

# FORUM



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The school you see here is two schools in one. A ceiling system with great flexibility and versatility was needed to make the combination work.

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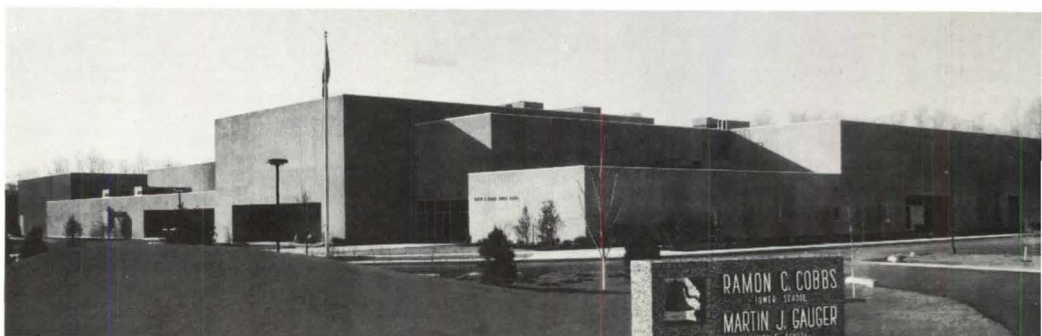
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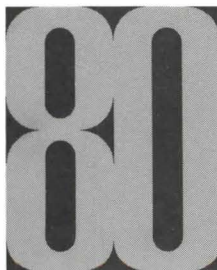
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1892-1972

THE ARCHITECTURAL FORUM Vol 137 No 2, September issue

Published 10 times a year, combining Jan./Feb. and July/Aug. issues, by Whitney Publications, Inc., 130 East 59th St., New York, N.Y. 10022. Sent without charge to architects registered in the U.S.A. and Canada. Qualified persons are invited to write the Circulation Manager on company letterhead. Please give your principal state of architectural registration, your title, and the kind of work you do. Correspondence regarding service, change of address, etc., should be sent

to Marc Oppenheimer, Circulation Manager. Subscription rate is \$12 within the U. S. A. and possessions and Canada. Elsewhere, \$20. College Rate for Students and faculty members of U.S. and Canadian accredited schools of architecture, \$6. Single Copies, \$2.00. Member of Business Publications Audit of Circulation, Inc. Controlled circulation postage paid at Cleveland, Ohio and New York, N. Y. ©1972 by Whitney Publications, Inc. All rights reserved.





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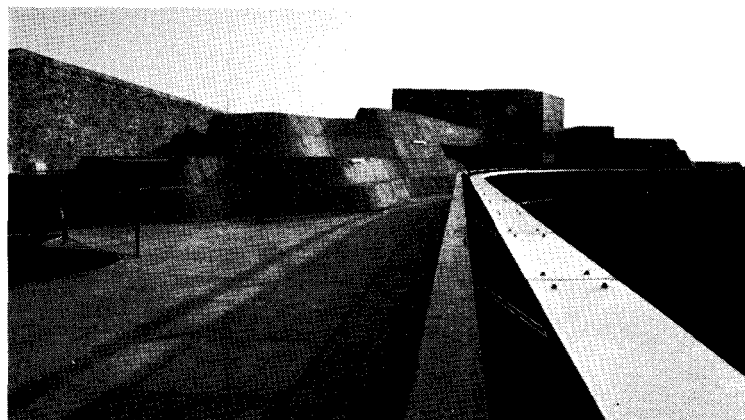
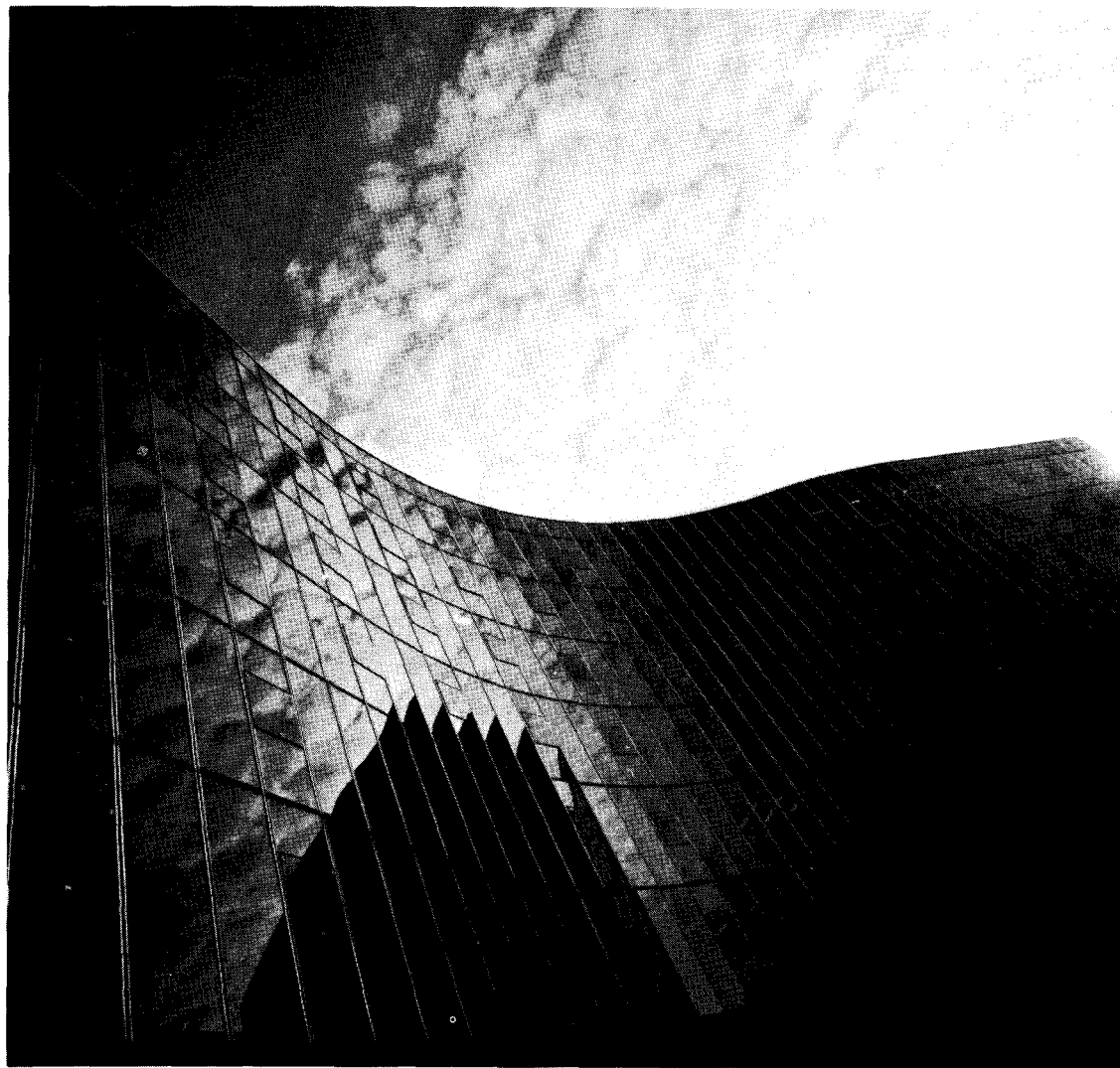
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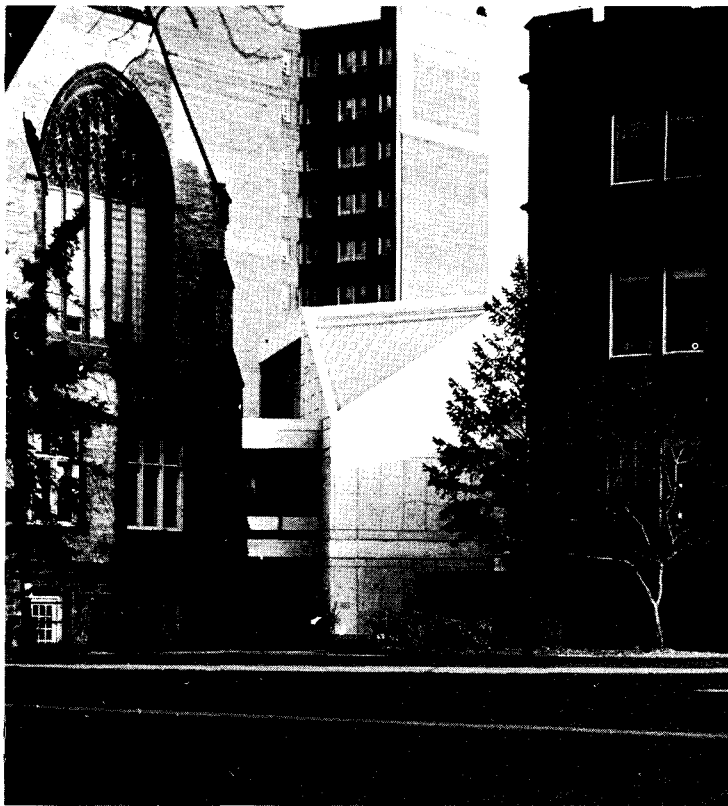
## COMMUNIST PARTY LINE

The lines of the new Communist Party headquarters building in Paris are hardly straight. The new building, designed by Oscar Niemeyer, contrasts straight slab endwalls with a curved glass curtainwall facade that weaves its way around its corner site and looks out over a city square. The building is only 35 ft. deep and its interior is divided into rows of office cells. Sun and light permeate the nar-

row interior and the building stands out as an architectural *tour de force* in an otherwise slummy area of the city. The intention that the building symbolize a brighter future for the French working class through the Communist Party seems well served. The formula for the building is not, of course, a new one—LeCorbusier first stated the contrast of a tall slab with that of a freer form in 1930. But here the old formula

is freshly interpreted and takes on new integrity. The curtain-wall is by Jean Prouve and is applied uniformly over the building regardless of interior divisions. A conference room with a bubble top (photo, left) is located on street level, but below a built-up plaza in front of the building. The top of the building resembles an ancient city (photo, above) and includes gardens accessible from the sixth floor dining areas.

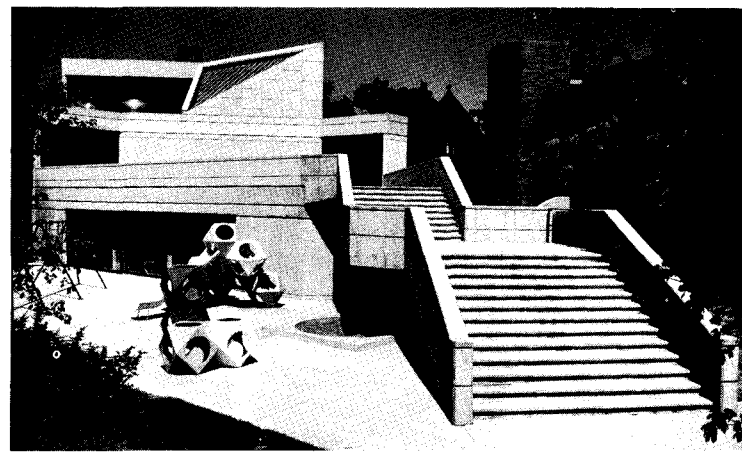
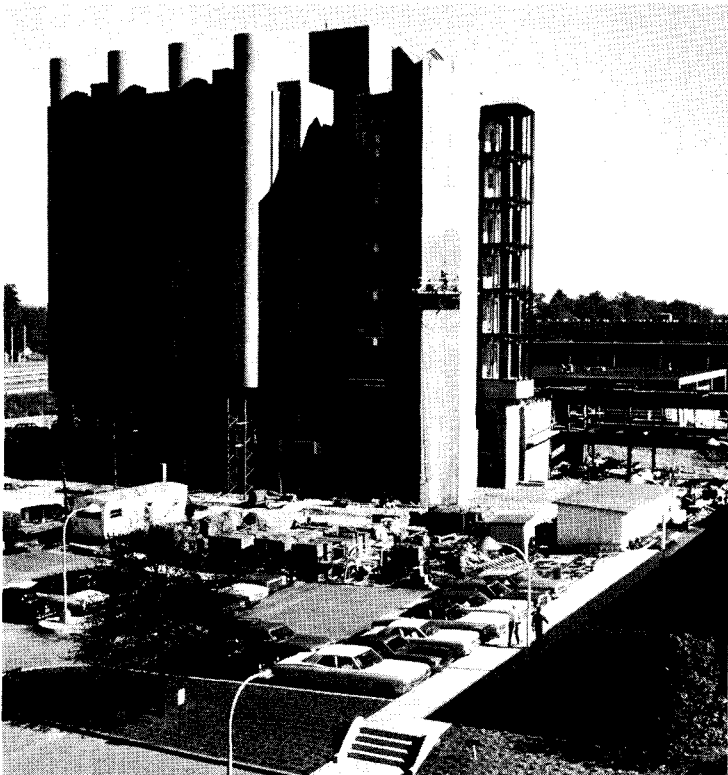




#### TOBACCO ROW

Ulrich Franzen & Associates designed this research tower for Philip Morris Inc., in Richmond. Adjacent to an existing 17-building company complex, the new research center (which resembles a fistful of cigars) is constructed with brick facing and

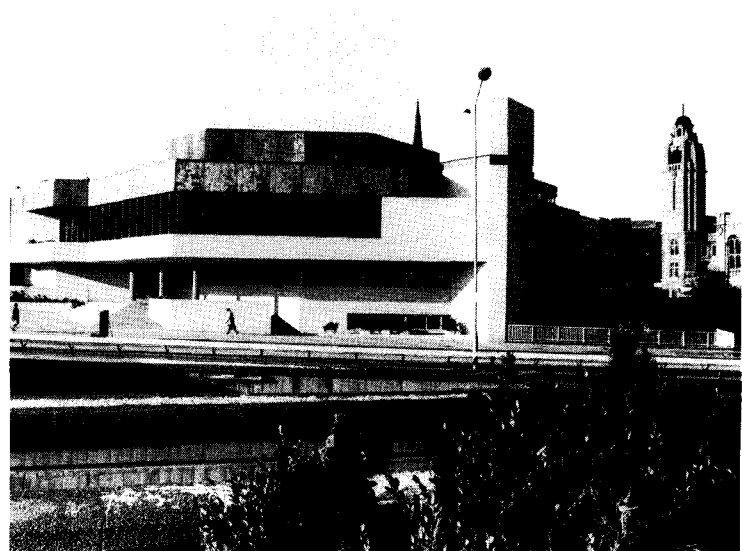
outside-in mirrored glass, fitted into black anodized aluminum window sashes. The new tower, to be fully completed at the end of this year, adds 60 percent more space to a research program on tobacco and its smoke components that will eventually involve 400 persons on staff.



#### CONCRETE COVENANT

Standing in contemporary and diagonal counterpoint to the adjacent (and sponsoring) Church of the Covenant, in Cleveland, is this new educational facility, which combines plazas and above- and below-grade spaces. Architects Richard Fleischman & Associates designed the structure with free and open spaces that will con-

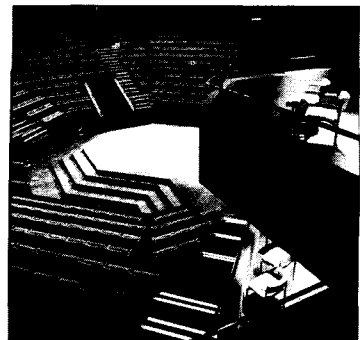
trast with the rigid box-like plan of the Parish Hall (right), which houses upper school and adult activities. The new building will contain Toddler and Kindergarten classes, plus the first through sixth grades. The plan for the project was integrated with another plan for a sunken plaza and together the two will open up a major pedestrian artery.



#### DRAMATIC CRUCIBLE

The New Sheffield (England) Theater Trust Ltd. has a new playhouse. Designed by Renton Howard Wood Associates, it contains a 1,000-seat octagonal auditorium and a 300-seat stadium theater that share a multi-level arrangement of foyer and workshop areas. The reinforced concrete structure has steel trusses to span the auditorium and foyer areas; the octagonal form dominates the entire structure and seems suitable for its irregularly shaped site. Architectural finishes heighten the interior's visual impact and include glossy

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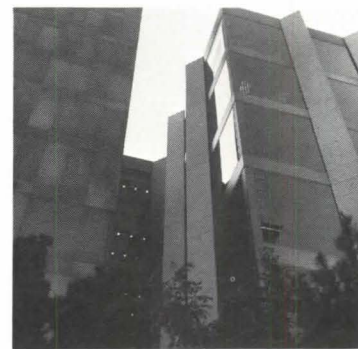
Residents of the Qu'Appelle Lake area, in Saskatchewan, can enjoy open air Masses in their new Catholic chapel, designed by Clifford Wiens. Only the sacristy and confessional are enclosed; pews for 50 persons are grouped around the altar and the roof shades another 200.

The chapel appears diminutive and simple. Structurally, it is a three-dimensional truss system where the cottage-shaped roof itself forms the upper chord system, which is secured to timbers that fit into the center hub. The hub is supported by a tension rod that connects to the roof apex.



#### DENVER RENEWED

Designed by Architects Muchow Associates, the Financial Program Building in downtown Denver is a bold combination of granite, glass and aluminum. Triangular exterior columns offer strong vertical orientation for the seven-floor building; continuation of the spandrel line around the columns offer horizontal counterpoint. The first floor is divided on a diagonal grid.



#### ZIGZAG JACKPOT

This recent project by the Swedish architectural firm of Sten Samuelson AB helped to win for its creators the 1972 Essem Aluminum Prize: a sculpture executed in aluminum by Swedish

artist Bengt Orup. The building is the head office of Frigoscandia AB, in Helsingborg. The zigzag upper story is supported on concrete columns and, at one end, a dart-shaped section juts over the lawn dramatically.



#### EYECATCHER

Mexico City's Siqueiros Cultural Polyforum is not to be missed. Its 12-sided concrete exterior and interior are filled by bold murals by Alfaro Siqueiros depicting the history of humanity and with symbolic references to Communism. Inside, an underground level houses a museum and offices and is reached by

walking behind a screen of water. At ground level is an auditorium, theater and balcony. And an upper level has a hall and turntable for rotating up to 1,000 viewers.

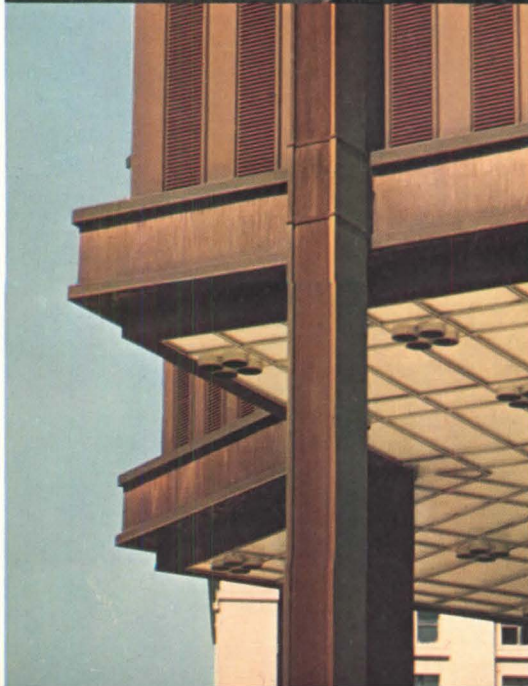
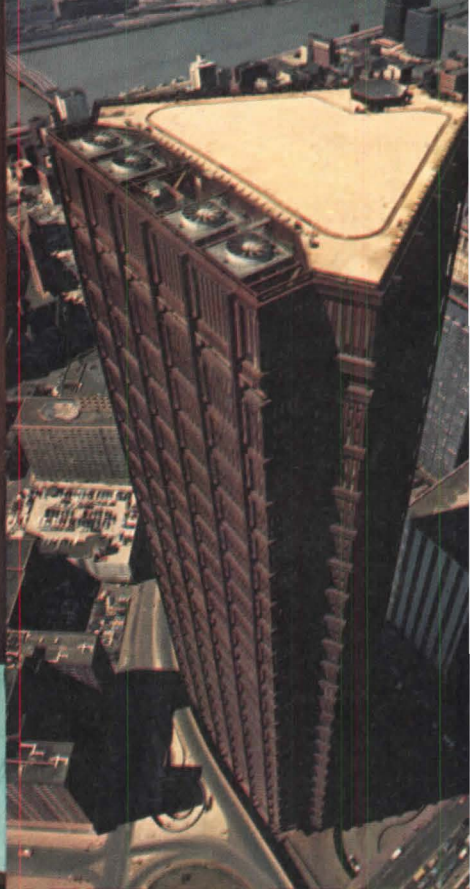
PHOTOGRAPHS: Page 5, Michel Moch. Page 6 (bottom right) John Donat. Page 8 (lower left) Swedish Internal Press Bureau; (top right) Rush J. McCoy.



There's no place like home...









# U.S. Steel's Pittsburgh headquarters building.

Our new Pittsburgh headquarters building towers 841 feet above the city's Golden Triangle. It's a bold triangular structure, with 64 floors, each almost an acre. From its underground parking levels to its rooftop heliport, it's a showcase of architectural and engineering innovations. A few:

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**Fluid-filled columns.** The 18 exterior columns are hollow box sections, set three feet outside the walls and filled with fluid for fireproofing.

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**Modular layout.** To facilitate servicing and conversion of the column-free office space, all wall and ceiling components are based on a 4'4" square module.

**No partition wiring.** All electrical, communications and control wiring and air conditioning is installed in the cellular floors or in the ceiling

sandwich. The lighting is centrally switched; intensity is changed simply by changing reflector assemblies.

**Computerized operation.** A complete operations and control system operates everything electrical—from air conditioning and elevator dispatch to fire-alarm control and light switching.

**Systems analysis.** Each innovation resulted from a systems-analysis design approach that involved everything from site selection to alternate methods of construction and space utilization. The building team of architects, engineers, contractors and USS technical experts examined economic and technological ramifications of each system in relation to the whole. Nothing was designed in isolation. And no system was allowed to dominate the total design.

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# BOOKS

**ARCHITECTURA NAVALIS MERCATORIA.** A Facsimile of the classic Eighteenth Century Treatise on Shipbuilding. By Fredrik Henrik af Chapman. First published in 1768. Reprinted by Praeger Publishers, New York. 9½ x 13½. Illustrated. \$25.

REVIEWED BY CARL KOCH

**ARCHITECTURA NAVALIS MERCATORIA** is a reprinting of a book first published in Stockholm in 1768. It was a book of great contemporary importance, being originally translated into French, English, Russian and German.

It is beautifully printed and bound, consisting largely of plates and plans—62 in number—of ships large and small of the period, all of which were originally copper engravings. They are all about 13 x 18 inches, being folded once, and printed in black on good quality buff paper.

The author, Fredrick Henrik af Chapman, was born in Gothenburg in 1721; his father emigrated there from Yorkshire. Since the elder Chapman was the holmajoren of the Gothenburg Naval Dockyard, his interest in ships came naturally and early.

He apparently became dissatisfied early in life with the inefficient and haphazard way of shipbuilding. (The *Wasa*, a large Swedish warship, had capsized and sunk on its maiden voyage some 90 odd years before he was born.) Chapman spent a considerable time studying in various countries and

working in many shipyards; he returned to Sweden in 1757 to become a master shipbuilder to the Swedish Navy.

In his own preface to his book, Chapman indicates his reasons for writing it as follows: "It thus appears that the construction of a ship with more or less good qualities is a matter of chance and not of previous design and hence it follows, that as long as we are without a good theory on shipbuilding, and have nothing to trust beyond bare experiments and trials, this art cannot be expected to acquire any greater perfection than it possesses at present."

"In the theory of a common oar, even Archimedes made researches, and many others after him; notwithstanding which, this theory is not fully explained. If such difficulties occur in this investigation, how great must those be which attend the theory of shipbuilding, where so many other circumstances are combined."

In what must have been a remarkable feat for the time, the author assembles a considerable body of theory under such headings as "On the resistance, On the dimensions," etc.

Whereas Herr Chapman's text will be of interest to relatively few general readers today, an examination of the plates will provide a fascinating escape back to a time when art and science were one—and beauty was more often to be found in the works of man.

Though most of the plates are of large merchant and war ships, I found the lines and plans of many smaller vessels even more interesting—even a Venetian gondola is included.

The publisher states his hope that this book will give pleasure to all interested in the history of naval architecture, to all those fascinated by the influence of science on the arts of past ages, and to model builders and others interested in shipbuilding.

To all such, this book should appeal. Beyond that it addresses a general human need for beauty resulting from the satisfaction of real needs and requirements with love and humility. The ships and boats of yesterday did that to a very satisfying degree, and the painstaking draftsmanship assembled in this book brings it all surprisingly to life.

**PLANNING CITIES.** Selected writings on principles and practice. By Frederick H. Bair, Jr. Edited by Virginia Curtis. Published by the American Society of Planning Officials, Chicago. 491 pp. \$12.50.

REVIEWED BY H. H. WAECHTER

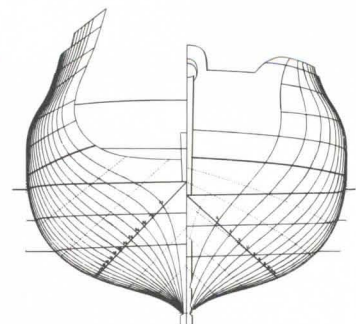
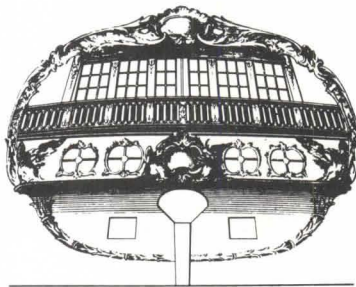
Mr. Bair has written and lectured extensively during a lifetime of productive planning practice. Though such volume cannot be a coherent piece of one cast, it is meant to be representative of Bair's thinking on planning practice and of his philosophy of planning.

The discussions on planning techniques, land use regulations, zoning details and administrative matters are expert and expressive of planning practice in contemporary government. With many of his ideas Mr. Bair was ahead of his time, and many of his criticisms are still valid. Indeed, his critical writing is to this reviewer the most interesting and valuable aspect of this fine volume.

Mr. Bair recognized long ago the bothersome problems of air and soil pollution, faulty land use and unreasonable exploitation of natural resources. He advocates passionately the protection of public interest and promotion of the general welfare. Yet he does not seem to ask for more fundamental changes in ownership of land and natural resources on which better decision-making processes will depend and without which we cannot extricate ourselves from a dangerous environmental situation. The urgent language that asks for better control of the developer, who wants unrestricted use of land for profit, does not satisfy the modern ecological planner, who must point out that in view of overpopulation we are running out of usable land in favorable locations. The political challenge consists in finding economic systems that can be substituted for business as usual.

For a planner such as Mr. Bair, who spent much of his life in Florida, it must have been an increasingly frustrating experience to see the water table recede and overdevelopment cre-

Mr. Waechter was educated in Germany and came to the U. S. in 1940. He has held professorships in various universities and is a practicing architect in Creswell, Oregon. He has contributed to several books and professional journals.

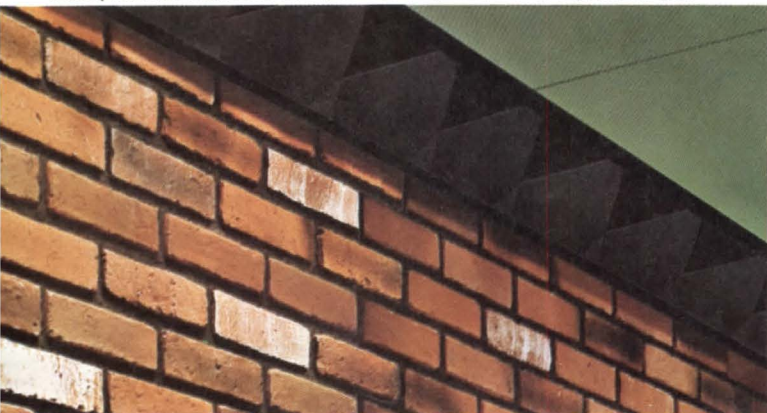


Mr. Koch practices architecture in Boston when he is not sailing.





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# BOOKS

(continued from page 12)

ate an ecological catastrophe which has brought us by now beyond the point of return. Beaches are mostly private, many covered with black oil, and the coast line has become a never-ending hamburger alley.

Bair's political thinking does not spell this out clearly, but the cited facts of our development practices show that we cannot hope for even modest beginnings of improvement of our environment, and in time for survival, without finding the way to constitutional changes in the limitations of land ownership rights, perhaps by the application of planned land user rights. It would not be good enough to begin with improved planning on public land only. Land is available in limited amounts only and cannot be replenished. There are ecological limitations to land reclamation and irrigation practices. Land should be as little a commodity as is air. Only then we may really benefit from Mr. Bair's suggestions on techniques of performance standards in planning. And the discussions on population densities will have to be revised as soon as we have learned how to reduce population growth, how to manage a better population distribution, and how to distribute wealth so that we make democratic planning processes meaningful.

Bair's book is particularly stimulating to the searching mind who seeks to improve practical methods and who wants to approach problems in a critical manner with the aim to do more of his own thinking.

**LIVED-IN ARCHITECTURE:** Le Corbusier's Pessac Revisited. By Philippe Boudon. Translated by Gerald Onn. Published by the MIT Press, Cambridge, Mass. 200 pp. \$7.95.

REVIEWED BY STUART E. COHEN

In 1922 Henry Fruges, an industrialist, commissioned Le Corbusier to design a garden city of workers' housing for the French suburb of Bordeaux Pessac. The result, an important

work in the International Style of modern architecture, is almost unrecognizable. It has been altered by the individual owners, each house presumably reflecting the taste of its occupants. The elements which characterized the International Style (flat roofs, roof terraces, strip windows, pilotis) have been changed, and caused Le Corbusier to observe that, "It is life which is always right and the architect who is always wrong." It was the need to understand the alterations made to Le Corbusier's buildings which prompted Philippe Boudon, an architect, to undertake the study documented here.

Boudon, while he may be an admirer of Le Corbusier, is objective, and understands both what the International Style was and what it was not. He uses a detailed historical account of the Pessac project to dispel myths which Le Corbusier popularized about his work. The project is described physically, particularly the dwelling units, and a comparison is made to the J.J.P. Oud houses at Stuttgart. The Oud houses are analysed as functionalist and the comparison stresses the limitations of trying to understand Le Corbusier's work in these terms. Boudon grasps the metaphor in Le Corbusier's work and his preoccupation with the machine as both functional and poetic object. Le Corbusier wrote, "Thanks to the machine, thanks to standard components, thanks to selectivity, a new style will assert itself." At Pessac standardization was an ideology, not a technical innovation, but Boudon also presents it as the source of a possible socio-architectural problem: the sameness of the houses. Somehow this looms as a larger issue for the author than for the residents. Variations in siting and orientation (in the site plan) are credited as overcoming this.

Boudon and a sociologist proceeded by conducting interviews with the present residents of the houses at Pessac (people living in the local area), and a group of architects and engineers asked to discuss the project. To introduce the excerpted texts of the interviews the author presents his assumptions,

Mr. Cohen has taught architectural design, and currently has his own architectural practice in Chicago.

his working process (non-directive interviewing), and the factors to be dealt with: (1) The style of the traditional Bordeaux region house and the custom of adding to and remodeling one's home; (2) Alterations or the lack of them to both the exterior and interior of the individual houses; (3) What the residents said about their houses; (4) The siting and location of each house in relation to the whole project (the thesis being that there is a correlation between personality, life style, and site).

The predominant Bordeaux vernacular style is a structure the interviewees called a *lean-to-house*. It comes in two types, *double fronted* with a central interior corridor and *single fronted*, a semi-detached house with an interior corridor running alongside the partywall, giving access to rooms from one side. The conversion of the Pessac houses into the second type layout was easily done (see plan) and was the commonest interior alteration. Boudon points out that it is important to note, not that Le Corbusier's villas were altered to make them more familiar, but that they seemed to facilitate and "to a certain extent, encourage such alterations." Whether this was intentionally an "open" situation can not be determined; however the original prospectus for the project informs us that "the interiors of the villas have not been completely finished . . . houses sold in a partially finished condition are to be exempt from the 7% conveyancing tax."

The residents tended to like the interiors at Pessac, finding them comfortable and spacious, while disliking the exteriors. The houses looked "Moroccan," i.e., foreign, and the use of concrete reminded many of the residents of *blockhaeuser*. In the alterations to the exteriors more than half of the original wide windows were blocked up and altered; however the primary objection to the houses' exterior style had to do with the roof terraces. "It was surprising, after the traditional lean-to houses, . . . these houses have no roofs." "Taken all in all, the sort of style I like, you know, is a big house with a big roof." One interviewee wished he had been rich enough to buy a house with a proper roof. Boudon concludes, "Roof or terrace, a house is a single structure that is sur-

mounted by a sign . . . a roof is something material, something physical. A terrace, on the other hand, is not material, it is a plane or at most, an architectural abstraction . . . in the final analysis it is simply the absence of a roof . . . houses are synthetic structures made up of many different components and among those components there are some which make for universality." It would seem that for the client (or user) ARCHITECTURE is the outside of the building and that for the architect it is the making of an image. The moral, if there is one, is that the image should be a familiar one.

Boudon concludes that Pessac was not a failure. He finds the site planning successful, although its deviation from Le Corbusier's theoretical urban types is too simply explained by M. Fruges' desire to "offer the workers houses that were fully detached." Boudon also applauds Le Corbusier's "open plans" because they satisfied the needs of the occupants to alter their houses. With respect to the balance between the individual and the collective, Boudon wonders the extent to which the "failure of Pessac" (which Le Corbusier accepted) influenced his later work.

Although well researched and documented, the study seems to be unstructured and unprofessional, sociologically. From its starting point, the question of why the alterations took place, the book evolves into a sampling of lay attitudes toward architecture. This is perhaps its greatest value and as such it is probably a book whose implications transcend its merit. It is worth knowing that Henry Fruges wrote of Le Corbusier, "It was in vain that I asked him to put himself in the place of the prospective purchasers, whose eyes are accustomed to decorative effects, even though they may be of the most discreet kind. . . ." If this was, as Boudon implies, a great part of Le Corbusier's "failure" then perhaps MIT Press might do well to package *Lived-In Architecture* with their forthcoming publication of the Venturi's *Learning from Las Vegas*. The two books could be sold together, vacuum wrapped in plastic and should appeal to architects and critics interested in current controversies in American architecture.



# FORMS & SURFACES

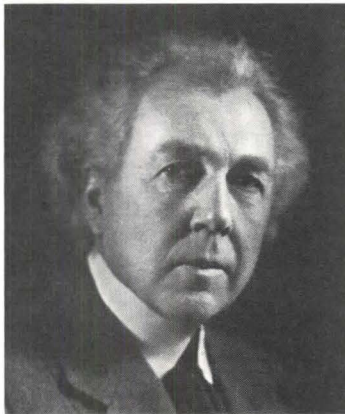
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# LETTERS



## ON RETHINKING WRIGHT

FORUM: Congratulations on presenting a Frank Lloyd Wright article in June, his natal month, particularly one as refreshing as the Barnett (Weinstein-Robertson) piece. I admired what was said and how it was written. One idea which seemed lacking was, why is Wright apologetic now, what has he to offer beyond the planning solutions of other masters? Wright began with reality, asked how could it be modified, were commonsense principles and humane aims applied, and accepted the direction which emerged in his imagination. He didn't define "problems" and prescribe ideal remedies. The process of letting human life work itself out under the influence of natural principles he would have called "organic" or even "democratic." However idiosyncratic this usage, it is quite possible to sense the drift of his thought and the healthiness of his attitude. Maybe they will spread?

EDGAR KAUFMANN, JR.  
New York City Columbia University

FORUM: Mr. Barnett ("rethinking Wright"), like David Gehard in his book on R.M. Schindler, properly reproaches Giedion, Hitchcock-Johnson, and others for the greatest theoretical sell-job of the century. There was "a historical assembly line", a true dialectic from which International Style was the legitimate result. Actually the Wrightians weren't so much against dialectics; they just had one of their own, and the choice

was no better than which of the two you wanted to pick.

The trouble with buying into the Wrightian dialectic was that somehow you had to buy into all that crazy lotus-land ornament too, which just kept getting crazier and crazier as Wright got older. As Venturi said, an honest ordinary bathtub or door knob just looked hopelessly out of place inside one of the Master's hex-module fantasies (not to mention the Marin County Civic Center), regardless of how valid either might be in their own terms.

Much of Wright's new appeal, Barnett notwithstanding, seems to come from just this same crazy-weird ornament, now being rediscovered at the time when taste swings through another romantic cycle. Hopefully when enough time passes it will all look about as harmless as the battles between Wren's and Burlington's people in England 200 years ago.

PAUL FISHER  
San Francisco, Calif. Architect

FORUM: Your article in the June Forum regarding the Metropolitan Museum of Art's acquisition of the Frank Lloyd Wright house in Wayzata, Minnesota, is in error in reporting that the Metropolitan Museum "refused to take a second look" at the Imperial Hotel in Tokyo. We took more than a second look at the tragic loss of the Imperial. We were, however, unable to secure funds for any positive action.

ARTHUR ROSENBLATT  
Vice Director, Architecture and Planning, Metropolitan Museum of Art  
New York City

FORUM: There are many reasons to justify the existence of a magazine.

One of them is found in the June issue of the ARCHITECTURAL FORUM entitled "Rethinking Wright"!

HOWARD W. ELLINGTON  
Wichita, Kan. Architect

FORUM: Naturally we are immensely gratified with Jonathan Barnett's "Rethinking Wright" (June '72 issue). That what has long been apparent to those of us immersed in Wright's concepts is shared with others in the profession is most encouraging.

CHARLES MONTTOOTH  
Spring Green, Wis. Taliesin

## EARLY LABOR PAINS

FORUM: I notice in your March '72 issue under "Labor—Birth of a Union", it was stated, "The union had made solid gains—the first ever scored by a unionization movement in the history of the architectural profession."

In 1938-39 or thereabouts, a majority of the professional employees of the Board of Design, Parkchester Housing Project, (the chairman was Harold Shreve) selected the FAECT (Federation of Architects, Engineers, Chemists and Technicians) as their bargaining agent. As Parkchester was a one-shot job, bargaining did not extend over a long period, but solid gains were achieved before the project ended.

Mr. Shreve when apprised of the facts said, "I didn't know these conditions existed."

ALBERT H. ORTHMANN  
Shenorock, N. Y. Architect

## ON DISNEY WORLD

FORUM: In reading your in-depth article on Disney World, which I found extremely interesting, I was especially struck by your remarks that not even Le Corbusier had ever proposed anything as daring as EPCOT. That is true, but I bring to your attention my article in the January '71 AIAJ, in which I propose a similar idea, not as a private development, but as an outgrowth of comprehensive regional R & D programs.

Incidentally, this article was originally submitted to the FORUM.

EDWARD FRANK  
New York City Architect

FORUM: I read your article on Walt Disney World (June issue) with a mixture of disbelief and disgust. The whole thing seemed more like a public relations hand-out than anything approaching architectural criticism.

Ignoring for the moment, the implications of totally disregarding the lack of esthetic standards implicit in the whole playground's tasteless melange of periods and styles, I was appalled at the bland acceptance of the inevitability of commercial spoilage of a huge chunk of largely untouched Florida wilderness, the worship of wasteful technology as a means to an abstract end and finally, the cynical hoax perpetrated on the public with the creation of an unreal, scaled-down and plastic version of the past, while the real thing crumbles into ruin in

the centers of our cities.

I thought the FORUM was a magazine seriously involved in the preservation of what is viable and important in our architectural past, and with finding solutions to the great urban problems of our day, and not concerned with the promotion of vacuous, pastel-tinted escape hatches.

New York City PETER CARLSEN

FORUM: Congratulations on the exceptionally good write-up on Walt Disney World in Florida. As an employee at Disneyland here in California and an architecture student at USC, I have much appreciation for such an article. However, there are two mistakes.

First, Welton Becket & Associates were the architects—not designers—of the two hotels at WDW. They were designed by WED Enterprises (Architecture and Engineering subsidiary of Walt Disney Productions.) I only point this out—not to detract from the technology of Welton Becket & Associates—to give due credit to the "imageers" of WED Enterprises.

Second, the facades of the Main Street are not 7/8 scale (like its counterpart here in California) but full scale; no "forced perspective" is used on Florida's Main Street. Here in Disneyland, "forced perspective" is used on the Main Street facades, the Cinderella Castle, and the Matterhorn, just to name a few.

Anyway, thank you again for your generous article on Walt Disney World.

JAMES L. TUCKER  
Manhattan Beach, Calif.

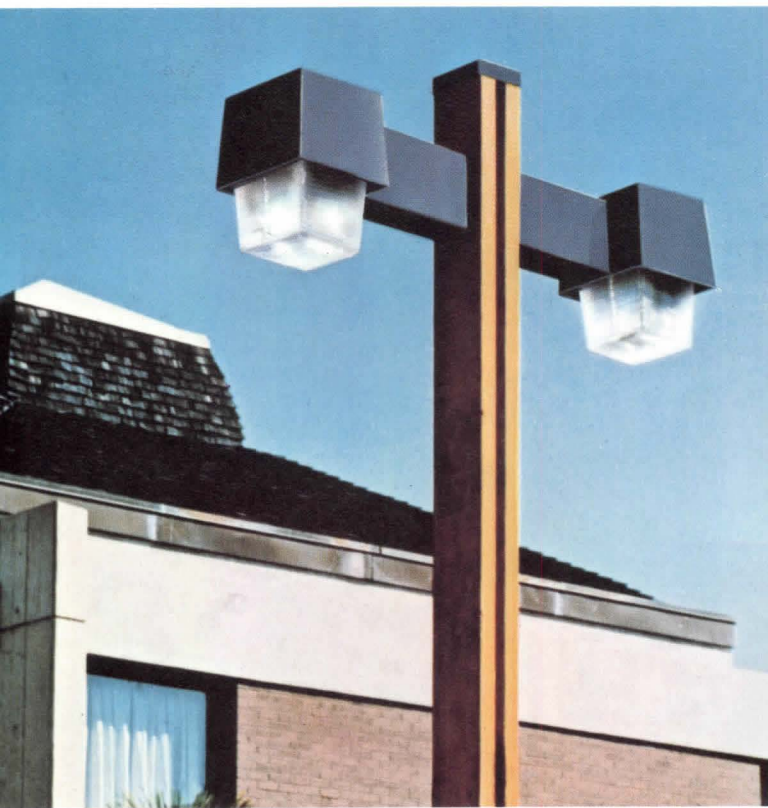
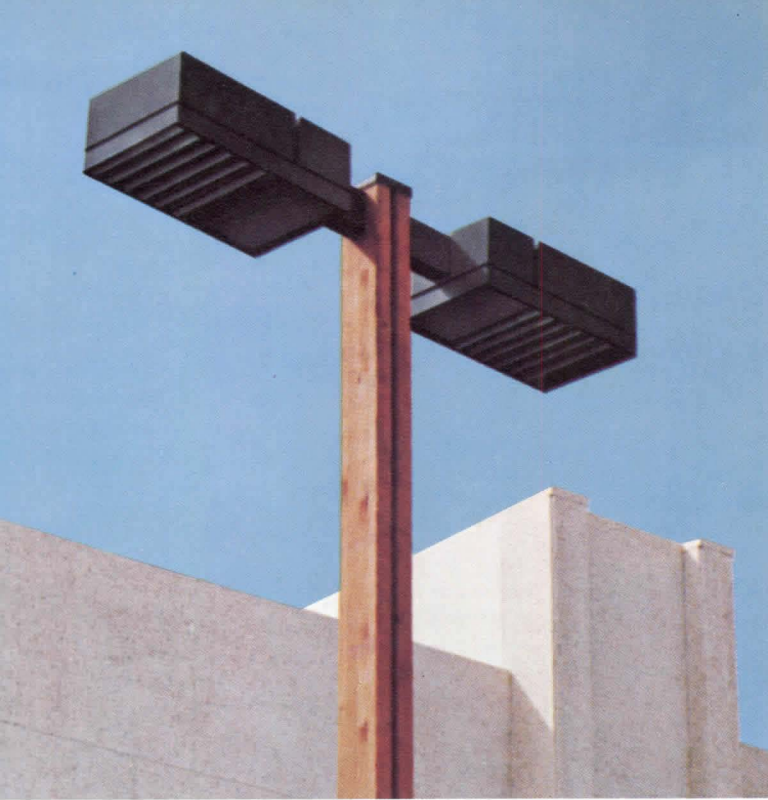
## ARCHITECTURE FOR THE ILL

FORUM: The Walter Netsch SOM geometry so glowingly described in "New Form for Therapy" (June '72) as "emotionally well spaces . . . for emotionally disturbed children" couldn't, in my professional experience, be wider of the mark.

As former Director of Design for the largest mental health construction program in the world, the New York State Health and Hospitals Facilities Improvement Corporation, with more than \$1 billion to their credit to date, we learned that emotionally disturbed persons need the most simple, realistic

(continued on page 18)





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## LETTERS

(continued from page 16)

and readily comprehensible spaces, geometries and materials to help stabilize their personal realignments.

Playing tricks with materials: that zebra plywood that looks like individual boards, but isn't; those open balconies that look open, but are glass or plastic; and that "cubistic teepee" (your words, not mine) interior shown on page 64 that might be pretty scary for any nonarchitectural type might be clever stunts for the well, but can be profoundly disturbing to the mentally unstable or disoriented.

Just try thinking of a person with a poor sense of balance trying to walk unassisted across a waterbed—a normal person—and you'll get an idea of what this interior could be for the unwell.

Maybe the article was just an office joke in an issue that touts Walt Disney World, but it's a sick joke and unreasonably misleading to those architects and laymen who look to FORUM for its insight and usually responsible leadership and overview.

*Cruz Bay, St. John  
Virgin Islands*

DANIEL SULLIVAN  
Architect

P.S. And in an issue with such a good editorial re AIA consent agreement, too! Sad.

**Walter Netsch replies:** *It has never been my philosophy for clever stunts or novel design. Field theory was applicable to the problem and did not ritualistically follow the rotated square. It was developed from a program response establishing territorial integrity to the occupant of each room, participatory guidance by the staff without hierarchal domination, and a physical environment responsive to the character of the natural terrain.*

*Professional workers in the field of child care have found the building a cooperative, non-domineering, responsive habitat. I think it would be unfortunate if our concept of simple realistic and readily comprehensible space only related to physical*

*forms that look more to Kay than to need.—W.N.*

### COPPING OUT ON ST. LOUIS

**FORUM:** The article "A New Spirit of the Law" apparently ignores that the basic reason for copping out on the city of St. Louis is the fact that it is unsafe to be in the core of St. Louis because of the high crime rate.

If Peter Blake produces another edition to "God's Own Journey" some buildings in St. Louis should be a wealth of material.

*St. Louis, Mo.*  
EDWARD J. THOMAS  
Architect

### MORE ON THE DUCK

**FORUM:** Many thanks for the lightful article "The Case for the Big Duck" by James Winick (Apr. '72 issue). Nowadays, what with all the "effete snobs," "screaming mimi's" and "novous nellies," it is refreshing to find tragi-comedy still alive (what is presumed to be dead) architectural disputations.

*Oakland, Calif.* R. V. McELROY

### THE ARCHITECT AND THE FEE

**FORUM:** Your apparent naivete is astounding. Do you truly believe members of the AIA are here to the Institute's fee schedule? (June editorial) That leaders of the profession (I speak only of New York City) demand and receive the scheduled fee for designing public buildings for the city? That architects who design commercial buildings, office buildings, or multiple dwellings receive scheduled fees?

If so, you are totally unaware of the facts. It just is not so. All such fees are negotiated.

You quote a former president of the AIA. I can quote a former president of the New York Chapter who, apparently unaware the transom over the door of the meeting room was open, said in response to the question, "As to fee; that is negotiable."

*New York City*  
LOUIS ALLEN ABRAMS  
Architect

As a practicing architect ("real life") I am aware of the fact that fees are often negotiated. However, I think there is a vast difference between establishing minimum standards of fees as well as ethics, and tossing out the whole system and thus inviting clients, public as well as private, to shop around for the cheapest services.—Peter Blake





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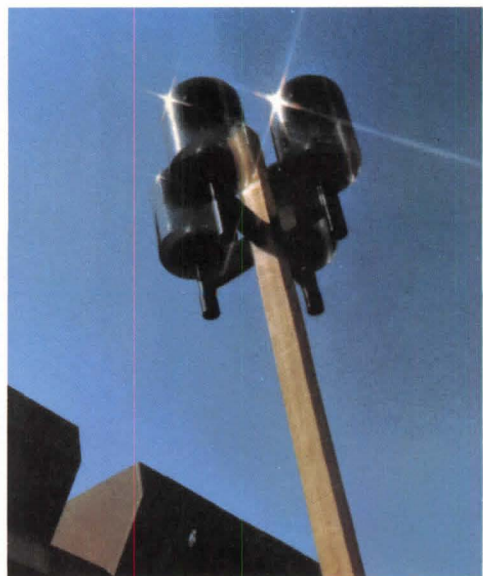
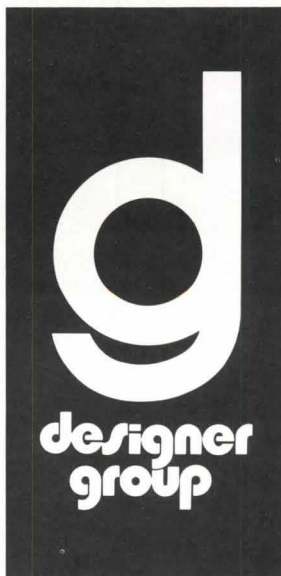


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# FORUM

FORUM is in ferment. *In vino veritas.*

Well, the truth is that ferment, to be useful, has to have direction. That is so whether you are putting two words or two bricks together.

Thinking about FORUM's future, I have thought a good deal about the future of FORUM's past, and I have found that the high benchmarks of sound judgement and fine journalism, those set by a long line of great editors and writers, still hold. Even though the grid of society has altered. Even though editorial emphasis has changed.

The thing is that FORUM, in a great many respects, has always been in ferment, just as architecture has. And it has been *despite* ferment, and *because* of architects, that positive directions have so often emerged to inform a society seemingly dead set on disarray. Never mind that society seldom listened; it's learning to.

It is for the architect, whoever s/he may be, to open up and, in concert with a more responsive press, expand society's concept of what is possible. The first principle of architecture is getting the job. And there are payrolls to meet. But there will be fewer and fewer jobs to get, fewer jobs of positive, long-term consequence, if the architect defaults in his role as teacher. After all, there are very few people in our society who can tilt at, as well as *build*, windmills.

FORUM has been, and will continue to be, a chronicle of your best efforts to heighten the humaneness and harmony of man's environment. It will point up new opportunities for architects to have greater say in setting standards for its development. It will critically assess the character (as well as impact) of your work. It will appraise new technologies, and new methods of better organizing the design and construction process. Most pertinently, however, FORUM will survey the spectrum of human experience, and it will trace the vital trends which are gradually altering our way of life and, inevitably, our orientation to the physical environment. Our kit of professional parts is nothing without a comprehension of the events affecting their use. That is so whether you are writing or building what you have to say.

Just 40 years ago, FORUM ran two articles about the future of architecture; one by Buckminster Fuller, the other by Franklin Roosevelt. Both wrote of the momentous changes coming up; both urged architects, as tacticians, to assume leadership in planning for change; both looked to architects as a unifying force which could combine the resources of science with our insights about the human condition. 1932 was a watershed year for FORUM, and the things Bucky and the President wrote then still apply. I would say the future of FORUM's past is pertinent, and that this watershed is as full of promise.—WILLIAM MARLIN, EDITOR



Photo: John Amarantides



# OFFICIALDOM

## THE PRICE OF ARCHITECTURE

The Architect/Engineer Selection Bill, which would grant legislative status to the traditional procedures for selecting firms to perform architectural and engineering services for the federal government, having passed the House, now awaits action by the Senate Government Operations Committee.

The bill, sponsored in the Senate by Sen. John L. McClellan (D., Ark.) and Sen. Charles H. Percy (R., Ill.), would instruct government agencies to select architects and engineers on the basis of their competence and qualifications at a negotiated fee that is "fair and reasonable."

The bill requires that three firms be selected and rated in order of preference, after which a "fair and reasonable fee" would be negotiated.

Rep. John Buchanan (R., Ala.) said, "When one seeks to acquire the services of a physician, surgeon, lawyer, or architect or engineer, one is looking for competency and training, and also for originality, innovation, and inspiration . . . choice of architect must not lie solely on the basis of price . . . but on that design which can most capably and efficiently do the job."

## HOW TO WORK WITH HUD

The AIA will sponsor a conference (Oct. 5-6 in Wash., D.C.) designed to teach architects how to cope with HUD programs for low- and moderate-income families. Participants will prepare a sample application and follow it through the various channels of HUD processing. The chairman will be Charles L. Edson, former HUD official. Other speakers will be: Harold B. Finger, asst. secretary for research and technology at HUD; Louis R. Lundgren, Board of Directors AIA; David Falk and Arthur Hessel, both former HUD housing specialists.

Registration is \$150 (\$90 for students) which includes a \$45-copy of "A Practical Guide to Low- and Moderate-Income Housing" authored by chairman Edson and Bruce S. Lane.

Contact M. Carter McFarland, The AIA, 1785 Massachusetts Ave., N.W., Wash., D. C. 20036.



Fast houses in Pennsylvania

## SHELTER FROM THE STORM

Pennsylvania's homeless victims of Hurricane Agnes will have instant shelter any day now. In Bear Creek, Pa., the local drag strip has been developed by HUD to receive the first 50 fiberglass laminated units, all of them electrically heated and wall-to-wall carpeted. The units are built by Craftech International, Ltd. of Croydon, Pa. (which also produced eight 2,000-sq.-ft. dormitories made with fiberglass for the summer Olympics officials in Munich).

The flood victims will live in these houses rent-free for a year, under the President's Disaster Fund, and will be counseled by HUD for their permanent housing needs.

"The enormity of the disaster demands we depart from strictly routine temporary housing measures," said Theodore R. Robb, HUD regional administrator. "We are examining every facet of the housing technology as a potential resource to get everyone under temporary shelter as quickly as possible."

## ARTS

### RETURN OF THE MURAL

The citizens of Roosevelt, N.J., have long been proud of the mural Ben Shahn painted on fresh plaster in the schoolhouse community room in 1937. The picture is of European immigrants—Albert Einstein and Charles Steinmetz are in the foreground—arriving in the

States. The mural, which mainly tells the story of Roosevelt, N.J., the WPA new town of the 30's, was found after Shahn's death to be cracked and fading, the pigmentation turning to dust.

The community of Roosevelt (formerly Jersey Homesteads) was planned by the FDR administration as a cooperative town for New York and Philadelphia garment workers. Depicted in the mural (far right) are Sidney Hillman, Sen. Robt. F. Wagner, Heywood Broun, John Brophy and David Dubinsky, who were involved in the planning of this very special community of immigrants. Above them is a picture of FDR whom Shahn revered. The sweatshop Triangle Shirtwaist Company is in the center of the painting.

Ben Shahn moved there with the wave of Eastern Europeans, and lived and worked there most of his life. Most of the settlers of Roosevelt were Jews, and in the mural can be seen the sign: "Germans protect yourselves. Do not buy from Jews." The dismal and grim refugee reception room of Ellis Island is there at the left of the mural, and John L. Lewis is giving a speech to laborers in the center. The American flag is there with, curiously, only 45 stars. In the upper left corner Sacco and Vanzetti can be seen in coffins.

Over a year ago the whole mural wall (55 ft. long and 11 ft. high) was peeled off the schoolhouse and lovingly transported to Bologna, Italy (where ailing murals go) to be restored. Mr. Nonfarmale, the world-renowned restorer from Bologna, had come to Roosevelt last year to examine the mural, and found underneath it the "synopia" (the original drawing over which Shahn painted the mural). Mr. Nonfarmale took them both back with him to Italy where he worked on them for more than a year.

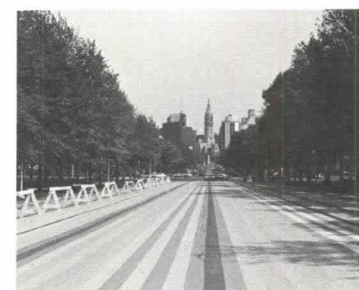
The "synopia" is now on display at the National Portrait Gallery in Washington, D.C., and the mural is back on the school-

house wall. The Ben Shahn Foundation hopes to sell the "synopia" to help pay the costs (\$60,000) of restoring the mural.

## RAINBOW STRIPES

Twenty-five miles of stripes, each stripe eight inches wide are the final project of the "City/2" show at the Philadelphia Museum of Art (Oct. '71 issue).

"Half the city belongs to you," is the message of the exhibit



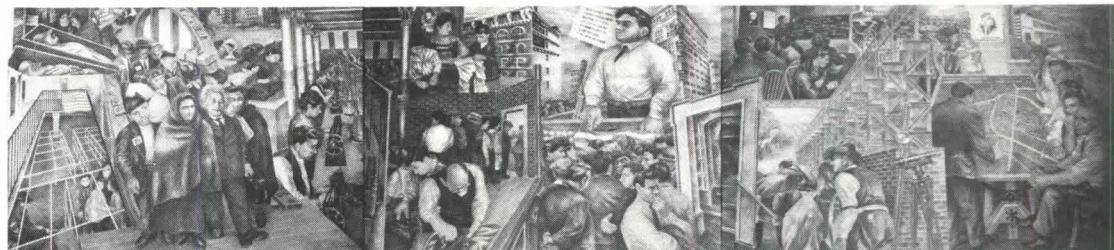
Street art in Philadelphia

(to rhyme with the title, "City over two"); in other words, half of the city's ground floor is in public ownership. These stripes in the parking lot are an effort to make visible and important a small segment of this part of the city.

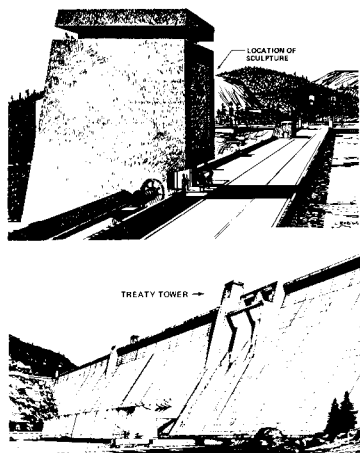
The stripes were conceived by Gene Davis and executed by high school students from the Parkway Program. The city lent a stripe-painting machine (which moves at the rate of four miles per hour, we learn), and the National Endowment for the Arts gave funds. The work is classified as a mural—which it probably is, if you're lying on the sidewalk.

## SCULPTURE ON THE DAM

The Army Corps of Engineers, Seattle District, is inviting sculptors from the United States and Canada to submit designs for a sculpture to be placed on top of Libby Dam in Montana. The competition is open to recognized sculptors and members of sculptor societies, and will be conducted in two stages: there will be only three finalists in the







Libby Dam needs a sculpture

second stage. First prize is \$15,000; second prize, \$7,500; and third prize, \$5,000. The official name of the contest is "Competition for a Sculpture to Commemorate the Columbia River Treaty of 17 January 1961 Between the United States and Canada For the Cooperative Development of the Water Resources of the Columbia River Basin."

Libby Dam, on the Kootenai River, is 98 percent complete, with the pool behind the dam rising to fill what will be known as Lake Koocanusa, a 90-mile-long body of water.

Write for details to Paul Thiry, FAIA, 800 Columbia Street, Seattle, Wash. 98104. Requests for information must be received by November 15, 1972. Deadline for entries is January 8, 1973.

## MUSEUM APPOINTMENTS



Richard E. Oldenburg, who has been acting director of the Museum of Modern Art in New York, has now been officially installed in the position of director. • Gerald Nordland, director of the San Francisco Museum of Art, will become the director of the Frederick S. Wight Art Galleries at UCLA next January.

# PRESERVATION

## MUST THE PHALANX FALL?

The historic buildings of the North American Phalanx, one of the most important communitarian settlements in the U.S., are in immediate danger of demolition. An emergency committee has formed to save the Phalanx, constructed between 1843 and 1852 in Colt's Neck Township, N.J.

The North American Phalanx was founded in 1843 by a group from Albany, N.Y., organized and backed by leading journalists and intellectuals. The members wanted to make a practical test of the principles of community design proposed by the French Utopian Socialist, Charles Fourier. The community's economic base included hominy milling, a cannery, and the cultivation of 673 acres in the "interlaced" manner prescribed by Fourier. Fields were laid out in intricate patterns to promote contact between workers. The Phalanstery's housing included dormitories for singles and apartments for families connected by "Galleries of Association" to promote friendly social contacts. Some members constructed small cottages of their own design adjoining the communal dwellings.

During the 1840's and 1850's the North American Phalanx was the showcase experiment in community design on the eastern seaboard. Alexander Woollcott was the most famous of the children born there.

The community dissolved after a tragic fire in 1855 destroyed its commercial buildings. Since then, its residential buildings have been used as a boarding house, hotel, apartment house, and as a shelter for migrant workers. Now vacant and vandalized, fine parquet floors, graceful balustrades and hand-painted wallpaper remind one of another era. The 6½-acre tract occupied by these build-

19th century commune for sale



ings is for sale. Unless a sympathetic private buyer or adequate federal or state funds can be located quickly, a suburban housing development is expected to obliterate the remains of the Phalanx.

Among the historians and architects who hope to see the Phalanx rehabilitated as a community center, academic center, or museum are Albert Fein of Harvard and Long Island University, Donald Drew Egbert of Princeton, Michael Sorkin of MIT, and Charles Lyle of the Monmouth County Historical Society. Coordinator of the effort is Dolores Hayden of the Dept. of Landscape Architecture, College of Environmental Design, Univ. of Calif., Berkeley.

# ACADEME

## UNIVERSITY APPOINTMENTS

The new School of Architecture at the University of Tennessee, Knoxville, is searching for a dean, and has established a committee for that purpose.

• Dr. John B. Nesbitt, has been named chairman of the new environmental engineering program in the College of Engineering at Penn State. The purpose of the new program is to provide a sound engineering education in the field of environmental improvement.

• Hermann H. Field is the new Professor of Environmental Planning and Design in the Political Science Dept. of Tufts University, Mass. He will chair the new program on urban social and environmental policy.

• R. Burton Litton, Jr., has been appointed chairman of the Dept. of Landscape Architecture at Univ. of Calif., Berkeley.

## FELLOWSHIPS FOR TRAVEL

The Foreign Area Fellowship Program is inviting applications for its annual fellowship competition for the 1973-74 academic year. The program provides support to advanced doctoral candidates at U.S. and Canadian universities for dissertation research in Africa and the Near East, Asia, Western Europe, and Latin America. All applications are due by mid-November. Write for more information to Foreign Area Fellowship Program, 110 East 59th Street, N.Y., N.Y. 10022.

(continued on page 67)



# USES OF THE PAST

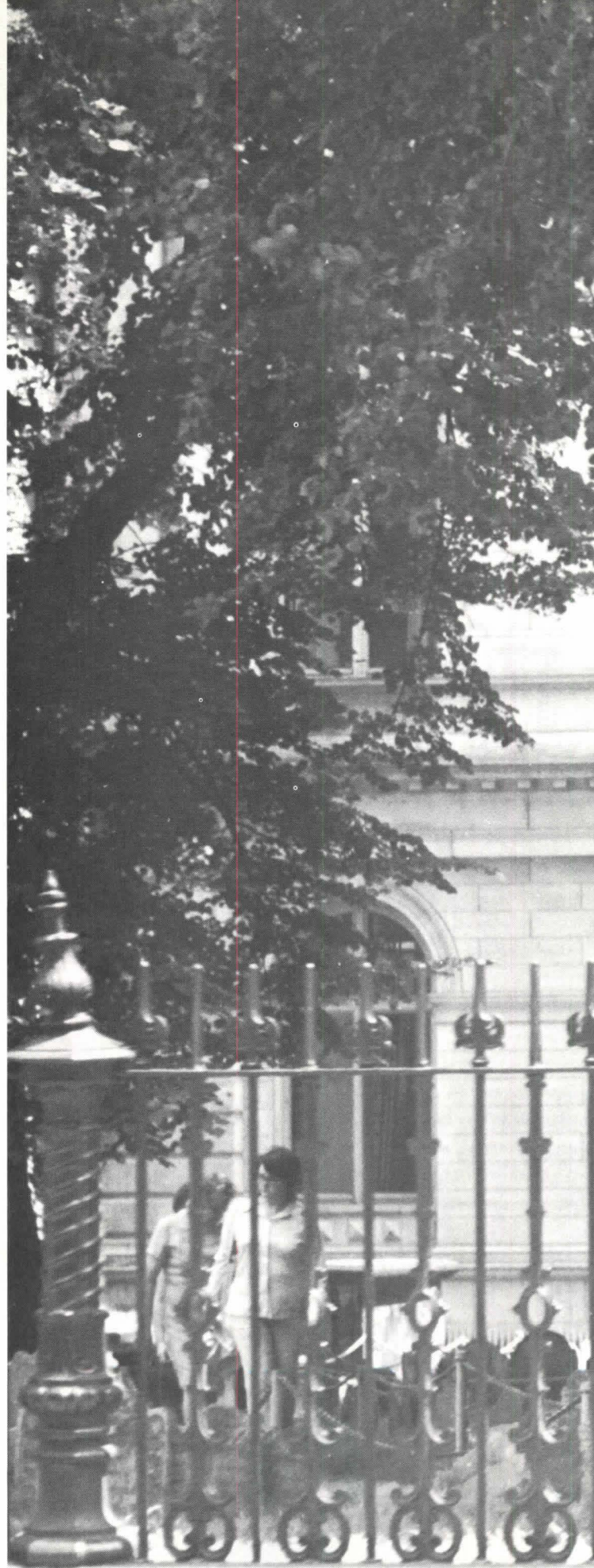
Boston is learning that the dividends of historic preservation are far more than financial

Walter Muir Whitehill, the sage and spirited director of the Boston Atheneum, knows a character when he sees one. Real characters are, of course, hard to find. But over the years, during his morning walks from North Station, Whitehill has met many, and has spent a lifetime pointing them out to other passersby.

Boston, you remember, was the place where "... the Lowells spoke only to the Cabots, and the Cabots only to God." That kind of pretention has had its Last Hurrah. While old money matrons still go to market in the back seats of vintage town cars, new money brahmins are downtown snapping up the latest suit bargains at Filene's basement. Locke-Ober has finally admitted women to its first-floor dining room. MacDonald's is giving shoppers a break across from the Common. The exodus of professional, white collar men and their families seems to be slowing. And the South End and Back Bay are alive with restoration and renewed commitment to the city as a way of life. The new brahmins may not be in the money. But they tend to be in the know when it comes to appreciating, enjoying, even fighting for the city's past. "No right-minded Bostonian," Whitehill has written, "would dream of walking along a street if he could, by any chance, cut through an alley headed, even approximately, in the direction he is going."

This state of mind pervades Boston today, and it is an attitude which savors disgression—and discovery. On both its byways and its beaten paths, the symbols of Boston's past—especially its architecture—are being retrieved from neglect, and recycled for new, revenue producing purposes. It is an attitude open to stopping "along the way." And it turns out, more often than not, that one's destination was little more than an excuse to detour.

In the following pages, Forum deals with two of the old characters which became, over a century, indelible features of the Boston scene—the Old City Hall, located on School Street in the business district, and The Vendome Hotel, located on Commonwealth Avenue in Back Bay. These spry Victorian structures, well-schooled in Second Empire French, have suffered vandalism, fire and political corruption, but have also, despite obstacles to their survival, proven that the Last Hurrah is on those who think that a city can do without ties to the spirit which made it.



Old City Hall seen through King's Chapel Burying Ground.







# OLD CITY HALL

Boston's Old City Hall was, as Edwin O'Connor wrote in *The Last Hurrah*, "a lunatic pile of a building; a great, grim, resolutely ugly dust-catcher. In its old, high-ceilinged chambers, the elected and appointed officials of government slumbered, mused or conducted the affairs of the city; in this, they were guided by the opportunities afforded them and, to a somewhat lesser degree, by the strictures of conscience."

Guided to a *much* greater degree by those strictures, a dedicated group of Bostonians got together in the late 60's, determined to save Old City Hall, and to transform it into a money-making amenity. They have succeeded, as anyone who has walked down School Street in recent months can tell you.

Gone, or practically gone, are the memories of political graft. Developmental gall has breathed new life into the 1862 Louvre-like landmark and, always liking a cad, the Old Lady has let herself become rentable—80,000 sq. ft. worth.

The man behind this is Roger Webb, a 1961 graduate of the Harvard Business School, and the kind of guy with nerve enough to speak of "landmarks" and "assets" in the same breath. This is not exactly the kind of talk which endears a promising young man to his go-getting peers, especially when they are the kind of people who think that cities are merely investments to cash in on, rather than places where people can live.

The inspiring thing about Webb's kind of talk is that he actually went *through* with it.

What you have there now is a rich mix of activity—both inside the restored building as well as on the plaza in front. School Street hasn't had so much action since Mayor Curley called his cloakroom quorums.

On the top floor, tucked under the Second Empire mansards of *Architects Gridley J. F. Bryant and Arthur Gilman*, are the offices of Webb's nonprofit organization, Architectural Heritage.

On the ground floor, off a slightly sunken outdoor cafe, is *Maison Robert Restaurant* run by Chef Lucien Robert who, in between talking with galloping gourmets (and architecture critics), has lately been upstairs

pace around the old Treasurer's office, thinking about expansion.

Right across the spacious entrance hall is a branch of The First National Bank of Boston, located fittingly where the city's auditors and assessors were.

In between, you will find a firm of lawyers, an insurance company, the offices of the Massachusetts Housing Finance Agency and, before too long I am told, a potpourri of retail shops off City Hall Alley. The Alley is the best way from School Street to the new Government Center because there is so much to see.

Thanks to Webb, there is now much *more*, of course. Think of it. You can open an account. Grab some quiche. File for divorce. Cash in a policy. Complain (or compliment) the MHFA. And, if you are lucky enough to catch him between meetings, you might even ask Webb how to go about saving your landmark building.

Since you are interested, this is what Webb went through.

Back in late 1966, Walter Muir Whitehill, fearing an undignified demise for Old City Hall once the new one was completed, asked then-Mayor Collins to at least *think* about finding a new use for the old pile. Collins did, and he appointed what has been described, for some insane reason, as a blue ribbon panel to estimate how much it would cost to adapt the building.

You know blue ribbon panels. This one, it turns out, wasn't given compensation for the estimating job and coughed up, somehow, a figure of \$5 million.

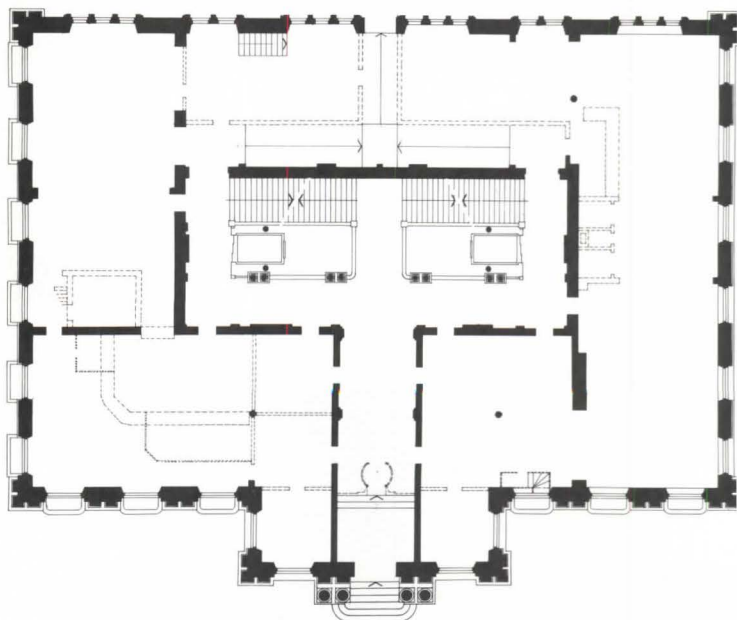
Webb was, at the time, doing a similar job, studying the feasibility of restoring the historic Faneuil Hall Market, and had acquired a feel for restoration costs. And he said as much to the new Mayor, Kevin White.

White, looking over Webb's optimistic figures for Faneuil Market, told him to come up with a lower estimate for Old City Hall, if he could. Webb did. The probable cost, he calculated, roughly one-half that of the first, prohibitive estimate.

Convinced of the project's feasibility, Mayor White decided on a nationwide competition in late 1968. And Webb, who



Pre-restoration view from King's Chapel tower.

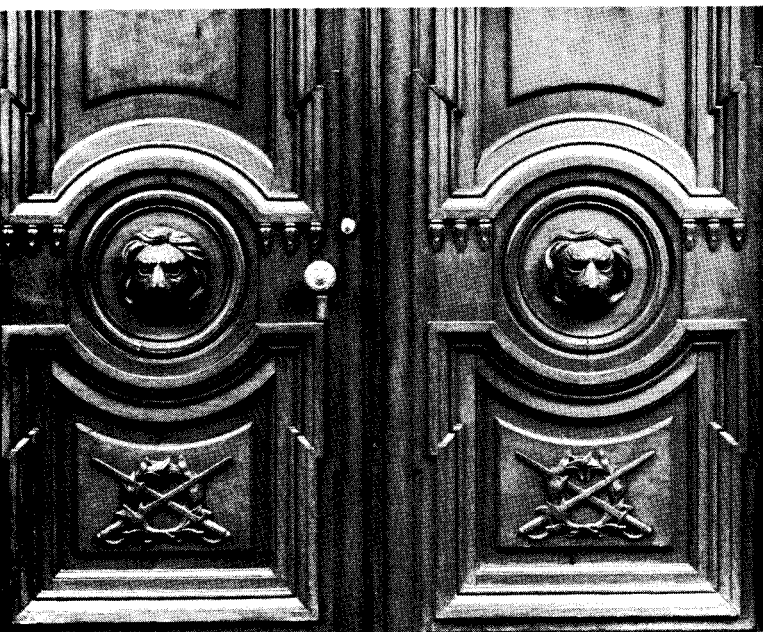


FIRST FLOOR/BEFORE Dotted lines show elements eliminated in restoration.





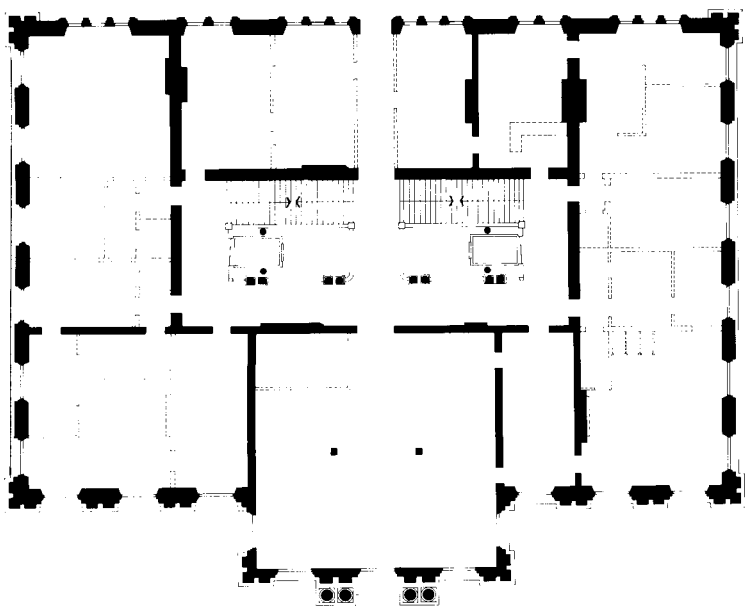
Lost: Old City Council Chamber, now two office floors.



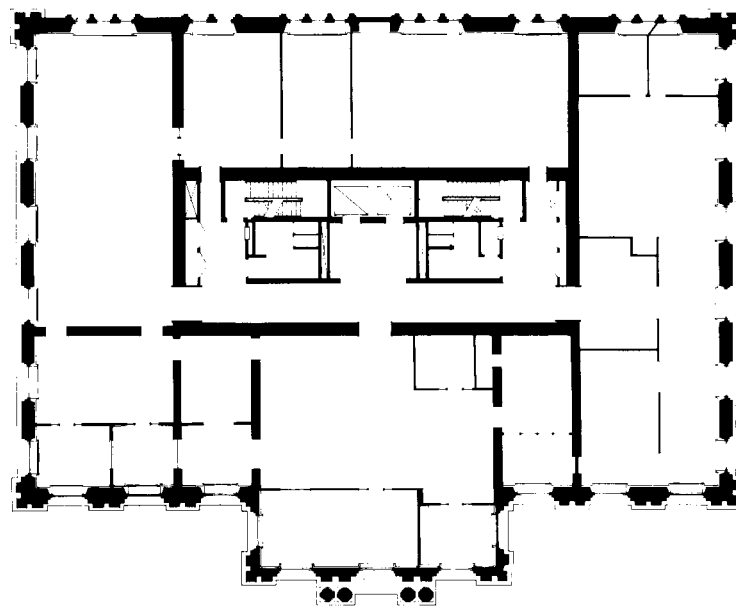
Kept: Many a mayor passed through these



Lost: Grand central staircase, now elevators.



THIRD FLOOR/BEFORE

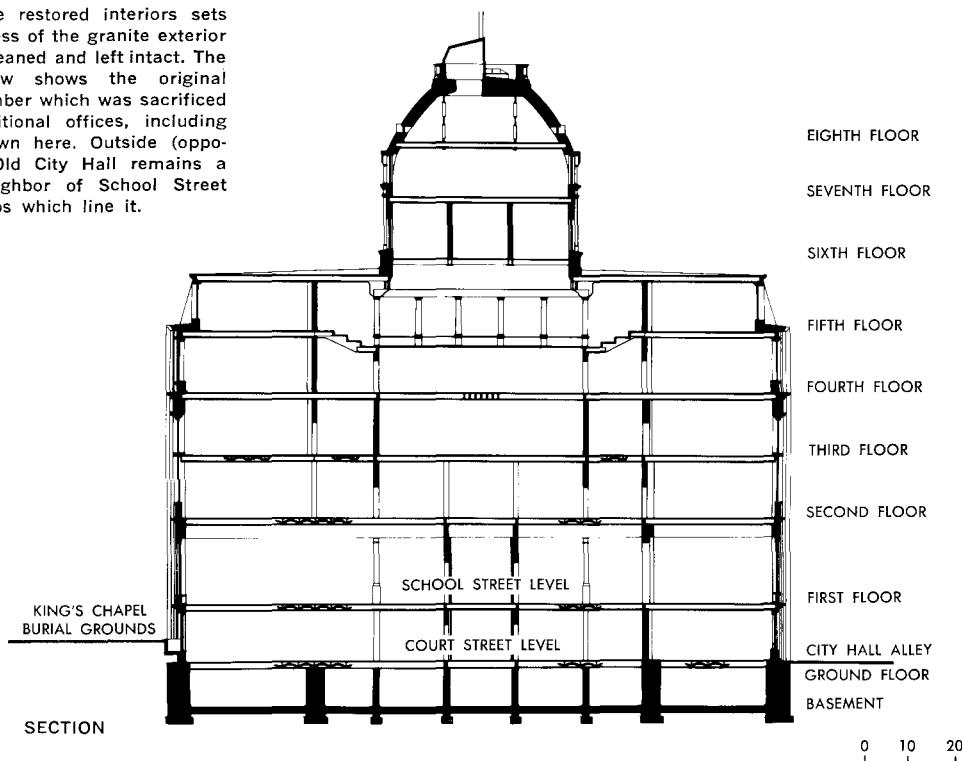


THIRD FLOOR/AFTER





Original arched window, looking out over King's Chapel Burying Ground, is re-framed with oak boards. The simplicity of the restored interiors sets off the richness of the granite exterior which was cleaned and left intact. The section below shows the original Council Chamber which was sacrificed to gain additional offices, including the one shown here. Outside (opposite page), Old City Hall remains a closeknit neighbor of School Street and the shops which line it.



had done the convincing, felt a little like the man who had thrown his baby out with the bath.

Instead of wringing his hands, Webb set up the Old City Hall Landmark Corporation as a subsidiary of Architectural Heritage, and entered the competition. It took him 11 months, until Nov. '69, to win it. Only two other development groups came up with proposals; but one of them, a group of students from Webb's *alma mater*, charged him with violations of the Conflict of Interest Law, pointing out that Webb's architect at the time, Frederick (Tad) Stahl, was already serving as a consultant to the City. Although the Corporation Counsel denied any such conflict, Stahl was forced to withdraw without a fight—a measure of this architect's well-known dedication to the principle Webb was trying to put across.

The other problem faced by Webb was that fact of local life, the Boston Redevelopment Authority. The BRA staff had been, from the beginning, generally receptive to Webb's role in the Old City Hall project. Unfortunately, the five-member Board has no staff representation and its general feeling was that what the landmark site needed was another flat chested office tower, not a monument to Mayor Curley. The final Board vote was tight, three to two in Webb's favor. But as Msgr. Francis J. Lally, former Chairman of the BRA Board, noted, "New buildings are only a part of the story; without a memory of its history, any great city is eventually impoverished."

Given economic realities, memories can only take you so far, and Webb knew that if Old City Hall was to survive as a visible feature of Boston's cityscape, it would have to be self-supporting.

Webb brought in new architects, Timothy Anderson and George Notter, who work out of a tremendous loft space in the North End. Recently, they sat down outside Old City Hall and, between sips of Meursault Charmes '58, we got into what sacrifices they (and the building) had to make.

As they explained it, the magnificent Bryant-Gilman spaces inside *had* to go because, this building *had* to succeed commercially. While the exterior



bearing walls of Concord granite were left intact and cleaned, the inside was gutted and fitted for offices to redeem Webb's investment. No kidding about it, losing the grand central staircase and the Council Chamber is regrettable. But the staircase was the logical place for elevators, egress stairs, toilets and circulation corridors—now complete and new within the original interior bearing walls at the center of the building. And the chamber, originally a two-story space, was the logical place to gain more rentable floor area. At eight dollars per square foot, that means something.

The floor space surrounding the elevators on all five floors was thus left open and adopted to tenants' needs as they developed. The generous arched windows, glazed with single sheets of glass to accent the arch, were re-framed with natural oak boards—floor boards, actually—which expand and contract with the weather. The mechanical units of the new central heating and air-conditioning system were grilled and are hardly noticed. The new lighting is subtle but dramatic. In some places, arched doorways and openings were worked into the interior partitions, recalling the pattern of windows on the exterior. And, on the ground floor, Chef Lucien's customers are eating under the arched ceiling of the old brick cellar.

It may be that Charlie, like a good many commuters, "may ride forever 'neath the streets of Boston," but after seeing what Roger Webb hath wrought, it is hard to imagine anyone preferring a ride to a walk.

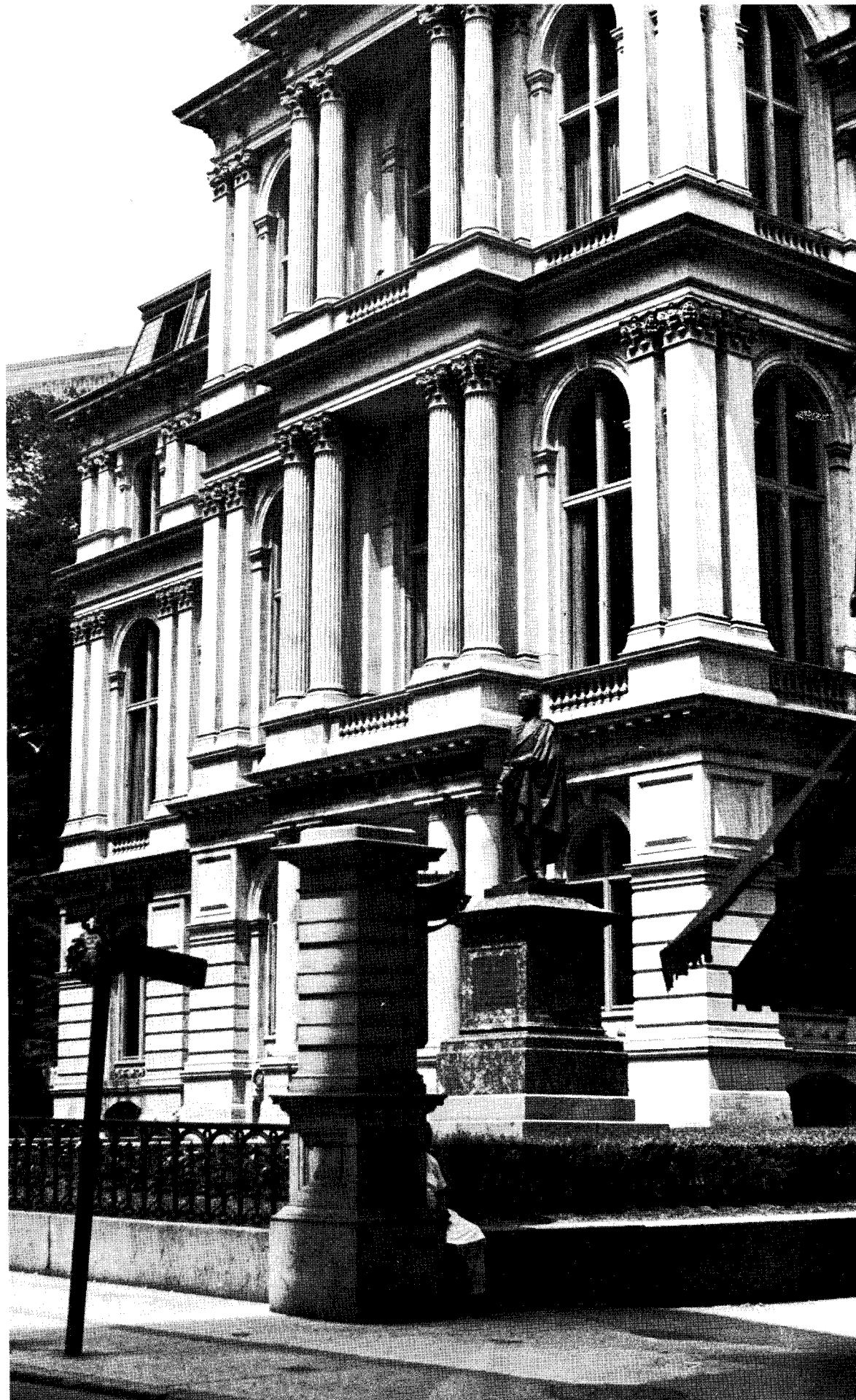
Old City Hall has become, much more than a restored landmark, a way to experience and learn from the city's past.

#### FACTS AND FIGURES

Old City Hall, Office Building, Boston, Massachusetts. Owner: Old City Hall Landmark Corporation (Roger Webb, President). Architect: Anderson Notter Associates Inc. (George Notter, Principal in Charge). Engineers: Le Mesurier Associates Inc. (structural); Progressive Consulting Engineers Inc. (mechanical); Herosy Associates Inc. (electrical). Interior Designer: Les Larson (Maison Robert Restaurant). Contractor: Kirkland Construction Company. Building Area: 91,900 sq. ft. Construction Cost: \$1,841,776 (including tenant work).

(For a listing of key products used in this building, see p. 80.)

PHOTOGRAPHS: William Marlin, pp. 35 and 39; William Clift, pp. 36 and 37; Carol Rankin, p. 38.







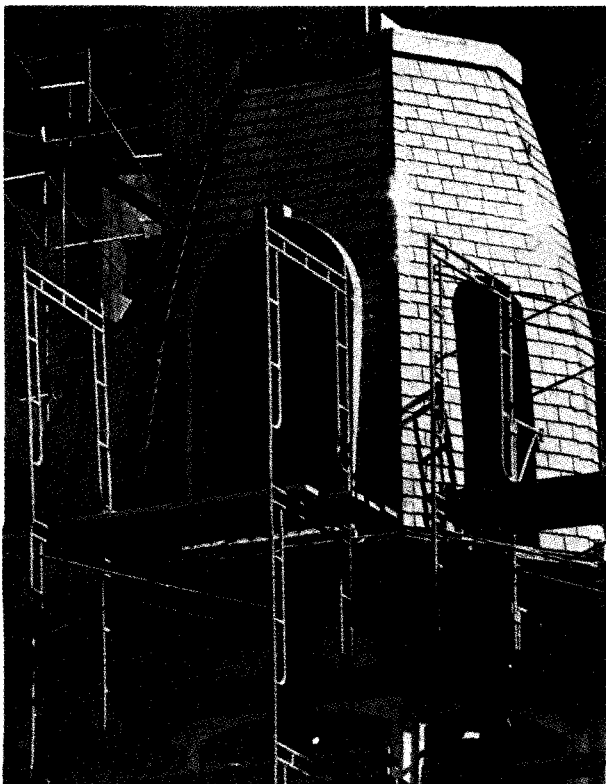
## THE VENDOME

Who *didn't* stay there?

The venerable Vendome Hotel, designed by architect William Gibbons Preston, was built in 1871. It became Boston's best and the talk of every other town. President Cleveland and General Grant put up there. So did Sarah Bernhardt and Harriet Beecher Stowe. By 1886, electric lighting had been installed. So had novelist Henry James, who wrote much of *The Bostonians* while in residence.

Looking out his window over Commonwealth Avenue, he noted, "It is all very rich and prosperous and monotonous, but, oh, so inexpressingly vacant—speaking volumes for the possible serenity, the common decency, the quiet cohesion of a vast commercial and professional bourgeoisie left to itself."

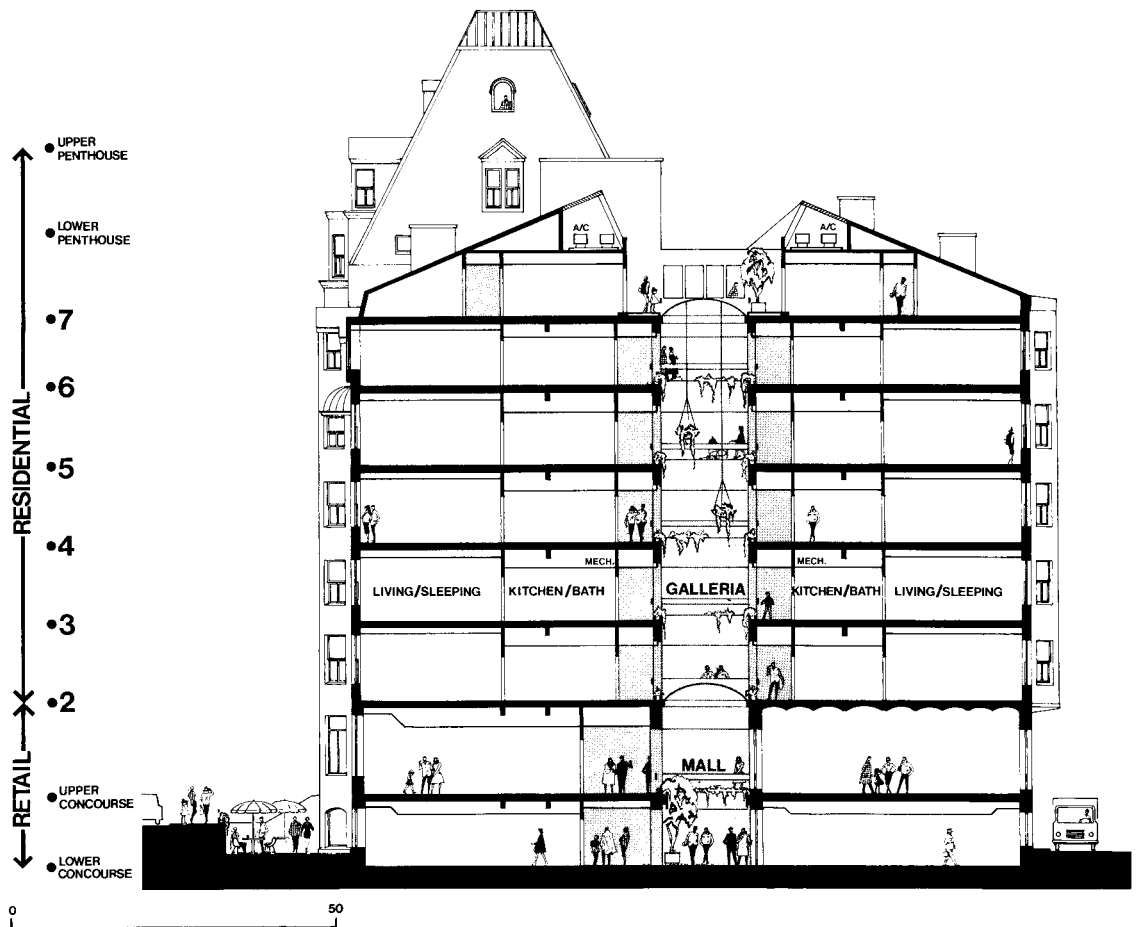
Somehow, quiet cohesion still



Scaffolding and uncertainty surround Boston's venerable Vendome on Commonwealth Avenue.



The Vendome in 1882 (opposite above) was the most sumptuous hotel in New England. The Vendome in 1972 (right) would have opened this month, completely restored, had not a tragic fire earlier this summer interrupted progress. This section shows how the spaciousness of Commonwealth Avenue was taken inside the building, forming a grand, seven-story galleria lined with apartments on the upper levels and with shops on the first two.



characterizes Boston's Back Bay. Commonwealth Avenue is its most resplendent street and, as one historian remarked, the biggest drawing room America ever saw.

It is still there to see, and to experience, and The Vendome is part of it. In fact, it is difficult to think about the past and future of the hotel without thinking of the past and future of the area around it. For just as The Vendome was the focus of Back Bay development in the last decades of the 19th century, so has it become a focus of 20th century renewal.

Commonwealth was laid out by Architect Arthur Gilman who, as you recall from the previous section, also worked on Old City Hall. Its ambience is 19th century, very French—and intact.

You can think of Commonwealth as the spine of Back Bay. And it is, more than a street, a grand connector link-

ing the Public Garden with the Fenway. 240 ft. wide, its two roadways stretch westward in long, long blocks with an elm-shaded park down the middle.

On each side, Victorian townhouses rub brownstone elbows in a close, if correct attitude toward each other. What is more important is their attitude toward the street itself. Set twenty feet back from the curb—mansarded, sculpted, corniced—these sometimes calm, sometime frenzied facades compose a continuous, rich wall.

If grace and unity are measures of a street's success, Commonwealth Avenue is proof that the 19th century had something. But the point is, so do we. It is still a street to savor. And certainly a street to protect.

Back Bay began in the late 1850's with one of the most ambitious dredge and fill operations in U.S. history.

Underfoot, its elegance had been marshy flats along the

Charles, filled in with gravel, oyster shells and, so we are told, assorted trash—worn out hoopskirts, for example. If Winslow Homer's comical 1859 engraving of the scene is any indication, scavengers must have been plentiful.

In 1972, those scavenger instincts persist. For there are those who feel that the low-profile, close-knit character of Back Bay is dispensable, that it should be brought up to date, and that new high rise apartments are the best way to go about it.

Then there are those increasing numbers of people who actually live in Back Bay and are fighting to protect and preserve its identity.

Sorry, but there is no way to report (or dismiss) this as an elitist sentiment. Increasing numbers of professional men and their families are moving into the area; many are buying and restoring their own homes; and

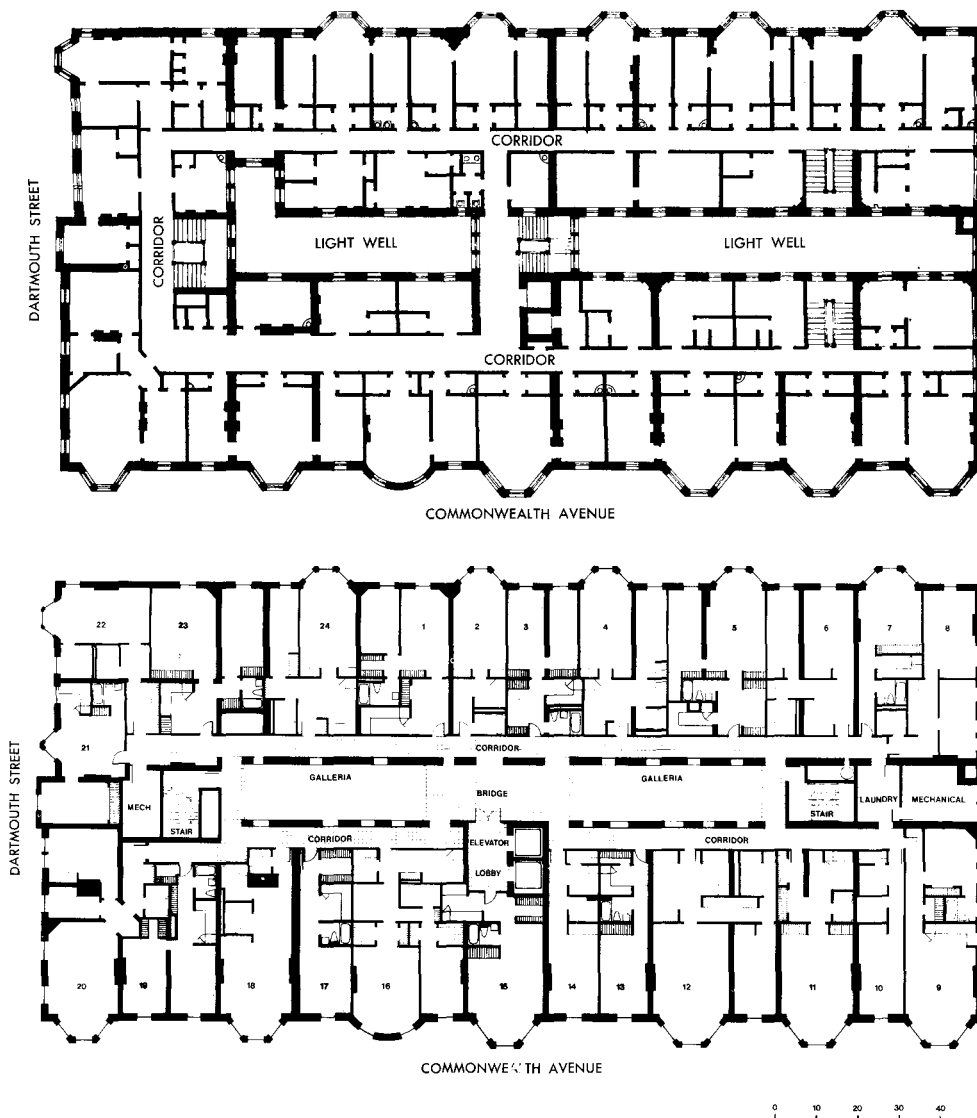
they are determined to keep what they moved here to get—a liveable, uplifting, human scale setting in which to bring up children, benefit from the city's cultural and historic assets—and have a ball.

Despite its slide into oblivion and neglect during the Depression, The Vendome has remained a very special asset in the Back Bay scene. People have been concerned about the building, not only because it is *there*—a testament to Boston's cultural and social primacy—but also because they fear what *might* go up in its place. And its place is a whopping 30,000 sq. ft. site at the corner of Commonwealth and Dartmouth. That isn't exactly speculative peanuts.

Back Bay already has over 8,000 dwelling units, and a population of roughly 23,000, but the shortage of apartments, compared to the demand for them, is grievous.

At least as grievous has been the shortage of people places,





Typical floor plans of the original (above left) and restored (below left) Vendome dramatize how much the architects respected the old building. The outdated lightwell became an up-to-date galleria, rich with activity and landscaping.

right along Commonwealth, where residents might enjoy lunch or do their banking. The Vendome, in many people's eyes, was an unused resource, waiting to be recycled for present-day purposes.

This was, at least, the way Architect Roger Lang thought about it. Lang, since moving from the Midwest several years ago, has been carrying on a torrid love affair with Boston, and is associated with Architect Tad Stahl of Stahl Associates. Living a block away from The Vendome on Newbury Street, Lang woke up every morning to his coffee and a great view of the old hulk, and he was determined to "retrieve" it from the oblivion.

In 1971, contractor-developer Pasquale (Pat) Franchi, in what some of his friends thought was a temporary lapse of sanity, purchased The Vendome for "something" under one million dollars. Around Boston, Pat Franchi is known as a man who will go for

broke for something he believes in, and Franchi believed The Vendome, "retrieved" as apartments, would not only be a positive gesture toward Back Bay—but a money-maker as well.

Fortunately, Tad Stahl and Roger Lang—in their 40's and 30's respectively—were ready to help Franchi go for broke and bring back The Vendome.

Probably the most important aspect of their design solution is its reverence for the street-scape. This was reinforced in two ways. One, the original facades were restored to their appearance around 1880; which is to say, the marble was cleaned, the brick blasted, the tangle of fire-escapes removed, and the towering mansards newly covered with simulated slate. Two, the expansive atmosphere of Commonwealth Avenue was taken inside by creating an *interior* street-scape in the form of a two-level concourse of service and specialty shops representing 30,000 sq. ft. of rentable area. Entrances and

display space were located along this "street," enhanced by exposing the original brick walls and vaulted ceilings.

Rising from the concourse levels is a five-story Galleria. Formerly the light well of the hotel, this dead space was opened up and capped with a continuous, vaulted skylight.

Access to every one of the 124 new units is off corridors which surround and bridge the Galleria. There are 14 one-bedroom and ten studio units per floor, each oriented toward the outside, each with the scale and detailing of the original perimeter rooms. Beneath the mansardic peaks, several penthouses were custom-designed to brahmin taste and budget.

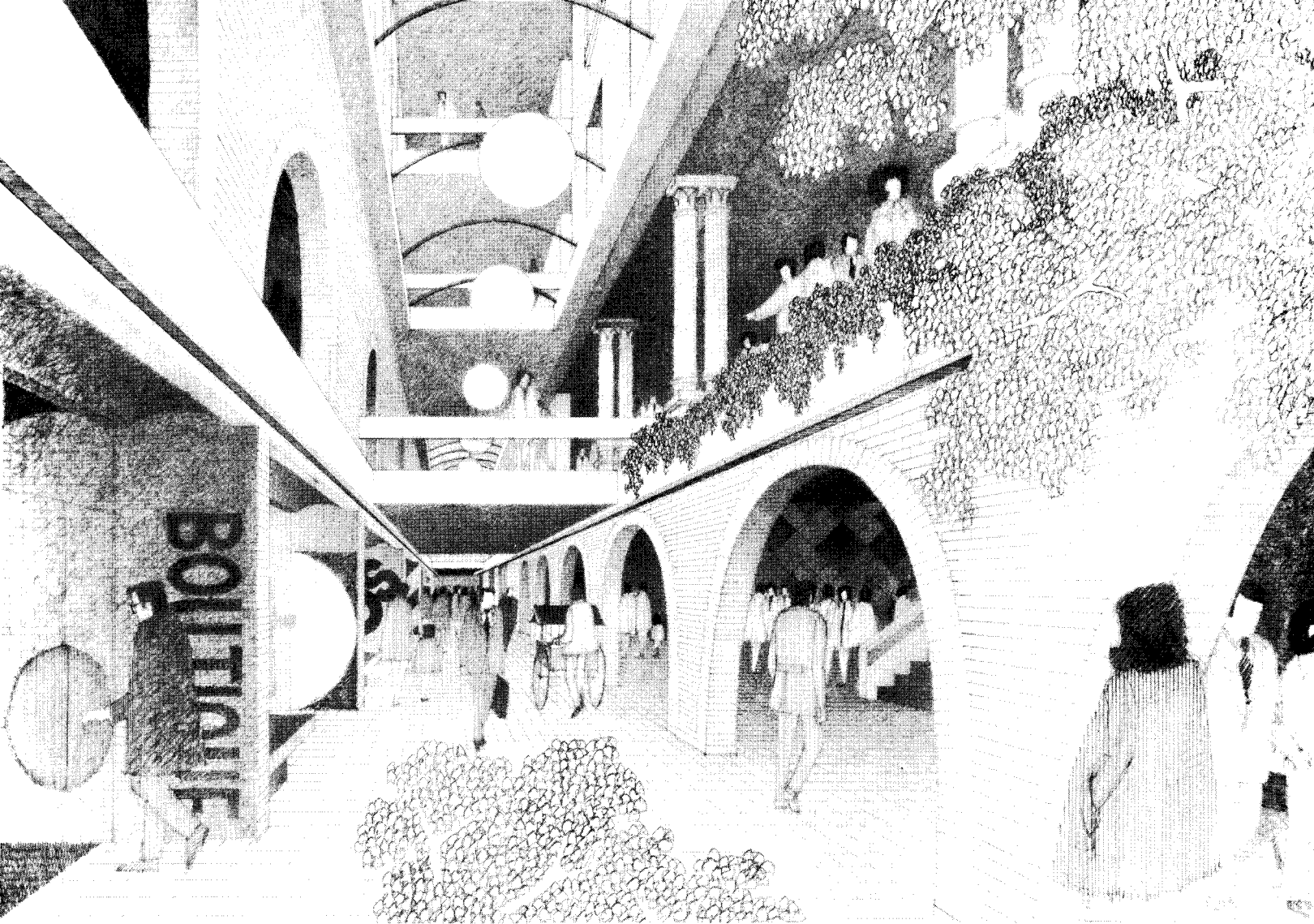
The interesting thing is not so much what the rents are (they start at \$235 per month) but the cross-section of Bostonians willing to pay them. By the beginning of this summer, with renovation at full steam toward the intended September opening, a

good two-thirds of the units had been spoken for.

Another good sign was the popularity of the new Cafe Vendome, located on the lower concourse and accessible from the Commonwealth-Dartmouth intersection by way of a sunken sidewalk plaza. Opened early last spring as a bellweather of the building's commercial (and community) success, the Cafe was an all night encounter session. A steady stream of customers, dressed in everything from cut-offs to cutaways, frequented the place. And the bellweather peeled with good talk over two a.m. slurps of espresso.

The trouble with this good news is that it all went up in smoke several months ago, and just weeks before the sprinkling system was to be installed. The fire, which destroyed about 30 percent of the 188,000 sq. ft. structure, was followed by the collapse of one section which represented roughly ten percent. Naturally, this killed off any





hope for a September opening, and ensuing investigations have delayed resumption of work. Right now, Franchi and his architects are saying they will complete the job, if allowed to. Back Bay sentiment is strongly for it; there are many people who know, first-hand, what Boston almost had.

While the technique of renovation is a story in itself, and one which remains to be told, what matters most is the *intent*. And that, fire or no fire, is valid.

The Vendome was well on its way to showing that a landmark can be both an amenity and a taxpayer, and to proving that economic incentives and cultural values *can* pull together. That is the kind of example needed to save the Back Bay in any lasting sense.

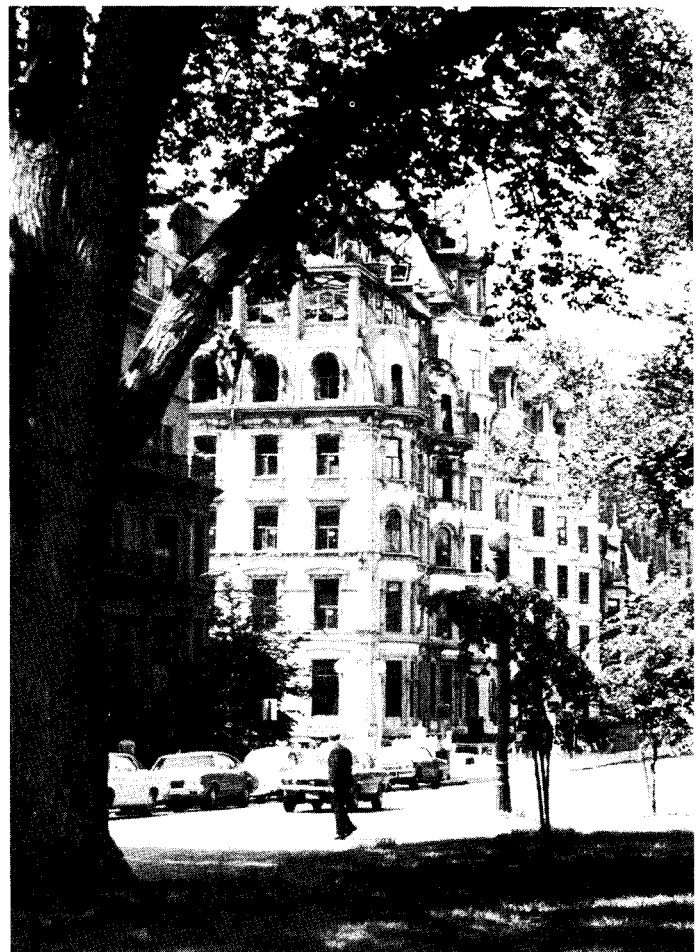
As a catalyst of community determination, The Vendome has made its point. From now on, around here anyway, when you say "renew," you'd better mean "restore."—WILLIAM MARLIN

The landmark today languishes on Commonwealth Avenue—awaiting investigations into the fire which cut off its new lease on life. Back Bay residents, however, are not languishing in their determination to see The Vendome's restoration completed. The Cafe Vendome, just off the lower concourse (drawing above), had already done much to whet the appetites of Bostonians for the new, old structure.

#### FACTS AND FIGURES

Restoration and renovation of The Vendome, Commonwealth Avenue, Boston, Massachusetts. Owner: Franchi Development Trust (Pasquale Franchi, President). Architects: Stahl Associates (Frederick A. Stahl, partner-in-charge; Roger Lang, project architect; Frank C. Adams, project designer; Mrs. H. Alison Tart, interior designer for Cafe Vendome; William Preston Gibbs, 1842-1910, Father Confessor). Engineers: LeMessurier Associates (structural). Consultants: Vincent J. Piconi, P.E. (mechanical); The Thompson & Lichtner Co. (material testing). General Contractor: Eastern Builders, Inc. Building area: 188,000 sq. ft. Construction cost: \$3.5 million (approximate).

PHOTOGRAPHS: The Bostonian Society, p. 30 (top); Jim Hughes, The Christian Science Monitor, p. 30 (bottom); William Marlin, p. 33 (bottom).





# THEORY IN PRACTICE

This architecture reflects the dual values of practitioner and teacher

BY ROBERT L. GEDDES  
with introduction and  
conclusion by  
WILLIAM LaRICHE

Just as there are no young philosophers, there are no young architects. This familiar observation was recently reiterated by philosopher Paul Weiss, who realized that architecture must be developed from the architects' experience of the world. There is no young architecture that is fully achieved.

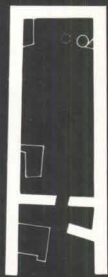
The development of a major type—the Greek temple, for instance, requires a period of reflection often longer than an individual life. Hence it is impossible to have a new architecture “every Monday morning.” The development of an architectural philosophy is even more complex. There must also

be a framework of principles that can be applied to a broad range of formal problems.

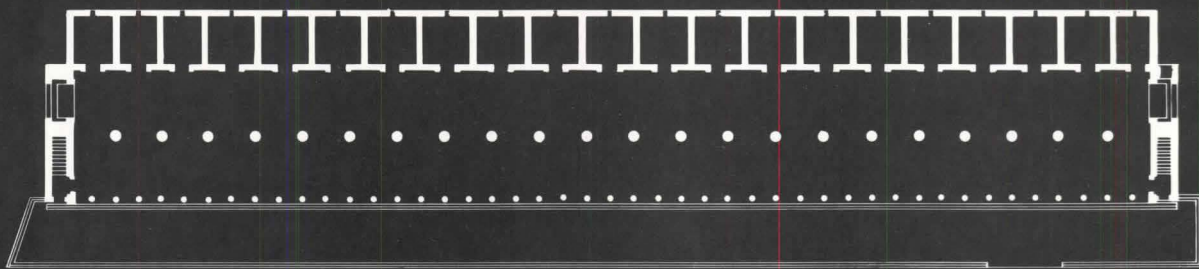
There are certain archetypal forms in architecture, forms that have recurred throughout the millenia in various cultural contexts. They seem to respond to fundamental human needs, for they have been elaborated into the accepted physical forms of our basic institutions. Through the combination of serial, centroidal and field organizations, we have established, in the words of Mircea Eliade, the continuous space of our cities as a whole and the discontinuous space of our sanctuaries within them.

The fundamental cell, the megaron (Figure 1), has been replicated into the serial continuity of the stoa (Figure 2), an ancient Greek colonnade. The same basic form has also been

Mr. LaRiche teaches architecture at Princeton University and is a practicing architect on the staff of Geddes Brecher Qualls Cunningham.



1. House of Ib, Troy



2. Stoa of Attalos, Athens

It is now almost six years since we began to develop a coherent body of architectural work, purposely based on a common set of theoretical principles. Some of the work is under construction, and some of it is now completed. We feel it useful to set forth the architectural intentions of the work as a whole, not only as a basis for understanding the individual buildings, but also as a contribution to the theory of practice of architecture.

The five buildings whose plans and sections are presented for the first time on these pages were designed in sequence: 1)

Beaver College, Science and Academic Classroom Building, 1968; 2) Rutgers University, Newark Campus, Classroom and Office Building, 1967; 3) Southern Illinois University, Humanities and Social Sciences Building, 1968; 4) Goucher College, Fine Arts Building, 1968; and 5) Institute for Advanced Study, Princeton, Dining Commons and Academic Building, 1969. As a body of work, these buildings were studied in relation to each other, specifically, and to the theses of the modern movement in architecture, generally. In this way, the buildings consciously set out to inform each other, and thereby to gain authority by continuing a line of thought about architecture.

In our previous work in Philadelphia, two designs foreshadowed our future studies. Both have previously appeared in

Mr. Geddes is Dean of the Princeton School of Architecture and Urban Planning. He is design partner in charge of the Princeton office of Geddes Brecher Qualls Cunningham.



exalted into the temple (Figure 3) and into the basilica (Figure 4), that unique and privileged focus of urban life in the West. The stoa, of course, was one terminus of an agora, that civic and commercial loft space of the ancient Mediterranean.

Through the combination of such elemental forms, one can accommodate the relationships between essential human activities and values. Degrees of privacy and community, for example, need not be limited in practice to the two components of Le Corbusier's "indissoluble binomial": the individual and the collective, which become the ends of a continuum that includes innumerable conditions.

The phenomenon of center is also important. Moreover, it can occur in other than purely symmetrical compositions. It is possible to establish a center with

equal authority in buildings demonstrating dynamic balance.

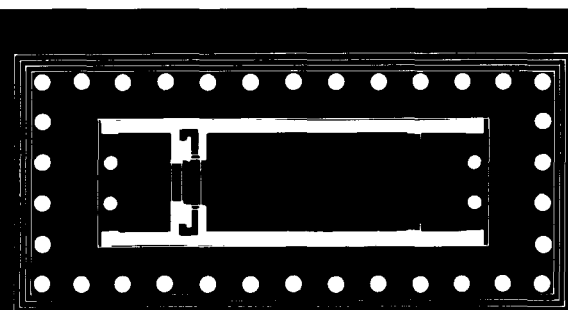
Mies said, "You could learn everything in architecture" from Schinkel's Altes Museum, where archetypal forms are brilliantly combined (Figure 5). The temple form is suggested on either side of that circular hall, which affirms the universal need for a center in space. Less obviously, the basilica is evoked in the peripheral galleries by inverting the cella and peristyle of the temple form. The almost equal treatment of opposing ends of these galleries, however, and the overall proportion and columnar modulation of the space again recalls the commercial stoa.

Schinkel's conception of the museum as an institution is ambiguous and complex. Ironically, the hierarchic ordering of space that produces these qualities is

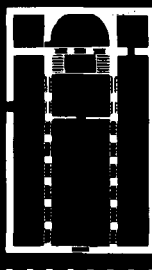
minimized by Mies in deference to the concept of "universal space."

Le Corbusier's "free plan" goes beyond Schinkel's concept of modulation to engage all space man chooses to order. Specific forms are composed hierarchically within this universal framework. Their relation to it forms part of the meaning of the whole.

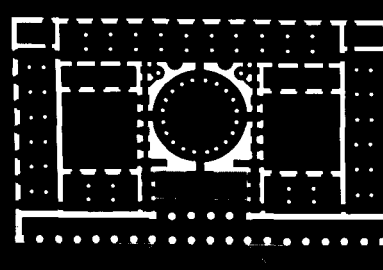
In each building presented in this article, the universal spatial ordering system, the hierarchic disposition of activities, and the archetypal formal themes are brought into play—at varying levels of consciousness and degrees of success. There is a definite progression from one building to the next, as experience informs intuition and the past work leads one to set more demanding goals for each successive project. □



3. Temple of Concord, Agrigento



4. Basilica at Benian, Algeria



5. Schinkel, Altes Museum, Berlin

FORUM: the Laboratory/Classroom Building for the Moore School of Electrical Engineering at the University of Pennsylvania (March, 1959, issue) and the urban design for the University City Science Center (August and September '64 issues). Admittedly these early designs are partial forecasts, but the later buildings and urban designs have borne their mark. They provided some of the empirical experience from which we drew our observations, leading toward generalization, understanding and theory.

The understanding of architecture is dependent on the ability to identify and classify its elements, and to understand the relations among its elements. The understanding of architecture requires theory. We have found that architectural theory helps us as a guide in our prac-

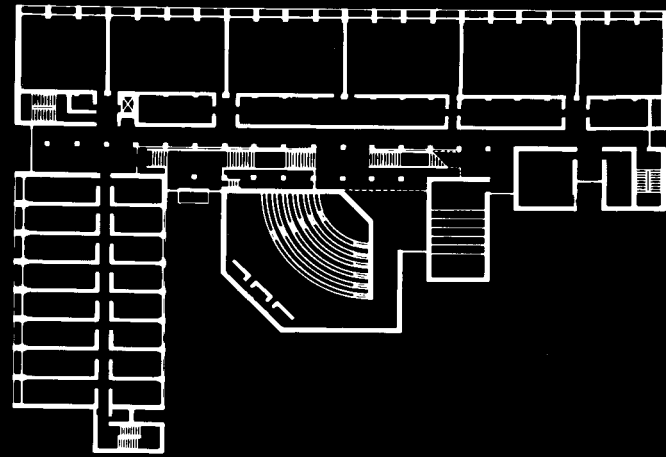
tice. The role of theory in the everyday practice of architecture is undervalued in our times, because of the often mistaken notion that the solution to an empirical architectural problem will arise almost self-generated out of the problem itself, in a sort of automatic pragmatism. In actuality, the resolution of an architectural problem is not so simple a process, involving as it does, not only an operation, but a cultural dimension.

In architecture, to solve a problem is to develop the correct form that is, to create a close correspondence between the structure of the task and its equivalent in form, the formal structure. The central goal of architecture is the coordination of the building task and the building form, by means of building technics.

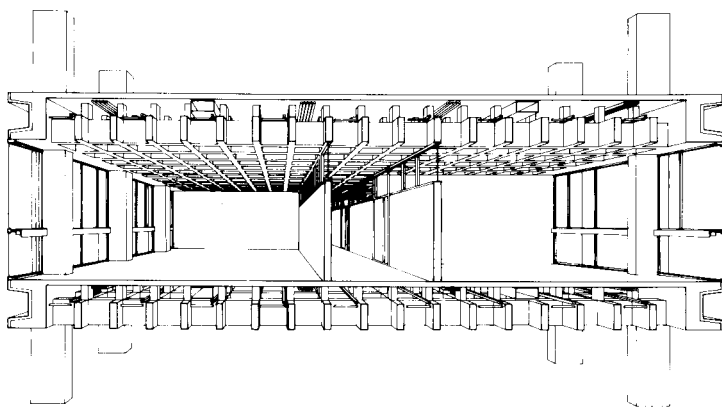
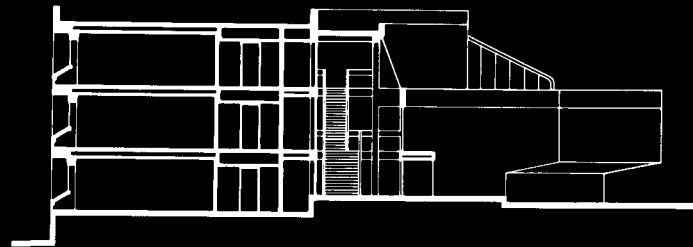
The theoretical core of our

work is, therefore, the interaction between the building task, form and technics. This statement may not seem to differ markedly from the other three-part formulations, such as the Vitruvian model. But the emphasis is different, because the three elements are not related to each other as equals, they are related in a hierarchic order. For example, although we recognize that the building technics are an integral part of both the building task and form, we do not seek to make technics the prime generator of the task and form. Technics in this sense are instrumental, enabling means to achieve the integration of task and form. The generators of a proper architectural solution arise out of a deep understanding of the building task, and the prepared imagination that seeks correspondence, correlation and





In the Marian Angell Boyer Hall of Science, at Beaver College, a central stair provides access to two different kinds of facilities. On one side, there are linear loft spaces containing laboratories, support facilities and offices; on the other side, special spaces such as auditoria, lounges and greenhouse. Location: Glenside, Pa., on rolling garden landscape. Building area: 72,000 sq. ft. Cost: \$2.7 million.



6. Beaver College

coordination in form.

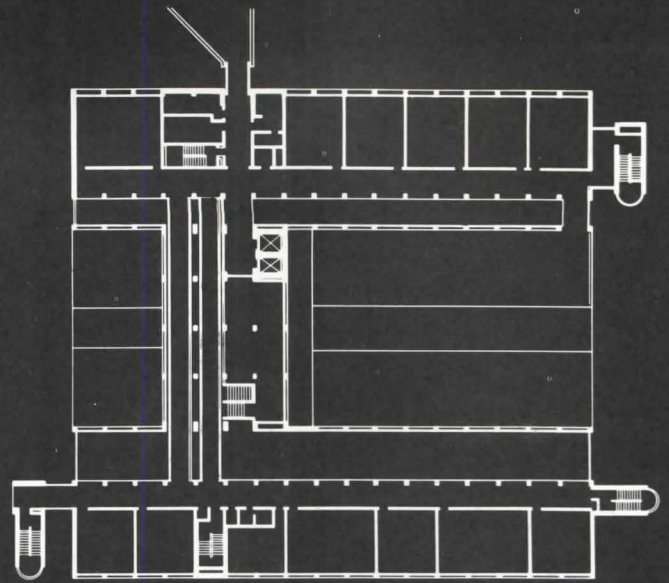
In this series of buildings, a formal system is being developed. Not only are we working on architectural solutions to specific building tasks and their unique sites, but at the same time we are seeking to develop a generally valid system of form. If successful, the formal system can respond with enthusiasm to the specific context of its landscape, and to the specific needs of its inhabitants. There are six elements in the formal system:

1. The spatial grid. The primary means of visual order and spatial organization is the rectilinear grid, which has been reinforced in twentieth century sensibilities by the explorations in grid construction of cubism. Grid structure in our buildings is more than a contextual field. In these buildings, the grid is directional;

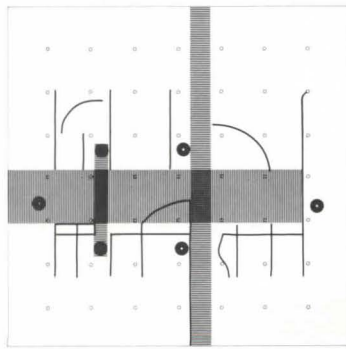
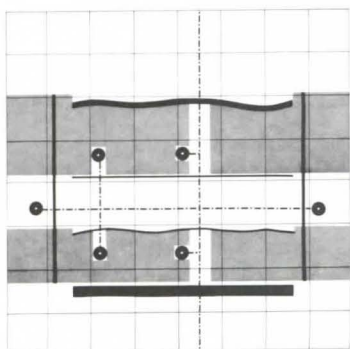
that is, we have modulated or differentiated only one of the two coordinates of the planning grid, keeping one coordinate constant as a measure and module in series. The primary grid is often modified, overlaid or supercharged with other grids, larger and smaller than the primary grid. For example, in Figure 9 (Goucher), we are exploring the implications of a grid that is rotated in relation to the primary grid; and in Figure 10 (IAS) we are exploring the multiple-layering of larger and smaller grid configurations.

2. The structural frame. The rectilinear frame is the instrument of visual organization and building technics that most readily achieves the spatial grid. Framing is equivalent to drawing, in that it produces sets of space, divisions, reference





At Rutgers, the State University of New Jersey, Newark, two galleries and a cross-connecting ramp gallery provide walking access to three stories of classrooms and commons area, while the elevator core provides vertical access to the eight stories of faculty offices. Location: Newark, on the corner of a high-density urban campus. Building area: 103,225 sq. ft. Cost: \$4.2 million.



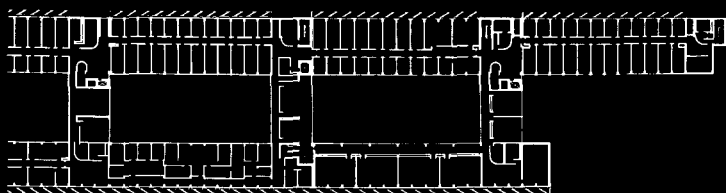
7. Rutgers at Newark

lines for separation and identification. The structural frame serves more than one type of structure: it is at one time the primary means of creating visual structure, and also the primary means of organizing building technologies. In these buildings, the structural frame is varied in one of its two coordinates, but not in both coordinates at the same time; for example in Figure 7 (Rutgers-Newark) the framing is held constant in the north-south direction, and varies in the east-west direction according to the circumstances; in Figure 8 (SIU, Carbondale) the same principle is applied; and in Figure 10 (IAS) the 20-ft. column bay and the 10-ft. wall grid are held constant, while other grids are built in harmonics, that is, built on multiples and subdivisions of the basic module, which is closely related

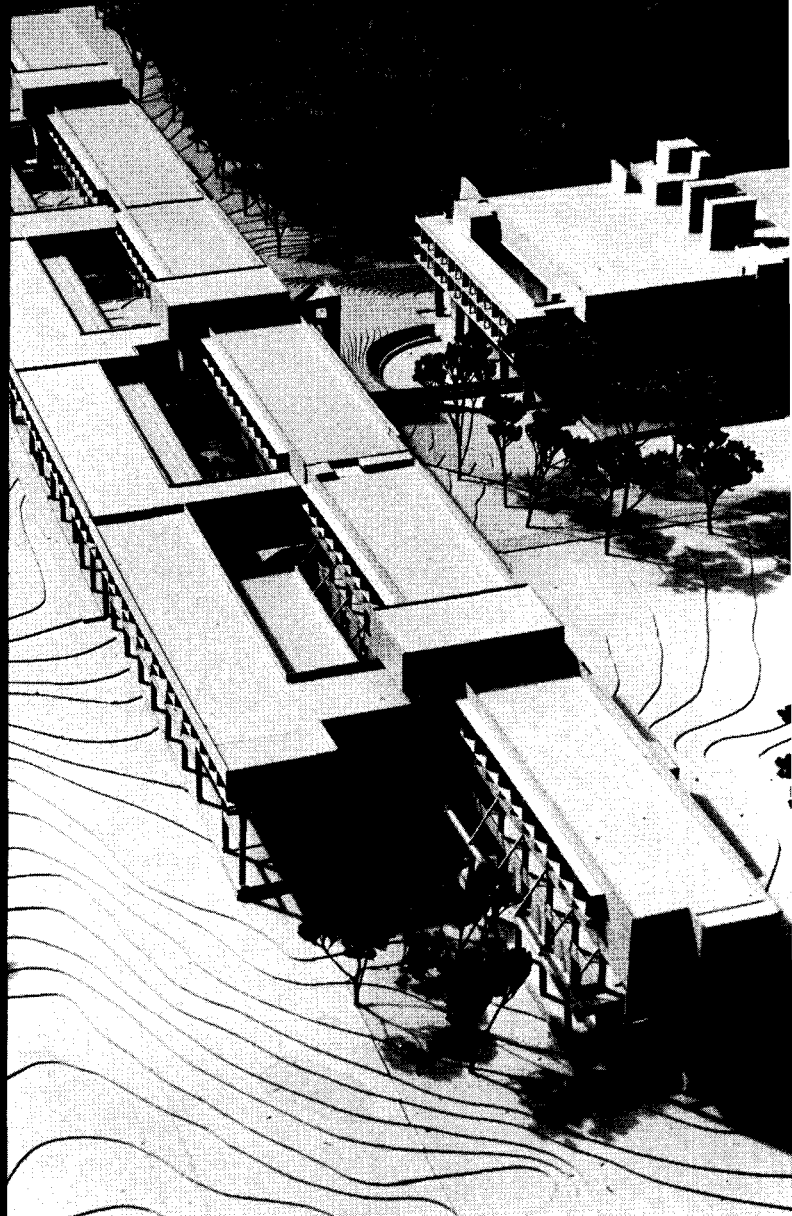
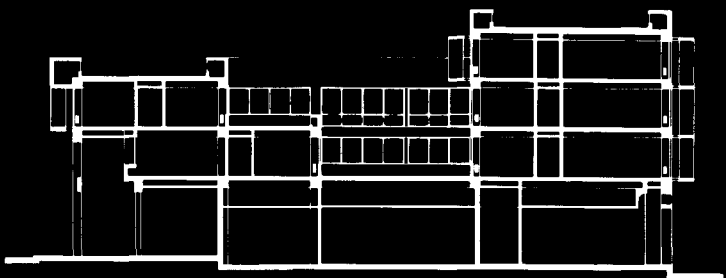
to human scale.

3. The loft space. The loft is the type of building form that most readily allows for an approximate fit, rather than a tight fit between the building task and form. Therefore, the loft space has enough generality about its form to serve a wide range of building tasks, and to accommodate itself to future change. In these buildings, the linear loft space has been developed as a less than universal, but satisfactory, approximation of user needs. The linear loft maintains one of its coordinate dimensions constant, allowing for change and extension in its linear longitudinal form. In most cases, we have found that the typical space of a building is well served by linear lofts; for example, in Figure 6 (Beaver) and Figure 10 (IAS), one of the two major building





Southern Illinois State University's Faner Hall (the humanities and social sciences building) has two parallel lines of linear lofts, three and four stories high. These create a series of linked quadrangles for a large number of academic departments. The ground level arcades serve classrooms, student activities and a museum; the upper floors serve faculty offices, departmental and student common areas. Location: Carbondale, Ill., in the central campus area, between the original late 19th century and the recent postwar campus. Building area: 250,000 sq. ft. Cost: \$11.7 million.



8. Southern Illinois University

elements is the linear loft; whereas in Figure 7 and Figure 8 almost all of the building consists of the layered grouping of linear lofts.

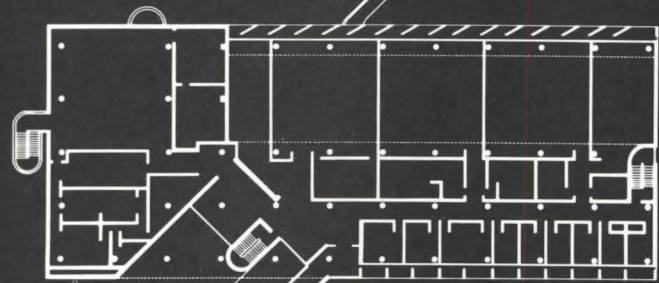
4. The singular space. Within the spatial continuity of life, some spaces have characteristics that mark them as special places. Eliade has pointed out that for religious man, the creation of a singular space was a paradigmatic reconstruction of the cosmos; for secular man, we seek means to break the homogeneity of all space in order to serve the human needs for orientation, identification, hierarchy, ritual and meaning of use. In these buildings, special spaces are often based on the permanence of use (for example, the lecture halls in Figures 6 and 10), or of the public nature of the use (for example, the ramps in Figures 7 and 9 and the stairs in

Figures 6 and 10), or the humanistic hierarchy of use (for example, the student commons in Figure 7, and the coffee commons in Figure 10).

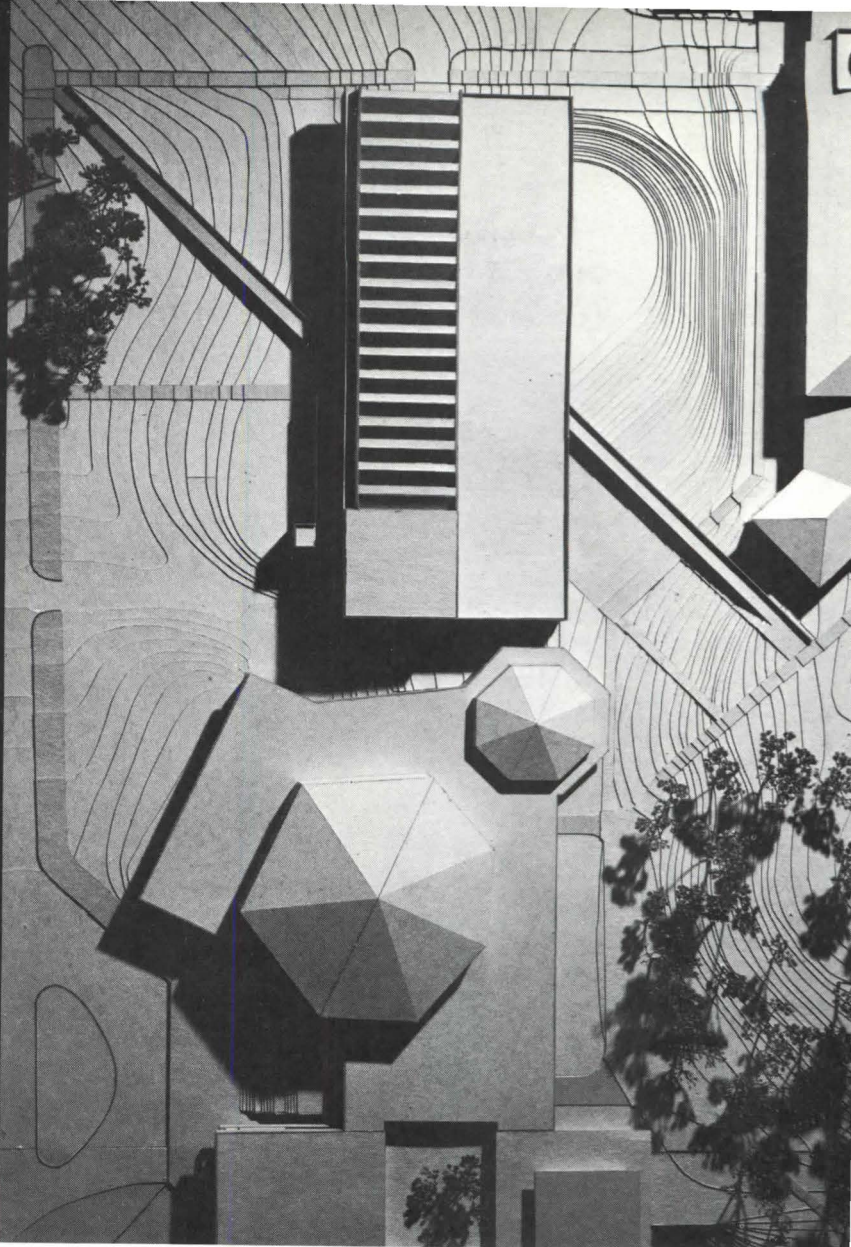
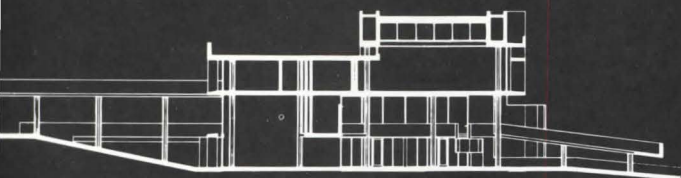
5. The path of movement. The form of the movement network is the armature of the individual building form and the group form. The elements of the movement network are simply three: a) open and enclosed linear galleries, sometimes developed in pairs of major and minor hierarchy, b) in connecting bridges, levels and ramps, and c) points of vertical movement, stairs and elevators. The spatial relations between these three elements of movement are rigorously organized to serve the internal needs of the individual building, and to weave into its context. For example, in Figure 9, the central ramp serves as the entrance to the building

Professional credits for the five buildings discussed in this article are as follows. The Marian Angell Boyer Hall of Science, Beaver College, Glenside, Pennsylvania: Architect, Geddes Brecher Qualls Cunningham (GBQC); Project Architect, Elizabeth Lawson. Classroom and Office Building, Rutgers, The State University, Newark, New Jersey: Architect, GBQC; Project Architect, Hamilton Ross. Faner Hall, Humanities and Social Science Building, Southern Illinois University, Carbondale, Illinois: Architect, GBQC; Project Architect, John DeBello. Fine Arts Building, Goucher College, Towson, Maryland: Architect, GBQC; Project Architect, Rhett Jones. Dining Commons and Flexner Hall (Academic Office Building), Institute for Advanced Study, Princeton, New Jersey: Architect, GBQC; Project Architect, Roland Gallimore; Landscape consultant, Zion and Breen Associates. The GBQC design team on all five projects: James Dill, William Dix, M. Neville Epstein, Harrison Fraker, Roland Gallimore, and Robert L. Geddes.





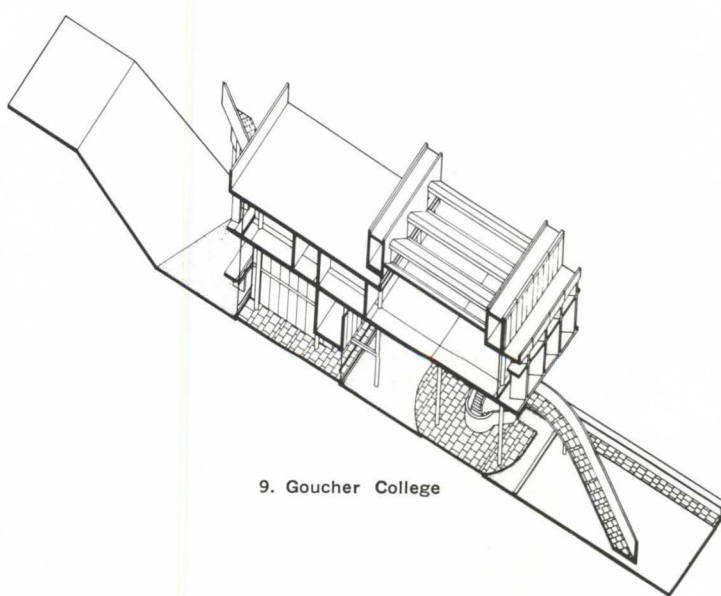
The Fine Arts Building of Goucher College has an upper level that serves studios and workshops in linear loft spaces, while the lower levels serve galleries, exhibitions and an auditorium. A pedestrian ramp provides access from the center of the campus on one side, and from the auto access and parking on the other. Location: Towson, Md., on a rolling, wooded campus. Building area: 42,500 sq. ft.



and also as the entrance to the central campus; in Figures 8 and 10 the paths of campus-wide circulation are the basis of the built form of the building; and in Figures 6, 7, and 9, the paths of movement take on some of the characteristics of being singular places in their own right. **6. The enclosure.** These buildings recognize that there are many elements of enclosure, responding to the diverse needs of cultural symbol and operational filter, of privacy and community, of entrance and threshold, of air, sound and light. The exterior fabric has increasingly become a deep structure in order to reduce energy uses, reduce glare, and maintain clear glass. The interior enclosure has been polemically of two types; engaged column and wall relations (Figure 7), and the free column and wall relations (for

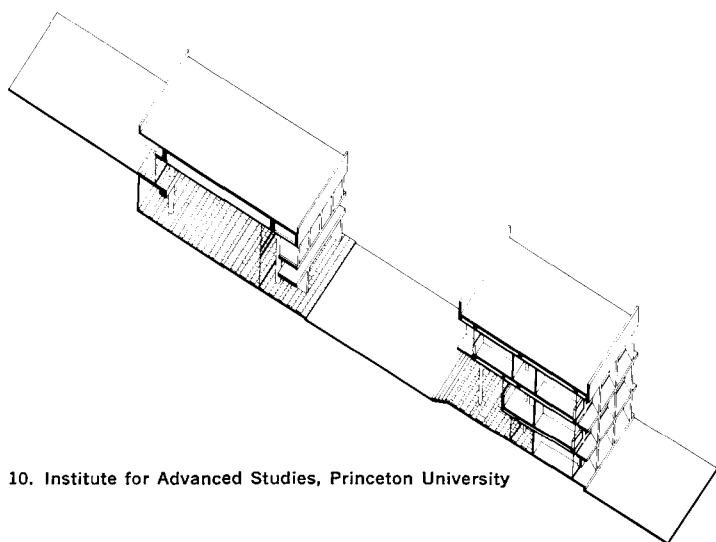
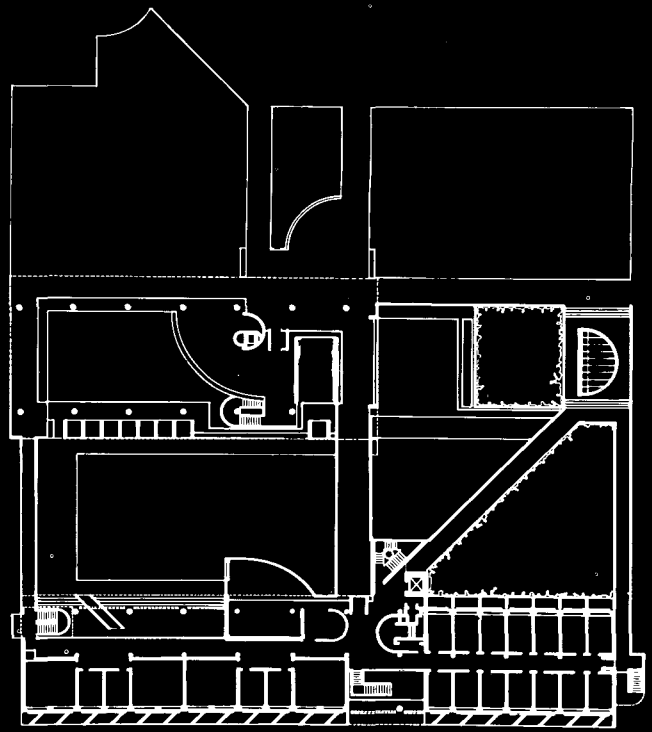
example Figure 9); in later work, both types of relations have been used in a single building (Figure 10). We have become increasingly aware of the nature of the "middle scale" enclosure; that is, the stair and balcony railings, the furniture, the soffits and skylights, the landscape garden in the "mediocosmos" of everyday life.

Composition is the creation of a community of parts. As in a social community, in architecture there are many apparent polarities. It is not sufficient merely to recognize the existence of contradictions and conflicts; it is necessary to learn to compose effectively. Therefore we seek responsive compositions that include not one but both, that mediate freedom and order, specificity and generality, uniqueness and universality, both inside and outside



9. Goucher College





10. Institute for Advanced Studies, Princeton University

a structure or a building.

These five compositions are similar in their elements, but different in their totalities, because they are responsive to their own inhabitants and their own landscapes. They share their vocabulary of enclosures, their galleries and promenades, their layered lofts and singular places, their frames and their grids. And, as a series, these buildings represent a stage of evolution.

The purpose of these notes is to describe a recent body of work in two different ways; first, to identify the principles, the elements and relations, in a useful way for a practitioner of architecture; and second, to indicate the extent to which it is helpful to think of architectural practice as a series, rather than as individual works. In this way, one can make a learning

experience of architecture, and perhaps respond to Piet Mondrian's request that "It is not enough to explain the value of a work in itself; it is above all necessary to show the place which the work occupies on the scale of the evolution of plastic art."

We are faced today with a critical situation of mind and culture. The sciences seem unable to place human values in a generating and motivation position, and the arts seem headed inward the disintegration of form. We witness all around us a veritable cult of incoherence; the next stage may be the outspoken attempt to produce incoherence, incoherence as such. But now more than ever before, we must reaffirm that architecture, as an art, is concerned with form, the creation of coherence in reality. □



**In conclusion**, the problem of a building's relation to its site is that of the intersection of the man-made with the natural order. The Greek practice of placing sanctuaries in opposition to the landscape heightens the distinction between the two orders.

The skeletal simplicity of Mies' Farnsworth House affirms both the Greek imperative and the irony of the minimalist goal—that the meaning of a composition is inversely proportional to the amount of information it imparts (Figure 11). Hence the aspiration toward abstraction and the excision of all but the "essential" elements.

Unlike Mies, Le Corbusier explored this intersection through what he included in his compositions. In the residential areas of the Ville Radieuse, the apartment buildings are disposed in a geometric pattern (Figure 12). The ground plane is organized on the model of the English garden. Pathways that appear to meander across the site are, in fact, ordered on a diagonal grid. An ideal concrete formal garden is superimposed on an organic English garden; both the man-made and natural orders are in the architect's control.

The three most recent buildings presented here display different advances over their predecessors at Newark and Beaver in acknowledgement of their site. The SIU building distinguishes itself first by its 900-ft. length.

Vertically, the trees contain it, while, in the horizontal dimension, it introduces new scale to the campus. It is a permeable edge accommodating a variety of activities. The building's change of height in transverse section conforms to the difference in scale between the old precinct and the new. This double-sided stoa, transposed from the cores of ancient cities to the English garden of an American campus, is not the first increment of the concrete formal garden of the Ville Radieuse. And yet, its identity consists in part of its affinities with the classical and the Corbusian examples.

In many of Le Corbusier's buildings, the upper floors display a regularity of organization not found on the lower floors, which respond to site conditions. The Goucher Fine Arts Building reflects this practice. Numerous site pressures are resolved into a single gesture: a ramp rises from the ground, intersecting the building on its own terms. As in Le Corbusier's Carpenter Center, the diagonal system of major movement is a major formal element. The Farnsworth House opposed the ideal, Cartesian forest of columns to the actual forest before which it is placed; at Goucher, the landscape is idealized, and two conflicting aspects of one system intersect.

Kenneth Frampton has contrasted the hierarchic spatial

organization of Le Corbusier's project for the League of Nations Competition with the anti-hierarchic project of Hannes Meyer. For Meyer, operational and economic efficiency were an exclusive passion: composition, ideally, was the unmediated translation of program into spatial fact, and all spaces were assigned equal importance. Le Corbusier, on the other hand, felt that architecture should respond to cultural values of varying importance.

At Rutgers-Newark, singular spaces of exceptional importance occur within a continuous gridded frame-work such as Meyer would have employed. In the area of the ramps, for instance, the connections of the columns and beams, the height of the space, the angle of the ramps, and the general spaciousness of the lounge combine to form a center to the building.

At Beaver College, the loft spaces of the continuous frame are subdivided as teaching laboratories. Here flexibility of partition locations and responsiveness to program changes are essential. The stair gallery is the collective area for those people whose only shared purpose is movement from one place to another (and lingering to converse along the way). The large space, the generous admission of natural light, and visual access between corridors and gallery define this space as

a privileged intermediary realm. As at Newark, the space between all spaces becomes a place.

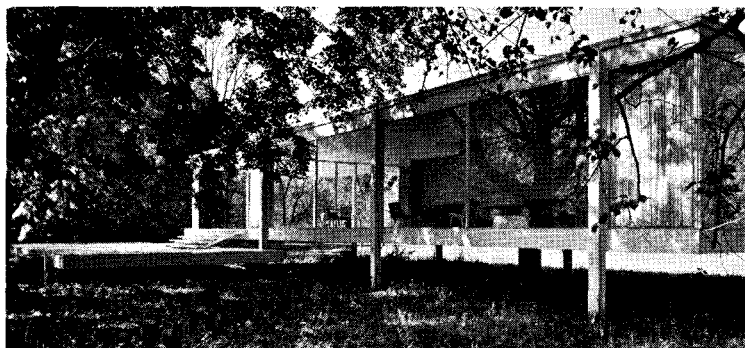
In opposition to Newark, however, spaces at Beaver where people congregate with single intent are formed in acknowledgement of their use: the auditorium and lecture rooms are recognized as singular and discontinuous.

At Goucher, the Beaver and Newark experiences merge. Requirements of the auditorium and exhibition area are addressed within the framework of the building; both the free plan and the intrusion of movement from the site are acknowledged (Figures 13 & 14).

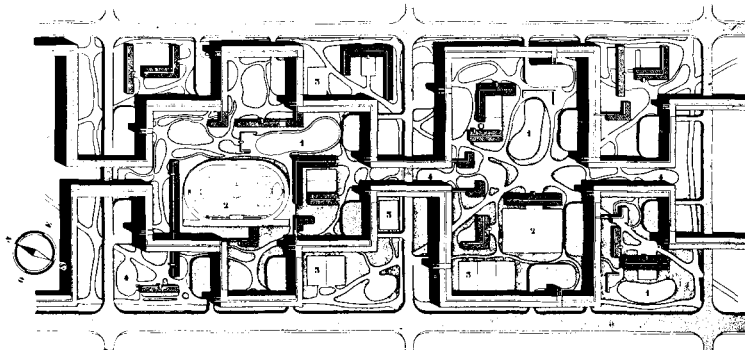
In all three buildings, spaces for individuals are constant in form: the cellular repetition in these office stoas imparts a linearity and sense of measure to the free plan loft space.

An institution is a matrix of transcendent concerns. To manifest an institution in space, one requires the kind of continuity of intention and formal method toward which these projects aspire, and within which distinctions of scale, context, and function are included..

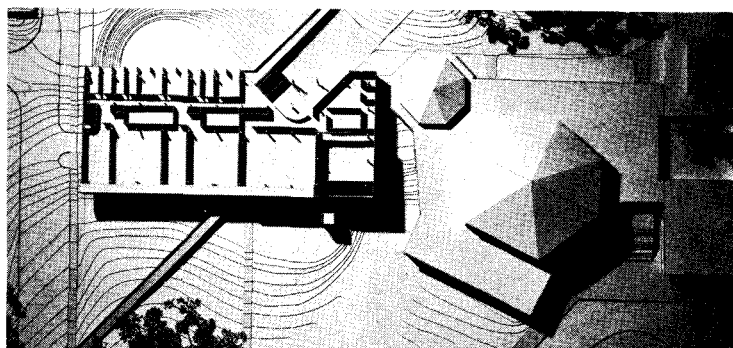
**PHOTOGRAPHS:** Rutgers at Newark, Beaver College and Princeton University: George Cserna; Goucher College: Marc Cohen, Skomark Associates; Southern Illinois University: Lawrence Williams. **GRAPHICS:** Bruce Abbey and Jay Laughlin, of Geddes Brecher Qualls Cunningham.



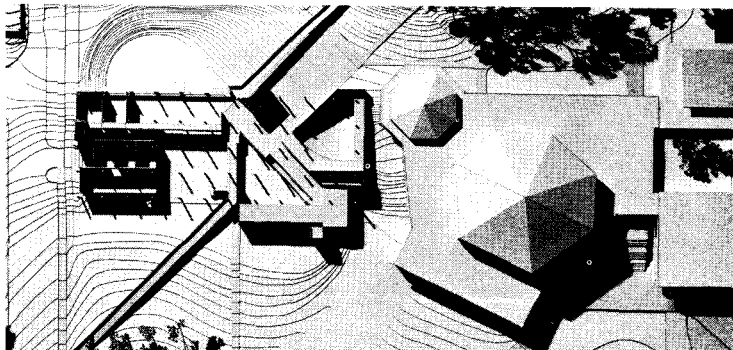
11. Farnsworth House



12. Ville Radieuse



13. Goucher College



14. Goucher College





# ADOBE AND OLD WOOD

Nat and Margaret Owings' hacienda in the desert is a marvel of simplicity

BY ROSALIND CONSTABLE

You would never think, to hear him talk, that he was one of America's leading modern architects. For Nathaniel Owings (Skidmore, Owings and Merrill) is in love with the past. When he wanted a "secret" house far from the modern world he built it of adobe in the middle of nowhere, twenty-odd miles north of Santa Fe, New Mexico, overlooking the magnificent Jemez Mountains. "Nat" Owings is a bluff, friendly and outspoken man. Says he: "We never live in a modern setting if we can avoid it. That's for our clients." For that matter, his much-photographed modern redwood house, built on a cliff in Big Sur, is not very different in execution (if not in concept) from his adobe house in New Mexico. "Both of them are basically made of natural ma-

terials rather than processed materials," says Owings. "You can build a perfectly good adobe house without using any metals. My reaction is to go violently far from the mechanical aspects of the modern scene."

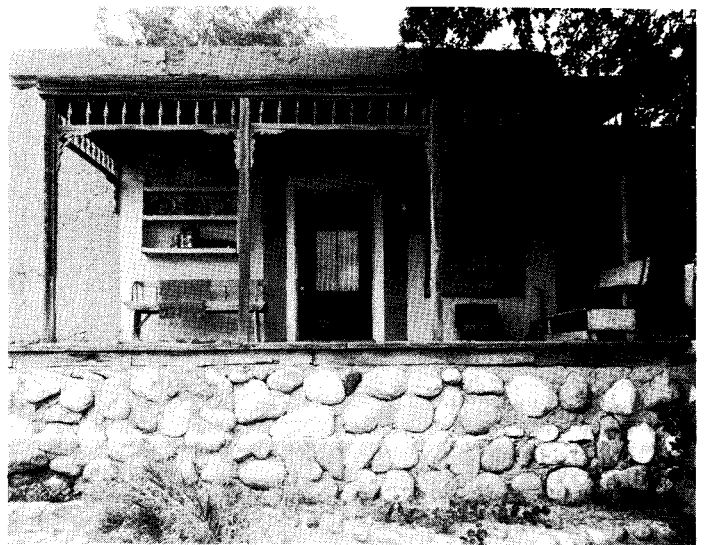
It all began in 1956 with a kitchen stove, an ornate, Victorian kitchen stove that Margaret Owings (Nat Owings' second wife) found languishing in a junkyard in nearby Espanola. Owings at that time already owned an old adobe house (thoroughly modernized) in New Mexico, with a large adjoining vegetable garden. It was in this garden that Mrs. Owings decided to build a small adobe studio in which to house her kitchen stove. "That started the whole thing," she says. Soon an entire complex of small traditional adobe houses grew up in the vegetable garden: main house, guest house,

studios, caretaker's house, each with its own courtyard, hacienda-style, or portal (long porch). The modernized adobe house next door was sold. "I wanted to assert myself architecturally," says Mrs. Owings.

The Owings were lucky enough to find first-rate adobe clay in the garden, and a brick maker in nearby Cuymongue who still made bricks "by the old method", which requires that the adobe mix (clay, chopped straw and water) be kneaded by horses hooves. The bricks must be left standing for at least a year, by which time "they are practically as hard as glass," says Owings. A builder and carpenter, Albert Livermore, was found in Santa Cruz; and he was willing to carry out Owings' architectural ideas, and even to dream up some of his own. "Albert is a marvellous man," says Mrs. Owings, pointing out the old pinon nut toast-

**Ms. Constable** is a member of the Forum's Board of Contributors.





Entrance to the Owings desert compound is through heavy wooden gates (above, left) punctuating the high adobe wall that surrounds the entire area. Inside, the individual buildings are rustic and Spanish in motif, with large porches, such as that along Mrs. Owings' bedroom (top) and outside Mr. Owings' bedroom (left). The front of Mrs. Owings' studio (above) typically combines adobe, wood and natural stone in its construction.



er that Livermore found and used as backing for a kitchen shelf that contains spotless stainless steel pots and fragile Mexican plates. "Albert makes instant antiques from old boards," says Owings admiringly.

The walls of the various houses are two adobe bricks thick which, plus the plaster, means they are 25 inches deep. Interior walls are white and windows are few and small, according to custom. But light (a modern requirement) is provided from cunningly concealed skylights. The courtyards (or plazas) are raked gravel, but there is one small emerald lawn, sporting a poplar and a weeping willow. "A concession to our New England background," says Owings.

Nat Owings is the architect, but "the interiors are more or less mine," says Mrs. Owings. The main house is approached through heavy wooden doors, of no particular ancestry. "We just concocted them," she says. The visitor proceeds down a path paved with forbidding blue-black glazed bricks—from the old Santa Fe Penitentiary. The faded blue wooden front door (from Pena Blanca) is flanked by imposing three-cornered French lamps (from Third Avenue). It opens onto a large room furnished, to the left, with an old Spanish grain chest and a French parquet dining table. To the right is a Tudor four-poster bed and another that started out as a wagon. Beyond is a small bedroom, the bed originally a picket fence. To the far left of the front door is a pot-bellied stove which, fed pinon or juniper wood, is the sole (but adequate) source of heat in winter. Behind it is the kitchen area, its functional electrical equipment concealed behind rough pine doors; rickety-looking wooden drawers actually operate smoothly on runners.

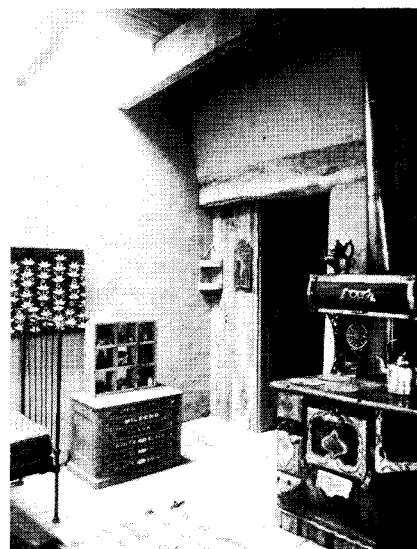
"I have a mania for old

wood," says Mrs. Owings, and the air is indeed filled with its scent. She has subordinated her second passion, for color, to allow the muted tones of old wood and brick to predominate. There are no dazzling Navaho blankets on the broad-beamed floors, as in most Santa Fe adobe houses. "I try to restrain myself," says Mrs. Owings. (But she has hung some of her colorful "stitchery" abstractions here and there on the walls.)

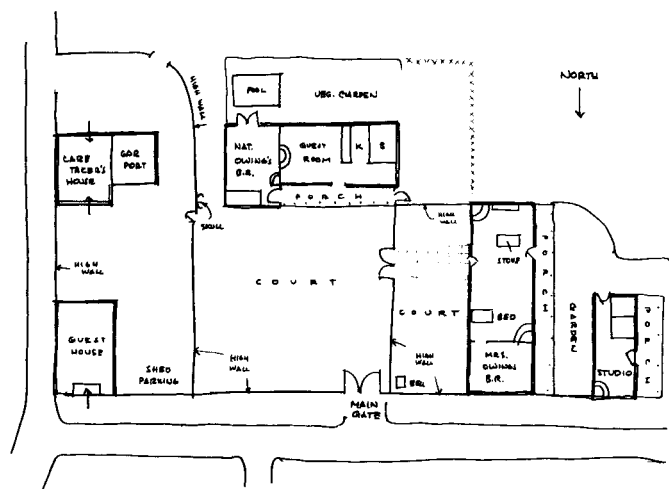
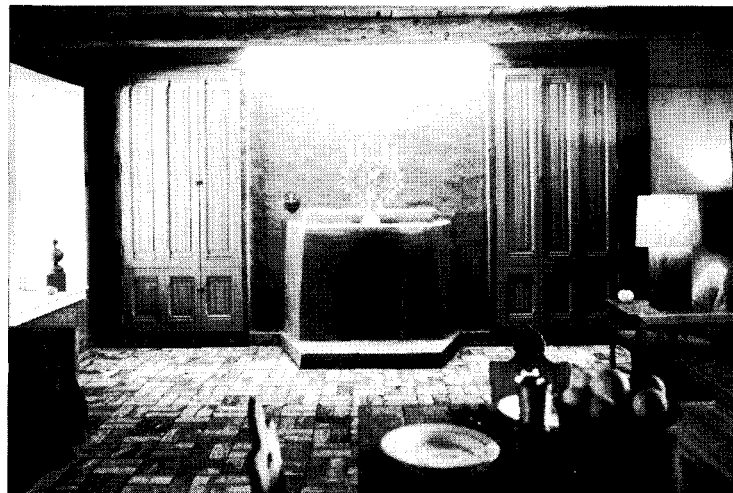
"We'd go out in our truck and find the wood," Mrs. Owings recalls. "Sometimes we'd buy a roof. Sometimes it was a barn that wasn't being used. We'd either give them new material, or pay for it." Many of the splendid old doors were discovered in Rodarte, a Spanish-American enclave high in the mountains behind Taos. (But a pair of handsome redwood doors in the guest house were rescued from a Victorian house in Monterey that was being demolished.)

Nat Owings' studio, attached to the guest house, has the distinction of an earth rather than a wood floor: earth mixed with ox blood, to harden it. His studio contains his collections of Kachina dolls, strictly confined to those dolls that portray Indian dances he has actually seen performed. "I don't care if they're old or new," he says of his Kachina dolls. "They're all valuable to me. I love them."

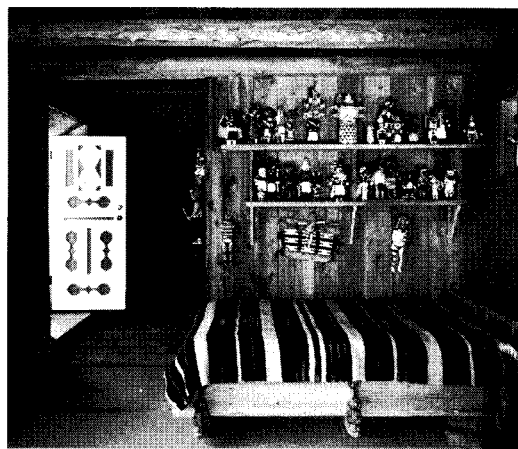
Every foot of beam, every old brick, has for the Owings its own well-remembered history of search and discovery. But Mrs. Owings lingers longest over the kitchen stove, in what is now her studio, and which "started it all." "It's so marvellous," she says. "We've never equalled it, really." Does it still work? the visitor ventures to ask. Mrs. Owings hesitates. "I must confess we've had a little gas stove put in it, so that we can keep steadily warm in winter."



Homely, yet with a certain elegance, the guesthouse (left) has an adobe interior and rustic furnishings; the fireplace is lighted by a skylight overhead. A free-form sculptured fireplace (top) provides a focal point for Mrs. Owings' suite and is counterpointed by another diagonally across the room (plan, below). Her suite also contains a kitchen and work area (above), and a private bedroom beyond.



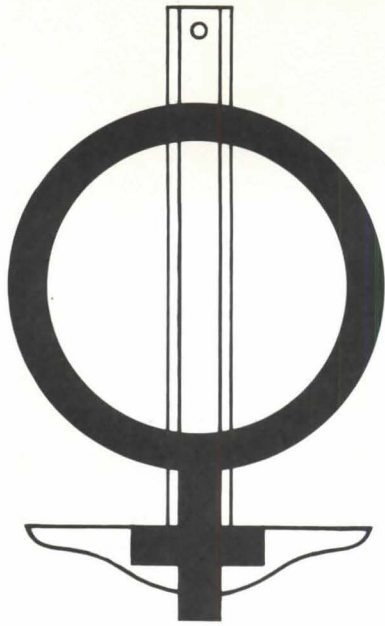




The main house on the compound is primarily one large room with an old stove for heat and a new one for cooking (top). Many of the building materials and artifacts were picked up by the Owings during their travels and include old bridge timbers, antiques and early American furniture. The corner fireplace (far left) of the main house is topped by kachina dolls, which also decorate the wall over Mr. Owings' bedroom (middle photo). The bedroom in the main house features a bed made of an old fence (left).



# WOMEN IN ARCHITECTURE



True or false: The architectural profession, in a kind of "gentlemen's agreement," gives its women professionals unequal pay, unequal responsibility, unequal opportunity, unequal recognition, and unequal respect as serious professionals.

False, say the official spokesmen. "Some of my best friends are women architects," jokes James A. Scheeler, Deputy Executive Vice President of the AIA. More seriously he says, "I've heard consistently there should be more women in the profession. But I'm not aware of our schools discouraging women; I'd like to see some facts." He defines a "positive program" as getting more women "into the pipeline," and a negative program as raising the subject of discrimination "without hard data."

Men are not the only defenders of the profession. Betty Lou Custer, Executive Secretary and Director of Public Relations of the St. Louis Chapter, AIA, cites a survey she made by mail of 12 architectural offices cross-country, to conclude "there's no discrimination at all." She is emphatically against Women's Lib, believing that this movement seeks undue benefits and recognition for women. Her own schedule (daytimes for the AIA, evenings for her practice) exemplifies her belief that "you can't be an architect part-time; you have to be dedicated." She has been asked to write an article on women in architecture for the *AIA Journal*.

A growing number of women, however—long out of school or still "in the pipeline"—know second-class professional status on a first-hand basis. Few have been comforted or energized by the Women's Liberation movement. "I thought it was just me," says one woman in her mid-forties. Many have been silent for 20 and 30 years. The times were never right for speaking out, for sharing humiliation and anger with men or other women, or for attempting to change the situation.

"Hard data" on a broad scale is not available. However, an intensive study of 25 women architects (plus an equal number of women lawyers and doctors, and 75 men to match) has just been tabulated by its authors, Kay Standley, Ph.D., and Bradley Soule, M.D., both with

the National Institute of Child Health and Human Development. (Jo Ellen Standley, an architect and Kay's sister, also assisted.) The women architects reported considerable discrimination: in admission to the profession, 42% of the women; acceptance by peers, 39%; evaluation by professors, 27%; acceptance by clients, 50%; hiring practices, 65%; promotion, 69%. Interesting to the study's authors—a psychologist and psychiatrist, respectively—is the fact that 31% of the women architects say they've received no "undue discrimination," a question asked "almost tongue in cheek," according to Kay Standley. (How much discrimination is too much? Are women simply prepared for a certain amount?)

The following incidents must go beyond "acceptable" limits. Each is a true story, one of a growing number that women are gradually revealing about their professional lives.

- A British woman worked six years for a firm in the Boston area before attaining the level of responsibility she had enjoyed in Britain. She was not, however, made an associate. When she decided to move on, her projects were divided among several men, all associates in the firm.

- A woman who recently graduated from Yale, and had almost a year's office experience, was hired at \$1 an hour less than a man who had no experience. She asked him to speak to their employer but he declined, afraid he'd lose the dollar. At her insistence, the employer "remedied" the situation, raising her hourly wage 50¢. (Another woman, registered for years, was doing the same work as men earning considerably more; when she asked for a raise she was told, "What are you complaining about? You're the highest paid woman in the office.")

- In the midwest, the gala dedication of a prominent public building was attended by John F. Kennedy, other dignitaries, and the male principals of the firm. The woman architect who designed the building was not invited.

- On a young designer's first visit to a project she had taken over in mid-construction, the construction administrator from her office and the workmen took



her up the outdoor service elevator at top speed, through open wells, and swinging over steel beams 14 stories in the air. The woman learned later (not from the construction administrator) that this wasn't exactly standard practice.

- A new graduate from Cooper Union found herself increasingly asked to do secretarial work. When her employer decided to move the bulk of his practice to the suburbs and leave only one person in the city, he asked her to type this ad: "Office to share with drafts-woman who answers phones or whatever . . ." She typed the ad, leaving out her own part of it, and quit.

- At an architecture school in California, a woman (a foreign student) responded to a local architect's call for help on a two-week charette. She kept declining his invitations to dinner, claiming the pressure of work. On the last day she finally accepted, and it soon became clear that unless she granted him her favors she would receive no check for her work. "You can put your check in your ear," she said, and walked out. He did not pay after receiving a call from the department head, and when the woman herself called, he threatened to report her to the government for working on a student visa. She was never paid.

#### Postures and attitudes

It would be comforting if such examples reflected the attitudes of the few reactionary practitioners found in any profession. But these and similar incidents are from the most successful offices in the country, the most prestigious design firms.

An article in *The New York Times*, April 11, 1971, on women employed by Marcel Breuer & Associates, was planned as public relations (six women! count 'em, six!). It backfired when one woman "said she'd been bypassed several times in the income-sharing program that the other job captains and the partners [all men] enjoy. It happened because she is a woman, she said. But when she threatened to quit, she was told it had been an oversight and was immediately made a participant in the program." Checking now with this woman, who had been with the office nine

years, one learns that by mutual agreement she took an extended vacation that August—"they ran out of work for me, and I wanted to visit my family in Europe." When she returned in November, the office told her they'd understand if she took another job as they still had no work for her.

Men are struggling to take the proper posture. In his President's Report to the last AIA convention, Max O. Urbahn spoke about women. Strongly urging that they be encouraged to enter the profession and make their maximum contribution to it, he added, however, "I hope they will not find me patronizing if I suggest that they may have, not just equal, but unique contributions to make to the cause of a more humane environment." When asked to define these unique contributions, Urbahn suggested that "innovative living patterns" might come from women, as opposed to the more "regimented" designs from men. Undoubtedly well-intentioned, his explanation unfortunately suggests that men have little ability

But the plea has changed. Today, the responsible woman architect rejects these sentiments as a kind of female chauvinism; she also rejects them as the product of a male chauvinism that sees women operating only in certain "female" areas. Today, women believe their role in architecture should be as broad as the field itself; women as a group have no "special contributions" setting them apart from men. (Women as individuals, of course, do have special contributions, and one of the major problems for a woman professional is getting the work she is qualified to do—no matter how unusual it is for a woman to do this work—and, alternatively, achieving respect as a professional if she chooses to specialize in an area considered "woman's work.")

#### How many women?

No one knows how many women are in the profession, are registered, or are even members of the AIA.

The best information on AIA membership comes from a tally of women members made by the AIA staff in 1969. The total

women often find fewer barriers to entrance into the relatively new and growing occupations not yet stereotyped as 'men's jobs.'

In the 1969 *Handbook on Women Workers*, a compendium of facts published periodically by the Women's Bureau, the word "architecture" appears not once in the index or any tabulation. But women remain a small part of many professions, says the Bureau of Labor Statistics—1% of engineers, 3% of lawyers, 7% of physicians—despite growth in these professions.

Women generally earn about \$3 for every \$5 earned by a man, although this figure is as high as \$3.33 for "professional/technical" workers (four million of the 30 million women employed). This differential doesn't necessarily mean that women are receiving unequal pay for equal work; it reflects the fact that women are more likely to be in low-echelon jobs. Actually, only 3% of all women in the private sector earn more than \$10,000 a year, according to a White House staff member who is recruiting women into high-ranking government jobs. In fact, women's income relative to men's has deteriorated in most occupations in the last 15 years, during a time when the number of employed women has hit a record high. Women, today, comprise two-fifths of the labor force.

How many women are studying architecture? David Clarke, Executive Secretary of the Association of Collegiate Schools of Architecture (ACSA) reports "a 7% increase in women last year [1971-72, over 1970-71], and this year it's even bigger." But while the number of women is increasing, the relative position is not improving. In 1971-72, for instance, the ACSA statistics for U.S. schools show 23,569 full-time students in architecture and 1,509 part-time students; the 1,500 women students were 5.9% of the total. In 1968-69, however, with 20,795 full-time students and 1,183 part-time, the 1,185 women were 5.4%.

*Time*, in its special issue on "The American Woman," March 20, 1972, made this single observation on the profession: "Women architects have fared even worse than painters. Only 6% of the students in archi-



The times were never right for speaking out, for sharing anger and humiliation, or for attempting to change the situation.

to create "innovative living patterns" (which is absurd) or that women can only operate in this area (which is awkwardly close to saying that women should all design kitchens).

It is not entirely a man's idea that women should stay in the kitchen in their professional work. Lulu Stoughton Beem, writing in *Inland Architect* in October 1884, asserted proudly: Women are naturally better judges of color, better in the blending of fabrics, besides knowing intuitively what is wanted about a house—wants too small for men to perceive . . ." The magazine reprinted this in December 1971, under the headline "Women in Architecture: A Plea Dating from 1884."

was then 233; it is now estimated at 250 to 300. Total corporate membership in 1971 was 23,238.

Reliable statistics on the number of architects will soon be available in the Detailed Characteristics volumes of the 1970 census. Meanwhile rough estimates come from Elizabeth Duncan Koontz, Director of the Women's Bureau of the U.S. Department of Labor: 33,000 registered architects were employed in the U.S. as of late 1970, according to the Bureau of Labor Statistics, about 4% of them women. There were about 8,000 urban planners, about 20% of them women. This difference is "not too surprising," says Ms. Koontz, "since



itecture schools are women, and only 1% of the members of the American Institute of Architects. In art, of course, statistics are not so important as the quality of talent, but it is hard to believe that women are as untalented as the statistics imply."

Aptitude measurement is the specialty of the Johnson O'Connor Research Foundation and its Human Engineering Laboratory, which has tested 300,000 people over the past 50 years. Of 22 distinct aptitudes—finger dexterity, tonal memory, "graphoria," etc.—men and women are equal in 14, women excel in six, men in two. These two aptitudes are grip, or physical strength, and "structural visualization," or the ability to visualize things in three dimensions, an ability that "seems central to the technical/scientific professions (engineering, architecture, surgery, mechanics, building)." However, "the exact figures are one woman in four, one man in two." A paper on "The Potential of Women" by the Human Engineering Laboratory [347 Beacon St., Boston, Mass., 02116] suggests that only cultural bias keeps these professions from even remotely approaching a 25% female population.

#### Why so few?

The attitudes openly expressed in the schools offer a partial explanation:

- The dean of one Ivy League school of art and architecture was approached by a young woman at a party. "I'm one of your students," she said. He was trying to place her. "In graphics?" he asked. "No, architecture." His reply was quick: "Women shouldn't be in architecture."
- The dean of another Ivy League School last year questioned his Committee on the Status of Women as to whether women should even be encouraged to enter the design professions "because of the stamina involved."
- A *design critic* at still another major school announced over TV that he couldn't take seriously a certain gifted woman in his class, since she would "just go out and get married."
- When the NYC Commission on Human Rights asked several eastern architectural schools to recruit more women students, one dean was unenthusiastic,

said *The New York Times*: "Women approach architecture differently from men—they're either too finicky or too controlled," he said.

With these attitudes, a woman's application is likely to be very carefully scrutinized or very quickly dismissed. (One young woman tells of two schools "losing" her application.)

But the problem begins earlier. Beatrice Dinerman's research (Dec. '69 issue) discloses that "close to two-thirds" of a representative group of women architects received no encouragement from counselors or faculty members to enter the profession; over half were "actively discouraged" from this choice.

The AIA hopes that its new brochure, "The new architect," will give special encouragement to women since it includes the photo and comments of a woman as one of the eight people trained as architects. The woman, however, is Fay DeAvignon, President of the Association of

Office, Washington, D.C., 20402, for 10¢.] The series of about ten leaflets is not being continued, however, because of budget restrictions and because of the Bureau's "present emphasis on opportunities for women with a high school education or less."

*So You Want to Be an Architect*, a book by Carl & Carolynn Meinhardt and Alan E. Nourse, M.D. (1969) describes, in one chapter, the lives of seven hypothetical architects. Carolynn Meinhardt recalls that she and her husband wanted to give the woman architect her own practice but Harper & Row ruled it out. The woman ended up an associate in the Cooperative Firm (at \$30,000 a year); her husband became an associate in the Huge Anonymous Firm (at \$50,000).

Another in this genre is New York Life Insurance Company's "Should You Be an Architect?" by Pietro Belluschi. This was No. 7 in a 57-booklet series, so probably dates from about

en women planners in important positions contributing in major ways to the organizations they serve . . .")

#### School and beyond

The female student will often go through school getting either too little attention ("I had one critic who never gave me a crit," says a recent Harvard graduate), or too much ("I had one critic who would stand three inches away, breathing hard").

She will have difficulty getting financial aid. A woman at MIT last year, denied the official statistics, surveyed virtually the entire department to show that women were denied equal aid. Reviewing the situation, the department revealed that women, although 19% of the student body, received 21% of the scholarships (but far fewer fellowships and assistantships). No one was refused scholarship aid, but the administration revealed that women asked for less money than men, and one woman speculated that perhaps they were afraid of being refused. MIT's Assistant for Minority Affairs noted that while talk is good, action is better, and since a formal complaint had been filed with two regulatory agencies, the department should immediately counsel every woman on receiving "full per capita aid," should review constraining roles in which women are cast, and should make immediate restitution where pay discrepancies exist. MIT has now totally changed its system of distributing money. (At Harvard, meanwhile, when asked whether women receive equal aid, Dean Maurice Kilbridge replied that women "probably need less money," since many are married. Women are extremely bitter over this attitude, especially since many are married to men who have no trouble getting financial aid.)

The female student will often experience hostility from male students. One woman recalls her first day at school five years ago. Another student accosted her: "You'll never have to support a wife and children; you're just taking jobs away from us."

"I don't want the men to accept me," says Fay DeAvignon, who will soon graduate from Boston Architectural Center; "I want to be part of it." In her



Why so few? The attitudes openly expressed in the schools offer a partial explanation.

Student Chapters, AIA; she regrets that "it looks like you have to be a special person to be a woman in architecture." Other women have a different criticism: realizing the lack of "role models" in their own early lives, they suggest that showing women at work in the profession would have made a stronger point. Each of the men in the folder speaks about the specifics of his work.

A 1970 leaflet from the Women's Bureau—"Why Not Be an Urban Planner?"—is not as lively or handsome as the AIA folder, but includes photos of a number of women at work, some identified as working part-time or on a flexible schedule. About 50,000 of these folders were distributed. [Available from the U.S. Govt. Printing

1955, says New York Life. It was reprinted in *Scholastic Magazine*, April 1970, and appears in a paperback compilation of the full series (latest revision, 1969), which had a distribution of two million copies before being discontinued last December. "I cannot, in whole conscience, recommend architecture as a profession for girls," writes Belluschi. "I know some women who have done well at it, but the obstacles are so great that it takes an exceptional girl to make a go of it. If she insisted on becoming an architect, I would try to dissuade her. If then, she was still determined, I would give her my blessing—she could be that exceptional one." (Paul Oppermann, on planning, thought he was being more hopeful: "I know a doz-



remaining time with ASC/AIA, she hopes to start an action program, asking the deans to increase their percentage of women students. Some schools are already doing so—MIT was aiming at a 33% quota, and Columbia's new freshman class of 34 includes 16 women (without special recruiting effort). The ACSA has just issued three resolutions aimed at bringing in more women students, and has a new committee on career documents and recruitment. "But don't make too much out of these resolutions," says Robert P. Burns Jr., head of the department at North Carolina State, and retiring secretary of the ACSA; "they're kind of motherhood and the flag."

Somewhere along the line, the woman student must resolve what is being called a "fear of success"—a fear that by attaining fulfillment as a professional person she will risk fulfillment as a woman, that she will disappoint her parents' *real* wishes for her and be in severe conflict with society's expectations. Men experience no such conflict between fulfillment as a human being and as a man. Matina Horner, a clinical psychologist and the new 34-year-old president of Radcliffe College, has been investigating this problem with extraordinary insight.

There is also fear of failure. "Do so many women architects marry other architects because they despair of making it on their own?" asks a young woman. Marriage to another architect does not end discrimination for the woman architect. Her professional concerns will often be secondary to her husband's, her name will often be omitted from the firm's name and her job may even consist of "all the work I don't want to do," as one husband put it.

But married or single, the woman architect finds nothing in the tweed-jacket-and-pipe image that helps her to get jobs. The message that "some architects are more equal than others" is nowhere clearer than at the Harvard Club of New York City, where a man with an M. Arch. from Harvard enjoys full membership while a woman with an M. Arch. from Harvard joins with "Ladies' Signing Privileges"—and even then is allowed in the main dining room only during limited hours, and is never allowed in the library, bar, squash

courts, etc. The American Civil Liberties Union and NYCLU have brought suit against this Harvard Club for "illegal, discriminatory and unconstitutional" practice. (All other Harvard Clubs grant women equal membership.)

#### WARM, WALAP and others

Early in 1971, some 200 women (and, inadvertently, one man) were asked to join in a Women's Architectural Review Movement. The questionnaire and quiet manifesto came from Regi Goldberg, a young architectural designer with Ulrich

"festival" of fall activities was planned. The Alliance hopes to gather names and addresses of every woman in the U.S. who was now, or had ever been, a student of architecture. [AWA's address: 18 E. 13 St., New York, N.Y. 10003.] Active participants hoped their enthusiasm would spread. "I've never worked with a group before, and I'm not the Women's Lib type," said one AIA member, "but this is the right organization for me."

A parallel group began in the Boston area last November as WED (Women in Environmental

Louis) and the University of Minnesota had formed local organizations, and in 1922 they formed the national organization Alpha Alpha Gamma for "mutual encouragement and the exchange of ideas among women in architecture and related arts." At its peak, the group had ten student chapters and seven alumnae chapters; when graduates outnumbered undergraduates, it reorganized (in 1948) as the Association of Women in Architecture, with Alpha Alpha Gamma its undergraduate affiliate. Today, only one chapter of AWA remains—60 members strong, in Los Angeles—although Dorothy Gray Harrison, President, reports that several schools inquired about starting or reactivating a chapter. The group runs meetings and tours for its members, has an annual exhibit, raises money for small scholarships. Since 1960, it has produced a survey of employment opportunities for women, with fresh data gathered every two years from almost 100% of the architectural and engineering offices in L.A. "Maybe this information gets passed along better by word of mouth," says Ms. Harrison, but the periodic questioning made people know they were on record." [Her address: 2115 Pine Crest Drive, Altadena, Calif., 91001.]

The Society of Women Engineers dates from 1952. It has 1,100 members from all branches of engineering—and a few from architecture—in its 22 regular sections and 28 student sections. Numerous committees work on employment opportunities, admissions, professional guidance, etc. For 22 years, SWE has held an annual convention, and for the past two years has sponsored a conference jointly with the Engineering Foundation (proceedings soon available) on "Women in Engineering." [SWE is at the United Engineering Center, 345 E. 47 St., New York, N.Y., 10017.]

The National Association of Women in Construction has existed only since 1955, but at last count had 5,000 members in 158 chapters. Two years ago it set up a national Executive Office in Washington, D.C. [1000 Vermont Ave., N.W.], and last year announced its "Operation Woman Power," a comprehensive educational program to help more women qualify for responsible positions in the con-



**"Do so many women architects marry other architects because they despair of making it on their own?" asks a young woman.**

Franzen & Associates. She explained her proposal for an exposition (with seminars and lectures) as "an attempt to educate ourselves, our male colleagues, the media, the universities, architectural historians and critics" about the "contributions and capabilities of the female architect."

The response to WARM was only lukewarm. Of the moderate number replying, only a few wanted to exhibit their work with other women. But Regi Goldberg persisted. Early in 1972, she received the support and facilities of the Architectural League of New York, and with seven other women, planned an open meeting in early May: more than 80 women attended.

During the past summer, workshops met regularly, discussing ways to serve the profession and the newly named Alliance of Women in Architecture. An Education Workshop made plans to reach young women (through career counseling, the media, and a slide presentation of women at work in the profession). A Discrimination Workshop took steps to gather precise data and advise women of appropriate recourse. A Steering Committee took shape. A newsletter began to appear. A concentrated

Design); 23 women were brought together by Dolores Hayden, now a graduate of Harvard. By the time of the first open meeting in March 1972, the group had renamed itself WALAP (Women Architects, Landscape Architects, and Planners). Its first meeting drew 100 women.

WALAP has been particularly concerned about changing the design professions. One workshop has tackled the question of serious part-time work for women—and for men—and produced the article on flexible schedules appearing on the following pages. (WALAP also protested to the state registration board, which gives no credit for part-time work.) Another group is considering an all-woman office, to be organized on a cooperative and non-hierarchical basis. WALAP has also launched a campaign against sexist advertising by the manufacturers of building products, and is pressing for change on various other levels—locally, in the architecture schools, and nationally, in the professional organizations. [WALAP's address: 39 Martin St., Cambridge, Mass., 02138.]

A much earlier group still exists. As early as 1915, women students of architecture at Washington University (St.



struction industry. The three-phase program includes 12-week courses in the basics; 26-week courses in specialized subjects; and reimbursement to NAWIC members "for the cost of junior college and university courses successfully completed in subjects leading to degrees in architecture, construction or engineering."

#### ASPO and AIP respond

Women planners are following a different route, finding favorable response from two existing organizations—the American Society of Planning Officials and the American Institute of Planners.

In October 1971, ASPO issued an impressive document, *Women in Planning: A Report on Their Status in Public Planning Agencies*. "This report substantiates the commonly held beliefs that women are underpaid, denied supervisory responsibility, and restricted from rising to positions of responsibility and authority in planning agencies." The study was undertaken largely because women planners (catalyzed by Planners for Equal Opportunity) had challenged ASPO at its 1970 national conference; in response, ASPO set up a Women's Rights Committee, and the committee charged

en professionals, not the full 623 agencies responding last year to ASPO's annual questionnaire on expenditures, staff and salaries. Clearly, then, the overall picture for women planners in public agencies is "even more bleak" than this report indicates. The report also reviews personnel policies—55% of the agencies give maternity leave; none gives child care; almost one-quarter give flexible schedules. [The 28-page report is available for \$6 from ASPO, 1313 E. 60 St., Chicago, Ill., 60637.]

Reactions to the study have varied, says its author, Karen E. Hapgood, Research Associate with ASPO. "Some planning directors showed it only to their women employees." But many agencies asked how to find more women. ASPO will establish a "resource pool" for women planners—simultaneously serving women who want to find a new job or return to the field, and agencies who want to hire them.

Research personnel at ASPO are also developing a proposal "to study the effect or non-effect of the planning process on women as a sub-group in our nuclear family society," reports Ms. Hapgood. "It is the contention of the proposal that planning services exist primarily for the middle-class family"

like to establish a clearinghouse for job opportunities. This is in line with our goal for increasing the numbers and the responsibilities of women in the planning profession." Chairperson of the committee is Diana C. Donald, who is also a member of the Board of Governors.

The AIP Board made a firm commitment to this issue last October, adopting a policy statement and guidelines for equal opportunity and treatment of women planners. The policy is broad: "The AIP affirms that the profession and practice of planning is entirely open to women equally with men." Also: "The AIP affirms that societal prejudices are never a justification for perpetuating discriminatory practices against women."

The guidelines cover such practices as *giving equal work assignments* ("Women planners must not be assigned lower grade professional work or non-professional work unless it is also being given to men") and *providing equal access to the profession from within* ("Women paraprofessionals, such as secretaries doing significant planning work, must be advanced and given the same educational opportunities as might be given to male paraprofessionals, such as draftsmen").

The AIP has gone further; in June 1972 the *AIP Newsletter* carried a concise "summary of remedies" for unlawful discrimination in employment. The review was prepared by AIP's legal counsel at the request of the Women's Rights Committee.

The committee expects to make a major report to the Board of Governors at the Boston Confer-In, October 7-11, "stressing specific goals for numbers of women who should be employed by planning firms and agencies, and creating a means for dealing with violations of the women's rights guidelines adopted by the Board last October." It is possible that opposition may surface at this point; the work thus far has met no difficulty.

The Boston Confer-In promises to have a good proportion of women among key participants; the program chairman calls himself "a sympathetic supporter of the movement. The conference will also have day care facilities, and a special program session on women in planning is being de-

veloped by an Ad Hoc Committee of Women in Planning (most of them from WALAP).

But this isn't a new perspective for the AIP. An excellent paper on "The Role of Women in the Planning Profession" was given at last October's Confer-In West, in San Francisco, by Trudy Parisa McFall, Program Manager of the St. Paul Metropolitan Council and one of four women AIP members in Minnesota. She identified major problems facing women in the profession, and presented some realistic approaches to change, with recommendations directed to the AIP, to individual agencies, and to women planners themselves. [Copies available from the AIP, 917-15th St., N.W., Washington, D.C., 20005.]

#### The AIA reacts

Meanwhile, this past spring, the New York Chapter/AIA was inviting "members, ladies and guests" to its Annual Luncheon—this, in a chapter with some 27 corporate members, 19 associate members, 1 professional associate and 4 members emeritus who are women. Quite a few women in the chapter (and a few men, too) found this salutation objectionable. (Are women too thin-skinned? Quite a few men—and a few women, too—would say so. But labels are important. More and more professional women are enjoying the new salutation Ms., which considers a woman as a person in her own right, with her marital status irrelevant in the business context. Men, after all, have always been addressed in these terms.)

On the national level the AIA is at least peripherally aware of the new women's movement in architecture. Soon after the WARM questionnaire went out, Regi Goldberg was invited by AIA's Director of Research Programs to join a "Convention Group" aimed at making Houston "a turning point in the history of AIA Conventions." Her proposal to give a platform to all sub-groups (including women, immigrants, rural architects, young unregistered) drew no enthusiasm, she recalls.

Actually, the Houston convention did have a women's session; the AIA asked Gretchen Minnhaar, an architect with her own office in Grand Rapids, Mich., to run an informal dis-



Clearly, then, the overall picture for women planners in public agencies is "even more bleak" than this report indicates.

the staff to investigate the status of women professionals.

Among the report's findings: a man with a master's degree and over ten years of experience *earns 26% more* than a similarly qualified woman; even at entrance level, and *under civil service*, men earn 6% more. Unequal standing is not the result of unequal education since master's degrees are held by 40% of the men and 41% of the women.

ASPO surveyed only the 163 public agencies employing wom-

—not for various individuals "and particularly not for women."

AIP also has a Women's Rights Committee, set up when 150 women responded to an AIP questionnaire on discrimination. A second questionnaire went out recently, to the 300 women who are 6% of AIP members: "The Women's Rights Committee of AIP hopes to identify qualified AIP women for offices and other activities within the Institute [such as testifying on federal legislation, etc.] and would also



cussion. Some 20-30 women (and several men) attended. A similar event at the 1971 convention also drew 20-30 women. "There's no continuity between one convention and the next," says Ms. Minnhaar. On her own, she has been counseling young women on architecture, and two girls who entered the field on her advice have just graduated. She is "very much against a separate organization for women in architecture. The fact that we are women shouldn't make us different."

Also at Houston, the AIA received a proposal signed by the women's groups in Boston, LA and NYC. This "proposal for consideration and action" was prompted by an AIA-recommended book, *Opportunities in an Architectural Career*, which seemed to acquiesce in the unequal treatment of women. Asking for "immediate non-endorsement" of this book, the proposal then asked for a serious effort to achieve broader representation in the profession, a national plan to bring students into contact with architects, and a report on the status of women in the profession.

"There was no time to put it in the form of a resolution," says Fay DeAvignon. "Also, they should have gone to the student organization to see what's already being done." (No effort by student chapters seems to be aimed specifically at bringing women students and women professionals together, however, or improving the status of women in architecture.) The proposal never became a "resolution" offered to the full AIA membership, but it was noted in the convention transcript, with the request that the criticized material be revised before being published again.

But the rest of the proposal seems to have been swept under several rugs. According to James Scheeler, Deputy Executive Vice President of the AIA, "It's my understanding that Hugh Jones is following through on some of the questions raised." Hugh Jones, however, says he was asked to bring the proposal to the Resolutions Committee simply because he is the Director for New England. He suggests that the women work up something for the 1973 convention: "You can put darn near anything across if you do it right."

Asked whether the AIA is considering any kind of effort or Task Force on women, Max Urbahn, President of the AIA, replies that "Sally Harkness is reporting to the Board this fall on steps to be taken." Says Ms. Harkness, "I haven't heard about it if I am; it's a surprise to me." (Sarah P. Harkness is a non-voting member of the Board; Fay DeAvignon, a voting member, is the only other woman on the 30-member body.)

Sarah Harkness, a founding partner of The Architects Collaborative, believes that the AIA is "doing very well on its own—asking me to be on the Board is one thing, and they'd like to get more women involved in committee work. The more I see of the AIA, the more I respect them. They're really trying."

The first woman on the Executive Committee of the New York Chapter, Judith Edelman, has said that she is "distressed to find the AIA such an exclusive gentleman's club." She thinks that more women should join the AIA as one route to participating fully in the profession, and especially if they're going to make their presence felt."

Some women are concerned about the development of women's groups outside the AIA. "It would be better to work through the AIA where all the machinery exists," says one New York woman, "and avoid a fragmentation of efforts." But she deplores a decision by the Chapter's Equal Opportunity Committee not to release a report on prejudice "because it would make everyone hostile." The committee has broadened its scope to include women this year, but has developed no program as yet. "This spring we were getting together names of women working in architecture," says a woman on the committee; "we were using Regi Goldberg's list. For the summer we decided to let things run along, so as not to overlap the AWA."

Especially disturbing to some AIA women is the case of *l'Union Internationale des Femmes Architectes*. The UIFA was organized in 1964 "to create bonds of friendship and of confraternity between all the women architects of the world . . . second, to determine the place that the woman architect has actually in the whole world and in the

different countries, making it clear that she doesn't wish to reserve to herself a purely and exclusively feminine field, and that, on the contrary, she wants to work in close collaboration with her masculine colleagues." [UIFA's address: 14, rue Dumont d'Urville, Paris XVI, France.] Its 3rd International Congress is scheduled for September 12-15 in Roumania, where 600 architects—one-third of the profession—are women. One of UIFA's five Vice Presidents, and the only American officer, is L. Jane Hastings, a Seattle architect with her own practice.

Last November, Ms. Hastings wrote to William L. Slayton, Executive Vice President of the AIA, asking for funds to attend the Bucharest meeting. In

existence.

Actually, says Payne, "we've encouraged the UIFA to coordinate with the UIA; we don't want to split our allegiance between two international agencies." But the UIFA is not likely to "coordinate" with the UIA, since the latter is "unanimously opposed" to a special women's group and has been successful in curtailing official participation in UIFA by several Iron Curtain countries.

## Legal action

Male-dominated professional societies will respond to the women's movement as they choose, and in their own good time. The only thing a reluctant organization can lose is its credibility—and a few members.



**Women will resort increasingly to legal action against discriminatory employers and universities.**

December, he answered that limited funds would not allow the AIA to assist. He assured her, however, that during 1972 the reorganized Committee on International Relations would be "seeking your input into its programs." This hasn't happened.

Women who know of the UIFA wonder why the AIA has made no mention of the Bucharest conference while announcing full details of the International Union of Architects conference in Bulgaria later the same month, and in fact contributing to the expense of four U.S. delegates. Maurice Payne, AIA Director for International Relations, says that information on the women's conference was received only in June, too late to be published in the *AIA Journal*. Several years ago, the *Journal* almost did a report on the 2nd conference of UIFA, but this "fell through" according to the editor. The Public Relations office, which publishes the *Memo*, says it has never received any information on the group and is not aware of its

But women will resort increasingly to legal action against discriminatory employers and universities, and these defendants can lose face and money alike.

A complaint filed in the spring of 1970 by 11 women planners at the Boston Redevelopment Authority is not yet settled; according to *The Phoenix*, a local underground newspaper, Massachusetts Commission Against Discrimination "can't decide" how far back in time to go in awarding the women damages. All but two women in the Planning Department joined the action, and their statistics tell an appalling story of discrimination on many levels—regardless of years of experience, for instance (given an advanced degree as a constant), the highest paid woman didn't earn more than the lowest paid man. BRA's response—uncooperative and untruthful, according to the "BRA Eleven" and others—suggested to one observer that sex discrimination is so thoroughly "inherent in the BRA's world view" that the BRA sim-



ply cannot comprehend the case.

A legal action takes its toll; several of the 11 were fired at once (which is clearly illegal) and their subsequent case over that was lost in Equity Court. A man who filed a supporting affidavit, saying that his female supervisor was better qualified, was also fired. The BRA is now mostly hiring male planners.

Another complaint that has dragged on is Franziska P. Hosken's with HEW. The third woman to get an M.Arch. from Harvard's Graduate School of Design, Ms. Hosken has twice been refused a faculty position at the GSD. She charges that the selection method is "discriminatory, one-sided and totally undemocratic," and that her qualifications "are superior to those of many" who now teach there. Although HEW seems ready to find that women have been denied equal opportunity on the GSD faculty, there are signs that Ms. Hosken will not be one of the women chosen by the GSD to fulfill Harvard's Affirmative Action Program. [Full details of a school's AAP, once it is approved, can be learned by writing to Public Information, Office for Civil Rights, HEW, Washington, D.C., 20201.]

Failure to comply with an Affirmative Action Program could mean cancellation of a university's federal funding, so the architecture schools will be kept on their toes by university administrations, by HEW, and by minority groups. David Clarke of ACSA [1785 Mass. Ave., N.W., Washington, D.C., 20036]. He suggests that this list will help to place the few people who are available or will at least get everyone off the backs of the architecture schools struggling with a scarcity of candidates.

But there is no substitute for local pressure. WALAP has made several protests to Harvard's GSD, despite the existence of the school's Committee on the Status of Women—or actually because the committee was largely selected by the Dean (to support his position of defensive inactivity, say some) and appears to be his excuse for the school's lack of a positive program. WALAP's latest action is an "open letter" urging GSD graduates to make all contribu-

tions to the GSD conditional on "funded, functioning programs" that show a commitment to change. WALAP also protested GSD's questionnaire to its alumnae last year, charging that the GSD was basing future policy on women's past role in the design field, "whereas this role is now changing." (The questionnaire asked, among other things, for the names of "outstanding" women for the faculty; the GSD's Committee on the Status of Women later protested that women should be hired on the same basis as men—they should have to be "qualified," but need not be "nationally prominent.") The questionnaire turned up about 40 names. The dean admits that not all were followed up.)

New legal channels are available to women. The Equal Employment Opportunity Act of

en who have been compliant participants in patterns of discrimination.

#### Female futures

The future will surely bring more than statistics and lawsuits. Creative energies are already turning towards research. An extraordinary first draft of "A History of Women in Architecture" has just been completed by Doris Cole, a young architect living in Cambridge, Mass. She traces women's concern with architecture in America—their practice of architecture—back to Indian times. She discusses the proliferation of "etiquette books" on domestic architecture in the 19th Century, and describes the constant attention women gave to practicality rather than monumentality. She traces the expansion of women

who have been meeting together regularly. "Initially we decided to restrict the meetings to women only, until we had achieved some degree of self and group identity; presently we are considering methods to begin a dialogue with the men in the school. We seem to have arrived at the point where we can see that female liberation is going to be a limited good unless it is accomplished along with male liberation."

New and varied women's groups will spring up. Dolores Hayden of WALAP in Boston is now working in the Department of Landscape Architecture at the University of California in Berkeley; she has announced herself as a central contact for those "interested in starting a chapter" in the Bay Area.

Women active in the profession will be increasingly drawn into education. Denise Scott Brown, who was recently invited to speak to women students at Kansas State reports that the dean believes "the best thing the girls can see is a woman."

For some students, a women's design program or project will be appropriate. In the unique program at California Institute of the Arts, a dozen women last year attempted, in an intensive way, "to discover the design implications of the reawakening of feminism." They hope to continue this year, perhaps designing "utopian feminist environments," perhaps creating maps that pinpoint areas of concern to women. The group is compiling a grand registry of all women involved in design—everything from graphics design to product design to urban design. [Women's Design Program, School of Design, Cal Arts, Valencia, Calif., 91355.]

Research will expand. Roslyn Lindheim, the only woman who is a full professor of architecture at Berkeley, says that "as the role of women changes, so will the design of physical form; no one is yet looking at this seriously." She herself wants to study "new environments for birth," considering birth a natural phenomenon to be joined by fathers, and not an "illness" requiring hospitalization. A psychiatrist and sociologist are also part of this project (not yet funded); ideally, it could result in the creation of such an environment. Prof. Lindheim is exploring another phase of wom-



**Laws already on the books will surprise many women who have been compliant participants in patterns of discrimination.**

1972 (which amends Title VII of the Civil Rights Act of 1964) now covers employees of state and local government, and as of March 1973 will cover private employers of 15 or more persons instead of 25 or more; this legislation prohibits discrimination on the basis of sex. [Further information: Equal Employment Opportunity Commission, 1800 G. St., N.W., Washington, D.C., 20506.]

And, as of April 1972, the Office of Federal Contract Compliance requires the inclusion of women in the Affirmative Action Programs of federal contractors; cut-off points are a \$50,000 contract and 50 employees. This is the so-called "Revised Order No. 4" requiring specific goals and timetables in the hiring of women. [Further information: OFCC, Employment Standards Administration, U.S. Department of Labor, Washington, D.C., 20210.]

These laws, already on the books, will surprise many wom-

beyond the domestic domain and into the realm of the community. She spends a chapter on the unique Cambridge School that began in 1915 when five women hired two instructors to tutor them in architecture. It is a fascinating history, with thoughtful views on the present and future of women in the profession. "It's a little out of fashion to study history," says Ms. Cole, "but it's important to know where you came from to know where you are and where you are going." Her work deserves to be published and widely read.

What else for the future? Student groups will proliferate, exploring the role, problems, potential, of the professional woman. Vivian Cruz Barsocchini, a planning student at UCLA, reports that "very few of the women in the school talk to each other, yet communication has opened up in the whole school" because of a group of 15-20 women (planning students, secretaries, architecture students)



en's lives in an interdisciplinary seminar on "environments for the aged." She points out that most of the aged are, in fact, women.

Research in another direction is being done by Lucinda Cisler, who has a B.Arch. from Yale and an M.Arch. and M.C.P. from Penn; more recently she has been heavily involved in the women's movement (on the national board of the National Organization for Women, etc.). Ms. Cisler has been awarded an Arnold W. Brunner scholarship by the Architectural League of New York to study "Women in Architecture: The Influence of Professional Education." During the current school year she will visit various schools, and will query many other people—in all age groups, and in all environmental fields ("one thing I'm interested in is seeing how women might have been diverted from architecture"). Men and women are invited to join this study [P.O. Box 240, Planetarium Station, N.Y. 10024].

The structure of the workday will change, and a flexible schedule for men and for women (see the WALAP article, following) will be as great a change in our time as the eight-hour day was decades ago. Already, a number of employment agencies in major cities, and a national non-profit organization called Catalyst [6 E. 82 St., New York, N.Y., 10028] are dedicated to the "optimum use of America's trained womanpower," as Catalyst defines it. But like the eight-hour day, the part-time work schedule for women with a full-time home schedule will be only a marker along the way. Young professional women are looking increasingly toward "egalitarian marriage," where responsibility for home and family is shared equally—and joyfully—by both partners. The liberation of women depends on—and promotes—the liberation of men.

It is, then, a time of great awareness among women—and great anger. It is also a time of great creative ferment. Women see themselves as part of a world where there are more than enough problems to go around, more than enough challenges to occupy the best minds of both sexes. Women want "in" to this world.

—ELLEN PERRY BERKELEY

# THE CASE FOR FLEXIBLE WORK SCHEDULES

BY WALAP

This article grew out of a series of discussions among a group of women in architecture, landscape architecture and planning in the Boston area. We met to discuss issues of mutual interest, and for many of us (particularly those with families) the subject of part-time work was important: the difficulty of finding it, the lack of Registration credit in Massachusetts, the low status and image, and the generally unfavorable economic conditions accompanying it. We soon came to question the viability of the standard work schedule into which we are trying to fit ourselves.

A flexible work schedule is mandatory at the present time, if the capabilities of women are to be realized. Women find that their childrearing years overlap a critical period in their careers and are forced to make an all-or-nothing choice between having a family or continuing their professional development. Women should be entitled to work if they want to or have to, in whatever way is possible for them.

The tendency in many planning and architectural offices, however, is to separate from the "committed" professional anyone who suggests a more flexible work schedule. The latter is relegated to "low status" jobs—for example, conducting neighborhood surveys (in planning) or drafting details (in architecture). The serious full-time professional on the rise goes to client meetings and is groomed for an executive or administrative position. Lacking serious part-time work opportunities, women must often drop out during the critical years of career development and lose work continuity and the opportunity to rise in their professions. The real question is whether the capabilities of women are worth the adjustments that must be made by an office. We believe they are, not only because good professionals are always needed, but also because a person

*(continued on page 66)*

**WALAP** is a group called Women Architects, Landscape Architects and Planners, organized earlier this year in the Greater Boston area (page 49). The following people contributed to this article: Andrea Leers Browning, Joan E. Goody, Lisa Jorgenson, Shelley Hampden-Turner, Sarah P. Harkness, Joan Forrester Sprague, Jane Weinzapfel.







# NAVAJO SCHOOL: A STUDY IN COMMUNITY CONTROL

Architects make sure  
that an Indian school  
grows out of local  
values and traditions

The intense interaction between a small Indian community and a group from MIT has created a school. In its spatial qualities and relationships, the school is in the spirit of the typical residential camp (above) and the many-sided **hogan** that shelter a Navajo family.

"When the people of Rough Rock first came to us, asking us to do a school," says Chester Sprague, Associate Professor of Architecture at MIT, "we said no, the Navajos should do it." Sprague recommended that MIT work with the Navajos to design a process enabling the community to design its own school.

The result (now in working drawings, with construction funds voted by Congress) is the first school for Indians to be designed as "a Navajo educational experience in a Navajo environment."

The process by which architects and community worked together was intensive and unique. The process was important to all participants—to the MIT students, as an experience of unparalleled educational value; to the mature architects, as a time of professional growth, and further commitment to the idea of community control; and to the Navajos of Rough Rock, as another proud gain in autonomy. (Rough Rock was the first Indian community in the U.S. to be given direction of its existing school by the Bureau of Indian Affairs; others have now followed.)

But the process is also important to others—as a method of approaching any design problem, whether it is in a familiar culture or not, and as a method of working with any client, whether the client is "educated" and articulate or not.

Rough Rock is in Arizona, in the Navajo Indian Reservation that overlaps four states. Struggling to maintain their heritage

and eke out subsistence on this reservation are 120,000 Indians, mostly Navajos.

Rough Rock itself is a scattered community of 1,000 people. Since the Navajos have no village tradition, families live in a 20-mile radius around Rough Rock. Average family income is less than \$2,000—most people are unemployed. Many raise sheep and a few work at construction, but the existing school is the largest single employer. The school is, in fact, the only institution of any kind at Rough Rock.

In 1970, the Navajo board that runs Rough Rock Demonstration School decided with the rest of the community that a new high school should follow in the spirit of the elementary-level Demonstration School. The community should be responsible for running the high school, and for planning and building it. The school should serve the entire community, not just the 250 persons of high school age. (The Demonstration School was already a center for health services, auto repairs, sales of supplies, money lending, eating and meeting.)

The school board contacted Sprague. For several years he had been involved with Indian communities—sensitive to their local needs and concerned with their self-expression and self-determination. Years ago, he began to study Pueblo architecture and village forms, from earliest pit houses to the multi-storied remains in New Mexico. Early in 1970, Sprague and John A. Steffian published a





study on self-help housing, under contract to HUD. A *Self-Help Housing Process for American Indians and Alaskan Natives* drew upon first-hand investigations in Alaska, the Southwest, the Great Plains and Florida. The study aimed "to transform the present federally-directed housing process, with its numerous fragmented acts of inefficient and paternalistic benefaction" into a more efficient process, "accepted, directed and operated" by the users. Its key recommendation was an Advocate Team and a Housing Coordinator on the local level—the one transferring its skills to the native community, the other drawn from the native community—to provide technical assistance that would develop the local capacity to create housing. No governmental action followed this thoughtful study.

Sprague also headed a study (worked on by 15 MIT students, among others) of native housing in the remote villages of Alaska—housing "widely considered by far the most deteriorated in the U.S." One-fourth of the Alaskans, or 60,000 people, are "native": Aleuts, Eskimos and Indians. This research, with Steffian as consultant, looked into different housing types and utility systems, offering schematic village plans and setting up criteria for evaluating them. It is a thorough presentation, but avoids making judgments that must depend on local conditions and priorities. Again, no follow-up from the feds. "They already have a way

of doing things," says Sprague.

The Alaskan research also looked into technological remedies for such appalling health problems as the high incidence of disease caused by zero ventilation in winter. For germ control, Sprague commissioned the design of an ultra-violet device; prototypes are being tested by the Public Health Service.

In all this work, Chet Sprague has honored the knowledge and ways of the Indian, and Rough Rock understood this. "These clients buy us," says Sprague, "but they cherish their own values. At Rough Rock, they asked explicitly for a full understanding of their values—and then gave me a free hand!"

Understanding another culture is never easy; Sprague (again with Steffian as consultant) tried some new ways. (Steffian's previous work has included work among squatters in Peru.) A seminar at MIT gathered anthropologists, students from Harvard's American Indian program, and architecture students from MIT, to talk about Navajo culture—the symbolism of Earth as a vibrant, nurturing element, etc.

Nothing takes the place of seeing the land; "it's so *there*," says Sprague, "you've nothing to relate to but earth and sky." The immediacy in Navajo architecture is also compelling: "When they go out of a space, they want to go directly into another space, or outside; corridors are an inconvenience."

In January 1971, the MIT students went to Rough Rock (the department allows each student

\$300). "We were invited into their *hogans*; we questioned people about the qualities of Navajo space. We showed slides to get their response. They said what they didn't like in the existing school, and we asked what they wanted in the new one. They often said it shouldn't be all traditional."

The MIT people talked to one-third of Rough Rock, mostly through an interpreter. ("That's part of community control, using your own language," says Sprague.) Long discussions followed the meetings with the community. Out of all this searching came a program and a direction. But the participatory process is hard to sustain, says Sprague. "They don't believe it's theirs to run." And authorship is complicated. "I want authorship to be in the community," he says, "but MIT and the students also want a share. And I want some authorship for the form, or at least don't want it to be thought hideous by other architects."

The Navajos are a very private people, says Sprague. The formal and respectful way to greet someone is not to look him in the eye; this invades his privacy. "We listened a lot. We didn't say we knew what to do. We figured they knew."

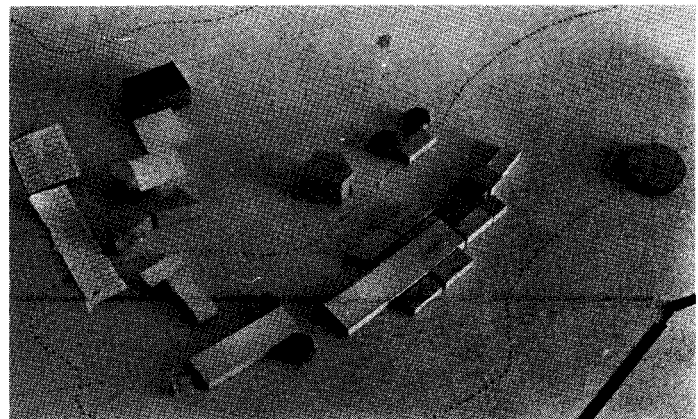
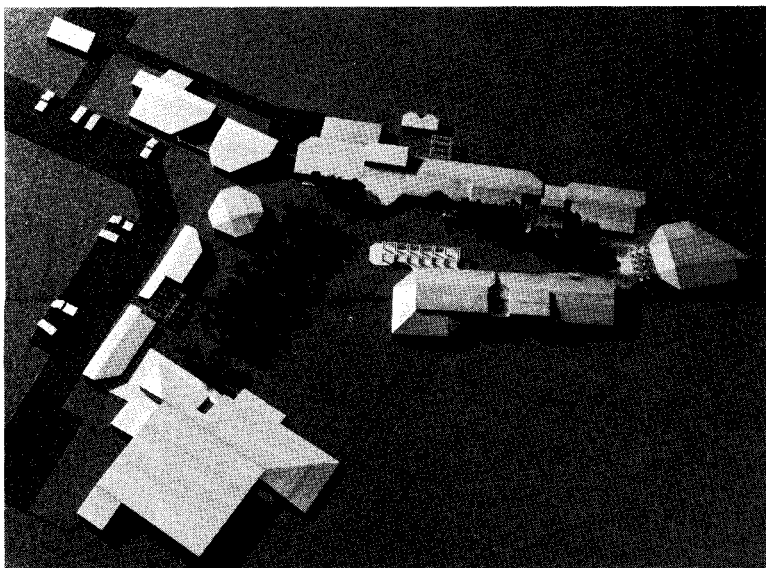
In the end, the MIT people knew how to isolate the choices. They posed three alternatives—small structures in a compact plan; larger buildings; and small buildings in a loose plan. Rough Rock chose the third, and also chose the construction method: a compromise between all local

labor and no local labor.

The design relies on two traditional forms, the polygonal *hogan*, and the "shade shelter." Boxes are avoided as "un-Navajo." There are no corridors. The school is organized as a street—for visible organization and for protection against the southwest winds. There are no "classrooms" as such, but "areas" of formal and informal activity, mostly open to the resource core, but with greater privacy possible by the use of level and height differences.

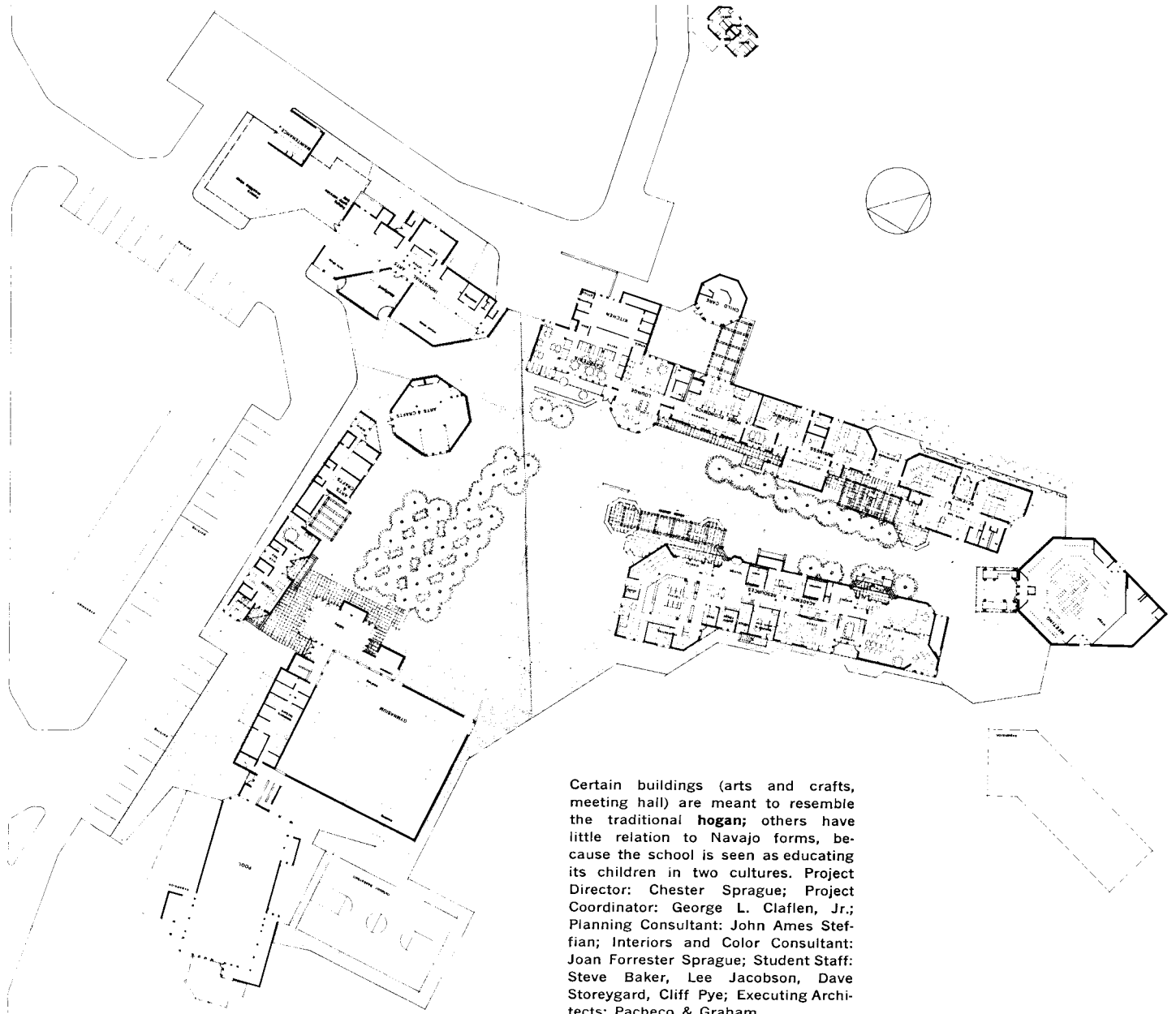
The building is oriented toward different features of the landscape—the desert, a distant mesa, cliffs, a canyon. Because the building should be in sympathetic relationship to the earth and not dominant in the landscape, the gym is sunk 10 ft. into the ground. Materials will be traditional; interiors will use symbolic colors; a furniture-building process will begin.

The result of this work will be more than a school, and more than a resurgence of pride among the Navajos of Rough Rock. Sprague is looking ahead to an exploration of cultural facilities for the Cherokees, housing for some aged Sioux, and an extension college for another Sioux community. He wants to redefine consultancy so that far more decision-making is in community hands. Steffian is working in the same way, but closer to home. These architects are committed to the idea of autonomy for powerless communities. Their students are learning that before they pick up a pencil, they have to learn to listen.

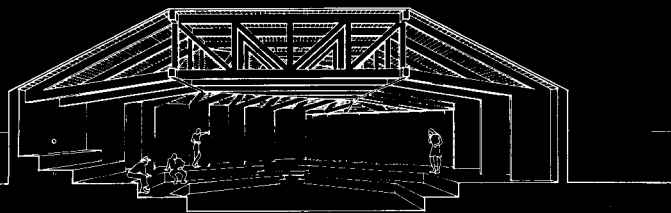


The school done by the MIT people (left) has the same casualness of design as the models which were made by the Navajos (above), with varied shapes and varied relationships between buildings and spaces.





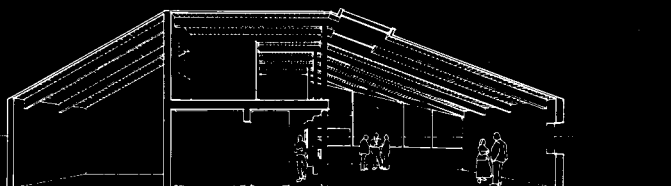
Certain buildings (arts and crafts, meeting hall) are meant to resemble the traditional **hogan**; others have little relation to Navajo forms, because the school is seen as educating its children in two cultures. Project Director: Chester Sprague; Project Coordinator: George L. Claffen, Jr.; Planning Consultant: John Ames Stefian; Interiors and Color Consultant: Joan Forrester Sprague; Student Staff: Steve Baker, Lee Jacobson, Dave Storeygard, Cliff Pye; Executing Architects: Pacheco & Graham.



**MEETING ROOM**



**ARTS AND CRAFTS**



**INDUSTRIAL ARTS**



**CLASS AREAS**



## Aerodynamics: New Design Criteria

BY WALTER G. HOYDYSH



The shape of a city can determine its climate. It is no accident that the urban centers of this and other nations have foul air and atmosphere. These are the direct result of haphazard planning, partly due to widespread ignorance about the effects of structure on the environment.

Many cities are comprised of clusters of high and low-rise buildings, with networks of street canyons, that channel traffic and atmospheric flow into the central core. All urban structures interact with the surrounding air flow and, by their specific shape and location, can

manipulate the atmosphere around them. If urban planning is done with the aerodynamic consequences in mind, an urban development can have a decent atmospheric environment. If its effects on air and circulation are not considered (and they rarely have been), the resulting city could interfere with natural ventilation and virtually strangle its citizens with poor, hot or stagnant air.

Part of the reason that aerodynamics have not been more important in urban design is that scientific knowledge of such phenomena is only now starting to leave the laboratory and become part of the practical business of city and facility design and management. Architects have previously had neither the incentive or skills to include aerodynamics in their design criteria. Nor have their clients.

An architectural competition held for the redesign of Skopje, Yugoslavia, proves the point.

Skopje had been almost completely destroyed by earthquake and the competing architectural planning teams had almost free rein in designing a new town. A team led by Kenzo Tange won, with a design calling for a walled community ringed by tall buildings and reminiscent of early village development. Tange's design was esthetically pleasing. But summers in Skopje are hot and the new design was the perfect way to make summer intolerable. The wall effectively stopped any breezes from entering or circulating in the town, so the sun would have been free to shine down and bake the town and residents alike. Fortunately, this city was stopped before it started.

A wind tunnel test of four different models for Skopje's new plan proved the first solution unsatisfactory. The testing, which was carried out at Tokyo University, eventually led to a new design that opened up the wall somewhat and created chan-

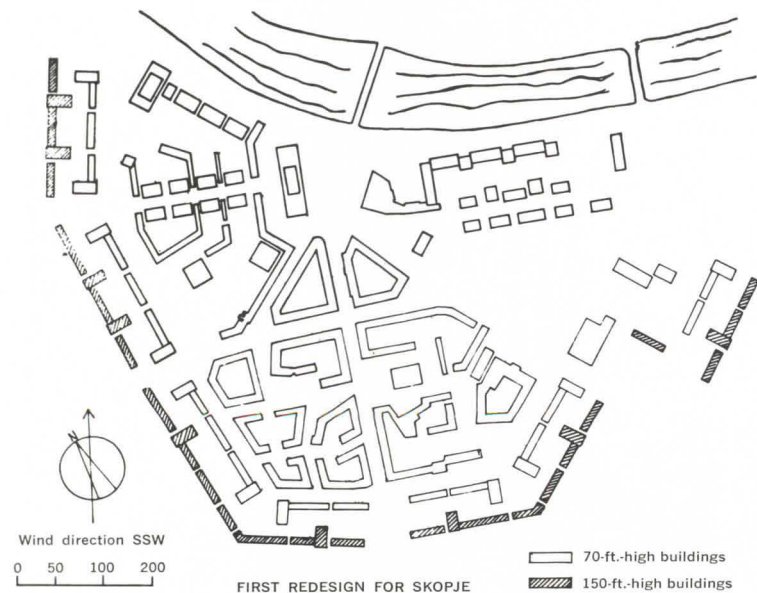
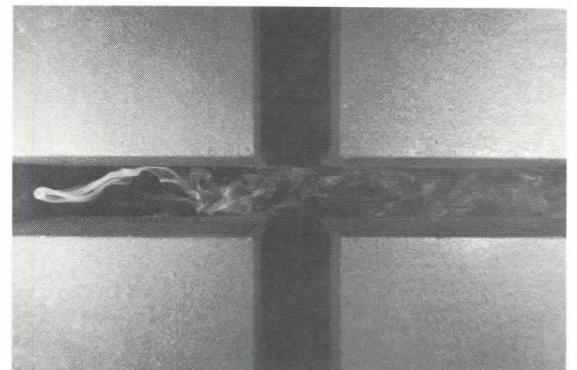
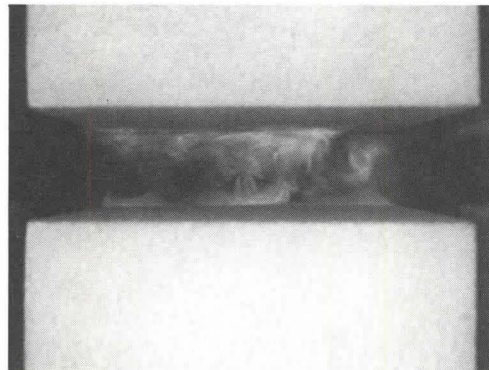
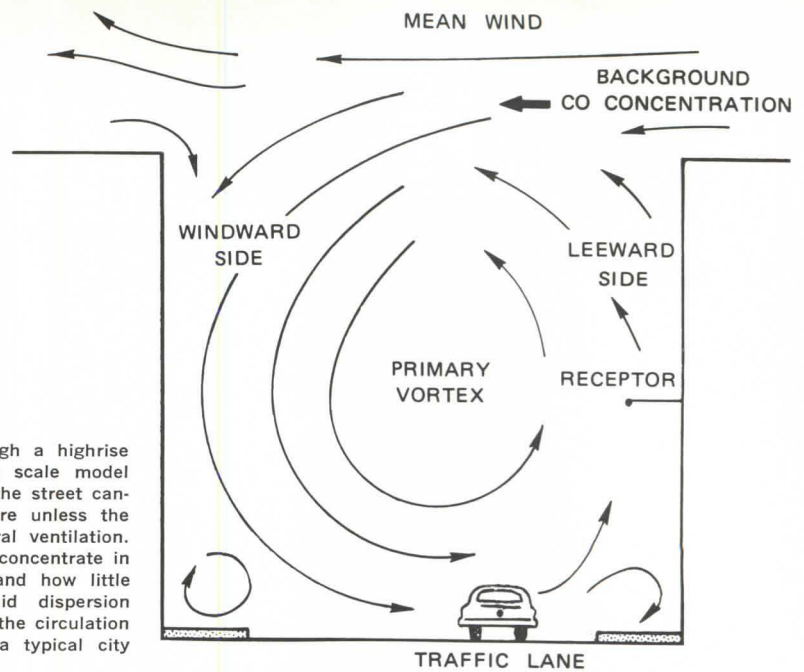
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**Walter G. Hoydysh, Ph.D.**, is an aerodynamicist by training. He is now Director of the Environmental Engineering Research Laboratories at New York University, where wind tunnel simulation techniques have been pioneered in their application to urban, industrial and environmental problems. Currently he is principal investigator for a two-year study for the National Science Foundation on environmental effects of building clusters.

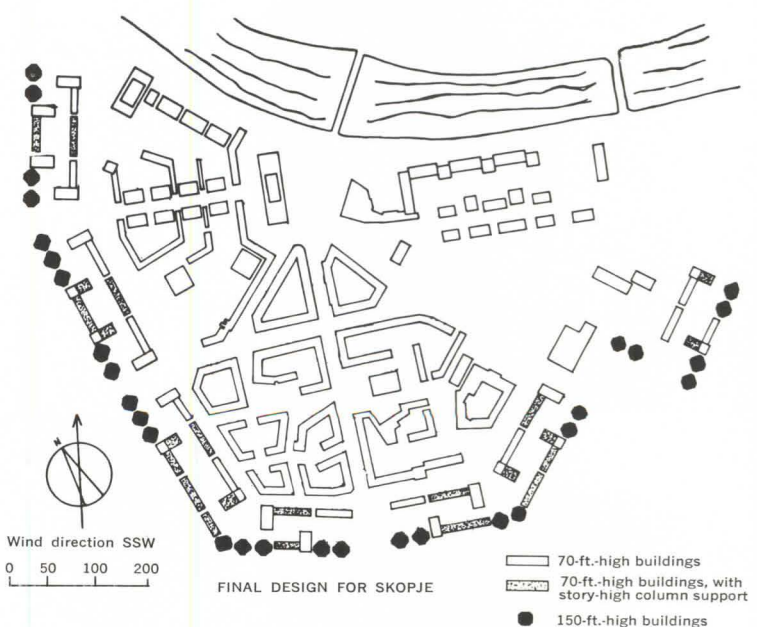




The diffusion of pollutants through a highrise city (left) is predictable through scale model testing. Once pollutants get into the street canyons, they substantially stay there unless the area is designed to permit natural ventilation. Such tests reveal how pollutants concentrate in the middle of a block (below) and how little cross street ventilation can aid dispersion (lower right). The diagram traces the circulation of vehicular exhaust fumes on a typical city street.



FIRST REDESIGN FOR SKOPJE

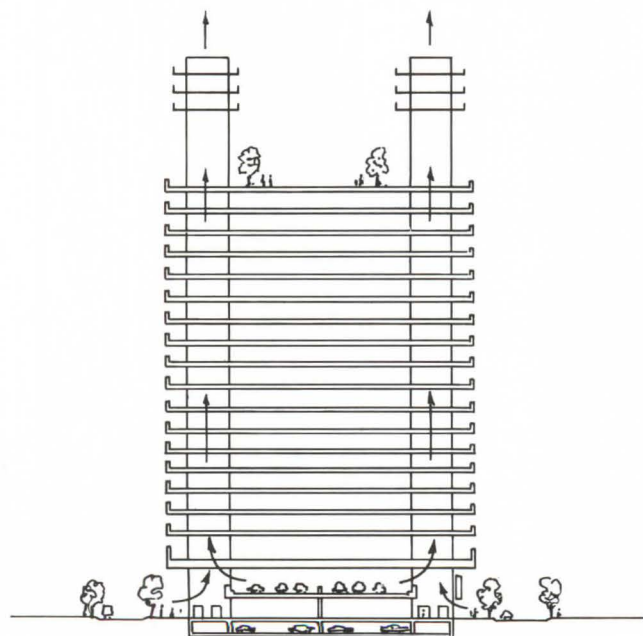
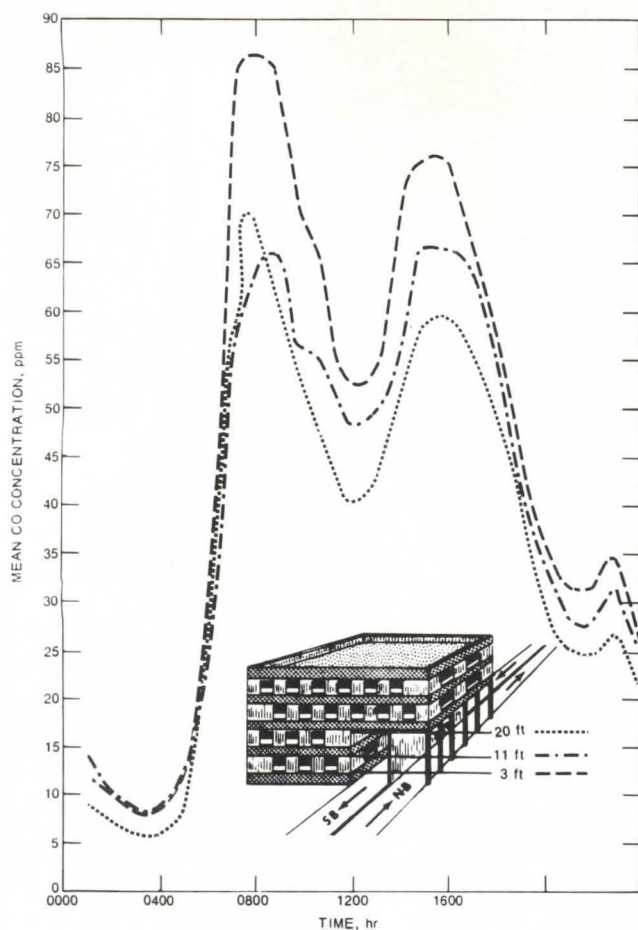


FINAL DESIGN FOR SKOPJE

Skopje, Yugoslavia, was completely redesigned after it was destroyed by earthquake and the new plan (left) called for a city walled by tall buildings. This would have stopped all natural ventilation in the town, trapping hot and

polluted air in the center city, so modifications were made to prevent this. The final design (right) varies the height and spacing of the perimeter structures so that fresh air can flow through the city.





Measurements of some Manhattan air-rights structures have revealed almost 90 parts per million of carbon monoxide during rush hour (top diagram). Any level above 45 parts per million must be considered hazardous to health. One way to solve such problems might be to devise a building design that would act as a chimney for the offending pollutants (sketch). Here the natural tendency for hot air to rise (aided mechanically if necessary) could ventilate the area.

nels that would provide for through ventilation from one end of the city to the other. This newer version not only had thermal advantages, but the natural flow of air could now carry pollutants (including incineration, industrial effluents, etc.) out of the city.

Certain sources of pollution cannot, realistically, be totally eliminated. They will probably always remain a characteristic and necessary evil of urban existence. But, applying aerodynamic knowledge to architectural design can lessen their impact and help to create comfortable and safe urban environments.

One fortunate circumstance in adding aerodynamics to architectural criteria is that a primary tool for such work is the traditional project scale model, which most architects build and keep in their offices anyway.

The complex air flow patterns induced by the three-dimensional geometry of the urban complex are difficult to describe mathematically. Therefore, high speed computers that have proved effective in solving other complicated problems have not yet been successfully applied to the challenging problem of aerodynamic flow in cities.

At present, the most effective technique available to planners and architects in predicting the environmental impact of a design is the wind tunnel experiment. Developed and used for over 50 years by the aircraft industry, the wind tunnel has, in the last two decades, been modified and adapted for studying atmospheric flow phenomena. A small number of such facilities exist in the United States, one of the earliest at New York University in New York City.

The experimental wind tunnel approach uses scale models of many individual buildings in a total urban complex to determine the effect of atmospheric flows on urban structures and to help develop designs which are environmentally acceptable. The architect and urban planners construct their models primarily for esthetic evaluation, but can easily adapt them to wind tunnel experiments for little time or money. The scale model wind tunnel experiments can be conducted on proposed highrise structures that may be built on sites close to major

pollution sources, such as highways, power plants, incinerators, etc. The tests could not only insure safe design for the building itself, but could also predict any air flow patterns around the proposed structure that might adversely affect air quality. A wind tunnel can be used to help design conventional buildings and those structures designed primarily as ventilating media.

A structure specifically designed to improve air quality can include several types, of which one is here sketched. It can be constructed around an existing pollution source and act directly as a chimney, helping to convect contaminants to the upper atmosphere and channeling fresh air from the upper atmosphere down to street level. This is one possible solution to air rights structures, which experience high air pollution levels especially at rush hours.

Scale model wind tunnel investigations are hardly a new idea; they have been carried out in such countries as Japan, England, France and Canada, as well as the U. S. Japan, in fact, has grown quite dependent on the method as a way to cope with the overpopulation of such a small land area. Japan has a population of about 105 million, squeezed onto a land slightly smaller than California. Rapid industrialization after World War II led to severe environmental problems. Japan had little choice but to make environmental planning and testing a national policy and wind tunnel experiments have become the basis for many of the predictions and corrective actions taken to deal with the country's deteriorating atmospheric conditions.

The Japanese had to go to scale model, or physical, testing because its land is so irregular and complex that it would be almost impossible at this time to make accurate meteorological calculations and atmospheric predictions through a mathematical model, or computer. The scale model approach has therefore become very important, not only for atmospheric testing, but for such special problems as typhoon and earthquake simulation. The experiments are also used to determine the air flow patterns of tall buildings to make sure that they do not cause unpleasant winds at street



level where people are.

In the United States, the findings of wind tunnel experiments have been used for many years, but more occasionally and less comprehensively than in Japan.

In the late 1940s, the proposed construction of the United Nations Building in New York caused a major controversy because it was to be located next to a major power plant. People feared that under certain wind conditions, the stacks of the plant would send effluent to the upper floors of the diplomatic building and create unacceptable pollution levels in and around the complex. Scale model tests, performed at New York University's Environmental Engineering Research Laboratories, led to the conclusion that the narrow profile of the structure and its particular location relative to the power plant minimized pollution effects. So this project was built as designed. More recently, the 110-story twin towers of the World Trade Center, in New York City, were tested prior to construction to determine the effects of high winds and wind gusts on such tall structures. These tests led to some redesign to insure that the towers will withstand hurricane forces with minimum vibration.

If similar tests are run on the several new developments being planned in New York, problems can again be avoided. Manhattan Landing and Battery Park are two major projects being planned for residential and commercial development and both are near highways. If their geometry is planned with purely esthetic motivation, they may well result in atmospherically antagonistic forms. The Welfare Island project, which is already under construction, has not yet made such tests. Its plan calls for a corridor of buildings to run the length of the island, with the tallest buildings along the center spine, and the lowest along the water edge. Since the island is near a major power plant, it is possible that the central corridor may act as a horizontal chimney under certain wind conditions.

Scale model tests have been used on large groups of buildings successfully. A development planned inland of the beach in Durban, in Natal, was able to achieve natural air conditioning with the help of scale model testing. The new project

called for new hotels and other buildings to be located behind a wall of existing highrise apartments and hotels. The air flow patterns were tested in a hydraulic tunnel, using water as the test medium. This eventually led the designers to a solution, even in so warm a climate as northern Africa.

There are many cases of urban development and architectural design that fail to cope with aerodynamic and environmental effects of man-made structures. The most notable examples are projects near to major pollution sources, which lead to stagnation in the lower atmosphere and a hazardous buildup of pollution levels, due to reduced atmospheric ventilation. Air rights structures that trap vehicular exhaust fumes have been shown to have carbon monoxide levels in the vicinity that exceed federal levels tenfold. In New York, again, the newly completed highrise towers constructed over the approach to the George Washington Bridge and a luxury project over the East River Drive, in Manhattan, experience rush-hour pollution concentrations that far exceed acceptable standards. And schools are now being built over highways. The cumulative and long-term effects of exposure to such unhealthy atmospheric conditions are still being learned.

The newly built Brasilia is a good example of hasty planning and the failure to experiment with alternative designs that could best interact with that particular climate and terrain. The result is undesirable atmospheric conditions, especially in the residential areas, where the winds are annoying, the dust levels high, and there are no shady play spaces.

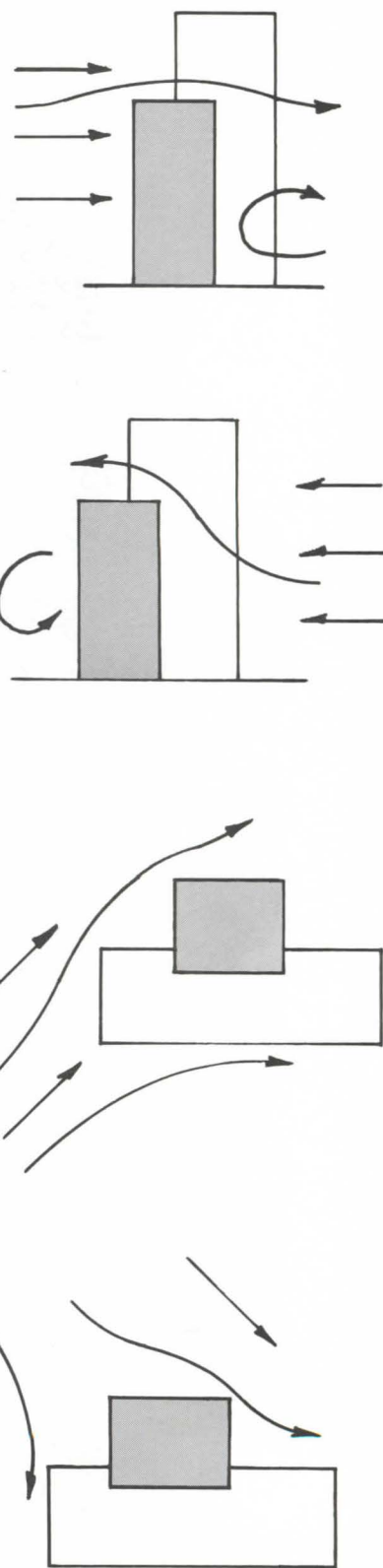
Perhaps the most dramatic example of aerodynamics ignored or minimized in design was the total collapse in 1942 of the then new Tacoma Narrows suspension bridge. The failure to understand its aerodynamic consequences resulted in a structure that could not withstand the vibrations of even relatively light winds. Had it been subjected to prior aerodynamic analysis and wind tunnel experiments, most, if not all, of the reactions could have been predicted and thus avoided. The cost of such tests would obviously have been small com-

pared with the costs of later repairs or, in this case, total loss.

The solution to such problems and errors must be more comprehensive than a few tests here and there. There should be a policy that aerodynamics must be included in design criteria, that the environmental effects of development must be determined and recorded prior to construction. Since urban centers, clusters of buildings, and individual structures can be designed to interact beneficially with atmospheric flows and since they can increase ventilating and dispersing of the urban atmosphere, we should be able to improve a city's air and climate in the future, despite pollutants.

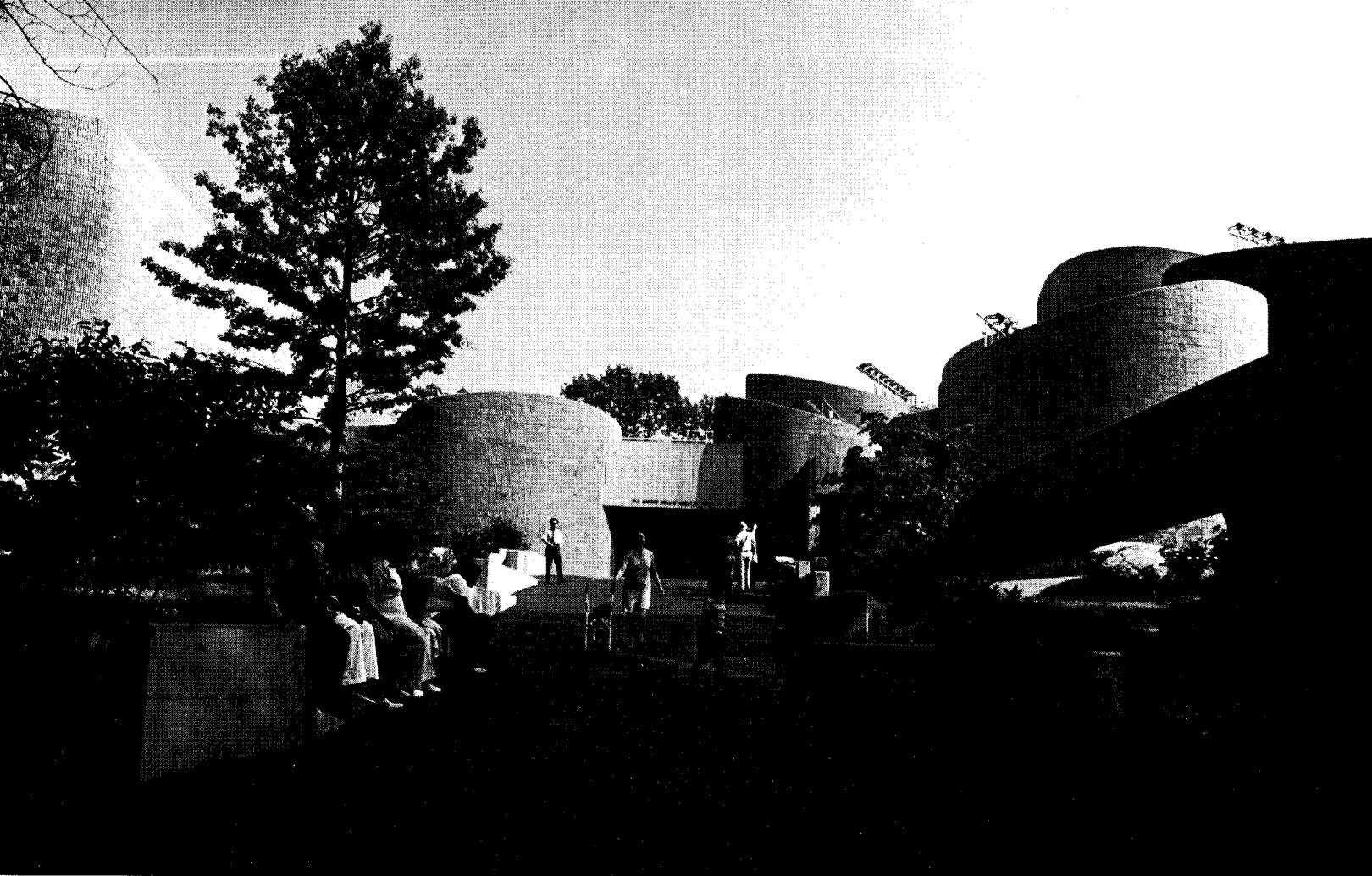
Perhaps builders and/or owners of new projects should be required to file an environmental impact report before they are allowed to build. (This is already done in Japan.) New York City recently found itself in an embarrassing situation precisely because it and the developers of two new projects failed to coordinate their plans or to deal with the environment on a policy level. Both projects went to different agencies within the city and although they were only a few hundred feet apart, one never knew about the other until it was too late. This was the story. A residential builder and Con Edison, the city's major power source, simultaneously planned projects on adjacent sites. The apartment was to be 460 ft. high; the stacks of the new steam generator 100 ft. lower. In some wind conditions, this would mean that the stacks would blow right into the upper floors of the luxury apartment building. They both had to file plans with the city, but to different agencies. The result is that the power plant will be allowed to operate only when wind conditions are such as to blow the stack exhausts away from the new residence.

If environmental impact becomes policy and architects, administrators, planners and clients are sensitive to the issue, cities and decent air can coexist. By taking advantage of aerodynamic knowledge and techniques, the architect and planner can not only shape the face of the city, but also the quality of its environment.



Even simple rectangular building forms, such as those above, create very complex atmospheric flow patterns. Unless these are studied and applied to building and city design, the natural pollutants of urban living can be increased rather than diminished by structure.







# ZOO BUILDS RARA AVIS

The World of Birds enhances an already splendid zoo.

BY ADA LOUISE HUXTABLE

There are no flies on New York's Bronx Zoo. It entertains, informs, instructs and proselytizes, and it uses the tool of architecture to do so with singular skill. The World of Birds, being officially unveiled last June, is the second spectacularly specialized exhibit building to be constructed by the New York Zoological Society in three years following the highly successful World of Darkness, for nocturnal animals, in 1969. The \$4-million structure is the gift of Mrs. Lila Acheson Wallace, co-founder of Reader's Digest.

These new buildings, both the work of the architectural firm of Morris Ketchum Jr. and Associates, demonstrate an extremely sophisticated policy of zookeeping and of architectural-ecological environment.

The Lila Acheson Wallace World of Birds has been developed in close association with the Zoological Society's general director, William Conway; the ornithological staff, including Joseph Bell and Donald Bruning, curators, and Jerry Johnson, curator of exhibits and graphic arts.

Both buildings are impressive as art, science and theater. Together they add immeasurably to the unquenchable wonder and delight of this paradoxical city—so consistently capable of delivering the best that it bothers to do so only occasionally, and so rich in resources that it throws them away.

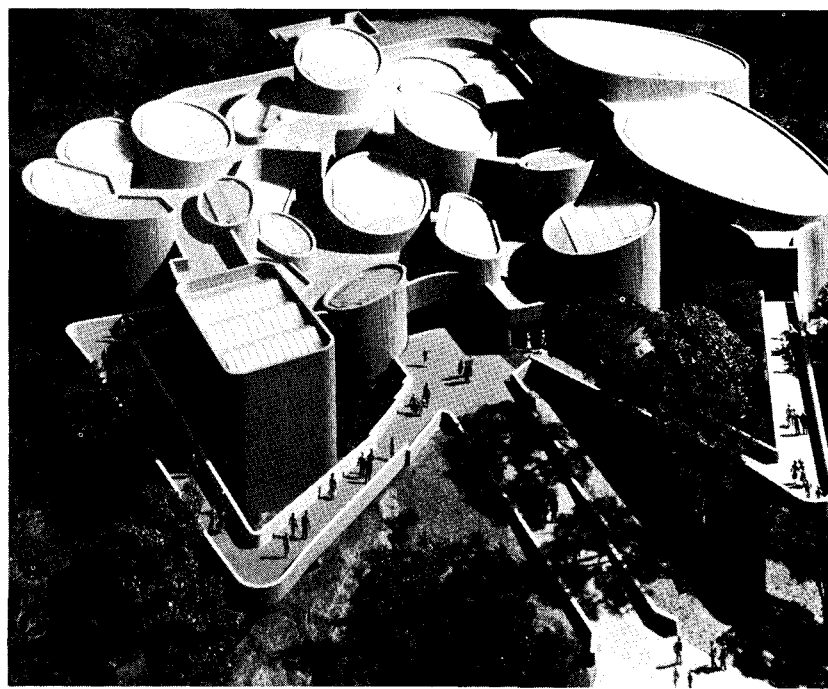
The zoo has been delivering the best and enriching its resources since 1898. It has a distinguished architectural tradition that began with a fine master plan in 1899 by Heims and LaFarge, one of the prestige architectural firms of the time.

The Ketchum office is doing the master planning today. (In contrast, the neighboring Botanical Garden has been going steadily architecturally downhill.) But zoo planning and building have changed radically since then.

The still-handsome Baird Court Promenade of 1901 to 1910, which provides entry after one passes through the beautifully scaled Paul Manship animal

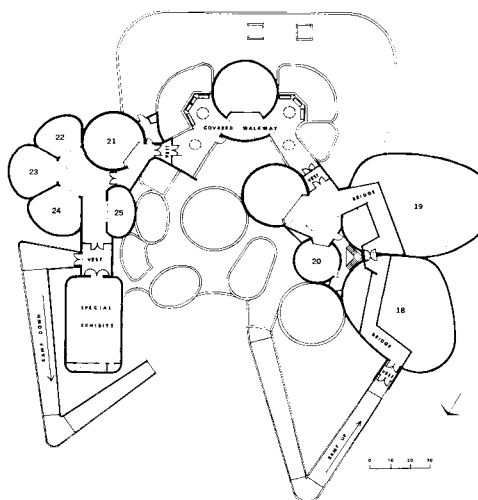
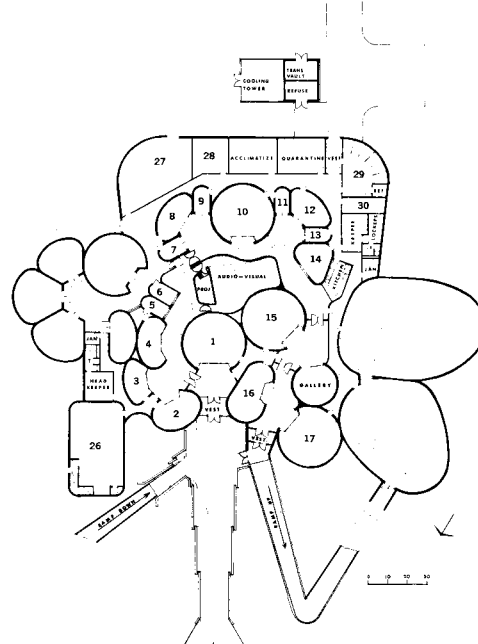
The World of Birds is an asparagus-like bunch of cut-off cylinders, ellipses and free forms joined by ramps. There are no public stairs; one gets from level to level on long graceful outdoor ramps. Architect Morris Ketchum Jr. calls it a range of volcanoes. This is the new living quarters in the Bronx for 550 birds of 200 species in 25 different habitats.

Ms. Huxtable, the Pulitzer Prize-winning architecture critic for The New York Times, has been a contributor to the Forum in the past, and will be in the future. This, her second article in a series, was reprinted by permission © 1972 by The New York Times Company.



## LEGEND OF EXHIBITS

- 1-6 Secrets of the World of Birds
- 7-9 The Mating Instinct
- 10-14 The Bird and its Nest
- 15-20 Birds Around the World
- 21-25 The Treetops
- 26 Workshop
- 27 Boiler Room
- 28 Fan Room
- 29 Storage
- 30 Live Food





gates of 1934, is classical and formal. Its near-orange brick buildings with limestone trim have proper academic detail from Doric to Renaissance, and animal bas-reliefs. The complex presents one of the city's most pleasing urban vistas.

Some of the original elements of the scheme, such as the Reptile House, the rebuilt Flying Cage, the Sea Lion Pool and the Rockefeller Fountain, are, as the zoo puts it, still "operational."

The elephants are in their old home, the Elephant House of 1908, south of the Baird Court, "a classical palace with a Byzantine interior," according to *AIA Guide to New York City*, "with a high dome and terra cotta decoration that could serve as capitol of a banana republic."

New quarters now in planning will have less reference to past architectural splendor and more attention to natural habitat. But old buildings will be saved.

The new buildings, significantly, are a far cry from this kind of turn-of-the-century Beaux Arts urban landscape. They are non-buildings, in a calculated sense. And they have been carefully inserted in natural settings. The change has been from a museum of living things to a living ecology.

The World of Birds, deceptively monumental in photographs, fits the landscape with felicity—as it is meant to do. Form follows function in a meticulous packaging of the exhibition program.

The result is an asparagus-like bunch of cut-off cylinders, ellipses and free forms joined by ramps. The point, however, is not to create a far-out monument, but an interior of simulated natural environments.

The rough-hammered concrete

block walls actually wrap around the spaces of the specific exhibits, which range from Australian outback to tropical rainforest, complete with real waterfalls and audiovisual storms. It is surefire drama and painless education. And fun.

The ramps tie the exhibits together in a prescribed circulation pattern, from forest floor to treetop viewing. Skylights supplement natural illumination, making the building a hothouse for natural vegetation.

Several exhibits are open-fronted, and the viewing route leads through two of the most dramatic settings, with birds swooping around one's head.

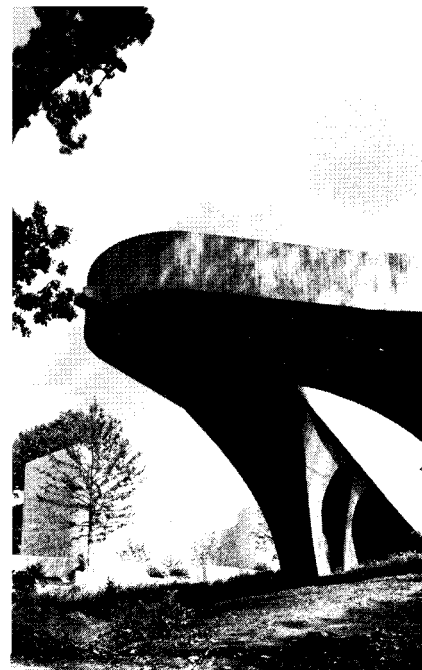
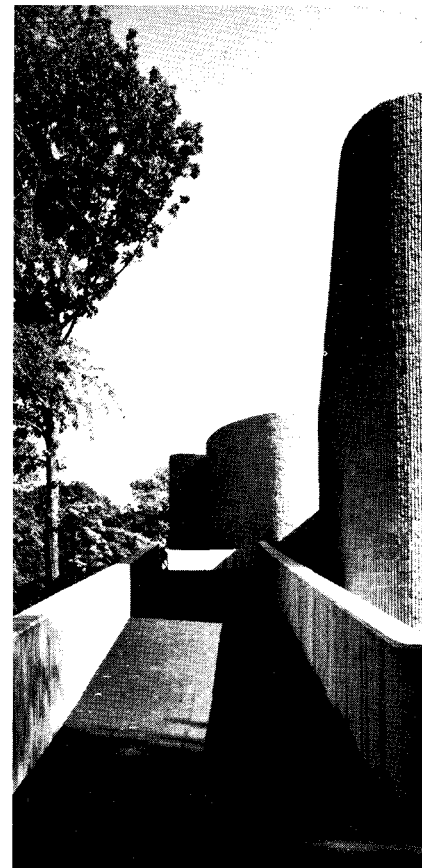
This is stylish, dramatic and creative architectural problem-solving that adds an extra dimension of pleasure to the building's programed intent—to show birds in their varied natural habitats, functioning normally, so that the visitor shares and understands that world for a miraculous brief time.

Between the Heims and LaFarge buildings and the new construction there has been a revolution in zoological theory and architectural design. The World of Birds illuminates both brilliantly.

#### FACTS AND FIGURES

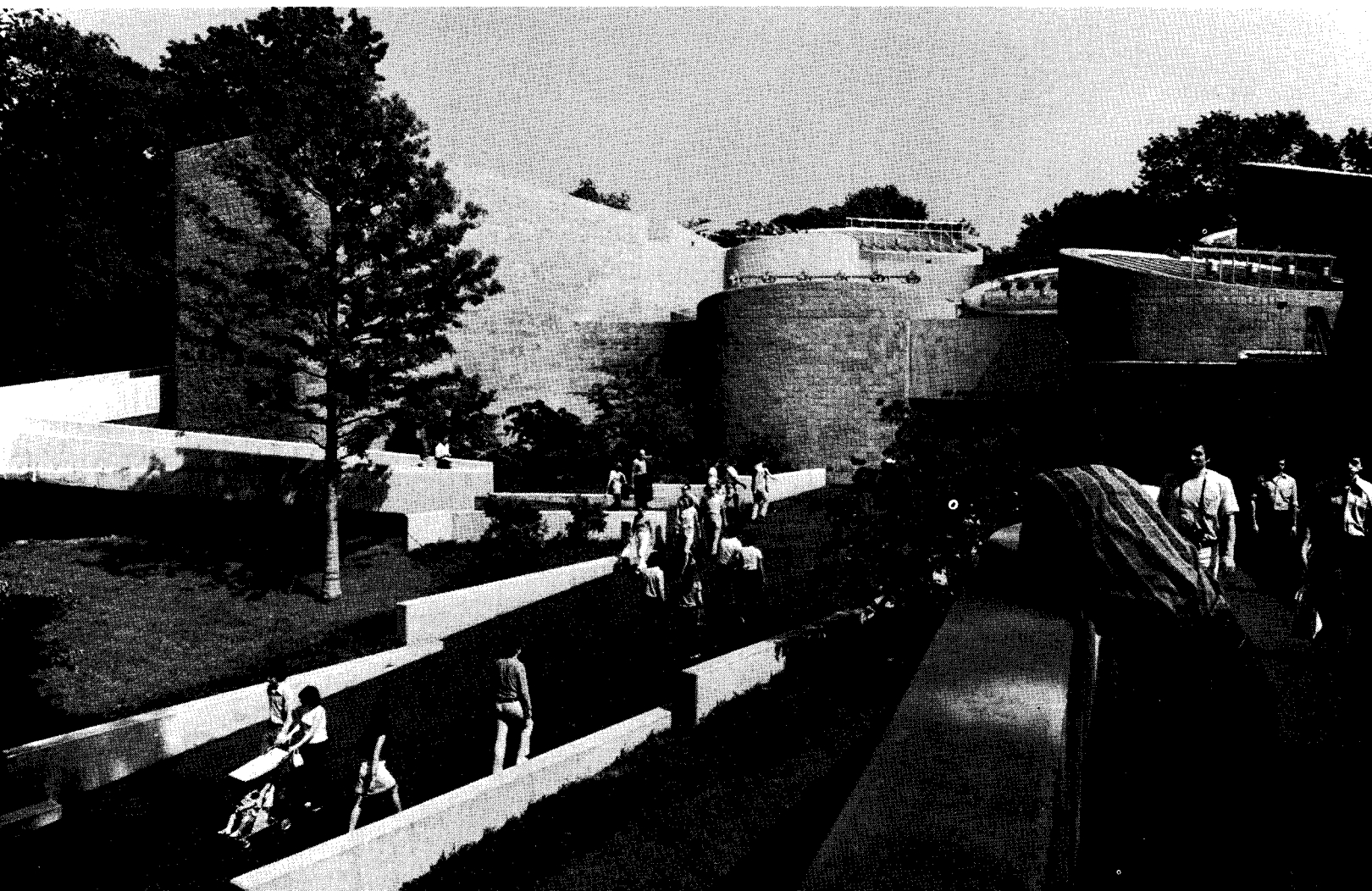
World of Birds, Bronx Zoo, New York. Owner: New York Zoological Society. Architect: Morris Ketchum, Jr. and Associates (Paul Palmieri, job captain). Engineers: Paul Weidlinger (structural); Wald & Zigas (mechanical and electrical). Consultants: William G. Conway, General Director, New York Zoological Society. Interior Displays and Graphics: Jerry Johnson, Curator of Exhibits and Graphics, New York Zoological Society. Contractor: William L. Crow Construction Company. Building Area: 40,000. Cost: construction \$3,290,000; site development \$30,000; furnishing and equipment \$600,000.

(For a listing of key products see p. 80)  
PHOTOGRAPHS: Alexandre Georges



Zoo visitors walk on bridges through the African and South American jungles. Wonderfully vivid thunderstorms in the rain forest are created by strobes, hi fi speakers and shower heads. The hummingbirds fly low without fear inspecting the enchanted onlooker. Rough hammered concrete block walls wrap around the spaces which contain everything from Australian outback to tropical forest.







## WOMEN IN ARCHITECTURE

(continued from page 53)

who spends a significant portion of time in activities outside the office might approach environmental design quite differently, bringing further enrichment to the professions.

We further questioned whether architecture is best produced in a traditional office environment, whether it is possible to program an individual to perform regeneratively in an office for 40 or more specified hours per week, 50 weeks per year. We wonder whether this person doesn't become narrow, constricted, performing by rote rather than by interest or inspiration. Modern educators have found that students will learn if they are allowed freedom and are trusted to follow their learning impulse. Work and play become one, the same, activity. If an adult professional had similar opportunities, wouldn't the quality of the work improve?

### All would benefit

Many architects and planners, while recommending and ostensibly designing for more rewarding lifestyles for their clients, perpetuate extremely rigid time commitments for themselves and their employees. To request an alternate schedule or to take a "sabbatical" at the end of a job leads to questions about one's seriousness as a professional. This equation of a specific time commitment with professionalism forces all of us to choose between family concerns and a satisfying, meaningful career. The traditional solution has meant that a woman gives up career for family; the man gives up family for career. We are women, but we believe that all professionals, not only women, would benefit from a reexamination of traditional work schedules and roles. The eight-hour day, five-day week for an entire working career does not seem ideal for all people and all jobs. This schedule may suit many, but variations may benefit others.

Objections will be raised against flexible work schedules. For example it might be felt that coordination within the office would be difficult. However, with little extra effort, specific

meeting times could be scheduled, and those attending might be more likely to come prepared.

Management might also feel that the office could not afford to have an empty desk part of the time. However, *paired workers could share a job and/or desk*. One should also consider that in the present system the person sitting at a desk eight hours a day may be mentally truant a good part of that time. There is reason to believe that a more flexible time schedule would lead to more intensive and efficient use of time on the job—and therefore greater economy.

Another objection might be that certain tasks can't be handled on a short or intermittent time basis. But *the office work could be reviewed to see which jobs are suitable to this sort of scheduling*. It will be found that the work flow in some jobs is such that they are best handled on a flexible schedule.

The prejudice that a full-time employee gains more experience and is more valuable to the office can be balanced by the fact that *involvement in other interests can enrich a person's contribution to the field*. S/he\* would have the opportunity to gain a different perspective than the person who chooses to concentrate exclusively on work and who perhaps goes stale or gets in a rut.

Again, it is said to be bad for morale if one or two people can come in late or leave early (even though they get less money). Perhaps *other employees would not feel cheated if they could choose to do this themselves when a light work load in the office permitted*. Time to read, write, travel, take care of one's house and family, or carry out one's own projects would at times have more appeal than the money lost. Time off with full job security would benefit many people at different stages in their careers. The additional training an employee obtains by taking time off to study would in many cases give the firm additional resources.

Despite possible problems, our discussions have produced some alternate work schedules which we believe should be seriously considered by employers and

\*Editor's Note: "S/he" is one researcher's redesign of the "he and/or she" construction. It is pronounced suh-HE, the accent apparently on the masculine.

employees. Some of the proposed alternatives might fit certain offices, certain jobs, certain people, better than the conventional schedules. Our purpose is to open discussions of the possibilities, to encourage the expenditure of the extra effort necessary for experimentation, and to counter the prejudice that deviation from the standard hours means lack of commitment.

### Alternative arrangements

The following are some suggestions for alternatives to the standard work schedules:

1. *Flexible-time contracts* in which an employee agrees to work a specific amount of time per year as needed (perhaps half or two-thirds the regular total), rather than on a regular schedule. This could prove to be a definite advantage for the employer. Peaks and lows in the work load or in phases of a job could be accommodated economically without short-term hiring and firing. There might be periods of charette and periods of no work at all. The variety in itself would be stimulating, and the time spent in the office would relate to real work needs, not to an artificial schedule.

2. *Task-related contracts* in which an employee agrees to accomplish a specific task by a specific date with no stipulation as to where or when the work must be done. This would allow freedom to work nights or mornings or weekends, as one's best time of day or other commitments suggest. Employer and employee might agree in advance how many total hours of work the job should require. The procedure might be as simple as saying, "We need this drawing completed by Tuesday. Do you think you can do it in about 20 hours?" The employee is then free to accomplish it when and how s/he believes best, and if there are questions, can schedule him/herself to be in the office when the appropriate person is available to help. In other situations the project coordinator might estimate a schedule and amounts of time to accomplish various phases of the work and then "sub-contract" them out to various members of the team at each phase. In many cases this procedure is already being used informally, but if it is

formalized, each person gains the freedom to accomplish a task in the way best suited to the person and the specific job.

3. *Paired workers for one job*: Two or more workers might split a job in a fashion appropriate to that specific task. Some overlap of time and a good job diary would be required to keep each worker informed of problems and decisions. This is already being done with a limited number of teaching jobs in the Brookline, Mass., public school system, and there is an employment agency in Newton, Mass., that acts as a clearing house for employees wishing to share jobs in a variety of fields. This approach requires a certain compatibility between co-workers and probably would work best if the pair is self-selected. However, the principle of shared responsibility is already in effect in many offices where one worker covers for another on vacation or temporarily out of the office. Pairing assures a consistent backup in emergencies.

4. *Expansion of the consultant approach*. People with highly desired skills (spec writers, renderers, photographers, interior designers) are often able to set their own schedules, and in smaller offices where they cannot be supported full time they are welcomed on a job-by-job basis. In larger offices, several specialists could be on retainer for less than full-time work and would therefore be assured a regular income. These approaches could be extended to less specialized areas.

The work of an architect or planner is considered to be thinking work rather than mechanical, and for the committed professional the mental work often continues outside the office. Mere presence at a desk has not proved to be a guarantee of good work; there has to be trust on the part of the employer and responsibility on the part of the employee. If the employee is free to work when and how s/he believes best, dignity can be added to the roles of all personnel. This shared responsibility and respect would acknowledge the employee as a total professional rather than a tool in a hierarchy. The employer would reap the benefits of thought and effort from a whole person instead of simply buying technical ability.

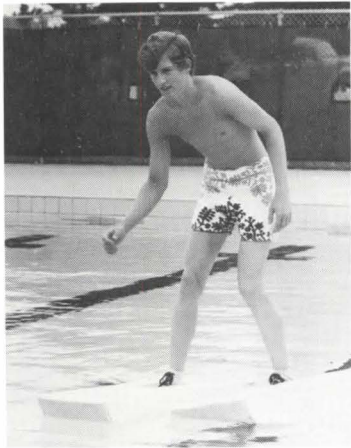


# FORUM

(continued from page 23)

## A WALK ACROSS THE POOL

Hugh F. Rogers, an assistant professor at Penn State University, divided his two engineering graphics classes into eight teams and announced that grades would be partially determined by how well the students "designed, constructed, and used water walking shoes". Rogers, who wanted to get away from a "nuts and bolts" project, said that "if the students could devise shoes which would enable them to walk on water, they would be using all sorts of engineering concepts — design, buoyancy, water density, and small area hydraulics, among other things."



Tom Morck in his water shoes

The final exam, a race among team representatives, was won by freshman engineering major Thomas E. Morck of Glen Rock, N.J., who walked forty yards in two and one-half minutes. Morck, wearing styrofoam shoes, with stabilizing fins on the soles, says that the secret is to shuffle.

## TRANSIT

### ZAP! YOU'RE A JOLLY TROLLEY

A trip on a trolley is a trip to nostalgia-land unless you happen to be in Pittsburgh. A hot orange rising sun on a field of yellow and purple is wonderfully described by John T. Mauro, executive director of Port Authority Transit, as "eye-catching". When the project is finished, 25 of Pittsburgh's 95 trolleys will be brightening up the byways. Eight will be painted red and white; eight yellow and white; and eight orange and white, all in vertical patterns. These splendid trolleys will carry on for seven

years, after which they will be replaced by buses. The "color dynamics" were done by Industrial Designers Peter Muller-Munk Associates.

### HOW ABOUT A FREE RIDE?

A new idea in mass transit is gaining ground in various capitals of the globe: the free ride.

- In Moscow, the Literary Gazette, official newspaper of the writers' union, published a proposal which eliminates the use of tickets, and charges a small tax on train users. The average commuter would pay \$2.40 a month for unlimited rides for himself and his family. Comrades from 60 cities wrote enthusiastic letters of approval but so far the official response is a firm nyet.

- In Rome, several free-ride experiments have already taken place. For six and one-half hours every working day, (the rush hours) everyone rides free. If the trial-run recently completed is judged to be successful in luring sufficient numbers of those auto-happy Romans into the buses, the free-plan will become permanent no matter what the cost. (Officials have said that the last six-week experiment — in May and June — cost the city \$2.4 million in uncollected fares.) The annual deficit for this rush-hour-only-no-fare system is estimated at \$25 million.

- In San Francisco, Robert Kahn, Lafayette business counselor, suggested that success of the new born Bay Area Rapid Transit trains is only possible with free rides. A half-cent retail tax in the district would bring in \$30 million annually, and that, plus revenue from the new gasoline sales tax, would

allow the 75-mile network of trains to be operated without charging fares. He says, "We can run BART free, like the air, which we hope someday will be purer because fewer people will use cars." There would be savings in the purchase and maintenance of fare-collecting equipment; and the Bay Bridge 5 p.m. traffic catastrophe might become but a dim memory.

- In Massachusetts, the University of Mass. will use the \$475,441 grant just received from Transportation Secretary John A. Volpe to help fund a demonstration project for travelers in the Amherst area to use free bus service instead of their cars. Several communities around the country already have free buses in town. The people like it, and so do the merchants.

- In Washington, D. C., the Department of Transportation recommended earlier this year that Congress consider the idea of subsidizing a limited free mass transit program in major American cities. According to DOT officials, only good could come of it. Large in-town areas now used for parking might be changed to tax-paying commercial spaces. Air pollution would significantly diminish.

Perhaps a day will dawn when the city dweller can once again sigh without gasping. Car horns might not destroy people's eardrums, and the cars themselves might not run over shoppers who dare to cross the intersection. For us here in Manhattan, the memory lingers on of the quiet, clean spring day when the striking bridge controllers kept the cars out, and the Bronx, Brooklyn, Queens and New Jersey got polluted instead.

A hot orange sun on a field of yellow and purple, in Pittsburgh





## A COUNTRY ON WHEELS

One-half of all new single-family homes purchased in 1971 were mobile homes. The average one cost \$7,130, as compared with \$25,000 for a conventional home.

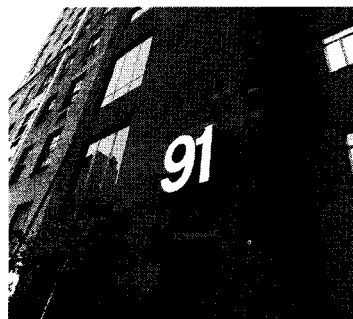
To put it another way, last year 95 percent of home buyers in America (with incomes under \$15,000) bought mobiles. These statistics were reported in a recent issue of *Business Week*.

## CITYSCAPE

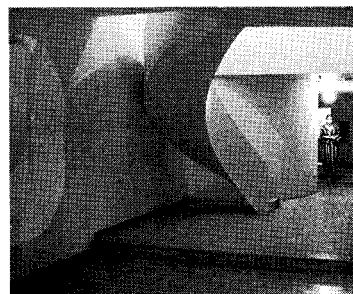
### THE BIG NINE ONE

Architect Brooks Parker has transformed an ordinary Manhattan tenement walk-up into five luxury duplex co-op apartments. Curving stairwell (shown) leads down to the round kitchen module. The living is gentle here: each apartment has a woodburning fireplace, an impressive lighted fountain, and would you believe a greenhouse. The huge stainless steel address graphics (below) are designed by Corchia, de Harak Inc.

*An address you can be proud of*



*From tenement to luxury duplex*



### ALABAMA GETS INTO THE ACT

Are you ready for Holyland-U. S. A.? An Alabama group plans a tourist attraction with a 101-ft. statue of Christ, a replica of the Wailing Wall, a 12-acre Sea of Galilee and a colosseum with chariot races. Perhaps it can serve as a substitute refuge for pilgrims who falter on their way to Florida's Disney World.



### THIS MINI IS A SLOIP

"We call it the *sloip* project," says Landscape Architect Allen Don Fong, "a word which means *space left over in planning*, and our goal was to make this small urban space into something to be used, rather than merely looked at." This mini park on

Wilshire Blvd. in Los Angeles measures 42 by 71 ft.; and somehow fitted into this niche is a fountain, a row of evergreen trees, masses of flowers and seats for passersby. This privately owned and maintained oasis is officially named the Willard W. Keith Pocket Park, and is part of Wilshire Center.

## HONORS

Architects Ben R. Johns, Jr. of Richmond and Vincent G. Kling of Philadelphia were awarded stainless steel plaques by the American Institute of Steel Construction for their design of the Richmond Coliseum.

- Rene Kleinhaus, a student at L'Institut d'Architecture et d'Urbanisme, France, has won the \$6,000 prize in the first William Van Alen Memorial Award competition, sponsored by the National Institute for Architectural Education. The contest was for designs in Industrialized Building of Housing For a Total Community. The award will be an annual event. An alternate first prize of \$1,000 was awarded to Hermann Paul Haupt of the University of Illinois (below).

- First Aluminum Association Student Design Award goes to Doug Kendall of Rhode Island School of Design for an aluminum prop and stage system he designed for the Looking Glass Theater of Rhode Island.



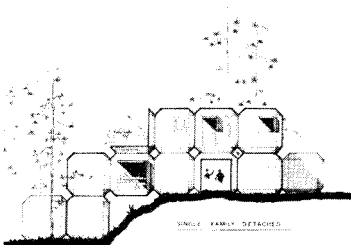
*From Hamlet to Hair in hours*

He used existing aluminum pipe hardware to construct lightweight portable stage set equipment. The system is highly durable and rust-proof, and can be easily broken down into components. An Allen wrench and a tape measure are the only tools required. Mr. Kendall has also built a 1/4-scale working model for the theater company for working out possible set variations, and for teaching new members how to dismantle the system quickly.

### STRUCTURES IN STEEL

The American Iron and Steel Institute is inviting entries to its 12th annual Design In Steel Award Program.

Four categories of structures will be judged: housing, high-rise and lowrise construction and public works. Two awards will be given in each category; one for best design and one for best engineering. Structures completed after Jan. 1, '70 are eligible. Deadline: Jan. 26, '73. Design in Steel Award Program, 201 E. 42nd St., NYC 10017.



*The houses of Hermann Paul Haupt*

### ADDENDUM

On the subject of Christopher Alexander receiving the first AIA Research Medal at the Convention in June, we wish to clarify that this is not a one-time-only award, but will be an on-going award. We regret the misunderstanding.

PHOTOGRAPHS: Page 22 (right) Patrick Radebaugh; page 23 (bottom) Bill Logan; page 67 (left) Pennsylvania State Univ.; page 68 (left, upper) Jon Naar, (left, lower) Hans Kung.



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**SHOWROOMS:**  
New York City, Chicago,  
Denver, Rochester,  
Atlanta, Miami.

# ad infinitum







Owner: State of New Jersey  
Architects: Mahony & Zvosec, Princeton, N. J.;  
Kenneth De May of Sasaki, Dawson, De May & Assoes, Inc., Watertown, Mass.  
Gen. Contractor: Glenwall Construction Co., Hawthorne, N. J.  
Curtain Wall by Cupples Products, St. Louis, Mo.; glazing by American Paterson  
Glass Co., Paterson, N. J.

# LOF helps Ramapo College change

As the wooded countryside around Ramapo College changes colors, so does Ramapo College. With Vari-Tran® reflective glass, the building shown here presents an ever-changing mural that depicts the varied hues of the four seasons. The mural changes each day, often each hour.

Ramapo College is located on a spacious, wooded tract in Mahwah, New Jersey, and it was the intention of the school officials and their architects to

preserve and even complement this environment as much as possible. To accomplish this end, Vari-Tran was selected.

By using Vari-Tran coated glass fabricated into Thermopane® insulating units, they achieved other ends. Since Vari-Tran reflects the sun's light and heat, less air conditioning equipment is needed to cool the building. And less energy is needed to run the air conditioning. In winter, Thermopane reduces heating bills because of its insulating properties.





# school colors every semester.



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## L-O-F Hi-Performance Glass

On Reader Service Card, Circle 313



# PRODUCT REVIEW

This month's Product Review concentrates on structural materials and various building components.

## COATED GLASS

Vari-Tran is a new development in reflective glass coatings, manufactured by Libby-Owens-Ford Co. Not only can it reduce costs, says the company, but it can conserve energy by reflecting a large percentage of the sun's energy and so reducing solar heat gain in the building. When fabricated with a Thermo-pane insulating unit, the Vari-Tran can also help reduce winter heat loss.

On Reader Service Card, circle 101.

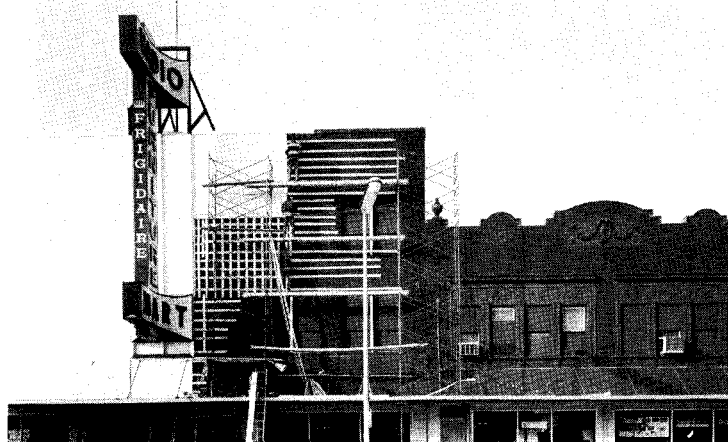


## ACOUSTICAL INSULATION

A new spray-applied, acoustical, thermal and condensation-control product is now available from Keene Corporation's Ceiling and Insulation Division. Named Sonotherm, the new product is asbestos-free and provides protection against dis-

coloration; it contains no paper and is supplied with a thoroughly dried adhesive. It may be applied to many building materials, including metal, concrete, gypsum, wood, common brick and cinder block.

On Reader Service Card, circle 102.



## VINYL SIDING

Solid vinyl siding is available from the Mastic Corp. Called Contour T-lok, the siding is virtually maintenance-free and will not dent, will never need paint, will not rust, peel, blister, rot nor scar. Nor will it support combustion. It can be washed with

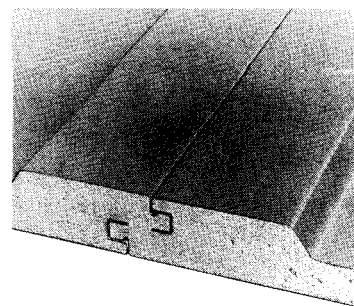
soap and water. The product is available in wood grain and solid colors and a wide variety of panel shapes, sizes, and types. Cost is comparable to premium-finished, painted aluminum and steel sidings, but installation costs are lower.

On Reader Service Card, circle 103.

## PANEL JOINT SYSTEM

Insul-Lap metal building panels by Glaros Products Inc. are manufactured with an interlocking joint system. When combined with the urethane core, this patented joint, with a factory-installed gasket, assures a weather-tight panel system. On-site erection is fast and easy and all fasteners are concealed.

On Reader Service Card, circle 104.



## STAIRWAY-PLATFORM

A new prefabricated stairway-platform has been introduced by Equipto. The steel safety stairway units greatly simplify climbing up to mezzanine areas, docks, scaffolding, etc. They come in any height from 3 ft.

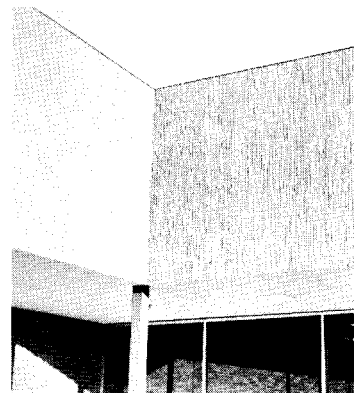
to 8 ft. 2 in. and in three widths. All are in stock and available for immediate shipment. Strong and inexpensive, the units are designed for fast and simple installation.

On Reader Service Card, circle 105.

## PANEL FACINGS

Johns-Manville has introduced the first of a new line of panels for interior and exterior construction. Called Splitwood, the new product has a deeply embossed linear directional design. The units are three-dimensional and made of cement reinforced with asbestos fibers and steam cured. They are noncombustible, durable and require little maintenance, according to the company.

On Reader Service Card, circle 106.



## ROOF PROTECTION

Roof-Tite is a new, waterproof asphalt shingle sealer developed and marketed by Molar Enterprises, Inc. This two-coat process protects against roof leaks from ice-water backup between shingles; it adheres to metal, so is also useful for roof and gutter junctures. The product may be brushed on and has the adhesive quality of epoxy; it withstands summer and winter temperature differentials without cracking or peeling, says the company.

On Reader Service Card, circle 107.



(continued on page 74)

On Reader Service Card, Circle 314→



**NEW**

**Sanymetal®**

**LAMINATED PLASTIC PARTITIONS  
WITH STAINLESS STEEL PILASTERS  
...ARE SMOOTH INSIDE AND OUT!**

Sanymetal laminated plastic panels, along with Sanyplastic doors and stainless steel pilasters with exclusive recessed latches and hinges, are the ideal combination for strength, beauty, easy cleaning and economy . . . with smooth, flush, corrosion-free surfaces inside **and** out.

The new sliding Sanylatch is recessed with an inset bolt . . . no surface mounting. Hinges are fully recessed within width of door . . . no surface mounting. Factory applied toggle hinge brackets are flush with pilaster, no surface mounting or wrap-around hinge brackets. Only Sanymetal offers the beautifully smooth "timeless trio" toilet partition.

- Sanyplastic panels are solid core, corrosion-free, impervious to common acids, oils and cleaning agents. **Double** brackets are non-ferrous.

- Stainless steel pilasters offer so much more than a core . . . the strength of all-steel — the jewel-like beauty of 302 Stainless Steel in contrast with your choice of a wide, wide range of Sanyplastic colors and patterns for panels and doors.

- Sanyplastic doors are solid, quiet and smooth . . . all the way around . . . you'll probably want the full facts . . . ask your Sanymetal rep, check Sweets or write direct.

**Sanymetal®**

THE *Sanymetal* PRODUCTS COMPANY, INC.  
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Wall  
Supported



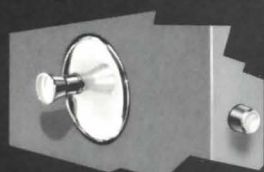
Ceiling  
Hung



Floor  
Supported



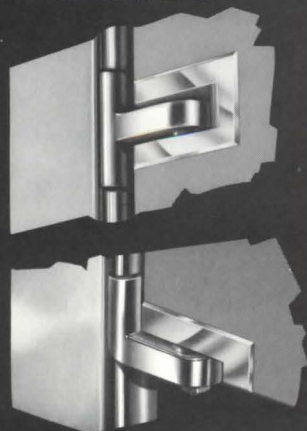
Overhead  
Braced



**CONCEALED LATCH  
INSIDE AND OUT**

Recessed Sanylatch . . . flush-to-door surface latch plates of chrome-plated solid brass or stainless steel — both sides . . . smooth lever operation of stainless steel inset bolt.

**RECESSED HINGES  
INSIDE AND OUT**



Recessed hinges and factory applied toggle hinge brackets . . . proven-in-use to millions and millions of swings . . . bottom hinge bearing has "power" return to pre-set opening.





# PRODUCT REVIEW

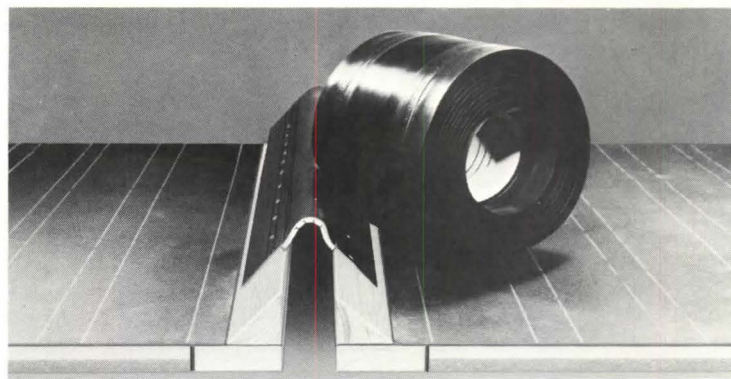
(continued from page 72)

## ROOF EXPANSION JOINT COVER

A seamless, monolithic roof expansion joint cover has been announced by the Building Products Division of Grefco, Inc. The

new product has an exclusive mistake-proof, self-adhering splicing system and is composed of flexible vinyl bellows and semi-rigid vinyl flanges with continuous steel fastening strips imbedded. Called Metalastic Mark II, it is a seamless extrusion and accommodates building movements in three dimensions. It remains flexible at temperatures ranging from -50 deg. to 200 deg.

On Reader Service Card, circle 108.



# Yale products solve almost every security problem you can name.

## And some you haven't thought of.

Start with thousands of locks like Yale®. Residential locks. Commercial locks. Auxiliary locks. Cabinet locks. Padlocks. Combination locks. Door controls, like door closers, panic exit devices.

## Electric locking systems: Centralized control of building security:

Our Eaton Electric Locking System allows one person to control one or all locks in an office building, factory or school.

## Locking systems that tell you who came in. When. And through which doors.

Yale Identi-Logic® Access Control System. Ideal for top secret installations.

But at Eaton security is more than just locking things up.

## Intrusion and fire detectors.

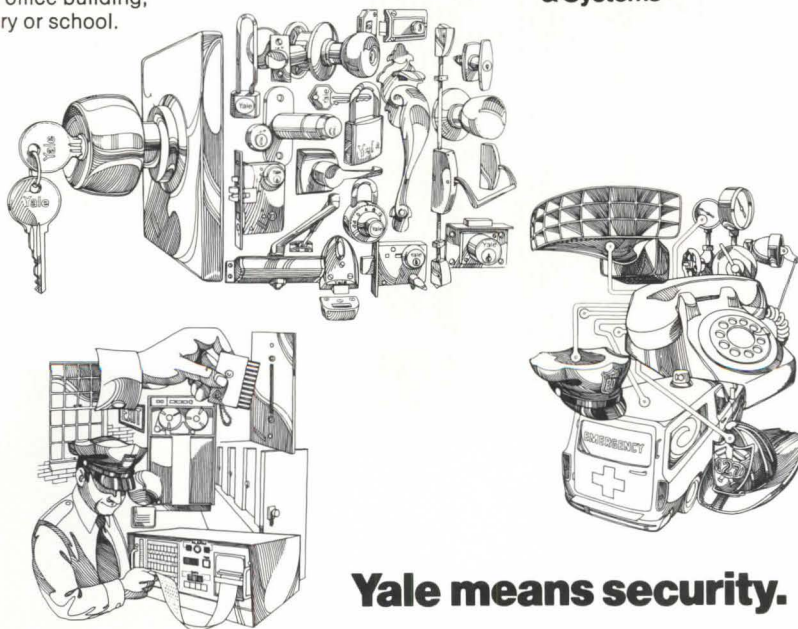
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& Systems



**Yale means security.**

## WATER HAMMER STOPPER

A reliable, maintenance-free solution to damaging water hammer in plumbing are the water hammer arrestors, called Shoc-Kushon, made by Greer Hydraulics, Inc. There are no mechanical parts or bellows, but are lightweight and small, with a corrosion-proof stainless steel shell that houses an air-filled Buna N bladder. High pressure surges generated by quick valve closure flow into the unit, compressing the bladder and causing instant absorption of the shock.

On Reader Service Card, circle 109.



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

WORLD OF BIRDS, BRONX ZOO. ARCHITECTS: Morris Ketchum, Jr. and Assoc. (Materials and Manufacturers as submitted by the architects.) WATERPROOFING: Nervastral. BRICK, BLOCK, AND STONE: Plasticrete Corp. (Split Rib Block). ROOF MATERIALS: Philip Carey Mfg. Co. THERMAL INSULATION: All-weather Crete. ACOUSTICAL MATERIALS: Conwed Corp. GLASS: Misco Murlap. ELEVATORS AND ELECTRIC STAIRWAYS: Sedgwick Machine Works—Dumbwaiter. DOORS: (Exterior) PPG; (Interior) Overly Mfg. Co. HARDWARE: P & F Corbin Locksets & Closers, Rixson Hinges. INTERIOR MATERIALS: United States Ceramic Tile Co. PAINT: Pittsburgh. ELECTRICAL DUCTS AND WIRING:



# Save up to 70% in space!

**Joy axial fans offer you this big design advantage over conventional centrifugals of equal performance.**

Joy believes air moving systems should be built in, not built around. And the Joy Axivane® fan makes a "built in" system possible. Constructed around the motor, the Axivane fan features in-duct mounting to eliminate duct turns, offsets and plenum boxes.

Result: Smaller equipment rooms. More usable space!

In addition to saving up to 70% in space, the Axivane fan offers these additional benefits:

**UP TO 50% LESS WEIGHT**

permits reduced structural requirements.

**LOWER INSTALLATION COSTS**

thanks to a pre-adjusted, self-contained package delivered in one piece.

**QUIET OPERATION**

sound attenuation is much simpler with the higher frequencies of the Axivane fan.

**LOWER OPERATING COSTS**

due to greater operating efficiencies.

**ADJUSTABLE BLADES**

provide a wide operating range.

**STRAIGHT-THROUGH DESIGN**

for easy, fast installation.

Yes, you'll have room to spare when you specify Joy Axivane fans. The fan system designed with architects in mind! For additional information, contact Joy Manufacturing Company, Air Moving Products, New Philadelphia, Ohio 44663. In Canada: Joy Manufacturing Company Ltd., Alpha Fan Division, Winnipeg, Manitoba.



Save up to 70% in space! 

*Offices and plants throughout the world*

**NEW  
PHILADELPHIA  
DIVISION**



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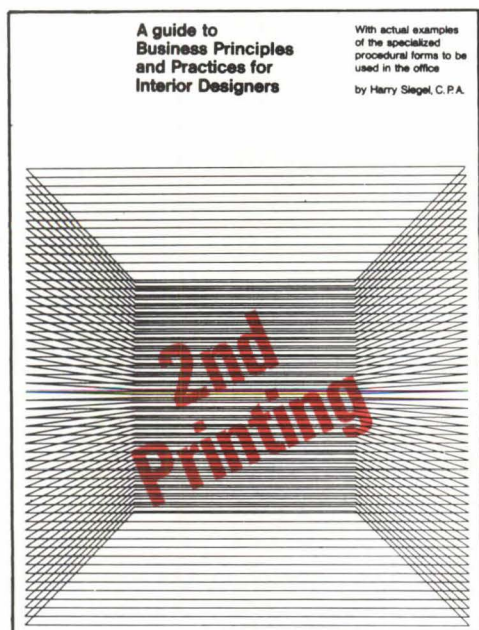


# A guide to Business Principles and Practices for Interior Designers

With actual examples  
of the specialized  
procedural forms to be  
used in the office

by Harry Siegel, C.P.A.

This book won't tell you one blessed thing about design  
but it may well be the most important book ever published  
for interior designers, space planners, architects and students.



A long time consultant to design firms, Mr. Siegel has put together a clear-cut guide to the business routines which often frustrate the independent designer. He explains everything from the mechanics of setting up as a professional to estimating job time, billing and collecting.

This business guide includes actual samples of specialized work forms, letters of agreement, and contracts designed by Mr. Siegel for such satisfied clients of his as Melanie Kahane, Michael Greer, Daren Pierce and Ellen Lehman McCluskey.

His book tells you what you need to know to protect yourself from financial losses . . . to estimate the value of your talent and effort . . . to calculate operating costs . . . to arrive at satisfactory

fees . . . and to explain your charges to your client.

He shows you how to make initial proposals for a job . . . to make safe and binding agreements . . . to collect from clients . . . to protect yourself from losses due to client defections and vacillations . . . to control the flow of orders to suppliers, work rooms, carriers, contractors . . . and helps you protect yourself from errors and financial hazards.

He guides you to simple business routines that help you take the business side of your profession in your stride—without being obsessed by business problems.

This is a book that is a must for the man who knows much about designing but not enough about making money.

## Chapter Headings

Interior Design as a Profession  
Divisions of the Profession  
Business Formations  
Location and Nature of the Business  
Essential Counsel and Assistance  
Initial Contact with Client  
Letter of Agreement  
Confirmation of Contract Proposals  
Methods of Determining Fees and Compensations  
Other Job Factors in Setting Fees  
The Client's Budget  
Estimation and Control of the Budget  
Purchase Orders  
Client's Inventory and Billing Control  
Billing and Collecting  
The Non-Residential Field  
Initial Contact with the Non-Residential Client  
Fees and Compensations in Non-Residential Work  
Letter of Agreement in Non-Residential Work  
Estimates and Procedures in Non-Residential Work  
Contract Breakdown  
Relations with Trade Sources  
Theory, Objectives and Methods of Recording Time  
Insurance  
The Job Book  
Other Working Forms  
Basic Elements of Bookkeeping and Accounting for Interior Designers

**A guide to  
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and Practices for  
Interior Designers**

by Harry Siegel, C.P.A.  
176 pages  
more than 40 illustrated forms  
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# In case of fire, PPG Fiber Glass Wall and Panel Insulation won't become suffocating smoke.

Since most building codes don't specify a smoke developed rating for wall and panel insulation, materials that can generate dense clouds of acrid smoke can be used.

And smoke, as you know, not only does heavy damage to areas not touched by the fire itself, but actually causes more deaths and injuries than the flames.

PPG Wall and Panel Insulation carries an Underwriters' Laboratories flame spread rating of 25 and smoke developed rating of 50. (Compare that to other low fire-rated insulations which could smoke test up to 200 and more.)

These are the same "Fire Hazard" ratings that most building codes require for pipe and duct insulation.

PPG Wall and Panel Insulation is listed by UL for use in a variety of fire-rated wall and partition designs. For all the details, just send in the coupon.

**PPG: a Concern for the Future**

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Panel Insulation.

Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

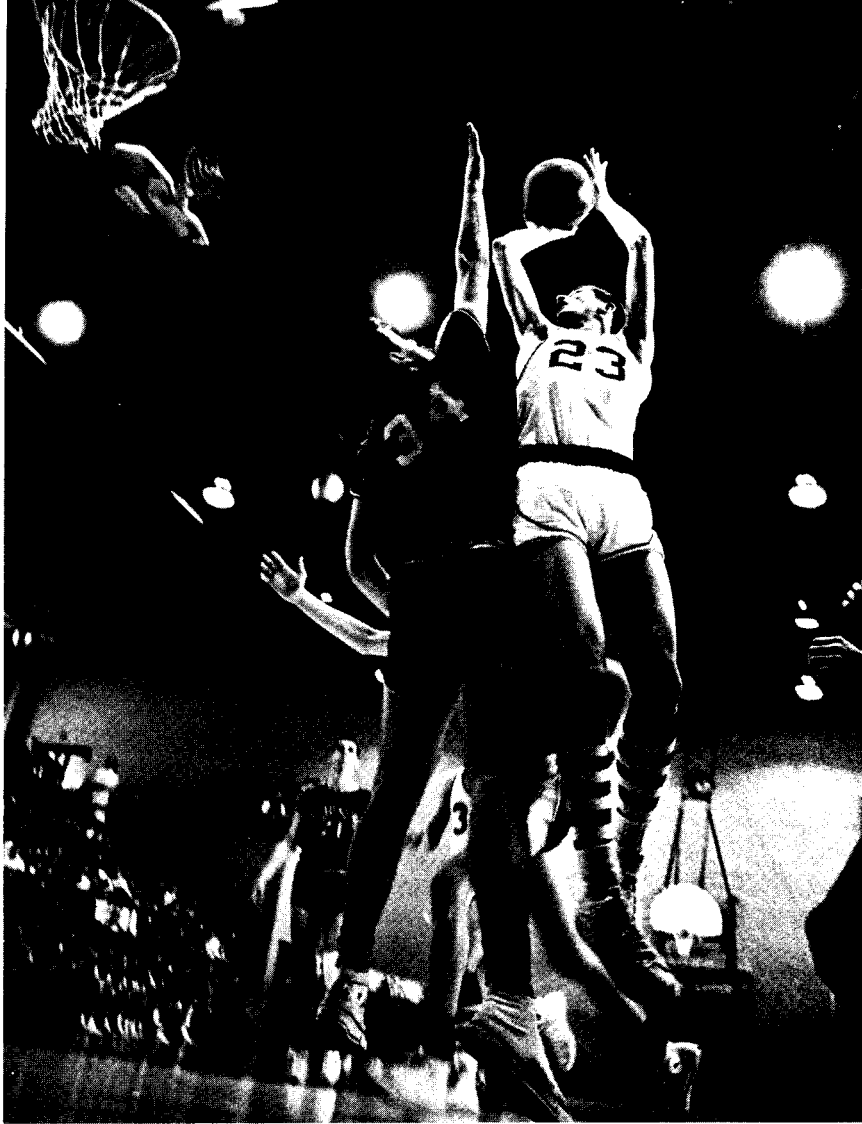
Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_



**noise control  
is important  
here...**







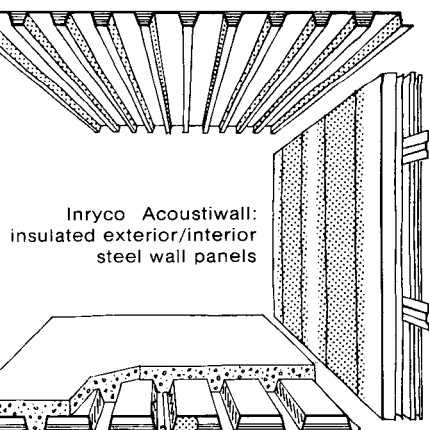
## but here, it's required by law.

Excessive noise can be a federal offense. The U.S. Occupational Health & Safety Act limits noise levels in plants to 90 decibels. Most plants today exceed that... even though too much noise can affect employee health. Morale. Safety. Productivity. And therefore, profits.

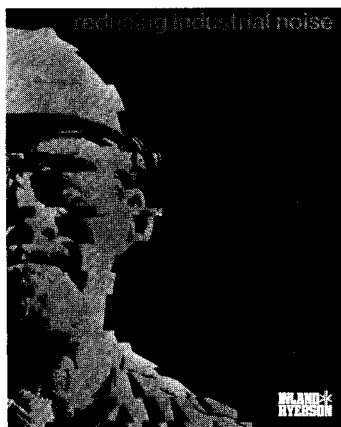
The time to start an economical sound control program is at the blueprint stage. By designing in Inryco® Acoustideck®, Acoustiwall™ and Acoustiflor™. They absorb sound from all sources, and reduce reverberation. They provide a sound basis for all other elements in an effective noise control program. Yet they add only about 1% to total building costs. They all act as structural as well as acoustical materials.

On your next project discuss noise control with an Inryco engineer. Write for our free booklet, "Reducing Industrial Noise," Catalog 23-8, and for the address of our office nearest you. Inland-Ryerson Construction Products Company, 4031 West Burnham Street, Milwaukee, Wisconsin 53201.

Inryco Acoustideck:  
combination roof deck  
and acoustical ceiling



Inryco Acoustiwall:  
insulated exterior/interior  
steel wall panels

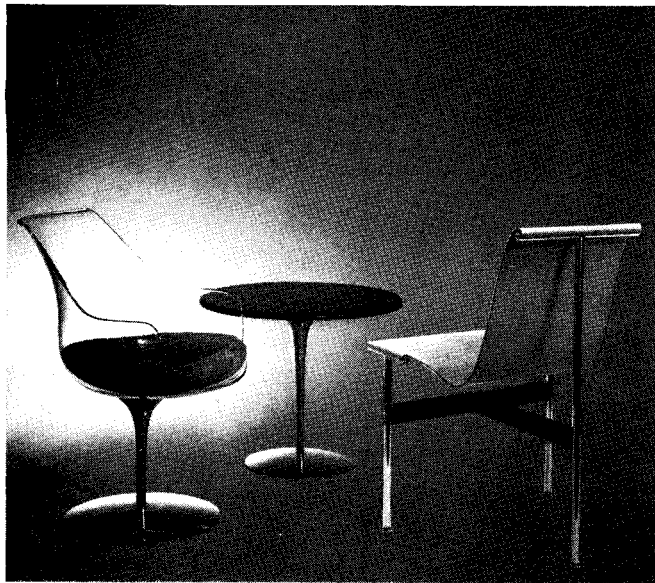


Inryco Acoustiflor:  
combination structural floor  
deck and acoustical ceiling.

# INLAND RYERSON

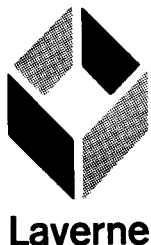
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Meets today's needs.  
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## PRODUCT REVIEW

(continued from page 74)

Stonco. ELECTRICAL EQUIPMENT: Bryant. STANDBY EMERGENCY POWER: Onan Eastern Corp. LIGHTING FIXTURES, LAMPS: Omega, Neoray, McPhilben, Lightolier, Sylvania. PLUMBING FIXTURES, TOILET SEATS: American Standard Fixtures—Church Seats. PIPING: Chase Brass and Copper Co. HEATING BOILERS: H. B. Smith Co. UNIT HEATERS: Trane. HEATING VALVES, PIPING, CONTROLS: Robertshaw Controls Co. AIR CONDITIONING: Trane. DIFFUSERS, DUCTS, PUMPS: Titus Mfg. Co., Worthington Corp., Weinman Pump Mfg. Co. SPECIAL FANS AND VENTILATORS: Swartwout. INTERCOM SYSTEMS: Dukane Corp. CEILING MATERIALS: U.S.G. Audicote Acoustic Plaster. WATER COOLERS: Halsey-Taylor. MOVABLE PARTITIONS: Wondoor Corp. KITCHEN EQUIPMENT: Rudman & Scofield. FINISH FLOORING AND CARPETING: Dex-O-Tex.

THE VENDOME. ARCHITECTS: Stahl Assocs., a division of Stahl/Bennett, Inc. (Materials and Manufacturers as submitted by the architect.) WATER-PROOFING: G.E. "Elastomeric Membrane" (simulated copper patina). ROOF MATERIALS: Johns-Manville "Colorbestos." FENESTRATION: Capitol Products. ELEVATORS AND ELECTRIC STAIRWAYS: Consolidated

Elevator Co. LIGHTING FIXTURES, LAMPS: Prescolite and Lightolier. PLUMBING FIXTURES, TOILET SEATS: American Standard. OTHER PRODUCTS: Avco bio-degradable detergent stone cleaner.

OLD CITY HALL. ARCHITECT: Anderson Nottter Assocs. Inc. (Materials and Manufacturers as submitted by the architect.) CONCRETE AND CEMENT: Atlantic; Atlas; Masslite; Darek; WRDA. STRUCTURAL STEEL: Southeastern Metal Fabricators, Inc. FLOOR AND DECK SYSTEMS: Epic Metals Corp/COFAR. ACOUSTICAL: Conwed. GLASS: American Saint Gobein Corp. INTERIOR PARTITIONS: U.S. Gypsum. ELEVATORS: Beckwith Elevator. DOORS: Weyerhaeuser; Virginia Glass Co. HARDWARE: Plaza Lock Co.; Sargent & Co. INTERIOR MATERIALS: Heather Brown quarry tile; Rubacon. PANELING: Vicraten. ELECTRICAL: Kelek Co. Fabricators, Westinghouse Components. STANDBY EMERGENCY POWER: Dual-lite. LIGHTING FIXTURES, LAMPS: Sylvania recessed; Lightolier. PLUMBING: Kohler, Speakman. COOLING/HEATING: Baltimore Air Coil; Taco, Inc. UNIT HEATERS: McQuay. RADIATORS: Rittling. CONTROLS: Honeywell. AIR CONDITIONING: American Standard Heat Pumps. DIFFUSERS, DUCTS, PUMPS: Titus; Bell & Gossett; Federal Pump Co. FANS & VENTILATORS: Loren Cook Co. FIRE PROTECTION: W. D. Allen Co.; Simplex Time Recorder Co. CEILING MATERIALS: Tab Lock; Celotek. WATER COOLERS: Halsey-Taylor. FINISH FLOORING AND CARPETING: GAF; Lees & Roxbury. FURNITURE & SEATING: Knoll.

## "Weathering" as specified ... Cabot's BLEACHING OIL

Architect demand is great for the unique "driftwood" look, an effect heretofore found only in seacoast areas after years of exposure to salt air. Cabot's Bleaching Oil, when applied to untreated wood surfaces, imparts a delicate gray tone which weathers in but a few months to a natural driftwood gray. Bleaching Oil, available in oil or creosote base, will not crack, peel, or blister. Everybody talks about the weather; Cabot's has done something about it.

*Cabot's Stains, the original Stains and Standard for the nation since 1877.*

Oceanside home in Maine; Architect: Edwin A. Koch, Ogunquit, Maine; Cabot's #241 Bleaching Oil on shingles and siding.



### Samuel Cabot Inc.

One Union St., Dept. 991, Boston, Mass. 02108  
☐ Send color card on Decking & Fence Stains  
☐ Send new Cabot handbook on wood stains.

For wood chip samples, write on your letterhead.





**Remote electrical lockout,  
selective by-pass, and the**

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Maximum Security  
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**restrict-a-key™**

This new concept in access control provides a practical solution to security problems involving perimeter doors, vital record storage areas, computer rooms, communications centers, or any other high security areas.

Built upon the Sargent Maximum Security System, with its proprietary keying, pick-resistant cylinders and full key control, the No. 4500 Restrict-A-Key Series offers mechanical security with a remote electrical lockout capability, and selective by-pass of this remote lockout. As required, the instantaneous lockout of all keys in the system can be achieved by the turn of a switch in the central control station or other remote location. Or, activation of a by-pass switch enables owners of a special master key to override the electrical lockout and still retain access to an area. A third level lockout totally secures the restricted area.

In this way, areas may be secured from persons working beyond a given time frame, while supervisory personnel retain access to these same areas. Complete lockout also may be achieved in yet another time period against all comers, or in the case of a security crisis.

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STREET \_\_\_\_\_

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# READER SERVICE FILE

## PRODUCT LITERATURE

To order material described, circle indicated number on self-addressed Reader Service Card, facing page 76.

### BUILDING PANEL SYSTEM

Revere Copper and Brass Inc. has just released a 20-page color brochure introducing the newest technique in the application of sheet copper in the building construction field. This new system of laminated panel construction brings to the architect and design engineer, in a single complete package, even greater flexibility of design coupled with more economical installation costs. It comprises the various components, giving detailed drawings of structural and veneer panels, traverse seams, mansard, fascia, soffit and other roof details. On Reader Service Card, circle 200.

### DECORATIVE LIGHTING

General Electric Company's Lighting Systems Business Department has a new brochure "Decorative Lighting for Colonial, Traditional and Contemporary Settings." The publication features the complete line of GE Decorative luminaires for High Intensity Discharge Lamps: Mercury, Metal Halide, or Lucalox®. It covers all types of outdoor decorative lighting applications. On Reader Service Card, circle 201.

### DRAFTING/ART TABLES

The Huey Co. announces a new four-color abridged catalog presenting 57 of Huey's industrial radius tension drafting/Art tables. One table of each series is illustrated. The bold, new table designs offer beauty, efficiency and comfort and stable steel construction for long life with virtually no maintenance. On Reader Service Card, circle 202.

### PARTITIONS

Air Wall Div., Richards-Wilcox Manufacturing Co. offers a new architectural partition catalog. The catalog includes architectural specifications and construction details of Air Wall, Magna Wall and Trak-Wall partitioning. Also included are illustrations of typical installations as well as accessories and optional equipment. On Reader Service Card, circle 203.

### STEEL SHEETING

Armco Steel Corp. has a new eight-page, two-color brochure on steel sheeting for trenches, cutoff walls and shore protection. It explains the need for and the advantages of steel sheeting. On Reader Service Card, circle 204.

### STEEL FLOOR JOISTS

Sheet Committees of American Iron and Steel Institute offers a four-page residential builder report entitled "Steel Joists . . . opening new dimensions in residential floor framing. The two-color brochure depicts the installation procedures and variety of joists that are available for framing in residential construction. Also included are typical ways to utilize a

steel floor joist system, sizes and strength capabilities. A list of manufacturers of steel floor joists is also available. On Reader Service Card, circle 205.

### INDOOR LIGHTING

Koch & Lowry Inc. has just published a new supplementary catalog filled with the latest designs. The catalog contains all new floor, table, wall and ceiling fixtures and lamps. On Reader Service Card, circle 206.

### SEATING AND TABLES

A new 64-page seating and tables catalog is now available from R-Way Furniture Co. A comprehensive view of traditional, colonial and modern seating and table variations are pictured and described. Tastefully upholstered pieces, high and low back chairs with or without arms, metal and wood frames, lounge, side and colonial seating are all shown in detail. Occasional and restaurant tables complement the seating with informative descriptions. On Reader Service Card, circle 207.

### WOOD FOUNDATIONS

The All-Weather Wood Foundation System is an innovative method of foundation building. It is approved by such authorities as Federal Housing Authority, Veterans Administration, Building Officials Conference of America, Inc. This foundation can be installed in any weather. It presents an effective drainage system. This brochure is offered by Osmiose. On Reader Service Card, circle 208.

### STAINLESS STEEL MANUAL

A comprehensive design manual presenting a wide range of basic information on the uses of nickel stainless steel in architecture has been issued by The International Nickel Co., Inc. It is directed to the practicing architect, but it also is an excellent introductory text for the student. The manual contains information on the characteristics and basic properties of the various steel types. A variety of stainless steel installations and products are discussed. On Reader Service Card, circle 209.

### LIGHTING

A four-page, four-color brochure by E. J. S. Lighting Corp. features architecturally perfect, Decorator-inspired lights in a walnut wood-grain, contrasted with Satin Brass. They blend with traditional and modern furnishings and give excellent multidirectional lighting. On Reader Service Card, circle 210.

### PRE-ENGINEERED BUILDINGS

Panelfab International Corp. has completed a product information kit entitled "New Dimensions in Manu-

factured Building Systems." Included in the kit is a new series of eight product brochures demonstrating the variety of building applications available with Panelfab. Product categories include Commercial Buildings, Educational Facilities, Housing & Shelter Products, Curtain and Window Walls, and Original Equipment Manufacturer Products. On Reader Service Card, circle 211.

### DECORATED WALL TILES

A new eight-page full-color brochure on the 1972-73 line of Decorated Ceramic Wall Tiles by Villeroy & Boch is offered by Amsterdam Corp. More than 125 different patterns and colors are shown. The tile sizes include 6" x 6", 4 1/4" x 4 1/4", and 4" x 8" in patterns that include abstracts, geometrics, florals and other decorative motifs and in a palette of colors ranging from the subtlest of pastels to the most vibrant, dramatic primary hues. The extensive collection is designed to provide architects and interior designers with numerous choices for full-wall, border and accent area treatment for virtually all commercial and residential design applications. On Reader Service Card, circle 212.

### FIRE PERFORMANCE

"What about Fire?," a brochure containing facts on the fire-performance of several building materials, has been revised by The American Institute of Timber Construction. The 16-page illustrated brochure discusses the excellent fire-resistive qualities of engineered timber construction, including structural glued laminated timber. On Reader Service Card, circle 213.

### EMERGENCY LIGHTING

A new eight-page illustrated three-color brochure on "Console," the fluorescent emergency light, includes application, wiring schematics, specifications and complete technical description. Three models incorporate U-40 watt fluorescent. The "Console" can be employed as a conventional lighting fixture under normal conditions. However, if a power failure occurs, the unit will turn itself on and operate for three hours under its self-contained special battery inverter system. It recharges the batteries automatically to full capacity in 14 hours. The front panel may be designed for silk screen messages. The entire luminaire is U. L. listed. Globe Illumination Co. On Reader Service Card, circle 214.

### DRAWING REPRODUCTION

Eastman Kodak Co., Business Systems Markets Div., offers an eight-page brochure entitled "Drawings Made Easy." Brochure covers such topics as renderings, old drawings, doubling output and wasted motion. On Reader Service Card, circle 215.

### SOUND ABSORPTION

New literature describing the "Sonosorber," a unique molded mineral fiber cylinder that provides efficient, low cost sound absorption, is now available from Keene Corp. Ceiling and Insulation Div. The incombustible "Sonosorber" is reported to be 20% less expensive than conventional. They work by converting acoustical energy in three ways: By absorption of noise as a resonator, as an acoustical blanket, and by diffraction. Ideally suited for use in such places as factories, gyms, convention halls, auditoriums and warehouses. On Reader Service Card, circle 216.

### SKYLIGHT SYSTEMS

Kalwall Corp. offers a four-page, four-color brochure on Skylight and Sky-roof Systems. It covers esthetics and function, watertightness, and the company's design and engineering capacity. Some details are included. Can be used in schools, parks, residences, pavilions, etc. On Reader Service Card, circle 217.

### ALARM LOCK

Alarm Lock Corp. has a folder which describes their Safety Alarm Locks. This lock enables you to secure the emergency fire exit. It reduces pilferage, protects inventory, reduces guard costs. Prevents violations and saves lives. One model fits all doors. The alarm can be heard 1,000 feet. It is available with a panic bar extension. On Reader Service Card, circle 218.

### PARTITIONS

A new fully illustrated brochure offered by Hough Manufacturing Corp. is of timely interest to all concerned with the efficient planning of school space. It details information and specifications on each of four Hufcor Partitions, with sketches to illustrate their effectiveness and versatility as teaching aids. All offer full tack display surfaces in a wide choice of colors, plus interchangeable clip-on accessories . . . chalkboards, shelves, and desks. On Reader Service Card, circle 219.

### STAINLESS STEEL FURNITURE

The International Nickel Co., Inc. has just published a 16-page, full-color brochure. It is designed to show the beauty, versatility and availability of stainless steel furniture in the market today. The brochure is divided into seven sections: Office, Airport, Hospital, Bank, Restaurant, Home and Outdoor Furniture. In addition to a helpful section showing the available finishes and textures, there's also a handy, separate four-page folder which tells you where you can buy Stainless Steel Furniture. On Reader Service Card, circle 220.



# Our expanded line lets lockers breathe.

Your school needs it. Your students need it. A locker that doesn't seal odors in, or seal air out.

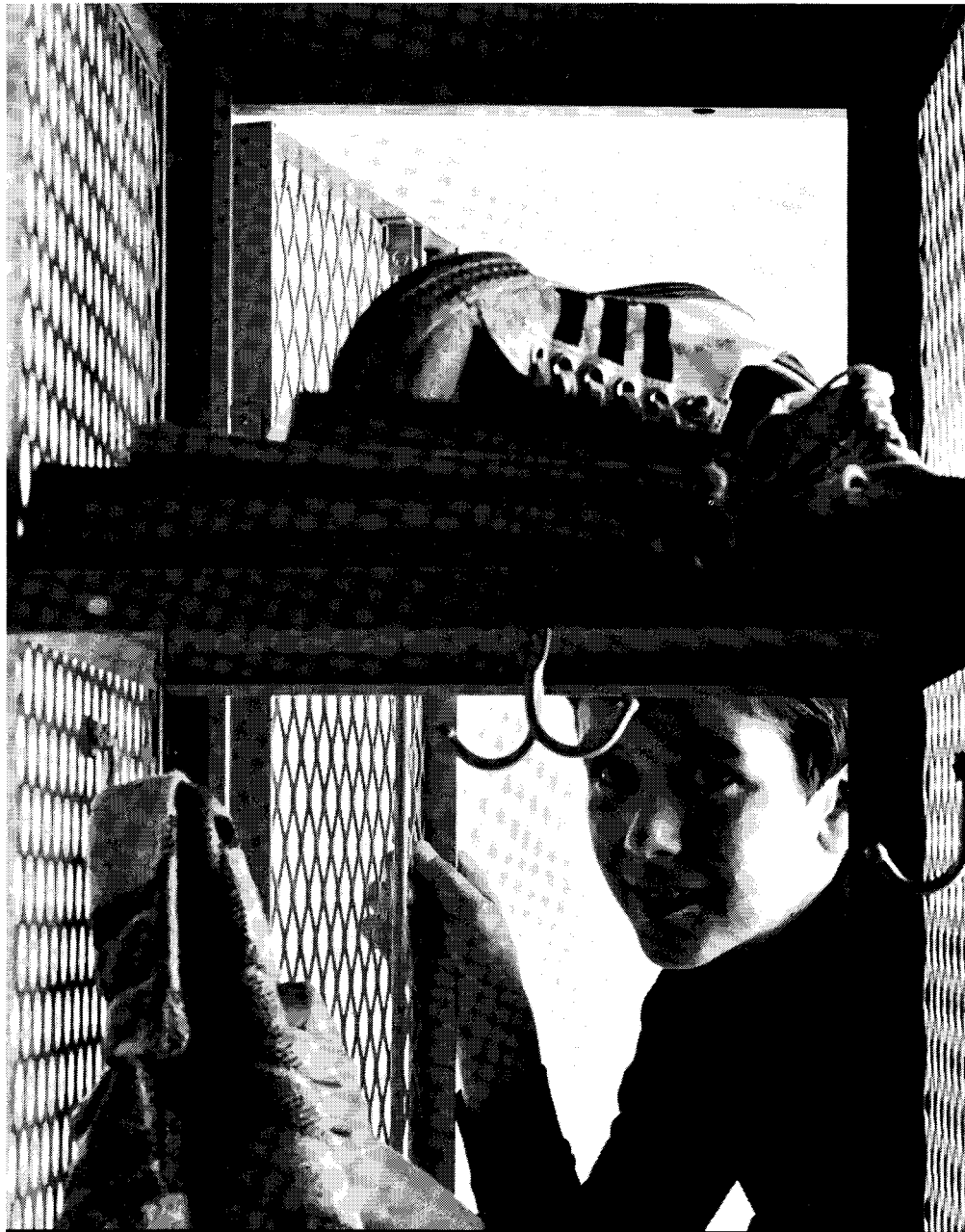
It's the Republic Expanded Metal Locker, especially made for locker rooms... with 13-gage  $\frac{3}{4}$ " mesh expanded metal on both front and sides. Mesh expanded metal smooths out more problems, too, by eliminating burrs and sharp edges so clothing and hands don't risk damage.

Frames are 16-gage, channel-formed for strength. Bottoms, shelves, and backs are also 16-gage.

Locking mechanism is 3-point design on single, double, and multiple tier units — and the doors will accommodate any standard locker lock you like.

Republic KD Expanded Metal Lockers are available in single tier, double tier, and box types — in 19 standard colors. They're compatible in design and assembly with other standard Republic lockers. And Republic offers the most *complete* locker line, a model for every need.

Write. We'll be glad to supply further information. Republic Steel Corporation, Manufacturing Division, Youngstown OH 44505.



SINGLE TIER

DOUBLE TIER

BOX TYPE

**Republicsteel**  
Manufacturing Division



# READER SERVICE FILE

Product Literature (continued from page 82)

## RESILIENT FLOORING

The mid-year edition of the 1972 Azrock Floor Products catalog of resilient flooring is now available. The 16-page catalog contains full-color illustrations of all colors and patterns available in Azrock Vinyl asbestos floor tile, Azrock Asphalt Floor Tile, and Azrock Feature Strip, and Vinyl Cove Base. Also included are information in sizes, gauges, uses, recommended installation, light reflectance values and brief specifications guide. On Reader Service Card, circle 221.

## URETHANE ROOF INSULATION

The Upjohn Co. has a new brochure on Urethane Roof Insulation available from CPR Division. The booklet relies on a series of striking mezzotints to describe typical commercial, industrial and residential roofing applications, as well as to illustrate rigid broad stock installation and spray techniques for urethane foam. Case histories, plus basic technical data, point up the design flexibility, physical and thermal properties and other inherent advantages of urethane foam insulation. On Reader Service Card, circle 222.

## VINYL FLOORING

A colorful new brochure describing the solid vinyl floor tiles and 72-inch sheet vinyl flooring is being distributed by The Goodyear Tire & Rubber Co. The brochure shows the many styles, patterns and colors in the regular flooring line. On Reader Service Card, circle 223.

## LIGHTING AND FIXTURES

The Feldman Co. is making available its 1973 catalog. This 104-page catalog features over 400 full-color photographs and illustrations. A wide variety of classic, traditional, and contemporary styles are included. On Reader Service Card, circle 224.

## METAL STRIP

Hi-Shear Corp.'s brochure describes and illustrates design applications for Zip-Ztrip, a versatile metal strip used for attaching interior panels and partitions. Zip-Ztrip is available in 5/8 to 5 1/2 in. widths, and utilizes precut surface grooves or extrusions. The product features installation simplicity, quick disassembly, and no attaching parts or tooling. On Reader Service Card, circle 225.

## HOSPITAL/INSTITUTIONAL

AVM Corp. has a 34-page brochure on their Jamestown Products. The brochure is divided into four sections: Jamestown Products, Planning Specifications and Construction Details. On Reader Service Card, circle 226.

## METAL BUILDING SYSTEMS

The Metal Building Manufacturers Assoc. announced the availability of a new brochure entitled: "Metal

Building Systems Meet Today's Building Needs and Set the Pace For Tomorrow." This colorful eight-page brochure will help answer the questions: What is a Metal Building System?; Who Uses The Metal Building Systems?; How Buildings are Constructed; How Buildings are Sold; The Advantages of Metal Building System; and The Future for This Type of Construction. On Reader Service Card, circle 227.

## OUTDOOR LIGHTING

The new catalog from the Art Metal Operation, ITT Lighting Fixture Div. includes the characteristics, detailed specifications and dimensional drawings of their new Mercury Outdoor Wall Bracket. The highly styled, contemporary design complements the Mercury Vapor Fixture designed as general lighting for commercial and industrial application. On Reader Service Card, circle 228.

## CUT STONE

Matthews Brothers Co., Inc. offers an unusual brochure about limestone. It shows that limestone is not too expensive. The company feels that cut stone, in its new textured look, can meet the challenge of today's design. On Reader Service Card, circle 229.

## SOUND CONDITIONING

Flexicore Co., Inc. has a 24-page booklet called "Practical Sound Conditioning." It explains how multi-residential buildings can be constructed to eliminate annoying, unwanted noise. This fully-illustrated booklet discusses types of sound and how unwanted noise from each type can be eliminated by the use of precast concrete decks and concrete or masonry party walls. It also tells how to plug up air leaks and isolate plumbing to complete the sound conditioning. On Reader Service Card, circle 230.

## UNITIZED CONSTRUCTION

A new brochure outlining the recent advances in design and construction of components and complete room units for motels, hotels, dormitories, and apartments is available from American Bridge Div. of U.S. Steel. Details of the Unitized Construction System, including information on weight savings, speed of construction, strength and simplicity plus information on "turnkey" service. On Reader Service Card, circle 231.

## CONTRACT CARPETING

DuPont Textile Fibers offers a new guide to selecting contract carpet for architects and designers. The 22-page, full-color booklet discusses the advantages of carpeting, what a specifier needs to know about commercial carpet fibers. Color and construction, static, flammability and acoustics. It also discusses installation and maintenance. On Reader Service Card, circle 232.

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# THE STACK PACK





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