

New! Kentile Gemstone Asphalt Tile-9" x 9" x 1/8". Shown here with feature strip. Easy to maintain. Gemstone is economical and long-wearing for residential and commercial floors.



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URBAN AMERICA INC., including its National Action Council, is a nation-wide non-profit educational organization combining the programs and resources of two national organizations with the common goal of improving cities—Urban America (formerly American Planning and Civic Association) and the ACTION Council for Better Cities.

## THE ARCHITECTURAL FORUM / MAY 1966

#### FORUM

A monthly review of events and ideas.

#### THE NEW CAMPUS

Oscar Newman of Washington University describes the University of Toronto's remarkable Scarborough campus, analyzes four others, and con-cludes that "the New Campus has come to occupy the dominant position in current architecture.'

A monthly review of notable buildings.

#### BACK AT THE LIBRARY

Two critics' reactions to John Johansen's design for the Clark University Library, and to his manifesto.

#### STYLISH MARRIAGE

Two distinct architectural styles come together in the same Rome building, prompting a lively debate.

#### BOSTON'S INNER BELT

Controversy over a two-mile stretch through Cambridge contains all the elements of the national dilemma.

#### RICHARDSON'S TOWN

North Easton, Mass., is still enjoying the results of a fruitful patronarchitect relationship experienced during the 1880's. By Larry J. Homolka.

Le Corbusier's works, 1957-65.

## MAUNA KEA HOTEL

80

SOM shows that a stage set can be fine architecture, and vice versa.

### LETTERS



The Scarborough College campus (pages 30-55); photograph by John Reeves.

THE ARCHITECTURAL FORUM Vol. 124 No. 4. May issue Published 10 times a year, combining Jan./Feb. and July/Aug. issues, by Urban America, Inc., 111 W. 57 St. New York, N.Y. 10019
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#### PUBLISHER'S NOTE

I think that the timely, geographic, and thematic coincidence next month of two important design meetings is too remarkable to be coincidental. In which case there should be some kind of award for the anonymous conference planners who were clever enough to seize the chance for complementary discourse.

The AIA is holding its annual convention June 26 to July 1 in Denver on the theme, "Technology, Environment and Man." It follows on the heels of the International Design Conference in Aspen, June 19 to 24, which will deal with development of the human potential to cope with the forces that shape man's environ-

Only tall mountains stand in the way of an easy flow of the general to the particular. That and the sobering prospect of a six (or, God forbid, five) hour drive over the Great Divide with Peter Blake at the wheel.

There is no arena in which the interests of Technology, Environment and Man contest with such ferocity as that of transportation. The outcome has a great deal to do with the nature of our cities, for transportation has no equal as a city-shaping force.

That would be reason enough for the attention which the editors pay this month to highways (and will pay next month to rapid transit), but it is not the only reason. It is becoming apparent that transportation is, in part, an architectural problem.

If a city must suffer penetration by a freeway, design can do much to soften the impact-architectural design, not just the engineering of the road for maximum efficiency. If a city is building a transit system, design can help lure commuters out of their cars and onto the rails. Design, in sum, can do much to reconcile the Technology of transportation, the Environment of travel, and Man, whether in movement or between trips. L.W.M.

# Fifty years ago we thought bonding roofs was a good idea...

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- 1. Barrett Division, Allied Chemical Corporation, wholeheartedly and without reservation, supports, endorses, and recommends the practice of bonding roofs. We believe this practice is as important today, if not more so, as it was when we inaugurated it 50 years ago.
- 2. Barrett will vigorously continue its policy of bonding roofs that meet our exacting standards. We are committed to the position that a roof bonding program, administered and controlled by roofing manufacturers, is essential to the welfare of the building industry.
- 3. Barrett's experience has proven that the roofing bond works to establish higher standards in materials, application, and workmanship, and we accept the moral responsibility to our customers to maintain these high standards.
- 4. Barrett believes that the practice of bonding roofs must not be diminished or discontinued because of misunderstandings; rather, it must be given even greater support and use so as to continue and improve the roofing industry's high standards.
- 5. Barrett Division, Allied Chemical Corporation, recognizes its responsibility to the industry. We believe that as a built-up roofing materials manufacturer, with more than 100 years of experience and complete resources at our disposal, we are particularly qualified to carry on the research and technical service required to protect the interests of our customers, building owners, and the general public.



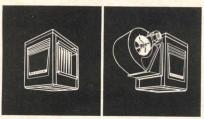


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# **Gas Comfort Conditioning Flexibility:**

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Here's the broad line of pre-engineered, fully packaged, ready-to-install heating/cooling units you need to fit an almost endless variety of comfort conditioning jobs. Whether conditions require free-hanging unit heaters, duct or forced-air furnaces, Reznor has a

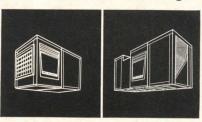


model to fit. Option of air systems to provide static pressure your installation demands including make-up air with shutters to vary outdoor air from 0 to 100% (ideal for mild weather ventilating).

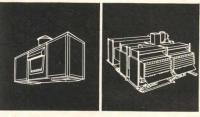
In addition to the industry's pace-setting THERMOCORE heat exchangers, Reznor units include power vented and infra-red heating assemblies. Capacities from 25,000 to 1,600,000 Btuh.

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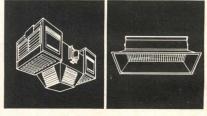
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to ITT Reznor, International Telephone and Telegraph Corporation, Mercer, Penna., Dept. T6-2A.





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GENERAL SERVICES DEPARTMENT

February 4, 1966

Humble Home Office Building Butyl Membrane Waterproofing

Mr. Carroll F. Brehm Special Products Department Carlisle Tire & Rubber Division Carlisle Corporation Carlisle, Pennsylvania 17013

Dear Mr. Brehm

This is in reply to your inquiry concerning the butyl membrane waterproofing for the three-level basement of the Humble Building in Houston, Texas.

The entire foundation and sub-surface portion of the Humble Building was encased in a one-eighth inch thick butyl sack. The seven foot thick concrete foundation slab for the tower section of the building was poured upon a one-eighth inch thick sheet of butyl spread on a thin concrete mud slab at the bottom of an excavation about sixty feet deep. The edges of the sheet were extended up along the outside of the foundation and the concrete basement wall to provide a waterproof bag around the sub-surface portion of the building. Approximately 230,000 square feet of the one-eighth inch thick butyl sheet weighing 200,000 pounds was required for installation of the membrane for the basement of the building. The butyl material was furnished in one-eighth inch thick rolled sheets, twenty feet six inches wide by ninety feet long.

The butyl membrane was installed during the spring and summer of 1960. It is still in excellent condition with no evidence of deterioration and has provided the Owner with a dry, leak-free basement. The water table at the building site is approximately thirty-five feet above the bottom of the membrane waterproofing so that the lower thirty-five feet of the building and butyl membrane are normally completely surrounded by water.

To date the butyl sheet membrane has provided very satisfactory service.

Very truly yours,

HUMBLE OIL & REFINING COMPANY

By Roger C. Aude

The butyl membrane was installed during the spring and summer of 1960. It is still in excellent condition with no evidence of deterioration and has provided the Owner with a dry, leak-free basement. The water table at the building site is approximately thirty-five feet above the bottom of the membrane waterproofing so that the lower thirty-five feet of the building and butyl membrane are normally completely surrounded by water.



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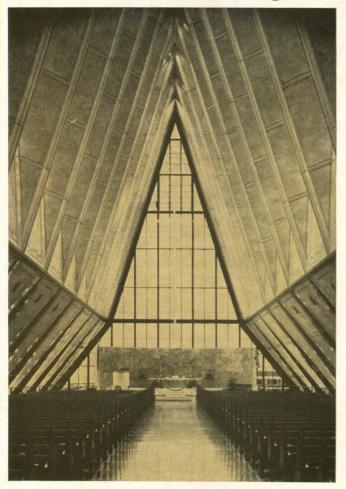
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# Inspirations

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Custom designing has taken on new dimensions. Glas-Wich, the latest in creative ideas, give you a chance to design with extra qualities for added interest. An invisible sound barrier, safety and heat absorbing qualities of Glas-Wich make it a designer's dream for beauty with utmost efficiency.

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It offers the owner low first cost, takes up no land space and no floor space, either.

It teams with a gas- or oil-fired furnace, or with an all-electric fan-coil unit indoors.

And the architect can work them into

his building design in a number of unobtrusive ways. Let them project a few inches from the wall... and they disappear from view on the inside. Fit them flush outside... and let them project into a closet, utility room... or, as in the picture above, into a brick buttress that serves other purposes.

Other parts of this Carrier system? Refrigerant tubing with quick-couples at both ends for a fast, clean connection to fan-coil or furnace.

An all-electric fan-coil that can power air through long duct runs—does it quietly from any spare space—above a

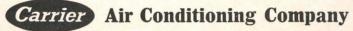
closet, in a furred-down ceiling, a crawl space or attic.

Only 131/8 inches high, it heats with electric strip heaters or a hot water or steam coil.

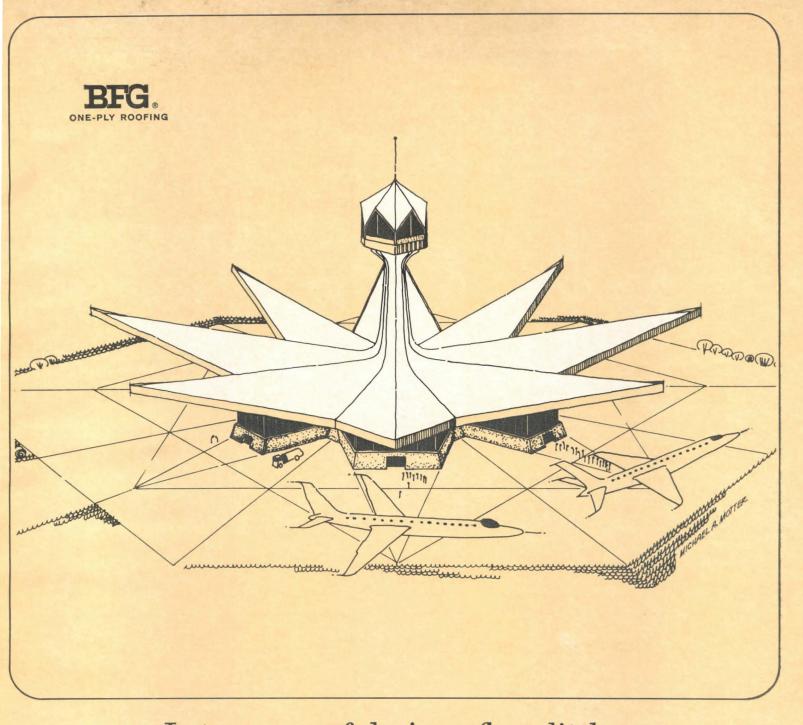
Or, Carrier furnaces can provide heat and air movement from a closet, attic or crawl space location.

Details? Your Carrier dealer will be glad to give them to you.

You'll find him listed in the Yellow Pages. Carrier Air Conditioning Company, Syracuse, New York 13201. Represented in Canada by Carrier Air Conditioning (Canada) Ltd.



More people put their confidence in Carrier air conditioning than in any other make



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The far out look is in. Now you can design roofs that look the way you want them to look. Steep pitches, curves, barrel vaults are no longer a problem. B.F.Goodrich has a remarkable new roofing system that works as efficiently on unusual contours as it does on flat roofs. Its name is BFG One-Ply. One-Ply is a laminate of DuPont Hypalon® synthetic rubber backed with neoprene-bound asbestos. It's light, flexible, easily installed, fire resistant, self-flashing. And so watertight, we guarantee it five years against leaks. For technical details. Write B.F.Goodrich Building Products Department AF-13, Akron, Ohio 44318. And then start flying a little.







#### PRESIDENT'S DINING ROOM

Series 7000 narrow projection door closers with covers; aluminum covers to match door hardware, wood covers to match door paneling. PRESIDENT'S DINING ROOM for the elegance of matching wood. An attractive closer installation for this formal dining room. POOL DIRECTOR'S OFFICE, an aluminum closer with an aluminum cover for an attractive installation that's impervious to this corrosive high humidity location. CAFETERIA entrance, a match between closer cover and door hardware to contrast with the dark door finish.





CAFETERIA ENTRANCE

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Any door within a school can have unique or special requirements. These doors by their location, traffic pattern, adverse environment or esthetic requirement can pose a problem in the selection of proper door control.

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Series 6100 Uni-Trol door control, a combination of door closer and door holder. INFIRMARY DOOR, an attractive installation in the school infirmary. During open hours, the door is held ajar to avoid congestion.

1117



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# What's this new material that makes a one-ply roof watertight-for years?



# **HYPALON®**

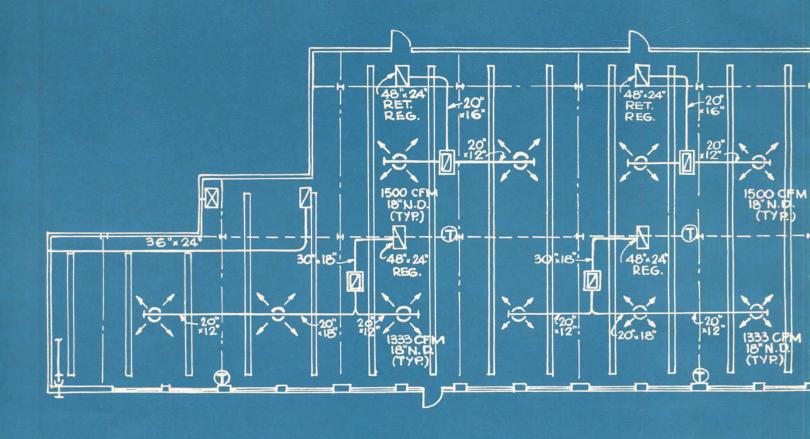
It's Du Pont Hypalon synthetic rubber. And it's really not new, except in the manner it is used here by B. F. Goodrich—as a husky laminate with asbestos backing bound with Du Pont Neoprene.

In many industries, HYPALON has thoroughly earned its spurs as a long-lasting "outdoor rubber." Available in a range of permanent colors, it ignores continuous exposure to sunlight, weather... stays resilient and "alive" at high and low temperatures. It defies chemicals, abrasion, flame and is considered immune to ozone.

No wonder B. F. Goodrich chose Hypalon as the surfacing for its unique One-Ply roofing system. No other material would do as well.

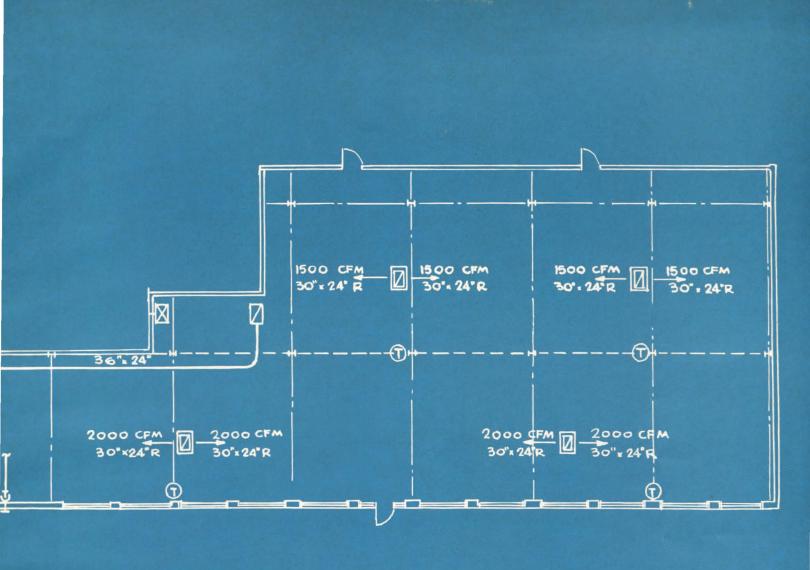
For more details on Du Pont Hypalon, and its use in roofing, write us today. The Du Pont Company, Elastomer Chemicals Dept., Room 3910, Wilmington, Delaware 19898. Du Pont of Canada Ltd., 85 Eglinton Avenue, E., Toronto 12, Ontario. Du Pont de Nemours International S.A., Etoile Building, 81 Route de l'Aire, Geneva, Switzerland.





Conventional air distribution system

Celo-Flow system costs less,



Celo-Flow® air distribution system

# performs better, looks better

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The architect recommended the Celo-Flow® Acoustical / Ventilating ceiling system because he wanted to eliminate ceiling clutter and the almost inevitable soiling that accompanies diffusers. And the Celo-Flow system gave his client more quiet, even air distribution than ducts and diffusers could.

Of course the real clincher came when he showed his client comparative cost estimates. The 6,040 sq. ft. job done conventionally would have cost \$6,190 installed — including ducts, duct insulation, diffusers and ceiling. The installed Celo-Flow system cost \$4,635 including perimeter insulation, baffling and ceiling. That's a saving of \$1,555—more than 25%!

Matching appearance of Celo-Flow mineral fiber *clear-thru perforated* and *surface-perforated* units achieves a "single pattern" effect, regardless of the number and location of the ventilating panels or tile.

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# **SCHOKBETON®**

Another outstanding example of Schokbeton's design plasticity.



Schokbeton precast concrete double-window curtain wall unit, Sir George Williams University, Montreal, Canada Architect: Ross, Fish, Duchesnes & Barrett. Schokbeton by Schokbeton Quebec, Inc.

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The Redevelopment Division of Urban America, Inc. Announces a Lecture-Workshop

> "achieving superior urban design through urban renewal"

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ROGER MONTGOMERY AIA, Professor of Architecture and Director, Urban Renewal Design Center, Washington University, St. Louis, Missouri.

H. RALPH TAYLOR President, Taylor-Hurley Associates, Inc., New York; formerly Executive Vice President, Renewal and Development Management Company, Inc. and Director, New Haven Redevelopment Agency.

july 14-15, 1966 princeton inn princeton, n.j.

One of three lecture-workshops sponsored by the Division; the other two covering moderate-income housing to be held July 12-13, Princeton Inn and August 11-12, Claremont Hotel, Berkeley, California.

H. M. Franklin, Director—Redevelopment Division Urban America, Inc.—1220 16th Street, N.W.—Washington, D.C. 2003 Please forward further information on Lecture-Workshops.	6
Name Title	٠
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# An island tradition... preserved and protected with Olympic Stain



Honolulu's Sheraton Royal Hawaiian Hotel is an island tradition of world-wide fame. The task that confronted Wimberly, Whisenand, Allison and Tong Architects, Ltd., was to design a shopping center for the hotel in harmony with its reputation and with the beautiful, tropical grounds on which it stands.

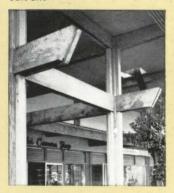
By taking full advantage of the site's existing trees and plantings, and by making use of a variety of natural wood in the post and beam colonnade, the architects have made the modern cluster of shops suggest a Polynesian village, woven into a grove of palms. In several places they have built the multi-level roof around the wind-bent trees. "Natural wood was selected," Mr. Allison reports,



"to maintain the tropical environment and to make the building fit smoothly into the surrounding gardens and landscaping.

"With the full range of over 60 Olympic colors from which to choose, Wimberly, Whisenand, Allison and Tong had no trouble finding the one they felt would best "give the rough wood a low-maintenance finish that would blend with and complement the tree barks."

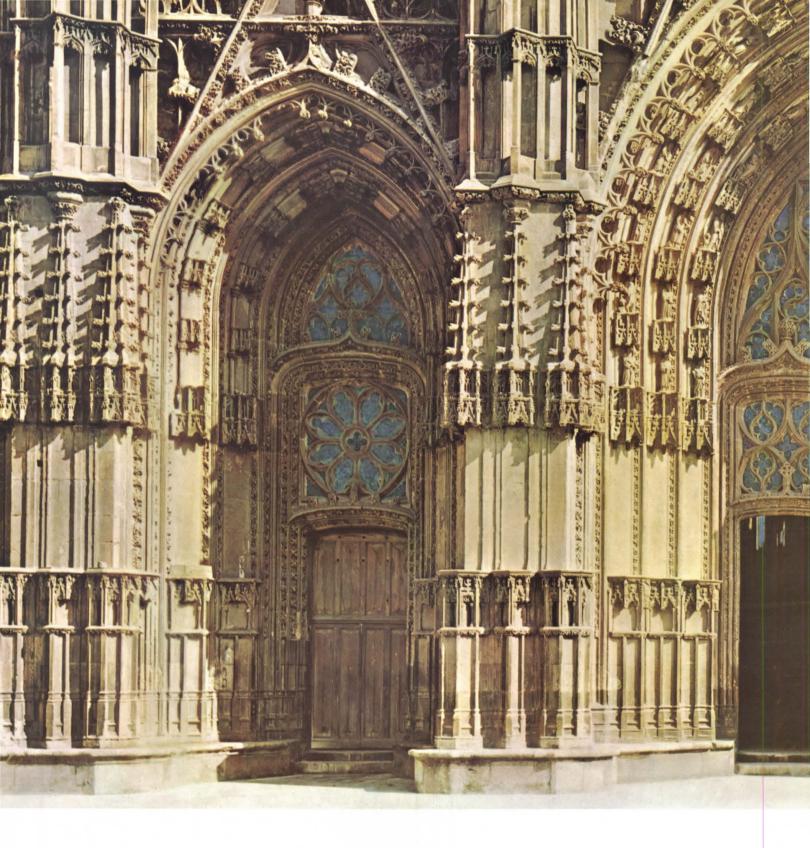
In a Pacific climate like Hawaii's the problem of adequate protection for exposed wood is especially significant. Natural wood was specified for the project because, in the architects' words, "its preservative nature resists the problems of humidity and salt air,"



The Sheraton Royal Hawaiian Hotel Shops are a harmonious part of their tropical site—thanks, in large part, to Olympic Stain.

For color samples on wood and new A.I.A. Information Manual, write Olympic Stained Products Co., 1118 N.W. Leary Way, Seattle.





# Some people believe a door should be a work of are

When it comes to entranceways, which kind of beauty concerns you most? The beauty of form? Of function? Of materials? At Schlage, we feel these three aspects of beauty are inseparable. We try to prove it in the way we make

our locks. A Chronologically, beauty of mat rials comes first. We pay a premium to go metals of intrinsic structural integrity and un formity. The tolerances to which we machine these materials bring a mathematical beauty



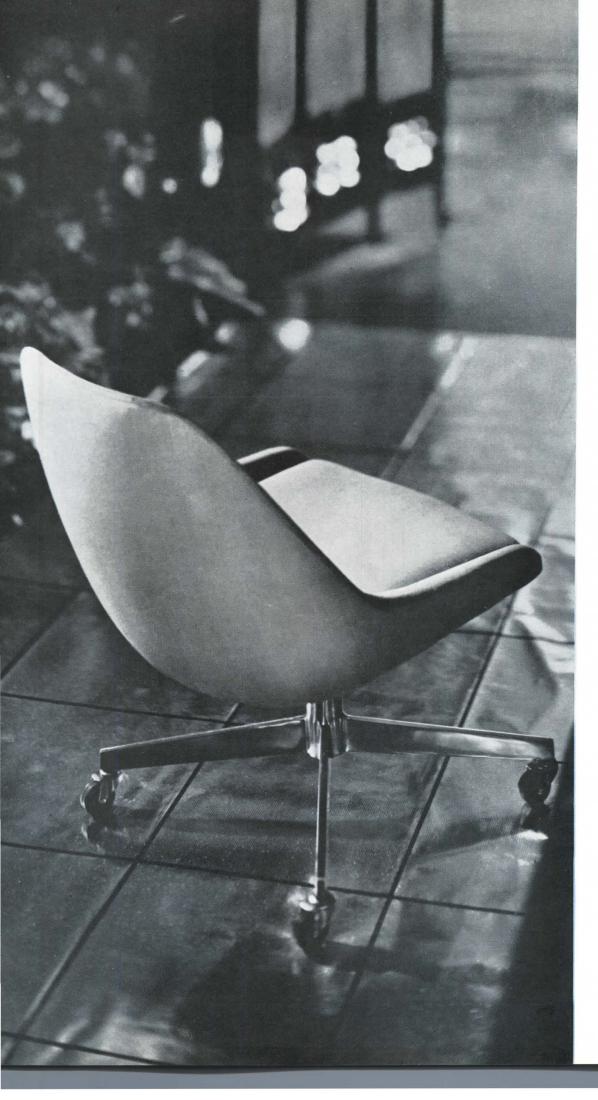
The facade of Saint-Gatien, Cathedral of Tours, is a masterpiece of late Gothic architecture. Started about 1200, Saint-Gatien was not completed until 1547. A limited number of special quality reproductions, made from this photograph, are available from Schlage Lock Company, Box 3324, San Francisco.

# chlage does.

the hidden dynamics of plungers, springs, beargs, tumblers. The external form grows out the internal function. At Schlage, this means the production of 101 different designs (and 3 finishes), each related to the mechanics of

locking, each with beauty built in at every step. This is why Schlage locks work on and on, smoothly and effortlessly, until they achieve a further economic beauty, the beauty of old age. 

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SAN FRANCISCO · VANCOUVER B.C.



# Meeting of the minds.

Innovation. Environment, Service. These are thoughts you live by. So do we. With you in mind. Take this chair for instance. It's new. With many innovations. But it's just one of some 50 Steelcase chairs which respected architects have used in noteworthy office installations. In other items of office furniture, too, your Steelcase representative can offer an impressive number of choices to fit your aesthetic and functional concepts. Most important, though, is what he can do to make your job easier. He doesn't just talk service. He gives it. The kind you like. And that we'd like to tell you about. Why don't you get in touch with Steelcase? Now. While your mind is on innovation and environment. And service. Write Dept. A.

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This new tile ceiling

will probably deceive







Guard installed on concealed zee suspension system (no intermediate fire protection needed).

You'll have to look very closely at an Armstrong Santaglio\* Travertone™ Ceiling to realize that it was put together tile by tile. The barely perceptible joint lines fade away to create an overall monolithic appearance.

We achieved this illusion by extending the meticulously arranged surface design right out to the square, sharp edge of each tile. When the tiles butt together, the pattern blends to create a subtle, bidirectional effect for really striking interiors.

There's nothing illusory about Santaglio Travertone's other characteristics, however. Acoustical efficiency is high, whether the tiles are cemented in place, or mechanically suspended. NRC Specification Range is .65-.75 for the former, .60-.70 for the latter. Average

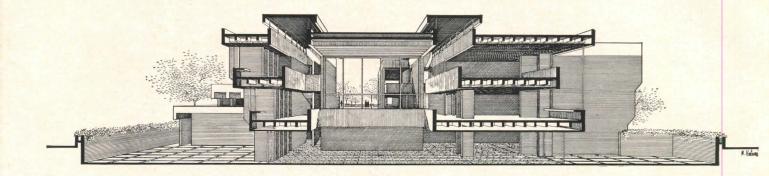
Attenuation Factor is 41 decibels. Light Reflection Coefficient is "b."

Noncombustible Santaglio Travertone Ceiling Systems provide fire protection, too. UL Label-Class I Flame Spread rating. UL Time-Design rating on floorceiling assembly-3 hours.

Santaglio Travertone is available in 12" x 12" x 3/4" tiles, with T & G square edges. The tiles cement quickly to any firm, flat, dry surface. Or they can be installed with standard concealed suspension system.

We could go on about Santaglio Travertone-particularly in relation to specific applications. Want us to? Write Armstrong, 4205 Rooney Street, Lancaster, Pa. \*Design patent applied for.





# Marvin Hatami designs a college library.

# Utilizing Zonolite® Masonry Fill Insulation in walls reduces initial equipment costs, saves \$700 per year on fuel, substantially raises indoor wall surface temperature.

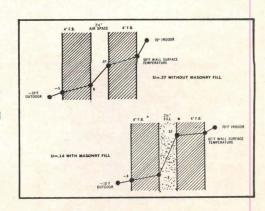
What would seem to be an added cost for insulation, in reality, is a highly profitable investment for your clients.

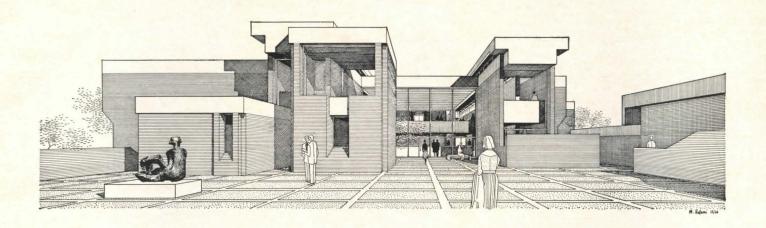
Consider this library designed by Marvin Hatami and engineered by Cator Ruma of Denver, Colorado.

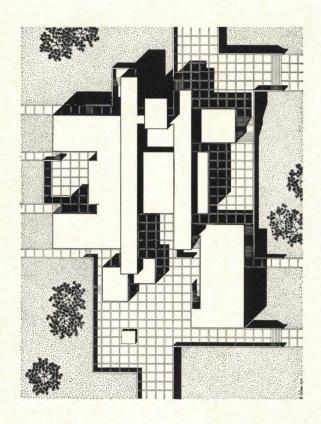
Its reinforced brick cavity walls feature Zonolite Masonry Fill Insulation. Installed cost? 10¢ per sq. ft. or \$3245 total. As part of a 20-yr., 6% mortgage, it figures out to \$279 annually.

For this investment, the client saves \$700 per year on fuel. That's a direct 250% return on his yearly investment in Zonolite Masonry Fill Insulation.

There are indirect savings, too.
(1) Smaller, less costly heating equipment can be used. (2) Indoor wall surface temperatures are raised from 50° to 62° F. This reduces body radiant heat exchange, minimizes wall surface downdrafts. (3) The interior surfaces of the walls can remain unfinished. And (4) the building is quieter because of Zonolite Masonry Fill Insulation's excellent sound absorption characteristics.







DESIGN CONDITIONS			Winter Heat Loss in BTU/Hr. Assuming 70°F Indoors —10°F Outdoors		Summer Heat Gain in BTU/Hr. Assuming 95°F, DB 64°F, WB Outdoors 78°F, DB 65°F, WB Indoors	
	Without Masonry Fill	With Masonry Fill	Without Masonry Fill	With Masonry Fill	Without Masonry Fill	With Masonry Fill
Walls	4" Face Brick 2½" Air Space 4" Face Brick	4" Face Brick 2½" Zonolite Fill 4" Face Brick	962,000	364,000	201,000	76,000
Roof	Roofing, 3½" Concrete		225,000	225,000	107,000	107,000
Floor	4" Concrete on Grade		56,000	56,000	-	
Glass: Solar & Transmission	1/4" Heat Absorbing Plate		730,000	730,000	443,000	443,000
Ventilation	15,000 DFM		1,080,000	1,080,000	229,000	229,000
Lights	175 Kilowatt		-	-	596,000	596,000
People 500		_	-	200,000	200,000	
Totals			3,053,000	2,455,000	1,776,000	1,651,000
% Savings with Masonry Fill		3,053,000-2,455,00 3,053,000	0 x 100= <b>19.6</b> %	1,776,000—1,651 1,776,000	,000 x 100= <b>7%</b>	

Additional facts of significant interest are available in our Bulletin MF-113. For your copy, please write Dept. A, Zonolite, 135 South LaSalle Street, Chicago, Illinois 60603



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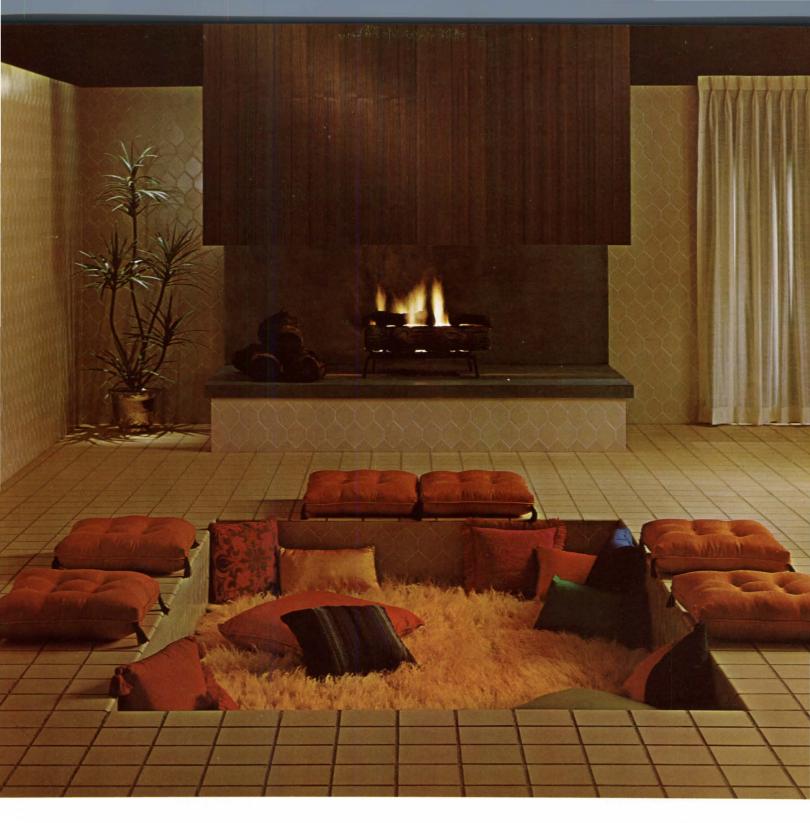
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# All-electric office building means "higher rentals... better earnings" says leasing expert

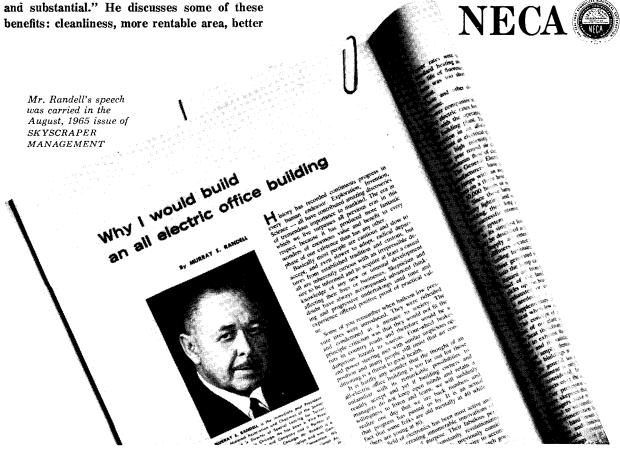
"I believe the all-electric office building has a distinct advantage competitively and can demand and obtain higher rentals resulting in better earnings than the average standard office building can produce," says Murray Randell, Director of Special Leasing for the Chicago firm of Turner, Bailey and Zoll.

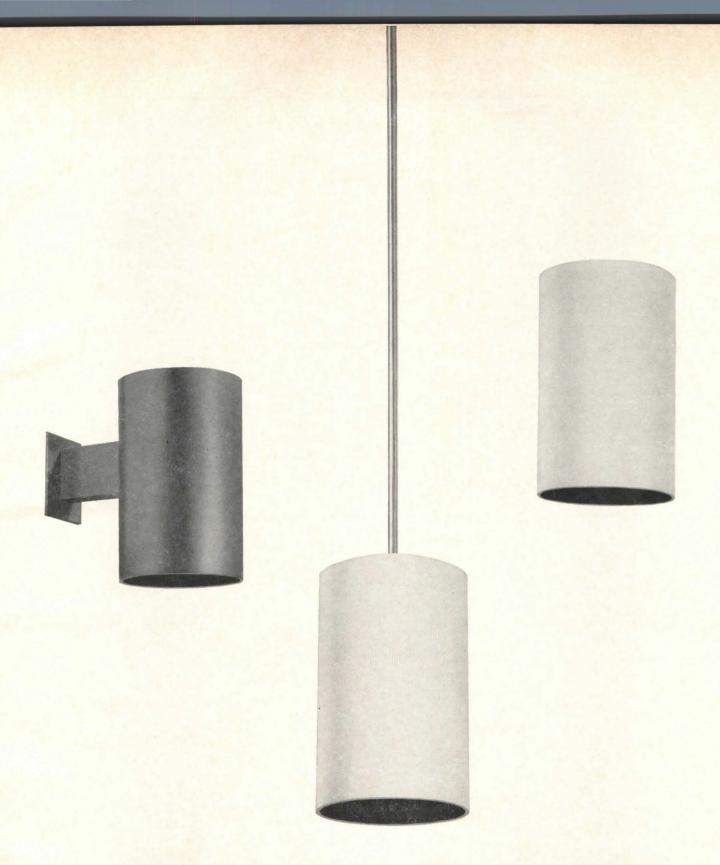
Mr. Randell made this statement in his speech, "Why I Would Build An All-Electric Office Building," given at the annual convention of the National Association of Building Owners and Managers, of which he is past president.

Mr. Randell points out that "the advantages and benefits accruing to the owner, manager and tenants of an all-electric building are numerous and substantial." He discusses some of these benefits: cleanliness, more rentable area, better

light, use of light for heating, efficient temperature and humidity control. And he points out how these benefits not only give the building a competitive advantage now but will prolong the economic life of the building. He believes that experience to date indicates that the operating costs of the allelectric building are lower than in a conventional building and cites figures to support his contention.

Because Mr. Randell is an acknowledged expert in his field, and has no connection with any phase of the electrical industry, we believe you will want to read his speech in full before you plan your next office building. For a free copy, write: NECA, National Electrical Contractors Association, 610 Ring Building, Washington, D.C. 20036.



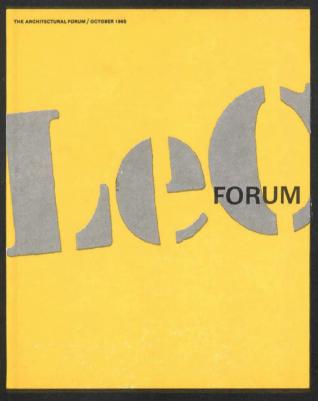


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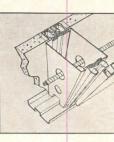


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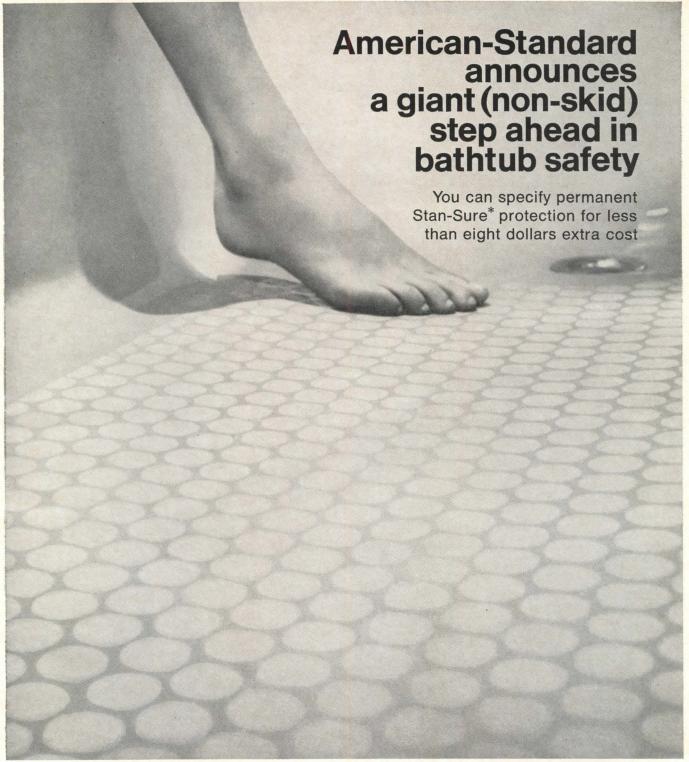
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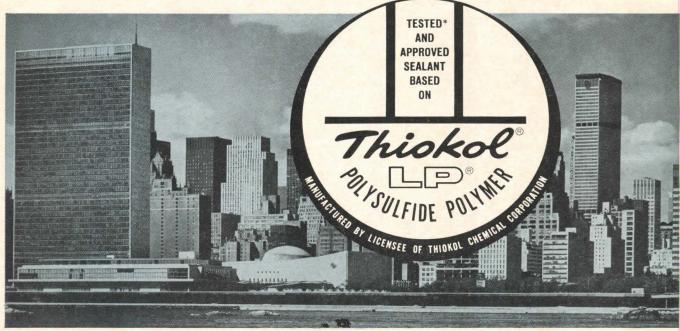
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#### HOME FOR HUBERT

"Down here where money's easy, Let's spend, let's spend, the cry; And it's après votes, the deluge. Let's build to beat Versailles."

James C. Cleveland Congressional Record

In an exchange of spring poesy, Congressmen last month kicked around the question of whether the Vice President should have a mansion to call his own. It wasn't exactly a fresh issue: for 180 years various administrations had been calling for a junior executive White House.

Who is kidding whom, queried William Cramer (Rep., Fla.) when he looked at the GSA sketch of what the mansion might look like (below). "All he is getting here is 4,000 square feet for entertainment. Why can't he entertain in all those wonderful square feet of the White House?"

Why not try to get ahold of Bobby Baker's old pad, asked H. R. Gross (Rep., Iowa).

After all, pointed out James C. Wright (Dem, Tex.), even forest rangers get log cabins.

Somebody called all the existing ex-Vice Presidents, and they agreed it would be nice for their successors to have a mansion. Harry Truman recalled that he had lived in an apartment when he held the office. Richard Nixon said he was all for a Vice-Presidential mansion "in principle," and Mr. Johnson, who had to rent a fancy place in which to do his Vice-Presidential entertaining, could hardly object.

So the bill passed by a margin of 13 votes, along the following lines: GSA is to supervise the design, construction and furnishing of a Vice-Presidential mansion for \$750,000 and to accept cash gifts, old furniture and the like to help defray costs. The site is ten acres

of the Naval Observatory grounds on upper Massachusetts Avenue.

GSA was offered plenty of guidance on how to go about its task. Mrs. Charlotte Reid (Rep., Ill.) urged study by a nonpartisan commission, in consultation with the AIA, the National Capital Planning Commission and the Fine Arts Commission.

August Heckscher suggested a national architectural competition. While Kenneth Gray (Dem., Ill.), chairman of the House Subcommittee on Public Buildings and Grounds, favored a "modern" style home by "a top architect," he felt it was too late to "hold a contest."

President Johnson speedily signed the bill, but accompanied it with the directive that nothing be done at the moment because of Viet Nam military spending and inflation-neither of which give indication of passing into immediate oblivion. Congressman Gray and the GSA, hopefully, will now use the time to hold that contest.

### TRAGEDY IN TWO ACTS

In 1960, San Francisco staged perhaps the most ambitious architectural competition the U.S. had yet seen. It involved 22 acres of prime land in the lap of the city, the first phase of the Golden Gateway urban renewal project that was to transform the decaying downtown waterfront into a shining micro-city of apartments, townhouses, and commercial buildings. The land was to be awarded, not just on the basis of the price developers would pay, but on the basis of urban design.

Last month, purchase of the land in the second phase—an 81/2-acre parcel set aside as Golden Gateway's commercial center-was being negotiated with a development syndicate called Crow-Box-Portman representing money from Texas, Oklahoma, and Georgia. This time around there was no



HE great concrete cliffs (opposite) that have risen on a plateau about 20 miles from the center of Toronto are an important milestone in urban design in North America. On this plateau, in the next few years, some of the new urban design theories ("Plug-in Cities," Action Architecture, Service-and-Traffic Grids, etc.) will be given their first, practical workout.

The concrete cliffs are called Scarborough. They grew, like some sort of high-priority emergency project, in near and in two years flat. Scarborough was designed to accommodate about 6,000 people—in its initial stages, anyway—which means that it was designed to accommodate the total population of New York City in 1715.

Scarborough, of course, is not a city. It is the nucleus of a new sort of campus—a campus that was conceived as a single building, almost infinitely flexible, and expandable.

A college can never be quite like a city, and the analogy contains certain dangers. But many things that happen in a college are analogous to things that happen in a city: a college is a place where many people work (and in some cases, though not in this one, live); it is a place for research, for continuous communication, for the development of social contacts, for the movement of many people in many directions and by different means at the same time. To these extents, a college campus can be a laboratory for many design concepts applicable to the new, large-scale complexes, including cities, that we must build to survive.

# THE NEW CAMPUS

It suggests a changed scale in urban architecture

On the next 25 pages we try to do several things: first, to document in photographs and drawings what Scarborough is today and what made it what it is; second, to analyze four other new campus projects (Berlin, Forest Park, Marburg and Chicago Circle), and to show that Scarborough is no isolated freak, but part of a world-wide move toward a new scale and toward new systems of design appropriate to that scale; and, third, we try to assess the significance of Scarborough and of these other projects, and to evaluate them as well as this can be done at such an early stage.

All the material for this article was assembled and written for the Architectural Forum by Oscar Newman, Associate Professor of Architecture at Washington University in St. Louis. There, Professor Newman runs the Master's Program of Urban Design and the Urban Renewal Design Center, together with its director, Roger Montgomery. The material shown on these pages represents only a sample of the continuing collection of significant urban design projects carried on at this Center.

We are most grateful to Professor Newman and his associates for making some of this material available to us. And we applaud those who dared build Scarborough—the architect, John Andrews, and his associates, and the client, the University of Toronto. All these will be remembered for their courage as well as the quality of their achievement.



# **SCARBOROUGH**

# The program, people and principles that shaped it

BY OSCAR NEWMAN

Scarborough is one element in the expansion program for the University of Toronto.

The main, downtown campus of the University has already eaten up all the land available to it. Traditionally, at this university, large separate departments are often housed in buildings off campus; but Scarborough is the first example of a major facility for 6,000 students, offering a broad program of studies, to have been planned out in the suburbs.

Scarborough will also be the first of many such facilities under a long-range expansion program. This program will eventually relegate the mother campus to providing only graduate studies to the many undergraduate campuses all over the metropolitan region.

Work on the master design for Scarborough was begun in the spring of 1964 by a team made up of an architect, a planner and a landscape architect, assembled by the University of Toronto Planning Board.

A development program and schematic land-use plan were scheduled for review in the fall of that year. When the presentation was due, the team had produced a master plan and a detailed schematic for the building and site. The concept has not changed very much since.

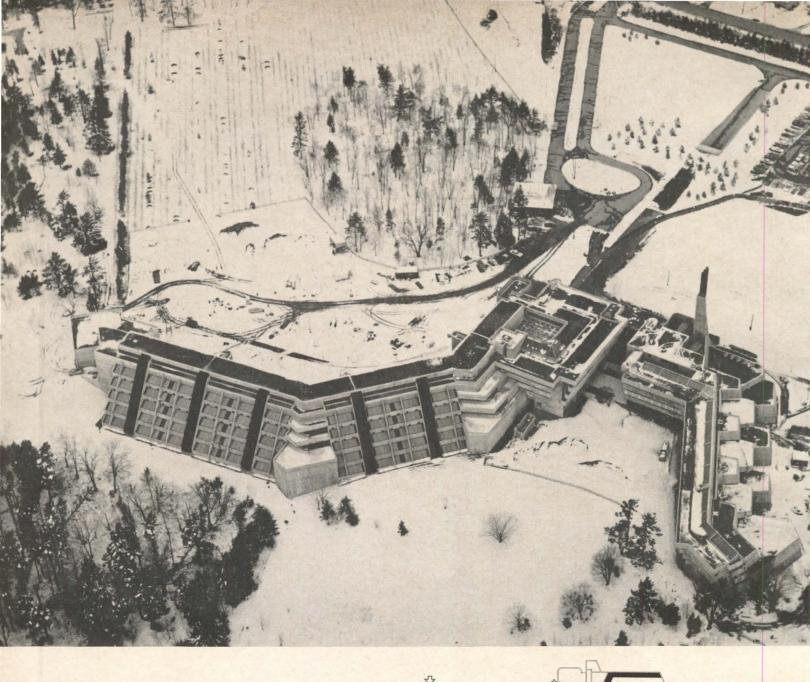
The campus building, from its acceptance by the board to the completion of the first stage (as illustrated here), was put together in just over two years.

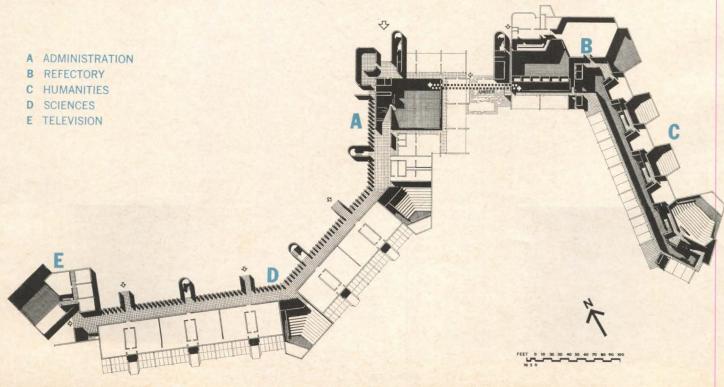
To aid in the detailed design development and in the preparation of the contract documents, the architectural firm of Page & Steele was brought into association with John Andrews who remained, throughout, the coordinating architect.

From a terrace outside a student lounge, one sees the sloping walls of the science labs, and the stepped-out floors of the Humanities Wing.









# Scarborough College: Site and siting

The choice of this particular site was made when the land was purchased, well before the planners were called in. It is part of a large conservation area, zoned so that only 50 of its 200 acres can be built upon; and only for institutional use.

Most of the site is a heavily wooded valley with a small river. To the north, however, is a higher plateau of some 50 acres, clearly defined by a ridge. For reasons of climate and easier accessibility, most of the campus was set on this plateau.

An expressway links the campus to the city and to the suburb of Don Mills. There is bus service now and there will be subway service in the future. Initially, however, most students and staff will arrive by car, and appropriate parking facilities have been provided. Since the campus building follows the ridge, the flat area to the north was kept clear for parking and future expansion.

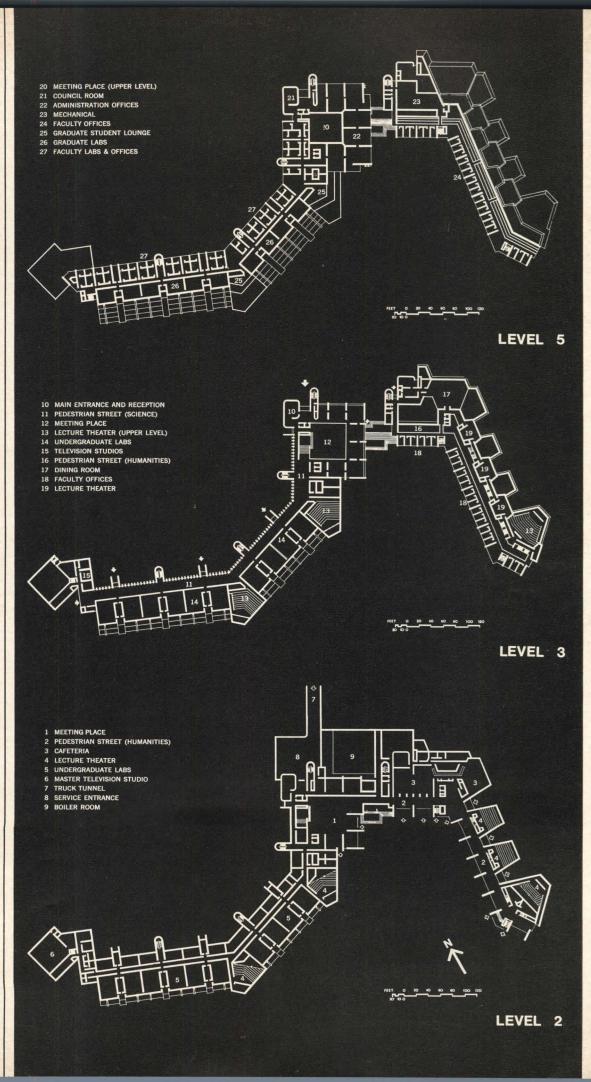
### First stage: a single building

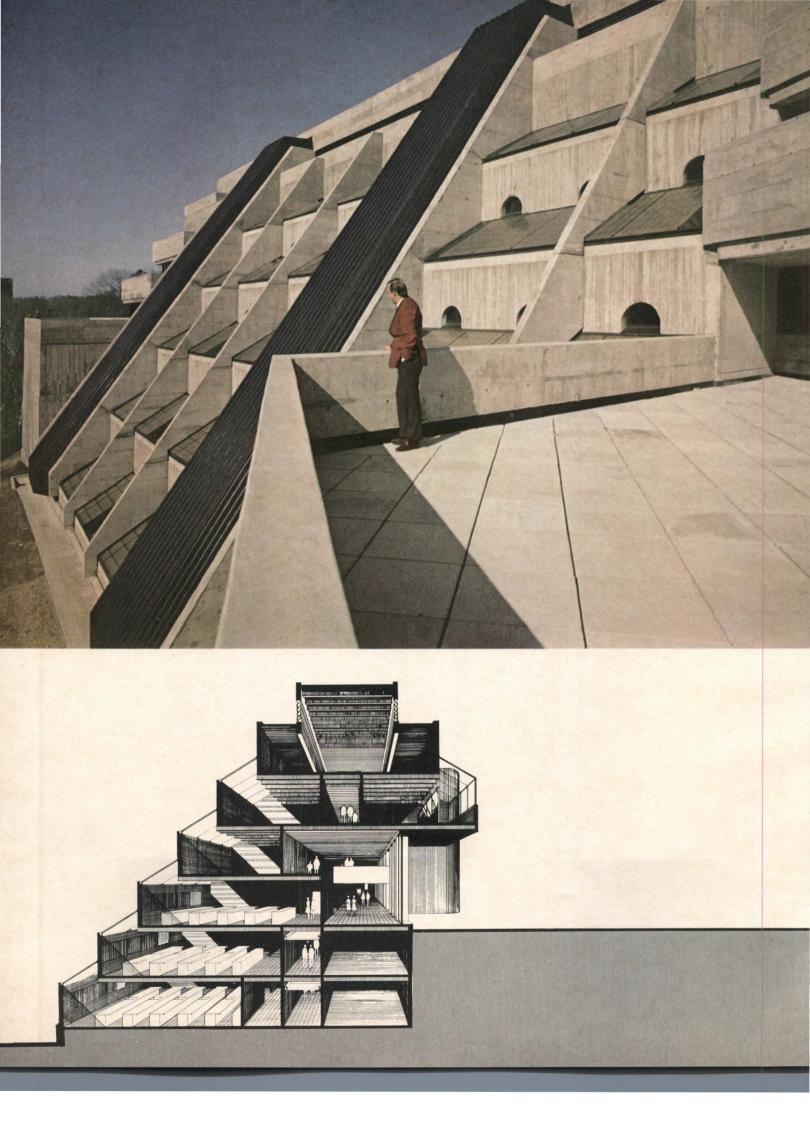
Scarborough (Phase One) consists of a central administrative and social focus (see p. 40); from this extends a Science Wing (p. 37) to the west, and a Humanities Wing (p. 39) to the east. Access is from the north.

The long, meandering structure is five to six stories high, and is fitted to existing grades so that access to the main interior circulation spaces is always from the plateau to the north. At the third level up (see center plan at right) the two principal wings, which are connected underground, are separated by an entrance slot.

The key to the building is its interior circulation system (see diagram at left). This system uses enclosed, skylit (or glasswalled) pedestrian "streets" that tie all spaces together, and make the campus weatherproof. How these "streets" work is described on the next six pages.

Left, air view of campus and plan of circulation system (left segment is third level, right segment second). Right, representative floor plans.





#### Scarborough College: The Science Wing

On every floor of the Science Wing, each set of two labs shares a preparation room. These rooms and labs are serviced by exterior ducts large enough to accommodate maintenance men. The duct layout is explained in the diagram at bottom, right.

Spaced at varying intervals between strings of labs are the lecture theaters. They form the "knuckles" of the Science Wing, and their polygonal plan permits the wing to change direction so as to follow the line of the natural ridge. Terraces, like the one shown at left, are located outside these lecture theaters, and outside the student lounges above the theaters.

The Science Wing is entered primarily from the plateau level to the north. These entrances lead into a kind of continuous interior "street" that is the most striking characteristic of both wings of the campus. From this "street" one reaches undergraduate labs on four levels (see section, opposite) by way of the rounded stair towers spaced evenly along the north side of the "street." The top of the Science Wing-its sixth flooris, in fact, a great mechanical space that feeds all the labs below through the systems of sloping ducts mentioned earlier.

#### Sloping walls for better labs

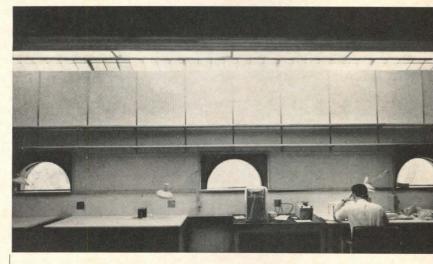
Next to the interior "street," the most striking detail here is the stepped-back south wall. This unusual profile gives the labs wall space (which lab technicians need) instead of window space (which they don't want); it gives them plenty of natural light through long, sloping skylights; and it produces laboratories of varying size on different floors—another required feature. Semicircular windows in the exterior walls permit an occasional glimpse of the surroundings.

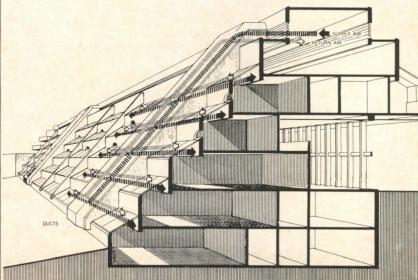
Typical undergraduate labs were designed to hold 20 students, and their size was limited by the preferred distance from a television screen. Each lab is plugged into a closed circuit television teaching system.



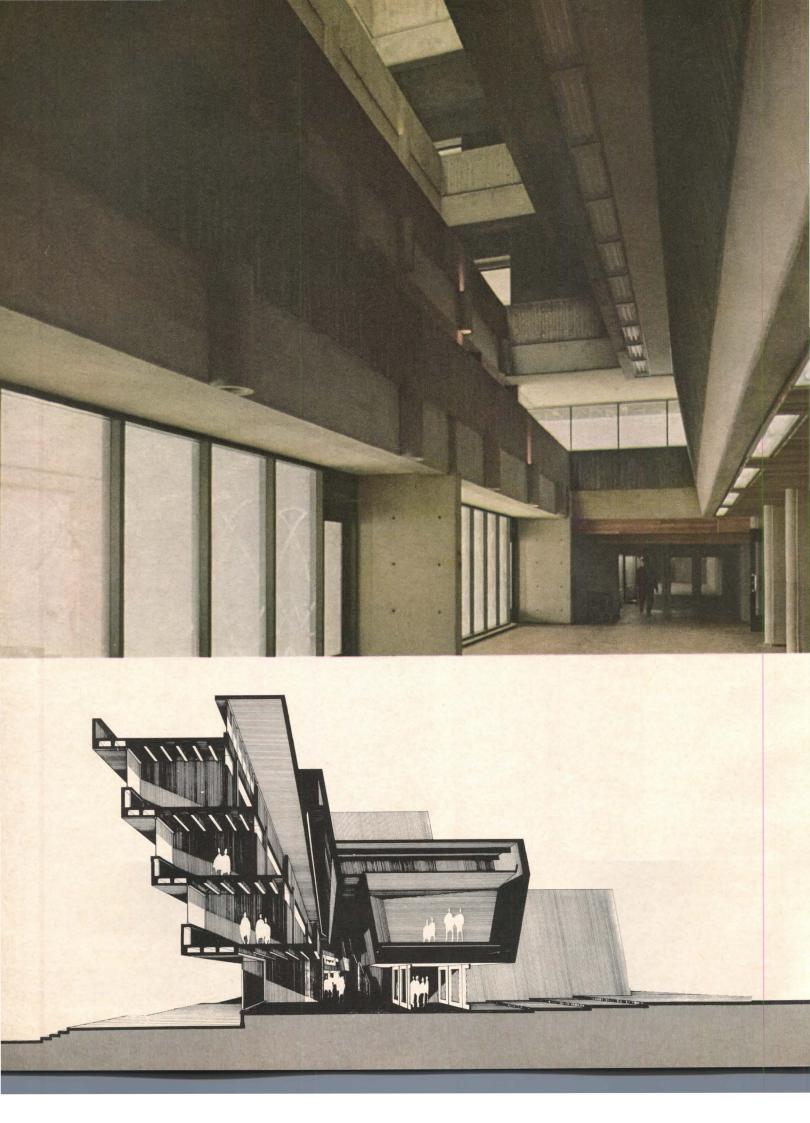








Opposite: Terrace outside student lounge at fourth level of Science Wing. Diagrammatic section shows pedestrian "street." Right, top to bottom: north wall of Science Wing with rounded stair towers; view of pedestrian "street"; interior of typical lab, with semicircular windows and continuous skylights above; and diagram of mechanical system.



## Scarborough College: The Humanities Wing

The shorter wing of the campus consists of auditoriums and offices strung out along a galeria-like, multi-level circulation spine lit by a continuous skyight (left, and below, right).

Each office level has its own balcony-corridor which overlooks the common galleria. At the ground level the pedestrian 'street' can be entered both from the plateau to the north and the valley to the south. On the south side, the "street" is glazed from floor to ceiling; on the north it is lined by large auditoriums on the ground level and smaller ones above.

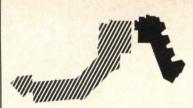
In section (opposite) the Humanities Wing provides two evels of lecture theaters on the north and three levels of offices above the ground on the south. Since the grade of the plateau drops off toward the east, the 'street' in the Humanities Wing could be placed a full story below the Science "street." This was resolved in the central fleeting Place (next page).

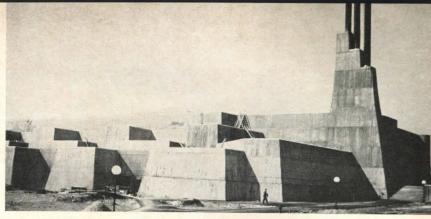
#### Splayed and staggered walls

The large lecture theaters capacity: 200 seats) on the street" floor were designed with inward-sloping walls. Thus hey provide a large floor area for an appreciably smaller roof area and span, and offer certain acoustical advantages.

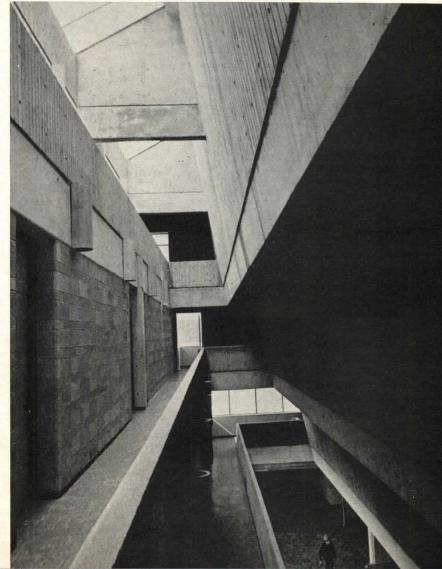
The smaller lecture theaters apstairs (capacity: 100 seats) have walls that slope outwards. This, too, provides better acousics, but structurally the solution is not nearly so rational. Access to the small theaters is by individual straight-run stairs and by bridges from the galeria's balconies.

Three large auditoriums (250 teats) were built in the knuckles" provided by the break in linear movement as he building changes direction. The offices on the south side tep outward as they climb up. In contrast to the labs in the beince Wing, these offices have arge windows facing south and west. The stepped-out profile provides a "natural" sun screen.





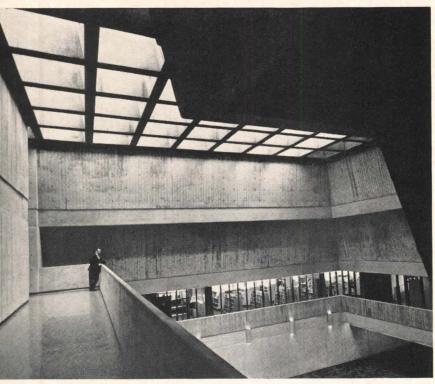




Opposite: 4½-story-high pedestrian "street" that is the circulation artery of the Humanities Wing (as shown also in diagrammatic section). Right, top to bottom: View of Humanities Wing from the north, with its clustered auditoriums and dramatic chimney stack; south and west side of this wing, showing stepped-out profile that provides sun control for ribbon windows; and typical balcony level within the central pedestrian "street."









Left (top to bottom): View at highest level of Humanities Wing, looking down upon skylights that illuminate the Meeting Place below. In the distance is the roof of the Science Wing. Other photographs show views into Meeting Place from mezzanine and main levels of Science "street," respectively. Opposite page: Overall view of the Meeting Place, and cutaway view showing its relationship to adjacent levels.

#### Scarborough College: The Meeting Place

Although the two wings of Scarborough appear to be separated by the entrance slot, they are, in fact, joined below the entrance platform at the level of the Humanities "street".

This passage leads from the Humanities Wing into the squared-off northeast end of the Science Wing. The squared-off block, with a sky-lit court in its center, is the focus of the campus: the Meeting Place.

In cross-section, the central block resembles the northern edge of the Science Wing on one side, and the southern edge of the Humanities Wing on the other (see diagram, opposite). Between these extensions of the main wings is the Meeting Place (roughly 80 ft. square).

The Meeting Place is located one floor level below the grade of the plateau to the north, but is directly accessible from the natural grade to the south. The Meeting Place is four stories (about 50 ft.) high, and it is surrounded, on different levels, by bookstores, administrative offices library facilities (in Stage One) a cafeteria and kitchen, a faculty dining room, and, on levels, a group of seminar rooms

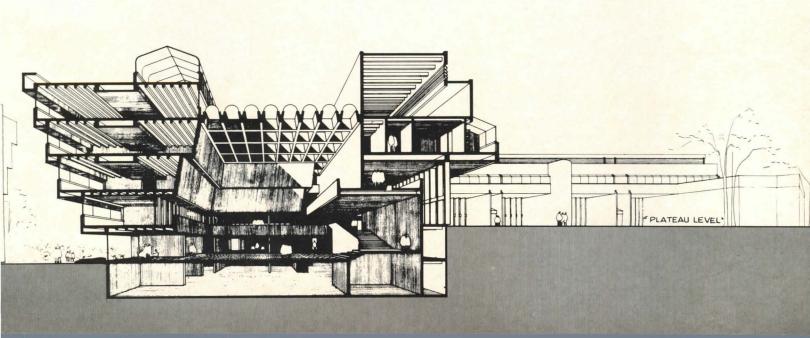
#### Crossroads of the campus

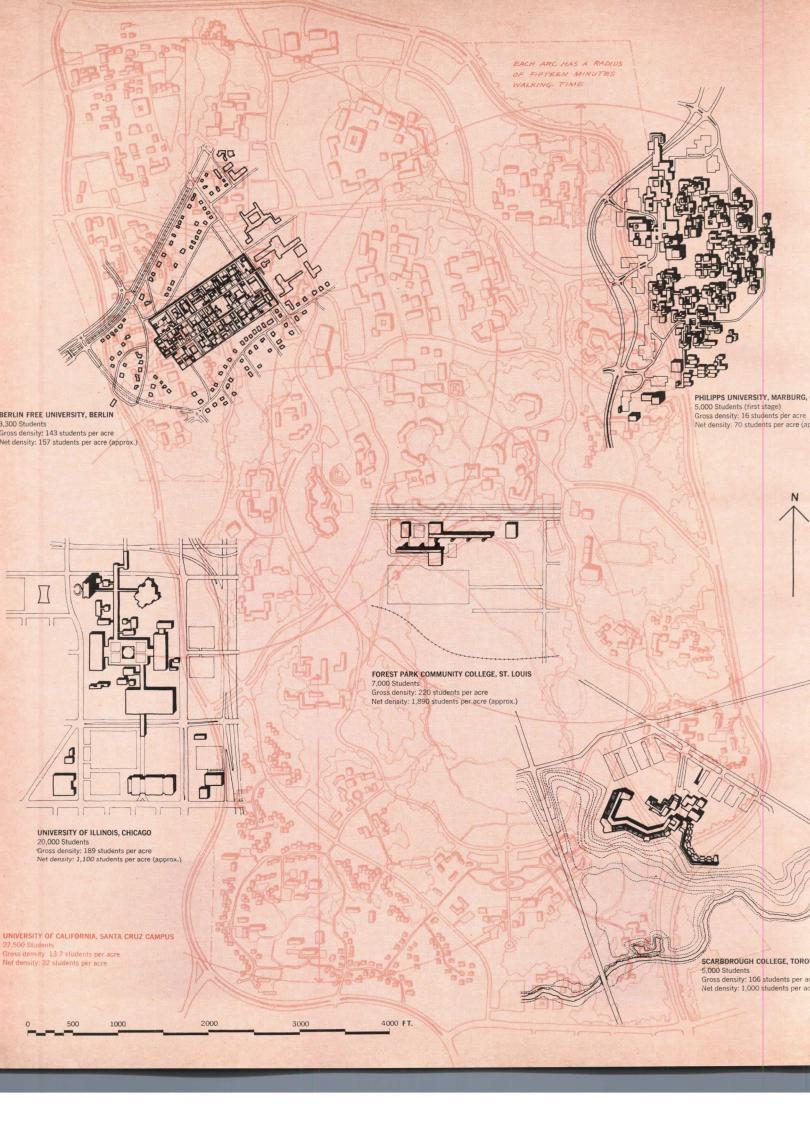
Because the level of the Science "street" is one floor higher than that of the Humanities "street," the Meeting Place serves as a vertical link between these two. This was handled in a generous fashion, with broad steps and platforms joining the two levels. Everyone, and faculty alike, must walk through the central Place to get from one facility to the other—and this architect's intention.

The scale of this Meeting Place makes it a truly monu mental space, overlooked by various galleries; and it is lit no only through the great eggerat skylight overhead, but also from unexpected angles through glas walls and skylights in the many spaces that converge here.

(An analysis of Scarborough by Professor Newman appear on p. 53.)







# THE NEW CAMPUS

It is characterized by urban density, stress on circulation, and the mixing of disciplines

The compactness of the New Campus: At left are the five examples analyzed on the following pages, shown against the sprawling outline of the University of California at Santa Cruz. All drawings, including that of Santa Cruz, are at the same scale. (Gross density refers to the total acreage of the site, net density to enclosed spaces only).

"The very same process of automation that causes a withdrawal of the present work force from industry causes learning itself to become the principal kind of production and consumption. Hence the folly of alarm about unemployment. Paid learning is already becoming both the dominant employment and the source of new wealth in our society."

Marshall McLuhan Understanding Media

With the suddenness of a coup d'état, the New Campus has come to occupy the dominant position in current architecture. The cause of the phenomenon appears to be the confluence of two currents of change, both of which have been developing for a long time: the one, a change in the aspirations of the profession, the other a change in the nature of higher education.

The profession, for its part, has been seeking a more relevant role in society. We architects find ourselves continually frustrated in our desire to communicate, through building, our values, aspirations and lifestyles. Our present role is all too accurately measured by the insignificant percentage of building society allocates for our design.

Most of what we do design, moreover, contains built-in limitations. Office buildings are little more than large, neutral lofts, regardless of how much time is spent fiddling with details. Shopping centers offer intriguing problems of circulation and servicing, but the more design we put into them, the less successful they seem to be. Airports would appear to be a problem of particular relevance to a mobile society, but all we end up designing are the waiting lounges, mobile or otherwise; and the guts of the problem, the jumble you see from the window of a waiting plane, they won't even let us come near.

When it comes to planning, our position is reduced to the absurd. Large scale residential developments in our country are built solely for the occupation of the middle class, whose aspirations for ever larger lots are coupled with oblivion to the implications of urban sprawl. As planners of cities, we are hamstrung in that we control none of the mechanisms for the execution of our proposals. At best we are involved with the design of the ideal while the refuse of the real accumulates around us.

## Campus form follows a faith in urbanity

Small wonder that campus design has opened a welcome new horizon. But there is something more involved than the opportunity to extend the scale of practice. Perhaps what this is can be best explained by the comparison of the plan of Santa Cruz against the five campuses we have chosen to talk about in this article.

The layouts and densities of these other campuses are not merely a reflection of available land or even of academic policies. Their form is the result of a commitment on the part of their designers to a life-style. For our five campuses it is a commitment to a life-style which, with urban centers, is quickly disappearing from America. Santa Cruz, in contrast, is in the tradition of the dispersal unleashed by the automobile. Santa Cruz's similarity to suburban planning is not accidental. It is simply too reminiscent of the laissezfaire planning policies that have disemboweled our cities.

It is not reading too much into the plans of the other five campuses to suggest that their designers are using them as instruments to express their aspirations and faith in high-density urban environments. For the American designers, at least, these campus proposals represent a conscious rejection of current planning policy and a desire to construct something new

Much of the research for this portion of Mr. Newman's article was carried out by students in the Master's Program in Urban Design at Washington University as part of their curriculum. Mr. Newman particularly wishes to acknowledge the assistance of Michael Lowe in coordination of material and graphics.

BERLIN FREE UNIVERSITY. Architects: Candilis, Woods & Josic; architect in charge, Shadrach Woods. Number of students (first stage): 3,300. Area of site: 24 acres. Distance from city center: 6 miles.

Berlin University, for all its emphasis on circulation and commitment to open, non-compositional form, is basically a departmentally organized campus. There is, however, within the programmatic dictates of departmental organization, a hierarchical circulation pattern and grouping of facilities.

As a matter of policy, the architects deliberately avoided providing a single strong campus focus (beyond that of the cafeteria) in order to encourage the development of spontaneous centers and interdepartmental mingling throughout. They further felt that a single university focus conflicted with their notion of design for future expansion.

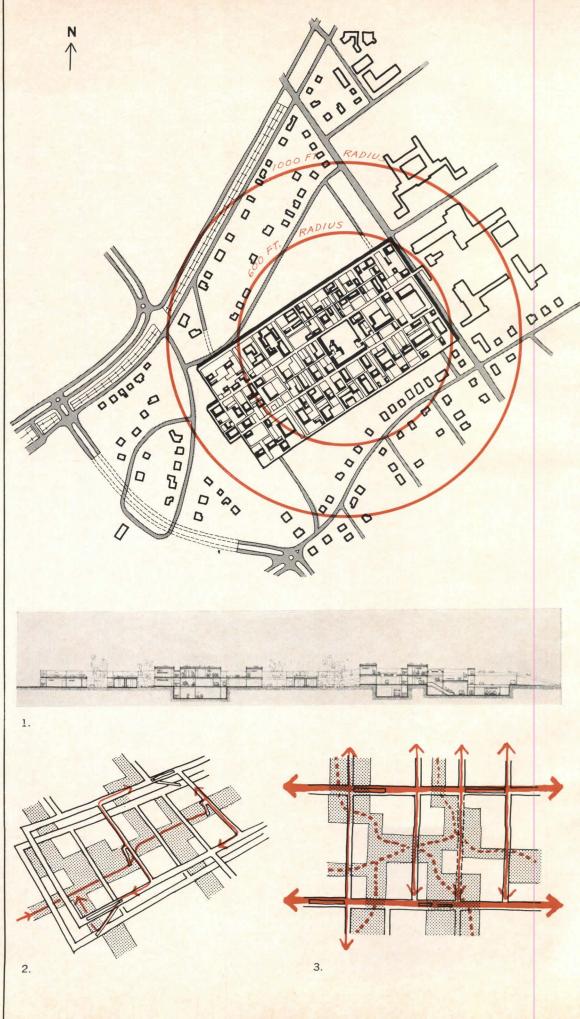
The campus is structured around a horizontal grid of pedestrian movement. The major corridors are some 16 ft. wide and run parallel to each other the full length of the site.

A secondary system consists of 8 ft. wide walkways, at right angles to the main arteries, located where changing circumstance dictates. Independent of the covered rectangular sheet grid run a series of interconnecting green spaces which move around and under the buildings in a non-geometric fashion.

The two types of covered streets set up their own horizontal hierarchical activity structure. The larger, short-term facilities are located off the primary walkways. The smaller, longer-used facilities—seminar rooms, labs, and offices—are located in the areas between the major parallel streets and are accessible off the secondary walkways.

Further small, long-term use activities are located at the second level. Corridors on the second level open to roof decks.

1. Section of campus. 2. Possible paths of movement, using all three circulation systems. 3. A hierarchy of paths: the grid of covered walkways, and the rambling, open greenways (dotted lines).



and, hopefully, inspiring in the urban framework.

The other facet of the campus as an architectural problem is its uniqueness as a building program. The campus for 10,000, built at a stroke, has no precedent and hence no formal historical baggage to prescribe its solution. As a program it offers a blend of opportunities not available elsewhere.

Its scale is that of a small town. But it is very different in that the designer is working for a single client with a program that is definitive; a budget which is real and which, once allocated, he controls; and a staging sequence which, by comparison to town planning, is finite rather than open-ended and unpredictable.

In terms of client, both educator and student are, after all, members of an elite. Studies of perception have shown that artistic taste is a ladder, paralleling class, and that those on each rung emulate the values of those on the rung immediately above. The architect, as a professional taste-maker, automatically occupies the highest rung. Campus clients, unlike most others, are only a rung or so below. They are both flexible and responsive.

Best of all, campus design stands out as a problem uniquely reflective of our time—a distillation of the needs and values we like to think of as being synonymous with our great, open, mobile, and progressive society. Universities are not just the most sophisticated of all our institutions, they may be, today, the most relevant.

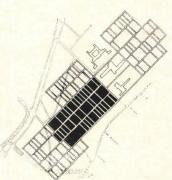
## Explosion in education, a revolution in planning

Higher education is now the preserve of everyone. Its assumption of mass scale is one of two changes in the educational process which have helped bring about the emergence of the New Campus.

The second is, of course, the expansion of human knowledge, which has brought a headlong specialization of existing disciplines and the periodic creation

of entirely new ones. The problem is not one of simply providing everybody with a uniform advanced education; it is compounded by having to provide for greater choice in courses of study and for post-graduate specialization.

The effect has been a complete reorganization and restructuring of space allocations. The campus



Controlled staging: The Berlin campus will grow to three times its present size (dark area) in modular increments

as we have known it will never be the same again.

The old tradition of providing buildings for particular departments has given way to an organization in terms of functional activities: labs, teaching spaces, faculty offices, administration areas, etc. Instead of the repetitive standard classrooms, uniformly provided for every department, spaces of varied shapes and sizes are being shared by all disciplines. The result is the provision of a much greater variety of teaching and study spaces, both in terms of size and function, and a more careful programming of their use. To check the accuracy of design for "optimum use," scheduling models are set up and verified by computer.

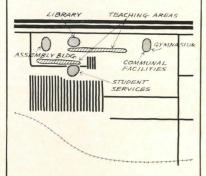
The coupling of functional campus organization and computer programming has resulted in savings of up to 30 per cent in the requirements for both space and teaching faculty. Facilities can be scheduled to be occupied some 90 per cent of the time and to 80 per cent of their capacity.

But the break from departmental to functional organization, while encouraging such efficiency, also has resulted in a loss of orientation and identity on the part of the students and, in some instances, on the part of the faculty. Where students previously had some form of home base from which to operate, usually related to the departmental building which housed the courses they majored in, they now tend to operate out of a locker (at least during those formative years spent in undergraduate study).

## Counteracting the threat of a loss of identity

With so many and varied courses being offered and spaces being allocated anonymously for use by all disciplines, any structuring of the student's course of studies must be done in his own mind or not at all. There is no identifiable echo of a course of studies in threedimensional space, as there is in the traditional universities organized by department. (As an aside, it would be interesting to explore whether, since one of the university's major functions is to prepare the student for a leading role in society, this separation of professional identity from spatial identity is not in fact readying him to face our unstructured world).

To counteract this lack of identity and to provide some sense of home base in functional organization, the New Campus tends to provide much more



Common spaces at Forest Park are generous in relation to teaching areas

space for individual study and socializing. Libraries, for instance, form a much larger ratio of the total space than they do in traditional campuses. Common social spaces, varying in size to FOREST PARK COMMUNITY COL-LEGE, St. Louis. Architects: Harry Weese & Associates; associate in charge, Jack Hartray. Number of students first stage, 3,000; on completion, 7,000. Area of site: 32 acres. Distance from city center: 5 miles.

Forest Park was programmed to provide some 25 different courses of study, discouraging organization by department in favor of organization by function. Because of the very restricted site that came with the decision to locate in town, the campus was made four stories high. To cut down on the need to be continually climbing stairs, the campus was structured with a vertical hierarchy of activities.

The teaching units move out in opposite directions from the central focus. They are 180 ft. long, and are serviced by circulation and utility towers at each end.

Within the vertical section of each unit, working from the bottom up, are the large lecture theaters; the general function classrooms of various size; the small classrooms and seminar rooms; and the laboratories and offices. They are arranged so that the large, common and frequently changing facilities are located near the ground level, while the small, specialized and long-term use facilities are located on the upper floors.

The large volumes of the campus library and administration offices are located opposite each other and form the horizontal focus of the campus. Adjacent to them is a paved plaza containing an open-air amphitheater, and there are plans for the eventual addition of a large enclosed assembly area.

UPPER LEVEL STAGE I STAGE IL UU 200 UU UU STAGE IL 2. GROUND LEVEL

1. The vertical organization of the teaching wings, with circulation paths shown in red. 2. Plan of campus, with the second stage in broken outline.

serve from three to 300 students, are usually sprinkled very liberally throughout the campus.

The result is the maximum mixing of disciplines. But the problem of student-teacher interaction seems a much more difficult one to solve: organization by function seems to make it inherently difficult to achieve.

#### Flexibility vs. suitability: the paradox of growth

The demand for mass education and the consequent specter of unpredictable growth, places a great premium on flexibility. But flexibility in campus design contains an inherent paradox: the closer one gets to achieving the universal, all-embracing spatial grid, the further one gets from providing spaces which are suited to specific needs.

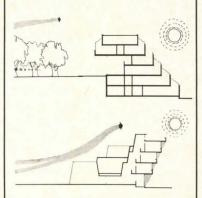
Two distinct and somewhat opposing solutions to this paradox have been attempted. On the one hand, there are those New Campus designs that rely upon a repetitive module and structural system which will allow the interchangeable construction of most of the predictably required spaces. Problems of growth or internal expansion are solved either through simple addition or through a process of breakdown and reassembly.

Examples of this are Berlin Free University and the University of Marburg. The form language utilized for these campuses is neutral in the extreme. The projects are never seen as complete forms at any stage in their development; they

answer the old compositional requirements of architecture by simply refusing to deal with them. The buildings are intended to be understood as a series of visual fragments, with perception of the totality the result of an accumulation of sequential experience. Perception, in any case, is understood to be continually modified by changing use and identification with different areas.

An inherent problem in this universal-grid approach is the added expenditure required in the overdesign and duplication that comes with making one thing serve many possible future uses. The overdesign usually appears in the structure, detailing, and the provision of utilities.

In the other direction there are those who respond to the need for flexibility and growth by de-



Expression of the particular: Sun, wind, and their effect on Scarborough's forms

veloping a form language based on an expression of the peculiar qualities and requirements of individual spaces. The result is inevitably much more a personal expression on the part of the architect who designs the campus.

The design of the whole structure is an assembly of individually expressed elements. They are knitted together by finding in the circulation and common activity areas equally expressive forms which, hopefully, tie things together.

Problems of growth and flexibility are answered in that the form language is "organic": that is new problems, additions, changes, or adaptations can always be answered by finding an expression of these new needs in the ever-changing total composition. Examples of this method of working are Scarborough and, to some extent, Forest Park Junior College.

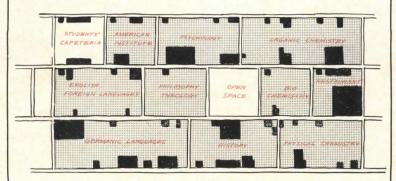
The limitations of this approach appear not in the form language (although the forms depend greatly for their success on individual architectural talent) but rather in the actual physical process of making alterations. Spaces designed for peculiar needs do not lend themselves readily to adaptation to other uses, even though the form language may allow them to be integrated with the old.

A clear advantage of this approach over the first, however, is in the provision of better functioning areas. The continuous problem of change can to some extent be avoided by the further development of the organic logic into a hierarchical organization of spaces and activities—a solution which in itself goes a long way toward limiting the need for large-scale future changes.

#### Hierarchies of activity, and circulation systems

The great frequency of change in use of facilities, the great numbers of people involved in these changes, and the high densities of the New Campus all have conspired to give circulation systems an inordinately important role in its design. But the formal expression of circulation has a significance which goes beyond such functional considerations.

Whether it is because they are the embodiment of the mobile



Berlin is organized departmentally, but dotted with small shared meeting places

PHILIPPS UNIVERSITY, Marburg, Germany. Architect: Marburg Planning Department, under the direction of Kurt Schneider. Number of students: 10,000. Area of site: 622 acres. Distance from city center: 2 miles.

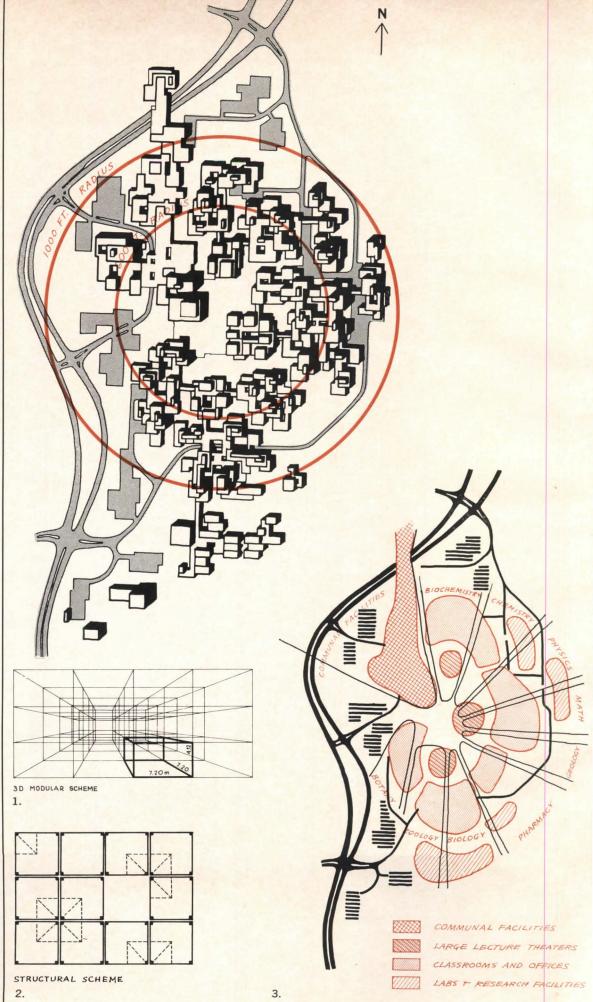
The Marburg campus has been designed to get the best of both worlds: the campus is organized departmentally, and each department has a clearly structured hierarchy of activities.

From the core, containing the library, a large auditorium, restaurants, shops, and student union, the campus develops out in a series of concentric rings on a departmental basis. The larger commonly used facilities are located off the central core and are shared interdepartmentally. The smaller, specific and less frequently changing facilities are located in the central rings. The graduate facilities and research laboratories are located in the peripheral rings where they are also more readily serviced. The campus thus has the flexible advantages of functional organization while still providing the identifying attributes of departmental organization.

To provide the maximum flexibility within this general plan, a three-dimensional modular system was developed for the structure of the entire campus. Expansion can occur easily in all directions.

The structural system is made up of standardized precast concrete columns, beams, walls and slabs. The columns are designed to carry varying loads should the decision be made to expand upward or increase the span of adjoining spaces. Mechanical equipment is carried in ducts built into the precast floor system, providing freedom to build rooms of varying heights. The system was designed to allow for the construction of all foreseeable special requirements, except the large auditorium.

1. The modular scheme, in three dimensions. 2. The repetitive structural system. 3. Marburg's departmental division of space within a core-centered, hierarchical plan.



society or the personification of progress, circulation patterns in the form of the New Campus have entered the realm of the symbolic. If there is one similarity all of our examples share, regardless of sometimes conflicting design philosophies, it is in this formal expression of movement systems. It is their most characteristic feature.

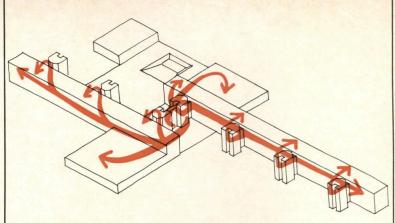
A further component of this concern with circulation is the development of clearly defined activity hierarchies. These, in combination with the circulation hierarchies, have resulted in giving the new campuses strong tree-like patterns of organization and physical structure.

Both in campuses arranged by function (Chicago Circle, Forest Park) and those arranged by department (Marburg, Berlin), the hierarchical allocation of activities is the single strongest organizing element. Those activities most used in common and those of largest size are located centrally, with a gradual tapering off toward the periphery to those activities used by the fewest numbers and for the longest durations of time.

Specifically, the following activities tend to be centrally located and shared interdepartmentally on a university-wide basis:

1. Teaching facilities of a high density and with a high changeover frequency, such as auditoriums, lecture theaters, and audio-visual laboratories;

2. Non-teaching facilities of



Circulation and campus form: Forest Park

large scale, including libraries, athletic facilities, administration offices, lounges and commonrooms, and dining facilities.

By comparison the following activities tend to be located in a peripheral position, whether horizontally or vertically:

1. Teaching facilities with a low density and low frequency of change-over, and those which are peculiar to specialized courses of study or dependent on frequent delivery of bulk equipment and supplies;

2. Such non-teaching facilities as research laboratories and offices for faculty members.

Within this hierarchical ordering, the resulting circulation systems are usually, in terms both of size and location, a reflection of desire lines. Like the transportation arteries of metropolis, they become more dense, more prominent, and more spaceconsuming at the core. But unlike our automobile-dominated

streets they are the gathering spaces of hundreds of people and the places of most intense human exchange.

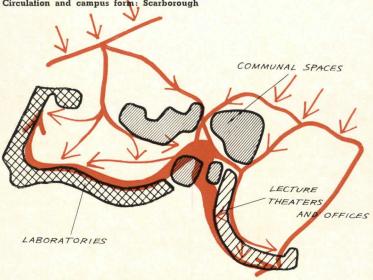
#### Advantages of an urban site, imagined and real

Such comparisons of campus and city introduce two distinctly different subjects. The more obvious one is the problem of the campus's location as related to its extracurricular role in the community beyond its primary educational function; and, conversely, the city's educational role in the functioning of the campus. The second association, somewhat less applicable to our discussion but equally intriguing, is the notion held by a good many urban designers that the campus is, in miniature, a prototype problem in city form.

Taking the problem of location first, the present character of our urban centers renders philosophical discussion on the merits of campus and city association rather pointless. For a good many Americans who now attend universities, the everyday experience of an urban environment is limited to one not too different from that presented by the Santa Cruz campus. They are the children of the suburbs. Their only experience of city is that of a decaying old hulk some 20 miles from where they livesemi-abandoned, occupied by the poor and derelict. The city as enjoyed by Europeans is only an occasional phenomenon in America, much more the exception than the rule.

To advocate then, as many do,





UNIVERSITY OF ILLINOIS, Chicago Circle. Architects: Skidmore, Owings & Merrill (Chicago); partner in charge, Walter Netsch. Number of students: 20,000. Area of site: 106 acres. Distance from City Center: 1 mile.

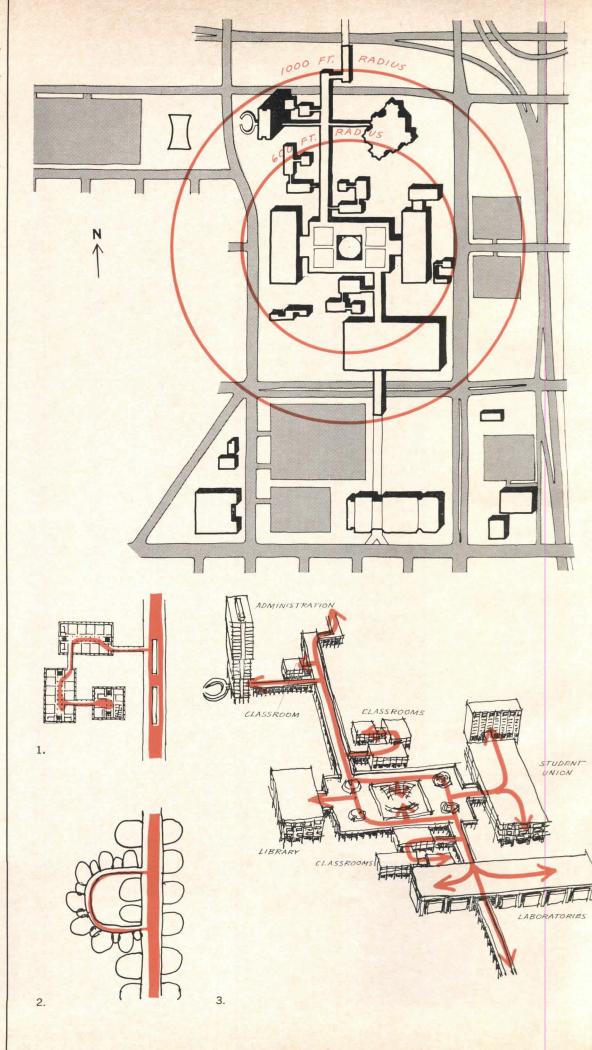
Chicago Circle is a mixture. For although great emphasis is placed upon organization by function and a two-level circulation system, it does not begin to explore the organizational freedom implied in these concepts.

The plan has the look of traditional campuses built and added to on a piecemeal basis-with the final, most contemporary addition of covered pedestrian walks. And yet we know that it is not a traditional plan because the words tell us that each building houses a very specific function, and that they are all interdependent. The form owes much more to a concern with monumentality than to an expression of the carefully segregated functions of the buildings. Each building is a separate composition, joined to another only by a neck-link.

The circulation system itself is most indicative of the problem. The corridors are not designed (as in Berlin and Scarborough) as places in which people gather, nor as cores around which centers of activity are clustered. They are simply long, disassociated, connecting links. In Jane Jacobs' terms, their separation from campus activities has already proved their undoing. They have become dangerous places for people to walk alone in the evening.

In the classroom clusters, there is a lack of consistency in what is corridor, as separated from what is classroom. Moreover, if one is unfortunate enough to be in the last box, it is necessary to leg it back through all the rooms and boxes to the main corridor even when all that separates one from it is a wall and a few feet.

1. A classroom cluster, with circulation paths in red leading from elevated walkway. 2. An alternative arrangement and path system, for joining cluster and walkway. 3. The overall campus core and circulation system.



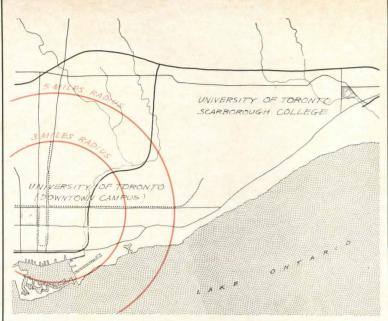
that the New Campus be located in the city so that the students can participate in its rich and varied life is to seek something that does not really exist. Advocating the converse—that the campus be located in the city as a force for the enrichment of urban life—has much more truth to it.

There are, of course, certain risks involved. Even a cultural bequest of 10,000, when placed in a dilapidated, antagonistic environment, may only be able to function with a high rampart around it. In such a situation the campus, in the reality of its everyday functioning, may never affect anything even a foot beyond its gates. The students may end up being as shut in as the area around the campus is shut out. Chicago Circle has a few stories to tell along these lines.

The placement of a large campus in an area programmed for renewal may be the most important justification for an urban location—not only in bringing higher education facilities to areas usually devoid of them, but as a psychological stimulant to encouraging development. Professor Jack Meltzer of the University of Chicago has pointed out that the commitment of institutions to areas undergoing renewal may be the



Campus and city: Chicago Circle, like Illinois Institute of Technology, is in a close-in, transitional neighborhood.



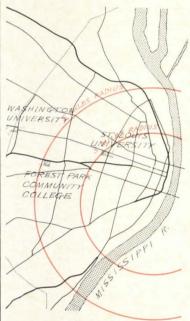
single most important catalyst for getting things underway. (In the way of a further aside, a great deal of thought is being given these days to the planning of campuses as central elements in new towns for populations of 100,000. Combined with commercial and social centers, they may yet give low-density suburbia a proper focus.)

## Prototype of form or place of transition?

As to our second item, campus as city, there are the visible similarities to ideal urban forms which our visionary city builders have spotted. Campuses show some likeness to cities in that they are complex collections of activities, highly concentrated and serving a large population. They may suggest such useful organizational notions as pedestrian and vehicular separation, expression of circulation, and design for growth and flexibility (as, indeed, Scarborough suggests—see following pages).

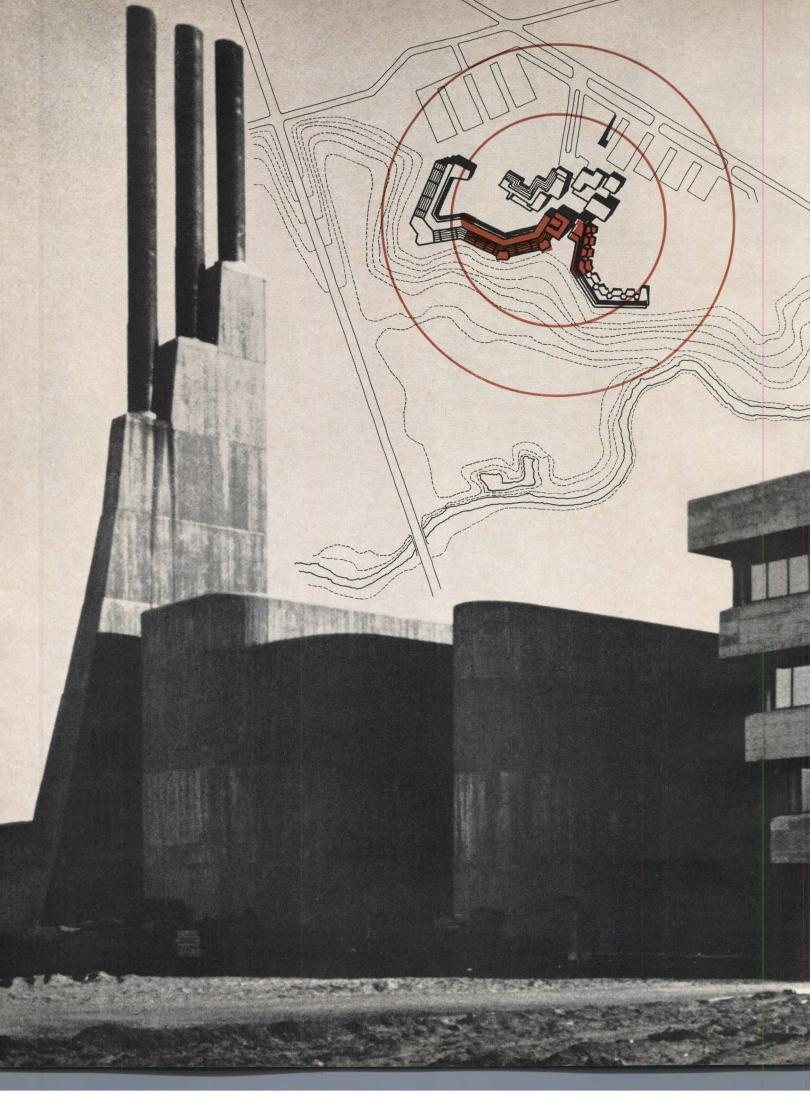
But beyond a certain point the similarities stop. Campuses are unifunctional institutions. They are for the most part homogeneous in terms of age group and class. They are unconcerned with direct production and with providing family housing, the function which takes up some 70 per cent of urban space.

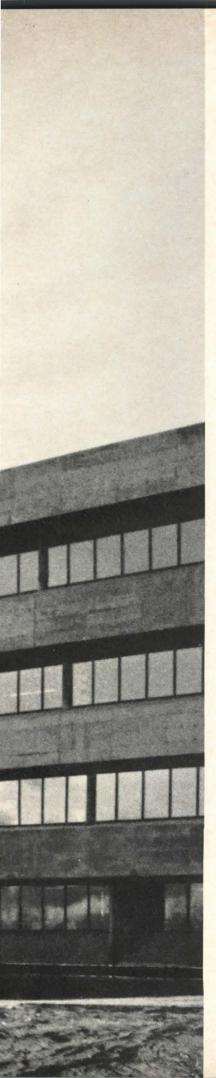
Campuses have a more significant role to play as social institutions than they do as precursors of avant-garde urban form, a Scarborough, despite its urban form and density, is remote from the University of Toronto's downtown campus.



Forest Park will be, in every sense, an urban campus, sited adjacent to a main artery in the heart of St. Louis.

point which we architects tend much too readily to forget. To the youth of the suburbs, as well as to the youth of the second wave of rural migrants, the New Campus may well provide a first introduction to dense environments. For many it will also be a place of transition and acclimatization to complexity and vast numbers. If it can also provide a stimulating life, these students may go on to demand similar structures, and similar stimulation, in their cities.





# THE NEW CAMPUS

An evaluation of Scarborough College, and of the new architecture which it represents

At left above, next to the surrealist calliope of the boiler plant, the site plan of the entire Scarborough campus. The first stage is shown in red. Future expansion will include additions to the two present wings and creation of two clusters of common-use facilities in the campus foreground.

The final unique quality of the New Campus is that it represents (along with some isolated examples of new-town centers in Europe) the first realizations of a new architecture. Its implications as an expression of new values and life-styles override its simple consideration as a single-function building type.

In this light, Scarborough represents a process of organization and a commitment to a pattern of living which is applicable to almost any large-scale problem. Scarborough is a single structure for the daily activities of some 6,000 people. Through its system of organization it enables these thousands to be in close communication—to benefit not only from association by conscious choice, but from association through unpremeditated encounter. This type of association has hitherto been the attribute and sole domain of large-scale, dense urban environments.

Scarborough houses a multitude of functions at a scale that many object to as "inhuman," an intangible that becomes increasingly elusive with examination. It is building become landscape, and as such opens a new avenue for the consideration of what we mean by "human" scale. By its sheer size it is able to tame aspects of a hostile environment while at the same time exploiting topography in a way smallscale building never can.

As an adjunct to its commitment to high density, Scarborough has given its circulation system iconographic significance—making it symbolic of the whole campus and the dominant element of its form. Through the very act of concentration, Scarborough comes to grips with the automobile by simply being able to exclude it from the interaction process of 6,000 people.

Scarborough allows for flexibility and change by organizing a multitude of curricula and disciplines into a system based on providing a variety of different spaces for teaching to be shared by all, rather than simple allocated volumes. It provides for community and privacy by adjusting its circulation system to be either more or less

inaccessible, and through the simple device of a vertical hierarchy of organization. Scarborough's total form as well as detailed form is an expression of internal activities and organization, and as such the building is both organic and open.

As design methodology culminating in building form, Scarborough is, without doubt, immeasurably successful: the programmatic analysis, the expression of various activities and circulation patterns, the response to elimate and site—all are carried off, not only with philosophical conviction, but with final realization in form that needs no labored functionalist rationale to prop it up.

#### A vocabulary of form

In any architectural design process, the translation of programmatic factors into building is, unfortunately, not automatic. There is a point, as the Bauhaus learned, beyond which even the best of methodologies cannot take you—where the program and process must finally see its realization, and the architect as artist takes over.

But an artist in creating form does not work in a vacuum. His work is both an assembly and distillation of his accumulated vocabulary of form language. Andrews's vocabulary, at the scale of the total building, owes much to the unistructuralistsfrom Le Corbusier's plan for Algiers to Theo Crosby's Fulham Study. And in this sense Scarborough transcends the simple problem of campus to indicate directly the form of our future multi-functional, high density urban cores.

But at the scale of the components, Scarborough's form language is a peculiar mixture. Andrews's vocabulary is sometimes modern, sometimes Gothic, sometimes Baroque.

The most significant contribution of the architects of the twenties was their realization of the inescapable inference of social values on building form—that the values of a culture are endowed in its architecture. Their desire to find a machine esthetic, as technologically feeble as it may have been, was inescapably linked to their search for an esthetic which would symbolize the new and open society of which they felt themselves a part.

In Scarborough, this modern esthetic is not always present. The direct, open, even neutral quality aspired to by the modern movement is sometimes overshadowed by an enchantment with rich and convoluted form. There is a conflict between the image of the New Campus as a social force and the occasional appearance of a stage set. It is a conflict somewhat reminiscent of the one experienced by the 19th century mercantile class in the building of the Neo-Gothic, ivory-towered universities for their children.

This is not by any means true of the whole building, however. For the most part, Andrews is able to maintain a delicate balance. The Science Wing (opposite) is both direct and convincing, outside and in. But by the time one gets through the administration block and into the Humanities Wing (below and right), transition has taken



place: there is what appears to be an almost Gothic concern with the mystique of light and towering forms—an architecture that draws all too much attention to itself.

Somewhere along the line the obvious facility with manipulating form has gotten out of hand;

what started as an expression of program and function has, at a certain point, become expressionism for its own sake.

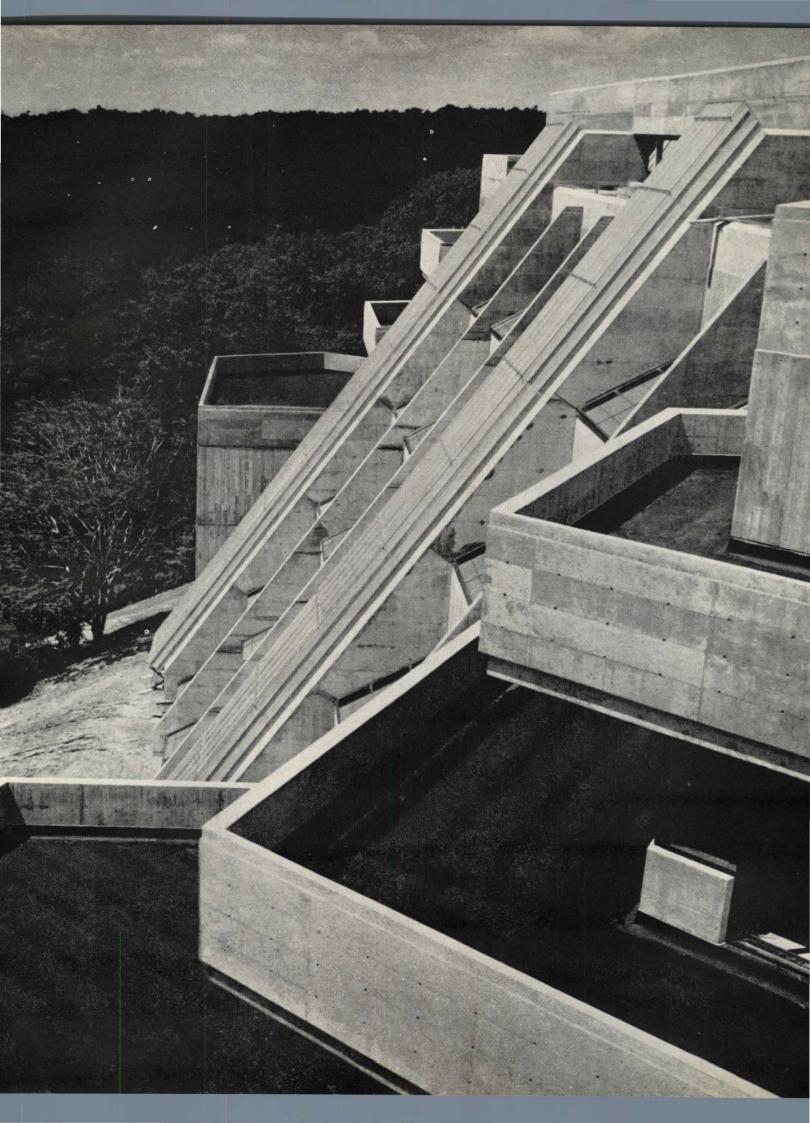
The excesses, however, are easily forgiven. They concern detail, and the significance of Scarborough is its totality. The visitor succumbs most willingly to the sheer power of the whole, to Andrews's ingenious blending of light, form, and space into a single experience. And Scarborough is, after all, a beginning rather than a culmination.



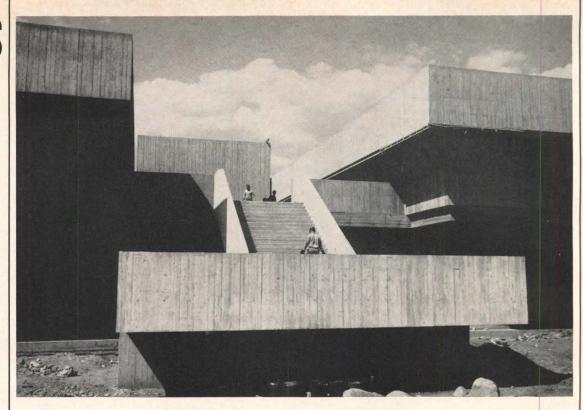
#### FACTS AND FIGURES

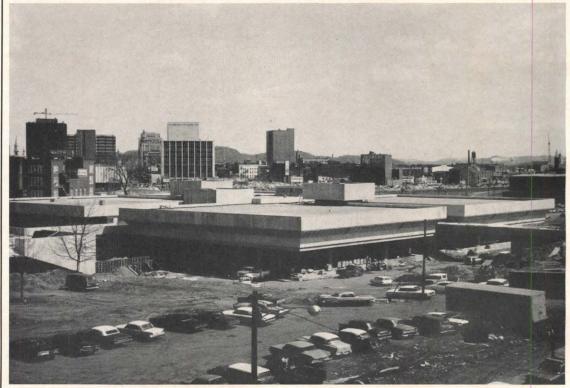
Scarborough College, University of Toronto, Ontario, Canada. Coordinating Architect: John Andrews; Michael Hugo-Brunt, planner; and Michael Hugoh, landscape architect. First Stage. Architects: Page & Steele in association with John Andrews. Partner in Charge: Robert Anderson. Landscape Architect: Michael Hough & Associates. Engineering Consultants: Ewbank Pillar & Associates. General Contractor: EGM Cape Co., Ltd. Building area: 400,000 sq. ft. Construction cost: \$11,760,000. Cost p.s.f.: \$29.40. PHOTOGRAPHS: John Reeves.





## FOCUS





#### NEW HAVEN SCHOOLHOUSES

The bold, horizontal facades of Saarinen & Associates' Hill High School in New Haven are broken on two sides by burly stairways (top photo), and on the other two by pedestrian bridges to the street. The overhang of its heavy-browed concrete canopy will be even more pronounced when the temporary

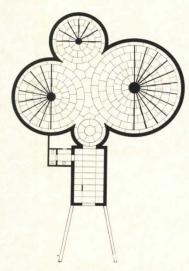
slanting window enclosures beneath it are replaced by vertical windows set back behind the perimeter corridor. Designed as four schools in one, the top floor of the structure is divided into quadrants or "houses" around a library core (bottom photo). Each house will serve 400 students from all four grades and will have its own ad-

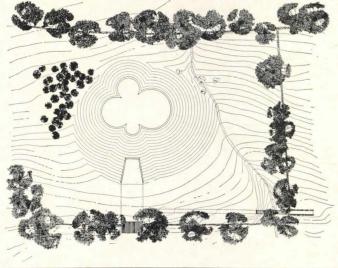
ministrator. Spaces in each quadrant will include classrooms (some with relocatable partitions), a general purpose room, and a house master's office. The ground floor will contain specialized classrooms, offices, a cafeteria and an auditorium. The school, scheduled to open this fall, will be served by a gymnasium in a separate building.

#### CONNECTICUT BUNKER

A few hundred feet to the northeast of his famous Glass House in New Canaan, Philip Johnson has just completed an underground museum to house his growing art collection (mostly Pop and Op). The museum consists, in plan, of four circular areas, tangential to each other, and ranging in diameter from about 12 ft. to about 40 ft. The three biggest areas (the smallest circle is an entry) function like three, huge revolving doors-except that the revolving panels can be moved individually, rather than in unison with the others. Each panel is an off-white, carpetcovered display wall, and the floor is paved in a pattern that reflects the guiding tracks of the revolving walls overhead. When the walls are not revolving, guests can sit in the central space on upholstered stools. The gallery is buried in the hillside and artificially lit. Its entrance resembles that of an air-raid shelter, hence the nickname "Kunst-Bunker." The site plan (far right) shows the four-leaf clover shape of the Kunst-Bunker traced in outline on the hilltop by means of a curb on top of the museum's walls. The area inside the curb is filled with sand.









#### BALTIMORE ROW

Peaked and flat roofs, bayed and flush windows, and staggered facades give pleasant variation to Hugh Newell Jacobsen's Bolton Square rowhouses (left) in Baltimore. The omega-shaped group will include 35 houses with four distinct layouts, all represented in the seven completed units. Each has a real fireplace and a walled garden off the living room (right). The nucleus of the group will be an enclosed park accessible from the private gardens. The renewal site was awarded on the basis of a design competition.

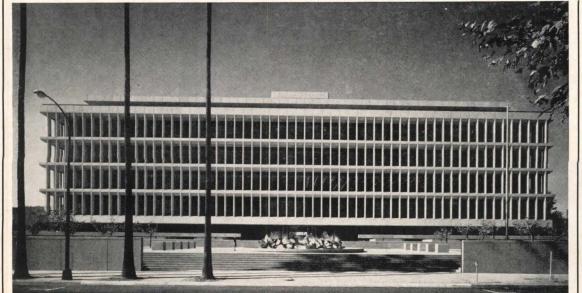






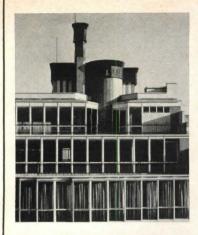
#### NIGERIAN CAMPUS

The jet-age partnership of McMillan-Griffis-Mileto — offices in Rome, New York, and Lagoshas completed the main portion of its biggest African commission, the University of Lagos in Nigeria. Its low, broad-brimmed concrete buildings look out over Lagos Lagoon from a site that only a few years ago was untouched jungle. The core facilities of the university, grouped around a two-level central concourse (background of upper photo), include a library and an administration building (left and right in upper photo), auditoriums, and a dining hall (lower photo). Broad poured-in-place overhangs and precast infilling grilles fend off the tropical sun.



#### CALIFORNIA COURTHOUSE

Resting, seemingly without support, on its recessed black granite base, Starks, Jozens & Nacht's Sacramento County Courthouse cuts a crisp and unpretentious silhouette against the California sky. The simplicity of its white quartz and gray glass facade contrasts sharply with Sasaki, Walker Associates' officious plaza below, whose embellishments include a fountain by Aristides Demetrios. The sixstory, \$7 million reinforced concrete courthouse contains courtrooms, cells, offices, a law library and cafeteria. A closed circuit television system monitors movements of prisoners.



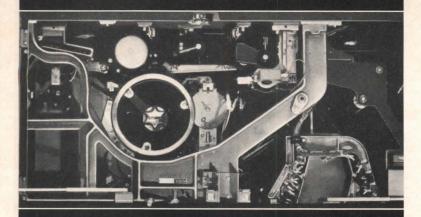


#### BARCELONA BOW

Stepped-out windows provide a delicate, bowed front for the modern Olivetti office building (photo right) which Belgiojoso, Peressutti & Rogers have gracefully introduced into Barcelona's traditional Spanish cityscape. The structure, housing nine floors of offices, a mezzanine repair department and a ground floor showroom, is crowned with facetious red, white and blue mechanical appendages (top photo). In the festively lighted showroom (lower photo), typewriters and calculating machines are displayed in plastic spheres which can be arranged at will by fitting their metal stands into floor sockets.

PHOTOGRAPHS: Page 56, Robert Perron. Page 57, Warren Uzzle of New York Herald Tribune (top), Robert Lautman. Page 58, Gordon McCampbell (bottom). Page 59, F. Catalá Roca.





# The rear end of the Xerox OR How I learned to love that LIBRARY



Three months ago (Jan./Feb. issue), we published an article on the proposed Clark University Library, and a commentary on it by its architect, John M. Johansen. The architect's statement, "John M. Johansen declares himself," elicited a mixed response from readers around the globe—to put it mildly.

Meanwhile, Mr. Johansen had asked a number of well-known critics and historians to comment. Some did—but not for publication; others said they were rendered speechless by the design and/or by Mr. Johansen's prose. Two respected critics, however, agreed to submit their reactions in writing and for publication. Their comments are reproduced herewith.—THE EDITORS.

#### BY MELVIN CHARNEY

In an issue of ARCHITECTURAL FORUM concerned with the core of the city "where the action is," John Johansen's Clark University Library building sets off its architectural gymnastics in a void. A library is part of a university, and as such it is a component facility of a group of buildings that together make a campus. In the larger urban context a campus itself can be seen to exude its own sense of place where the educational action is. What is the environmental identity of the Clark campus? How does this library relate? How do the circulation patterns tie into this cultural junction? It is obvious that these questions were not primary criteria in the design of the library. This building is interested in itself; it is involved in a library as a physical surrounding rather than in its surroundings.

Library architecture requires the skillful handling of large and small spaces plugged into a warehouse of books. Contemporary libraries are for the most part neatly packaged commodities that oversimplify and generalize wrapping and structure. The most up-to-date package calls for fragmented and accidental effects. Johansen's building can be included in this current trend; however, the fragmentation here is soundly based on post-packaging notions that commit the architecture to a true form dialogue. The parts of this building are uncoupled, separated, moved out into the campus and re-engaged so that the building becomes a free assembly and a "place" where something special happens, as well as an object. It is this environmental

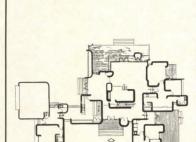
Mr. Charney is assistant professor of architecture in charge of graduate research at the School of Architecture of the University of Montreal. A practicing architect, he has also contributed to various professional magazines in Canada and the U.S.

quality that marks this building as an important contribution to the present architectural scene.

The Johansen building is designed from the inside out. The parts of the library that the students use for various activities with books stand out from a central book silo. Each of these parts is treated as a component with its own required configuration of space and material: the periodical room is very different from the reading rooms, which are in turn very different from the bent tube stairs or the snorkel ventilators. These components undergo further modifications according to light and orientation conditions. The total assemblage of these components is also concerned with use. The central box of books and ancillary elements are clearly related to the circulation conduits that feed up from a lower pedestrian plaza.

Despite Johansen's claim in his "Declaration of Independence" accompanying the photographs that this architecture just happened and that the building is "improvised" and "uncomposed" like the backside of a Xerox machine, there are traditional canons of composition evident in his work. In the assemblage the corners are made heavy, and the disposition of elements at the columns is articulated in a quasi-tripartite arrangement that sits firmly on a battered base with a sharp weight at the top against the sky. In this way, as well, this building is very much in touch with the times.

The emphasis in the design of the library on the specific configuration of parts, and the whole as a frank accumulation of these parts, reveals to the observer a physical dialogue that clearly explains the nature of the building. The building reads as a committed place full of the objects and implications of a library; thus it becomes an identifiable density. In the totally urbanized environment of the citylands in which we live, the nature of the architecture of a special sub-environment becomes an important message of this building.



Floor plans of Johansen's Taylor House (above) and Clark Library.



#### BY SIBYL MOHOLY-NAGY

John Johansen's commentary on the library he designed for Clark University can be taken two ways: as a link-up in intellectual space between architect and socio-science-philosophy, fulfilling finally the unrequited craving of the lowly building profession to be accepted on equal terms by the scientist; or it can be judged as a desperate attempt to cover the bleakness of architectural confusion with a blanket of borrowed verbiage.

The bid for scientific recognition is as old as the Industrial Revolution and as doomed as the wax wings of Icarus to make like Gemini 6. The current self-rationalization of architects, of which Johansen's writing is an extreme specimen, must produce alarm in those who see the contribution of serviceable space and memorable form as an undiminished need in a pluralistic man-made environment.

Johansen claims for his design the discovery of a new architecture "not of the passing mechanical age, but of the electronic age" while "all but a few today, regardless of their talent, are out of touch." To bolster this modest claim to a prophetic breakthrough, he calls on Einstein, Heisenberg, James Jeans, Sartre, "chance music" and John Cage, unpredictable choreography and Cinema Verité, the Xerox Corporation, the lowly barnacle, and that incomparable master of the pseudo-scientific intangible, Marshall McLuhan.

The result of this staggering erudition is a maze of contradictions, admirably crammed together in five short columns. Oracular McLuhanisms—"a global embrace abolishing time and space"—collide head on with the architect's commitment "to the prevailing conditions and experiences of his time"; the liquidation of all of Johansen's earlier work as "Renaissance" with Hannah Ahrendt at her Renaissance best: "Our thinking is anthropocentric, con-

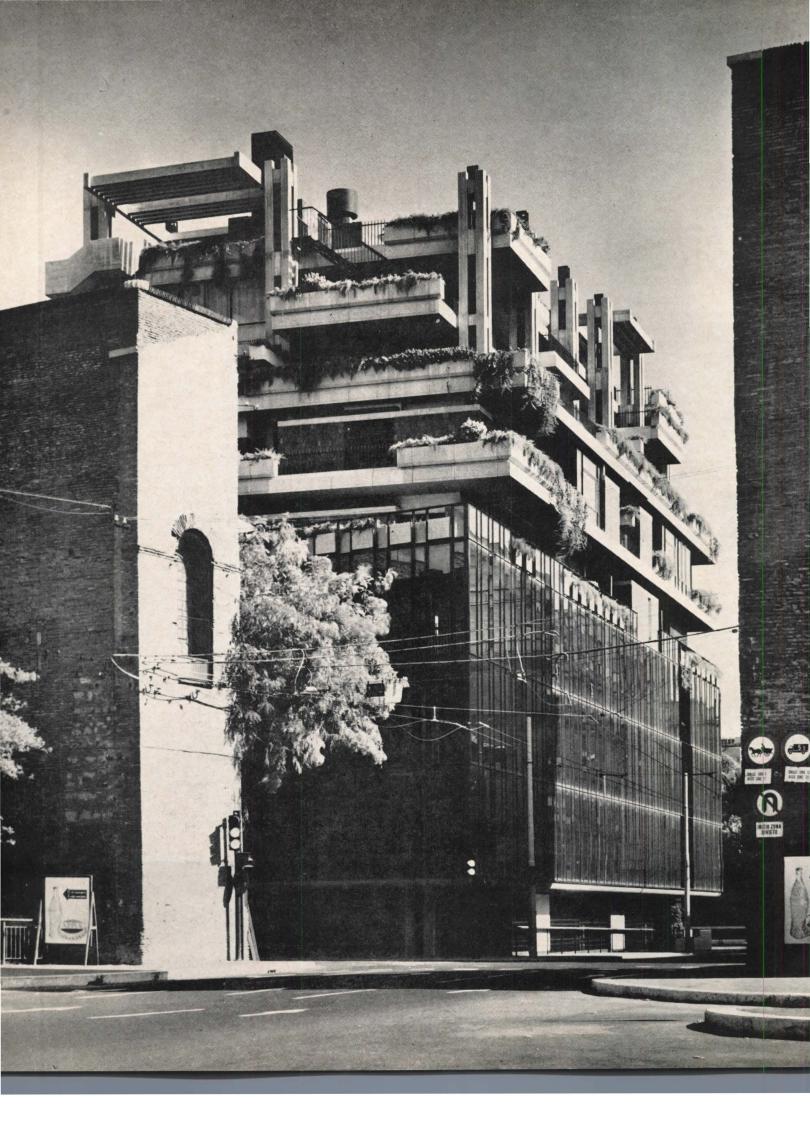
cerned primarily with the human condition." Existentialist salvation from the unpredictability of life through alignment with the most rigidly predetermined, dehumanized solutions of "electronic devices" is combined with an adolescent romanticism, addicted to the unpredictable happening, without preconceptions of order. Here is a library "simply doing a job . . . performing" the age-old, most traditional task of providing for book learning while its designer's ideal is "anti-perfection, anti-masterwork, anti-academic."

The decisive point of rejection is Johansen's liquidation of architecture as a thing that endures, and the inestimable damage this neo-Kahnesque double-talk will do to students and clients. Good design concepts evolve slowly and through many variations.

The raised bookstack core has been used from Mexico City to New Haven, and the site plan of the Clark University building is a further development of Johansen's Taylor House plan on Long Island Sound (left). To pretend that these responses to a given program in solid reinforced concrete, representing a long range capital investment, "are accidental, haphazard, unresolved, to be added to or subtracted from" with an explicit "tolerance for error" is at best a fashionable affectation, at worst a claim to architectural irresponsibility. No client, whether single or corporate, would risk his desired architectural self-image or his cash on a profession that rejects any "attempt outright to be architecture" and replaces "a work of fine art, a thing of good taste or of beauty" with "the rear, not the tidy front, of a Xerox copier."

It is "fully predictable" that many will find the exterior of John Johansen's library unappealing, and the circulation patterns of the interior confusing. Few will argue the point that architecture, in order to survive as man's anchor on his native earth, must sail under its own and under no one else's conceptual flags.

Mrs. Moholy-Nagy is professor of architecture at Pratt Institute and is a member of Architectural Forum's Board of Contributors.



These are the facts, as we understand them: The building shown here is located on a lot bounded on three sides by the Via Campania, the Via Romagna, and the Via Sardegna, respectively. The property is across the street from the massive remains of the walls of Ancient Rome. The site is a little over 6,000 sq. ft. The building consists of 11 floors—three below grade, eight above grade—plus a roof garden.

The bottom two floors contain an underground garage reached by a spiral ramp. The street floor and the floor beneath it contain stores, as well as an entrance lobby with spiral stairs and elevators.

The next three floors contain about 3,500 sq. ft. (net) of office space each. And the remaining four floors contain apartments—some on one level, others duplex.

In short: 2 garage floors, 2 shopping floors, 3 office floors, 4 apartment floors; total equals 11 floors, plus a roof garden.

The concrete structure is more or less regular in spacing, but the columns become "clusters" (with a pipe chase in the center) above the garage floors; that is to say, structure and services have been combined.

What makes the building a trifle unusual, to put it mildly, is the manner in which its diverse functions have been advertised on its exterior: the garage, being underground, remains unexpressed except for the entrance to the spiral ramp; the stores, half visible, have slightly recessed glass fronts protected by railings. The offices are very fully visible: they are sheathed in a curtain wall of brown-tinted glass and gray-enameled steel. And the apartments are doubly visible: they are of precast stone elements, beige in color, with flower boxes (also precast), steel rails, some marble, and some wood-framed windows.

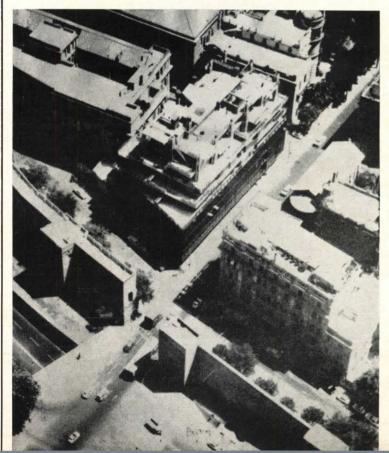
The architects—appropriately enough, three brothers—were Vincenzo, Fausto and Lucio Passarelli. Their building has caused quite a stir, as well it might. So, on the next four pages, we print the views of two Italian observers of, and participants in, the local architectural scene.

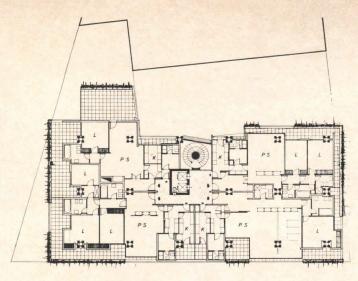
## MARRIAGE ITALIAN STYLE

Opposite: View through an opening in the ancient Roman wall, showing the corner at the Via Campania and the Via Romagna. Right (top to bottom): superstructure of the building visible above the ramparts; a 16th-century map of Rome; and a bird'seye view of the building on its site.



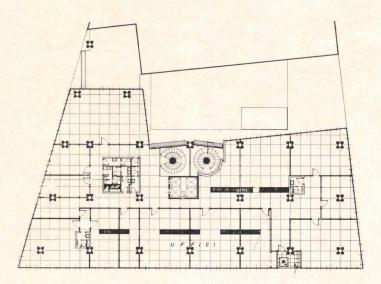




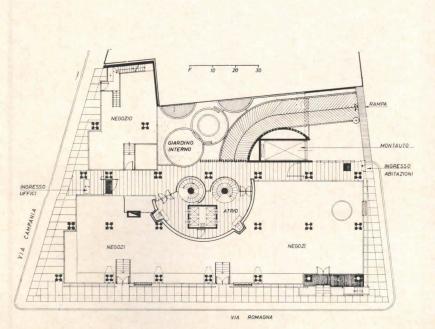


APARTMENTS of similar layout on floors 4 and 5 (above) are topped by duplexes.



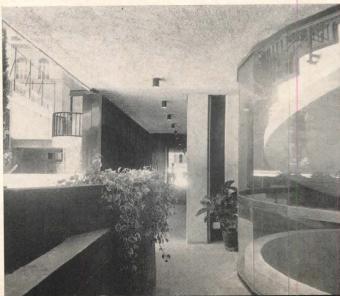


OFFICES on three floors with similar plans (above) have perimeter balustrades.



SHOPS on the street floor (plan above) surround an open central corridor (right).





### PRO:

#### "This is the architecture of reportage"

BY BRUNO ZEVI

It is the belief of many scholars today that art can be included in the general area of communication. . . . The reason we are paying so much attention to the building on the corner of Via Romagna and Via Campania in Rome is not because of the esthetic excellence of the result, but rather because of the method of development of the architectural composition and because of the importance of its statement. The building presents an opportunity to discuss the importance of communication in architecture.

Everyone knows that an architectural concept is modern to the extent that it rejects the Renaissance static perspective and classicistic methods of expression in favor of an expression of true content. This has been accepted since Galileo's time; but how many professionals, even of the so-called avant-garde, consider this in their everyday work? Faced with a multifunctional building project, the purists package the various functions into a single parallelepiped; the neoplasticist executes a decomposition of the internal organism into planes; and the expressionist seeks a plastic unity of the mass, even if loud and contorted. One way or the other, they all concern themselves with "packaging" the functions, limiting themselves to stating some peculiarity through a surface play of solids and voids. This process is reversed in the Via Campania building: the box is broken apart; the absurd anguish of a cohesive exterior tied to traditional prejudices is defeated. The row of shops forms the ground floor enclosure; the office block is treated as an undefined, flexible space in a glass envelope; and the residential portion is a series of hovering villas, subtracted from elementary volumetric forms.

Shall we define this as the architecture of reportage? No one can be offended: serious information is preferable to classicist facades—whether of colonnades or of curtain walls; better some unresolved linguistic joint, rather than false academic "harmony," either modern or ancient.

The problem of architectural communication is twofold. On the one hand, the "sender" must be analyzed—that is the intensity of communication of the interior spaces; on the other, the "receiver"—that is the sensibility to the urban context. Here are two critical instruments to verify the separation from classicism that, while masking all information, produces "objects" so autonomous of the environmental pattern that they can be moved from one place to another without changing it.

There is no delay in the message of this building as "sender," so much so that its public statement is its significance. To understand its value as "receiver," just imagine it transferred elsewhere, even a few meters: it no longer makes sense because it was conceived for that site, it belongs to that part of the city. The glass prism of the office block, twisted to cover the corner, respects the street network, while the upper part,

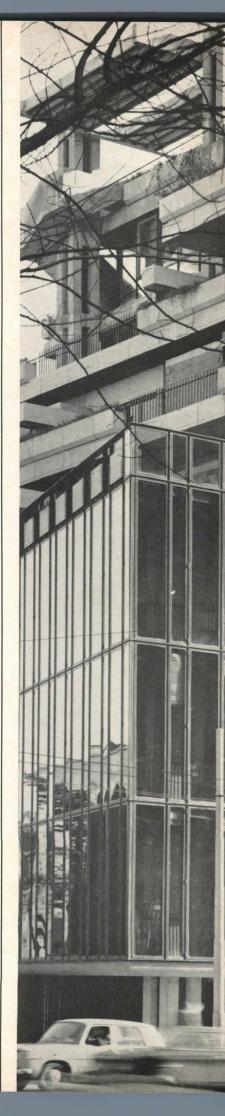
without form, is grafted into the panorama of roofs and sky. The photographic documentary . . . aims to show the four-dimensionality of this work. The building displays itself in wonderful images dependent on the point of viewing, acquiring aspects that are cubistic, expressionistic, informal, refined, brutal, or Pop.

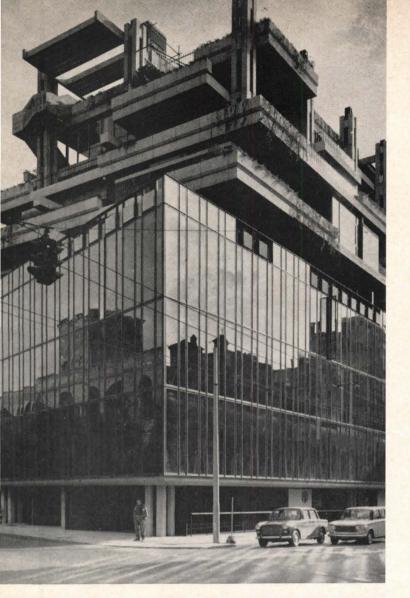
Pop? Certainly. The assumption of external reality in a work of art is here quite evident. Its glass surfaces mirror the structures across the street, especially the ancient Aurelian walls with their various red-brown hues. To an architecture which communicates its internal contents is added an architecture which reflects the urban texture; the art of exploding the centrifugal spaces of the villas checks the sonorous recital of the median part, whose poetic existence depends entirely on its surroundings, the absorbed and reflected light of the walls—on the days and on the seasons.

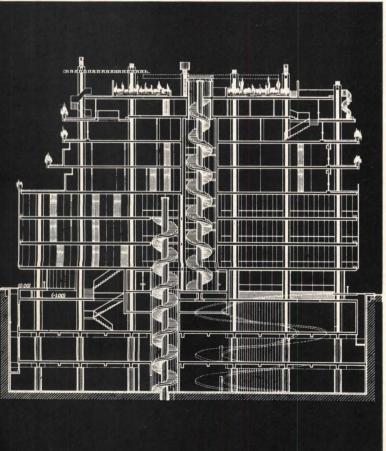
Since we chatter frequently about theories of environment, it must be said in conclusion that this building, although breaking sharply with its environment, springs from and reintegrates itself into it in an organic way; it discourses with the ancient part without fraud, false pretensions or subtle quotations, in short rejecting the three-dimensional concepts of the Renaissance, and burning every classicist residue left in the artistic conscience from three centuries ago until today.

Bruno Zevi is the editor of L'architettura which recently devoted almost 30 pages to the publication of this building. He is also a professor of history of art at the Architecture Faculty of the University of Rome. This article was translated from Mr. Zevi's statement in L'architettura.

Photographs by Ludovico Canali.







## CON: "The accretion of three very ordinary parts

BY GIANCARLO DE CARLO

The building consists of three parts. Two are above ground and one is underground, invisible except for a small portion of it which appears in the vestibule, at the level of the shops. Each one of these three parts is different, and the novelty consists in having them stacked up without any apparent coherence except for the continuity of the vertical structure. But what, indeed, does each one represent in itself?

The first part is quite ordinary and in line with the requirements of real estate speculation: maximum use of the site, modest concessions to the social status of the tenants—by the use of small flower pots called "interior gardens," of circular brick parapet walls, of some metal screen suggestive of Musharbeyeh grillework, and by the use of lots of glass.

The second part is just as ordinary: an open floor, but one with limited freedom; and a commercial curtain wall defining a volume which follows exactly the perimeter of the streets.

The third part is very ordinary too: The apartments' layout and all interior spaces are arranged according to the most common, current, middle-income standards of urban apartment design. There is much ado about balconies, pots, stairs, chimneys, but it is immediately obvious that with those details alone, one cannot go too far because such frills cannot make

up for the absence of a strong architectural framework.

Therefore, one should ask oneself: can a building be interesting and new in ideas just by virtue of the accretion of three ordinary parts? It seems to me that it cannot.

Others may object, saying that the true novelty of such an accretion consists in having actually achieved a building by the addition of three different parts! Or that, somehow, the building represents a new idea because its three parts are so commonplace in themselvesthat, in fact, the stacking up of three very different and ordinary parts could signify the destruction of all those precepts of coherence, identity and integrity which modern architecture has claimed; and that, because this accretion defies these precepts, this building is really an event, a sort of "protest."

Now I believe that such little stunts performed with words end up by being very sad and depressing—even though at first sight they may seem amusing. They remind me of listening to poor jokes, when, after a nervous titter, one is left in a state of silent despair from which it is difficult to emerge.

There cannot be anything significantly new in architecture which is not wholly and coherently new, which does not involve in this same process of innovation all the aspects and all the parts of architecture. Something "significantly new" must encompass the reality of architecture as a subject in re-

Mr. De Carlo, whose remarkable dormitories in Urbino were published in the first issue of the new Architectural Forum, in April 1965, practices architecture in Milan. He is also a professor of urban design at the Institute of Architecture at the University of Venice, a recent visiting critic at the School of Architecture at Yale, and a member of "Team Ten."

lation to the functions performed; and the reality of architecture as an object in relation to the urban environment of which it is a part—from its organizational structure and its formal plan to the grammar and syntax of its expressive language.

Contemporary architecture stands in urgent need of entering upon the path of radical innovations. Its patrimony of ideas, its objectives, the means it employs, are obsolete and, when tested by facts, when confronted by the complexity and vigor of life, prove to be superficial and backward.

Its present state of stress, about which so much has been said, is similar to that of a deaf man who has vague suspicions about what is happening around him, but no clear understanding of the situation. In fact, architecture today is isolated within a thick band of orthodoxies and heterodoxies, mental contortions and abstract patterns, intransigent virtues and complacent vices, all still bearing the imprint of 19th-century culture.

Architecture has not yet entered into the modern world because (apart from some rare individual insights) it has not yet fully understood it. Architecture has not yet made that qualitative leap that the sciences first, and then the plastic arts, made at the start of the 20th century.

Can that qualitative leap be brought about in architectural criticism by means of verbal tricks, or in architectural practice by formalistic tricks?

It does not seem to me that it can. The formulation of the theory of relativity was not achieved by falsifying arithmetic. And the formulation of a new theory of architecture will not be achieved by adding apples and chickens and eggs.

For those who cannot make the pilgrimage to Rome, the effect might be achieved by moving Paul Rudolph's Yale Arts and Architecture Building to the top of Harrison & Abramovitz's C.I.T. Building in Manhattan.





## LAST HITCH IN THE INNER BELT

Massachusetts highwaymen find that cutting through Cambridge saves no time.

The last few links in the Federal Interstate Highway program of 1956 are now being forced into place against a background of spreading doubt about their value. These few remaining segments—almost all of them passing through cities—are the last to be done because they have generated the most prolonged opposition. But, what with 90 per cent Federal aid depending on a mid-1971 completion date, it is now or never for the highway planners.

The path of Boston's Inner Belt Highway through Cambridge represents the national dilemma in a nutshell. The Inner Belt is a proposed loop (map above) that would pick up and redistribute traffic from six radial expressways converging on the center of the Boston area, all of them either completed or under construction. After years of struggle, most of the Belt route has been laid out and approved by Federal authorities—all except a segment of less than two miles through Cambridge.

This Cambridge link involves none of the unique cityscape problems presented by the Embarcadero Freeway in San Francisco, for instance, or the elevated highway that threatens the Vieux Carre in New Orleans. The controversy in Cambridge is mainly over unimpressive residential and industrial neighborhoods that visitors to Harvard and MIT rarely see.

As a last resort the City Council briefly considered sacrificing MIT's "backyard" research facilities, but for the most part the choice has been between houses and factories. Torn between the votes of one and the tax receipts from the other, the Council has so far refused to give up either.

#### A hard fight, but clean

The most noteworthy feature of the Cambridge controversy has been the enlightenment of the opposing groups, most of whom have argued on respectable social and esthetic grounds though reaching vastly different conclusions. Almost every group concerned has questioned the

wisdom of the whole metropolitan highway plan, but concluded that it will inevitably be carried out and that the Cambridge link is indispensable to it. Only the City Council remains intransigent.

The bitterness of the Cambridge city fathers toward the Inner Belt was sharpened back in 1958, when the first stretch of urban expressway in the Boston area, the Central Artery, was completed. This elevated monster tearing through the heart of Downtown Boston is one of the grimmest demonstrations to date of the destructive potential of highways. Frightened by the specter of the Central Artery, several Massachusetts cities, including all of those along the Inner Belt, banded together in 1961 to push a law through the legislature giving them a virtual veto over state highway plans within their borders.

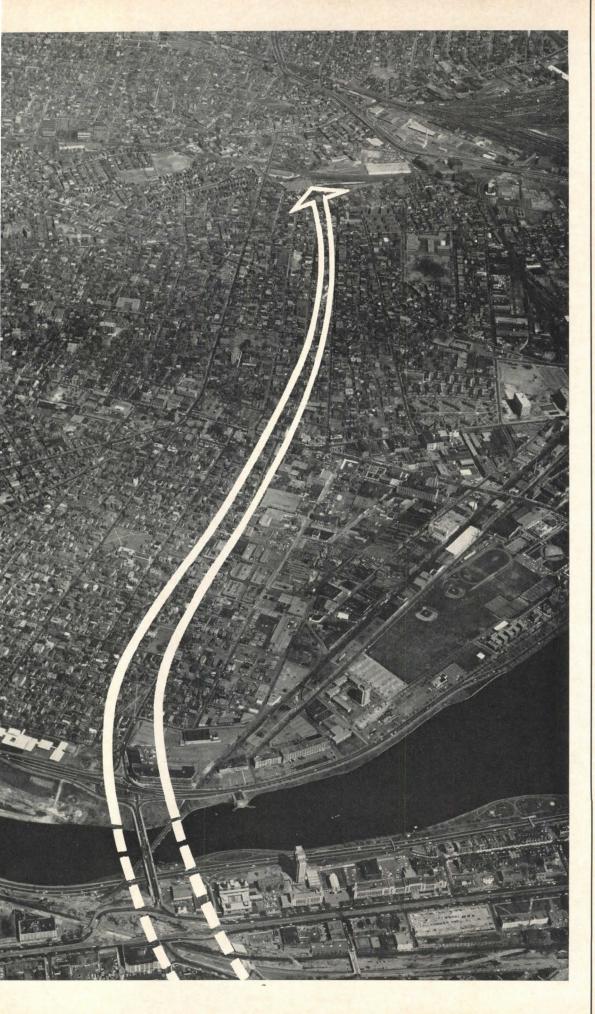
#### Doing the least damage

This veto has undoubtedly been a salutary force. It has delayed the construction of the Inner Belt for years, but the public city-state debate it generated has forced highway planners to recognize the needs of these cities-or at least the objectives of their leaders. There will be few eyesore conditions where the Inner Belt passes through Boston, Brookline, or Somerville. (In Boston, it will even disappear into a 3,000-foot tunnel where it goes by the Museum of Fine Arts and under the Back Bay Fens park.) But the Cambridge City Council was so inflexible that it eventually lost the sympathy of the legislature, which repealed the veto rule in 1965 to save the Inner Belt from a stalemate.

Ironically, state Public Works Commissioner Francis W. Sargent, who is now trying to force the road through against the city's opposition, is a man with

The state-proposed route for the Inner Belt through Cambridge would avoid both Harvard (left in photo) and MIT (right)—but pass through dense residential neighborhoods between them. PHOTO: Aerial Photos of New England.





a background in conservation and outdoor recreation planning and an outspoken advocate of more sensitive urban highway design. ("Is there not something very incongruous," he asked at last year's White House Conference on Natural Beauty, "in highway planning that calls for more beauty in the country and then creates ... urban monsters in our cities?") Sargent and his predecessor John Warner both have been in the difficult position of trying to do an enlightened job of planning in an atmosphere of public distrust.

Their efforts to make the Inner Belt less damaging have concentrated mainly on the design of the road (the most conspicuous failing of the Central Artery) rather than on its route. They were willing to accept the most direct alignment through Cambridge - along Brookline and Elm Streets-on the basis of engineering and cost studies. Warner introduced the then revolutionary requirement that the engineering firms assigned to the several sections of the road collaborate with architectural firms on their designs, which were then reviewed by a "blue ribbon committee" of prominent architects, planners, and businessmen (with strictly advisory power). For the Cambridge segment, engineers Goodkind & O'Dea were teamed with one of the most distinguished Cambridge firms, The Architects Collaborative.

#### The choice of alignments

But TAC participated in the program only on the condition that it be allowed to study alignments as well as sections.

TAC knew, as everyone else knew, that there is no way for a road of the scale and standards of the Inner Belt—an eight-lane divided roadway, 132 ft. wide, with continuous service roads, and a minimum radius for curves of \$30 ft.—to pass through Cambridge without serious disruptive effects. The fact that the end points in Boston and Somerville were fixed while Cambridge refused to negotiate further limited the possible alignments.

The differences among the several possible alignments lay mainly in whether the property they took was largely residential (the Brookline-Elm Street route, A on map), industrial (Portland-Albany Street route, B), or institutional (the Railroad route, C, never seriously considered by the state). Cambridge can hardly afford to give up potential sites for either housing or industry. A five-square-mile enclave at the very center of the Boston metropolitan area, it is constantly losing taxable land to its two universities and it has recently been chosen as the site of a large NASA laboratory.

TAC concluded, as the state already had, that the houses were more expendable than the industrial property. Many of the houses along the Brookline-Elm route are ripe for renewal, and others are likely to be replaced by higher-density development as land becomes scarcer. Besides, TAC saw an opportunity to replace both the lost housing and the continuity of the neighborhoods by constructing air-rights housing over a depressed roadway (facing page), for which there is special Federal support.

#### Voices of protest heard

Last fall a new force entered the picture. A group of young Cambridge planners, architects, and sociologists—fearing that the road would follow the Brookline-Elm route if the city failed to support any counter-proposal—established the Cambridge Committee on the Inner Belt. Their purpose was to find an alternative route that would save the low-to-middle income houses along the Brookline-Elm route.

They argued that while these dwellings might look expendable to middle-class eyes, they housed a group for whom replacement housing would be especially hard to find. The supply of low-cost housing is constantly being reduced not only by the expansion of campuses and industry, but by upgrading of houses for occupancy by college-oriented new-comers. Air-rights housing, the Committee contended, would meet neither the social nor eco-







Most of the many alignments proposed for the Inner Belt through Cambridge follow three basic routes with slight variations producing wide differences in its impact and cost.

A Brookline-Elm route (depressed) is most direct, lines up with existing street pattern. Displacement (state figures): 1,235 families, 2,116 jobs; estimated total cost: \$62.8 million.

B Portland-Albany route (depressed) goes through industrial belt, close to major traffic-generating activities. Displacement, state alignment (state figures): 814 families, 5,486 jobs; estimated total cost: \$72.2 million. Barton-Aschman alignment: 228 families, 6,110 jobs; \$96.8 million. Cambridge Committee alignment (their figures): 102 families, 2,320 jobs.

C Railroad route follows established barrier, uses existing right-of-way to reduce demolition. Displacement, state alignment (elevated): 141 families, 1,601 jobs; estimated tota \$96.8 million. Barton-Aschman ment (depressed): 141 families, jobs; \$130.8 million.

Residential neighborhoods threatened by the state's inner Belt route include many sound single-family houses, some of architectural interest, as well as multi-family frame dwellings that are too crowded together and obsolete in design to be preserved indefinitely.

PHOTOGRAPHS: E. Teitcher.

nomic needs of those displaced.

The Committee's alternative proposal was an alignment through the industrial belt, similar to the Portland-Albany route considered by the state and TAC, but carefully threaded through it to avoid all of the biggest plants. Cambridge City Planner Alan McClennen, who knows the terrain as well as anybody, calls their painstaking scheme "ingenious," but says it fails to meet state requirements for grades, conditions at access ramps, width of right-of-way, etc. There was some disagreement between the committee's figures on job displacement and the state's, hinging mainly on whether taking some of a company's property would cause it to leave Cambridge.

#### Another line of attack

Caught in a cross-fire of statistics between the Committee on the Inner Belt and the state Public Works Department, the City Council hired an independent consulting firm, Barton-Aschman Associates of Chicago, to study alternative routes.

Barton-Aschman's engineers found they could not recomthe Portland-Albany Route just as the Committee had drawn it up, but straightened it and widened it to conform with Federal standards, coming up with displacement and cost figures closer to those of the Public Works staff. Pressed by the Council to find a route less damaging to either housing or industry, Barton-Aschman proposed an alignment along the freight railroad line that runs along the north edge of MIT-an existing barrier that had once seemed a natural route, before the proposed road grew to its present scale and capacity and MIT's research facilities grew so dense along the tracks.

The revival of this route had an electrifying effect on MIT, which protested loudly that the buildings along it—many of them no more pretentious than the houses along Brookline-Elm—housed irreplaceable research programs vital to MIT, Cambridge, and national defense.

The City Council, hardly will-

ing to undermine national defense—or the institution that is attracting new research-oriented industry to town—ended the study where it had begun, opposing all routes.

That left the choice to Commissioner Sargent ("the toughest" he had ever had to make, he called it). He proposed a depressed highway on the Brookline-Elm alignment and passed it on to Federal Bureau of Roads Administrator Rex M. Whitton for approval. But Federal approval—often a mere formality—may take some time; the Cambridge City Council has carried its fight to Whitton's office and exacted a promise of a further detailed study.

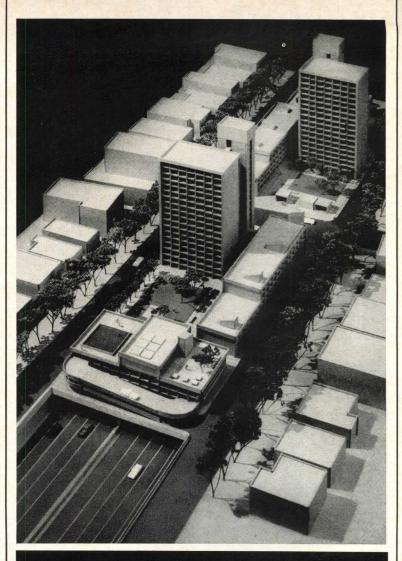
While the City Council fights on, a group of Cambridge institutions—with Harvard and MIT in the forefront—have announced formation of the Cambridge Corporation, "a nonprofit, privately sponsored development corporation aimed at assisting in the development of low-rental housing and helping with a wide range of physical improvements and other activities for the public benefit of the City of Cambridge."

The new corporation's first obvious mission, assuming the Inner Belt does go through, is helping to put the pieces back together by sponsoring housing over and around the new road. Considering the opportunity it presents, the corporation probably has its eye on President Johnson's Demonstration Cities Program. So out of the dust of Inner Belt construction a better Cambridge may emerge, unless the City Council is able to stop the road at the city line.

#### Making the best of it

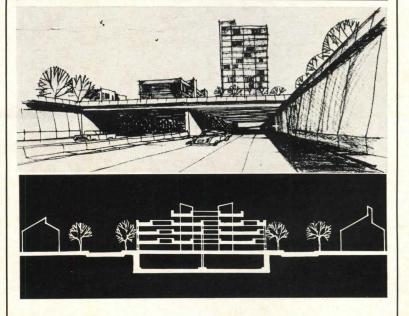
In the long run, the Cambridge struggle may have helped to decelerate the runaway national highway-building program, but it is almost surely too late to keep this road out of this city. The best contribution that Cambridge can make today is to demonstrate that thoughtful planning and community action can make even an expressway a positive factor in shaping the city.

-John Morris Dixon.



The Architects Collaborative, commissioned as design consultants for the Cambridge portion of the Inner Belt, made a study of possible air-rights development over a depressed roadway. They have proposed developments over the Belt at seven major intersections, which would preserve the visual continuity of the city along major cross

streets. The developments would provide housing at some locations, commercial and research facilities at others. A preliminary design for the housing (model photo above and sketch below) includes high- and low-rise apartment buildings, with parking garages at the ends of the platforms to serve as buffers against highway noise and fumes.



## RICHARDSON'S NORTH EASTON

BY LARRY J. HOMOLKA

A few modern American architects have enjoyed the benefits of enlightened and abiding patrons, but rarely have such creative relationships brought major improvements to a single community. During the 1880's, North Easton, Massachusetts, experienced such a fruitful con-

junction of patron and architect.

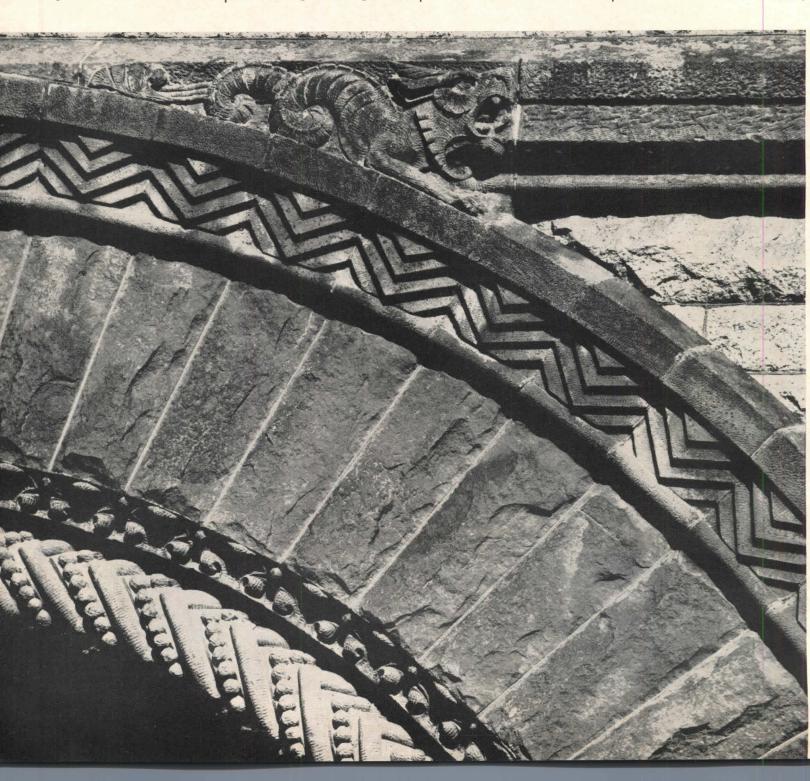
Under the sponsorship of the Ames Family, H. H. Richardson built five buildings in the small village 30 miles south of Boston: a public library, a town meeting hall, a railroad station, a gate lodge for F. L. Ames, and a cottage for his gardener.

All still stand in a setting that remains virtually unchanged.

Nineteenth-century North Easton was a factory town, its principal industry a shovel works founded in 1803 by Oliver Ames. As the firm of Oliver Ames & Sons grew and prospered, so did its community. By the end of the Civil War, the austere factory in the center of town had tripled its size, realizing considerable profits in the production of implements for the nation's westward expansion and its war effort.

Under the leadership of Oliver Ames's sons, Oakes and Oliver II, the family firm assumed increasing responsibility for North Easton's betterment by donating funds for civic enterprises such as schools, churches, a cemetery, and street and land improvements. But before the arrival of Richardson, North Easton could hardly boast of any examples of significant architecture.

Mr. Homolka holds a master's degree from Harvard's department of fine arts, and is now working for his doctorate there in the field of modern architecture. His research into Richardson's work in North Easton was undertaken at the suggestion of Professor Henry-Russell Hitchcock. PHOTOGRAPHS: David Plowden.



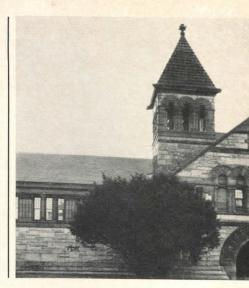
RICHARDSON began his productive association with the Ameses in the autumn of 1877, when F. L. Ames and his sister Helen Angier Ames asked the young architect to design a public library as a memorial to their father Oliver Ames II, who had died that spring. In the Ames Free Library (right and below), Richardson formed the basic concept that ultimately characterized all his libraries: a longitudinal stack wing lighted by a horizontal band of windows; an abutting cubic mass containing the entry, services, and reading room; and an engaged stair

tower mediating their union.

Richardson employed a cavernous entrance arch for the first time in the library. Reaching down to pedestrian level, it enfolds several steps leading to a vestibule and the principal interior spaces. The two-story stack wing sits slightly above the gabled reading room block, which actually contains four floors-entry, main floor, a second-floor apartment intended for the librarian, and an attic. The arch and the blind expanses of wall mask the displaced floor levels; only above do the arcaded lights align with the stack wing band, preserving the formal integrity of the elevation.

For the walls of his library (below), Richardson chose a subdued pink granite from the nearby quarries at Milford, with darker Longmeadow stone trim delimiting the masonry plane and its apertures. Craftsmanship of the highest order was required in setting the random ashlar walls, a mixture of remarkable variety minutely joined with red mortar.

The library ornament (below left) was probably designed by Richardson's talented assistant, Stanford White. The highly in-





ventive carvings are always kept firmly within the masonry plane through their apt scale, innate geometry, and vigorous execution. The crisp chevron moldings around the entrance arch are thoroughly appropriate to the neighboring rock-faced voussors and the heavily textured wall. White's fantastic gargoyle. equally at home in the fabric, creates a deft transition between arch and belt course.

It is likely that White also designed the handsome butternut woodwork of the stack interior (below). The stack space is defined by a deep wooden barrel

vault which springs from turned posts on the mezzanine. Balustrades of closely spaced spindles surround the central well and provide a warm filter for natural light.

Originally, the main floor was set with work tables—all the library furniture was designed by the architect—but the growing collection required additional bookcases. In 1931, Shepley, Rutan & Coolidge added yet another wing to the rear.

No detail was overlooked in the creation of the Ames Free Library. But its quality of design and workmanship was costly; F. L. Ames and his sister freely supplemented the original bequest to insure excellence.

Their fastidious concern is evinced in the fact that, although the superstructure was complete by 1879, the library did not open its doors until 1883, when an assembled collection of over 10,000 books was on the shelves, jacketed and fully cataloged. In addition, a large growth and maintenance trust assured long and active service. Today its superb condition confirms the uncommon foresight of the Ames family.



IN contrast, Richardson's second Ames building, begun in 1879, was largely a failure—a malformed design for a misinformed program. If the Ames Free Library marks an important step toward the kind of disciplined planning, formal clarity, and sensitivity to site and materials that makes Richardson the grandfather of American modernism, the Oakes Ames Memorial Hall (right and below) marks a momentary regression in his work.

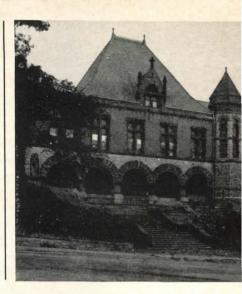
Two small meeting halls are located on the first floor, and an auditorium occupies the second.

While these now-vacant interiors are all but devoid of spatial interest and trim, the facade presents a lavish display of disparate forms, materials, and ornamental details. A high, saddlebacked hip roof dominates the pile, yet the corner tower and an opposing lower gable undermine its symmetry. Additional fragmentation is created by particularized fenestration and diverse materials.

While the Milford granite walls of the first story and tower recall the earlier library, the upper walls are of red brick, and a dormer on the north is shingled.

The masonry surfaces are also interrupted by perfunctory ornamental passages and several ill-considered details—a decided lapse in originality and quality when compared with the library. Even the powerful arcade which lumbers across the facade (below) fails to integrate these disparities.

Nevertheless, this loss of order and restraint led Richardson's contemporaries to admire the town hall. Its irregular silhouette, abrupt changes in materials, and bristling collection of ornament accorded with the prevailing taste for the picturesque.





THE remainder of the story belongs solely to Richardson's principal patron, F. L. Ames. In March of 1880, Richardson began work on the gate lodge (right and below) at the entrance to F. L. Ames's rambling estate. The naturalism of this low boulder pile shows the influence of Frederick Law Olmsted then working in the town.

Large glacial boulders, obtained from nearby meadows and creek beds, form the wall fabric. They are cast in large, stable masses: a cubic residence block with engaged stair tower, and an adjoining orangery wing

lighted from the south by a horizontal strip of windows below the eave. A great archway (below), spanning the road to the main house, connects the two parts of the building. It is composed of varicolored voussoirs with sharply cut moldings delineating the opening. The cut stones seem to hold back the irregular boulders, which crowd in on the arch and threaten to tumble freely from the wall.

This tension between the architect's geometric order and the random nature of his materials characterizes the entire conception. It is the key to the unique



power that is contained in the gate lodge's imagery.

The entire heavy mass is covered by an expansive orange tile roof. For the first time Richardson introduced eyelid dormers so that the roof's continuity of surface was assured. The sheltering membrane seems

to respond to the mass beneath it, rising with the main arch and reaching out to enclose the subordinate masses. If the Ames Free Library was an exercise in geometric simplicity and restraint, this approach was tempered by a new organicism in the gate lodge of the Ames estate.



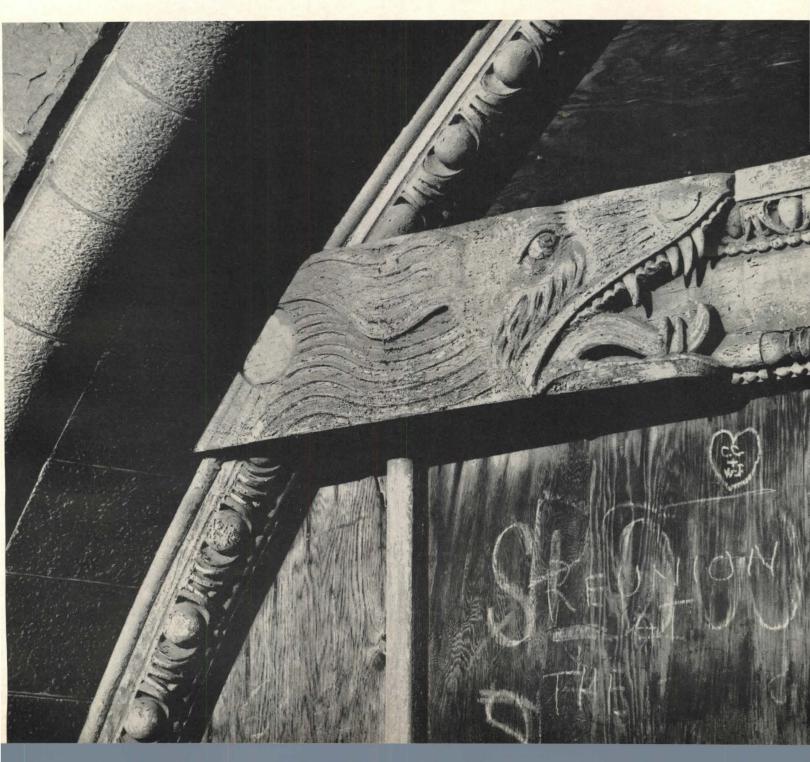
TWO more North Easton buildings were commissioned by F. L. Ames. In 1884, a small cottage was erected on his estate for the gardener (not shown), and the same year saw the completion of a railroad station (right and below) commissioned in 1881. As a director of the Old Colony Railroad, F. L. Ames took advantage of his friendly association with Richardson, giving the railroad a new building and North Easton a proud local terminal, now no longer in use.

The station is basically a simple longitudinal block, articu-

lated on either side by great arches which spring from ground level. It is capped by a broad hip roof, with deeply set eaves supported on sturdy beamed brackets. The deep reveals of the arches opened the wall with large infillings of glass while providing a sheltered setting for outdoor benches.

Although it is not Richardson's finest railroad station, the building was a fine addition to the town. Even in its present dilapidated state, the delightful carvings of animals (below) are a tacit reminder of the craftsmanship in Richardson's work.





# BOOKS

LE CORBUSIER: Complete Works 1957-65, Vol. 7. Edited by W. Boesiger. Published by George Wittenborn, Inc., New York, N.Y. 239 pp. Illustrated. 111/4 by 91/8 in. \$18.50.

#### REVIEWED BY PERCIVAL GOODMAN

"Works of art are of an infinite loveliness and with nothing to be so little reached as with criticism. Only love can grasp and hold and fairly judge them".

RAINER MARIA RILKE

The man is dead and the architect has become his monuments. From his earliest days he planned this apotheosis and he documented each part of the edifice. He was his own Boswell, his own St. Paul.

I look at my shelf with its row of Le Corbusier between covers and suddenly I am panting; interposed between the row and me is an exhibition hall in Paris, on the wall a blowup which becomes his competition plan for the League of Nations. I am thunderstruck, the clocks stop, I am in the time machine (I have been reading H. G. Wells). In another dimension, stripped bare, blinders off, how shall I return to the Ecole? What can I draw that can suit my patron M. Pontremoli in the grubby picturesque atelier on the Quai Voltaire?

Later I babble of L'esprit de Verité—pounding the cafe table quoting and misquoting the prophet's word. "There comes a time when the technical means are adequate for an architectural esthetic to be born," I shout. "At this moment the events of a period are conclusive enough to provoke a pure movement of the spirit." My fellow students laugh, "Movement is the word, merde is the result."

Such being Paris in the late twenties, I bought myself a pair of glasses with outsize horn rims.

I have been asked to review this book. It is hard to do when there is no desire to be critical, when I look at his photo (intently drawing with a stub of a pencil) and think of the monument he spent his life becoming.

Mr. Goodman, an architect, practices in New York City. He is also a professor at the School of Architecture, Columbia University, and the author, in collaboration with his brother, Paul, of the book Communitas.









Top to bottom: Two views of model showing Project for French Embassy in Brasilia, 1964-65. Tall building contains offices, long building is Embassy proper. Project for a hospital in Venice, 1965. Sketches by Le C. of gray oxen and white cows observed around Chandigarh. Detail of Cultural Center at Firminy, 1961.

Hans Girsberger quotes Le Corbusier's preface to the Collected Works 1910-1960—"It's slightly extravagant to have worked so much"—and Girsberger adds that 40 years ago neither he nor Le Corbusier thought the Couvre Complète would eventually encompass seven volumes.

The works 1957-1965 cannot be taken in isolation; Le Corbusier's architecture is all of a piece, a totality, a monolith of endless plastic variations out over 40 years of "patient search."

This monolitic quality is surprising, for Le Corbusier's polemics are all too often in conflict with his buildings. In his writings he insists on purity in the use of technical means, on a functionalism which is utilitarianism. In his buildings, it is the love of deep space and volumes which dominates.

"Architecture," he says, thinking of his three-dimensional reality and the Mediterranean ambiance of his dreams, "is the joyous play of forms in space," and then is forced to add flatly, "but [it] must be as practical as a typewriter."

Here is almost a caricature, this curious pairing of opposites, a Swiss Calvinist preacher, and the sun-drunk pagan dancer, Geneva and Athens.

Consider a few examples of this dichotomy:

He continuously speaks of the sunshade (brise soleil) as a technical device. But at La Tourette (marvelous photos of it in this book), dining halls, library, etc., face due west and his vertical louvers (ondulatoires) are perpendicular to the setting sun. I can testify to the heat traps thus created.

The ondulatoires are, of course, a handsome and simple way to provide thin vertical accents in a horizontal opening, and the brise soleil, wherever used, is a way of providing depth and modulation to walls. Naturally they do, on occasion, serve utility, even to the extent that, as in the Millowners' Building at Ahmedabad, much of each floor is taken up by sunshades.

How is it that a man born with a good solid bourgeois name like

Jeanneret on one side and Perret on the other, has to dig up an "ancestor" with the almost "aristocratic" Le (it's almost de) Corbusier? It reminds one of another great artist, "de" Balzac.

Such men, it seems, are forced to create their own mythology and, living long enough by it, believe it, and it becomes their reality. Then, because they are geniuses, their reality becomes ours. A homey anecdote illustrates how this works: My wife reminds me of a time when Le Corbusier visited us in our flat up 81 steps at the now demolished Marble House. Naturally the talk got around to New York architecture with Le Corbusier stating: "There are no stairs in New York—only elevators". Under his spell, we agreed.

At the time when he preached "the house is a machine for living in," he designed that lovely, drafty and unlivable house at Garches, which in plan, suitability to climate and faked construction is a denial of dictum. The ramp in the Savov house is a good example of how he takes a practical method of moving crowds up moderate distances and establishes a whole design on his fascinating use of a spaceeating and quite unnecessary circulation. But what a pleasure to move up that diagonal!

How lacking in resemblance are his statements in regard to man. "Man," he says, "is the measure" and invents the Modulor so all will be based on human scale. At the same time he celebrates a rationalization, industrialization and tailorization which proposes to replace man as individual in favor of mass man!

The Ville Radieuse expresses this preoccupation with machine man in a society comparable to Brave New World or the Republic. Discussing the Ville Radieuse in Communitas, my brother and I said, "Here is a prince of plans conceived with theoretical severity and with the daring practicality possible to one rejoicing in his times (1925), in the high capitalism of the Captains of Industry (so Le-Corbusier calls them!)."

This stance is carried out in his *Unités d'habitation*. The idea

is well symbolized in his picture of a large hand putting a shoe box into a slot in the structural scaffolding—the very epitome of the human in a filing cabinet.

Those of us sensitive to human values want to pull out those paper shoe boxes with their ridiculous fittings, rip out those Dr. Caligari "corridor streets" at Marseilles and put the majestic structure to a more suitable use . . . a museum perhaps with the space between the majestic pilotis used for exhibitions.

We must not look so closely at the ways in which wall depths were created at Ronchamp or at the construction of the great umbrella at the High Court in Chandigarh. Nor should we do more than exclaim with pleasure at the bulls' horns silhouette of Chandigarh's Assembly Building. Nor question the acoustical problems generated by the form and volume of the main hall.

What a joke Le Corbusier the artist may have played on Le Corbusier the thinker! The thinker trumpeted himself as the prophet of a new time, the artist did what he did. Who was the prophet?

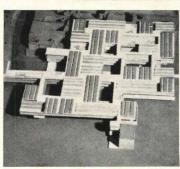
To find an answer let me pose a question first:

In 1851 Joseph Paxton built the Crystal Palace—it was 1,848 feet long, about 400 feet wide, used only iron and glass. The design was modular and so standardized that it took only six weeks to make the drawings and nine months to build from completely fabricated parts. This, then, was a prototype building which, if its lesson had been taken, would have saved architects of the Victorian period the aberrations of their time. If the lesson had been taken, Mies's 1921 drawing of the glass skyscraper would have been not a beginning but an ending. If this is true, then what building of today is the prototype for the future?

My own guess is based on the confidence that the increased free time, due to cybernation and the (we hope) elimination of war games, will lead to a new period in which we make the things we love by hand, machines doing the rest. Then the handmade effect of the Couvent de la Tourette,











Top to bottom: Project for Olivetti Computer Center at Rho, Milan, 1962. Project for a Cultural Center at Orsay, Paris, 1961. View of Chandigarh Assembly from High Court Building. And Le C. (with monks) inspecting the Monastery of La Tourette.

rather than the handsome mechanism of Buckminster Fuller or the Bauhaus elegance of Mies van der Rohe, is the future.

The intellectual was enamoured of Megalopolis, the artist of the Mediterranean. The artist will be proved right. The city squares praised by Camillo Sitte and not Brasilia will be the future.

It is curious that the theories of a man should turn out so variant with the fact of the work. From his earliest writings he celebrates the steamship, the airplane, the automobile, the polish given by the machine, the slenderness of steel in tension as rod or skin. He preaches the desirability of mass production, repetition, smooth finish and absolute rationalism. In actuality, his material turns out to be the roughest use of concrete, oversized, understressed; his forms varied and whimsical; his plans generally devoid of all except minimum utility.

It then is no surprise that his most grandiose work should be built with the primitive means available in the Punjab. How touching to see photos of natives with loads on their heads laboring to create this masterpiece of the Esprit Nouveau. How strange to read, "... there occurred an entirely new event in India: the bicycle..."

It is no surprise to find his inspiration dominant in the New Brutalism and the poets of the accidental and not at all influencing the technology.

Le Corbusier fancied himself a thinker in the style of a crisp, hard-eyed, efficient Americain, handler of men, the captain on the bridge, the chairman of the board behind his huge polished desk, empty except for six telephones—but philosophical withal. The true spirit was of another kind: an artist with his sketch book, his jeweler's loupe focused on the joyous play of forms under the sun.

The true Le Corbusier was summed up by E. E. Cummings: "While you and I have lips which/are for kissing and to sing with/who cares whether some one-eyed son of a bitch/invents an instrument to measure spring with?" Let this be his epitaph.

# Sand, Sea and SOM

Should resort hotels be judged by normal architectural standards? One architect, a specialist in the design of such pleasure palaces, once defended his concoctions against architectural criticism by arguing that hotels are really stage sets, fantasies, man-made mirages—not buildings. He had a point, and it forced a reevaluation of his hotels: they were, it turned out, simply bad stage sets.

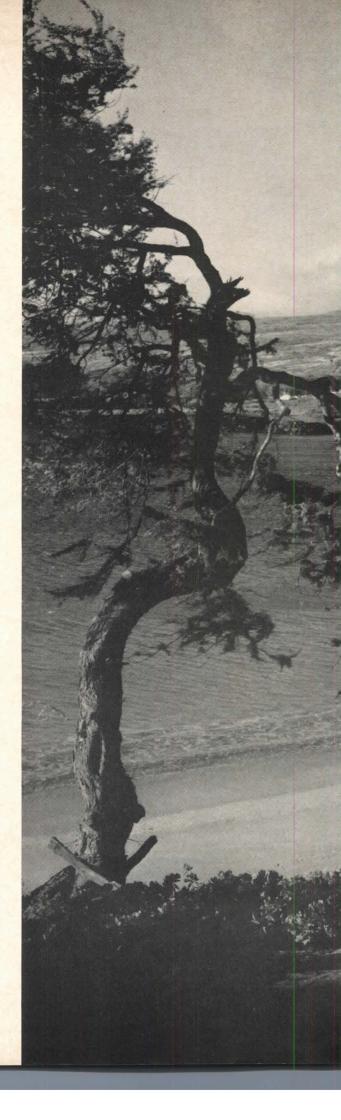
The Mauna Kea Beach Hotel in Hawaii, on the other hand, shows that a stage set can also be splendid architecture, and vice versa. Designed by the San Francisco office of Skidmore, Owings & Merrill for Laurance Rockefeller, it includes most of the components that one associates with tropical hotels: exotic materials and furnishings, lush vegetation, fountains, swaying palms and, of course, blue water lapping a sugar-white beach. All are legitimate in the tropics, but squeeze them into one resort and they usually spell corn.

They don't at Mauna Kea, for two reasons. First, SOM has generally handled these escapist trappings tastefully and rationally, using them where they seem appropriate, avoiding them where they seem forced. Secondly, the architects have deliberately played down the building, letting it serve as a backdrop and frame for a series of interior tropical gardens and courts.

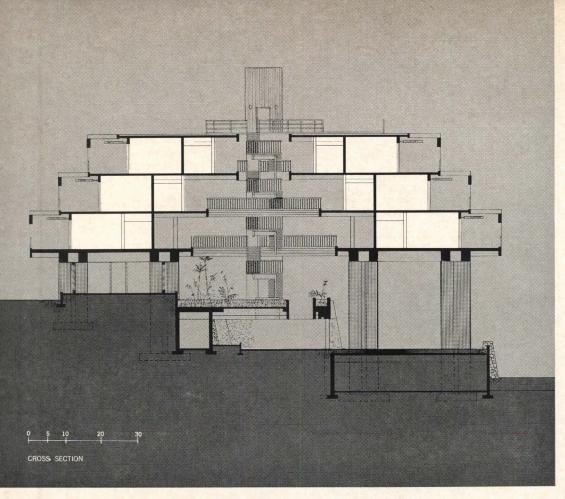
The picture at right would seem to deny the second claim. It shows the hotel as a strongly assertive structure poised on a bluff above a crescent-shaped cove. From this or any distant view, it has the look of a beached ocean liner. But the closer one gets, the less dominant the building becomes. At the entrance (below), placed atop the bluff on the landward side, the building masses begin to recede. From here, one can see through the building to the ocean and cove beyond. Inside (following pages), the building opens to the sky and breaks apart around interior gardens. The effect is like that of a ruin overgrown by a jungle, an effect that should become stronger as the building mellows and the plants mature.

SOM had to create the setting as well as the building. The 500acre site on the "big island" of Hawaii is a lava flow with sparse, desert-type growth. To make it more "Hawaiian," the 23 acres covered by the hotel complex were planted with palms and tropical flora brought in from more familiar parts of the Islands. Another 125 acres were developed into an 18-hole golf course, with the addition of a few imported palms and plants. The rest, 352 acres, was left undisturbed. The cove and its magnificent white beach are real.







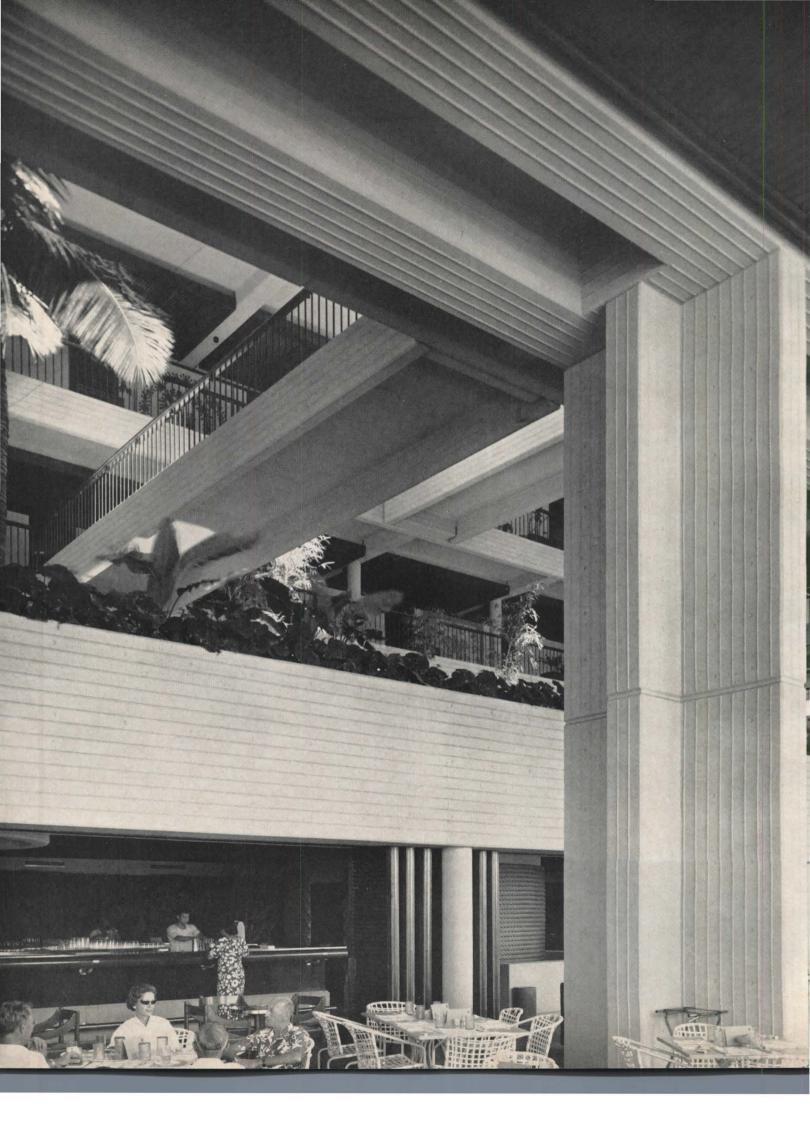




THE three guest floors of the hotel stagger inward above a series of central courts which are open to the sky (opposite). The guest floors form a superstructure over the hotel's base, a two-level complex of terraces carved out of the side of the bluff overlooking the cove. The base's lower level, the promenade, contains most of the public spaces—dining room, 220seat auditorium, cocktail lounge, buffet service and shops—as well as the kitchen, laundry and other services. Except for the dining room, which is a freestanding pavilion, all of these spaces are set into the hillside. The roof structures over them support the reception level above. The building has two unequal wings which are offset from each other (aerial photo). The two wings meet at the reception area, which contains still another interior courtyard open to the sky.

In section (above), the three guest floors pyramid over interior courtyards (photo, opposite), allowing spacious, unshaded balconies on the outside. In aerial photo (left), the hotel's offset guest wings are connected by the punctured reception area.



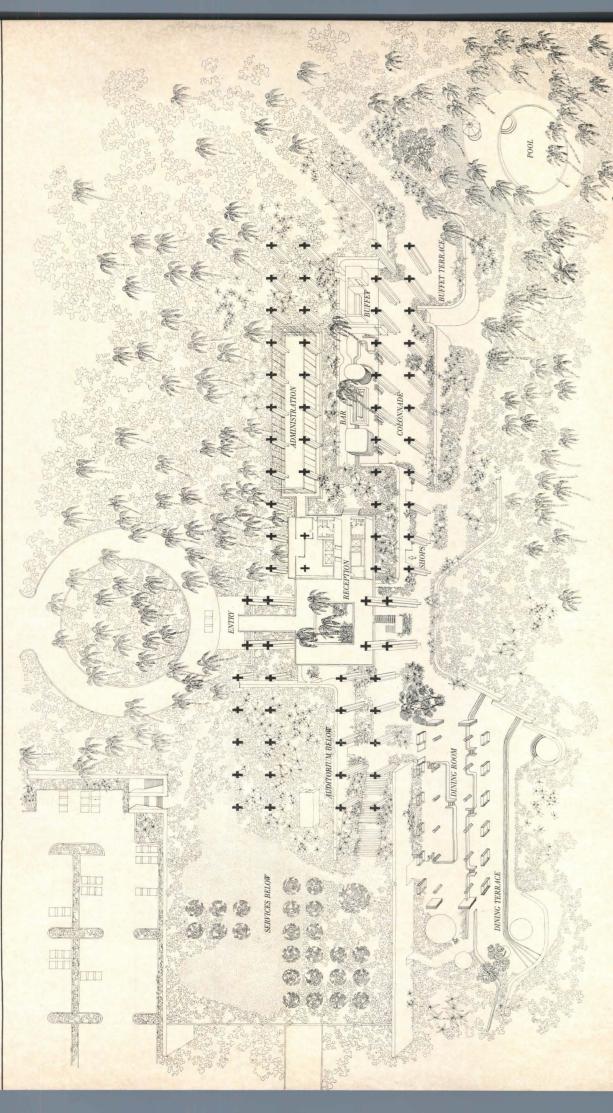


THE reception level (opposite) is given over almost entirely to gardens. Its only functional spaces are the lobby, a floating platform punctured in the middle to reveal a garden below, and the administration area. Entrance is by a footbridge connecting the circular drive with the lobby platform.

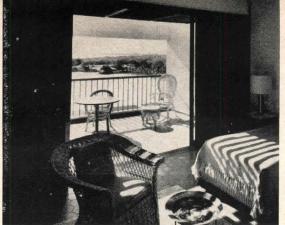
SOM went to great pains to produce a tailored, controlled quality in the concrete, which they felt would be appropriate to the building's use. A tight construction schedule, plus the rather unpleasant color of the local aggregate, ruled out the possibility of good color control. So they decided it would have to be painted, and searched for a forming method that would yield a surface unmistakably concrete, despite paint. They finally selected traditional board forms with a standard V-joint profile, producing V-shaped strips in the finished concrete. "We are not accidental architects," says Charles C. Bassett, SOM partner in charge of the design.

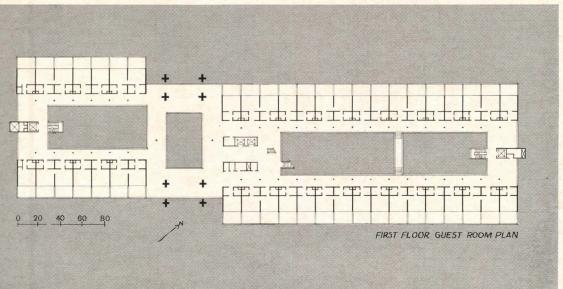


At the reception and promenade levels (perspective plan, right) foliage creeps in and around nearly all interior spaces; only the cruciform columns define the building masses. Left: Bar and buffet terrace. Above: Colonnade off shops; retaining walls of dark local lava and ceiling units of oiled luan contrast with the sand-colored concrete of the structure.











THERE is, everywhere in the hotel, a sense of openness of penetration by the breezes, the sunlight, the views of reef and sea-even, occasionally, the rain. The outward-facing walls of the guest rooms (left) are louvered wood panels that open almost their full width to large balconies. Because of the building's terraced profile, the balconies themselves are always open to the sun. The constant experience of nature extends even to the corridors, which are outside, above the tamed jungles of the central courtyards. Public areas, such as the glazed, satellite dining pavilion (below), have unobstructed views of the cove and sea. It is the tropical island, in the end, that becomes the most significant element of the hotel's design.

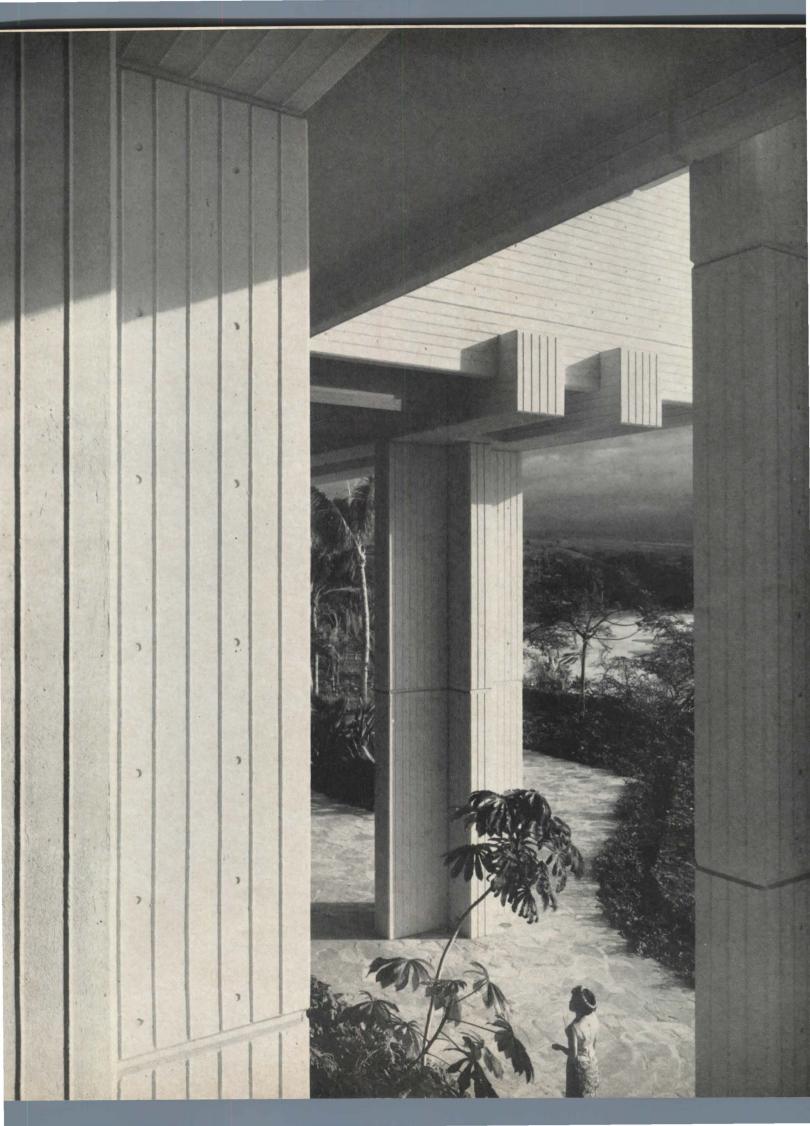
-JAMES BAILEY

## FACTS AND FIGURES

Mauna Kea Beach Hotel, Hawaii. Architects and Engineers: Skidmore, Owings & Merrill; John R. Weese, partner in charge; Edward C. Bassett, partner in charge of design; Marc E. Goldstein, project designer; Davis Allen, interior designer; Richard H. Ciceri, project manager.
Landscape Architects: Eckbo, Dean,

Austin & Williams. Civil Engineers: Belt Collins & Associates, Ltd. Golf Course Designer: Robert Trent Jones. Lighting Consultant: Jean Rosenthal. Kitchen Consultants: Harris, Kerr, Forster, R. Walter Kuhn. Shops Consultants: Becker & Becker. Laundry Consultant: Harry Pearson. Acoustic Consultants: Bolt Beranek & Newman. General Contractors: Haas & Haynie. Gross Building Area: 154,000 sq. ft.

PHOTOGRAPHS: R. Wenkam, except pages 83 and 86, Bruce Davidson, © 1966 Magnum Photos.







# FORUM CONT'D

have a love affair going on with the automobile, and that's the reality we must deal with."

San Francisco's Mayor John F. Shelley, still smarting from his city's rebuff of freeways, disagreed. "I could have saved the bureau all that money and told them the same thing," Shelley said.

# COMPETITIONS

GATEWAY MALL, ST. LOUIS

St. Louis will hold a national architectural competition for a block-wide, 18-block-long mall to run through the heart of the city on axis with Eero Saarinen's Gateway Arch. Details will be mailed in June to architects and landscape architects throughout the country by the city and the competition's cosponsor, Downtown St. Louis Inc.

Professional advisor is Charles E. King, and Downtown St. Louis said "substantial cash prizes" would be awarded the winners. The only other particulars announced were a series of "design goals," saying, among other things, that the submissions should include proposals for "use and design characteristics of new buildings and flanking developments" along the mall's path.

# INS & OUTS

ON THE AVENUE

In Washington, what Congress likes is likely to happen, and one of the things Congress appears to like at the moment is the idea of a rejuvenated Pennsylvania Avenue.

An indication of Congressional attitude came when Senator Alan Bible (Dem., Nev.) asked, during a Senate committee hearing on the Avenue, how much the Federal contribution might be expected to be. He didn't even blink when he got the answer: \$70 million.

During hearings in both the House and Senate, the proposals seemed to get strong support, except for what appeared to be minor questions of procedure. The betting in Washington is that work on the Avenue will be underway before year's end.

The one item on which most criticism has been centered since the plan was unveiled by the



Temporary Pennsylvania Avenue Commission last fall was a proposal for a huge National Square at the White House end of the Avenue—categorized by one critic as a "Mussolini-type paved parade ground."

But the commission members, headed by Nathaniel A. Owings, went back to their drawing boards and emerged in early April with a scaled-down square (above) that seemed to answer most of the objections.

When the proposal for the new square—two-thirds the size of that originally suggested — was presented to the National Capital Planning Commission, it was approved by a vote of 9-to-1, with only Mrs. Elizabeth Rowe, the chairman, opposed.

In a ten-minute, table-thumping lecture, Paul Thiry, a Seattle architect and member of the commission, said it was time the NCPC raised its sights because, "in this town we have to have something really important; we can't be all grass and trees."

In response to a complaint that the creation of the National Square would involve the destruction of several major buildings, he said he didn't see how "anyone in his right mind can go down and look at that junk and worry about losing anything." Said Thiry, "Anything done there is going to be an improvement."

#### THE INSCRUTABLE WEST

It looked like the biggest shoo-in vote of all time. The two Ft. Worth newspapers were for it and so were the Central Labor Council, the city council, and most civic leaders. But the April 12 tally put 38,397 in one column and 9,248 in the other. The possibility of urban renewal in Ft. Worth was rejected so emphatically

it seemed questionable whether or when the issue could possibly be raised again.

Only property owners were eligible to vote in the April referendum. Old maps which pinpointed blighted blocks were trotted out and used to convince homeowners that vast areas would be razed. Martin Anderson, author of *The Federal Bulldozer*, was imported into Ft. Worth to confirm these and other fears

A photograph from a Boston newspaper was stuffed in mailboxes showing a man being dragged from his house by four policemen (he had actually bought property already condemned). The right-wing Freedom Center of Libertarian Thought in town ground out leaflets warning "the home you save may be your own." And H. L. Hunt, the Texas millionaire who considers Federally financed hot school lunches subversive, beamed similar sentiments from his radio stations.

As summed up by a Ft. Worth newspaperman, "community leaders navigated the 180° shift toward Federal aid on tiptoe so quietlike that nobody heard them—or would turn with them."

#### SPEAKING TOUR

HUD Secretary Weaver took to the stump last month for Demonstration Cities as the Senate prepared for hearings on the Johnson urban programs. He was prompted by pessimistic prognoses from Congress, and, reportedly, by a prod from the White House. Demonstration Cities, it is said, is one demestic program Mr. Johnson wants delivered.

In Seattle, Dr. Weaver said that the demonstration concept was "the most realistic and responsive pluralistic solution we have yet



Calling Mrs, Johnson! There has been a slight hitch in the First Lady's beautification campaign: when she proposed that we should be planting rlowers along our highways, everybody cheered—and that, it turns out, included not only us, but also the flower industry, as well as the bill-board industry! In fact, as you can see on almost any road- (and railroad-) side across the nation, the flower people and the billboard people got together and behind the First Lady's admirable beautification drive—with mixed results. The view (opposite) of some buildings in Harlem, which seem a legitimate target for the drive, speaks for itself; it also demonstrates the trouble you are likely to run into any time you try to define "beauty."

conceived to meet the complex range of problems in our changing urban communities."

In Philadelphia, at the American Society of Planning Officials Conference, he emphasized the requirement for citizen participation in the demonstrations. This means, he said pointedly, "not only greater involvement of citizens in the process of community planning and development, but it also means the involvement of planners in the very down-to-earth problems besetting the residents of slum areas."

In Cleveland, Dr. Weaver extolled the program in terms that seemed to extend its social emphasis to the entire range of HUD renewal and housing efforts. "It is no longer enough to beef up a city's tax base or to build architectural monuments," he said. "Unless we can honestly say that our programs have expanded opportunities for housing, jobs, and recreation, then I say we are not doing our job."

When Congress recessed for Easter, HUD officials thought it might take two years for the Demonstration Cities Program to pass. By late April, they were optimistic about getting it through in one.

# **UPS & DOWNS**

SPLIT IN SYDNEY

The following report is by the Australian architect-critic Robin Boyd, a member of the Forum's Board of Contributors.—Ed.

The architectural profession in Sydney—indeed in all Australia—was split squarely down the center during the month that followed Jorn Utzon's resignation from the Opera House.

About half believed that this was a classic case of art being back-stabbed by philistinism. They argued that Utzon never resigned: he was maneuvered into an impossible corner by Davis Hughes, the politician, so that he finally gasped out, "I am forced to stop!" This cry of despair was misrepresented as resignation by the conservative (Liberal Party) government members who had been out to get Utzon from the start.

These arguments, with embroidery and variations, were proclaimed in meetings, marches, demonstrations and pamphlets with at least as much emotion as charged the separate but simultaneous public argument on Viet Nam. Messages from Giedion,



Rudolph, Kahn were read in support of Utzon to passionate conferees. Accusations were hurled at the Royal Australian Institute of Architects for not supporting a member more strongly when he was down. Above all, a principle was invoked: an architect should be allowed to finish his own work, no matter how or what. The movement focused on a drive to blacklist the panel of architects which the government proposed to replace Utzon.

It was a terrible test for the leaders of the local chapter of the RAIA. They voted on the proposal to blacklist the new panel, and the proposal was lost. Then the rebels outside counted their strength and demanded a general meeting to call a vote of no confidence in the chapter. The two sides met head on in a crowded meeting on March 28.

Speaking publicly for the first time since his maybe-resignation, Jorn Utzon said that he was forced to leave the job after 10 months of obstruction from his governmental clients. He said they appeared to have been misled by their advisors. He said he had asked them to write down any specific complaints about his administration of the project, but they had rejected this request. He said he was prepared to return, but only as sole architect.

The chapter president, Ron A. Gilling, said he and the organization had always wanted only to see the job completed with Mr. Utzon in charge. They believed "the whole dreadful affair is a great tragedy for our city and Australia." But there was absolutely nothing, Gilling said, that the Institute could do to prevent other architects from legally taking over

the commission. The chapter beat back the vote of no confidence.

By late April, Utzon was packing to return to Denmark. His supporters were calling for formal affidavits from individual architects all over Australia. Their object was to prove the government's acceptance of the resignation illegal because the Opera House Act of 1960 called for the construction "in accordance with the design prepared by Jorn Utzon." They were not very hopeful of legal victory; it was more a matter of principle. Behind the scenes the government started recruiting its panel to bring the Opera House to completion.

#### MONUMENT

On three sides (the fourth rises straight up from the street), the massive Manhattan warehouse shown at left has the look of a pyramid that changed its mind. To be built on air rights above the West Side tracks of the Pennsylvania Railroad, it was designed by New York Architects Davis, Brody & Associates.

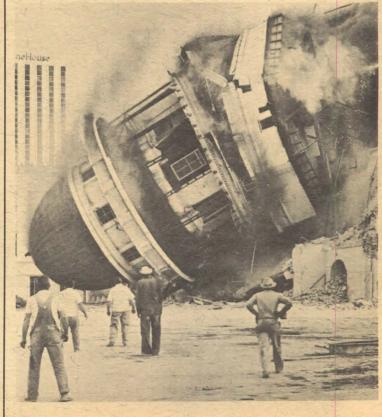
The shape, the architects report, (1) achieves maximum use of the zoning envelope without the multiplicity of costly roofs found in the usual ziggurat, (2) will be sympathetic to a projected housing development nearby, and (3) permits trucks to pull directly into any one of 41 loading berths.

The warehouse space proper is in the core of the building, with 14 floors of offices on the perimeter. The building will contain 1.4 million square feet of space in all, and will occupy the equivalent of a square block.

#### SO MUCH FOR BEAUTY

"No one is more attached to [the Fresno County Courthouse] than we are, nor can we deny the classic beauty of its unmistakable complement to the park which surrounds it. However . . ."

With this preamble, the Fresno County Board of Supervisors toppled the brick and granite courthouse (below), built in 1867, as being inconsistent with "the great Fresno of the 21st Century."



# **ORACLES**

#### MOSES IN TECHNICOLOR

When Robert Moses has something to say, he doesn't issue a White Paper. He issues a fat, colorful brochure, complete with foldouts, and sends it free to a few thousand civic leaders.

Two such Moses productions were released last month, one entitled Public Works and Beauty and the other The Saga of Flushing Meadow. The prose was as colorful as the photos, and as rich as the quasi-public agencies (Robert Moses, chairman) which paid the printing bills. Samples:

On architecture: "The intake structures over [Niagara] Falls [below] will ultimately be recognized as the finest modern monolithic architecture in this country."



On the fair: "Patience, I keep repeating, patience, my fine critics, patience! Keep your shirts and shifts on! You were not conspicuous when we leveled the ash mountains and rats big enough to wear saddles, with white whiskers a foot long, gazed wistfully at the bulldozers and junkies who disturbed their ancient solitary reign."

On democracy in design: "We went in for temples of religion. . . We rivaled the Seven Wonders of the Ancient World. We evolved Renaissance, Louis XIV, Tudor, Jacobian, Jeffersonian, Victorian, General Grant, Bozart [Beaux Arts?], Stanford White, Nervi, Lloyd Wright [as in Frank], Baroque, Rococo, Igloo, Ankhor Vat, Animated Typewriters, Frozen Music, and the ecstasies of Viennese pastry cooks. We found room for Michelangelo, Norman Bel Geddes and Walt Disney. If that is not democracy in design, what is?"

On beautification: "The greatest

opportunity for demonstration of the principles of national beautification is on the highway system." • On Moses: "We must attain common objectives, not by superduper czardoms, but by cooperation . . . beauty by example, and not by rhetoric."

# **IOPEN SPACE**

#### FILLING THE VOID

How to enrich space between buildings which is stingy, inert, unchanging? How to give a sense of place where there is none?

Paul Smith, in the current exhibition "The Object in the Open Air," at the American Museum of Contemporary Crafts, New York City, has collected some solutions by American designers:

Charles Forberg's sculptural tent of stretch nylon couples with Stanley Vanderbeek's three-dimensional films and slides to become a Cinema Tent in the Park (top right). "The Ring Thing," by Mark DiSuvero, is a variation on the traditional rope and tree swing (center). A monster-block by Forrest Myers, lacquered in red, yellow and blue, hangs in a tenement well (bottom).

The show will travel to San Francisco in the fall.

### LACK OF DIALOGUE

Ever since the Albert S. Bard Awards jury, in 1962, decided there were no New York City buildings worth honoring, its annual announcement of winners (or non-winners) has been awaited with more than routine interest. This year the jury gave three awards, but only one went to a building. The others were for open spaces.

Eligible this year for the program, sponsored by the City Club of New York and the J. M. Kaplan Fund, were privately commissioned projects built within the city since Jan. 1, 1964. The winners were the Sculpture Garden, Museum of Modern Art, designed by Philip Johnson with Zion & Breen, landscape architects; the Lincoln Center Plaza North, a collaborative effort of Harrison & Abramovitz, Philip Johnson, Eero Saarinen, Skidmore, Owings & Merrill, Pietro Belluschi, and Catalano & Westermann, with Landscape Consultant Dan Kiley; and the lone building, Johnson's Henry L. Moses Institute, part of Montefiore Hospital in The Bronx.

The jury acknowledged that there were other good recent







buildings in New York, but dismissed them for "either not recognizing the opportunity for an architectural dialogue with the adjoining city, or by outright rejection of it." The jurors included Ulrich Franzen, John Johansen, Albert Mayer, and Paul Rudolph.

# PEOPLE

#### GRANGERS KILLED

Architect Charles Granger Jr., 52, of Austin, Texas, his wife and 14-year-old son were killed in a head-on crash near Austin in March.

The Grangers had done much for architecture and design in Austin. Granger, a partner in the firm of Fehr & Granger, had been president of the Central Texas chapter of AIA, and a member of the Austin City Planning Commission's zoning board. He also had taught at the school of architecture, Rice University.

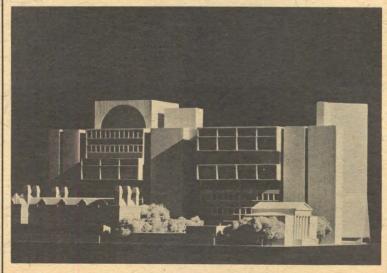
Mrs. Granger had been active in civic groups committed to preservation and urban design.

#### THREE FOR KAHN

Louis Kahn will be the first recipient of the Paul Philippe Cret professorship of architecture at the University of Pennsylvania. Cret was Kahn's professor of design at the University.

Kahn will have a retrospective show at the Museum of Modern Art through May 30. With it, the Museum is instituting a new presentation technique: a combined film strip and narration which permits a more critical analysis than the three-paragraph museum label has in the past. For the Kahn show, Vincent Scully, Yale art historian, does the narration.

Latest Kahn in show is his campus for Philadelphia College of Art, a complex of dormitories, student union, auditorium, gymnasium, theater, and classrooms. Dwarfing the college's present Victorian and neo-classic buildings will be the immense, brooding composition shown below.



# Wolter Manade

no mistake, of course, but is carefully plotted. Probably there is no customer of technology who has also caught on to the uses of design more adeptly than the airlines, even to the valuation of the human gesture in environment. The finest plastic touch of all on any airliner is the stewardess.

But design aloft is getting more difficult as the airlines become mass, rather than class, movers. Unlike on railroads, competition



#### GETTING THERE IS HALF THE FUN

This photograph will by now be familiar, showing as it does the staggering design of the greatest great silver bird so far, the Boeing 747, big brother to the 707-321. The interior is by the office of Walter Dorwin Teague, but obviously has not yet been completely polished. A difficult job. Into the big plane will have to be fitted no fewer than 490 seats, and presumably in the airily luxurious manner to which airline customers have become accustomed.

The nuances of this special branch of design have always interested me. Automobile stylists, compared with the aircraft experts, are quite deliberately crude; but some of the airliner seats, for example, might adapt quite well to the most up-to-date modern interiors. They have a little of the suavely Victorian quality of the Eames Hound Dog leather chair. The air chairs would be dangerous to earthly conversation, however; they are very sleep-inducing after a drink, even after the usual cardboard dinner served aloft.

That built-in lulling quality is

for passengers is keen because they are immensely profitable, and austerity does not woo trade. A friend once told me of being in the office of the president of a large airline when this man, in exasperation, telephoned the president of his biggest competitor and blurted, "Look here, let's agree to cut out all this nonsense: drinks, gifts for the kiddies, tie clasps, all that. Hell, we're selling transportation. We're not in the excursion business." A long, calming answer ensued; nobody even mentioned stewardesses.

But can the luxurious feeling in flight be maintained if it becomes necessary to seat ten passengers abreast in the new giant jets? The 747 mockup shows but a scanty payload of passengers. If it were filled to capacity, the photograph would really have given pause. The status symbol, a window, gets to be very rare. The room is as big as most cabarets—and, at that, will require a whole chorus line of stewardesses. The rub is that in this cabaret the chorus will also have to serve

meals. My reliable informant tells me that recruiting and keeping the girls is getting more difficult every month. Not because there is any shortage of pretty, well-adjusted All-American girls, but they don't want to be waitresses. While senior pilots on the airlines request the long flights, because they accrue so much air time flying from continent to continent that they can spend most of their days at home (flights over water pay a little better, too), the senior stewardesses, in contrast, usually request the shuttle flights. The point is the girls on the shuttles do not have to serve meals, but just collect fares. My friend is a little aghast at another stewardess-design problem in the new 747: "How about those private compartments? Who's going to chaperone the stewardesses when they have to serve a male passenger in there, the flight engineer?"

So there's turbulence ahead. Let us hope the designers somehow solve the situation without replacing the girls. If they do, the sometimes erratic behavior of the dispatchers will be hard to justify. I remember being stalled at a Chicago airport one afternoon when a United flight was postponed. None of the ticket-holders could guess why; the weather was beautiful, the announcements over the public address system blandly uninformative. As a result the passengers began to mutter angrily in the corners of the waiting room. This went on for several hours, until everyone was enraged, although we were all that reasonable middle-aged, shorthaired, would be executive-looking, darksuited type carrying attaché cases which a little girl I know in Atlanta refers to as Daddies. A mutinous mood prevailed by the time the airplane was finally wheeled over, and we were allowed to walk out to the movable stairway and enter.

Standing in the middle of the doorway into the airplane—not to one side, as is more usual, but squarely in the center—was obviously the A-1 trouble-shooter stewardess of United Airlines. She had a hand on a hip, and her eyes were narrowed. She was a little like Dietrich in the old "Blue Angel," but cleaner cut. As each of the Daddies huffed up the stairway and encountered her, she looked him deep in the eyes and said, "Hello, honey." There was no mutiny.

PHOTOGRAPHS: Page 27: UPI. Page 28: left, Carl Dixon Associates. Page 29: left, UPI; right, John McKee. Page 90: lower, Wide World Photos. Page 91: left, Triborough Bridge and Tunnel Authority; upper right Robert L. Beckhurd, Museum of Contemporary Crafts. Page 92: Pan American World Airways.



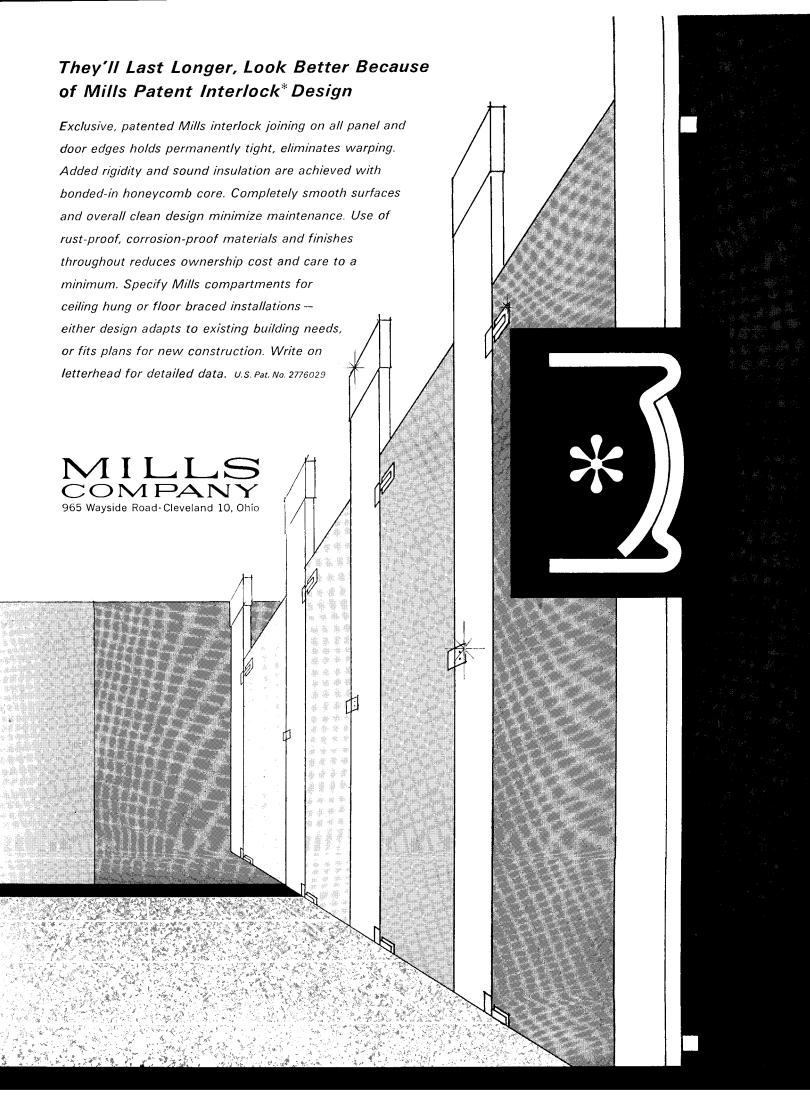
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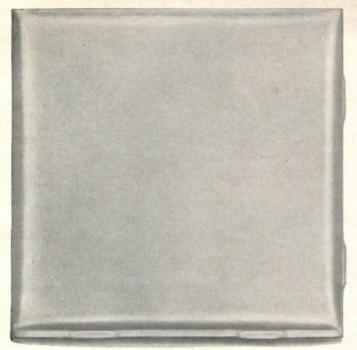
... unless you melt them! No other stacking chairs store away in less space—forty stack just four feet high. The name is obvious—the GF = 40/4 chair.

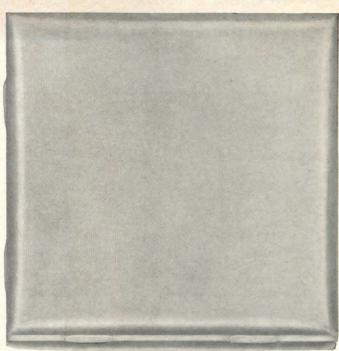
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# Sometimes progress amounts to a hill of beans



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# LETTERS

M'S IMAGE

Forum: There is no question nat any man, woman or corporation is entitled to wear whatever tothing he, she or it chooses, be it otton or sable, block or marble, ears or Dior, prefab or Mies. But choever heard of an important tizen, a substantial citizen, delibrately cutting off his fine clothes t the knees and the elbows and clashing paint on his wife's finery? This is for beatniks.

Am I to understand from IBM's atest attitude toward design March issue] that they are going or send me a cheap, ugly cover or my nice new 412 dictating mahine? Have I really paid too such for its wonderfully compact esign? Should my secretary's ypewriter be scratched up a bit? he won't like it. Should our next BM installation be concealed beind cheap paneling? Worse yet, hould I really give up my old at for fear my friends and clients will think I'm rich, like IBM?

What shabby thinking! What tter nonsense!

GRINNELL W. LOCKE
Architect

Forum: I enjoyed your article bout the IBM Company and the ronderful photographs of our wildings. Much of what you had to say is accurate, and I found all f it interesting. Eliot Noyes, Charles Eames and Paul Rand ave done a great deal for the IBM Company. I think the architectural and design reputation that hey have helped create for us over the past decade has been an important factor in our success.

On the other hand, it is perectly true that we think the cost
of some of our buildings ran comeletely out of line, and we have
ecently brought this area of our
cusiness under closer control.
ome of your comments on this
hange were not founded on fact,
and so I wanted to tell you the
easons behind several of the
ctions taken.

First, IBM never decided, as ou suggest on page 36, that "an mage of wealth was a liability" or the simple reason that we had ever intended to build an image of wealth in the first place. We till feel the same way. We want quality at the least possible cost, and for a considerable period of ime we believe most of our build-

ings met this objective. For example, Eero Saarinen did our Rochester plant in 1958 and the cost was competitive with anything we could have achieved anywhere in the United States. Marcel Breuer designed a laboratory for us on the Riviera which is outstanding but also lent itself to economical construction. However, in 1963 and 1964 we began to get costs on several projects that we considered totally unacceptable in relation to the results achieved. This was the basic reason for changing our policy.

Second, when policies are changed in a large corporation, and particularly when they are changed from the top, they sometimes do not appear logical. For example, the building which was stopped for redesign at the time when one of your contributors suggested "IBM wants austerity at any price," was a branch sales office. We felt the original design was not in keeping with the purposes of such an office.

Third, you go on to say that "stories abound of carpeting removed or fine wood painted over." There may well be many such stories around, but for the most part they are not true. It is true, however, that with the loose control we exercised over architects, and the fact that local managers could approve or disapprove projects, a sort of contest developed to see who could build the most unusual thing. This trend was also a contributing factor in our decision to change our approach.

In short, we continue to want good buildings at the best possible price. We believe our new policy will make it easier for us to achieve this goal.

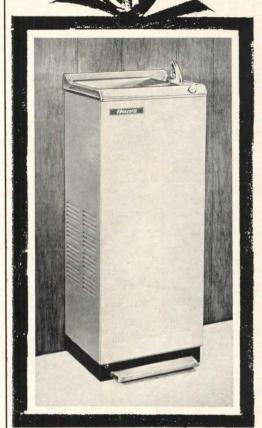
THOMAS J. WATSON JR.
Chairman of the Board
Armonk, N. Y.

#### BASIC PRINCIPLES

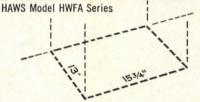
Forum: I find Roger Montgomery's review of my book, Rebuilding Cities [March issue], an extremely interesting appraisal, written in a very positive and helpful way, and I am extremely happy that he has grasped the main intention, which is to show examples of planning that have been actually turned into reality.

I feel that he has slightly missed the point of the last chapter in the book in which I tried very briefly to set out a few of the conditions for city building. It seems to me essential to have (continued on page 104)

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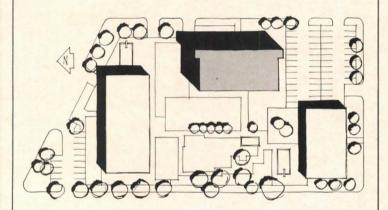
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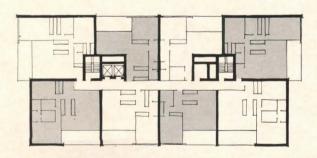


# THE CONTEMPORARY BRICK BEARING WALL

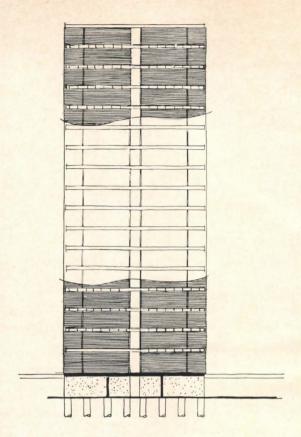
as designed by E. A. Anderson, AIA, and Peter Looms, AIA



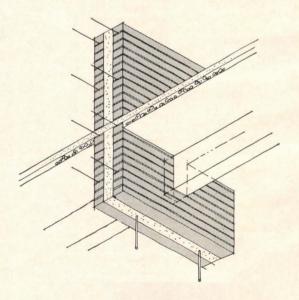
Park Mayfair East is the third building in Denver's only high-rise apartment complex. The first two buildings (one seven stories and the other eight stories high) are bearing wall structures. Park Mayfair East was originally designed as a 14-story structure with a steel frame. Bids on this original design showed that the steel structure, because of the additional fireproofing that was needed, would cost more than a masonry bearing wall structure. In addition, the owner's previous experience with bearing wall buildings showed him the significant advantages of masonry bearing walls acting as sound barriers between apartments. Other desirable advantages which masonry bearing wall design offered were speed of construction and low maintenance.



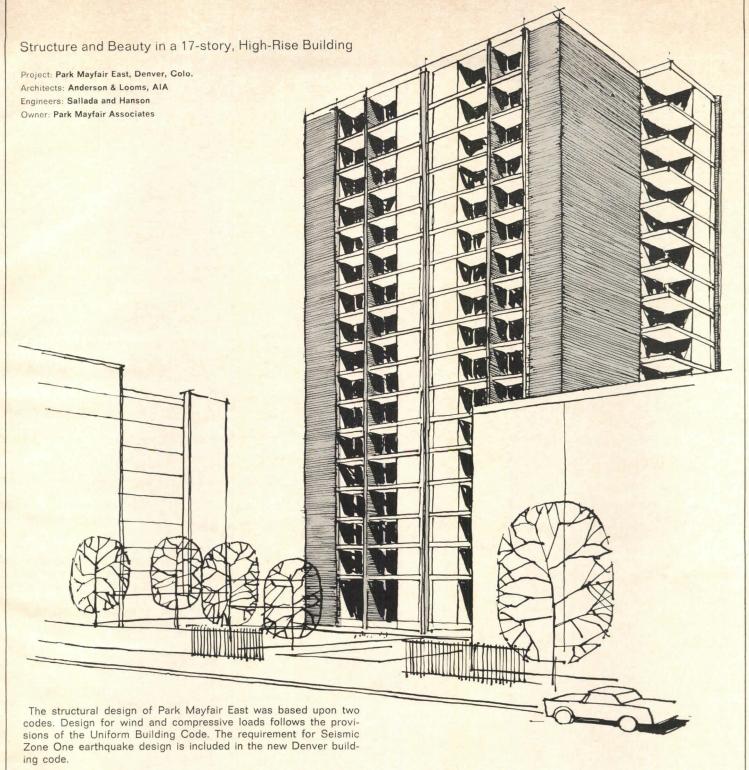
Redesigned as a 17-story, masonry bearing wall structure, Park Mayfair East contains 130 apartment units. The structural system consists of 11-inch-thick (two wythes of brick plus a grouted cavity) reinforced brick masonry walls and a precast concrete floor system. Brick bearing and shear walls, shown in this floor plan in heavy lines, are arranged to provide natural resistance to lateral as well as vertical forces. Apartments are separated by 11-inch brick walls which provide exceptional sound control (sound resistance of 58 decibels).



A partial section of an interior bearing wall shows the building structure. The floor system is of precast, prestressed concrete "T" slabs spanning between bearing walls. Spans range from 30 to 37 feet. The floor system is also an effective sound barrier (52 decibels). The bearing walls are founded on reinforced concrete grade beams supported on concrete piers drilled into bedrock.



This detail shows the precast and prestressed concrete slabs framing into the bearing walls. Only the legs of the slabs bear on the walls, and the typical bearing distance is four inches. The 11-inch bearing walls have a full-grouted collar joint, with the grout consisting of a mix of portland cement, sand, and pea gravel. Vertical and horizontal reinforcing is sized and spaced as various loading conditions dictate. The slabs, averaging eight feet in width, are finished with concrete topping. At intervals, this topping carries through the bearing wall and contains reinforcing to insure diaphragm action. The sand-finish, light-brown brick are laid in a running bond. ASTM Type S mortar, with a strength of 2,500 psi, is used.



The total height of the building is  $1641/_2$  feet. Modern brick bearing walls were a practical answer to the design problems of Park Mayfair East—including height, seismic zone requirements, and other strict code provisions.

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# **LETTERS**

(continued from page 101)

some kind of basic principles to which both clients and experts can look as a basis for policy. Maybe Lewis Mumford could do this much better than I, but it is at least worth attempting.

He also appears to have not fully understood the reasons for including a short summary at the end of current planning building projects. In my view each of these, together with several other examples for which I could not obtain the illustrations in time, should be given whole chapter descriptions.

The new capital of a very large country such as Brazil is surely significant, whatever the mistakes that have been made; the Haymarket area in Stockholm is a complex project involving a whole set of interesting ideas in a city which is famed for its intelligent planning. The American projects happen to include Penn Center redevelopment of Philadelphia, a city which I suggest has the finest planning record of any in the United States.

Why Mr. Montgomery should in any way relate the nonsense of Archigram and clip-on to serious planning, I have no idea. But these are minor criticisms of what I consider to be an extremely valuable review.

PERCY JOHNSON-MARSHALL
Professor of Urban Design
and Regional Planning
University of Edinburgh

#### CRITIQUE

Forum:

nydney calon carrinen akidnore standard cert centeuse systems schools ä salto: VON YON YON WON WON WON WON WON WON WON



Cambridge, Mass. HUGH ADAMS RUSSELL

#### NO FARMHOUSE IS AN ISLAND

Forum: I have just read with interest and concern "Building a Better Farmhouse" [March issue].

It is encouraging that projects concerning low-cost housing, whether farm, suburban or urban in character, are being given the attention of research-type analysis. The final prototype designs are proof that these units can be refreshing, imaginative, and functional.

On the other hand, it is dis-

couraging and disturbing to see that the design of the unit becomes an entity unto itself; that no further thought is given to this living unit as a small unit of a neighborhood and community environment, whether it is farm, suburban or urban.

By not taking this final and logical developmental step, an opportunity is lost to produce a meaningful unit related to its total environment. Without this further study, the project becomes shallow, superficial and incomplete.

JAMES PATTERSON
Architect

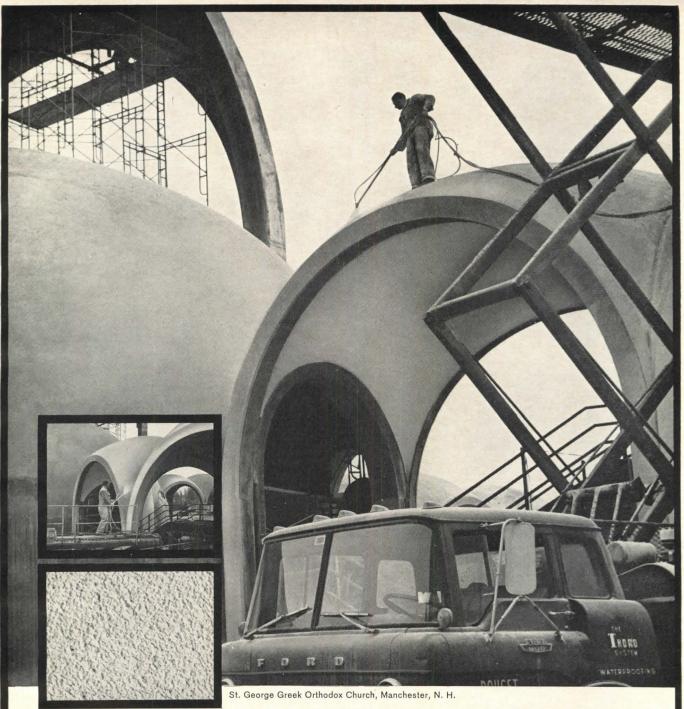
#### IS PORRO REAL?

Forum: In reference to your comments to my Cuban friend and colleague, Architect Angel Cano, on his letter [March issue] about your April 1964 and Jan./Feb. 1966 publication of the so-called "New Architecture of Castro's Cuba" and the School of Plastic Arts in suburban Havana, respectively, I would like to make a few comments of my own, as a Cuban, an architect, and a city and regional planner. . . .

It seems to me that a basic issue is being forgotten in all of this: whether, in fact, what you are commenting on is at all real architecture. . . . When one reads some of your captions, such as "sculptural drama," "other recent projects by Porro are equally audacious," "he has shown equal bravado in his School of Modern and Folkloric Dance," etc., one does wonder whether present trends in critical appraisal of contemporary architecture are leaning dangerously toward capriciously dramatic malabarisms, rather than to careful evaluation of the real meaning of such kinds of "architecture."

When you talk of expressing "something of a national character," you are confusing Cuba's location in the Western Hemisphere and its long-accepted achievements in true architecture before Castro with a new and radically changed pseudo-African environment. . . . Whether you legitimately classify Porro as a "creative architect" exploiting "the shortage of construction materials" to "justify his nonconformity" remains to be measured against more permanent values which some truly great architects have had in the past and in the present, i.e., the avoidance of sensationalism per se-whether in

(continued on page 106)



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structural or space-enclosing resources. A great many such architects would take exception with your trick-for-trick's-sake candid acceptance of Porro's bulboism as good architecture. . . . Its "sculptural drama" would, of course, receive due attention, but without its fogging the rest of its merits or shortcomings. . . .

Let the Forum, which has been doing such a great job in general, become still more careful as to what it labels great architecture. . . .

EDUARDO MONTOULIEU Associate Professor Graduate Program in Planning University of Puerto Rico

Three points in defense of editorial policies which Professor Montoulieu has questioned:

1. We often devote space to a work of architecture because of the ideas it presents. This does not imply our complete approval, although many readers seem to think so.

2. We were in no position to make a critical appraisal of Porro's work since none of us had seen it -nor were able to obtain reliable information of its background.

3. What we found interesting in Porro's art school was his uncommon - yes, audacious - combination of forms to produce what appeared to be, in photographs, a powerful-if perhaps disconcerting -spatial experience. From this distance, we could not detect any serious flaw in his structural derivation of these forms or their functional application. If Professor Montoulieu has found any, he has not specified them .- ED.

#### BEAUTY'S FRIEND

Forum: The architectural magazines for many years now have neglected their professional role, having selected material for publication on the basis of novelty rather than quality. This is particularly unfortunate during this aimless era, as they are the guides to students, faculty and impressionable architects.

Instead of judging work by the standards of Vignola, "firmness, commodity, and delight," or Le Corbusier, "serenity, joyfulness, and efficiency," they publish works of architects who are capable but misguided or cynical, whose work is accidental, haphazard and unresolved, who dream of the day when mechanical elements will take the place of sculpture, who reject architecture as a fine art, a thing of good taste or of beauty.

Viollet-le-Duc said: "Architecture cannot be barbarous for the simple reason that it is art. It is barbarous only in ceasing to be art when it degrades itself by belying and violating its own principles; when it slavishly follows the caprices of fashion; when it becomes the plaything of people without fixed ideas or convictions."

The work published is not that of architects but anti-architects. At best these reflect the worst aspects of a troubled age. But architecture should reflect man's aspirations, not his despair. Architects should create beauty not ugliness.

GEORGE NEMENY New York City

#### AUSTRALIAN CHARTRES

Forum: Your story of the Sydney Opera House is an intriguing one which poignantly illustrates the architect's endless struggle not only to impose reality on an inspiration but to reconcile God and mammon. One can only hope some formula can be-or has been evolved which will permit Mr. Utzon to see his work out with dignity.

I write as a layman to hope that professional support of Mr. Utzon's position would not be inappropriate. For it seems to me that there can have been few architects who produced compelling results without, at the same time, having been autocratic, contentious and profligate-to some degree. If Mr. Utzon has taken this long to reach the breaking point, he cannot be too great a sinner in any of these areas. In view of what he is doing, surely he deserves some support. . . .

Let those architects here who have never been fortunate enough to be able to realize their most monumental dreams send a kind word to Mr. Utzon. I have never met him. I know no one who knows him. But I have seen a twentieth-century pyramid, an Australian Chartres, another waterside Colossus. The very fact that it is being built must give architects courage and hope, particularly those who have had to spend their years fighting off the octopus of practicality. . . .

GUY K. BENSON
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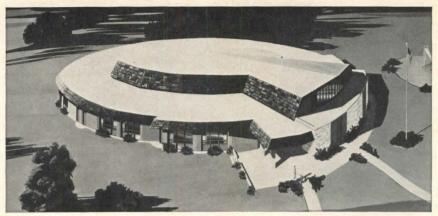
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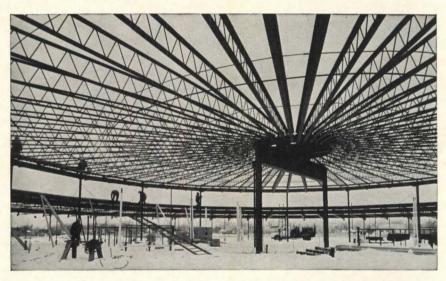
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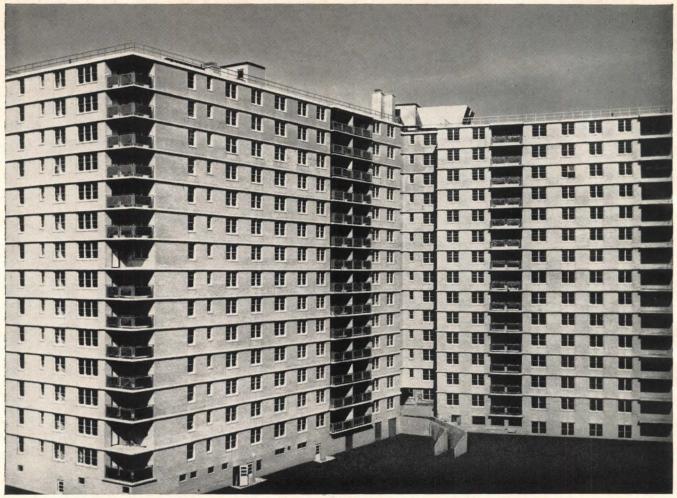
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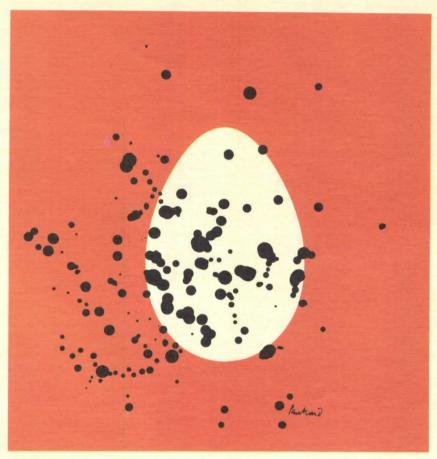
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