The Chicago City Council has declared it a landmark.

CHARLESTON

Charleston, South Carolina is about as historic a town as we have—and proud of it. Across the Bay at Ft. Sumpter the shot that ignited the Civil War went off. The city's architecture is just as revered as its history. But Charleston has the same problems today as most cities do. And when a developer wanted to put some housing next to the old historic district, the city almost let him. His scheme, it turned out, was an eight story condominium that would be out of scale and character with the district. Besides, to make room for it, 14 early 19th-century warehouses were going to be razed.

By last May the city's Board of Architectural Review had issued a permit for demolition. Only the intervention of a group called the Council for Urban Quality held up the destruction until, finally, the perplexed developer agreed to sell the land. "Save Charleston Foundation" was organized to raise the needed $1.26 million. By November they had the money, or pledges for it, and the land was purchased. It will be held for another buyer. Perhaps there is, after all, some meaning in the inscription on the Charleston City seal: "She guards her buildings, customs, and laws."

NYC LANDMARKS LAW

"What we need is continuity," critic Wolf Von Eckardt once wrote. "Historic preservation is not sentimentality but a psychological necessity."

New York's City Council seems to have understood Von Eckardt's wisdom recently by passing amendments to the Landmarks Law, broadening it considerably.

Perhaps most notable is a provision that lets the Commission hold hearings on proposed landmarks at any time rather than confining them to a six month period every three and a half years. Under the old law, buildings could disappear without a trace before anyone formally recognized their importance.

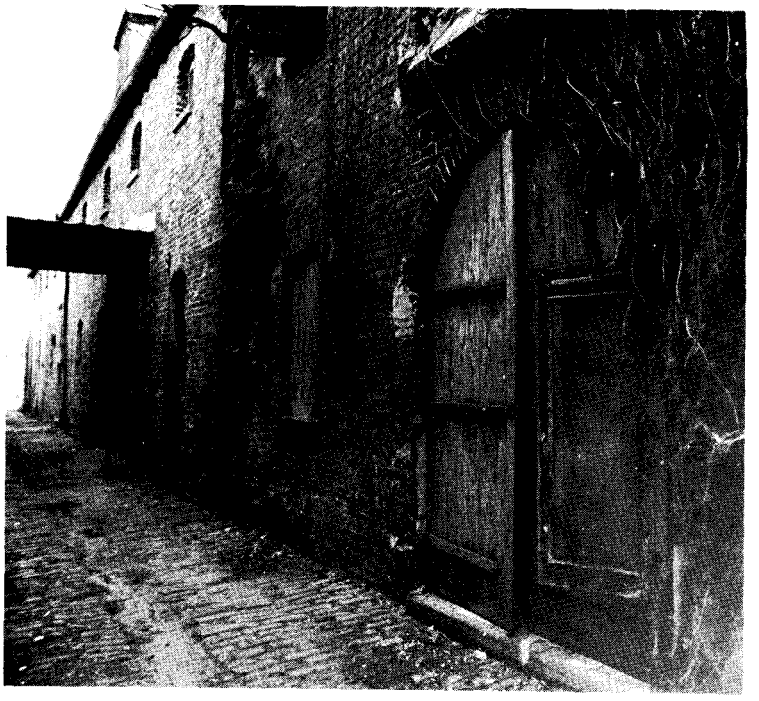
Another move involves interiors, which can now gain official landmark recognition as long as they are accessible to the general public, and are at least 30 years old. The Great Hall of the Metropolitan Museum, the concourse in Grand Central Station, the main reading room in the Public Library are but a few great spaces that can now be preserved along with their exteriors.

And a new category was created: Scenic Landmarks. These would be areas such as Central or Prospect Parks, or any other publicly owned open land "of special historical or aesthetic interest or value." And they can gain landmark status and be protected from careless change just as a building can.

Previously any changes in landmarks owned by the City had only to be presented to the Commission. Now such proposals must be made public.

Cities across the country will be watching the operation of these amendments. Even though there are a few loopholes left in the New York statute (church interiors are not covered for instance, nor are private interiors no matter how extraordinary), the legislation is something of a landmark in itself.

(*Continued on page 72*)



Historic, neglected, Charleston.

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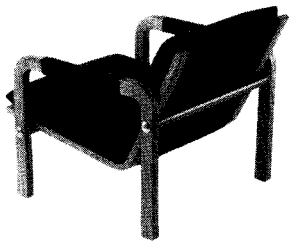


THONET
CENTER OF DESIGN

William Wilson Wurster of Stockton, California was an original version of himself. Modest. Simple. Sort of like the buildings he did, starting 1926. If you take a look at one of the first, the Gregory Farmhouse in Santa Cruz, you begin to understand that Bill, along with several others of the time, had a handle on something we have almost lost—humanism and regionalism as elements of design. Deterministic, form-giving poses just didn't seem right to him, and certainly not in the San Francisco area, which has always thrived on differentiation, on keeping to character, on being true to oneself.

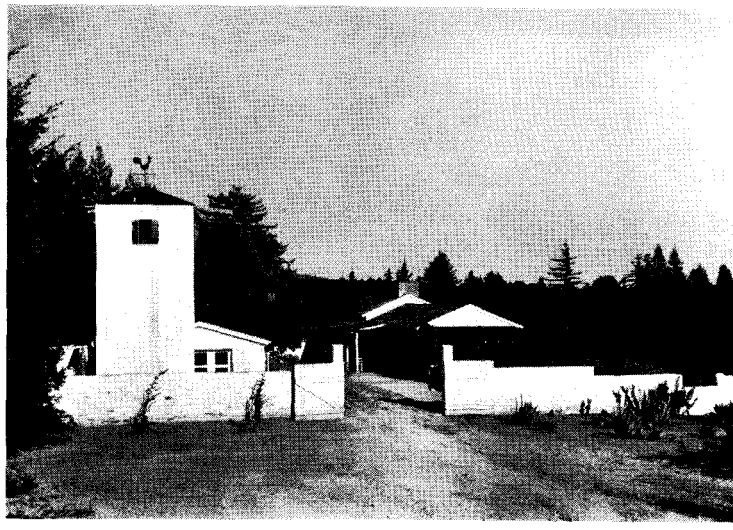
Those may sound like soft emotions. But if they do, it indicates we are more in need than ever of the values Bill Wurster believed in.

He began his career, remember, at an ominous time—the Depression. Donn Emmons (his partner from 1943 along with Theodore Bernardi) pointed out last September, "Rigid economy was part of every building program. Ostentation was both dangerous and unpopular. And the old, established families were more interested in the quality of their background for living than in impressing their neighbors."

Is it possible (just) that the example he has left, attitude as well as application, will be a practical source in an equally ominous time? I think so. And even without our present need to tighten society's belt, I would wish it. The difference is that we are coming upon constraints, in the form of this or that crisis, by having failed to look for the causes of crisis. Bill Wurster, with or without a depression, was the kind of man who *looked* for constraints and saw them, tangibly, as tools.

I don't think he would mind if, at this point, I say something, by way of him, about that almost forgotten period, when some very decent architecture was done—the late Twenties, the Thirties, the Forties, up until the time, say, when Mies did 860-880 in Chicago. All that time, one constraint or another, first the economy and then the War, afflicted America. And yet, Bill Wurster and his contemporaries managed to do work that really expressed the spiritual and geographical nature of this country. Assertions of optimism. Look at O'Neal Ford's stuff in Texas, or that of Fred MacKie and Karl Kamrath, or that of Harwell Hamilton Harris, or the Kecks in Chicago. How many others have I left out? Lots, probably. Those *are* good years, largely unstudied ones—all the more notable because so many of their buildings were not conceived to demand notice.

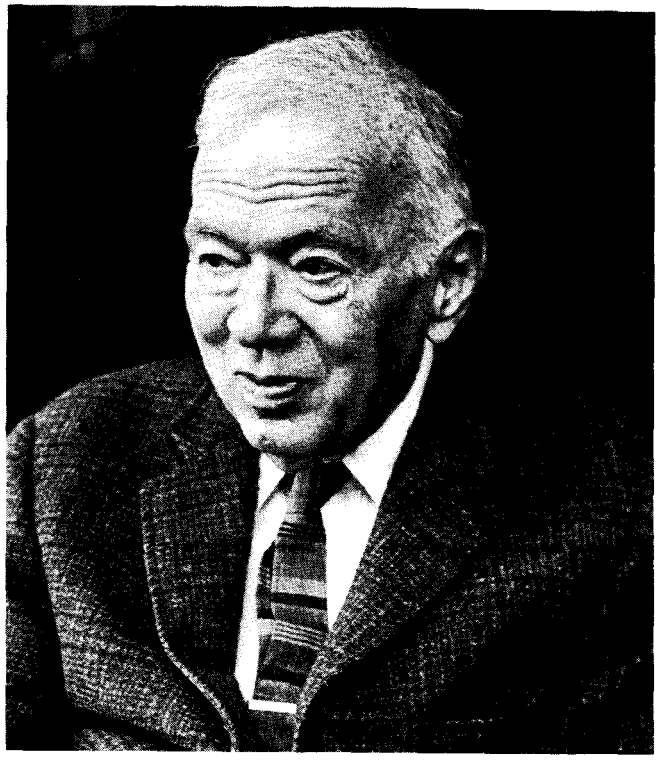
Perhaps that is why such work is starting to get it—being as it usually was well composed, congenial to site and climate, considerate of function, expressive of the special qualities of a place. William Wurster's influence in all this has, I suspect, barely emerged. And though he didn't go around giving the impression of wanting the final "say", we would all be smart to ask ourselves how such a humble, warm-hearted man usually had it. And will.—WILLIAM MARLIN



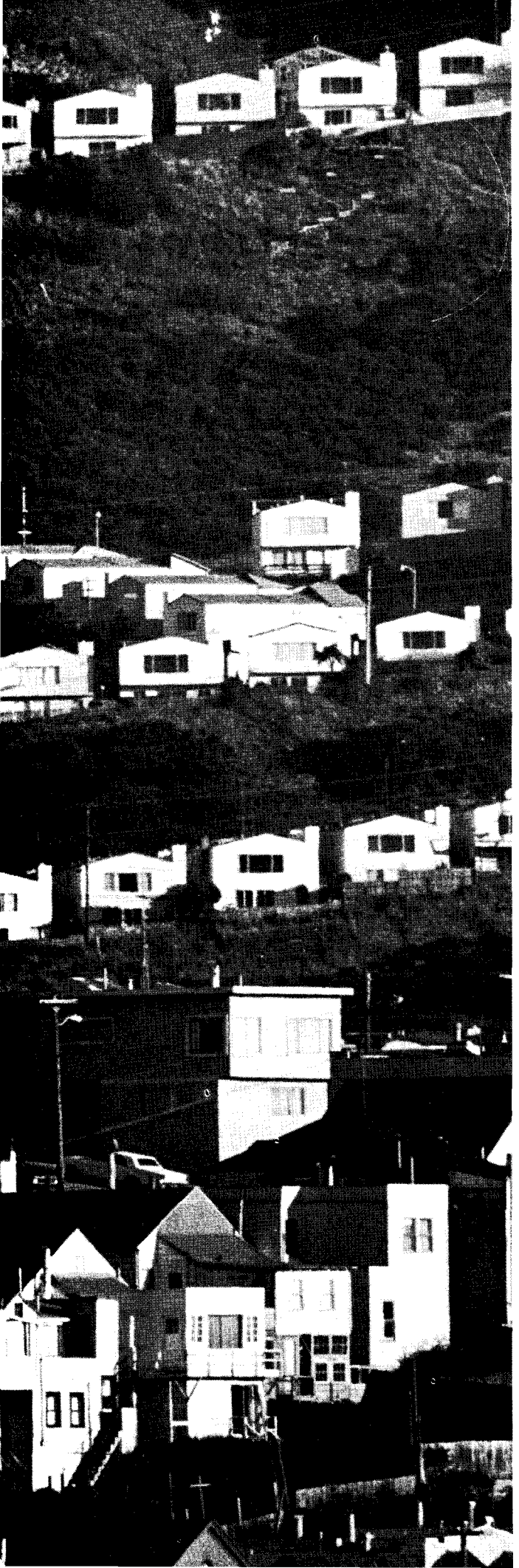
Gregory Farm House, Santa Cruz, California (1927).

FORUM

DECEMBER 1973 **VOL. 139 NO. 5**



William Wilson Wurster (1895-1973).



WHERE DO WE GROW FROM HERE?

Frustrated by traffic jams, shocked at urban sprawl, choked by pollution, citizens and local governments across the United States are rebelling against unrestrained growth.

By ROBERT CAHN

As you drive south out of Santa Fe toward Albuquerque, N.M., on Interstate 25, a lone billboard irresistibly draws your attention with its bold, one-word message:

"UNDEVELOP!"

The mural portrays what the highway traveler would see were there no billboard at all—the volcanic beauty of Black Mesa and the Rio Grande Valley. Carefully lettered in the lower right-hand corner is the name of the billboard's sponsor: New Mexico Underdevelopment Commission.

It is not entirely a gag. Although no such "commission" exists in governmental circles, this unofficial undevelopment commission has immeasurable gadfly influence throughout the state. Its founder, a young, articulate newspaper publisher, Mark Acuff, who writes a watchdog column in his weekly New Mexico Independent, has issued more than 500 commission membership cards and has sold 4,000 "UNDEVELOP" bumper stickers. In these ways the "commission" keeps the advocates of unchecked development off balance with the knowledge that someone is watching.

Like their counterparts in many parts of the nation, New Mexico's self-appointed undevelopers are riding the spreading wave of national sentiment which questions what was heretofore unquestionable—the star-spangled theme of chambers of commerce from coast to coast:

"Grow!" "Grow!" "Grow!"

The recent report by the Task Force on Land Use and Urban Growth, headed by Laurance S. Rockefeller, says this questioning of growth is a "new mood" that is sweeping the nation. Its opponents refer to it as "anti-growth," "no-growth," or "zero growth," while advocates generally call it "controlled growth," "limited growth," or "quality growth."

'No growth' outlook dim

The privately funded Rockefeller report, commissioned by President Nixon's Citizen Advisory Committee on Environmental Quality, arrives at the conclusion that absolute "no growth" is not a viable option in the near future. Population will grow. People will improve their status and seek more desirable living areas. A policy that would discriminate on individual freedom of mobility would be both legally and morally wrong.

Yet the report traces the pervasive opposition to uncontrolled growth throughout the nation. It points out that this opposition is motivated in part by concern for the quality of life. The report suggests that new institutions and procedures are needed to find ways of controlling the excesses that have resulted from the often unplanned or ill-planned development that has occurred in cities, suburbs, and countryside.

The anti-growth mood has been evident to me in travels around

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Mr. Cahn is the Pulitzer Prize winning Environment Editor of the Christian Science Monitor, where this article appeared earlier this year.

the country the last few years investigating environmental activities. According to the Rockefeller report and to urbanologists and planners, however, the mood is not being created by far-out environmentalists.

Many citizens are conscious that new development carries potential economic hardships as well as harmful environmental effects. The ready assumption of city or county officials that new growth automatically brings more jobs and more tax benefits has been sharply questioned in studies and in the personal experience of many taxpayers who find that the services required to accommodate the new growth can be more costly than the tax benefits derived therefrom.

But mostly, the new mood is just a feeling that creeps up on one as increased traffic extends commuting time or crowds impede shopping. Or the citizen finds new and often inappropriate buildings cluttering former open spaces or scenic landmarks. Or the signs of air, water, noise, and solid-waste pollution suddenly appear "next door" instead of being something to read about in the papers.

Exclusionary reaction involved

In some areas, the new mood, consciously or unconsciously, rightly or wrongly, may be an exclusionary reaction of the citizen who likes things as they are and doesn't want others, and especially others who may have differing standards of living, to enter his city or neighborhood or block. This kind of reaction can come from the pioneer resident, or from the newest arrival all too ready to block the road behind him to others.

What is "new" about this many-faceted movement or mood opposing growth is that it has surfaced in action, instead of just in grumblings and letters to the editor. New restrictive laws, zoning actions, moratoriums on building permits, density limitations, size or height limitations, or bans on septic tanks, are sprouting all over. They are accompanied by citizen lawsuits to prevent development. Once-tranquil city council or county commission meetings have become arenas of protest, overflowing with citizens seeking to block new subdivisions or factories or amusement parks.

In New Mexico, before Mark Acuff started the New Mexico Undevelopment Commission, citizens had raised such loud and vigorous protests over a proposal to locate a Kraft paper mill near Albuquerque that the company finally gave up and settled elsewhere.

Most of the state is still relatively undeveloped. The average New Mexican wants to keep it that way.

Albuquerque, with its snowballing population and physical growth over the past two decades, and a crime rate that last year was the highest in the nation, no longer seeks new residents.

The Albuquerque City Commission, with a new antidevelopment majority, voted a temporary moratorium on providing sewage disposal, water, and utilities to new areas outside the city.

The once-enthusiastic Greater Albuquerque Chamber of Commerce last September adopted a policy statement recommending "a moderate growth policy. . . . geared to preservation of the quality of life."

A decade ago, citizens of Oregon were developing an anti-growth attitude, even though their then governor (now senator), Mark O. Hatfield, was trying to bring in new industry to help the state's depressed economy. But among Oregonians, many of whom had recently migrated to the state for wartime jobs, the Hatfield industrial push met with resistance. There were already too many people and too much polluting industry, the people said.

The current Governor, Tom McCall, has gone the opposite route. "Come, but don't stay," he told Oregon visitors two years ago. Then last year he suggested maybe they shouldn't come at all. This year he has requested the Legislature to slash the "Come to Oregon" travel advertising budget by 30 percent. The Legislature may reduce it another 30 percent.

Adequate planning encouraged

Governor McCall believes some growth is inevitable. But he wants adequate planning for it. He is pushing strongly for a state land-use law with provisions to protect environmentally critical areas. A few months ago, he used the public-health laws of the state to force a booming coastal county to issue a moratorium on all new building permits until plans are devised for adequate sewage disposal and water supply. His latest move is a request to the Legislature to raise camping fees for out-of-state cars at state parks.

Florida and California, states that traditionally have vied with each other to attract visitors and industry, now are seeking to outdo each other in growth-control measures. Florida has only recently awakened to a need for stemming the tide of growth. Its extensive advertising of sunshine and the good life had increased population by almost 2 million, or 40 percent, from 1960 to 1970. But by 1970, a combination of new and old causes suddenly made the citizens aware that there were already too many people jammed into urban areas.

Added to the normal influx of tourists and retirees, thousands of Cuban refugees moved into southern Florida. Disney World brought a massive surge of unplanned growth to central Florida. And installment-land-sales companies increased their promotions to bring potential buyers to the state.

Under the immediate pressure of a severe drought, Governor Reuben Askew in 1971 called a conference of 150 experts in science, government, agriculture, and conservation to deal with the state's growth problems. Led by Profs. John DeGrove of Florida Atlantic University and Arthur R. Marshall of the University of Miami, the conference proposed remedies and formed teams to draft new legislation.

After continuing efforts by these citizen leaders, the State Legislature in 1972 passed four key planning and water conservation laws. This was despite opposition from forces of growth and development who succeeded in softening some of the measures but could not stop them.

"We have had a total and sudden shift in state policy from expansion to no-growth, from a pro-business climate to an attack on private enterprise," said one Tallahassee lobbyist in a speech to industry people.

New controls enacted

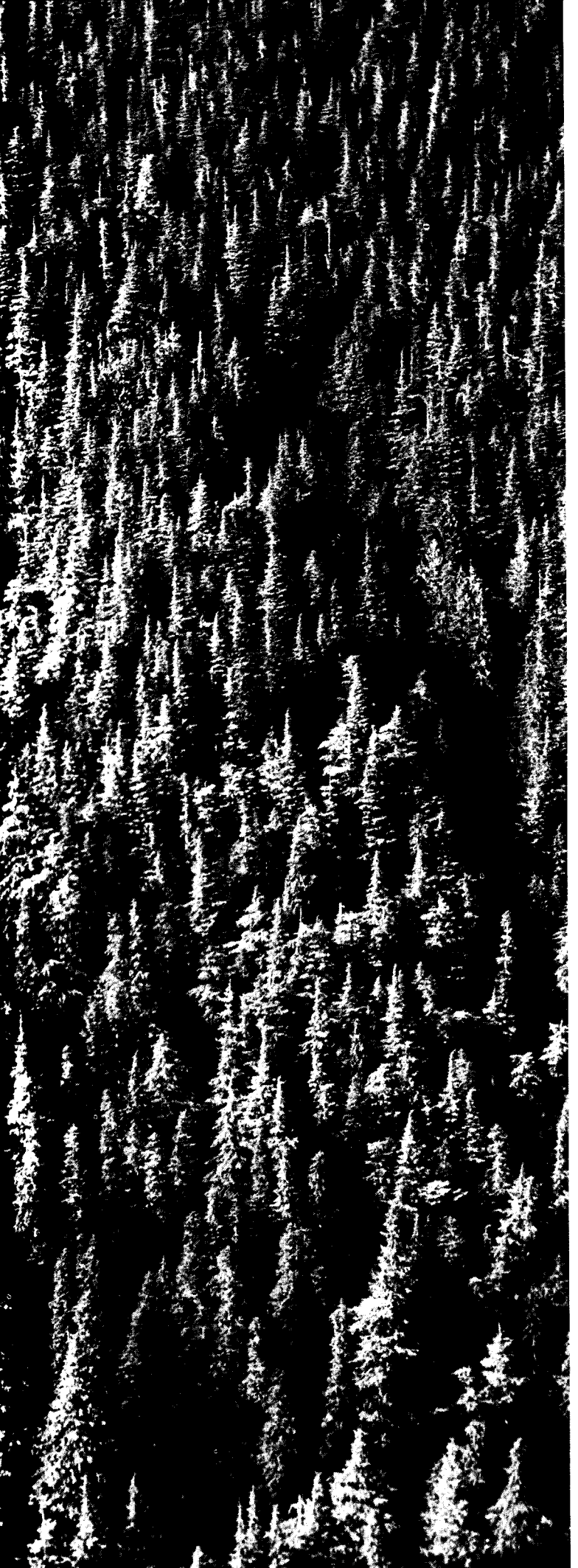
The most vital new law, the Environmental Land and Water Management Act, provides the necessary land-planning control to protect areas designated to be of critical environmental concern. It also provides control over areas that are to have developments of regional impact. And last fall Florida voters, by a large majority, approved a $240 million bond issue for the purchase of environmentally endangered lands.

At the same election, the city of Boca Raton, north of Miami, became the first city in the nation to vote a population maximum by adopting a city charter law to limit to 40,000 the total number of dwelling units to be allowed within the city limits. City commissioners in nearby Hallandale and Hollywood have also passed ordinances lowering the density of future growth.

Dade County (Miami), faced with overcrowding, air and water pollution, and inadequate sewage treatment, had a citizen revolution. This saw three commissioners recalled. A new mayor and two new commissioners were elected on a platform that called for a moratorium on development-oriented rezoning whenever the water supply, sewage treatment facilities, or road capacity, were found to be inadequate. (For more on Dade County, see page 42.)

Palm Beach and Martin Counties on the Atlantic Coast, Collier County on the Gulf of Mexico, and the St. Petersburg-Tampa area have recently adopted building moratoriums or density limitations.

Other evidences of the new mood in Florida are the efforts to preserve the Big Cypress Swamp and to protect Everglades National Park against development intrusions and water shortages, Governor Askew's appointment of Professors DeGrove and Marshall to the board of directors of the powerful and development-biased Central and Southern Florida Flood Control District, and an awakening by townspeople in central Florida that Disney World may eventually bring more troubles than profits. Disney World adopted some environmental protections for its own site. But it did nothing to help the many nearby towns that now are overrun with traffic, are sprouting new motel and tourist service facilities, and



are faced with demands for water, sewage treatment, and electricity that far exceed supplies. Many of these central Florida towns are considering growth limitations.

At a recent conference sponsored by the Florida Defenders of Wildlife 65 of the state's top scientists, educators, conservationists, economists, land planners, and urban experts spent two days discussing the effects of growth on the ability of nature to serve man, on the ability of government to serve man, and on the cost of living.

Increases in population that raise the cost of services are devastating to those citizens with fixed incomes. Benefits that seem to accrue to the middle-income range of the population from increased salaries are largely illusory because of the increase in the cost of living and the environmental debt incurred by not paying the full costs of growth in the past.

In-migration discouraged

Among other things, the conference recommended that the state discourage all in-migration "until we know what areas can accommodate growth;" limit commercial development and divert in-migration from areas known to be overloaded; produce an economic analysis that will clearly show the costs as well as the benefits of growth, and take strong steps to discourage land speculation, such as providing a tax on land sales.

California's anti-growth activities started earlier than those in Florida. In some ways they are more sweeping. Through statewide vote, the entire coastline is being protected for 1,000 yards inland. State and regional commissions have been established to control coastal development. A state environmental policy act, stronger than the national law, requires environmental-impact statements for most commercial development as well as for state actions. A powerful citizen group, California Tomorrow, has produced a comprehensive state plan for conservation and development. This explores alternatives for immediate actions and implications of these actions. It makes projections to the year 2000.

Citizens of Livermore and Pleasanton, cities 50 miles east of San Francisco, passed an initiative limiting issuance of new building permits until school, sewage-treatment, and water facilities exist to serve new populations. The San Francisco Bay Area Governments Association adopted a regional policy to halt the area's population growth at 5.5 million by 1980, only a million more than at present.

San Diego has acted to deny services to developers who do not comply with provisions for needed services. And last November the city voted a height limitation on shoreline buildings, which will stop the growth of skyscraper condominiums.

Meanwhile, the San Francisco Bay Area Conservation and Development Commission is effectively curtailing deterioration of the bay and preventing damaging commercial development along the shoreline.

Among other areas in which the new mood has been translated into action and controversy are Colorado, Long Island and other Metropolitan New York areas, the suburban areas in Virginia and Maryland surrounding Washington, D.C., and a number of towns in New England.

THWARTED DEVELOPERS ARE TAKING THE FIFTH

The U.S. Constitution's Fifth Amendment doesn't deal with just self-incrimination. It also states that 'private property' shall not be taken for public uses 'without just compensation.' Increasingly, as would-be land developers fetch up against environmental restrictions, they are taking to the courts. Decisions stemming from these court actions could determine where and in what setting future Americans live.

A Connecticut firm wants to build an industrial complex on 277 acres it has owned for 20 years in Stratford's Great Salt Meadow. The development would bring jobs and tax revenues to the area. But the state has denied the application because of projected environmental damage.

Primeval forest in California.

A man who, 12 years ago, bought 22 acres in the Palo Alto, Calif., foothills has been refused permission to subdivide his plot into small lots. The city has classified the foothills area as open space with 10-acre minimum zoning.

On the western shore of Lake Tahoe, a developer seeks to put 60 vacation condominium units on a 17-acre tract that was formerly a retreat for Henry J. Kaiser. The application has been blocked by low-density restrictions of the Tahoe Regional Planning Agency, a joint California-Nevada entity.

All of these thwarted landowners now are in court trying either to invalidate the restrictive regulations or to get compensation for the full development value of their property. All assert their constitutional rights have been violated because the actions of government constitute a "taking" without compensation. These claims are based on the Fifth Amendment provision that "private property" shall not be taken for public purposes "without just compensation." This provision is applicable to the states through the Fourteenth Amendment's provision that property shall not be taken "without due process of law."

Controls challenged

The adoption by state and local agencies of laws and regulations to control the consequences of unplanned growth, to restrict development of environmentally critical lands, and to control pollution has caused many citizens to challenge the actions in court. They allege violation of their property rights. The results of these lawsuits and the precedents they set may play a large role in determining where, and in what setting, future Americans will live.

Public attention is being focused on these issues by a report on land use and urban growth issued by a citizen task force headed by Laurance S. Rockefeller. The task force points out that a new mood of limiting or controlling development and growth is sweeping the nation.

When cities expand or suburban areas sprout new developments, natural features and open space that have been serving a common interest are threatened. Wetlands supporting the fish-bird-mammal food cycles, aquifer recharge areas (water-bearing beds of rock, sand, or gravel) coastal dunes, forests that reduce floods or prevent erosion of productive agricultural land or cherished scenic meadows —all are jeopardized.

The law has never allowed owners to do entirely as they please with their land. Regulation, however, has always brought owner resistance. Years ago, landowners attacked single-family zoning as a taking of property rights without compensation. But a wide variety of restrictions have evolved and been recognized as allowable regulatory activity within the public interest and not requiring compensation.

While various legal formulas are offered to explain just when compensation is required, courts traditionally uphold regulations designed to protect the public interest as long as some "reasonable use" is left to the property owner. Thus, the mere fact that a property owner cannot make the most personally beneficial use of his property, or is unable to realize speculative investment gains, does not mean that he must be compensated.

The crunch seems to come when regulations do not leave the owner with any economic use of his land at all. If development is the only possible use for the private owner, as is claimed, for instance, in the Great Salt Meadow Case, then it may be argued that an agency which restricts such development should be required to pay compensation.

But if governments are forced to pay full development value for all such areas of critical public interest, this could be so expensive it would inhibit protective legislation entirely. In the Great Salt Meadow Case, the plaintiffs are demanding $77.7 million compensation. More than $200 million in claims have already been filed by landowners against the Lake Tahoe Regional Authority.

"The takings issue is at the heart of the planning problem," says William K. Reilly, staff director of the Rockefeller task force. "If the public cannot compel landowners to maintain critical environmental property in present use without being required to pay compensation, then you can forget about preserving much of what we value in this country.

"It is important to recognize that a vast amount of property will remain in present use for decades to come even without strong public controls," Mr. Reilly adds. "But without these controls the market will decide which land gets developed and which remains as it is. What the task force is recommending is that a process of conscious public choice is a better way to make these decisions, so that development is steered away from the wetlands and beaches, the unique farmlands, and steep mountain slopes."

In a significant recommendation, the Rockefeller task force urges the U.S. Supreme Court to reexamine decisions made in an earlier era before land was recognized as an irreplaceable natural resource instead of as a commodity to be considered for its maximum market value.

In tracing court decisions on the takings issue, the report notes how the U.S. Supreme Court has apparently adapted constitutional language to meet what the court saw as society's contemporary needs.

Of particular importance has been a 1922 decision—Pennsylvania Coal Company v. Mahon. Pennsylvania had passed legislation forbidding coal mining that would cause the surface of land to subside under homes or public buildings. The mining company, in this case, argued that the law was an unconstitutional taking of property by the state because it interfered with the right to pursue mining on their property even if it disturbed other landowners nearby.

The Holmes opinion

In the court's opinion favoring the coal company, Justice Oliver Wendell Holmes said that "the general rule at least, is that while property may be regulated to a certain extent, if regulation goes too far it will be recognized as a taking . . . we are in danger of forgetting that a strong public desire to improve the public condition is not enough to warrant achieving the desire by a shorter cut than the constitutional way of paying for the change."

In dissent, Justice Louis Brandeis argued that compensation should not be required where the facts demonstrated an important public need. A restriction upon the use of property which deprives the owner of some right theretofore enjoyed is not a taking when the restriction is imposed to protect the public health, safety, or morals from threatened dangers, Mr. Brandeis said.

"The property so restricted remains in the possession of its owner," wrote Justice Brandeis. "The state does not appropriate it or make any use of it. The state merely prevents the owner from making a use which interferes with the paramount rights of the public."

A more recent (1962) Supreme Court decision, Goldblatt v. Hempstead, upheld state prohibitions for a gravel pit operation in an urban area and did not provide compensation for resulting economic loss. It may have given state courts a signal that they should be moving in this direction.

In the last half century, however, the Supreme Court has only rarely taken cases involving the regulation of land. It has preferred to leave the subject to state courts. Recently, courts in California, Wisconsin, Maine, and Maryland have sustained state land-use controls against owner challenges.

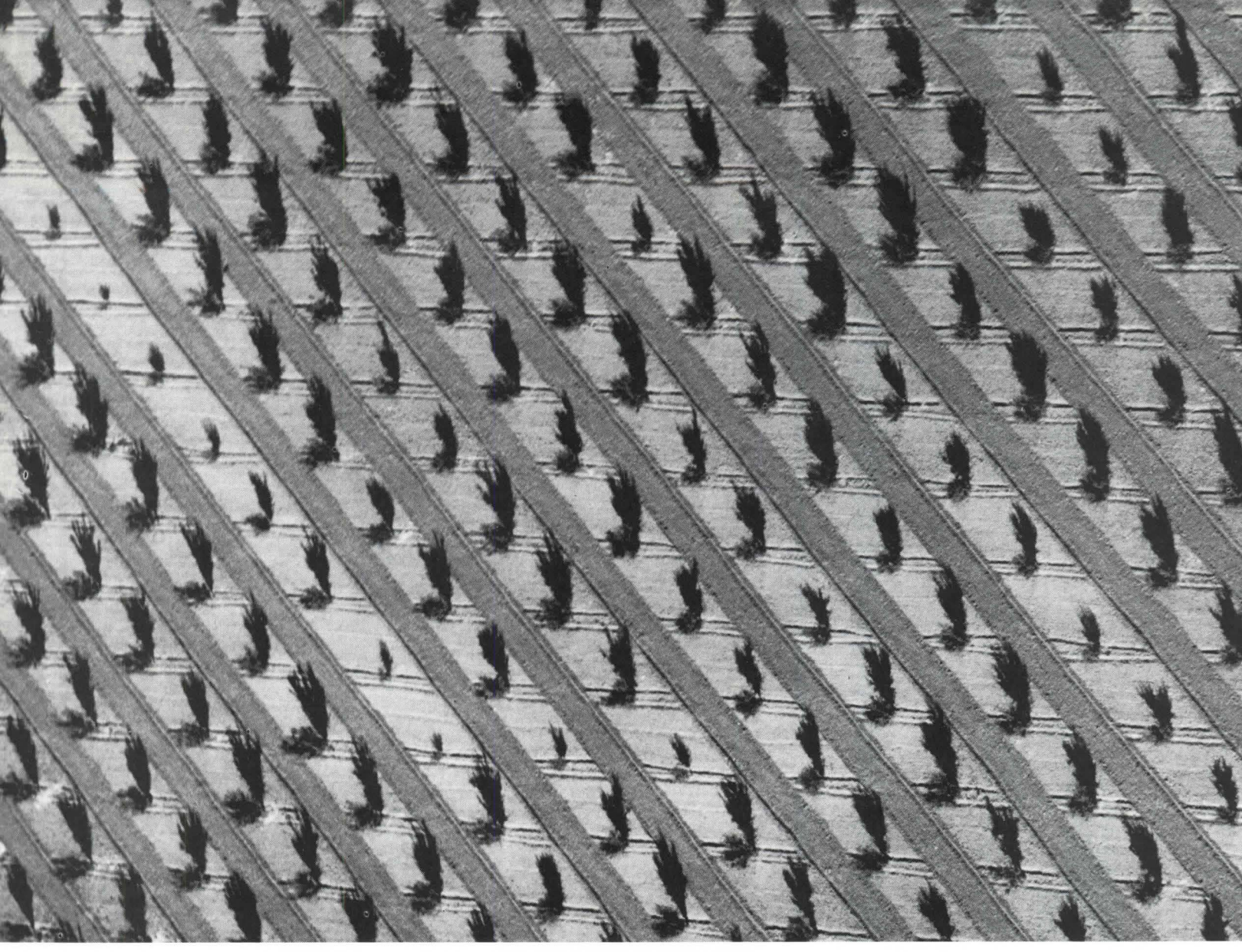
The Rockefeller report says that, at the time of earlier cases, such as Pennsylvania Coal, there was little knowledge of the interrelationships of land uses and their political environmental impacts.

"It would be inconsistent with our constitutional tradition to adhere blindly to these past precedents now that we have better information," the report says, recognizing that courts respond to basic change in society.

Lawmakers in states and localities are warned in the report not to be intimidated by older court decisions. The report urges them to "adopt stringent planning and regulatory legislation whenever they believe it fair and necessary to achieve a land-use objective."

The task force also recommends that courts presume that any change in existing natural ecosystems is likely to have adverse consequences that are difficult to foresee. The proponent of the change should therefore be required to demonstrate, as clearly as possible, the nature and extent of any changes that will result.

Gold dredge tailings, Snelling, California.



THE FIFTH AMENDMENT

No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a Grand Jury, except in cases arising in the land or naval forces . . . nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use without just compensation.

Another area of dispute over the "takings" question has developed as a result of recently adopted historic-site preservation laws. While some courts have indicated concern over whether aesthetic preservation is as important as the regulation of safety and health, other courts have upheld efforts to prevent activities that would deface or destroy places of historic or cultural significance.

Since property subject to historic-preservation requirements generally still has some economically reasonable use, preservationists argue that the mere fact that more profit might be made by destroying a historic structure or altering a site does not necessarily justify doing this.

Court role involved

A major case now awaiting decision in the New York County Supreme Court tests the relevance of this rationale as applied to Grand Central Terminal, one of the nation's classic railroad stations.

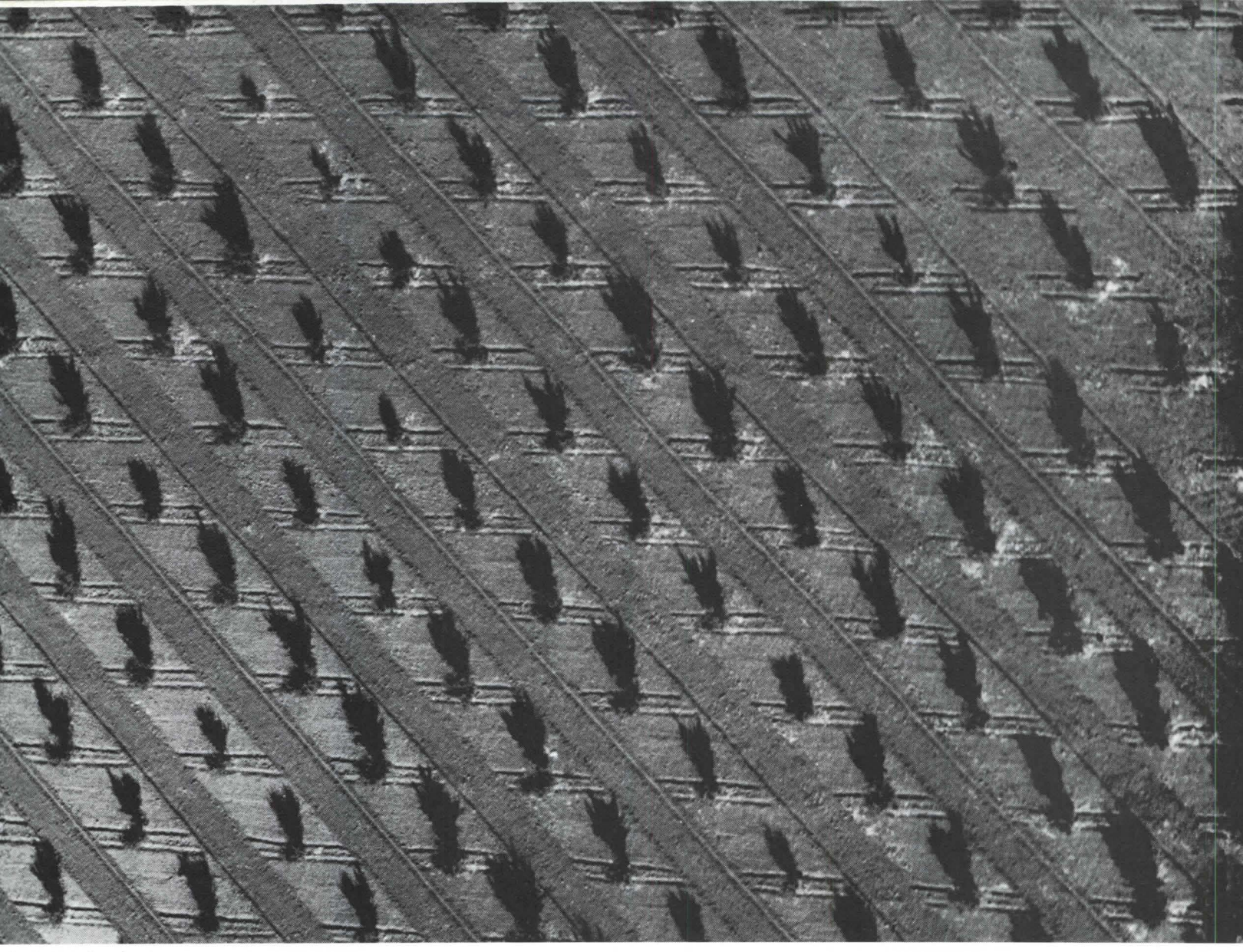
The present owner, who prefers to use the space for a 59-story office building, has challenged New York City's Landmark Preservation Law. Under this law, the station has been declared a historic landmark. The city has turned down the application for the skyscraper and the owner is asking for $8 million per year in compensation.

The growth and development of the country will thus be greatly affected by the courts as they seek to determine the adjustments in property rights required in the general public interest.

In a recent U.S. Court of Appeals decision, which denied a developer's complaint and upheld six-acre minimum lot zoning in Sanbornton, N.H., Chief Judge Albert W. Coffin sucmarized the view from the bench:

"This court, like other federal and state courts throughout the country, finds itself caught up in the environmental revolution. Difficult and novel legal and factual questions are posed which require the resolution of conflicting economic, environmental, and human values. The problem inherent in quantifying a 'way of life,' the beauty of an unspoiled mountain, may never be solvable with any degree of certitude.

"Thus basic value judgments will be made by legislatures and voters which courts can review in most instances, not on the basis of the wisdom of these decisions, but rather only to determine whether they are permissible within the relevant statutory and constitutional framework."



An irrigated orchard.

COURT ACTION FROM CONNECTICUT TO CALIFORNIA

GREAT SALT MEADOW, STRATFORD, CONN.

The Rykar Industrial Corporation seeks to develop an industrial facility and fill the 277 acres it has owned for more than 20 years in Great Salt Meadow. Local zoning regulations have permitted industrial development in the area since 1927. Development would benefit the area with new jobs and an increased property tax base.

The Rykar application to fill the marsh has been denied by the Commissioner of Environmental Protection under recent state legislation to protect coastal wetlands. Rykar alleges this action constitutes a "taking." It wants $77.7 million compensation from the state.

The commissioner of environmental protection says the Rykar property is part of a tidal wetland subject to flooding, hurricanes, and other natural disasters and that dredging would destroy shellfish grounds. At local hearings, residents warned of dangers to adjoining Long Beach, if dredging is permitted. They argued that the meadow's use as a wildlife area would be damaged by development.

The case now is before the Superior Court of Hartford County, Conn.

FLEUR DU LAC, LAKE TAHOE, CALIF.

Owners of Fleur du Lac, a 17-acre site on the western shore of Lake Tahoe, seek to build 60 second-home condominium units. The land, once a vacation retreat for Henry J. Kaiser, is heavily wooded. It has 12 or 13 old buildings and was zoned for medium density. The developer's plan would give maximum protection to trees and other vegetation. But the application has been denied by the Tahoe Regional Planning Agency. The developer says this constitutes a "taking" and asks $4.5 million in compensation. The case is awaiting trial.

The Tahoe agency, required by an interstate compact to deal with development pressures, has lowered the allowable density for Fleur du Lac to one unit per acre. The agency made engineering studies to determine the classification of the land. But it also made its rulings on the basis of reducing maximum use of the entire Lake Tahoe basin to preserve the ecology of the area.

GRAND CENTRAL STATION, NEW YORK

In August, 1967, the New York City Landmarks Preservation Commission designated Grand Central Terminal a "landmark."

Penn Central Railroad, which owns the terminal, and UGP Properties, Inc., lessee of the air rights over the terminal, plan a 59-story structure that would demolish all but the main concourse. The landmarks preservation commission has turned down the plan. Under the landmarks ordinance, which protects only the exterior of the building, the commission is empowered to help the owner find alternative paying uses for the uneconomic landmark. The New York City Planning Commission's suggestion of alternative sites for the floor area that could be developed at Grand Central was not implemented.

The owner and lessee alleged a "taking" and are asking $8 million a year in damages. The case, already tried, is awaiting decision by the Supreme Court, New York County.

PALO ALTO FOOTHILLS, CALIF.

Much of the 7,500 acres composing the foothills behind Palo Alto is suitable for subdivision development. Water and sewage lines were extended to the area after it was annexed by the city. The owner of one 22-acre parcel in the meadows of the upper foothills applied for subdivision approval. This was denied. He claims he purchased the land in 1961 expecting to subdivide and that new low-density zoning comprises a "taking." He asks $445,000 compensation from the city.

Palo Alto, on the basis of a study showing that costs for services would substantially exceed revenues from development of the foothills, adopted an open space ordinance for the entire area, with 10-acre minimum parcel size. The ordinance recognized that open space is a land use equal in importance to the traditional residential and commercial categories.

STOP GROWTH HERE AND IT WILL POP UP THERE

Halting runaway growth will take more than zoning and other legal restrictions, warns a presidential task force. Across America, communities wonder how to cope with a problem that springs from the basic fact that 'people are not going to go away.'

Is "no growth" a realistic answer to the overcrowding of the land and environmental decay that threaten many American communities today?

Citizens of some cities, such as Boca Raton, Fla., or Boulder, Colo., have so strong an anti-growth sentiment that they are trying to close their gates. Other cities, caught up in the new mood, are taking such steps as enacting zoning restrictions, denying sewer permits, or imposing building moratoriums to limit growth and development.

These actions appear to be needed and plausible, especially to the citizens living within a threatened area. However, a new report by a prestigious citizen group points out dangers in trying to stop growth on a piecemeal, city-by-city basis.

Nationwide, it must be recognized that, by the end of the century, an additional 54 million people will need living space. "Stop growth here, and it will pop up there; slow it down over there and it will speed up somewhere else, because people are not going to go away," states the report of the Task Force on Land Use and Urban Growth, chaired by Laurance S. Rockefeller.

Migrations expected to continue

The study, commissioned by President Nixon's Citizens' Advisory Committee on Environmental Quality, notes that even with zero population growth (the rate at which we simply replace ourselves), population would not actually level off for about 75 years. The migrations from rural to urban areas and from inner city to outlying suburban areas are expected to continue for some time.

This concentration of population in regional urban constellations will result in five-sixths of the people living in large urban regions by the year 2000. Adding to the housing demand is increase in the number of both young and old living apart from their families. During the 1960's, while total population increased about 11 percent, the number of households increased by 17 percent. Each new household takes up living space and requires services. From now until 1985, over 27,000 new households—as many as in a city the size of Ridgewood, N.J.—will be established each week.

Members of the Rockefeller task force warned that while limiting growth and development may be justifiable in order to protect the physical and social environment, restrictions should not be imposed purely for exclusiveness or economic reasons. Growth-limiting measures cannot be applied indiscriminately on a wide scale without affecting the aspirations of millions of Americans who may later seek to exercise their rights of mobility.

Options available for dealing with growth problems are expanding as communities seek their own solutions. The movement is so new that it is not yet clear which of the plans will eventually work out, and which may be unfair or unduly restrictive. Some of the current efforts, however, warrant careful analysis.

Take Boca Raton, Fla., for instance. This community of 41,000, north of Miami, composed mostly of middle-to-upper-income residents, voted last November to establish a ceiling on growth. The city was started as a wealthy private club. It had only 7,000 residents in 1960. But by 1970 it had grown to 28,500. With new ocean-front condominiums attracting retirees from the North, and with an expanding Florida Atlantic University drawing other residents, the city was becoming more crowded than its residents desired. Many of the loudest complainers were the newest arrivals.

Dwelling units limited

At the polls last November, Boca Raton voted a "population cap." This limits to 40,000 the number of dwelling units—both houses and multiple dwellings such as apartments and condominiums—that can ever be built. With an average of 2.5 people per unit, this would

mean an ultimate ceiling of 100,000. After that total is reached, the city could deny any more housing-construction permits.

The city already has imposed a moratorium on new building permits in order to prevent a rush of development before the new controls are clamped down. Some developers with building permits, and homeowners desiring to sell, will immediately benefit from the increase of demand over supply. But the law will impose hardships on land owners who expected to develop in the future. The law will undoubtedly be challenged at some time on whether this arbitrary ceiling is in fact exclusionary and goes beyond the constitutional powers of a municipality.

Voters in Boulder, Colo., narrowly defeated a maximum-population limit in November, 1971. The city, 22 miles northwest of Denver, has been one of the leaders in anti-growth sentiment, however, and is doing something about it. A recent report by the American Society of Planning Officials says Boulder is "probably the farthest along of any city in the country when it comes to a public consciousness that growth can be controlled or significantly affected as a matter of public policy."

Green-belt plan adopted

Boulder adopted one of the nation's first locally financed green-belt programs in 1967, voted a sales tax to help support open-space purchase, and has already bought or optioned more than 2,700 acres. With the population jumping from 37,000 to 67,000 between 1960 and 1970, citizens became alarmed with the results of a comprehensive plan that predicted the population of the city and nearby county area would double again in 20 years.

In the same election, when the voters turned down the population ceiling, they adopted a 55-foot height limit on downtown buildings and approved a resolution directing that the local government "take all steps necessary" to hold the rate of growth in the Boulder valley to a level substantially below that of the 1960's. A study supported partly by the federal government is seeking to determine the physical, social, and economic effects of different growth strategies. And the city council in February, 1972, voted to discourage new primary employment centers from locating in the valley.

Although Boulder's planning may, in effect, work to exclude low-income residents, the city is the only one in the Denver area to have a public-housing program.

Meanwhile, a number of communities across the nation have expressed an interest in what has been called the "Ramapo plan," based on the actions of Ramapo, N.Y., in prosperous Rockland County about 35 miles from New York City. Ramapo, which had doubled its population from 1960 to 1970, adopted a time-controlled zoning ordinance in 1969 for the unincorporated 60 square miles of the township.

Discrimination charged

Land for new housing in Ramapo can be developed only after the owner receives a "special permit." This is granted if the land is located in an area served by a minimum level of community facilities. These facilities—sewerage, drainage, parks and recreation areas, roads, and firehouses—are scheduled to be installed in accordance with an 18-year, capital-improvement program. In order to build, an applicant must have a minimum number of points (15) based on so many points for each of the services. He can speed up the schedule only by installing enough of the services himself to gain his required number of points.

This "development timing" plan was taken to court by a developer. But the New York Court of Appeals upheld it last year. Under the new ordinance, the building rate has been cut from approximately 1,000 new dwelling units a year to about 350 a year.

Critics claim that the development-timing regulations work to exclude minority groups. The town had banned any more apartment building. And, it is claimed, at the end of the 18 years, all new residential building could be denied. This would make the plan a measure for establishing a maximum population.

Palo Alto, Calif., throws yet another light on the growth issue. The city's 56,000 residents live within half of the town's acreage. The other half is undeveloped foothills. At one point, the city had been planning 3,480 dwelling units in the lower foothills. It had extended water and sewer lines to the area. But as part of an overall development study for the Palo Alto area, a startling discovery was made. It would actually be cheaper for the city to buy the foothills outright than to allow them to be developed.

The study by the San Francisco planning firm of Livingston & Blaney showed that the cost of schools, roads, police, fire, and other services would far exceed projected tax revenues. The city council used $4 million from its budget to start foothills acquisition. And to prevent development, the city then voted to reduce zoning density in the foothills from one unit per acre to one unit per 10 acres. It also voted to allow a variety of land uses such as golf courses, educational or research institutions, or farms that were consistent with open-space requirements.

Conclusions verified

While the costs versus tax revenue estimates are frequently disputed, other studies have verified the Palo Alto conclusions. It is rare these days for a city council or county board of supervisors to accept without questioning a developer's argument that his additional new homes or development will be economically beneficial to an area.

In 1972, the Urban Institute, Washington, D.C., studied 800 residential units and 30 acres of commercial development in a new area surrounding the city of Charlottesville, Va. It found that county expenditures associated with the proposed development would exceed county revenues by $101,000 per year. And a 1970 Stanford Law School study of a 690-acre tract in the city of Half Moon Bay, Calif., showed that the property and other local taxes would fail to pay for the cost of new schools, fire and police protection, and other services. By the time of the development's projected completion in 1982, the population of Half Moon Bay would be increased by 85 percent. The net loss (over tax revenues) to the city for providing services would come to $400,000 a year.

Another projection has been provided by Albert Veri, associate director of the Division of Applied Ecology at the University of Miami. Dr. Veri calculated costs for replacing 20 single-family units with a multiple-family apartment complex which would increase the population to 270 families.

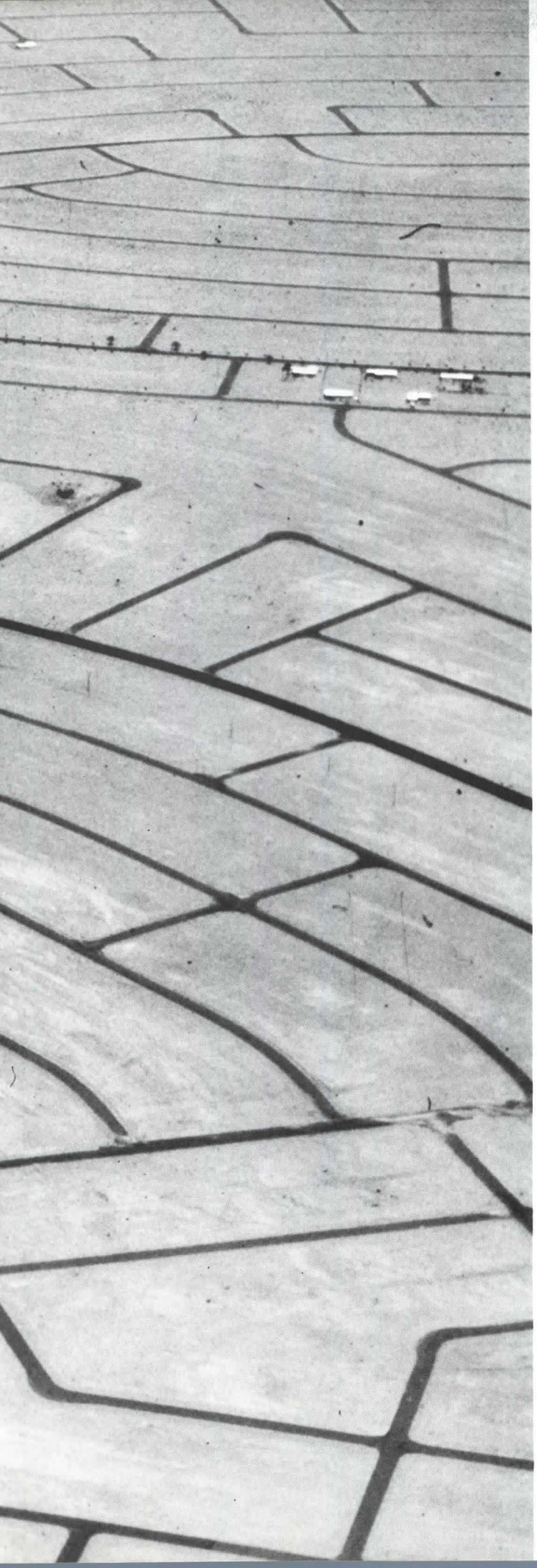
The 270 families would, Dr. Veri calculates, generate a need for 12 acres of public land for open space and recreation, three acres for service industry, four acres for retail stores, 11 more classrooms, 400 more cars, 120,000 more gallons of water per day, and for disposal of 100,000 more gallons of effluent and wastes per day. They would also need two more firemen plus $8,100 per year more equipment, 12 more teachers plus $12,900 per year for facilities, 1,600 more library books, and two miles more of improved streets. An additional $39,000 would be required each year for health services, $4,160 for recreation, and $69,000 for other services.

Full challenge ahead

While courts are beginning to support communities that seek to limit growth, the full dimensions of the challenge have yet to be confronted. No city or town, by itself, can deal with what is essentially a regional, indeed a national, problem.

As an antigrowth measure, the small town of Sanbornton, N.H. (population 1,000), adopted six-acre minimum zoning for the remote sections of the town. This new zoning effectively blocked the plans of a developer who expected to put about 500 family units on his 510 acres, mostly "second homes" for people from nearby metropolitan areas.

In the resulting lawsuit by the developer, U.S. Court of Appeals Judge Albert W. Coffin upheld the zoning as being reasonable to protect the general welfare. He held that the town could consider that hundreds of new homes would have an irreversible effect on the area's ecological balance. They would destroy scenic values, decrease open space, significantly change the rural character of this small town, pose substantial financial burdens for services, and



open the way for tides of weekend "visitors" who would own second homes. If the federal government, Judge Coffin said, can require environmental concerns to be considered in its actions, he did not see why Sanbornton could not consider such values in its zoning ordinance.

But Judge Coffin warned in his decision that the town had accomplished its zoning in a most crude manner. He noted that no professional or scientific study was made showing why six-acre zoning rather than four, or eight, is the right way to protect the values cherished by the town. And, although the ordinance may be a legitimate stopgap measure, "Where there is natural population growth, it has to go somewhere, unwelcome as it may be, and in that case we do not think it should be channeled by the happenstance of what town gets its veto in first," said Judge Coffin.

The Sanbornton action typifies the present dilemma—how to prevent the separate actions of the individual communities from being exclusionary and, at the same time, protect the natural values and maintain a livable environment. Statewide land-use controls for critical areas and for placement of major developments, as well as regional planning, are needed, says the Rockefeller task-force report.

PEOPLE OR LAND—WHICH FIRST?

"Now would be the worst possible time to declare that America is going to rest in place, or that everyone will stay where they are until environmental dangers are dealt with."

This comment by Ronald H. Brown, general counsel of the Urban League, reflects the viewpoint of those who view the current national trend toward limiting growth in urban areas as being restrictive on the poor and minority groups. They are skeptical of the motives of some who would limit urban growth.

"A concern for the environment and for proper land use can never be accepted as a cover for efforts to exclude people on racial or class grounds from living in a community," says Mr. Brown.

Top priority seen

But Oregon's articulate and forceful Governor, Tom McCall, says protection of the land is the No. 1 priority:

"The buffalo-hunter mentality of development that is threatening the great reservoir of natural land in the nation must be stopped."

Encouraged by word he had just received from Salem that a tough state land-use control law he had been pushing for several years had passed the Oregon Legislature, Governor McCall stressed that while population was increasing, no more land would ever be available. And he warned of activities such as a proposal to put 2,100 houses on a small rural hillside near the Oregon coast, where the land could not support such development without being ruined.

Most comments of public officials and citizen leaders in environment and urban affairs agree with Laurance S. Rockefeller, whose 12-member citizen task force, set up by President Nixon's Citizens' Advisory Committee on Environmental Quality, has published an eight-month, privately funded study of land-use problems:

That the massive urban growth foreseeable by the end of the century must be managed without destroying neighborhoods or nature, but also must be managed so that opportunities are not shut off to any segment of the population.

The study reported on a "new mood" gathering strength in the nation to limit or stop urban growth that is perceived as destructive to established communities and to the environment. The study also emphasized the need to reevaluate traditional attitudes that accept automatically every property owner's right to develop his land to its highest economic potential.

Mr. Rockefeller, although characterizing the report as "hopeful," said that "the task before us consists of learning to do what we have not yet successfully accomplished on any scale: the creation of communities that are socially open and environmentally sound."

Extremes called threat

The time is propitious for exacting higher standards of development, he adds, "because only now have the forces of conservation

A real estate promotion tract, California.

acquired sufficient strength to be taken seriously by traditional spokesmen for development."

The need for compatibility of economic and environmental demands is threatened by extreme positions, says Sen. Henry M. Jackson (D) of Washington: "The no-growth philosophy encourages rather than mitigates confrontations between the 'haves' and the 'have-nots' and denies to our society the very wealth and technological advancements which we must have if we are to cleanse and improve the environment."

Equally harmful are the charges of "those who make predictions of ruin should the laws of the free market be amended, or of those who claim that public planning and implementation of policies for protection of the environment invade constitutionally protected rights."

Inviting mobility

The deputy chairman of the Rockefeller task force, Paul N. Ylvisaker, dean of Harvard's Graduate School of Education, notes: "When we talk about opening new land to quality growth we are inviting mobility of a population that land-use controls, tax powers, and so on have really imprisoned within the central city."

Dr. Ylvisaker hopes that a future task force would deal with "how as we open the city to the flight of even those prisoned within it, we also anticipate the conservation and regrowth of these areas."

Dr. Ylvisaker is among several who stress that land-use issues involve a social as well as a physical dimension: "We can't just think in physical terms. We have to think in human terms as well. Sometimes to go too quickly in the direction of physical salvation may take you to human destruction."

Rethinking choices?

Russell E. Train, new head of the Environmental Protection Agency, believes, "It may well be time to rethink our ways of dealing with growth. The limitations of local home rule and the owner's right to develop property may need to be adjusted to new needs."

The problem of determining how society can best allocate resources so as to serve the broader community "may entail frank acknowledgment that some individual choices may not be accommodated," he adds. "It may be better not to build a highway if it is only likely to induce more sprawl and more pollution. It may be better to restrict automobile access to parts of cities if letting them in destroys neighborhood tranquillity and pedestrian freedom."

Running away cited

Another challenge for rethinking from William K. Reilly, staff director of the Rockefeller task force:

"Much of the urban-growth experience in the United States over the past quarter-century has consisted of people running away—from other people in the older cities, now even from the suburbs to the mountains and the seas. Now it is dawning on us that there is not really any place to run to.

"Clustering, green belts, new communities with a full mix of uses, more inclusive decisionmaking processes—all of these involve higher levels of social interaction and cooperation than we usually have achieved."

Former Interior Secretary Stewart L. Udall praises the report, but criticizes the acceptance as inevitable the trends toward decentralization and enlargement of urban regions.

Auto's importance

The study should have taken up critical energy problems and the need for ending the "automobile culture" which has caused the sprawl and unplanned growth of metropolitan areas, Mr. Udall insists. The present energy crisis, he says, which will grow more *serious, will actually* prove an ally to the environment because the decline of the automobile will force a move to more compact cluster living and thus save much of the land from development.

HOW MUCH SHOULD UNCLE SAM LET OUT HIS GREEN BELT?

As the American population expands, so does the demand for living room. And the resulting pressure on the nation's open spaces poses a growing threat to the quality of the environment. A presidential task force suggests alternatives to an unplanned, wall-to-wall megalopolis.

By the year 2000, say those who project present statistics into the future, five-sixths of the American population will be housed in vast urban regions.

What the statisticians do not yet know, however, is whether these megalopolises will be huge sprawls the length of Atlantic, Pacific, and Gulf Coasts, around the Great Lakes, blanketing Florida, and radiating out from a few other centers.

An alternative would be distinctive communities set in open farmland and countryside, the nearby mountains and seashores protected and retaining their distinctiveness and integrity. Abundant parks and accessible waterfronts along unpolluted waterways would grace the inner cities.

Such an alternative is possible, according to a report by the Task Force on Land Use and Urban Growth, headed by Laurance S. Rockefeller. But the report, done for the President's Citizens Advisory Committee on Environmental Quality, warns that the alternative will not be available without basic reforms in attitudes and institutions controlling the use of land.

It is also now becoming clear that open space, long valued for esthetic and recreation purposes, can have a very powerful influence on the growth and shaping of cities and urban regions if it is well planned.

Visual relief offered

Some of the open spaces—aquifer recharge areas (water-bearing beds of sand, stone, or gravel), coastal dunes, highly productive agricultural areas, forests that reduce floods, and wetlands which start the biological food chain—must be preserved for the essential part they play in ecology. Green spaces that give visual relief also provide recreational opportunity for the expanding population. They also keep cities and neighborhoods from merging into a solid mass. Without open space, qualities that made the areas desirable places in which to settle are lost.

Although some communities are making progress, the nation as a whole is doing a grossly inadequate job of making wise use of open space and green space, say urban experts and conservation leaders. The best available studies also estimate that from 500,000 to 750,000 acres of rural open space are lost each year in the urbanization process.

To deal with the problems of green space, the Rockefeller report recommends a combination of governmental and private actions. The task force seeks to have higher levels of government working to guide development, but with decisions being made locally, the report suggests that land kept open for purposes other than recreation is best left in private hands and regulated to prohibit uses inconsistent with the conservation of scenic characteristics or ecological processes.

It also recommends that vacant areas within urban regions—most often the unwanted leftovers of development—be preserved and grouped where they can *do the most good.*

Millions of acres already have been set aside by federal and state governments for permanent preservation of natural lands as national and state parks, wildlife refuges, national forests, and other designated public areas. Most of the national areas, however, are far away from population centers.

For years the federal government—primarily through the Land and Water Conservation Fund of $300 million a year (cut to $55 million for fiscal 1974 for Nixon administration budgetary reasons)—has been buying up land for national parks and forests and wildlife refuges and giving matching funds to states for purchase of park and wildlife areas.

New cars, automobile factory, Detroit.

Price keeps spiraling

However, private lands within the boundaries of national park areas still remaining to be purchased would require $250 million, at present land prices—and going up in price 10 percent each year. The price tag on the projected acquisition of Florida's Big Cypress swamp, needed to protect Everglades National Park's water supply, is $170 million.

Several states have voted legislation protecting certain types of natural areas. Hawaii has a statewide plan for classification of all land, with special designation of agricultural or conservation lands which are given some protection from development and tax benefits. Florida last year passed a land-use law setting up a system for protecting critical natural areas. The state's voters then passed a $240 million bond issue, most of it to be used for purchase of designated critical areas. New York State also passed a $1.15 billion environmental bond issue, including $175 million for parks and open-space acquisition.

Land purchase by government agencies can satisfy only a small part of the open-space requirements, although as seed money it at present serves a vital purpose. The larger need is for protective regulation and full cooperation from those engaged in the private development process.

"If the open space determination is framed for the public in terms of 'buy it or lose it,' we would surely lose most of our scenic countryside," says William K. Reilly, staff director of the Task Force on Land Use and Urban Growth.

"The answer has to be a mix of solutions that involves primary reliance on regulations, backed by property-tax assessments that reflect present use value. Sewer systems and roads, which attract housing, for instance, should be planned in such a way as to steer growth away from the lands that need to be protected from development."

Vermont's permit plan

Attempts by local governments to maintain green space by adopting town or county plans, are often unsuccessful. Some citizens are led to believe their town's conservation and open-space needs are met because planners show maps with substantial areas marked in green. When the plans are checked against the zoning, however, citizens may find that the so-called conservation areas are zoned for two-acre lots.

Vermont has a new land-use law which requires permits before development projects are started. Permits can be denied unless the developer can show that his project: will meet a number of strict environmental criteria, will not have an unduly adverse effect on the natural beauty of the area, and is in conformance with a local or state land-use plan. (For more on Vermont, see page 44.)

Two California counties have taken noteworthy steps. In 1965, Marin County placed two-thirds of its 300,000 acres in an agricultural preserve. One of these thirds has since been placed under preservation contract, with local governments authorized to reduce property-tax assessments. In 1971, the county rezoned land in the agricultural preserve from one dwelling per 3 acres to larger parcels, the majority of which are now zoned for 60-acre minimum lots. Monterey County now has about one-third of its land zoned for 40-acre lots.

New York State's recently legislated plan for keeping the 3.7 million acres of private land in the Adirondacks Park permanently protected will provide for an average of only one building for each 42 acres on more than half of the private land, industrial development will be largely confined to areas already built up, and large second-home developments will be curbed by the low-density zoning.

Unfair application seen

Agricultural zoning, by which property owners are allowed reduced taxes for maintaining their land undeveloped, has not been generally satisfactory in maintaining open space in most states where it has been tried, and has been subject to unfair application and windfalls for many landowners.

The Rockefeller task force recommends that existing programs be redesigned to apply two principles to agricultural zoning laws: (1) that benefits apply only to farmland located where it needs to be preserved; (2) that some permanent protections be provided so that the owner cannot use the subsidy and *then sell off* to developers at a large profit after five years.

One of the major recommendations of the Rockefeller task force calls for a federally assisted green-space program which would give permanent protection to green belts around cities and buffer zones between urban regions and within the regions.

A "national lands trust" with federal funding of $200 million annually is advocated. It would be made available on a matching basis (75 percent federal) to assist state and local land-use agencies in the designation, planning, and conservation of extensive green spaces in and around areas that are becoming urbanized. The federal government could make funds available for partial interests in strategically located lands.

Other means such as purchase of development rights along highways or waterfronts and the use of police powers for noncompensatory conservation zoning are also recommended.

Local governments already can regulate development and preservation of open space by requiring developers to set aside for open space or park use a portion of any proposed subdivision. The developer may be allowed to cluster units in one part of the subdivision in order to leave larger sections in open space and still maintain an average density that can meet regulations.

But inasmuch as this type of regulation does not cover the small developer, the Rockefeller task force has recommended that in newly developing areas, local governments require that all developers contribute open space, or cash to be used to acquire open space, sufficient to satisfy the reasonable needs of the residents in their developments.

45-year accomplishment

Another potential for providing green space is by voluntary donations from citizens. This activity has been aided by federal income-tax provisions. These generally permit income-tax deduction of such charitable gifts for five years and exclude appreciation of the value of the donated property.

The Nature Conservancy, largest of many nonprofit land trusts around the country seeking to assist in preservation of natural land, has helped save 972 areas involving 377,055 acres over the past 20 years in 45 states and the Virgin Islands. In addition to making purchases and receiving land gifts from private citizens or corporations, the Nature Conservancy can option or buy an area threatened by development, but sought by a government agency which does not have purchase funds immediately available, the Nature Conservancy can then hold the land until the agency has funds appropriated for purchase.

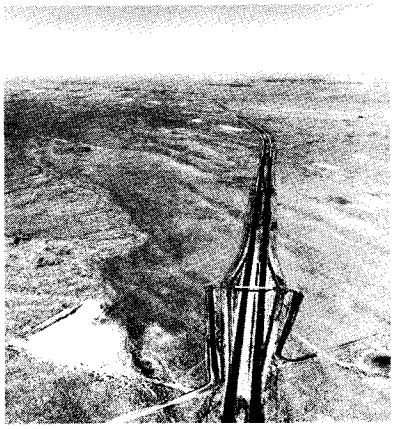
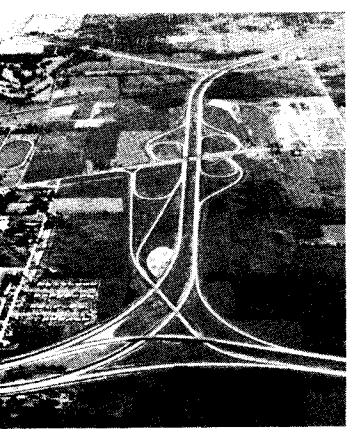
A new organization, the nonprofit Trust for Public Land (TPL), has recently been formed to help save threatened key urban-oriented natural lands. Most land trusts deal principally in rural natural areas. The TPL's founders, Huey Johnson, formerly western director of the Nature Conservancy, and Greg Archbald, a former Nature Conservancy lawyer, feel that while it is important to save wild and remote natural areas for the escaping urban dweller, it is equally or even more important to preserve urban open space.

Wooded ranch saved

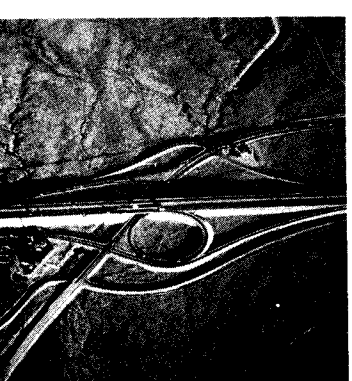
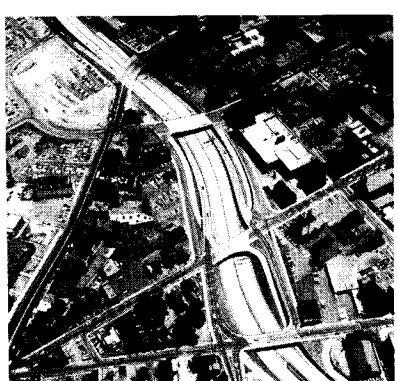
One of the TPL's first ventures was to assist in preserving a 672-acre ranch in Granada Hills, within the Los Angeles city limits. The ranch—with woods, cliffs, and streams—is situated at the edge of suburbia. As such it was a prime target of subdividers. The land had been held by a family for many years, and the sale price was just over $1 million.

TPL was contacted by the owner who hoped to have the ranch kept intact, possibly as a park, and was willing to make part of it a charitable contribution. On the last day of 1972, Mr. Johnson





and Mr. Archbald put together a package to buy half of the ranch, providing the owner would donate the other half if the whole area could be preserved. TPL then turned over the entire 672 acres to the city of Los Angeles for $450,000, and it has become the second largest park in Los Angeles. The owner has the satisfaction of seeing the ranch preserved, receives income tax deductions, and is able to make a charitable gift to society.

The use of regulations and governmental purchase or incentives in setting aside of open space land must be balanced with getting the development process of the private sector to move on its own.

This is now being done most effectively by the developers of new towns. For the most part they operate on a scale where open space helps to form neighborhoods, and causes the value of the developed areas to appreciate. By planning the whole project as a unit, the new town developer can have some development of high density, and yet keep flood plains or wooded areas or steep slopes free from development. New towns remote from urban areas are not seen as a long-term solution to the need for absorbing population growth because of the reluctance of most people to stray far from the attractions of large cities.

The developer who claims to be starting a new community, but is basically selling raw land on an installment basis with little building—the traditional "second home" investment scheme—is perhaps the worst enemy of the wise use of open space. When this remote and frequently environmentally critical land has been divided into uniform small lots, it is most difficult to plan for clustering or common open spaces. And reassembling the land for protection as open space if the proposed new community never becomes a reality, is almost an impossibility because of the many land owners involved.

Another form of open space even more difficult to preserve is land within the center city which may play a major part in making the urban environment liveable. A highly-publicized but never adequately implemented federally-supported "open space" program for acquisition of land for parks and greenspace in cities has now been phased out in favor of revenue sharing. It is doubtful that cities, on their own, will be willing to give a high enough priority to open space land acquisition once it must compete with more pressing demands for the revenue-sharing dollar.

Some planners believe that one effect of the new national mood of challenging unrestricted growth will be to change the methods used to assist decaying inner-city neighborhoods. Instead of trying to replace these neighborhoods with higher-intensity development, a more logical solution, say some experts, might be to construct townhouses, and small buildings, and seek to reshape neighborhoods through open spaces. The use of urban waterfronts, now in decay in many cities, can play a role in rebuilding vitality into core areas. And industrial waterfront property might be replaced with parks and low-density housing. With many of the nation's rivers now in the process of being cleaned up, urban waterfronts will grow in economic value.

The preservation of open space may depend largely on obtaining more liberal attitudes and court opinions relative to the rights of development that go along with ownership of land. Most land-use regulations have been viewed as restrictions on each landowner's preexisting rights, rather than as grants of rights he did not have before.

The Rockefeller task force concludes that it was likely that the traditional assumption of urbanization rights arising from the land itself will be gradually abandoned in the future:

"What is needed is a changed attitude toward land, not simply a growing awareness of the importance of stewardship, but a separation of commodity rights from urbanization rights."

WILLY-NILLY SUBURBAN OVERSPILL CAN BE TEMPERED

As in many other "bedroom" communities near major cities, citizens in Virginia's Fairfax County realized a few years ago that uncontrolled growth was heading their county toward a crisis.

In this 400-square-mile area a half-hour from downtown Wash-

ington, schools were jammed, sewage treatment plants were overloaded, and traffic clogged the roads.

The county had grown from 22,000 in 1920 to 98,000 in 1950 and to 453,000 in 1970. It was run by a board of supervisors whose majority still believed in growth at all costs. Taxes were skyrocketing as costs of additional schools and county-provided services exceeded revenue from new residents.

Then the citizens organized to do something. Only 10 percent of the county residents lived in incorporated towns and cities. Those in the vast unincorporated areas had little identification with county government. But there was a federation of 130 neighborhood civic associations. In 1969 it turned its attention toward growth.

Building moratorium adopted

As a result of this new citizen interest in growth, Fairfax County voters elected a slate of candidates pledged to control growth. This changed the balance of power on the board of supervisors. A moratorium against further building was adopted by the new board for most of the county on the basis of inadequate sewage treatment.

In April the supervisors held a two-day citizen workshop to discuss methods of controlling growth. Last month an all-day planning session of the entire board was televised throughout the county on public TV. And next week the board will hold a public hearing to discuss plans for further moratoriums on development, for controlled growth that would link future development to availability of services, a "land banking" policy in which the county would buy up key developable areas to control land use, and establish a requirement for environmental impact statements on all proposed major public and private development.

Not that all of this has been without controversy. Developers are still winning some fights. And 37 lawsuits have been filed against the supervisors by landowners who claim the county has illegally denied them the right to develop their property.

Politics upstages homemaking

Here, then, is an archetypal case of the rise of citizen resistance to uncontrolled growth.

The Fairfax Board of Supervisors chairman, Jean R. Packard, set aside her homemaking chores to enter politics last November. She won on a controlled-growth platform. She says that active citizen participation—attending hearings, making studies of growth cost vs. tax revenues, spending time informing others, and voting on local elections—is the only means for accomplishing change.

"If we can keep local government going the way the citizens want it to go," she says, "then we don't have to rely too heavily on the restraining powers of the federal or state government over which the citizens have far less direct control."

Citizen concern, however, can make itself felt in state government, too. In Oregon, for example, citizens started opposing new industrial expansion and growth more than a decade ago. Despite this sentiment, Gov. Tom McCall had been frustrated in efforts to get a recalcitrant Legislature to pass a state land-use control bill.

Citizen support organized

In November of 1972, Governor McCall sponsored a symposium on land use. Conservationists, business and labor leaders, bankers, farmers, builders and developers, and about one-fifth of the state Legislature met for three days to discuss the issues. Six hundred-strong, opponents and proponents, they met in small groups for debate, then re-assembled to hear reports.

This basis of citizen support has continued during the current session of the Oregon Legislature. Late in May a strong land-use law was voted which listed 10 priority areas in which controls should be exercised to preserve land. It established a state land commission and a standing joint legislative land-use committee and set in motion a process for identifying statewide land-use goals. The law also sets up a state citizen advisory committee on land use and requires each county to state how it is going to involve citizens in the planning program.

Fairfax County and Oregon illustrate the point that citizen involvement is the key ingredient of the antigrowth "new mood" that the report by the Task Force on Land Use and Urban Growth found to be sweeping the country.

Traditional processes protested

"Increasingly, citizens are . . . questioning the way relatively unconstrained, piecemeal urbanization is changing their communities and are rebelling against the traditional processes of government and the marketplace which, they believe, have inadequately guided development in the past," states the Laurance S. Rockefeller-headed citizen task force that made its study for President Nixon's Advisory Committee on Environmental Quality.

What, specifically, is the role of the citizen who desires a change in land-use and urban growth policies?

1. Organization. Citizens have found that the first hurdle confronting them is organization. In community after community the average citizen showing up for a meeting discovers that he does not have the necessary resources and staying power to fight well-equipped developers. Many find strength in numbers when they look around at a hearing and see similarly concerned neighbors giving up an evening to protest a development proposal or rezoning. Citizens have provided new issues for already existing citizen organizations, or have formed ad hoc groups.

Land or rights donated

2. Donations of land or development rights. A growing number of environmentally oriented landowners are voluntarily giving up their development rights, sometimes in concert with neighbors. Or they are donating land outright to public agencies or nonprofit land trusts. Typically well off and deeply committed, they want these natural areas or historic sites permanently protected against development or alteration. Their gifts usually can be used as income-tax deductions.

3. The ballot box. Ultimately, citizen strength must translate into electoral power. Citizens must not only keep informed on the issues but must actively work for candidates whose views they share. They can also write or wire their representatives and senators in Congress on issues such as the land-use policy act being considered now. Or they can write or wire the President or federal officials on environmental and urban issues concerning growth.

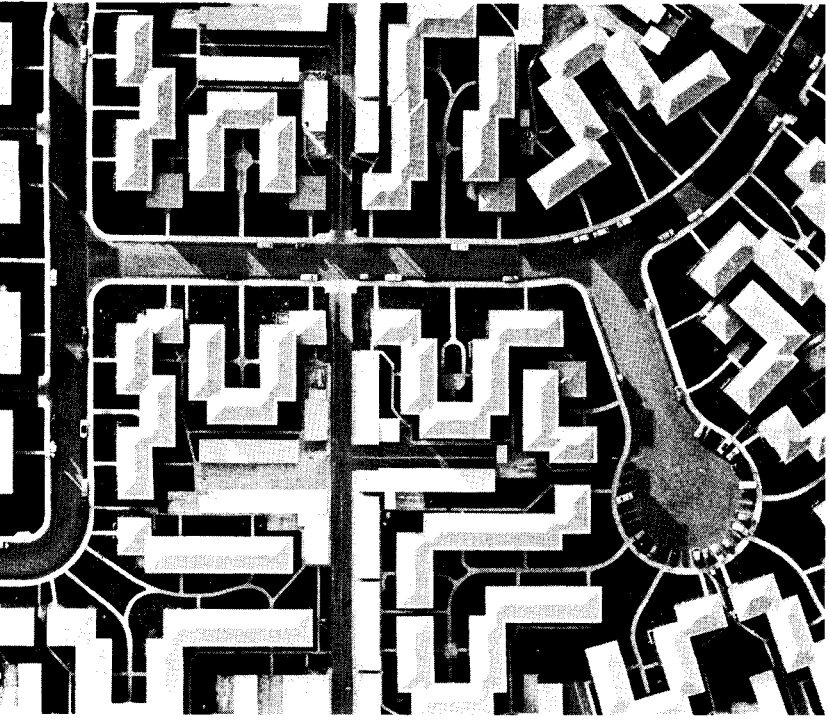
The November 1972 election proved the voter strength controlling land use and growth. In Colorado, voters barred the use of state and Denver city funds to bring the 1976 Olympic winter games to Colorado, after a campaign in which unwanted growth and environmental damage were the main issues.

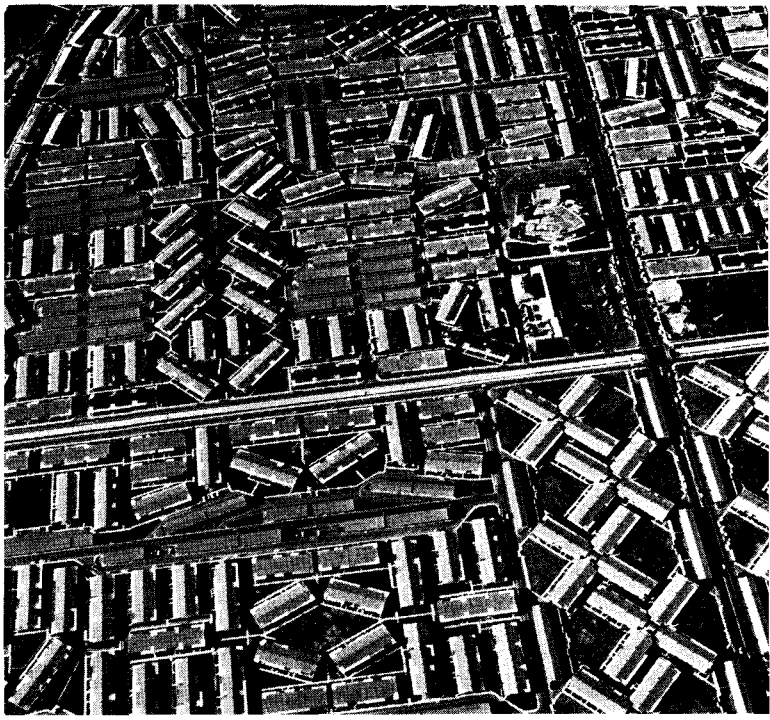
Florida and California . . .

Florida voters approved a $240 million bond issue to purchase environmentally endangered lands, in accord with a new state land-use act previously voted.

Californians adopted a law to control development within 1,000 yards of the entire coastal shoreline, and voters in three counties approved major open-space purchases. And in Boca Raton, Fla., voters took the unprecedented action of setting a maximum on the number of housing units that could be built in a city, establishing, in effect, a population growth limit.

4. Changing policies. Initially citizens concerned about growth tend to be more clear about what they are against then what they are for. But they soon learn that, to have any lasting impact, they will have to develop their own program. To help citizens identify possible needs in their communities, the Rockefeller task force includes in its study a series of specific questions to which citizens should be seeking answers. The Rockefeller report, "The Use of Land: A Citizens' Policy Guide to Urban Growth," is being published later this month by Thomas Y. Crowell.





Readers are invited to express their views on the use of land and growth in their communities. The following seven points, each with a range of alternatives, are given as a guide to response.

1. Local population and growth limits

In one community after another across the United States, citizens are beginning to equate unrestrained growth with a deteriorated quality of life. Their demands, expressed at the ballot box or in citizen pressure on public officials, call for moratoriums on new development until utilities or services are available, for outright moratoriums on all new developments, for density controls, or for forms of population ceilings. Yet the number of people and households will continue to grow well into the 21st century. And American traditions call for individual freedom to move from place to place. I believe that:

A. Each community, through democratic process, should determine its own population limit, and when and where development should occur, even if that may limit the opportunity of others to move into the community.
B. Communities should be willing to surrender the prerogative of population limit to a higher level of government, one which can ensure that area development needs are met while at the same time provide that the "undesirable" aspects of growth (airports, power plants, etc.) are shared equally.
C. Communities that impose population or density limits should first be required to support their action with an analysis of potential environmental damage from the additional growth.
D. Each community should phase growth at a pace that its citizens are willing to support with sewers, schools, and other services.
E. Growth should occur at its own pace. There should be no limitations on the landowner's "right" to develop.

2. To purchase or to regulate?

Historically, laws have tended to favor private development of critical environmental areas—wetlands, steep slopes, dunes, historic sites—when economic benefits outweighed intangible environmental benefits. Yet today we are beginning to understand the importance of these areas to the overall ecological system, or in the case of historic sites, to our heritage. I believe:

A. Where public benefits are demonstrable, such as in the case of areas of critical environmental concern, an appropriate level of government should be allowed to exercise increased regulatory powers over development, even to the point of prohibiting development outright.
B. An appropriate level of government would be expected to honor developers' "rights" by purchase of lands or payment of just compensation to landowners affected by new regulations to protect critical environmental areas, even if this means increased taxes where funds on hand are inadequate or allowing uninhibited development of critical areas if funds for such compensation cannot be raised.
C. When government compensates landowners affected by new regulations it should be required to pay only the value of the land in present use, not its potential value for development.
D. When government compensates landowners affected by new regulations, it should be required to pay the landowner what he would get if he could develop the property.
E. The government should not be allowed to abridge the "rights" of property owners even in critical environmental areas. In the final analysis, it is the marketplace that should determine which lands are worthy of preservation.

3. The automobile culture

Millions of people have apparently chosen the suburban way of life. Generally speaking, this means lower land development densities, extensive use of the automobile on large networks of roads and freeways, regional shopping centers as the focal point of a sprawling urban region. Critics say these patterns are wasteful of land and costly in providing services and place special burdens on those who cannot afford this style of living—the poor, the elderly, the handicapped, and the young. I believe:

A. All levels of government should continue to facilitate low-density suburban patterns of development, as this is what people want.
B. Governments should intervene in some areas to provide for more compact urban settlements, more town houses and apartments, mass transit, and shopping within walking distance of homes.
C. New communities that can be planned from the beginning so that a full range of public services and facilities are available, along with large amounts of community open space, should receive the financial support of the federal government.
D. Government should use all practical means to steer growth into new communities that are separated from existing urbanized areas by green spaces, and that include the full range of

public services, clustered housing, parks, and an industrial base for local employment.

4. Open space

Many people in urban areas complain that new subdivisions tend to grow into one another without any provision for preserving farmland, woods, and other open areas. This has led some authorities to propose that governments classify certain private lands as green spaces and regulate their use so that they will be permanently preserved. Also, open space within inner cities is often inadequate to serve the needs of large numbers of people in older or higher-density neighborhoods. I believe:

A. Governments should classify some private lands outside urban areas as extensive green spaces to be kept free from development permanently.
B. Developers of subdivisions and new towns should be required to reserve enough parkland and open space to serve the needs of the residents of their projects.
C. Governments should acquire prime recreation land on urban waterfronts before water-pollution cleanup results in raising the value of such lands.
D. All levels of government should encourage donations of ecologically significant land through tax benefits. They should also have institutions that actively solicit gifts of land by explaining public needs to landowners and advising them on the tax advantages of donation.
E. Statistics indicate that, even in the year 2000, plenty of open space will still be undeveloped. The fact that these areas will be far from cities is no justification for interfering with the way the real estate market works in and around cities.

5. Citizen participation

Citizens complain that many decisions affecting growth of cities are made by a few public officials, sometimes at closed meetings, or with inadequate public hearings and information. Before any city council or county commission makes decisions affecting major zoning changes or supplying of services or limiting or of expanding density, the public officials should:

A. Require public hearings be held in advance of any zoning change or growth control decision.
B. Require an environmental analysis of the impact of the proposed development or zoning change or other activity being considered, together with economic data to show relationship of costs of increased services vs. added tax revenue.
C. Open to the public all meetings in which such decisions are made.
D. Disqualify themselves from voting on any matter in which they, their family, or professional or business associates have a financial interest. They should disclose their real estate holdings located within the jurisdiction for which they are making decisions.

6. My community—for better or worse

A. Do you believe that additional urban development is desirable in your community? Yes — No —
B. Do you believe that zoning and other land-use decisions in your community are fairly arrived at? Yes — No —
C. Which, if any, of the following do you think developers of large tracts should be required to install or provide for at their own expense?

1. Roads Yes — No —
2. Sewers Yes — No —
3. Water connections Yes — No —
4. Open space Yes — No —
5. Sidewalks Yes — No —
6. School land Yes — No —
7. School buildings Yes — No —
8. Community recreation facilities Yes — No —
9. Community health clinic Yes — No —

7. Ranking your town, city, or county

How would you rank your community on a scale of 1 (very poor) to 10 (excellent) in the following categories?

1. Adequacy of parks. _____
2. Public access to waterfronts. _____
3. Adequate and enforced policies to protect established neighborhoods from incompatible new development. _____
4. Integrity of officials responsible for zoning and land-use permits. _____
5. Adequacy of off-street parking. _____
6. Mass-transit services. _____

MANAGED GROWTH

A Look At The Shift In Land Use Policies

Last September, over 500 planners, architects, builders, lenders and government officials attended a national conference on managed growth in Chicago, sponsored by the Urban Research Corporation in cooperation with Skidmore, Owings & Merrill, the Urban Land Institute and the Weyerhaeuser Company. Nineteen workshops explored (1) what communities are doing about growth, (2) how legislators and the courts are confronting it, and (3) techniques and strategies being adopted.

John Naisbitt, President of the Urban Research Corporation, and a member of The FORUM's Board of Contributors, asserts: "Far from seeing growth as progressive and desirable, many citizens want to preserve the quality of life they have now by restricting future growth; some seem to be viewing development itself as the enemy.

"While for years there have been *ad hoc* protests against specific building projects in various parts of the country, we are now witnessing the widespread passage of laws and ordinances to control growth. Nothing like it has happened in this country since the closing of the American frontier at the turn of the century."

In his keynote speech, pollster George Gallup, noted that, according to his survey, a majority of the American people believe that local governments are not doing enough to anticipate and plan for future growth.

Some of what *is* being done can be gathered from the synopses of the workshops. Although the opinions are not necessarily those of The FORUM, we give them a hearing in the belief that the architectural and allied professions must be prepared to answer the challenges to growth, to participate in land use reforms, and to arbitrate the emerging conflicts between private rights and public interests.

WHAT COMMUNITIES ARE DOING

Dade County, Florida

With a population of 1,267,792, Dade County (Miami) is the 17th largest metropolitan area in the country and one of the fastest growing. Or it was, until the people who live there decided unplanned growth was destroying their way of life. As a result, a slew of building moratoriums have been approved, effectively banning construction until land use policies can be written and approved. In revising its master plan, the county is expected to establish a limited growth policy, probably setting a population limit.

During the Fifties and Sixties, Dade County tried to attract residents. "Come on down," said the ads. Tens of thousands did—to stay. By 1970 Dade County was congested, housing costs were grossly inflated, and residents were being taxed exorbitantly to pay for strained municipal services.

Still the situation might have gotten worse had it not been for the Key Biscayne controversy. Key Biscayne, just south of Miami Beach, is an island whose water bearing soil supplies much of Miami's water. Threatened with a spate of high rise developments, residents went to the County Commissioners and asked for a building moratorium. They wanted time to raise ecological as well as economic questions and to plan carefully for their future solution. The moratorium was denied.

When the Commissioners turned down a second moratorium request, residents held a referendum, in March 1972, passing it by a three to one margin, and giving the Commission control of building in unincorporated areas of the County. Not surprisingly, the next election's prime issues were zoning rollbacks and building moratoria. Three new Commissioners and a new Mayor were elected—all running on a pro moratorium platform.

Today in Dade County, a building moratorium can be initiated by a single citizen, an organization or by the government. First the physical area is defined (from three blocks to nine square miles), and the reasons for defending it explained. Then a study, taking an average of seven months, produces a classification for the particular parcel.

The county also has capital improvement funds. In November 1972, voters approved a $600 million bond issue (with matching federal funds), to meet problems of rapid growth. The money can be spent on mass transit, or sewage treatment, and will no doubt be tied in with the General Land-use Master Plan *now* being updated. The mood in Dade County definitely menaces the proponents

of *laissez-faire* growth. Residents want it phased so that such services as schools, garbage collection, sewage disposal are available before, not after, developments spring up.

Several regional studies are already available. These Developments of Regional Impact Statements show what the environment is and how it is likely to be affected by future development and the growth of social services. It is also expected that a county review process will be established to comb various plans in the County's municipalities, resulting in definite densities and population 'lids' in undeveloped areas.

Fairfax County, Virginia

Thirty years ago Fairfax County was primarily agricultural. It encompasses 400 square miles just south of Washington, D.C. Today it has but nine working farms, largely as the result of tax laws which make real estate speculation more lucrative than farming. Still, as early as the 1940's, caring about the land, Virginia farmers enacted one of the country's early land use control measures—zoning. Although this has not completely safeguarded the area, a little less than a third of the county is still unspoiled, historic, wooded, rolling countryside. Even so, Fairfax County is "the fastest growing large county in the nation."

In January 1972, five new members were elected to the nine-man County Board of Supervisors, promising to tackle the problems of growth.

According to conference panelist Audrey Moore, a member of that Board, "We have cluster zoning. We have all kinds of planned development zones. A residential planned community zone allowed construction of Reston. We have a siltation ordinance. We have protection of our floodplains, although we don't have floodplain zoning. We have a building code, the BOCA Code. We have site plan and subdivision ordinances." Ms. Moore's point is that despite this legislation the county is being choked by growth. Her solution is a system of Transferable Development Rights (TDR), "originated by a man named Gerald S. Lloyd, a builder. I first read about it in a HUD report by Ann Louise Strong in 1966." What is TDR? Ms. Moore explained them this way:

"Basically, you would adopt your plan as you always have, except that it would be more of a 'policies plan'. It would call for the population you think could live comfortably in an area and for the commercial and industrial square footage to accommodate that population. You would then determine the amount of pavement you would need, where the roads ought to go, and the additional land needed for public facilities. The implementation is what would be different. You would divide the potential development for residential, commercial and industrial—three classes of rights—among all landowners, according to the amount of land they hold. Each acre would be entitled to its share, but you would subtract all existing zoning, which I believe you would have to honor. When a developer wanted to develop his land, he would simply file a site or subdivision plan. The site and subdivision ordinances, by the way, would have a provision requiring adequate public facilities before development.

"If he were not given enough 'rights' when they were divided, he would go to the open market and buy rights from another landowner, who would then not have the development potential for that particular use for his piece of land.

"The rights themselves would not be taxable as real property. Instead people would pay taxes according to the services they require. The open land would be subject to taxation and assessments only on its use.

"In Fairfax County, we have existing zoning in one area for high rise apartments for some 100 acres. People can't move on the roads there today. Because of traffic congestion alone, I can't think of a more inappropriate place for this kind of committed density. Transferable development rights could allow those property owners to be compensated, and the density would be moved where it could be accommodated. "Land for county public facilities would not require development rights. Under this system, a municipality could afford to acquire the land needed for public facilities, maybe get some open space and the right-of-way for roads so lacking in the growing area of Fairfax County today.

"One further advantage is an alternative that would assure good land-use control while still allowing the small builder to operate. More and more we hear that the only way to insure good land use is through the development of massive tracts and new towns by large corporations. Such an approach obviously forces the small builder out of business.

"TDR is not a no-growth system. It would allow growth, but it would allow it on a total, planned basis, rather than in the *ad hoc* way we rezone today. When an area reached the limits of its planned growth, the development rights would sharply increase in value. The government would be pressured to issue more rights.

"As I anticipate the system, if a community decided, on the basis of many factors, to allow more growth, additional rights would be issued to existing rights holders to protect their interests, and the plan would be amended. (Similar to a stock split.) The advantage would be that the community would decide on the basis of all aspects of the situation at the time. With this system, more orderly growth would occur. There would be no financial advantage to a developer to leapfrog far out into the countryside. It would not be cheaper. Also, there has been a lot of concern about exclusionary zoning—people writing zoning ordinances to keep other people out. It wouldn't happen under this system.

"But last, and certainly not least from the point of someone who has sat on a zoning board for almost two years now, there would be no prolonged zoning hearings, no hocus pocus, no hanky panky, no more nonsense.

"I think this system, combined with a national effort to redirect growth, a change in our tax laws, direct subsidies to poor people to buy housing, and subsidies to the suburbs for the infrastructure for new development, could bring about the kind of financially equitable, ecologically-sound land use that all of us—the homeowner, the environmentalist, the urban planner and the developer—are seeking."

San Francisco, California

Bagdad by the Bay, Herb Caen calls it, and part of its romance is its spectacular views. Unfortunately, these are disappearing, blocked by highrise construction. Angry protests against this construction led to the passage of the first law in the U. S. limiting the height and bulk of buildings (FORUM, April 1973).

In August, 1972, a stringent city ordinance slapped a 40-ft. height limit on buildings in almost every residential area of the city, and restricted high rise construction to the downtown area. In addition, bulk ordinances now control building widths, in an attempt to scale buildings to their surroundings and enhance their appearance on the skyline.

These ordinances, and the Urban Design Plan which preceded them, weren't consciously directed towards growth, but many think they were. Indeed, the connection may be valid. The San Francisco Department of City Planning looks at its job as one of structuring the environment the way the community wants it—of devising standards and guidelines around these community feelings. Conference panelist Allen B. Jacobs, San Francisco Director of City Planning, called it "a conflicting and dynamic process."

If growth doesn't conform to the standards set, he reminded everyone, then the community pays the consequences.

The bulk and height ordinances are based on a subjective determination of what was in scale for San Francisco, and their most immediate impetus came from highrise buildings which began to spring up on the waterfront.

Supplementing the zoning ordinances, the new height and bulk guidelines will help shape the city.

WHAT LEGISLATORS AND THE COURTS ARE DOING

Environmental Impact Statements

In a 1972 landmark decision, the California Supreme Court ruled that impact reports are mandatory before any governmental body can act either for itself or approve private projects. The decision effectively broadens the 1970 California Environmental Quality Act and means that shopping centers, apartment complexes and even private houses must file impact reports if their construction will affect the surrounding environment.

Before the 1972 decision, the law was interpreted to apply only to projects financed by the state, county or city governments. California's law is now the toughest environmental act of its type in the world, and may become the model for the rest of the country.

Though minor projects are exempted from the Act by a "negative declaration," all major developments must file an Environmental Impact Statement. Because of the time and expense involved in getting a negative declaration, developers have accepted the EIS requirement. For major private developments, EIS costs run from $2,000 to $15,000. For major public developments cost of an EIS may run as high as $150,000.

In California, if an EIS is required, it is used by local government to make a decision on a development. State permission is also required and most California agencies have review power. Today some 14 states require an EIS before a state permit is issued, but in some states the building permit has been interpreted as state discretion over private property rights. California courts see nothing unjust in such discretion.

It is perhaps overlooked that without government concepts to back it, an EIS is little more than words on paper. Hard standards are needed, and EIS preparation and approval must be made part of the political decision-making process.

Environmental Impact Statements should not be thought of as a push-button answer to growth. But they do point out uncertainties and lead to decisions based on far greater knowledge.

State Legislation

The proposed National Land-Use Policy Act directs the states to control development in "areas of critical environmental concern," asking states to control large scale development and land use in "areas impacted by key facilities" (airports and highway interchanges). Several states are already exercising such control. Here's what has happened in three states.

- The Hawaii Act of 1961-63 divided the state into four districts —urban (local control), rural, agricultural and conservation (the latter three under state control). This law's primary effect has been to increase housing costs because of the shortage of urban land.
- The Vermont Act of 1970 is part of a legislative process not yet completed. Initially, permits were granted by the state, which also set up a planning agency to develop statewide plan and review criteria which will form the second half of the Vermont legislation, involving expanded use of the environmental impact statement. In another one to three years, Vermont may go beyond the present arrangement to a mapped system if recent controversy over the entire program can be resolved.
- The Florida Act of 1973 (Land and Water Management Act) calls for state involvement in major development decisions, leaving the others to local government. There are two grounds for state involvement: (1) Development of Regional Impact (DRI)—a developer proposing a DRI must apply to a regional agency which prepared an environmental impact statement for a local government to use in making a decision. If the local decision goes against the findings of the EIS, the regional agency may appeal. (2) Critical Areas—the state designates critical area boundaries, generates goals for these areas, and leaves actual regulations to the localities. After six months, if no local action is taken, the state can adopt its own regulations.

Local Ordinances

Counties and cities across the country are legislating controls: laws establishing urban limit lines, which limit population ceilings; master plans setting density limits for each section of a city; laws affecting the height of buildings.

In theory, both local and state governments have the power of eminent domain. But in most cases, states have given this power to the localities. A good indication of a community's growth policy can be seen in the regulations resulting from this power. Such ordinances as zoning and subdivision regulations are being enforced to limit growth; but to be effective, a managed growth policy must relate to the community's ability to grow and to develop the land. Slowing growth will not solve problems alone because bad slow growth can be just as dangerous as bad fast growth. There must be *creative planning*. Moreover, ordinances are at the mercy of inept or corrupt leadership.

Just as important as ordinances is citizen initiative. Citizens can cut off bond issues, the way Colorado did when it rejected the 1976 Olympics.

Federal Legislation

Last July, the U.S. Senate passed the National Land Use Policy and Planning Act of 1973. Similar legislation was introduced in the House and is expected to pass and be signed into law, culminating three years of hearings and committee action.

The Federal role in land use policy and control is to persuade states and localities to set up processes which will resolve land use conflicts with less fuss. Federal legislation in this area is neither a "bowl of Jello" nor a "Fascist plot". It is a nuts-and-bolts measure depending entirely on statewide implementation. The Federal role is to provide the necessary resources, where they don't exist, and to define balanced national growth goals. National policy doesn't have to be the lowest common denominator of state and local goals, but can instead reflect their diversity, requiring state and local governments to begin planning. The legislation is therefore a prerequisite to a national growth policy. A three-year Council on Environmental Quality study is called for to prove the feasibility and the scope of a Federal policy role.

Additional pending Federal legislation urges states to control development in critical environmental areas; mandates state controls on large-scale development (and that with regional impact); requires states to review the impact of key facility siting, such as highways, airports, and powerplants; and allows states to provide for development of regional needs by making it impossible for localities to block such development. State work will be overseen by the Federal government, holding the purse strings.

Federal legislation will work only if states assume taking power over on some of the land use controls so jealously guarded by localities. Moreover, there must be public support, and affirmative court precedents. The widely held American view that private property rights are sacrosanct is already coming under great scrutiny in the courts.

The only precise provision of the pending Federal legislation is the Second Home and Subdivision Amendment to The National Land Use Policy and Planning Act. In an attempt to control land sales and development in rural areas, it would make developers planning subdivisions of 50 units or more get a permit. This would give local officials control over these developments.

Legal Limits to Managed Growth

The role of the courts, as pointed out, will be decisive. Important cases are now in process growing out of limitation efforts in Boca Raton, San Diego, Connecticut and New York. As these are settled, they will help define the scope of state and local authority.

Some of the legal vehicles for growth control:

- Undeclared Moratoria. Planning officials may commit lands to a "holding zone" category, while revising their policy. It is an interim provision which effectively slows development and is frequently an unchallengeable legal maneuver. This is a grey area of the law in which cases can go either way.
- Environmental Moratoria. In many areas of the country, the available public services and means of protection of the environment are inadequate. They simply cannot accommodate the demands of a growing population. So local legislative bodies have refused to supply additional services. This tactic is known as "utility politics." Sometimes, of course, communities oppose growth to protect the environment, but give financial excuses.
- Population Control Laws. The population control issue is difficult because it involves the problems of migration quotas, exclusionary zoning, and carrying capacities. Some of these efforts may conflict with Americans' rights to travel, to seek a better livelihood, or a better home.
- Low Income/Exclusionary Zoning. The Virginia Supreme Court, in examining a Fairfax County ordinance allocating at least 15 per cent of multi-family units to low income families, found that the provision of fixing housing prices for low-income residents goes

beyond the enabling power of zoning ordinances—zoning could not, in other words, be used as a socioeconomic tool. The Court also found that the requirement for low-income housing violates an article of the Virginia Constitution, that private property will not be taken for public purposes.

• Timing of Development. Ramapo, New York adopted a capital improvement plan which stringently regulates the timing of developments over the next 18 years, and the New York State Supreme Court upheld it.

But timing ordinances are fruitless if they do not embody meaningful schedules for implementation, an approved capital plan and budget.

TECHNIQUES AND STRATEGIES

Local ordinances are often ineffective because they apply only to a limited area. The problem they are trying to tackle, however, may be regional, and so many localities are creating jurisdictions to handle the problems of a geographically defined area.

The San Francisco Bay Conservation and Development Commission (created by the State legislature in 1965) was perhaps one of the first of these "metropolitan mechanisms." It regulates all proposed development in or along the Bay, cutting across dozens of municipal boundaries in the process.

The Twin Cities Council ignores municipal boundaries between Minneapolis and St. Paul.

The Miami Valley Regional Planning Commission imposes controls on a geographical area that includes all of the Dayton metropolitan area.

In these and other cases, there has been no effort to move power from local government to regional or state hands, but the planning commissions involved are obliged to reassess the availability of social services, education, and housing, along with formal environmental concerns.

Growth Costs vs. Tax Revenue

According to recent studies, each new resident of a community requires more in cash outlays for sewage, roads, schools, etc., than he will ever return in taxes. And the old axiom, more growth means more revenue, is being refuted.

These studies reveal that residential development has trouble paying its own way. If the community has a generous mix of low to high income single-family units, it will have difficulty producing sufficient school revenues. A community can make money with water and sewer facilities where economies of scale are enjoyed. Large cities cost more per capita than smaller cities, but very small cities cost even more. The costs accruing to the city from density, composition of population, etc., are not defined in various studies, and few have tried to answer the question of who picks up the tab when one community uses the services of another.

Land Banks

It has been proposed that virtually all developable metropolitan land be publicly owned and be made available by scale or lease as needed. This practice, known as land banking, is common in Europe, but the U. S. is a long way from it, though talk of it is mounting.

The Trust for Public Land is the first of the national conservation groups to specialize in urban land banking for public use—a model which may soon be adopted in many parts of the country. More and more people realize the need to control growth and inflation. And because land is increasingly scarce, they are interested in ways for communities to share in rising land values, while managing its use.

Huey D. Johnson, President of the Trust for the Public Land, strongly differentiates land banking from Communism, pointing out that banked land is *bought* by the government, not expropriated.

In 1904, Stockholm, Sweden, started buying land. The city borrowed from the banks, letting the purchased land generate income to pay back the loans. Stockholm now owns over 200 square miles of land with more than 70 per cent of the city's structures on it.

In any such program, emphasis must be placed on land philanthropy, acquisition technology, timing and flexibility. And to make the program work it is as important to have skillful implementation of these mechanisms, including planning ones, and not just a "planner" in the formal sense.

The Ramapo Plan

The much heralded Ramapo Plan was established as an ordinance in the city of Ramapo, New York, in early 1972. It prohibits new construction unless the builder himself provides adequate sewers, parks, roads and other services.

The law was upheld by both a Federal Court of Appeals and, in November 1972, by the U. S. Supreme Court. Attorney Robert H. Freilich, who drafted and defended the ordinance, calls the Ramapo Plan "a timing and sequencing of zoning controls, limiting growth in areas for up to 20 years as capital improvement facilities are developed and expanded."

One criticism of the Ramapo Plan is that it is exclusionary, a common criticism of phased growth. And Freilich emphasizes that zoning was devised to deal with new land, unused land, and was not meant to be retroactive. But corruption in zoning comes from a hazy understanding of reasons for limiting growth. Professor Freilich states that the Ramapo Plan can correct many of the ills of zoning and other growth limiting techniques, such as minimum floor area restrictions.

The intention in Ramapo was to control the timing and sequence of growth. And along with the plan, the town created a Public Housing Authority, calling for 300 public housing units. They concluded that planned residential zones were final, subject to revision only on a two-year basis with public hearings and comprehensive changes.

This would correct a history of spot rezoning. And to give the plan time to get under way, they employed the first of a series of growth control techniques known as interim development controls (stop-gap zoning). From the time the plan was submitted until the time the implementation tools were decided upon, the interim development control would freeze development of any use inconsistent with the new plan.

At the same time they formulated a capital improvement plan to be implemented over 20 years, using second growth control techniques, which are known as development easement acquisitions. In areas where residents wanted growth controlled, the town bought development rights from landowners. Following loss of development rights the landowner's property was reassessed, and he was given a tax break.

Also used was a third growth control technique, known as the Development Timing or Development Point System. The capital improvement program was designed to run sequentially with three six-year development periods. At the end of 20 years, the community would have all the necessary facilities. The essence of this technique was to reinforce the idea that there was no *development by right.* Two parcels of land constituted a subdivision and required issuance of a permit, which was subject to a 15-point monitoring system. And from this technique evolved a private system of development coupled with a public commitment to provide public facilities. Three court cases have upheld the constitutionality of this technique.

That this first national conference on managed growth drew so many participants from so many disciplines is indicative that professionals are concerned. But at the same time two thirds of those attending were city planners, government officials, and interested citizens. "It is but the start of a dialogue," says John Naisbitt, who would like to see a larger proportion of suppliers, lenders, architects and builders at the next conference, to be held February 18-20, 1974, at the Americana Hotel in New York City.

A realization emerges from these dialogues that managed growth is not incompatible with economic growth. In fact the economic well being of a community is more dependent on its physical growth being managed carefully and wisely. If a community rips up its wetlands, flattens its trees, and pulls in three factories to strengthen its tax base, its tax base will sag right along with the community's spirit. There are, of course, no easy solutions, but there *are* solutions. Growth can be managed. And it is refreshing that sane voices can be heard above the cries of the hysterical and over the silence of the unconcerned.

CULTURE AS CONSUMPTION

The incredible burgeoning of cultural centers during the last two decades normally should make America proud. This remarkable efflorescence seems to proclaim a civilization at the peak of its economic and political power, finally expressing its accomplishments on a more abstract or artistic level. We thus tend to see the pervasiveness of Culture as a valuable end result of the production process, which therefore justifies (or glorifies) its means.

During the 60's, a conservatively estimated 200 arts centers were built. ("Arts centers" seems to be the new word for cultural centers: Basically an arts center accommodates several kinds of performing arts activities, either in separate auditoria grouped in one or several buildings, or in one main space.) While figures still need to be compiled on arts centers in the 70's, Bill Lacy, Director for the National Endowment of the Arts program on Architecture and the Environment, states that, judging from the inquiries his office receives about funding, interest in cultural centers has hardly diminished. But by cultural centers, Lacy adds, he means everything —old buildings adapted to new uses to just erected edifices.

Does this continuing interest and commitment to cultural concerns in fact signify a genuine flowering of civilization? A flowering that, coinciding with the emergence of leisure, enables people to have richer, fuller lives? Actually, some think not. Instead it is argued that the culture boom signifies the true schizoid character of our society, the lack of integration of content and form in everyday life. In one of the most stunning analyses written on modern society, *Everyday Life in the Modern World,* sociologist Henri Lefebvre, compellingly argues the latter point of view. In this age of technology and urbanism, Lefebvre asserts "Leisure is no longer a festival (as it was in pre-industrial times), and the reward of labor is not yet a freely chosen activity pursued in itself, it is a generalized display." (One is reminded of the phrase—"Going places, seeing, being seen.") Furthermore, "active man" has been replaced by "man the consumer" as the dominant self-image guiding behavior. But what we consume, maintains sociologist Lefebvre are signs—not the actual substance, but only loose references acting as substitutes for the real thing. By his or her avid compulsive consumption of signs, modern day man and woman avoids any realization of being cheated, an escape mechanism as true for the bourgeois in his consumption of material goods as it is for the intellectual in his pursuit of high culture: "They (the intellectuals) have a number of successful means of evasion, and all the substitutes are at their disposal—dreams, make-believe, arts, culture, education." Culture, originally intended to give "meaning and direction" to everyday life, is thus engulfed by consumption.

But unlike straightforward consumption of material goods, cultural consumption has the "air of festivity that endows it with a sort of unity, socially real though fictitious—a part of make-believe." This unity, warns Lefebvre, is not the unity of culture typical of a coherent, integrated society; instead, the contemporary unity of culture starts at the top with cultural institutions, and is then purveyed to the masses, so that "culture is not a myth; it is worse; It is a state ideology."

Obviously, cultural centers in this frame of reference are not only tools of cultural institutions, but become commodities in themselves. They function as both objects necessary to the ritual of cultural consumption as well as vessels within which the compulsions considered cultural experience take place. They are agglomerations of signs of enlightenment, enrichment, signifiers of concepts, such as center-of-artistic-life. If arts centers are designed well, they perpetuate the escapism implicit in cultural consumption; the lack of integration of society in every day life; and its own grand illusions. The rapid rise of Sixties cultural palaces certainly seemed to correspond to Lefebvre's analysis of society: Every city had to have a travertine clad temple to the arts isolated on a swath of greenery. This type of expression has shifted in the Seventies: If not because neo-neo-classical frou-frous have not corresponded adequately to the public's fantasy levels, then because the centers themselves couldn't create Culture—many in fact were built without having a resident performing arts company. Thus, the heavy inflation in operation and maintenance costs (ranging from $1 to $2 per seat per use of the building) was enough to do culture palaces in financially. An informal survey recently conducted by theater manager Laurie Wakefield showed that most large cultural centers (costing over $20 million) in the U.S. lose from $500,000 to $2 million annually exclusive of bond costs.

Nevertheless, recent studies reveal audience interest in arts centers is still there. In a nationwide study conducted by the National Research Center of the Arts (an affiliate of Louis Harris and Associates) for the Associated Councils of the Arts, absence of accessible arts facilities was shown to be a major public concern. In a survey conducted by the National Research Center on the residents of New York State, findings showed a strong interest in neighborhood and community-based arts centers. Two-thirds of the New York State residents consider neighborhood and community cultural activities important, one-third very important.

The interest in neighborhood based facilities parallels the general trend in the 70's for more diffusely located arts centers being established around the country. Small towns and cities are now building arts centers, correspondingly smaller in scale. While the largest feasible size for an arena is considered to be at maximum 3500 seats, the large auditorium commonly contains 1400 seats and more often 400 to 500 seats. Another prevalent trend is toward the single multi-purpose auditorium, designed to handle a range of events with a variety of seating configurations.

The type of client has changed too, from one decade to another. Theater consultant Ralph Burgard contends that the days of isolated culture centers are over, and that in order for arts centers to function economically they will have to ally themselves with commercial or educational institutions. Already the education institution as client has come to the fore. As in the case of University of Akron and Drake University, arts centers on campuses are being used for curricular or non-curricular purposes. Many educational institutions are even starting to build arts centers downtown, thus making the center more accessible to the community residents.

Burgard sees another major client for arts centers soon stepping in—the shopping center developer. He cogently argues that cultural centers ought to be located in the places which consistently attract the most people—the regional shopping center. Since shopping centers already include plazas, malls, and parking facilities, performing arts halls, exhibit areas and the like could be easily integrated in small amounts into these complexes. Thus the smaller more decentralized arts centers wouldn't be as remote physically and psychologically to their audiences as were 60's culture palaces.

And Burgard's probably right. But ironically, the plausible success of such a proposal brings back the whole concept of culture as commodity. For Burgard's suggestion implicitly acknowledges the close correlation between cultural consumption and consumption of material goods. Man the consumer can now make a single voyage to the arts-retail center to fulfill his fantasies and escape the boredom of everyday life. Here he has the option to fetishistically collect the material objects that signify the good life and submerge himself in the cultural events that promise enlightenment.

It may seem somewhat schizophrenic (how apt) for an architectural magazine to point out the conceptual weaknesses in the whole idea of culture and cultural centers, while on the other hand publishing three of them. For even if these three centers do reflect new attitudes to cultural facilities—in terms of client type or design approach—these arts centers on the following pages still embody the myth of Culture, the Festival, the Event, demanded of arts center as commodities. The commodity aspect reads quite clearly in the case of Akron, where the objet d'art quality of the architectural solution again signifies the town's aspiration for cultural refinement. On the other hand, this association could be regarded as a necessary image reinforcement for the town, similar to what occurred at Broome County. In the case of the Broome County Arena, the building, by acting as a metaphor of the town's desire for economic, social and cultural renaissance, in turn helped bring that renaissance about. These arts centers could thus be construed as successful in terms of the needs of society. But they also perpetuate the system that Lefebvre eschews, by the fact that they so ably mirror its self-seductions. Ironically these buildings thus express the spirit of the age—historically an accepted criterion for "good" architecture—while proclaiming architecture's essentially passive role towards society.—SUZANNE STEPHENS

ART CENTER AS ANTECEDENT

A center planned for New York's Broome County has sparked an economic as well as cultural rebirth

Not long ago, the mere mention of a cultural center for the upstate New York town of Binghamton would have seemed a hopelessly grandiloquent gesture. One expects that a cultural center would require a healthy economic, social and cultural milieu to plug into—a milieu not too manifest in this city of 70,000. Typical of isolated rural/industrial towns, Binghamton has, until recently, looked as if it were atrophying from terminal anemia.

Nevertheless, a concerned body of citizens were determined to instill cultural life. In 1966, they presented a proposal to the Broome County Board of Supervisors (now called the Broome County Legislature) urging the construction of an arena auditorium and a performing arts theater.

Today, the first phase of the complex is complete—a 130,000-sq.-ft. arena with 3,600 permanent seats to which almost as many temporary ones can be added. This Broome County Veterans' Memorial Auditorium forms a major part of a downtown redevelopment scheme which was spurred by the decision to build the cultural center. Already a system of elevated decks and pedestrian bridges has begun to sprout around it, tying the arena to a bank building directly *en face*, and to a government center on one side.

At the bottom of the initial proposal, certain symbolic intentions could be detected. An arts center in this particular context would have to signify its role as a cultural mecca, and forcefully foster the image of downtown renaissance. Thus, it would have to be read easily from afar (and especially from the road) as an identifiable place: the paradigmatic architectural statement.

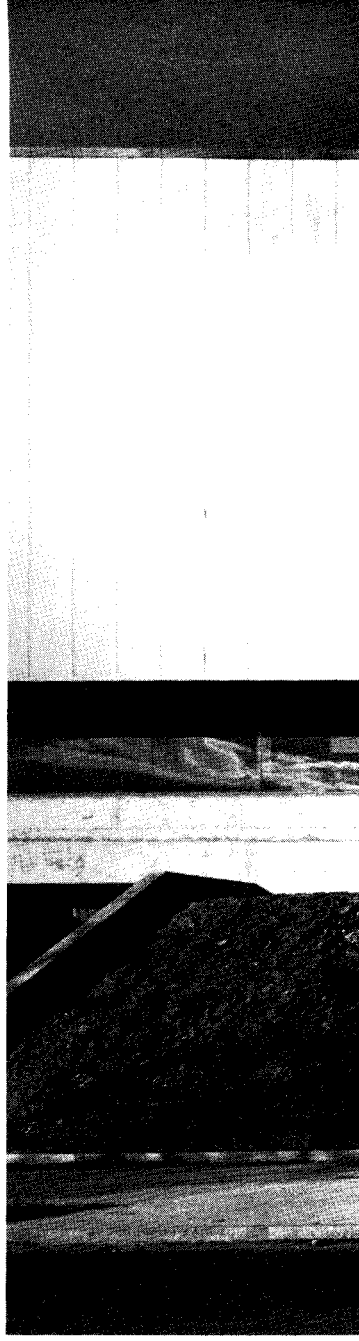
Probably these unspoken assumptions encouraged one organization, the Valley Development Foundation, led by then Executive Director Stephen Dragos, to urge in 1967 a statewide architectural competition. Although the pitfalls of such are no secret, sometimes bestowing a virtually unbuildable or useless "visual statement," a competition obviously would generate the brouhaha needed to capture public support. The competition then serves to ritualize public desire. If the cultural center itself is to embody a myth (the town as artistic center) the competition is the first step toward mythification.

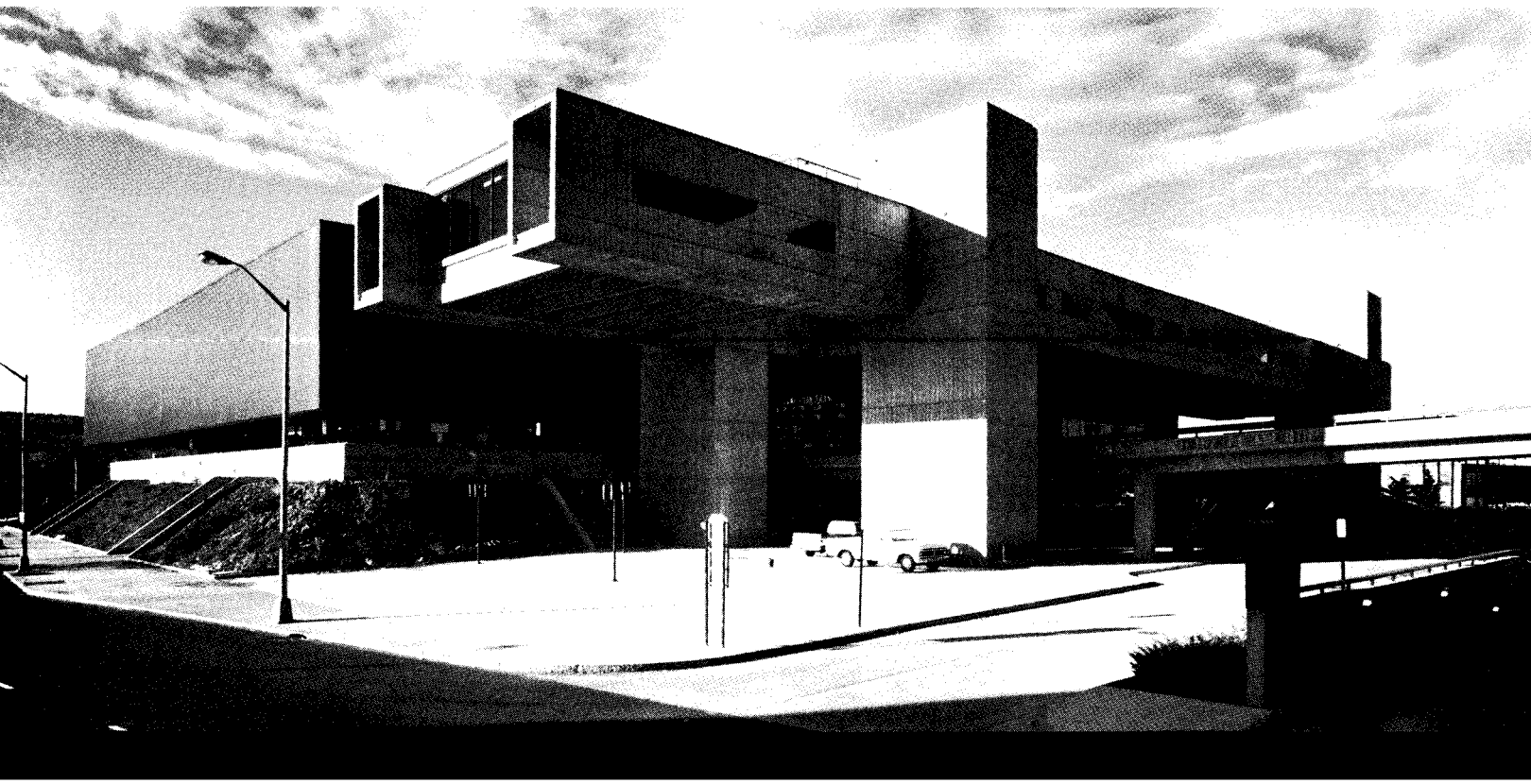
Despite the travertine gilt encrusted Sixties culture palaces, the jury—Romaldo Giurgola, Eduardo Catalano, H. Bernhard Haesli of Zurich and a citizen's representative, Douglas Seaman—picked a clearly articulated, straight-forward scheme.

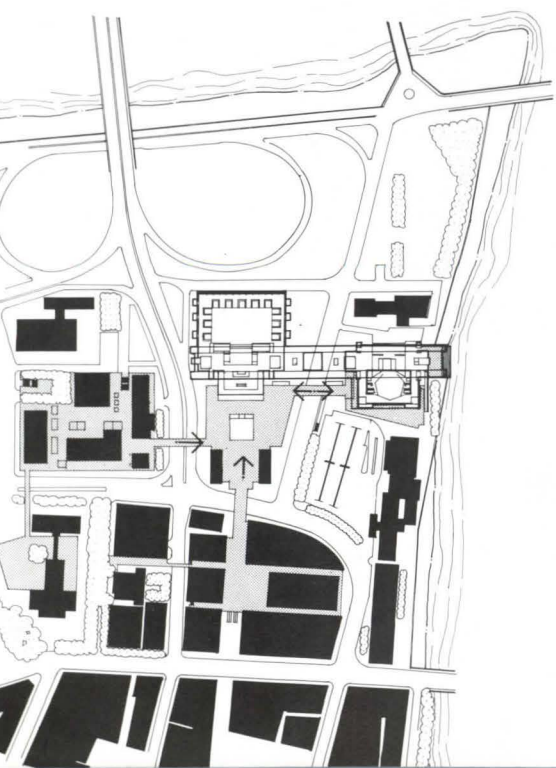
Fulfilling the central fantasy of such competitions, a young, unknown group of architects won: Michael Severin, Barry Elbasani and Donn Logan, all then teaching at Berkeley, although Severin was registered in New York State. (For more details on the now six-year-old firm of Elbasani/Logan/Severin, see the November 1973 issue of The FORUM.)

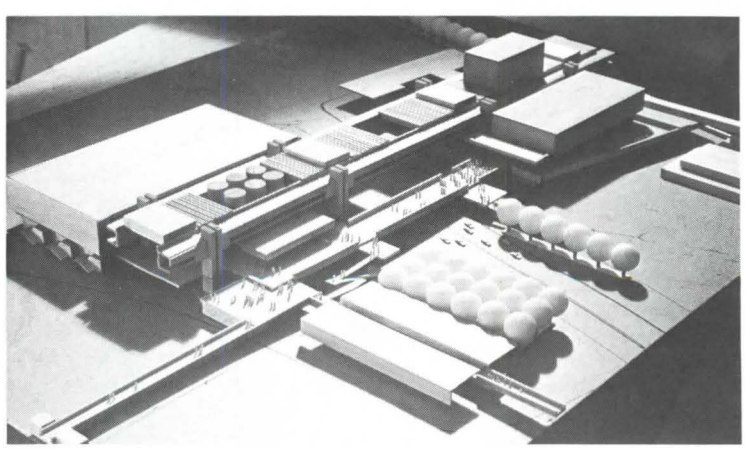
Runners-up in the Broome County competition included Kallman & McKinnell of Boston (second place); Wells, Koetter & Sherwood of Ithaca (third); and Abraham Geller and Raimund Abraham of New York (fourth).

The runner-up entries shared a characteristic not applicable to the winning scheme—the siting of the arena on a riveredge, with the performing arts center further inland.









Broome County Veteran's Memorial Arena, the first phase of a cultural complex to include a performing arts theater (model, above), occupies a 122,000-sq.-ft. site on the edge of downtown Binghamton, New York. The 320-foot-long gallery (opposite) with 62-foot-long cantilevers (top) will eventually link the two buildings. A system of elevated pedestrian walkways and decks are beginning to emerge, tying the building to new construction surrounding it, as part of a larger urban design program (site plan). Parking is accommodated by an underground garage, adjacent to the arena, nearby lots, and at the ground level drop-off entrance underneath the ramps (above).

Two redevelopment parcels, separated by a road, Washington Street, with one parcel bordering the Chenango River, had been selected for the cultural center. The waterfront site was 75,000 sq. ft.; the inland site, 122,000 sq. ft. In the program for the competition, the suggestion was made that the arena should be close to the Treadway Inn on the waterfront, since its activities would more often require hotel accommodations. Elbasani/Logan/Severin nevertheless decided that the waterfront site was too small for the arena, and felt that a performing arts center generated the kind of activities—promenading, dining, and so forth—that would create a real waterfront ambience. To link the arena to the motel, they proposed an elevated pedestrian spine stretching the length of the complex, and bridging the roadway. This 840 foot long gallery was to terminate with a view of the river, an ancillary connection serving as the link to the motel.

In dealing with the formal properties of the cultural center, ELS preferred rather simple, clearly articulated, unaggressive forms. The architects evidently understood that the image and amenities offered would have to communicate positively; thus, a design that was reasonably familiar (and therefore comfortable) would be most congenial. Nevertheless, such a scheme would also have to stage an "event" in its celebrating the basic ceremony of going out, seeing and being seen.

To create the proper setting, ELS did not try to invent new forms, but used existing vocabularies to coax new meanings out of a pragmatic solution for an existing context.

The vocabulary comes closest to Japanese interpretations of Corbusian and Brutalist esthetic —concrete ramps, distinct articulation of parts, horizontal masses raised by columns from the ground plane, blank walls pierced by circular hollow tubes for ventilating ducts. Materials follow suit: Rough board-formed concrete, and taut metal skins.

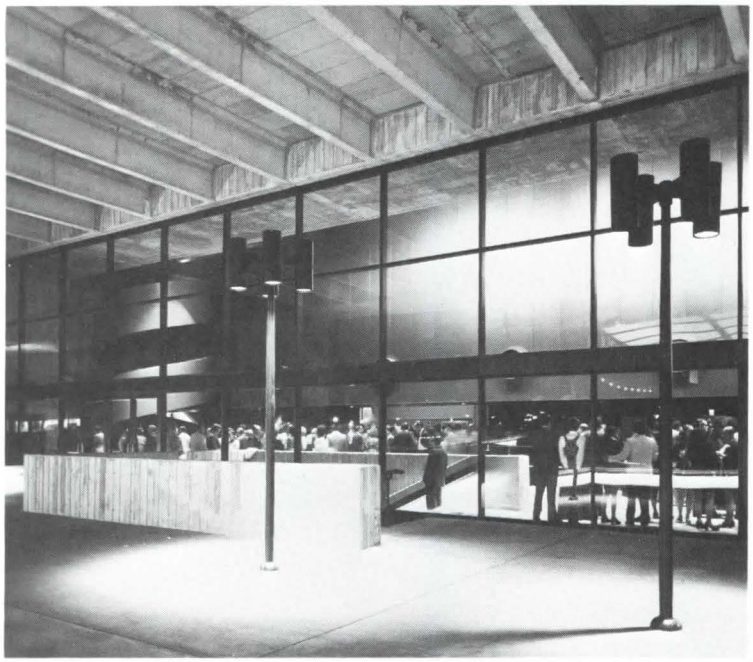
One important lesson borrowed from the Japanese Metabolists—about how buildings should be designed as add-on increments — becomes clear at Broome County. *Becomes* being the right word, for the building is still in the process of becoming; the second phase, the performing arts center, awaits funding. Fortunately with the open-ended quality of ELS' design, phased construction fits.

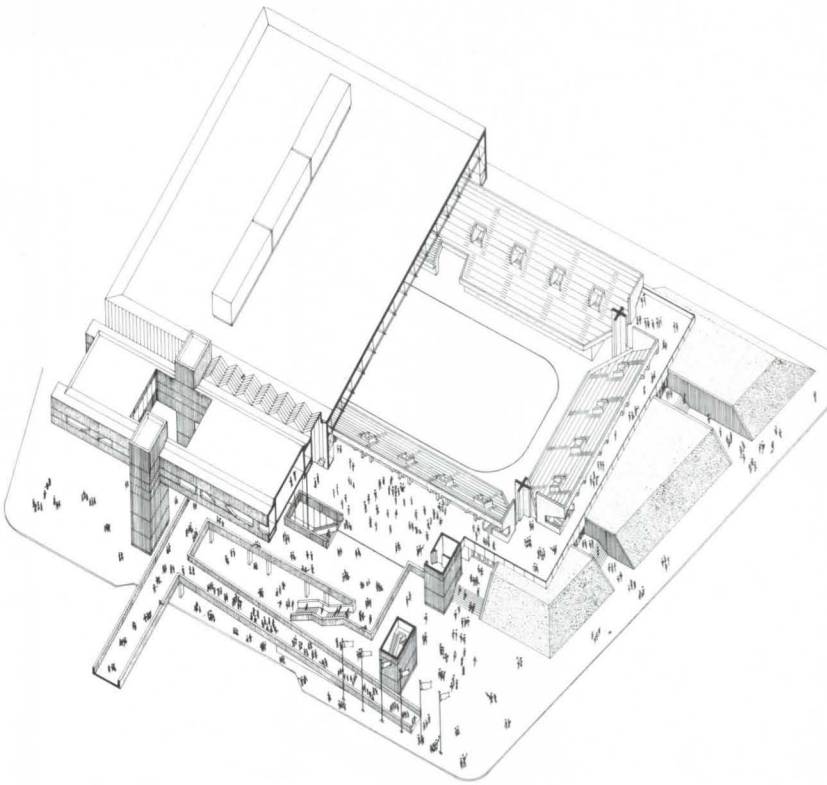
Herein lies the rub. The County now seems to be bogged down in welfare expenditures, and the citizens fear they cannot raise the money. Since the arena does not beg for expansion, the second phase may never be built. (Then too, while an audience exists for ice hockey games, Liza Minelli concerts, and Miss World/U.S.A. beauty pageants, would it necessarily support opera and ballet?)

Yet the pedestrian gallery, linking the arena to the projected performing arts center, and along which a sequence of activities is planned, loses a certain impact without the theater. The waterfront site now sits almost vacant. The beginnings of a riverside esplanade in back of two new buildings—Ulrich Franzen's First National City Bank, and the Treadway Inn—stop short at a parking lot.

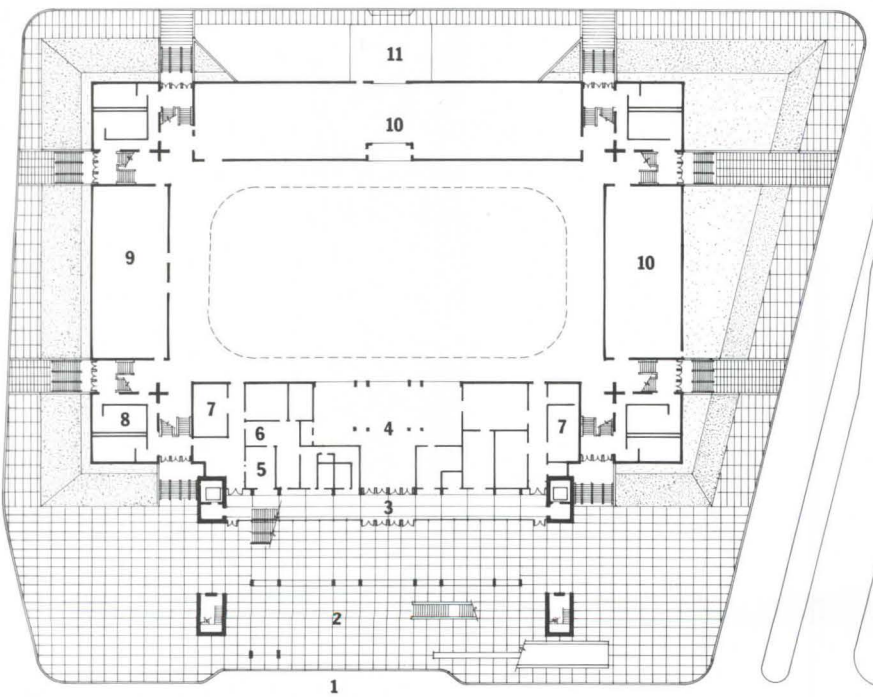
These overriding budget considerations have prevailed from the outset. The cost estimate at the time of the completion was $4.5 million for the arena and $3.5 million for the theater. When ELS won, they got the budget revised right away to $6 million for the arena and $4.5 million for the theater. While the arena came in at budget (the total, including site work came to $7.5 million) they readily admit it would now be impossible to build the theater for the $4.5 million estimate.

To keep the arena costs in

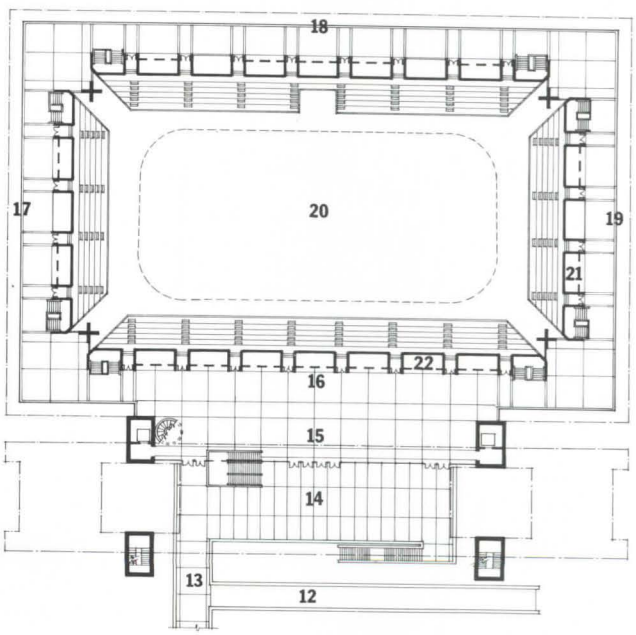




At the entrance elevation, a series of ramps (opposite) lead visitors to the second-level lobby. Additional entrances and exits are carved out of the earth berms surrounding the arena on three sides (isometric cut away, right). The entrance lobby (above) soars to a 38-foot height, visible from nearby pedestrian decks and bridges through a (22 ft high) window wall with panels (five and a half by seven feet) set into black aluminum frames.



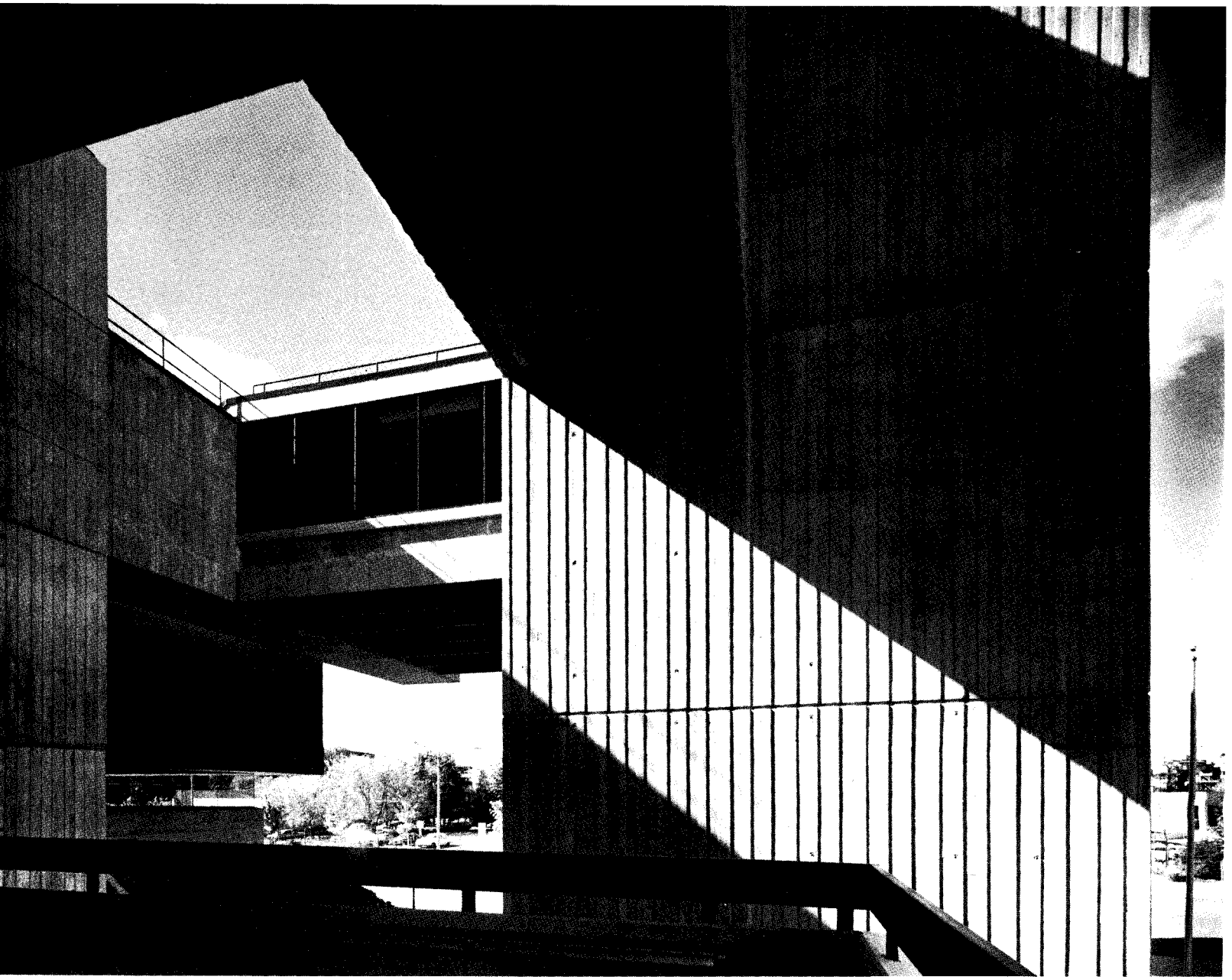
ARENA FLOOR PLAN

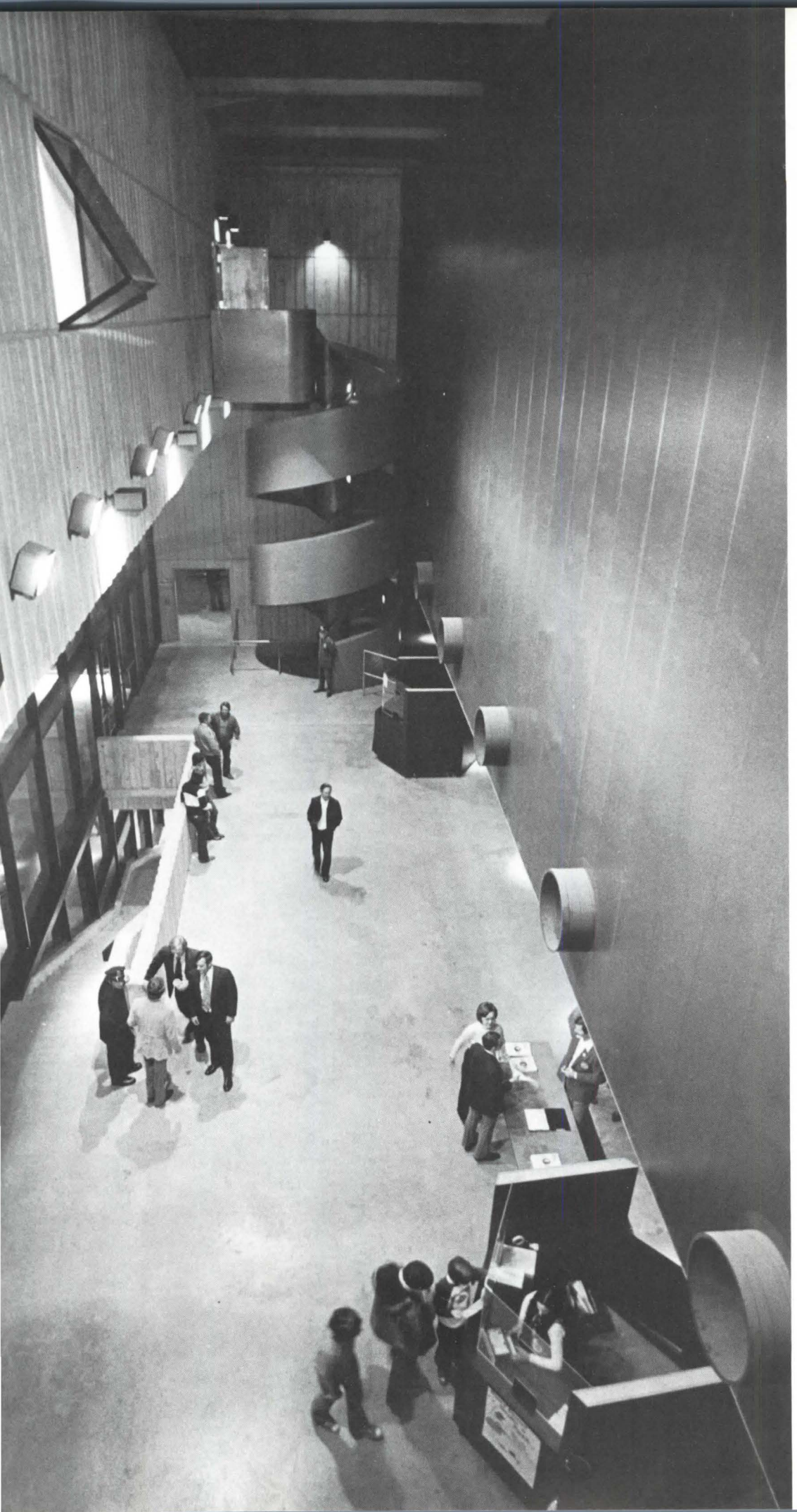


CONCOURSE FLOOR PLAN

1. DROP OFF
2. LOWER PLAZA
3. LOWER LOBBY
4. SKATERS' LOUNGE
5. TICKET OFFICE
6. GENERAL OFFICES
7. MECHANICAL
8. REST ROOMS
9. TEAM ROOMS
10. EQUIPMENT STORAGE
11. TRUCK ENTRY
12. RAMP DOWN
13. BRIDGE
14. ENTRY PLAZA
15. ENTRY LOBBY
16. NORTH CONCOURSE
17. EAST CONCOURSE
18. SOUTH CONCOURSE
19. WEST CONCOURSE
20. ARENA
21. CONCESSION
22. STORAGE

Fenestration in the poured concrete post-tensioned box-beam structure (right), reflects the pattern of cable supports. Openings between the double box beam gallery structure permit sunlight to reach spaces below (bottom). The steel foam-core sandwich panels wrapping around the skirt of the arena's space frame roof become an interior wall surface on the entrance elevation where the poured-in-place concrete gallery joins with the arena. The window jutting out from the elevated gallery allows peripatetic spectators to view activities and events below. Skylights originally were to extend the length of the lobby, but due to budgetary constraints were reduced to the two end portions only.





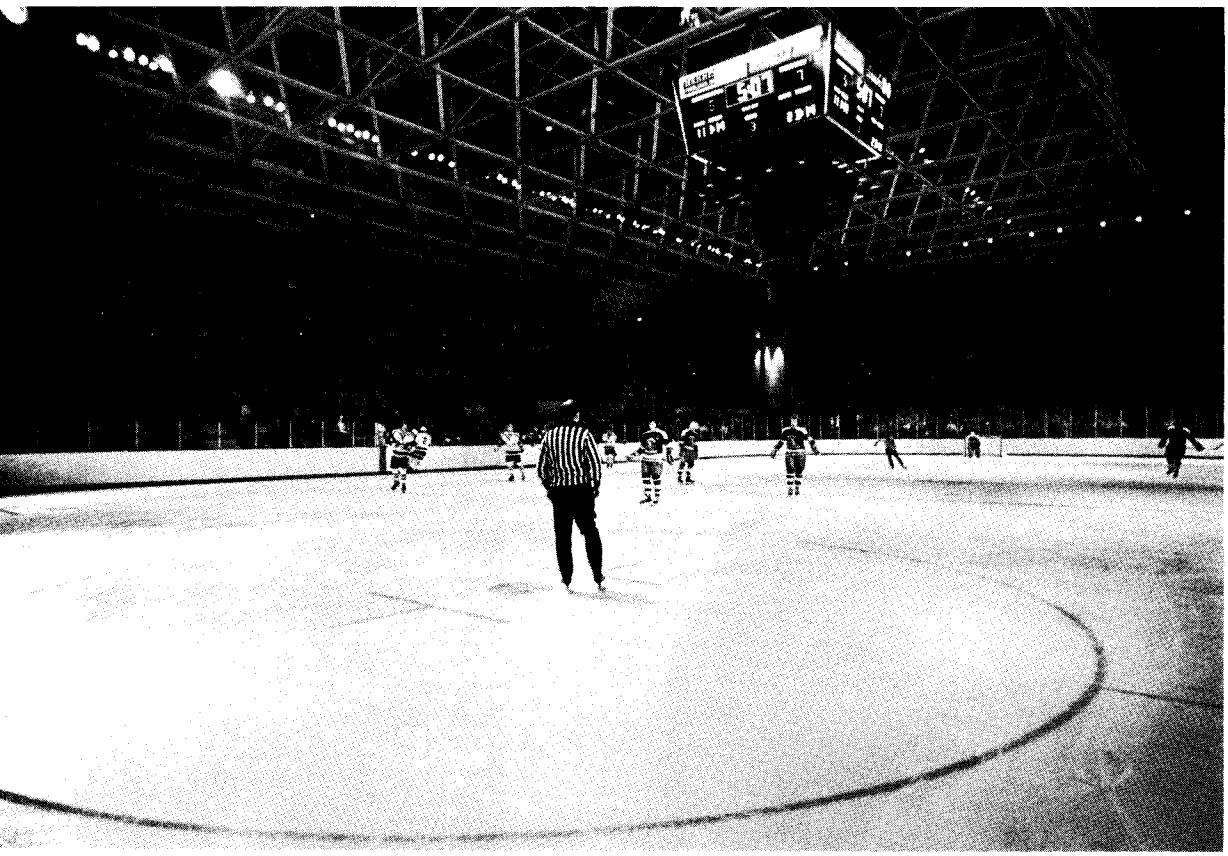
line, certain design features expressed in the competition model had to be tossed: The air exchange units feeding the arena, for example, were to have been installed in large drums in the gallery (see model, page 49). Now they are plopped on the arena roof, where they project above the otherwise strongly horizontal profile. The skylight above the lobby originally was to have run the full length of the arena, but now has been whittled down to the two end portions. Other deletions include the number of seats (originally 4,500) and a lower-level exhibit hall.

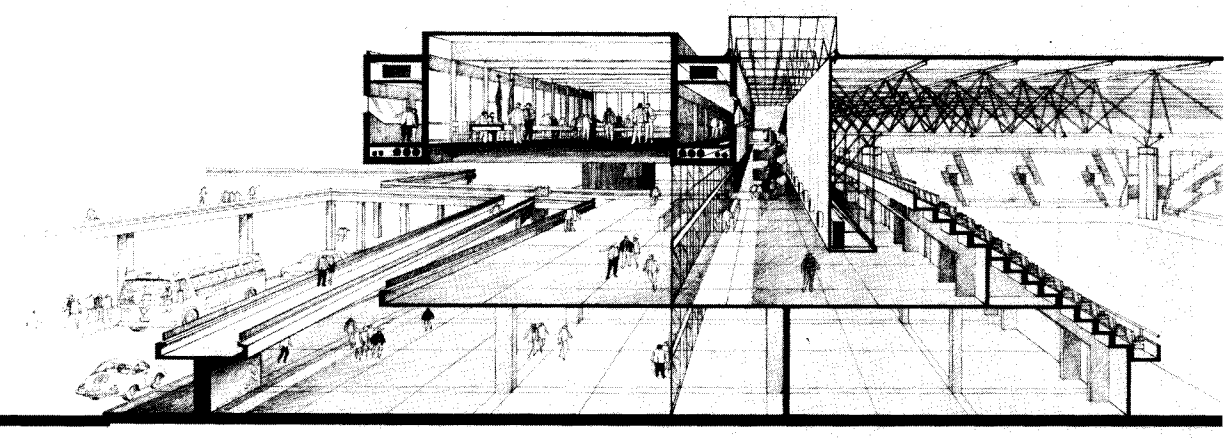
Costs were kept down largely due to the straightforward, exposed mechanicals-and-structure approach typical of theaters in recent years. A large 207-foot by 318-foot space frame, painted red-orange, spans the 116,000 sq. ft. arena. Eleven feet deep, it is principally supported by four large concrete piers at the corners of the precast concrete seating dishes and by four secondary columns at the perimeter of the auditorium. The precast concrete seating dishes are, in turn, carried on exposed precast concrete fins.

Another cost savings measure is the metal skin panels sheathing exterior walls of the 30 foot skirt on the space frame roof. While the complex was initially envisioned as concrete, budgetary constraints limited its use to the gallery structure. The auditorium space itself is clad in brown steel foam-core sandwich panels with interlocking shiplap joints, costing about three dollars per sq. ft. An embossed surface helps conceal irregularities in the skin's surface, and perhaps provides a degree of stiffness, although this is largely due to the lamination of steel to the plastic core.

Financial reasons aside, the architects feel that the choice of metal skin panels on the auditorium, in contrast with the board-formed concrete ramps and gallery, further clarifies the kinds of activities performed within these two areas. The arena reads as a light, floating volume, gently levitating over a band of butt-jointed glazing.

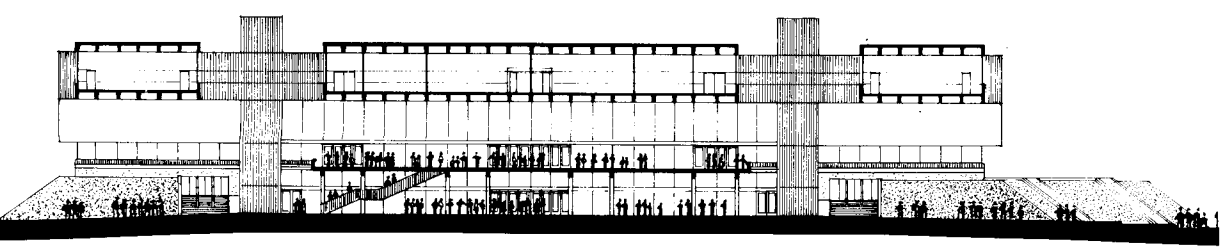
The gallery structure then becomes legible as a separate entity, a forceful link between the arena and projected theater. Circulation (entering, exiting,





CUT-AWAY PERSPECTIVE RENDERING SHOWING GALLERY WITH MEETING ROOMS

The 25,000 sq. foot arena floor is designed to accommodate an ice hockey rink (top) 185 by 85 feet, formed by a concrete slab resting on Styrofoam. The 116,000 sq. ft. arena can also house concerts since a wide range of temporary seating configurations can supplement the 3600 permanent seats. Fiberglass acoustical panels covered with a special paint line roof and wall surfaces in the arena to modify noise. The 22-foot high steel coil stair (opposite) leads from lobby to gallery and meeting rooms.



TRANSVERSE SECTION THROUGH GALLERY

promenading) activities are clearly signified in this entrance elevation where a 320-foot-long gallery cantilevers out 62 feet in either direction from the two 38-foot towers, with ramps connecting the second-story lobby to the ground and elevated plaza opposite.

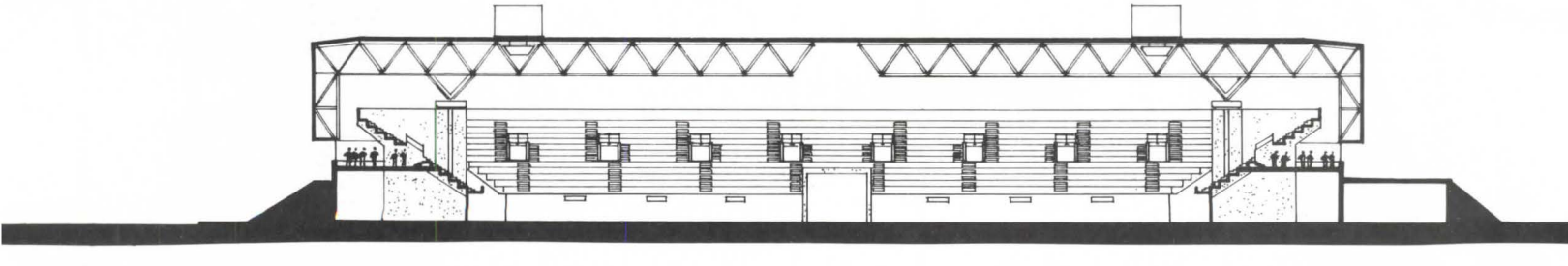
Not surprisingly, the gallery, comprised of two corridors placed in either side of various meeting and socializing spaces, required a complex structural system.

The German firm of Dyckerhoff and Widmann was brought in to construct the gallery, a poured concrete, post-tensioned box-beam structure. The Germans' strong selling point involves a patented device that connects the cables embedded in each of the four walls of the two box-beam corridors (fenestration reflects the cable pattern). Thus only four wood forms were needed to construct each beam: Pairs of forms were balanced from either side of the two towers and ran on rollers in opposite directions until two met in the middle.

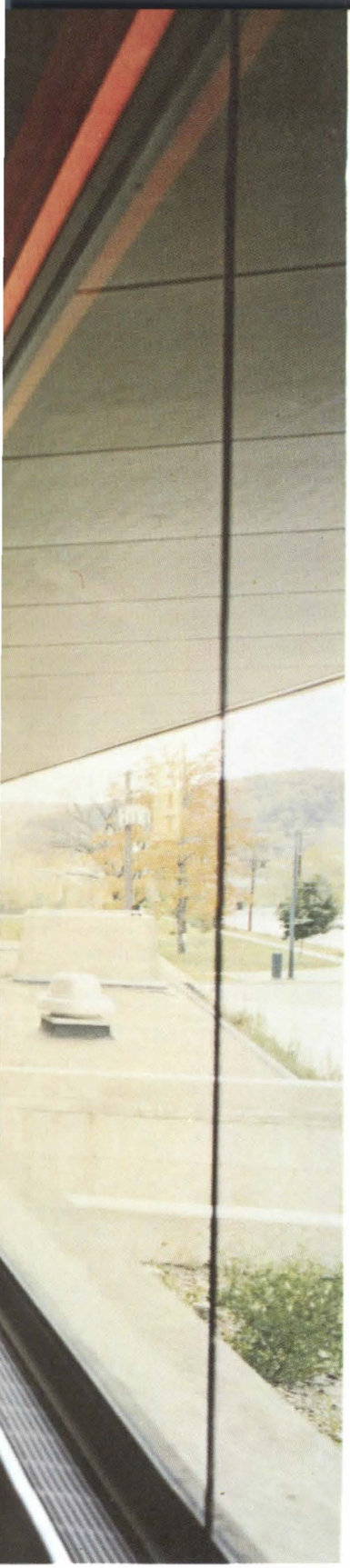
This ingenious method also meant that construction could proceed simultaneously underneath *the gallery at ground* level. After the corridors were erected, the German team cast the floor planks of the meeting rooms, then moved the forms on top of the floor and cast the ceiling planks.

Despite the complexities in the structure and the sophistication of its solution, the building is not without its rough spots, and one is put upon to speculate whether these are due to the construction management firm that supervised the arena, architectural execution gone awry, or the tight budget; all could be contributing factors. Of even more concern would be the apparently lackadaisical attitude, which recently seems to have taken hold, about finishing the building now that the arena is open. The last touches—cleaning, carpeting the lobby and concourse, seeding the earth berm walls, painting a large wall mural designed for the lobby by Barbara Stauffacher — all await action. But passitivity persists.

Interior finishes, on the other hand, over which the architects had *no* control, are being lavished on the gallery corridors



TRANSVERSE SECTION THROUGH ARENA



and social spaces. The result is consumate Kitsch: Fake wood paneling lines one wall in each of the two gallery corridors, while the opposite walls have kept their ribbed concrete textures, but are whitewashed (shades of picket fences). Carpeting is red-orange throughout, and a hung ceiling hides the concrete beams. Other finishes in the meeting rooms follow suit.

Since these last touches represent only one percent of the total design, ELS is rather philosophical (perhaps realizing they are not quite to the stage of demanding total design control). Nevertheless, this little one percent embodies the visual flourishes which are the most *frappant;* ones the visitor inevitably perceives before the architecture. More bothersome still is that these trimmings twist through the most ceremonial spaces—which, should the performing arts center be built, will be a major circulation area.

Of course, these cavils blatantly ignore the differences in how various observers comprehend such accoutrements. For the local audience, these ersatz embellishments may act as signs imparting the myth of elegance, enrichment, the sense of event—the implicit message of the so-called arts center. Even so, this trickery without logic just ain't the real thing.

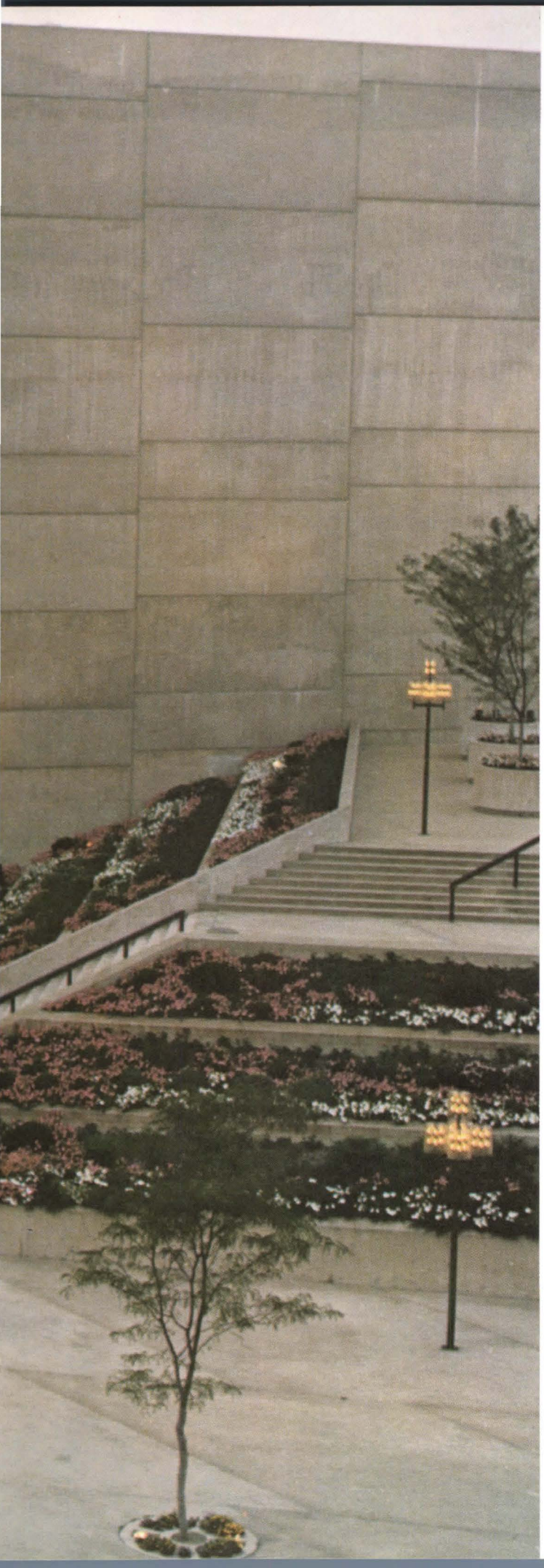
At the larger level of meaning, however, the arena has genuinely lived up to its symbolic role and has indeed launched the rebirth of downtown. After the competition, as a government center was being built with an elevated plaza nearby, the Binghamton Urban Renewal Agency saw the chance to have an integrated urban design, and hired Werner Seligmann of Cortland (professional advisor to the competition) as designer. His plan called for establishing an elevated system of decks between the arena, the government center and the rest of downtown. This elevated pedestrian ground plane, already beginning to emerge, will be continued into the heart of the nearby shopping district as part of a proposed office tower/apartment/retail galleria complex by the Office of Mies van der Rohe.

So, even though the expectation of which comes first—the arts center or an appropriate milieu — went against normal predictions this time, the results already smack of early success.

FACTS & FIGURES

Broome County Cultural Center, State Street & Susquehanna Street, Binghamton, New York. Owner: County of Broome, New York. Architect: ELS Architects; Principals, Barry Elbasani, Donn Logan, Michael Severin, Geoffrey Freeman. Partner-in-Charge: Michael Severin. Job Captain: George Duncan. Engineers: T. Y. Lin & Associates (structural); Flack & Kurtz Consulting Engineers (mechanical & electrical). Landscape Architect: ELS Architects. Interior Designer: ELS Architects (arena & lobbies only). Acoustic Consultants: Bolt, Barenek & Newman. Contractors: Edward L. Nezelek, Inc. (general); Louis Picciano (mechanical); Luna (electrical); S.P. Ainsley (plumbing). Building Area: 130,000 sq. ft. (not including exterior decks, ramps & stairs). Cost: $6,000,000 (construction); $500,000 (furnishings and equipment). (For a listing of key products used in this building, see page 79).
PHOTOGRAPHS: Nathaniel Lieberman.

Butt-jointed glazing at the concourse level creates a band of transparent space over which the space-frame roof, covered with metal skin, seems to float (opposite). Black silicone was used to give a thin pencil line to the joints of the panes. Because of this kind of fenestration, complicated calculations were necessary to prevent deflection in the space frame, which is supported by four large cruciform piers. Large metal doors on either side of the piers permit spectators on the second level concourse to be able to look into the arena space (below). Within the space frame roof catwalks are hung; mounted lighting and drain pipes from the roof are dropped into the piers.



ART CENTER AS ARTIFACT

A new performing arts hall in Akron exhibits the formal devices that cause some current architecture and sculpture to look alike yet remain apart

BY ROBERT JENSEN

If you think that the elements of architecture by which a building meets its "functions" are walls, columns, floors and roofs, then you may fall flat on your face where a "longing for art" is the force behind your commission.

The original impetus for the Edwin J. Thomas Performing Arts Hall in Akron, by Caudill Rowlett Scott in association with Schafer, Flynn and Van Dijk, came from such forces.

It came from the city 20 years ago, where the Akron Armory (designed for drills), was the only place to house performances by touring companies. It later came from the University of Akron which needed space for some of its theater, as well as for cultural lectures and seminars. As money was being raised and expenses justified, Akron even noticed that ". . . large organizations have sometimes cited a lack of adequate space for meetings involving hundreds or thousands," and this was added to the list of "functions"—which of course is not art at all.

These pressures then—including convention gatherings—combined eventually to produce the Akron Hall on this site. For the University is adjacent to the downtown core, to hotels and motels. The schedule for the 1973-74 season includes one- or two-night stands by extravagantly diverse groups: the Krasnayarsk Siberian Dancers, the Emmett Kelly, Jr. Circus, Marcel Marceau, a barbershop quartet, and an Italian-American Night.

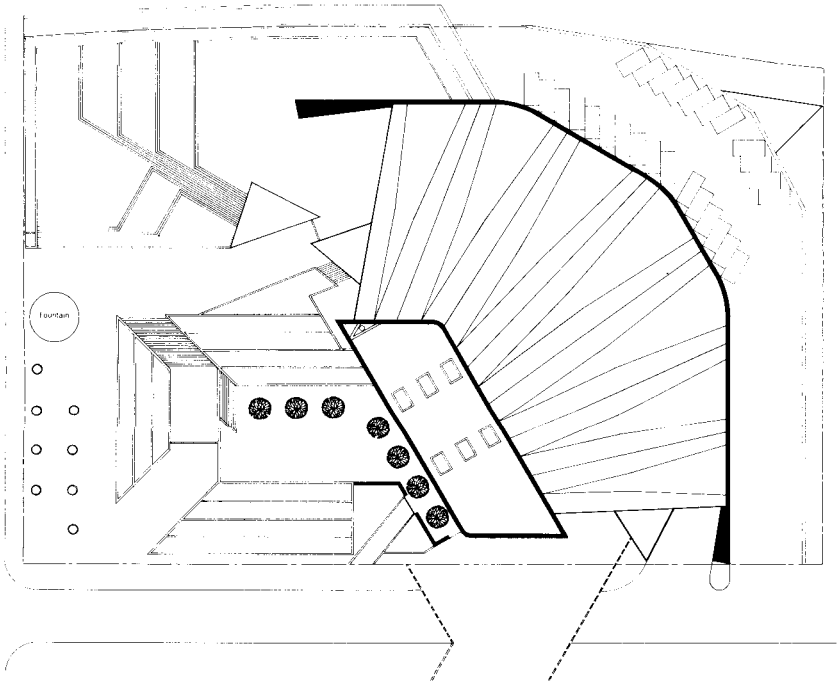
What this diversity meant, architecturally, was a nearly complete lack of the usual program specifics by which a large space might be organized. One program generality after another does not mean that an equivalent spatial generality can house them all, however, and the architects veered from this typical solution.

But no one seemed to want three halls either: What they have is one hall that may be reduced in actual space—from 3,000 seats to 2,400 to 900—by the movement of its ceiling alone (see pp. 64-65). The metal trapezoid ceiling panels take 15 minutes to change one space into another (operated mechanically and electronically), each room's acoustics are ap-

Mr. Jensen, an architect and critic, is currently writing a book on today's architectural trends.

Garden terraces, stairs, lighting and fountains are carefully integrated with the shapes of the building as patrons arrive for opening night at the Akron Performing Arts hall (left). All surfaces are of poured-in-place concrete, with a worked finish exposing the material itself.

The night shot above shows how distinctions between outside and inside tend to disappear. The east elevation (right) is the principle automobile entrance. The floor plans (opposite page) show the compactness of the Hall, with no seat more than 135 feet from the stage. All seating is continental, so there are no aisles. Access is from the sides at all times.



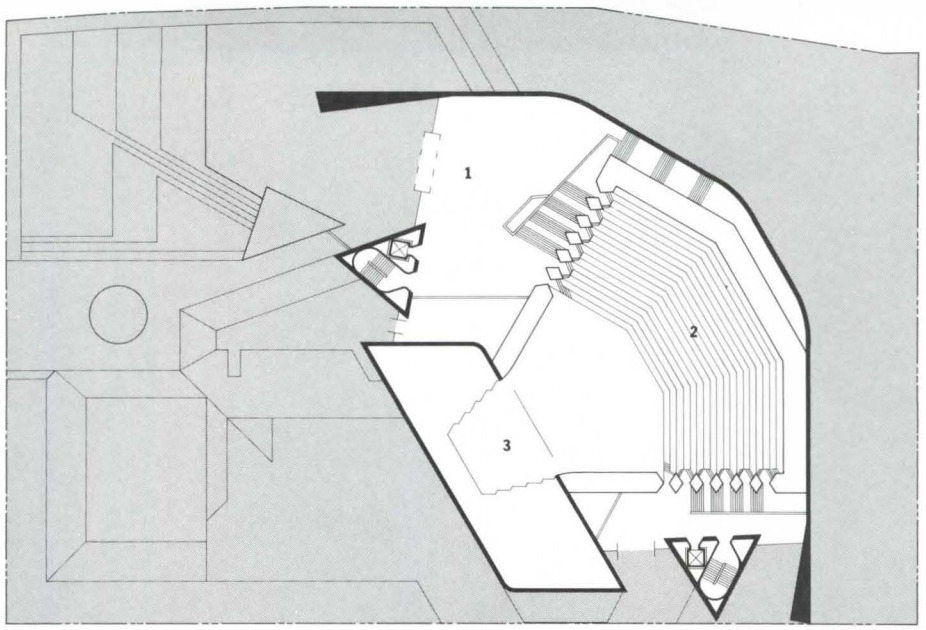
SITE PLAN

parently very good, and Dr. Vern O. Knudsen and George C. Izenour Associates see it as a culmination of their other acoustical-theater engineering achievements over the past ten years.

Certainly though, making this Hall work financially (filling it) will require ingenuity. All those weekdays between touring groups mean its unscheduled functions will have to materialize with some regularity. This Hall has no "house function" in the sense that the National Endowment for the Arts means it, when they recommend that a hall be built *for* something ongoing and specific, like a permanent orchestra. But all this is tolerated in Akron for a powerful reason: For the new Hall's "function" is as a symbol, making practical problems more trivial than they usually are.

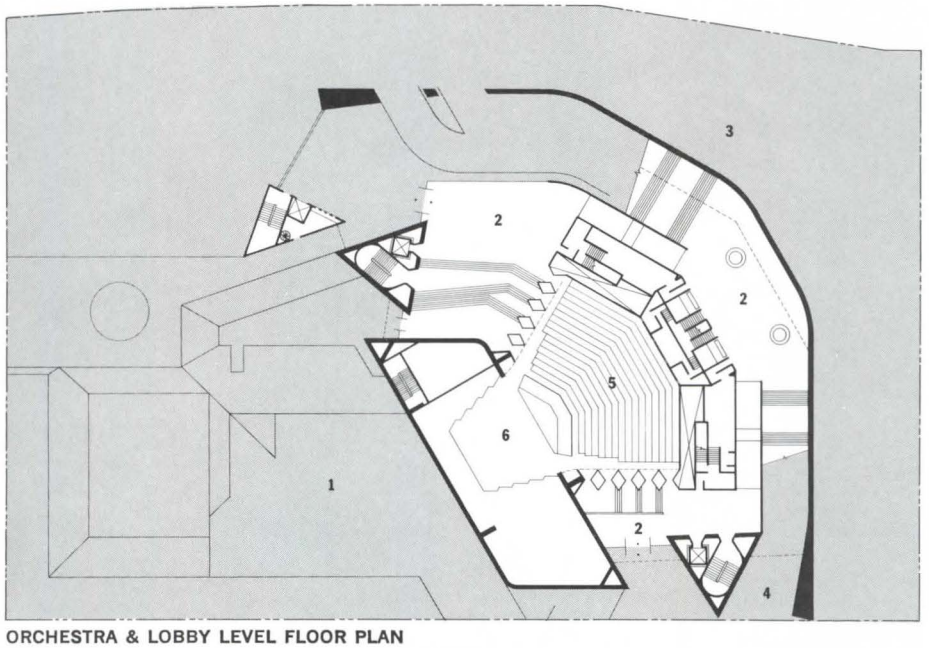
Related to symbol, the building links city and university: It ". . . is another evidence of the splendid town and gown relationship in Akron. This majestic structure will now serve as a cultural bridge . . ." says Norman Auburn, President Emeritus of the University. Whereas similar juxtapositions elsewhere are unmediated hostilities, this symbol is surely important to Akron, but it's not exactly what I mean. Rather, it is a symbol of culture as a whole that its sponsors, including Akron's major banks, its newspapers, and its national corporations (Goodyear, B.F. Goodrich, Firestone) wanted to create. "This building will provide an inspiration for all those who labored over the years to keep the light of culture burning in Akron." That is what they wanted: "the light of culture" for themselves. And a beacon to New York, Los Angeles, Chicago saying, "We can do it, too."

Their dreams have already been fulfilled and acknowledged. Worries over amortization of mortgage are insignificant when Ada Louise Huxtable says, "They Finally Got It Right" (New York Times, Sunday, October 21, 1973). "The trials and errors of a 15-year performing arts center building boom in the United States have finally produced a superb structure. . . It happened in Akron, not in New York. . . This is a building of which any world capitol could be proud."



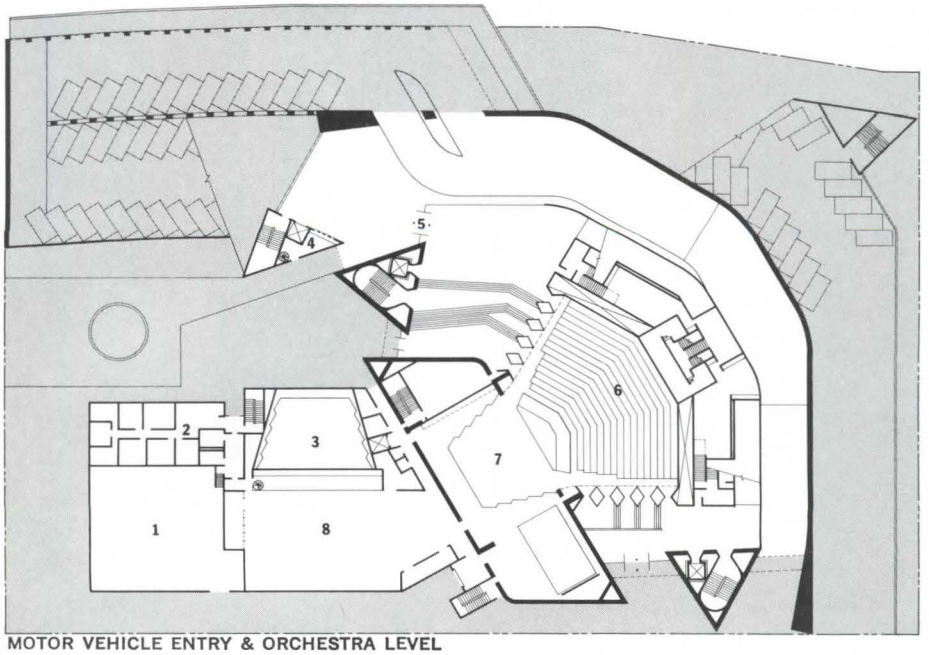
1 LOBBY
2 GRAND TIER SEATING
3 STAGE

GRAND TIER LEVEL



1 PLAZA
2 LOBBY
3 PARKING BELOW
4 ENTRANCE TO LOWER LEVEL PARKING
5 ORCHESTRA SEATING
6 STAGE

ORCHESTRA & LOBBY LEVEL FLOOR PLAN



1 WOOD SHOP
2 DRESSING
3 REHEARSAL
4 TICKET PICK-UP
5 AUTO DROP-OFF
6 ORCHESTRA SEATING
7 STAGE
8 PAINT SHOP

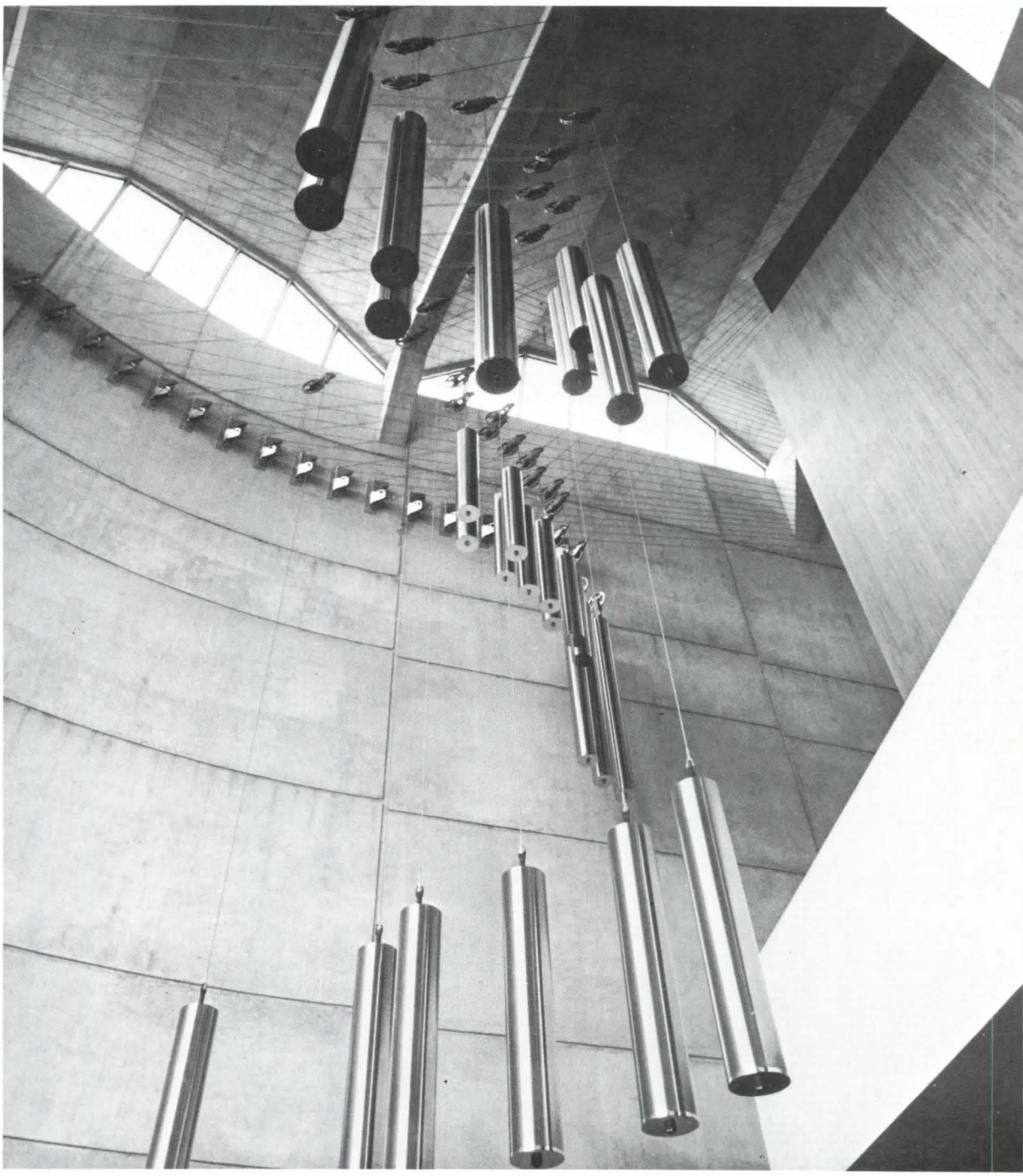
MOTOR VEHICLE ENTRY & ORCHESTRA LEVEL

It worked, I think, because the Akron Performing Arts Hall is a successful replica of current art—particularly minimal sculpture. In continuing that long historical precedent in modern architecture that says buildings should express only "themselves"—their essence—unambiguously, the Akron Hall takes its cues (even if the designers did it unknowingly) from another art form which has already reached the ultimate conclusions of that same impulse.

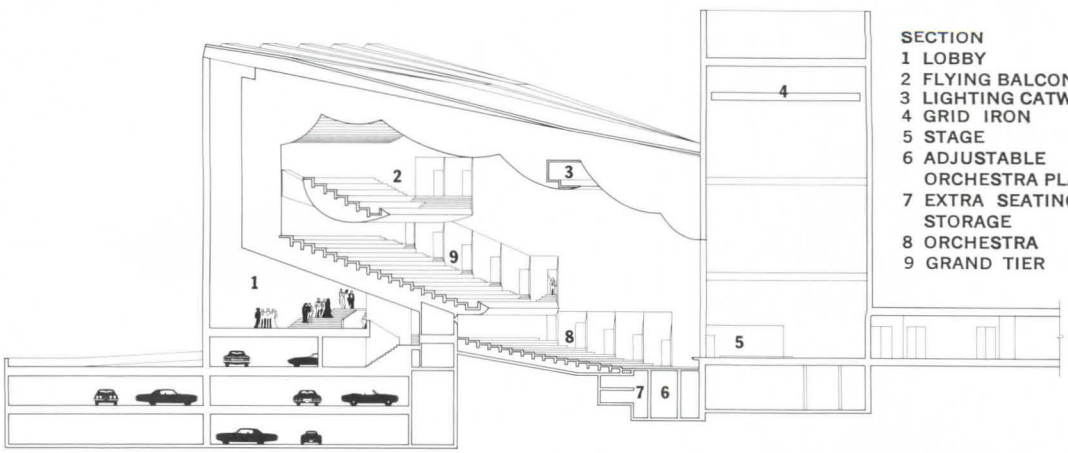
Outside, it is an insistently abstract arrangement of geometric shapes, none with right angles. Two stair towers, reading as triangular vertical tubes, and a massive back-stage block, a parallelogram in plan, have been composed like pieces of sculpture in front of a backdrop —the backdrop itself being the fourth minimal "piece": a massive concrete screen curving gently around the north and west sides of the whole building, running uninterrupted from ground to roof. Like a lens, it focuses on the pieces in front and blocks out completely what is behind—the vibrations, noise and seediness of several mainline railroad tracks. It is a two-sided building: one rejecting (and meant to be ignored), the other welcoming—from two directions simultaneously—both "town and gown."

The walls and roof of this four-piece group strain to disappear completely, as do the various floor levels that would tend to make it look more like "building" than sculpture. Floor edge spandrels are set deeply within the dominant planes of the stair towers, back wall and stage mass, receding from the viewer's notice. The folded-plate concrete roof is also set back in elevation, made as thin as possible to reduce its mass, and slants sharply to further shatter any reading of the whole as "stories" with a top. The walls between the objects are entirely of glass, and mullionless so that all that is seen are the sparkling stainless steel corner clamps joining panes, looking like random stars.

Inside, it is again abstractness that is perceived: Its space is that which is left over between independent objects. As such, the building tends to dematerialize walls, columns and fixed



The huge counterweights for the Hall's movable ceiling are revealed in the lobby, becoming more than decoration (above). Stairs and ramps of the circulation system are the principle shapes and contours of the space, on which people may promenade.



ceilings that are the traditional bases for the architectural organization of interiors. No paintings or hangings are applied to surfaces (these would acknowledge the existence of surface) and it is instead *movement* and paths of circulation—stairs, ramps, driveways—that dominate. The necessary rooms for managers, lighting equipment, dressing, scenery construction and practice are tucked away under the garden terraces outside, or under the main auditorium seating. In the suppression of rooms, a viewer's experience of the place is more dependent on "movement among" (things), than "standing within." This holds for the landscaped pyramids and stair patterns of the approach, the stair towers and stage block read as objects, and for the hall itself. From the lobby area, the hall is seen as the back edge of some huge object too; and inside, it moves as you watch. The hanging metal cylinders of stainless steel in the lobby are counterweights to the Hall's ceiling, again suspended objects in space, a metaphor for the whole.

As all the normal parts of architecture disappear in the Akron Hall—parts that have always been used to establish definitions and limits to space—we are left with space that is less defined than left over or implied. We fill in spatial boundaries for *ourselves*: literally and figuratively, space can be moved around.

The point of minimal sculpture is total abstraction, to produce objects reduced to their essence as art (for art's sake) so that a viewer in a gallery may not imagine the object to be anything but itself: unitary, whole, without ambiguity. It is isolated shape and form that minimal sculpture struggles to express, and nothing else: not surface, not spatial definition.

We have "read" the Akron Arts Center in a similar way, and the architecture clearly supports the reading: It works to a point. But in minimal sculpture, any association with emotions or with ideas beyond the "objecthood" of the sculpture, or with any outside meaning at all, is utterly inadmissible if the piece is to be seen as successful. Whereas with the Akron Arts Center, associations with outside issues permeate its presence.

It is of course our association of its forms with powerful tendencies in modern sculpture which makes it the symbol of culture it wanted to be. It is perhaps through such associations that it has been pronounced "the best." It is through "larger" associative and symbolic feelings that Akron sees the building linking town and university. Where the building, in a gesture purely symbolic, "edits out" the railroads and industry to which Akron owes its existence, then the Hall tries to be other than where it is, make Akron other than what it is (mostly), and emphasize dreams and preferences of people, more than facts.

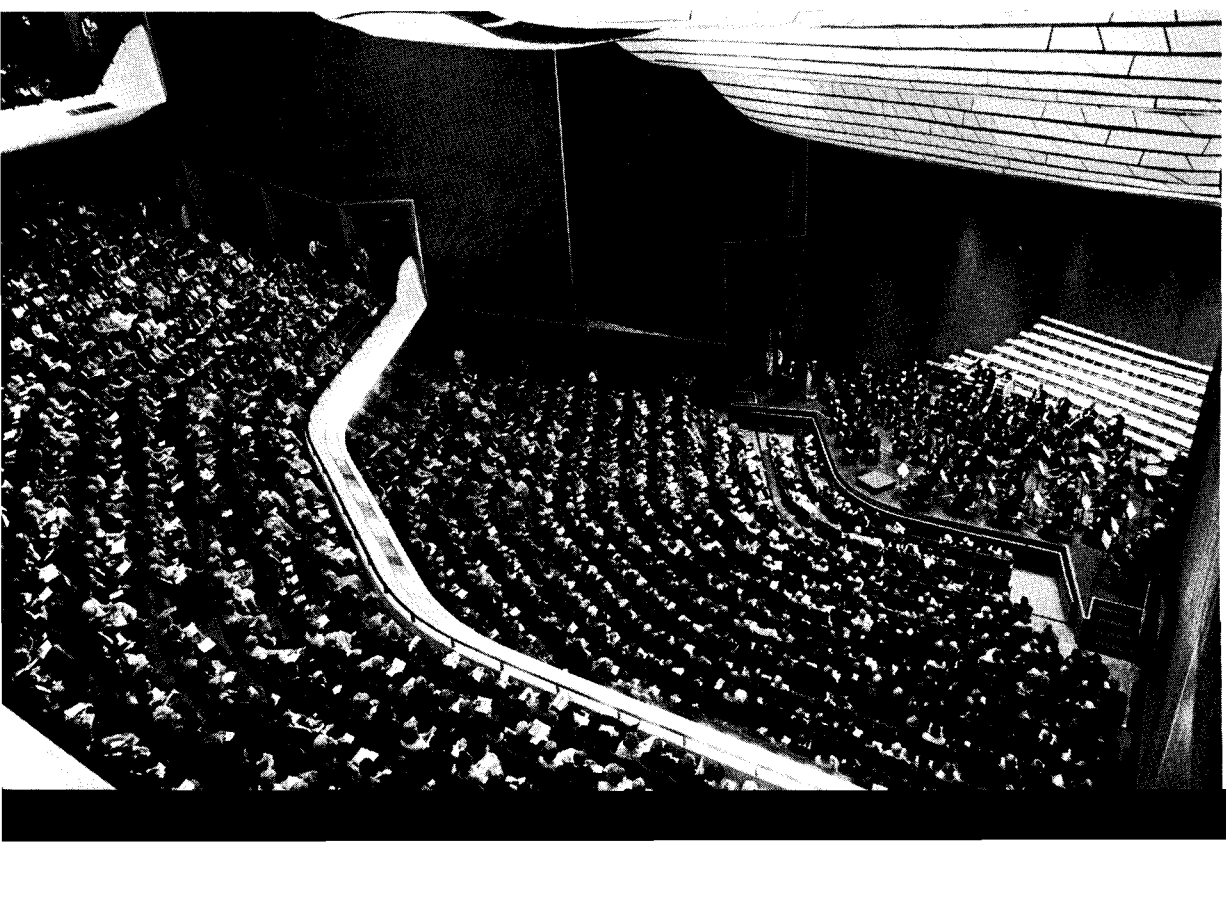
In trying to represent modern sculpture it has succeeded, through associational means, which *this* sculpture tries to deny completely. So it draws the distinction between sculpture and architecture: The first may be seen (if one chooses) as a commentary on a single intellectual abstraction from life, or a way of examining itself; the second cannot help but be swept into *daily* life as a participant, as much as a commentator. It can never be "pure," a complete reduction to essences in itself alone. This will become a larger contradiction as more and more, "advanced" current architecture—following its own historical impulses—tends to resemble the Akron Performing Arts Hall.

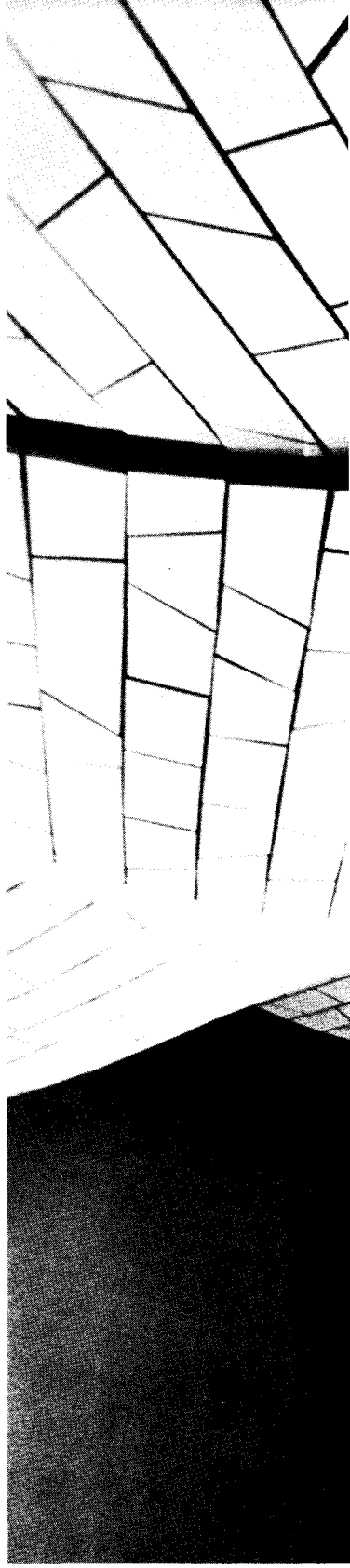
FACTS & FIGURES

Edwin J. Thomas Performing Arts Hall, University of Akron, Akron, Ohio. Owner: University of Akron. Architects: Caudill Rowlett Scott; Dalton, Van Dijk, Johnson. Job Captain: Charles Lawrence. Associate Architect: R.M. Ginsert & Assoc. Engineers: Dick Ginsert (structural); Scheeser and Buckley (mechanical); Kucheman and Varvaro (electrical). Consultants: George C. Izenour Associates (Theater Design & Engineering); Dr. Vern O. Knudsen (acoustical). Contractors: Mosser Construction (general); Spohn Corp. and Nova Co. (mechanical); John P. Novatny Electric Co. (electrical). Other: Architectural Graphics, Inc. (graphics); Mid-State Ornamental Iron Co. Building Area: 282,448 sq. ft. Construction Cost: $11,200,000.

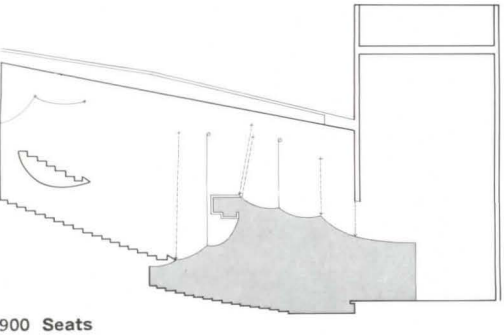
For a listing of key products used in this building, see p. 79.)

PHOTOGRAPHS: Robert Wilkey, pages 64, 65.

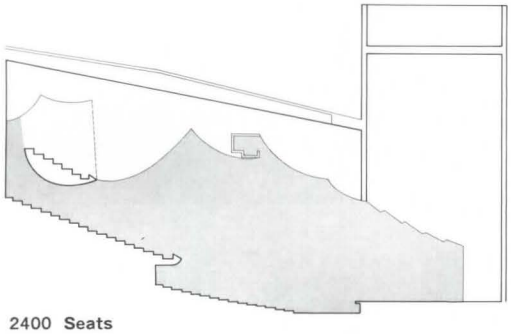




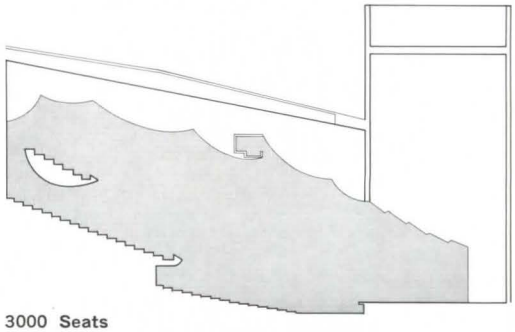
The three seating configurations of the Hall are shown at the right: 900 seats, 2400 seats and 3000 seats. The movable ceiling consists of a series of catenaries formed by metal panels on a cable suspension system. Interior walls of the hall are wood over wire mesh, opaque but acoustically transparent, and heavy velour dampening curtains may be lowered behind them to adjust reverberation time. Seventy-five musicians may be accommodated in the orchestra pit, and the stage size is adjustable.



900 Seats



2400 Seats



3000 Seats

ART CENTER AS ANONYMITY

This reddish-brown brick building hugging the *Iowa land* is a boon to both students and the community

BY EDWARD K. CARPENTER

As you come to the entrance of the Fine Arts building on the Drake University campus in Des Moines, the building stretches away to your right, straight and repetitious like the Iowa landscape. Harry Weese & Associates, who designed it, meant it to be long and narrow to define that edge of the campus and, more precisely, to contain the eastern edge of what will be a walk-crossed, open square separating Fine Arts from the new law school (being designed by Edward Larabee Barnes).

"We could have massed the building at one end of the site," explains Ben Weese, "but by stretching it out we provide a backdrop for the campus."

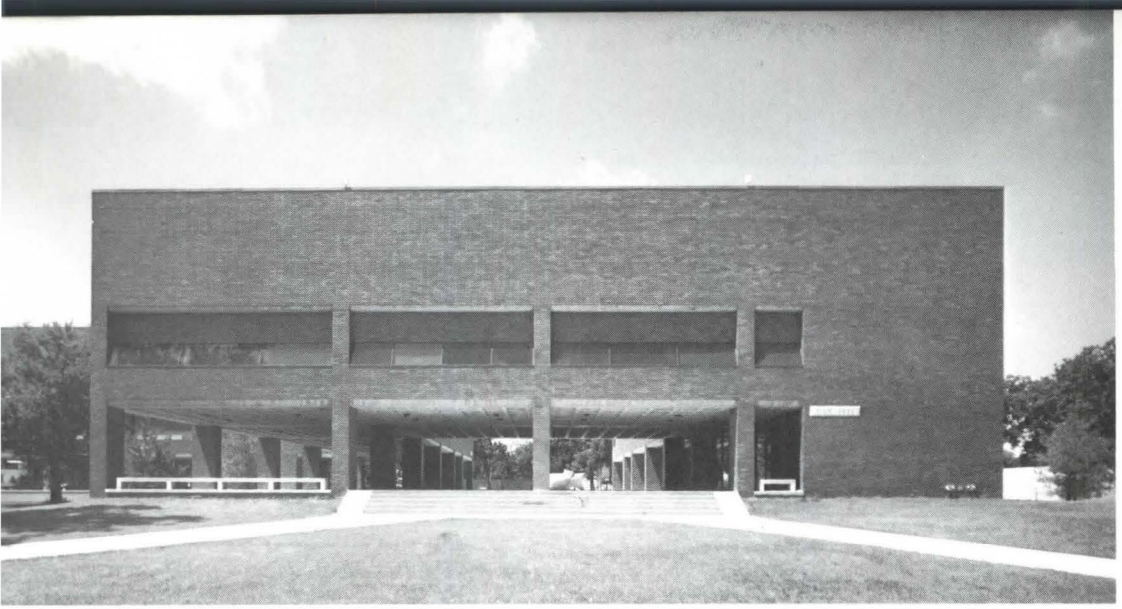
Mr. Carpenter, a Correspondent-at-large for The Forum, is an architectural critic.

The three story building's reddish-brown brick blends handsomely with both the campus beyond and the Iowa land beneath it. And although its blend lends it anonymity, that very understatement is a refreshing change. In the 1960's, these multi-purpose arts centers (called cultural centers then, in a reminder that art represented culture) were splashy, more flamboyant almost nouveau riche, as if the city commissioning a cultural center had just discovered the culture it was about to center. In the 70's, the emphasis has changed. The buildings have been toned down, indicating, perhaps, that culture is part of life again, perhaps even that it is here to stay. Another shift, also mirrored in the Drake Fine Arts building, is the location of these structures. Once splashed downtown where their floodlit facades were on display like spats and a cane on Fifth Avenue, they are now being tucked away on university campuses.

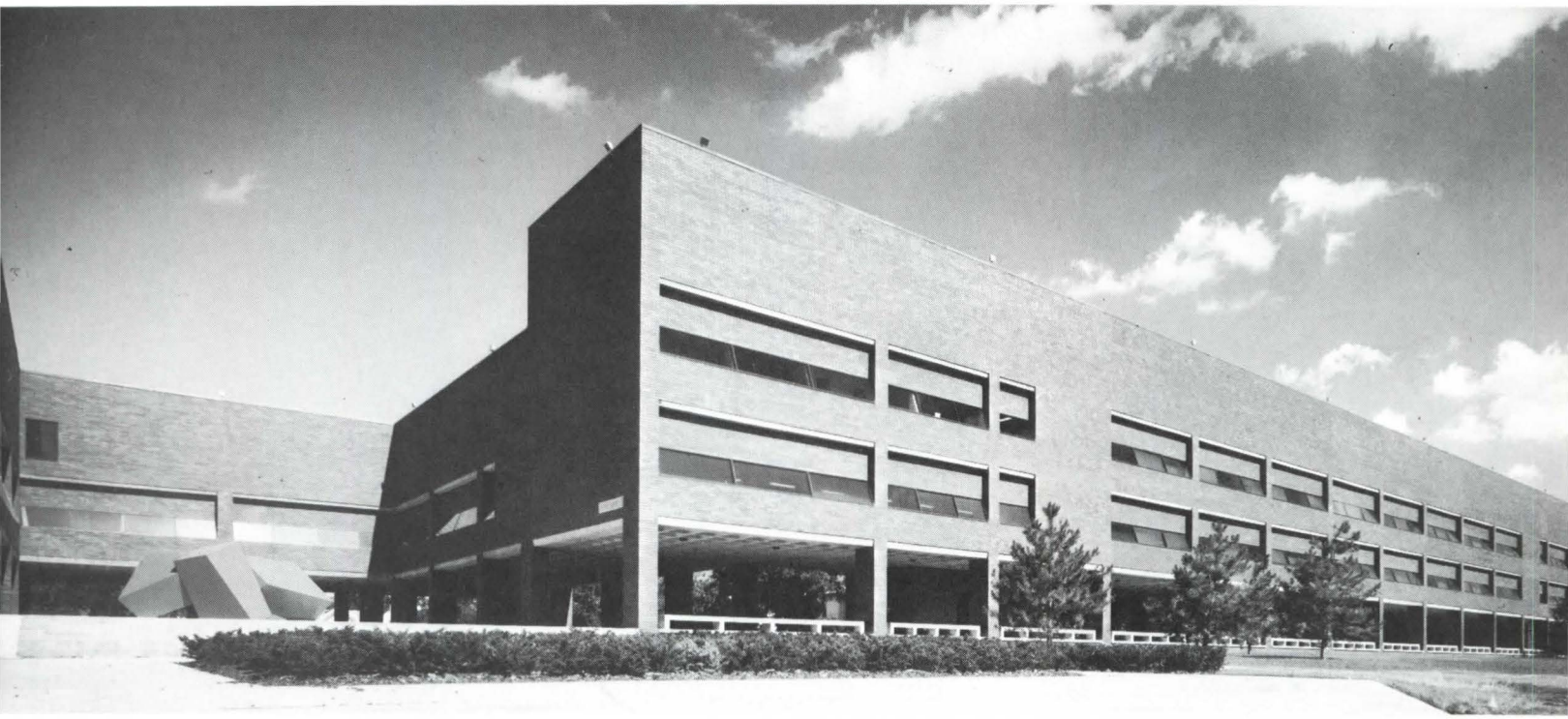
Economically this segregation makes sense. For universities can make these buildings serve educational functions. At Drake the Fine Arts Building houses classrooms, workshops, and offices for the departments of drama, fine arts, and music. But it also serves the community.

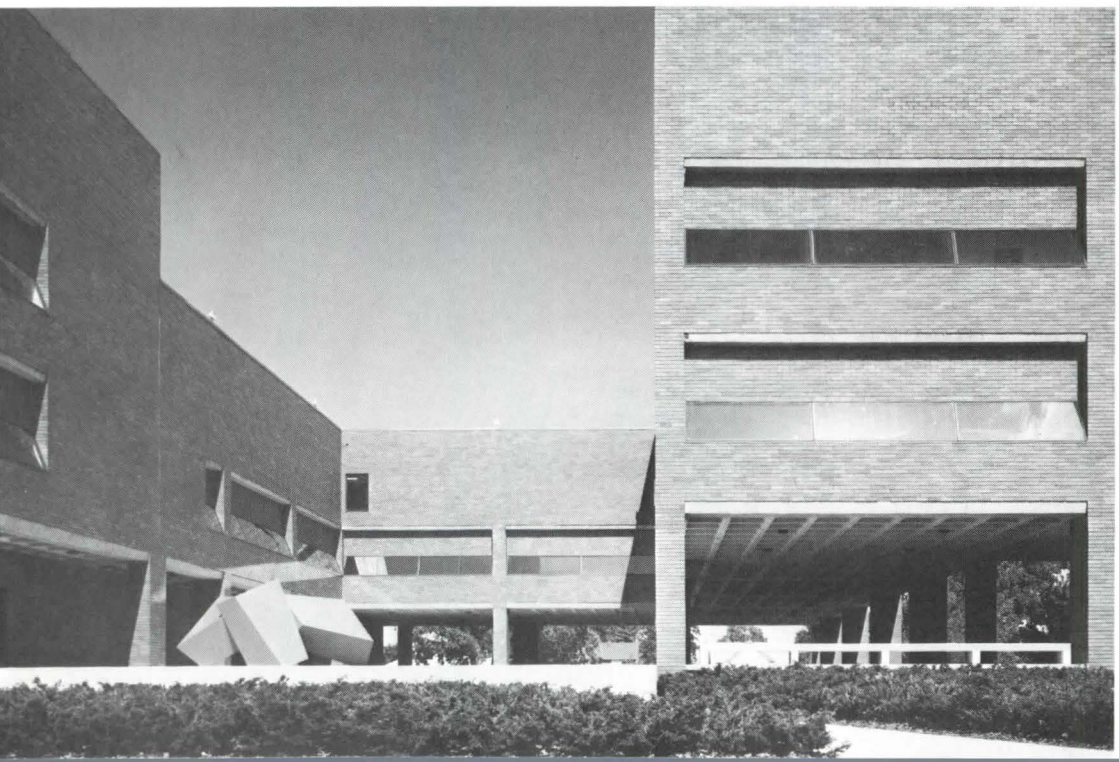
Easily, the nicest feature of the Weese building is its 700 seat auditorium adaptable for either concerts or drama.

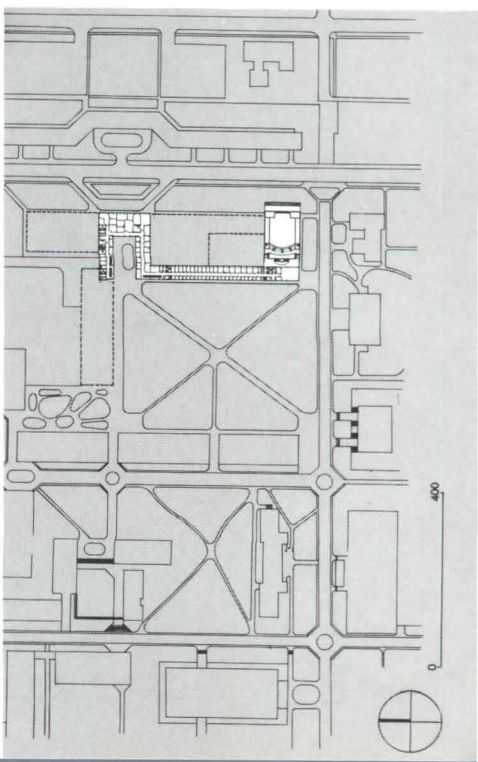
For drama, a proscenium arch folds down from behind a ceiling panel and fits into slots on the side of the house at the bal-

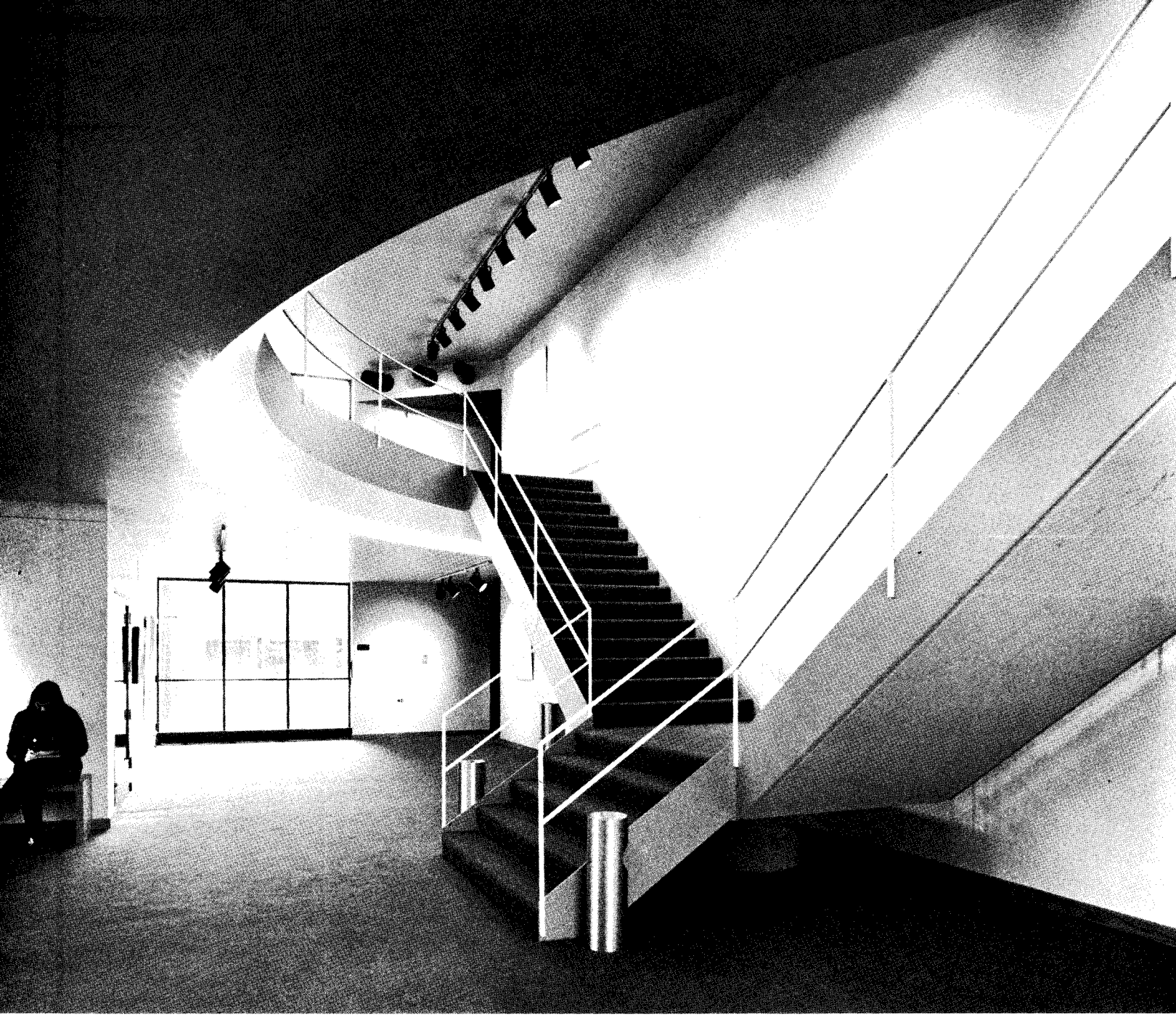


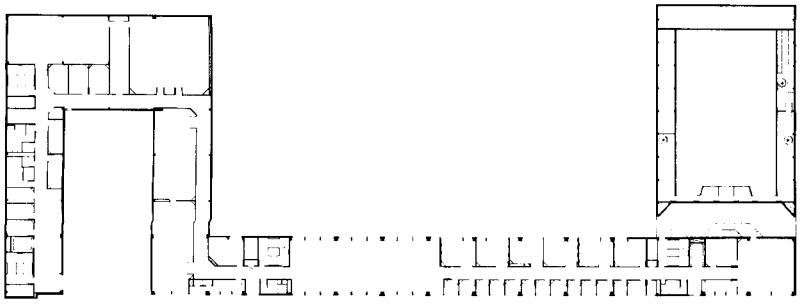
Almost the entire thrust of the Drake Fine Arts Center is horizontal. Its windows are horizontal; the unbroken bands of its brownish-red brick, which stretch parallel to the ground between stories, are horizontal; and its uninterrupted flat roof line is horizontal. Only the narrow columns framing its cloistered ground level walkway are vertical and when twice on the front facade space between windows allows a broader band of brick to stretch upward, the effect is merely to anchor the building visually to the ground. All this horizontality was carefully planned so that the building would define the space at one end of what will become an open square on the Drake campus.











cony level. For music, acoustical panels, to the rear of the sunken orchestra level and on the sides of the auditorium, are adjusted and the proscenium arch folded back into the ceiling. Above the orchestra pit, at the front of the hall is a pipe organ.

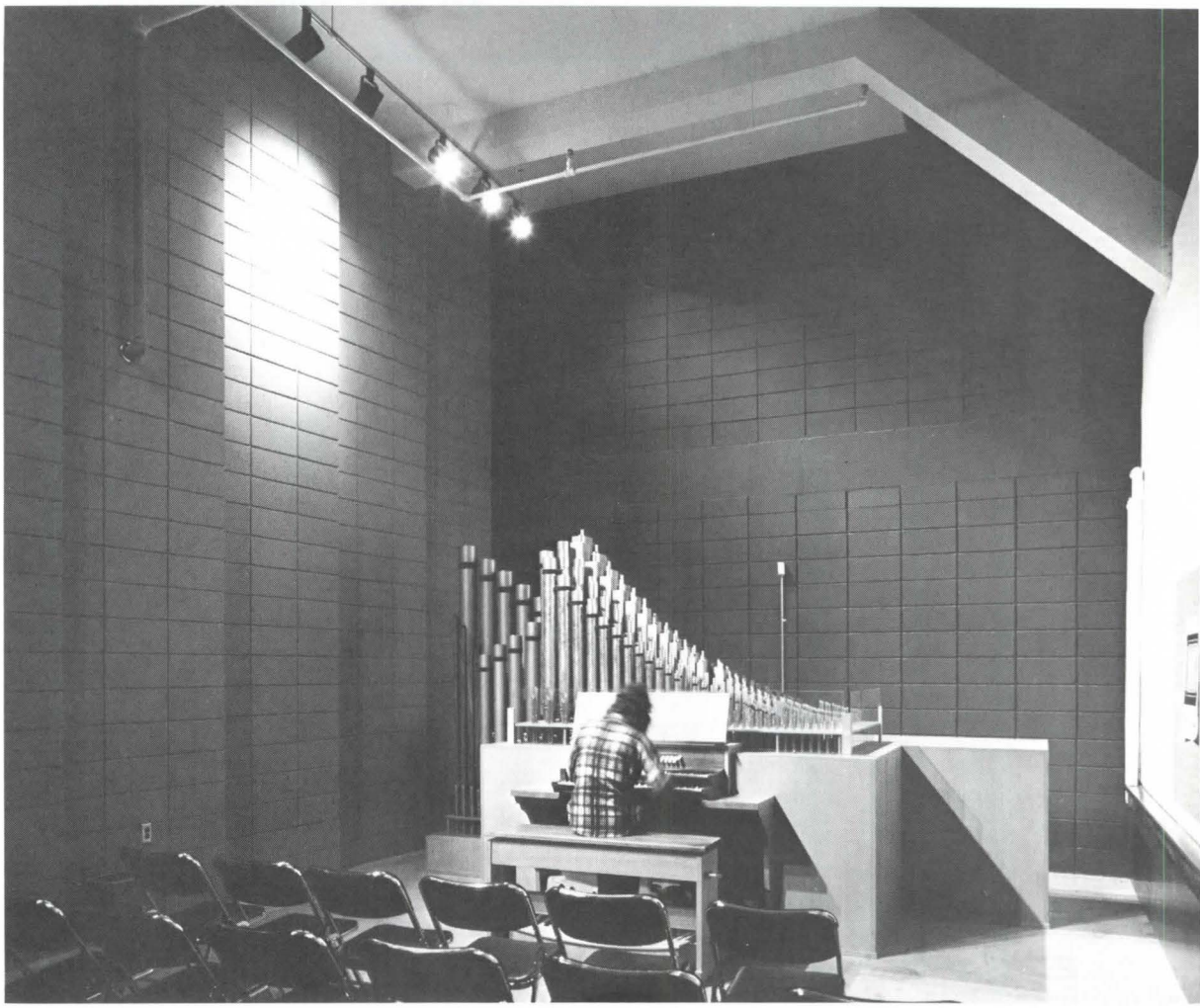
All this is bathed in tones of brown, in keeping with the earthy, unassertive appearance of the rest of the building. You come away with the feeling that the auditorium is a place where you could spend a lot of time without tiring of it.

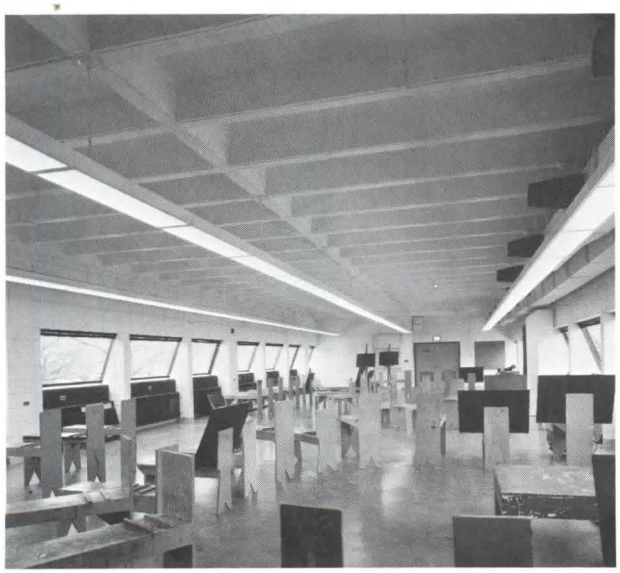
The balcony is a bridge, open in back as well as in front so sound is not trapped in a dead space above it. This is the device Adler and Sullivan used in their auditorium-theater for Chicago, which the Weese firm restored (FORUM, November 1965, p. 29). The rear wall of the Drake auditorium is lined with slats of cherry wood; an acoustical consideration becomes an esthetic one.

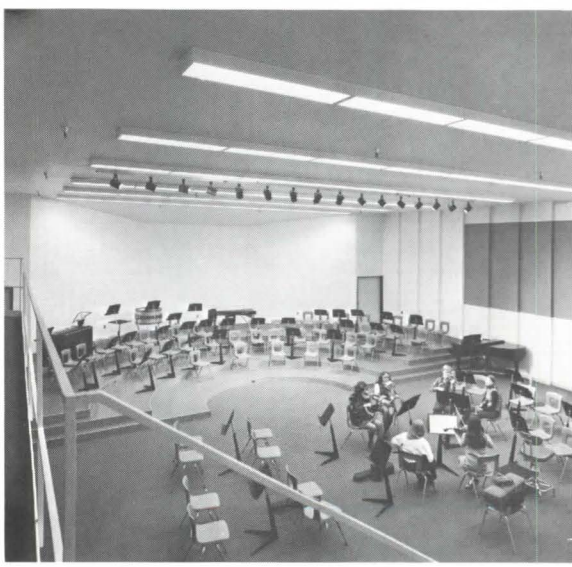
For drama the hall has limitations—for one thing, no wings. Props, scenery, and other stage paraphernalia must be stored at a basement level and brought up by elevator. While this might be a serious drawback for grand opera, it is a minor for today's dramatic productions.

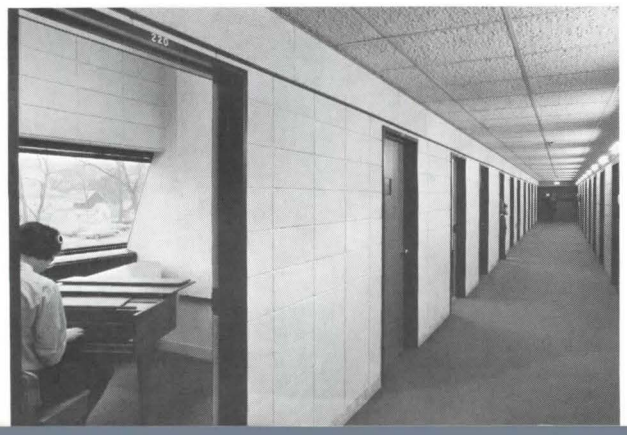
Seen from the outside, the auditorium is an appendage at the south end of the building meeting it at a right angle. To balance this mass, Weese takes the opposite end of the building through a convolution, a squared-off U attached to the other end of the length of the main wing. The center of this U is an open courtyard with a bright orange Rosario sculpture in it. One end of the U can be extended west towards the new law school—if funds permit it.

Already there are signs within the building that expansion is needed. Open since the fall of 1972, it is bulging with the personnel and materials of the three departments it houses. Along the long corridor of the main front wing are the tiny rehearsal rooms of the music department. Studio-like, each has a horizontal window canted inward at the top, a favorite Weese detail. This cant breaks up the rigidity of the facade but inside has little effect on the Spartan atmosphere. Rows of single fluorescent tubes in metal reflectors line corridors. Ceilings are acoustical panels.

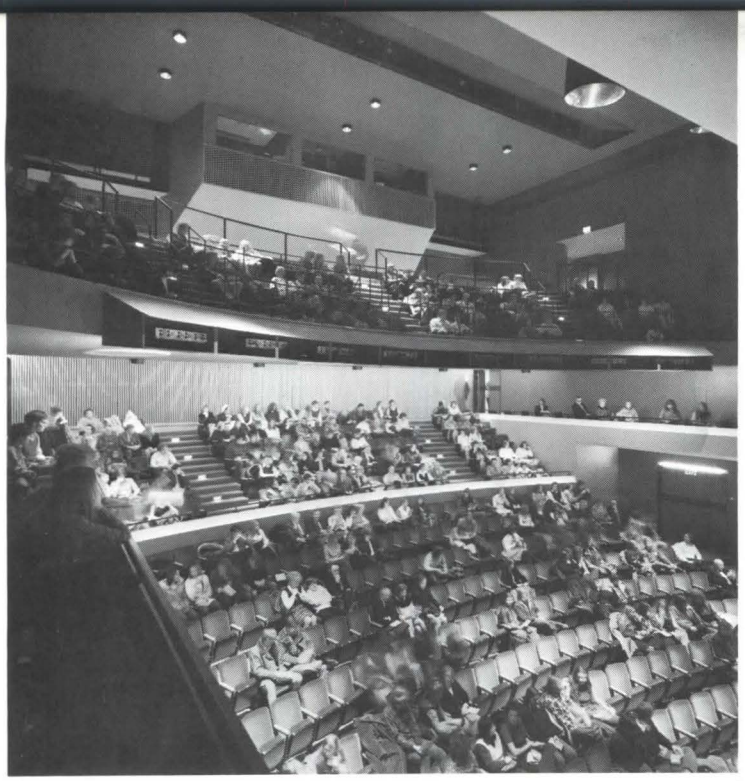




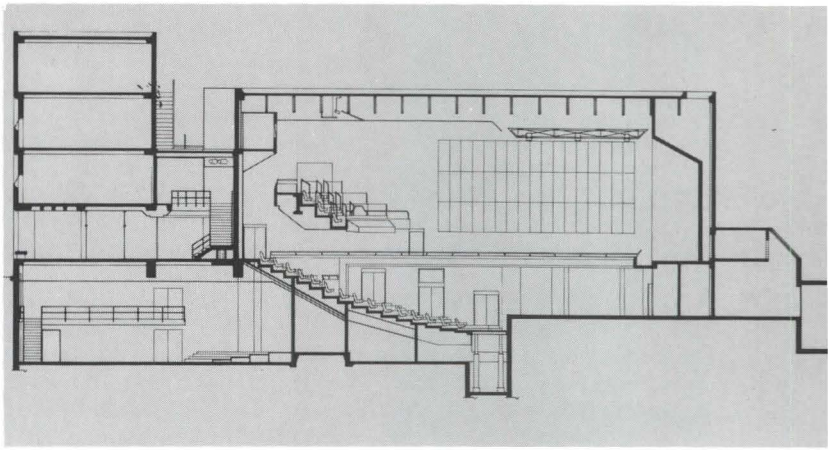


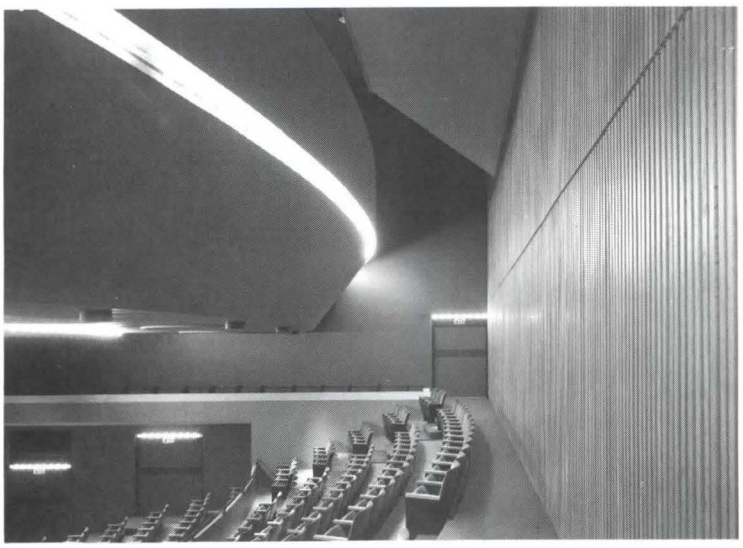


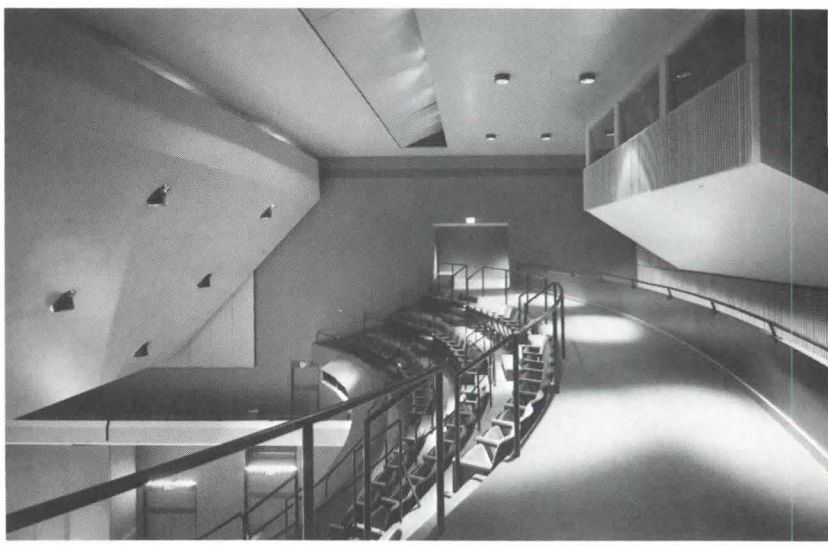
Three university departments, drama, music and fine arts, crowd into the Drake Fine Arts Center. And the splendid auditorium with its art filled entrance lobby is available for both student and community use. Corridors along the long element of the building are lined with small practice rooms. Ends of upper corridors have been closed *off and are used as* painting and sculpture classrooms. Below grade are larger rehearsal spaces for drama and full orchestra or band.



Drake Fine Arts Center's finest feature is its 700 seat auditorium. Its continental seating is done in light brown and walls and floor are deeper brown. The effect is one of quiet and dependability, and it lends the hall an aura one associates with a dear friend. Architects Harry Weese & Associates avoided splashy colors purposely because they wanted the hall to be one which people would return to with pleasure, and in doing so never tire of. A proscenium arch and curtains fold down from behind lighting on the ceiling to convert the orchestra pit into a stage. Three rows of seating at the front can be added or taken away, by recessing them into the floor.







And in the fine arts section, where easels and benches are set up in closed-off corridors, walls are cement block. This close-budget effect might have been even more utilitarian had not Weese eliminated ductwork by forcing hot air through blue nozzles that protrude from walls near the ceiling.

Most of the ground floor is kept open, so you will see through the building, upon approaching it, to what will become landscaped space. Right now the structure is surrounded by white frame houses, mostly owned by the university; these will come down as soon as new buildings are ready to accommodate the classes, laboratories and offices they now shelter.

Drake has been an Iowa institution since 1867, but it is only in the last 30 years that its campus has become an architectural showcase.

The new Fine Arts building fits the mood of the campus splendidly. And that is hardly an accident, for Harry Weese has been working on and revising the campus plan for over a decade. His contribution to Drake goes back even further, and the University's commitment to superior architecture even further than that. Saarinen did a dining hall and dormitories there after the war, and in 1965 Weese added to the dining hall and built a dormitory cluster of his own. In 1963 Meis van der Rohe built a school of journalism, a wonderfully quiet two story building with a inner landscaped courtyard. And elsewhere on the campus are very decent buildings by local architects. The Weese plan brings order and openness to what is now uncrowded clutter, suggesting few somewhat larger buildings where there are now many small ones. To be completed in 1974 is the new Student Union, designed by the Weese office, a striking fortress-like structure that will dominate the center of the campus.

But if the Student Union is dominant, the Fine Arts building is calmly efficient, containing and defining its corner of the University territory with little fuss and no brashness.

As easily as it delineates space, it illustrates today's conception of the performing arts center—competent and unostentatious, a building to be used and respected. It goes a long way towards making the Drake campus even more striking than it was. And as the citizens of Des Moines fill its auditorium to hear a traveling performer, it will be quietly strengthening the relationship between the campus and the community.

FACTS & FIGURES

Fine Arts Building, Drake University, Des Moines, Iowa. Architect: Harry Weese & Associates, Inc. Job Captain: Ben Weese; E. Freese. Engineers: The Engineer's Collaborative (structural); S.R. Lewis & Associates, Inc. (mechanical & electrical). Landscape Architect: Joe Karr & Associates. Interior Designer: Harry Weese & Associates, Inc. Consultants: Lustig & Associates, Inc. (theatre & stage); L.S. Goodfriend & Associates (acoustics). Contractors: Hawkins Construction Co. (general); Keating-Continental Mech. Corp. (mechanical); Brown Bros. Inc. (electrical). Building Area: 130,000 sq. ft. Land & Site Development Cost: $30,000. Construction Cost: $5,050,000. Furnishing & Equipment Cost: $250,000. Fees: $300,000. (For a listing of key products used in this building, see pg. 79.)
PHOTOGRAPHS: Orlando Cabanban.

FACETS

(*Continued from page* 19)

ENERGY

SUN CITY

"Why those curves?" "Why those shiny surfaces?" "Because that's the way it functions best," answer Raymond D. Snowden and Steven Lee Kinzler who have been honored with the $5,000 national award in the 1973 thirteenth annual Reynolds Aluminum Prize for architectural students. Snowden and Kinzler, fifth year students working with assistant professor James Lambeth at the University of Arkansas, designed a pre-fabricated solar living unit utilizing aluminum structurally and to capture the sun's rays for heating and electrical energy. A pre-fabricated solar mechanical system of thin aluminum bonded to transparent plastic to form a concave mirror would reflect the sun's rays into a solar collector. Steam created in the collector would drive an electrical generator and provide energy for the living unit.

Designed for low-rise medium-density situations, the one-, two-, and three-bedroom modules are to be pre-fabricated. Trucked to the site and assembled there, the modular units would be constructed of studs and beams sandwiched with foam insulation and an aluminum skin. These mobile modular units are designed to be used as additive components in which the primary module contains the living, dining and kitchen areas on the lower level and one bedroom and bath above. By adding modules laterally the unit can be enlarged to a two bedroom version with the second bedroom on the upper level and a study below, and a three bedroom unit having the additional bedroom on the lower level and a study above.

Each unit is focused towards the large reflector which also serves as the major source of natural light for the double height interior space. The aluminum and plastic surface of the reflector acts as a one-way mirrored window. Since the sides of the modules are without windows, no modification is necessary when they are grouped together in one unit or in larger numbers as row houses. Though they are entirely self-sufficient, the modular units are ideal for multiple linear planning in which they become true solar streets—a sun city.

The American Institute of Architects, which administers the award program, considered the scheme "commendably advanced towards its technical feasibility for regions of high solar indices." The design demonstrates excellence in three areas the AIA jury said: "The design of a housing unit solution through the use of simple modular units using a combination of three- and two-dimensional units, a competent use of these units to develop clustered planning forms on a community scale, and an approach to a significant energy/ecological problem through use of the built form as a solar energy device." As Steve Kinzler remarks, "the mass of man's habitations are the forms requiring this enormous energy drain." What we need to do is "accept the energy. Channel it. Contain it. Store it or utilize it. That's all (folks)."

ENERGY CONSERVATION WINS

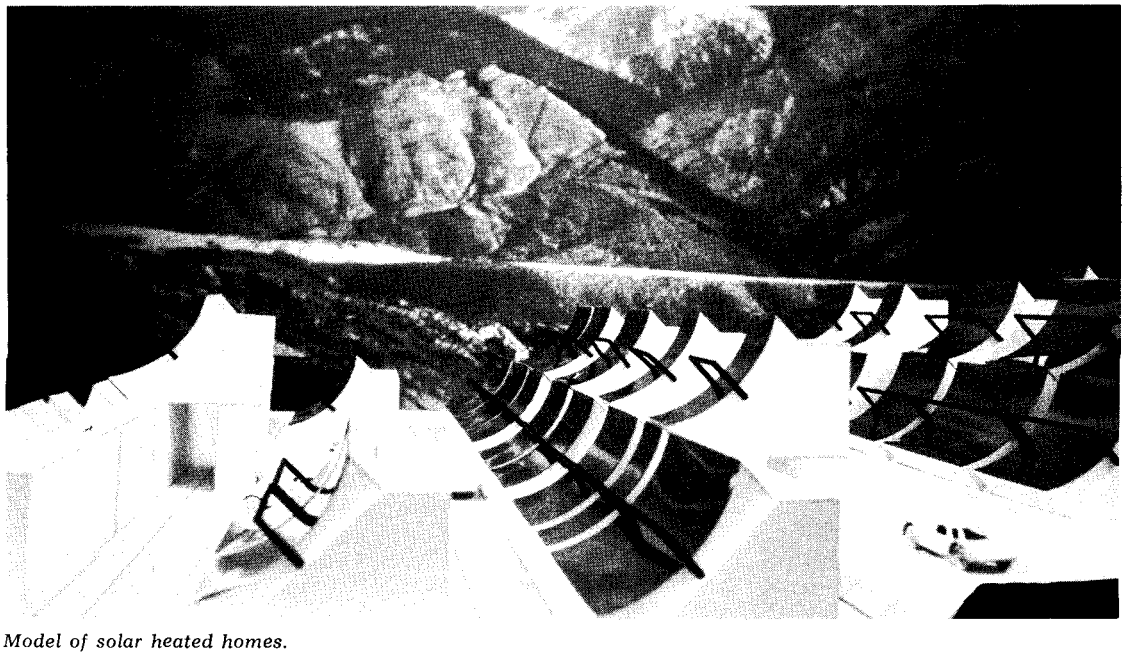
Owens-Corning Fiberglas Corporation issued its second annual awards to buildings whose designs were calculated to conserve energy and reduce environmental pollution.

In giving the awards, the jury noted that no single project incorporated all the energy conservation features that should be considered in any given building, and in their report they offered a checklist of 13 energy saving considerations. Here they are:

1. Building orientation and window to wall ratio.
2. Task lighting in place of uniform lighting.
3. Use of heat recovery equipment.
4. Dual-level lighting systems with a central control that will allow lighting level to be lowered while the building is cleaned.
5. Automatic occupancy sensors to regulate mechanical systems.
6. Lower makeup air quantities achieved by charcoal filters.
7. Berming to reduce heat loss and gain.
8. Wider use of solar energy for both heating and cooling.
9. Optimum use of insulation and other materials with high thermal values.
10. Recycling of products and buildings should be more widely considered.
11. Reevaluation of high level lighting in schools, offices and stores.
12. Architects and engineers must encourage the research and development of new energy sources.
13. One submission was the design of an open sports' pavilion, naturally lighted and ventilated, in response to the owner's original request for an air conditioned enclosed space. The initial investigation to determine whether an artificial environment was in fact needed, or at least if it could be only partially relied upon, should be the first effort of any designer who is seriously concerned with energy conservation.

Awards were given in three categories:

Commercial. Skidmore, Owings & Merrill San Francisco office's design of the Weyerhaeuser World Headquarters Building, Tacoma, Washington, (FORUM, March 1972) contains several energy saving features. The 360,000 sq. ft. building has a low profile and, as a result,



Model of solar heated homes.

a lower ratio of exterior wall surface than conventional office buildings.

Windows are also protected by long overhangs—cutting summer heat gains from direct sunlight. Weyerhaeuser heats and cools the building with an all electric heat recovery system, using double bundle chillers and storage tanks. The system simultaneously supplies chilled water for cooling and dehumidification, and hot water for heating. Excess heat is reclaimed and stored in the tanks and heat levels are constantly monitored by an automatic control system. Moreover, the use of specially designed open, low brightness, baffled light fixtures is said to cut the amount of power needed for conventional lights by 30 percent.

The new fixtures give 75 foot candles of light at desk height with only 2.8 watts per sq. ft. compared with four watts per sq. ft. in many office buildings. According to a study by the Puget Sound Power and Light Company, the cost of the first year's electrical operation was $74,753 or 21.35 cents per square foot per year—an average of 39 percent less per square foot per year than in comparable buildings in the area.

Institutional. The Smith, Korach Hayet, Haynie Partnership, Miami architects, were cited for the Boca Raton Community Hospital. They devised and later patented what they call Unitized Air Conditioning Modules, which are said to save $24,230 per year in heating and electricity costs. They permit an optimum number of air changes per hour at the proper temperature and relative humidity. And according to the hospital, the system requires 100,000 CFM of outside make-up air and 370 tons of air conditioning. This represents a 300 ton savings over a conventional system requiring 87,500 CFM of outside make-up air and 670 tons of air conditioning.

Industrial. The Lynn Utilities Operation of the General Electric Co. won industrial honors. Its in-house, combined-cycle generation system will burn two million gallons of fuel less a year than did the plant's previous configuration. The operation produces steam for testing aircraft engines, turbines and ship propulsion equipment.

Honorable Mentions went to: Cambridge Seven Associates, Inc. who in association with Arthur D. Little Inc., designed a solar heated and cooled office building for the Massachusetts Audubon Society; The Architects Collaborative Inc., for the Thomas Glass Factory, Amberg, Germany, where the intense heat of glass making is exhausted from the factory's 54 ft. A-frame roof; to Unthank Seder Poticha, Architects, for the Oregon State Board of Higher Education's Recreational Facility, designed to avoid complete enclosure of rooftop tennis courts.

Jurors for the competition were: Professor Gillord Albright, Department of Architectural Engineering, Pennsylvania State University; Ronald E. Aspgren, Chief Corporate Architect, Montgomery Ward, Chicago, Illinois; Robert B. Hollister, Vice President and General Manager, Turner Construction Co.; Frank M. Lebman, President, Synergo Co.; Walter A. Meisen, Assistant Commissioner for Construction Management, Public Buildings Service, General Services Administration; Jack Vincent, Mechanical Project Engineer, Energy & Process Systems Division, VIN Consolidated Inc.; James E. Wheeler, President, Wheeler and Stefoniak, Inc.

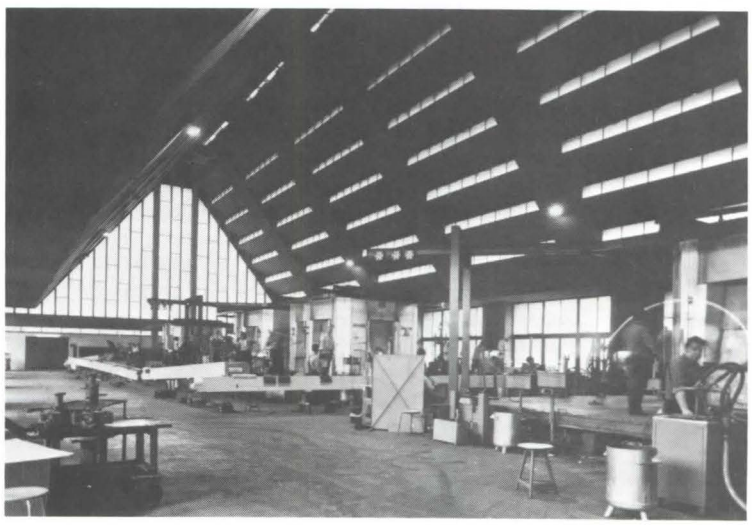
AWARDS

At a fall meeting of the Boston Society of Civil Engineers "William LeMessurier, by his innovative and superbly qualified work as a structural engineer, has developed methods and improved the economy of steel framed construction on a national level," said Joseph S. Jones, member of the American Institute of Steel Construction Board of Directors in presenting the AISC Special Citation Award. (The award recognizes individuals outside the stuctural steel fabricating industry who have made outstanding contributions to the advancement of steel framed construction.)

Mr. LeMessurier, whose firm, LeMessurier Associates/SCI, is in Cambridge, Mass., was one of the originators of the staggered truss system for steel framed buildings. Among his recent work are the Federal Reserve Banks of Boston and New York.

Weyerhaeuser World Headquarters.

Boca Raton Community Hospital.



Thomas Glass Factory.

Oregon State Board of Higher Education. Recreation Facilities.

TRANSIT

ROADS AND RAILS

President Nixon signed a compromise Federal-aid Highway bill on August 13th, opening up more funds for mass transit than at any time in our history. Out of $22.9 billion for highways to be expended in 1974-76, the 1973 Highways Act provides $200 million for buses in fiscal 1975; $800 million for any mass transit in fiscal 1976; and over $5 billion for controversial interstate highways to be used on any urban mass transit.

Though this is a major breakthrough, there is a lead lining in this silver cloud. In Chicago, Mayor Richard J. Daley wants the $1 billion Crosstown Expressway, but it is opposed by many, including Gov. Daniel Walker, who thinks the money would be better spent on the decaying CTA. While local politicians favor mass transit in Washington, D.C., the congressional committee controlling city finances opposes it. In Boston the windfall has overwhelmed the Massachusetts Bay Transportation Authority (MBTS) which can now do in ten years what it hoped to do in twenty, including a $200 million tunnel for trucks and taxis between Boston and Logan airport. A taxi tunnel is mass transit?

DESIGN

COMMUNITY SPACE FRAME

Subtitled an "Integral Approach to Urban Development" by Kenneth R. Schneider and Gene Zellmer, this study outlines a comprehensive solution to urban congestion, pollution, and suburban sprawl. The authors conceive of the city as design in three dimensions, comparing its design to a tree with services at the base, on ground level, linked by elevators to the upper community. An ideal community, they contend, would contain 7,500 people requiring 1000 sq. ft. per person, including dwellings, commerce, community facilities, industry, utilities and parking. All of this would require only 30 acres.

Schneider and Zellmer often cite Rockefeller Center as the most fully integrated horizontal and vertical transport system in the United States. However, their communal village is more closely akin in character to Italian hill towns and the villages of Thomas Hardy's novels; (Hardy, you may recall, started out as an architect); towns focusing on a piazza or green.

Schneider and Zellmer allow no suburban sprawl, rather they insist on a sharp break between urban and rural life, with the community looking out over surrounding farms, garden plots, forests and lakes, as Siena rises isolated above the surrounding countryside. The contrast is heightened through design so that every home, apartment and public space will be judged by its views as well as cubic space.

The individual living units are focused on family centers, cooperative, semi-private areas. These centers would provide communal day care, play areas and contain the major appliances which today are the source of much frustration for the individual home owner (the washer, dryer etc.). The family centers in turn would relate to the central piazza of the village. In a sense, the community is governed from this piazza, for here a democratically elected council meets, a concept developed to a high degree by the ancient Greek City States and Medieval Italian communes.

Though the community space frame appears to be limited to small separate towns, the authors believe the concept is capable of meeting the needs of a metropolis of 1,500,000 people by clustering space frames over an area of 200 square miles. Governmental centers, universities, and manufacturing would be interwoven into 15 clusters composed of 200 space frames. The individual space frames and clusters would be linked by a varied transit system. An important key to the operation of a metropolis space frame cluster is a highly developed system of non-vehicular transport for the movement of goods, ranging from a pneumatic tube system for small parcels to conveyors and tunnel railroads for larger items. All of this has its antecedents in the Renaissance and the 19th century, but it has only been realized fragmentally in Paris, Chicago and New York.

Could the community space frame become a reality? Schneider and Zellmer believe that it would have to be created piecemeal according to a master plan through a development corporation. They cite the "new town" of the New York UDC on Welfare Island. Clusters of a new metropolis could rise within 20 years as existing buildings are phased out in an urban area. Certainly new towns of the communal village type could be constructed near existing urban centers.

The authors use the pedestrian as starting point for the concept of the community space frame. Their concept is tied to a hierarchy of movement: walking, short range vertical and horizontal travel, then rapid transit between clusters and other cities. The automobile is relegated to a use frequency of the speed boat, a return to the concept of a sports vehicle common to the early years of this century. By drastically downgrading automobiles, the authors believe urban life will become manageable. Their basic concept is that urban scale must be related to comfortable walking distances. Only when that limit is reached do other means take over. Schneider and Zellmer's communal space frame is in tune with the way man has lived for thousands of years. Should we give it a try again?

The Community Space Frame is published by the University of California at Berkeley.

FRONTIERS

ULTIMATE MOBILE HOME

Before the Alaska pipe line was approved, BP Alaska, Inc. and architects Wallace, Floyd and Ellenzweig of Cambridge, Mass. were at work on a $20 million 95,000 sq. ft. Arctic "mini-city" where 140 people will oversee operations of BP's Prudhoe Bay oil fields. With temperatures falling to minus 70 degrees and winds to 100 mph, this operations center had to be designed with as much care as the life support system of Skylab.

The "mini-city" consists of two units, a composite building linked by a 40 ft. utility corridor to a service structure. The complex, totally electric, has its own 15,000-gallon sewage treatment plant, a water treatment plant and two 500 kw power generators. Three one million gallon water tanks and two 200,000 gallon diesel fuel tanks support the service system.

Heart of the city is the composite building which contains the Main Operations Control complex, brain of the total oil production facilities, and living accommodations for the 140 workers. Two stories of 70 16 by 20 ft. bedroom suites, each with two separate sleeping areas and a common bath, overlook the central recreation area measuring 50 by 200 ft. The recreation area, carpeted in astro-turf, contains a 20 by 40 ft. swimming pool, which doubles as a reserve for fire fighting, and a 40-ft.-square garden of plants indigenous to Alaska. Grow-lights supplement the sparse Alaska winter sunlight admitted by the transparent truss roof and triple glazed 50 by 24 ft. windows at the ends of the recreation area. A game room, sauna, library, and theater round out the amenities, plus a cafeteria, medical center, laundry facilities, offices and telecommunication monitors for the oil field operations.

Modules on way to Prudhoe Bay, Alaska.

Robert Cooke, project architect, says "Because of higher construction costs in the remote areas of Alaska, and the rigors of the climate, it would have cost us considerably more to build comparable structures on-site." Therefore the complex was built of five gigantic modules and smaller elements by General Construction Co. of Seattle. The five 40-ft.-high modules, aerodynamically designed to resist snow drifting, are constructed of steel, concrete, and APA grade-FRT (fire resistant-treated) plywood. The modules rest on skids or support units measuring 125 ft. by 50 ft. wide and five ft. high on eight ft. trestles built by Brown and Root in Houston. The support units and trestles were hauled from Houston through the Panama Canal to Seattle. Cooke chose FRT plywood sheeting for the eight inch outer wall of the living unit to "meet critical insulating parameters as economically as possible, as well as the structural capability to withstand the rigorous transportation requirements." The walls have an interior vinyl covering over two thicknesses of wall board, a one inch layer of urethane insulation, a ½ inch sheet of FRT plywood, plus a six inch stud wall containing two more inches of insulation and another layer of ¾ inch plywood.

The five assembled modules were transported by barge to Prudhoe Bay, some 3,500 miles, during the six weeks when the Arctic coast is ice-free. They were then walked by specially designed crawlers over 20 miles of gravel road to their final destination, a gravel pad five ft. deep, isolating the structures from the perma-frost of the tundra. When complete in summer of 1974, the buildings will be a dramatic hybrid of space age and mobile home technology.

URBAN HOMESTEADING

Across the country a host of cities are either initiating urban homesteading programs or are avidly watching those which have. Although programs vary from place to place, basically they are the same: Make available, at no cost, abandoned city houses to those who promise to fix them up and live in them for a stipulated period of time.

Homesteading, of course, has precedence in the United States. The Homestead Act of 1862 gave

House in Wilmington, Del.

160 acres of land to anyone who would work it and live on it for five years; predictably, it stimulated formidable migration to the wilderness.

Urban homesteading, even if undertaken widely, will not stimulate the same kind of response. In the cities, materials and labor are not readily available, the way they were in the hinterland. Even if an individual knows how to fix up a dilapadated house, materials to do it with are going to be expensive.

In Baltimore, where an urban homesteading program got under way last summer, estimates indicate a homesteader, doing his own work, could conform to building code for $7-$8,000; if a contractor did the work, $15-$20,000. But determined homesteaders from Rockford, Ill., to Boston are confident it is worth it.

For cities the program makes sense because it saves them the cost of tearing down houses they have taken over in lieu of taxes. But because of the sheer numbers, experts doubt the program will make more than a small dent in the problem. Philadelphia, for instance, has more than 30,000 of these houses, and only about 300 are owned outright by the city. Willmington, which was first to set up an urban homesteading program, has 1,500-2,000, but it initially offered only ten to potential homesteaders. Throughout the country, HUD has title or mortgages to 250,000 homes. Many of them abandoned, and conceivably these could be homesteaded.

"Banks are the key to the program," says a Boston housing official. So far banks are showing an interest but making few commitments. In Baltimore a bond issue has provided $2,000,000 for rehabilitation loans, and other cities may follow that example.

Other problems abound. The red tape involved in acquiring a house by tax default is confusing. The delay can be so long that, in the interim, a structure decays past repair. Already a high percentage is in this category. Some experts wonder how low-income families can find the money needed for renovating even a house they are given free. And many are concerned over those who may not be willing to follow through.

Despite these drawbacks, urban homesteading is an enlightened plan, offering excitement and, perhaps, even rewards for the cities and individuals who undertake it.

At best it could bring people back to urban areas that are starving for life. At worst things would be about what they are now. Homesteading comes at a time when many urban areas are on the verge of resurrection—a drop that could become a flood.

NEW TOWNS

The town of Coventry, Connecticut, a quiet little village of 8,600, all of a sudden finds itself faced with a proposed "new town" of 20,000 to be nestled within its boundaries. The issues that are beginning to surface in the battle between the new town developers and citizens' groups trying to prevent the zoning changes necessary for the new town underscore two of the stickiest problems about new towns:

First, where do you put them? Usually it is desirable for new towns to be located somewhere near a major urban center so that they don't have to be immediately self-sufficient in terms of industry and employment. Yet the best places for them are isolated rural areas, where they don't nudge in on incorporated land. If a new town is planned for an incorporated municipality, the next question is how much should the citizens be consulted on the decision?

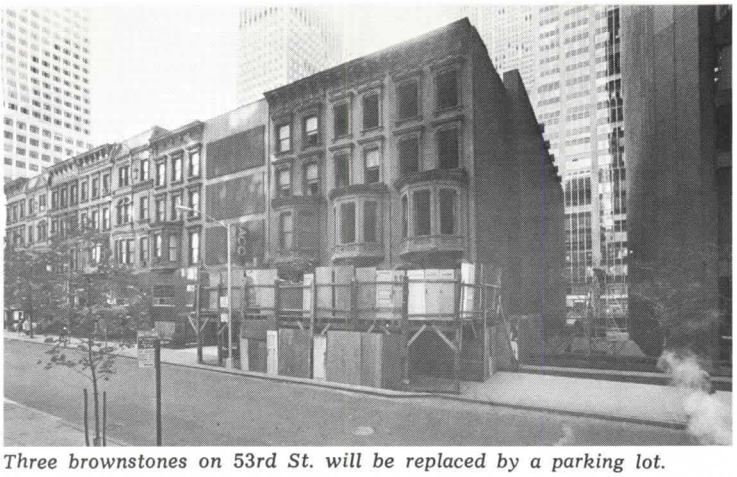
In the case of Coventry, the new town concept was the brainchild of the Greater Hartford Process, a group of businessmen who want to revitalize the Hartford region. So they formed a development company called the Greater Hartford Community Development Corporation (DevCo), which bought 1,600 acres *sub rosa* through an imbroglio of specially created real estate offices. Not until all the land was acquired, was the town able to track down the names of the actual owners. At this point DevCo came out in the open and announced the blessed event.

One must speculate that DevCo must have had its doubts about the village's reception to the scheme, and were thus reticent to reveal this economic boom (boom for whom? citizens wonder). At any rate DevCo will have to answer a lot of questions regarding new sewer, water pipelines, plus other needs such as teachers, schools, police, health care facilities, transportation, etc., next spring at the zoning hearings. (They have hired Donald Reay of San Francisco to be general consultant planner to the local planning firm of Brown, Donald & Donald.) The hearing will decide whether a zoning change will be made from the existing one-acre residential to a special "new town" zone. Meanwhile, the Planning and Zoning Commission as well as the rest of the municipal government of Coventry must remain neutral. If the zoning decision is contested, either DevCo or irate citizens' groups, would go to court.

FIASCO

The Contemptible Behavioral Syndrome: Just because a major corporation hires a big-name architect to design its main office building, or initiates a svelte corporate graphics program, it isn't always sensitive to design issues. Look at CBS. Right behind their main offices on Sixth Avenue at 53rd and 52nd in New York, CBS has decreed a parking lot for private use by its employees (actually executives), replacing five brownstones, three of which occupy about a 60-ft. wide plot facing 53rd Street (above, left) and two of which occupy about a 75 foot wide plot on 52nd (above, right).

New York's last traces of its 19th Century heritage have been



Three brownstones on 53rd St. will be replaced by a parking lot.

CBS 52nd Street demolition.

under constant threat in Midtown Manhattan owing to encroachment of glass and steel office towers, even on the cross streets. Compelling economic reasons are always given for the bulldozer's ball breaking apart these few remaining swatches of urban fabric. Ironically, in the case of CBS, not even reasons of economics can explain their decision to demolish these brownstones on two handsome side streets.

Perhaps, CBS has something up its sleeve for the future use of these lots; if not they'll no doubt soon discover that a tower surrounded on all sides by vacant land generates its own gusts of wind whirling down from the top of the building. Sixth Avenue already has turned into a wind tunnel because of all the towers with plaza frontages built since the 1961 zoning. But no office building yet has tried open space on all sides. Philip Johnson has said that CBS needed a socle (a base or pedestal)—maybe so, but this socle has been, very definitely, slipped on the wrong foot.

OBITUARY

Shadrach W. Woods, who since 1969 was professor of architecture at the Harvard Graduate School of Design, died of cancer last summer. He was 50.

From 1948 to 1951 he worked with Le Corbusier, mainly on housing developments, including the one in Marseilles. Woods' main concern was with research on and implementation of large scale housing and urban design programs that actually met the needs and desires of the people who would live in them. He built such housing not only in France but in North Africa and the United States.

In 1961, he started lecturing at Harvard and other universities. In 1964 and 1968, he was a Harvard Visiting Critic of Urban Design and then in architecture in 1969. Later in 1969, he became a full professor, though he continued his private practice.

Professor Soltan of Harvard said of Woods that wherever he perceived social injustice "he was ready to take a whip and flagellate the sinners."

Shadrach Woods.

GRANTS

CITY OPTIONS

Almost everybody these days talks about humanizing cities and communities. Unfortunately not everyone does much of anything about it. To help those who would like to, the National Endowment for the Arts will offer grants to those planners or architects who have plans to enhance special settings within a city—those that lend it distinctive character and identity.

Last year the Endowment initiated the program under the theme, City Edges, concentrating on urban boundaries. This year the emphasis moves inward. The Endowment defines a City Option as "a plan to preserve the charm or integrity of a city's past, or a study of something new involving a unique community attribute as yet unexplored; it may concentrate on a single detail within an urban network, or it may encompass the network itself. Objects, amenities, public spaces, design awareness programs, graphic information systems, neighborhood character; any of these could form the basis for a City Option."

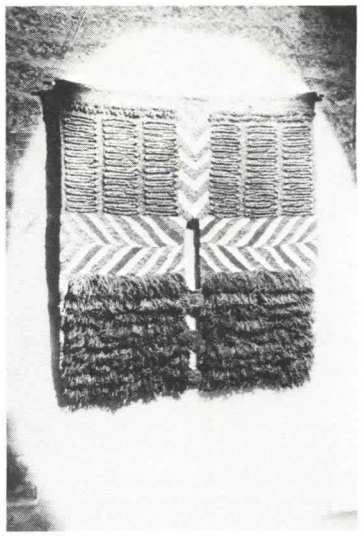
If this sounds vague, it is purposely so. For the Endowment means to leave open the broadest possible range of choice.

Individuals or groups can apply for up to $10,000. Grants to tax-exempt, non-profit groups, universities and government units may be up to $50,000.

Applications will be accepted until January 15, 1974, and may be obtained from Architecture & Environmental Arts, National Endowment for the Arts, Washington, D.C. 20506.

EXHIBITS

The Jacques Baruch Gallery in Chicago has a robust, vital exhibit, "New Concepts in Tapestries-Part II" (through January 26th), focusing on 13 contemporary artists from the United States, Belgium, Poland, Switzerland and Yugoslavia: Magdalena Abakanowicz, Jolanta Banaszkiewicz, Jagoda Buic, Lieva Bostoen, Zofia Butrymowicz, Kazimiera Gidaszewska, Maria Chojnacka, Jolanta Owidzka, Moik Schiele, Cynthia Schira, Kay Sekimachi, Anna Sledziewska and Sherri Smith.



Variation Bleu by Jagoda Buic.

We call your attention to this show, because these artists have extended the meaning of their medium beyond the more formal traditions of tapestry to the concept of the art fabric as a full-fledged environmental art—one having great value in the context of architectural space.

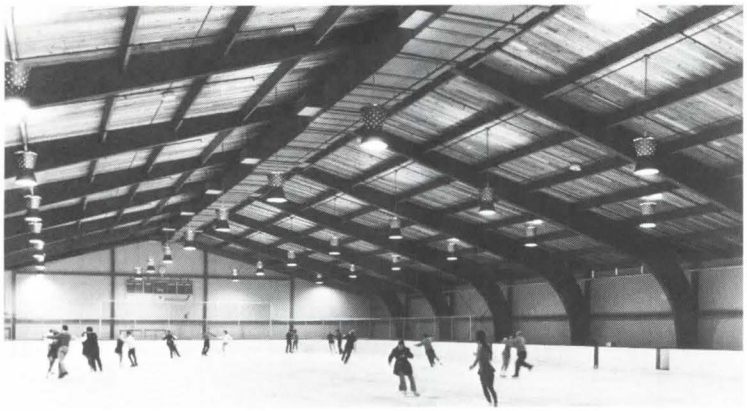
Museum after modern museum in both Europe and the United States has recognized tapestries and so-called "fabric structures" as worthy of major art treatment.

The Baruch exhibit is dynamic, varying from richly textured surfaces and forms to filigrees of fabric, like sensitive line drawings, suspended in space. The pieces range in size from 47 by 27½ inches to 18 by 7½ feet, although much of the work (not shown) is even more immense and sweeping.

Tapestry has been integrated into today's society as a living, moving, creative art, sharing the exploration of form and materials with sculpture, painting and graphics. As Jagoda Buic states, "The tapestry as well as other spatial elements, cannot be only decorative; it is conditioned by space and creates an ambiance for itself. The tapestry exists in counterpoint to the "warm" and "cold" surfaces of modern architecture, in counterpoint to emphatic materials like stone and steel. The fibers also stifle sound. I do not wish to cover the walls with tapestry. I would like them to exist together, so that the wall is present in the composition."

PHOTOGRAPHS: Page 17, UNESCO/Marc Riboud; 19, Dewey Swain; 76, Stan Ries (top left), March Garanger (bottom).

PRODUCTS



SKATER'S DREAM

A blend of natural beauty and low maintenance characteristics led to the selection of a laminated wood structure for the new Winnetka Ice Rink in Winnetka, Illinois. Koppers Company, Inc. of Pittsburgh supplied the wood arches, purlins and decking, and supplied us with the news of the new Rink. According to Koppers, all wood members received a special Cellon wood preserving treatment—preservative is deposited deep within the wood cells making it impervious to decay and termite attack. Laminated purlins are placed across the ceiling section of the arches, and two-inch tongue and groove decking is attached to the purlins.

A layer of felt, topped with asphalt shingles, completes the roof structure.

On Reader Service Card, circle 101.

MORE MULTIPLE SEATING

Steelcase has just added multiple seating to its 451 series. The contemporary style is available in modular packages of two, three, four, or five-place units including seats and tables. They are mounted on a strong 2½ inch diameter steel support tube and, to prevent tripping, the four-sided aluminum base is designed so that the curved sides do not extend beyond the outer edges of the seats. Installation can be in line, back to back or at any angle.

The double-shell construction provides support and fastening of cushioning and material coupled with strength and styling according to Steelcase. Tables have laminate tops, with or without ashtrays.

Any former Steelcase fabric, leather or expanded vinyl upholstery, is available and can be upholstered with button-tufting or plain (the plain upholstery is recommended for high traffic areas). Inside base surfaces and support tube assemblies are finished in matte charcoal. Shells are dark gold, slate, tan or white.

On Reader Service Card, circle 102.

PYRAMIDAL LIGHTING

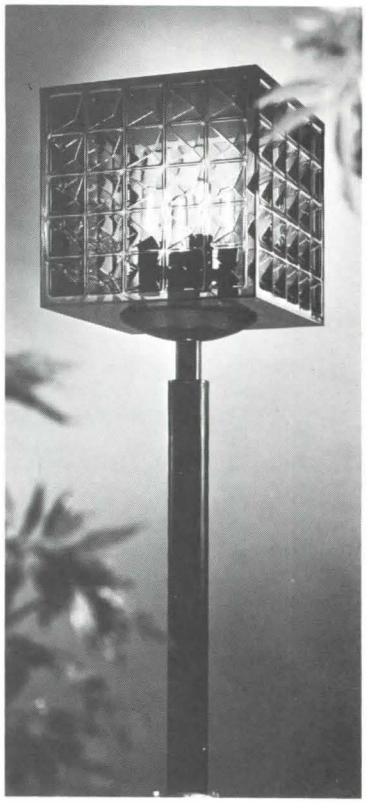
The Area Lighting Division of the McGraw-Edison Company has expanded its line of geometric luminaires to include a decorative pyramidal cube.

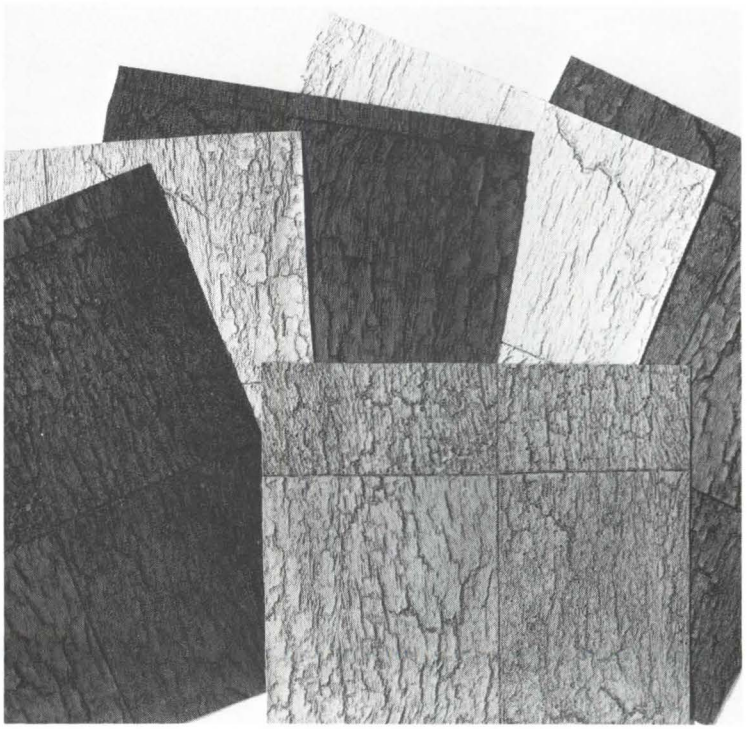
The new 16 inch square cube is exclusive with the Racine, Wisconsin, based division and is available in smoke, clear and opal. It will fit any standard McGraw-Edison geometrics stepttenon or plain base, and can be used with incandescent lamps to 300-watts, or mercury lamps to 175-watts. Replacement of existing McGraw-Edison cubes or spheres can be accomplished by removing the existing diffuser and replacing it with a pyramidal cube diffuser.

Pyramidal cubes can be post-top or wall mounted, or multiple mounted. They can also be used with single socket, cluster socket or enclosed refractor versions of the division's geometrics line.

Versatile, their use is for indoor or outdoor lighting.

On Reader Service Card, circle 103.





TAPATO TEXTURE

Deep markings of "Tapato" carve a pattern that is at once earthy and elegant according to its manufacturers, Vicrtex Vinyl Wallcoverings. Square sections, each with its own micro-terrain of furrows and ridges, are set on a uniform grille—color deepens with depressions in the surface, and lightens with elevations. Conceived in the 22 colors offered are textures suggesting natural elements: stone, bark and even earth itself. "Tapato" as with all other *Vicrtex Vinyl Wallcoverings*, has the guarantee of easy installation maintenance and design versatility.

On Reader Service Card, circle 104.

(*Continued on page* 78)

PRODUCTS

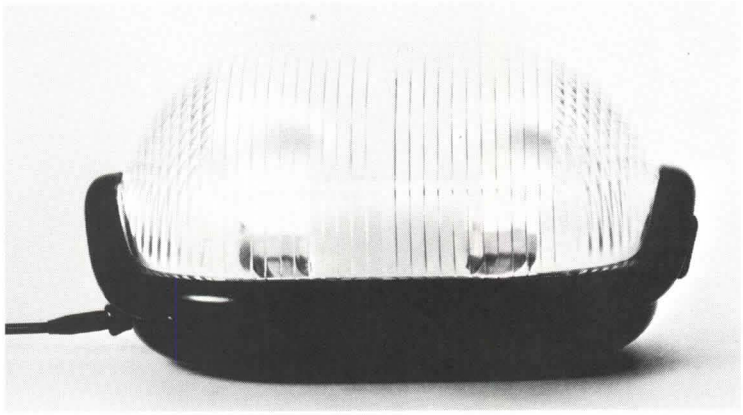
(Continued from page 77)

NUTS!

Archile Castiglioni, architect, has just designed a new lighting fixture for Atelier International, Ltd. which functions as wall, table or floor lamp.

"Noce" (the nut) is constructed of a cast aluminum body, with baked enamel finish, and a tempered glass diffuser. The floor/table version has an adjustable internal lamp holder providing for up to 150 watts of illumination through a 180 degree change of direction. The wall lamp is available in three versions: exterior or interior use with waterproof glass diffuser and adjustable lamp holder for 180 degree change of direction; exterior or interior use with fixed lamp holder for up to 150-watts of illumination; and exterior or interior use with fixed lamp holder for up to 150-watts mercury vapor lamp.

On Reader Service Card, circle 105.



The following is a listing of the key products incorporated in some of the buildings featured in this issue:

BROOME COUNTY CULTURAL CENTER, County of Broome, New York. ARCHITECTS: ELS Architects, Principals—Barry Elbasani, Donn Logan, Michael Severin and Geoffrey Freeman. (Materials and Manufacturers as submitted by the architects.) STRUCTURAL STEEL: Bethlehem Steel Corp.; Schenectady Steel Co. CURTAIN-WALL: Robertson Foam Core Steel Siding. ACOUSTICAL MATERIALS: Owings Corning, Duct Liner Boards. GLASS: PPG. ELEVATORS: Otis. CONDUIT: Youngstown. WIRING: Phelps Dodge. ELECTRICAL EQUIPMENT: Federal Pacific. WIRING DEVICES (SWITCHES): Pass and Seymour. LIGHTING FIXTURES, LAMPS: Continental Lighting Products. HEATING BOILERS: Bryan. UNIT AIR CONDITIONERS: Carrier (Indoor), Governaire (Roof). FIRE PROTECTION EQUIPMENT: Superior Fire Proof Door & Sash Co., Inc. FOOD SERVICE EQUIPMENT: Lafiteau-Cufford. FURNITURE AND SEATING: American Seating Co. OTHER PRODUCTS: (Ice Rink)—Charles R. Beltz; Conn Organ.

EDWIN J. THOMAS PERFORMING ARTS HALL, Akron, Ohio. ARCHITECTS: Caudill Rowlett Scott; Dalton, Van Dijk, Johnson. (Materials & Manufacturers as submitted by the

(Continued on page 81)

PRODUCTS

(*Continued from page 78*)

architects.) FOUNDATION WATERPROOFING: Sonneborn (liquid foundation). CASONS: (rotary drilled) McKinney. CONCRETE AND CEMENT: Fairlawn Supply Co.; Penn-Dixie Type One Buff Cement Haydite Aggregate. BLOCK: Cleveland Builders Supply Co.; Akron Brick & Block Co. STRUCTURAL STEEL: Klein Steel Co. CURTAIN WALL: Sterling Plate Glass Co.; Pilkington Brothers, Ltd. FLOOR AND DECK SYSTEMS: cast in place concrete. ROOF MATERIALS (ROOFING, GUTTER): sprayed urethane foam on folded plate roof of auditorium, built-up asphalt, felts, gravel on stagehouse. THERMAL INSULATION: ducts-Ton-o-Wrap, magnetic block glass fiber roof-sprayed/urethane foam. FENESTRATION: Pilkington Brothers, Ltd.; Sterling Plate Glass Co.; PPG. INTERIOR PARTITIONS: concrete, concrete block, concrete block and plaster, metal lath and plaster, metal studs and drywall. ELEVATORS AND ELECTRIC STAIRWAYS: (Hydraulic Pit Lifts) Dover Elevator Co. DOORS (EXTERIOR and INTERIOR): PPG; Superior Fireproof Door Co.; U.S. Plywood. HARDWARE (LOCKSETS, HINGES, CLOSERS): Sargent; Cleveland Bicon Company, Inc. INTERIOR MATERIALS (TILE, PLASTIC): Concrete, concrete block, plaster, drywall, vinyl wall covering, paint, plywood, carpet and wood trim. PANELING: Veneer plywood. ELECTRICAL EQUIP. (SWITCHES, BREAKERS): Strand Century. STANDBY EMERGENCY POWER: Onan. LIGHTING FIXTURES, LAMPS (STAGE LIGHTING): Strand Century. SWITCHGEAR & TRANSFORMERS: Westinghouse. PLUMBING FIXTURES, TOILET SEATS: Koehlar. HEATING BOILERS: heating and cooling from central campus energy center. UNIT HEATERS: Airtherm. UNIT VENTILATORS, RADIATORS, CONVECTORS: Schemenauer and Shaw Perkins. HEATING VALVES, PIPING, CONTROLS: Holmestead; Kunkle; Johnson Surface Company. AIR CONDITIONING COMPRESSOR, FAN UNIT: chilled water from campus energy center. UNIT AIR CONDITIONERS: Modine. DIFFUSERS, DUCTS, PUMPS, ETC.: Titus; Meyerjohn-Wengler; Ohio Fabricators, Inc.; and Fingerhut. SPECIAL FANS AND VENTILATORS: Clarage; Jenn-Aire. SPRINKLER SYSTEM AND FIRE PROTECTION EQUIPMENT: Spohn Corporation; W.D. Allen Co. CEILING MATERIALS: Tectum—exposed concrete, steel panels, plastic. WATER COOLERS: Halsey-Taylor. FINISH FLOORING AND CARPETING: Mohawk; Kilgore Cleaning & Storage. FURNITURE & SEATING: American Seating Co. REINFORCING: Republic Steel Corporation and American Stress Wire Corp. FORMS: Economy Form Company. STRUCTURAL STEEL FABRICATION: Klein Steel Company. STAGEHOUSE SPECIAL STEEL AND STEEL PANEL AUDITORIUM CEILING: Midstates Ornamental Iron Company. SPIRAL STAIRS: Duvinage. TOILET PARTITIONS: Mills . FOUNDATIONS: Kim Lighting, Inc. SMOKE VENTS: Wasco. PUMPS: Worthington, Taco, Weil, Allis-Chalmers. CONSTRUCTION CASTINGS: Neenah. FLOOR DRAINS AND ROOF DRAINS: Wade. HW STORAGE TANK: Adamson. HEAT EXCHANGERS: Patterson-Kelley. PRV: Spence. FLOW METERS: Taco. AIR HANDLING UNITS: Air Enterprises, Inc. WATER CONDITIONING: Mogul. WATER SOFTENER: Cleaver Brooks. HEATING COOLING COILS: McQuay. HEATING AND AIR CONDITIONING CONTROLS: Johnson Surface Co. SOUND AND VIBRATION ATTENUATION; Coppus; Korfund. LIGHTING FIXTURES: McPhilben; Stonco; Rambusch; Century; Consolidated Kinetics; Prescolite; Sterner; Perfeclite; Day-Brite. DIMMING LIGHT: Electro Controls; Strand Century. CLOCKS: Simplex. SEATING: American Seating.

FINE ARTS BUILDING, DRAKE UNIVERSITY, Des Moines, Iowa. ARCHITECT: Harry Weese & Associates, Inc. (Materials & Manufacturers as submitted by the architect.) PILING: Caisson, Blackhawk Foundation Co. WATERPROOFING: American Elastomers Co., Inc. CONCRETE AND CEMENT: 3750 PSI Concrete. BRICK, BLOCK, AND STONE: Goodwin Co. (Engineered King Size, Smooth Dark Heights). STRUCTURAL STEEL: Venetian Iron Works (ASTM-A-36). CURTAIN-WALL: Face Bricks. FLOOR AND DECK SYSTEMS: Concrete framing with concrete joists and concrete slab. ROOF MATERIALS (ROOFING, GUTTER): Built-up roofing, metal flashing and coping. THERMAL INSULATION: Cavity wall with 1" Polystyrene board. ACOUSTICAL MATERIALS: Acoustone Glacier; U.S. Gypsum. FENESTRATION: Duronadic Aluminum; Volkmer. GLASS: Plate glass. INTERIOR PARTITIONS: Concrete block and dry wall. ELEVATORS AND ELECTRIC STAIRWAYS: Hydraulic; Montgomery. DOORS (EXTERIOR AND INTERIOR): Weyerhaeuser. INTERIOR MATERIALS (TILE, PLASTIC): Exposed and painted concrete blocks and drywall. PANELING: National Gypsum Co. PAINT: Iowa Paint Co. ELECTRICAL DUCTS AND WIRING: 480/120-208 volt. ELECTRICAL EQUIP. (SWITCHES, BREAKERS): Westinghouse. STANDBY EMERGENCY POWER: 230 KW, ONAM. LIGHTING FIXTURES, LAMPS: Miller; Lightolier; Omega. PLUMBING FIXTURES, TOILET SEATS: American Standard. PIPING: Seamless Steel, copper for domestic water only. HEATING BOILERS: Cleaver-Brook. UNIT HEATERS: Modine & Trane. UNIT VENTILATORS, RADIATORS, CONVECTORS: Fin tube, Airtherme. HEATING VALVES, PIPING, FAN UNIT: Honeywell. DIFFUSERS, DUCTS, PUMPS, ETC.: Carnes Pumps Peerless Bell & Gossett. SPECIAL FANS AND VENTILATORS: Dweyer; McQuay. RADIO AND TV SYSTEMS: Conduits only. AUDIO VISUAL EQUIPMENT: MCS Engineering Corp. SPRINKLER SYSTEM AND FIRE PROTECTION EQUIP.: Midwest Automatic Sprinkler Co.; Iowa/Seco. CEILING MATERIALS: Exposed concrete and suspended acoustic tiles. WATER COOLERS: Trane. MAIL BOXES & CHUTES: American Device Mfg. Co. VENETIAN BLINDS AND SHADES: Slim Line; Royal Crest. INSTRUMENT LOCKERS, KITCHEN, LAUNDRY, LABORATORY EQUIPMENT: N II Laboratory Furniture Inc. FINISH FLOORING AND CARPETING: Scotsmoor, Stratton Industries, Inc. FURNITURE AND SEATING: Ideal Seating. FABRICS, UPHOLSTERY, DRAPES: Saluda Velour.

PRODUCT LITERATURE

To order any of the literature described, circle the indicated number on the self-addressed Reader Service Card on page 79.

CARPETING
The Wool Bureau has issued a brochure describing its new system of selecting contract carpet that simulates the kinds of light sources now used in most buildings. The 16-page color-illustrated brochure explains how the color of carpet is determined by the light sources under which it is viewed and the way in which carpet absorbs, transmits and reflects the light waves striking it. On Reader Service Card, circle 200.

FAUCETS
18-page catalog from Delta Faucet focuses on the completeness of the Delta/Delex faucet lines. Catalog, with descriptive charts listing faucet line by model and over 40 color photographs, includes "Crystal-Look" lavatory and bathroom faucets, "Sculptured-Handle" kitchen faucet and "Scald-Guard" bath and shower mixing valve. On Reader Service Card, circle 201.

ROOF DECKS
24-page brochure from United States Gypsum summarizes ways U.S.G. Roof Deck Systems hold costs down for institutional and commercial buildings. Brochure details "new ways with gypsum decks" relating to changes of the 70's, wider choice, insurance savings, reduced construction costs, low-rise apartments, improved fire protection, design versatility, acoustical performance, thermal insulation, structural strength, fast installation, and dry installation. On Reader Service Card, circle 202.

PANELS CONSTRUCTION
10-page brochure describes and illustrates new Tectum II Construction Concept developed by Gold Bond Building Products Division of National Gypsum Company for use in single and multi-family housing and light commercial structures. Concept employs conventional post and beam construction on a four-foot module and Gold Bond Tectum II wall and ceiling panels. On Reader Service Card, circle 203.

LIGHTING
Information on two new products in Amplex line of accent and display lighting equipment from Fostoria Industries, Inc. New Focalite Strips, compact "punch" lights for accent applications in windows, showcases and on counters and walls, rotate 350 degrees, swivel 180 degrees. New Wallites include a variety of models for commercial and residential uses, indoors and out. One model features twisted extrusion hood design. On Reader Service Card, circle 204.

SEALANT
Information on new one-part low-modulus silicone building sealant from Dow Corning Corp. Sealant 790 is made to withstand extreme building joint movement. "In construction joints, the cured sealant can be extended to 600 percent without failure." Sealant is permanently flexible and claimed non-deteriorating for 20 years or more. On Reader Service Card, circle 205.

ROOFING SYSTEM
8-page color booklet from General Electric's Silicone Products Department describes new GE Silicone/Urethane Foam Roofing System. System consists of a seamless blanket of lightweight rigid urethane foam coated with silicone rubber designed to give excellent and lasting insulation and weatherability. Booklet CDS-1345 contains information on features and benefits, illustrations of completed jobs, and application information. On Reader Service Card, circle 206.

LAUNDRY FACILITIES
10-page brochure from Speed Queen Division, McGraw-Edison Co., gives design ideas and installation details for coin-operated laundry equipment facilities in dormitories, apartments, military installations, and senior citizen residences. Brochure includes listing of electrical and plumbing facilities and gas and venting requirements necessary for a laundry room; gives typical laundry room layouts. On Reader Service Card, circle 207.

PLUMBING FIXTURES
"Catalog L," 76-page, two-color catalog from Chicago Faucet Company, describes full line of residential and institutional plumbing fixtures. Catalog includes over 400 illustrations, is indexed for easy reference. Full-color page of Tiffany Series residential trim is featured. On Reader Service Card, circle 208.

PLUMBING ROUGH-IN
New rough-in book from Eljer Plumbingware Division, Wallace - Murray Corp., contains roughing-in measurements for Eljer's plumbing fixtures. Dimensional drawings, directions and figures denoting distances said much easier to read and understand than in previous book. Specifications for each fixture, including distance from fixture to wall, minimum and maximum fitting sizes, proper location of leveling supports and other information, are illustrated on separate 8½" by 11" pages. May be placed in three ring binder for convenient use. On Reader Service Card, circle 209.

FLOOR PLANK SYSTEM
Floor Plank System from United States Gypsum explained in brochure IR-162. System designed to reduce costs and speed construction of high-rise and garden apartments, dormitories and light office buildings where bar joists are used in steel frame or load-bearing masonry construction. Consisting of 15" x 10' metal-edged gypsum planks, system offers a 2-hour fire rating and sound ratings up to STC 51 and IIC 61 with carpet and pad. On Reader Service Card, circle 210.

ACOUSTICAL UNITS
Geocoustic II acoustical units described in 8-page illustrated brochure from Pittsburgh Corning Corp. Bulletin GC-110 gives design guidelines, technical data, estimating information, and application data and specifications; describes how units can be used to provide precise amount of sound absorption where it is needed to give desired balance between sound absorption and sound reflection. Also discussed: "Patch technique," a technique designed to achieve better acoustics utilizing fewer units. On Reader Service Card, circle 211.

CARPET SAMPLES
Series of sample folders for open line of "Total Environment" carpet grades from C.H. Masland & Sons gives specifications and samples of entire color line for each quality; includes expanded instructions for installation and carpet maintenance. Material contained in standard size, heavy-duty washable plastic loose-leaf binders. Nine carpets—of soil-hiding nylon, acrylic/modacrylic blend, 2000+ Acrilan acrylic, and Herculon olefin fibers—offered in initial set. Includes carpets with foam backing and built-in static controls. On Reader Service Card, circle 212.

ACOUSTICAL GLASS
Control of noise with laminated architectural glass for windows described in 24-page research bulletin from Monsanto Polymers & Petrochemicals Co. Report examines the basic theories of sound, its transmission and measurement; discusses the effectiveness of laminated glass in reducing sound transmission and compares it to other commonly used window glazings. On Reader Service Card, circle 213.

INSULATION
20-page brochure describing physical properties, specifications and application data of Foamglas insulation from Pittsburgh Corning Corp. includes Tapered Foamglas insulation system for eliminating ponded water on roofs. Brochure contains detailed application photographs and technical data, graphs and tables, covers use of Foamglas insulation in all normal temperature applications such as roofs, plazas, parking decks, walls, floors and ceilings. Insulation available in tapered and flat blocks and 2X4' boards. On Reader Service Card, circle 214.

FIRE DAMPER OPERATOR
Automatic fire damper operator, UL listed, described in bulletin from Fixson-Firemark, Inc., includes technical details and installation recommendations for the FM-5590, electrically operated fire/life safety unit developed to remotely and automatically control listed curtain or interlock slat-type fire dampers. Operator holds damper in a normal open position until released to close by a signal from either a remote smoke or ionization duct detector, fire alarm system, or the building central control. On Reader Service Card, circle 215.

DOCK SAFETY
Brochure, "Concerned About Dock Safety?" published by Kelley Co., Inc., states that present OSHA dockboard safety standards are the same as compiled in 1956 by U.S. Department of Commerce. Brochure describes safety advances developed by Kelley such as patented Panic Stops which support the dockboard should a truck pull away while the board is in position, lip hinge design to increase strength with no weight increase, and cross traffic lags to provide full capacity support when dockboard is not servicing a truck. Bulletin refers to publications covering dockboard safety; includes a description of an agreement detailing responsibilities pertaining to safety. On Reader Service Card, circle 216.

WATERPROOFERS
4-color, 4-page Color Card on the Sonneborn new formula Hydrocide Super Colorcoat line of decorative waterproofers from Contech, Inc. Available in 22 architectural colors, color chips are grouped by color families: Concretes, Sands, Earthtones, and Landscapes. Colorcoat is textured coating for use on most exterior above grade masonry surfaces; may also be used to provide textured sand float effect to painted or unpainted concrete, stucco, block and brick surfaces. On Reader Service Card, circle 217.

RESIDENTIAL STEEL
"Steel Finds a Home In Housing," 4-page, 2-color brochure distributed by the Sheet Committees of American Iron and Steel Institute, describes and illustrates the various steel home building products now being used in residential and light construction. "Steel Siding Comes of Age" brochure features advances made by the steel industry for siding application for new construction and remodeling. Return reply postcards for both brochures offer names and locations of distributors in U.S. and Canada. On Reader Service Card, circle 218.

PANELING
All product literature on Marlite line assembled in a keyed Specification Guide from the Marlite Division of Masonite Corp. Individual sections included on Marlite brand panels and planks, Fire-Test, Motif Graphics, Marvelour, Korelock, doors, custo products, and partition systems. C Reader Service Card, circle 219.

EDUCATIONAL SYSTEMS
32-page color catalog describing all aspects of the VUE (Visual Unified Environment) System by American Seating depicts components such as the "Eduwall" mobile cabinet wall; media center; ES/I and ES/IV Classroom furniture; ES/III AudiLec chairs; and supplementary furnishings, all complementary to open plan or traditional schools. Catalog designed to help architects and designers effectively and efficiently plan a school. On Reader Service Card, circle 220.

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"And, together, we worked out a new and special grand master key system. It consists of Yale® bicentric cylinders with highly restricted key blanks.

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Most fiber and yarn producers have static control systems of varying degrees of effectiveness. But at Dow Badische our "Static-ticians" specially engineer our carpet products for permanent and safe shock control. Then we guarantee the certified carpets made of those products against shock—for the useful life of the carpet or for five years, whichever is sooner.

Our unique anti-shock carpet guarantee—Zefstat™— is the only anti-static guarantee in the market. You'll find it on carpets made of our acrylic, nylons and blends.

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