

Progressive Architecture

July 1975 An  Reinhold publication



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A spectacular four-level house is stacked dramatically on a steep, densely wooded site on northern Lake Michigan. By Richard Meier.

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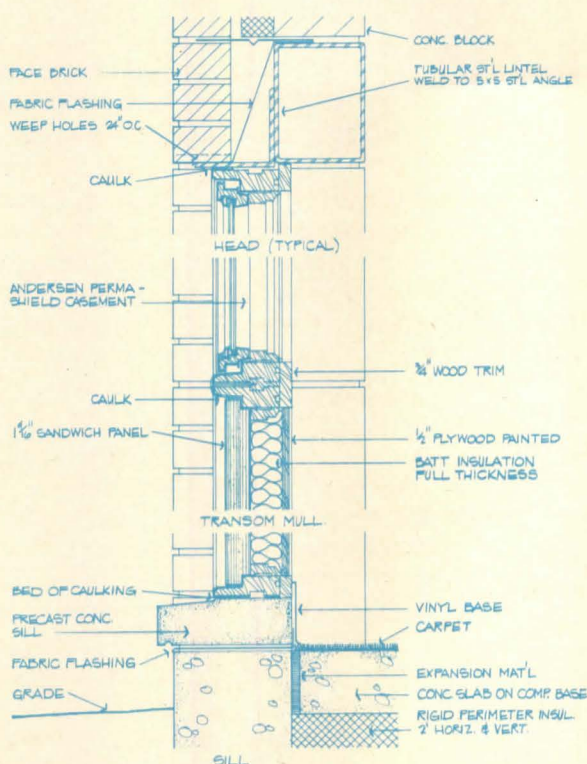
Cover: Cantilevered metal stairs of Douglas House (p.38) on Lake Michigan by Richard Meier join outdoor deck and dining level to living room above; mechanical space is below. Photo: Richard Meier.



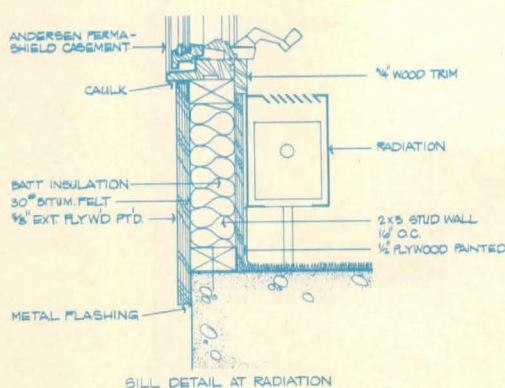


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Fishers Island School, Fishers Island, N.Y.
Vincent S. Spinella, District Principal
Architect: Charles King & Associates, Hartford, Conn.
Awards: Special citations from American Association of School Administrators and the A.I.A. 1973 Exhibition of School Architecture.

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Architects and their public

July 1975

Atlanta, where the AIA met this spring, is a good place to consider what architecture means to people. And the AIA Convention program (June P/A, p. 21) asked us to do that.

The convention headquarters hotel, the Regency Hyatt, and Peachtree Center, of which it is part, are extraordinary illustrations of architecture's potential for popular appeal. Few aspects of this complex are distinguished in terms of conventional architectural values: building forms are responses to patchy land acquisition and zoning constraints; details look like those of much ordinary commercial architecture; bridges between structures and other appendages are obviously ad hoc responses to needs or opportunities.

Yet this aggregation of office space, merchandise showrooms, hotel rooms, and restaurants totally transformed downtown Atlanta and substantially affected later commercial developments all over the world. Before Portman began designing and developing Peachtree Center in the 1960s, downtown Atlanta was incredibly lacking in notable architecture or open spaces. Reference sources of the time don't even mention it: the index of Burchard and Bush-Brown's *The Architecture of America* (1961), for instance, lists Athens, Ga., and Atlantic City, N.J., but no Atlanta. Without the magnetism of Portman's development, the city core might have just been dispersed, leaving only its gray shells next to the central freeway interchange.

Peachtree Center transformed downtown Atlanta not because of its square footage or dollar volume, but because it pleases people; that's why its postage-stamp plaza is always active, why its hotel is always booked up, why shopkeepers move in before floors are even laid. The lessons are the same as those taught earlier by Milan's Galleria and New York's Rockefeller Center; size and audacity are part of the appeal, but by no means the whole. (The World Trade Center in New York will never make it.)

After a week at the Regency Hyatt (even if you have touched down there briefly before) you can begin to appreciate more fully why this is an unforgettable environment for all but the numbest visitors. There is the immense pleasure of seeing everything from the balcony-corridor—dining activities in the lobby, elevators coming and going, the

Sample feedback form from AIA Convention. Checks indicate editor's ratings; arrows show median of public ratings, disclosed after exercise.

HYATT-REGENCY LOBBY		
SURPRISING		
not at all	_____	very
	_____	✓
LIVELY		
not at all	_____	very
	_____	✓
FUNCTIONAL		
not at all	_____	very
	_____	✓
INVITING		
not at all	_____	very
	_____	✓
IMPRACTICAL		
not at all	_____	very
	_____	✓
ORDINARY		
not at all	_____	very
✓	_____	
WARM		
not at all	_____	very
	_____	✓
QUIET		
not at all	_____	very
	_____	✓

maintenance staff at work, or other people just enjoying the pattern of sunlight on the balconies; at a convention, you can recognize friends walking to and from the elevators. (Can we ever be satisfied again with blind corridors and elevators?) Few of the details of this lobby are notable in themselves, and some would make the Modern masters shudder; but they all work together magnificently in reinforcing the overall concept.

The popular appeal of this lobby and of Peachtree Center as a whole is no accident; Portman strives quite consciously to give pleasure to people of all ranges of sophistication. And this convention program called on participants to estimate how users (not architects) would rate certain places. The seven test locations ranged from the plaza and hotel lobby at Peachtree Center to an elementary school (sample of my own score sheets above). Advance word is that visiting non-architects (spouses, etc.) were more accurate in gauging public opinion than were the architects. Full results, to be published in *AIA Journal*, will hardly be definitive, but the exercise will be significant for those who took part.

The importance of user response was emphasized by all speakers as the "Spaces for the Species" theme at this convention, but they were summed up most concisely by Donald Conway, director of research for AIA, one of the organizers of the program. In his closing remarks, Conway identified user response studies as crucial:

"Why should we do this? The answer lies in the relationship between these two elements—the spaces which we design and the human species for whom we design. . . . Throughout its history the principal focus and central claim of our profession has been that we bring a sensitive and humanistic understanding of this relationship to the design process. All of our other professional claims—our being sound businessmen, or arbiters of good taste, or supreme building technologists, are either additive or peripheral to this central claim. And nothing else takes its place as the basis for the position our profession claims in society."

A profession that meets these expectations of society is bound to prosper.

John Morris Diefen

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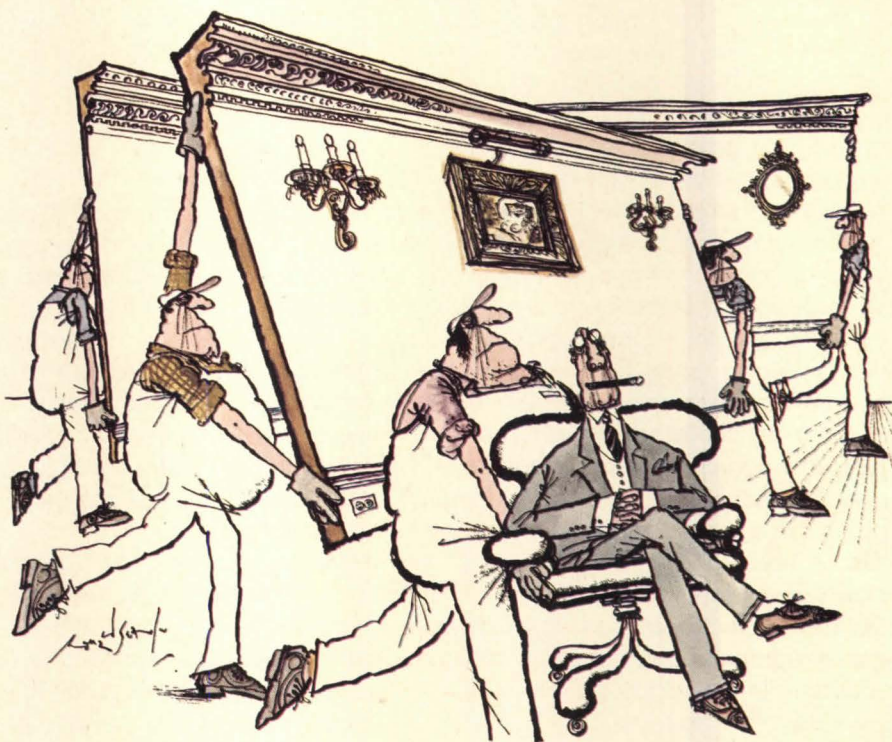
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Views

Energy update

I was pleased to see your recent issue (May 1975) dealing with alternative energy resources. One timely addition to your energy bibliography should be *Energy Primer: Solar, Water, Wind, and Bio-fuels*, recently published by Portola Institute (\$4.50 in U.S., \$5.50 elsewhere). It is an extremely comprehensive and up-to-date compendium of energy resource access information, and should prove valuable to both architects and designers. I look forward to a continuing exchange between established practitioners and those involved in grassroots technology. We need to establish a continuing dialog and a solid working base, working together to re-evaluate energy priorities.
Susan Ross
Santa Cruz, Calif.

Right elevator lobbies

Your April 1975 issue had a most interesting article entitled, "The ascent and descent of man." I feel that I should note, however, that the photo which you labeled as the Regency Hyatt Hotel in Chicago is definitely one of Portman's creations, but not the Chicago version.

Also, as a note of reference, the Rookery Building was designed by Daniel Burnham and John Root. However, in the photo you displayed (p. 105) the lobby design was by Frank Lloyd Wright.

Keep up the excellent work.
Howard B. Skolnik, Designer/Planner
Angelos C. Demetriou Architecture,
Urban Design, Planning,
Washington, D.C.

[The mistake in hotel identity was galling, since the P/A editors knew it was Atlanta all along; this error was also called to our attention by the office of John Portman & Associates. The Rookery lobby was originally designed by Burnham & Root and completed in 1886. It was remodeled by Wright in 1905—Editors]

Unsung hero

There's no getting around it. Kenzo Tange missed in Minneapolis! P/A devoted four pages of text and photographs proving it beyond any reader's doubt, and I'm jealous.

Shucks, fellows, I have been designing buildings that "missed" for 25 years, as have many of my colleagues, and not just in Minneapolis. Not once has P/A published any of my misses! Now that I understand that your magazine specializes in architectural failures, I fully expect to leaf through some future issue and see the headline, "Gernsbacher Misses Again." *L.M. Gernsbacher, AIA*
The Gernsbacher Group
Dallas, Tex.

Historical allusions

After perusing your April 1975 issue, I began to wonder how you settled on the word "progressive" for your title. Other more appropriate adjectives spring instantly to mind. "Digressive," for instance—do we really want to see a picture of King Faisal waving? Or how about "regressive?" This would certainly apply to the series (pp. 72–91) of House Design as Self-Gratification.

This is not one of those melodramatic letters demanding immediate withdrawal of my subscription. One does need reading material in the bathroom—perhaps a better place for self-gratification than the Connecticut countryside?

Mark Schaye
Los Angeles, Calif.

What is it about the Venturi's new firehouse on Dixwell Avenue in New Haven that is so convincing while the houses in your April issue seem just cute? Admittedly the cover picture is impressive, but that may be just size—and all that nature. I guess I have to admit some sour grapes, but there is more than that. I am an outsider, which gives me a special point of view, but there is something unhealthy in the tone of the writing—Moore reviewing Stern, Stern reviewing Moore. Certainly the smug self-satisfaction displayed suggests to me the atmosphere that must have prevailed 75 years ago. The denials demanded by the early modernists seem needed again already. A guy in my office standing near me just asked if I didn't like the Stern house—I

replied "I hate it." (One exception is the Radio City stair which is swell.) He countered "Didn't he have some fun?" That's just it. Since I was in school I've heard guys talking about having "fun," as if architecture were for self-amusement, and not merely self-indulgence but pretentious self-indulgence.

If opening up modern architecture to historical allusion is to be fruitful, then the social values proclaimed by the modern movement must not be forgotten, and at least part of these allusions must be to despised sources. That is the difference between Moore, Stern, et al on the one hand and the Venturi's on the other. With tongues firmly fixed in their cheeks and a wink directed at the knowing, the former indulge themselves with quotes from sources they like, which is to say easy ones, while the latter go to rejected sources—and discover a treasure chest!

T.G. Killian, Architect
New York

How about some replies to your readers' letters?

T.G. Killian: The point that the Venturi's and the rest of us have been trying to make for some time now is that a wider, not a narrower range of sources would improve architecture. To ascribe to the Venturi's the use only of "despised" sources is a curious put-down of some fine Roman stuff; but it sounds like the reader despises Stern's and my sources, not the Venturi's "despised" ones.

Lebbeus Woods: I am appalled at a kind of architectural arrogance I had hoped we'd seen the last of. These are houses, not hair shirts. The allusions in them are meant to increase the owners' comfort, not bludgeon them with High Art. The owner of one of them works (and very hard, too) at the problems of housing in underdeveloped countries. I would have thought it arrogant and presumptuous of his architect to invade his house with primitive Dionysian tensions, whose only purpose could be to demonstrate the architect's sensitivity or importance. Vitriol in the swimming pool or its architectural equivalent might unleash some primeval tragedy, I find the image offensive.

Charles Moore, Professor
School of Architecture and Urban
Planning
University of California, Los Angeles



A spectacular motor hotel.

ELEVATORS BY DOVER

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Stapleton Plaza Motor Hotel.

Architects: Paul R. Reddy, Denver, Colorado.

James Ream and Associates, Inc., Design Consultants, San Francisco, California.

Contractor: Hensel Phelps Construction Company, Greeley, Colorado.

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DOVER

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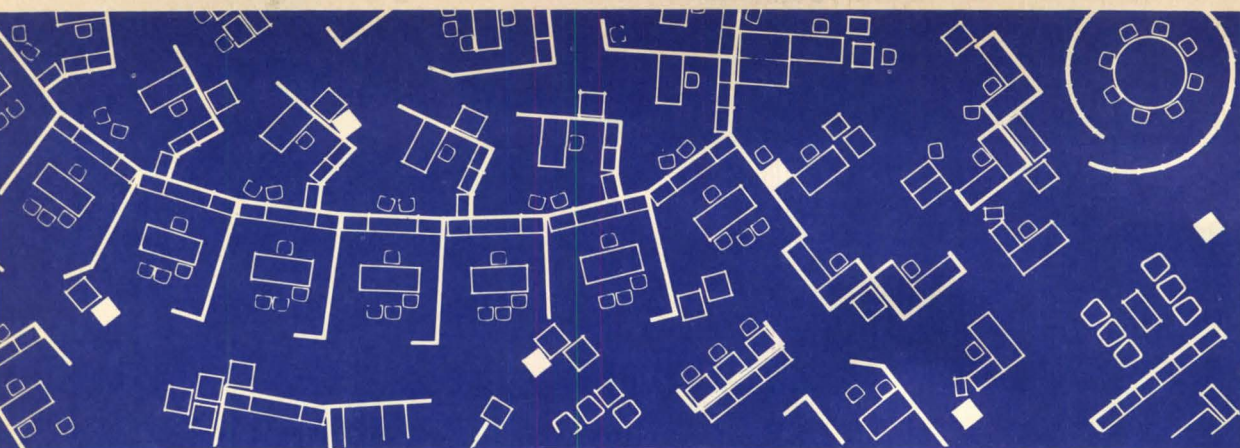


Upper left: one of the executive offices in the new IBM World Trade Americas/Far East Corporation headquarters, where free-standing Modulo 3 furniture and panel-hung components are combined.

Lower left: acoustical panels in the Modulo 3 System form offices, support components and establish an integrated staff area using free-standing furniture.

Upper right: free-standing, white laminate secretarial stations have recessed oak veneer work surfaces complement the panel-hung and free-standing components of adjacent executive offices.

Lower right: in 37 sq. ft. is an efficient work station containing panel-hung desk and work surface, an overhead storage units and mobile tub file. communication and electrical wiring for the station is safely concealed in the Modulo 3, UL approved raceway—the only plug-in, panel-to-panel System that's UL approved.



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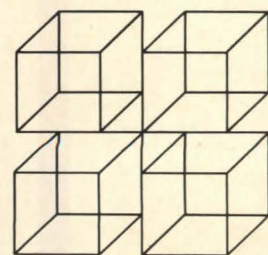
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Architect: James H. Livingston Associates, Ann Arbor, Mich.

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Architect: Segreti, Stillwell & Hasselman, Washington, D.C.

Qasal Panels, textured surface.

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Architect: Collins, Kronstadt, Leahy, Hogan & Collins Associates, Silver Spring, Md.

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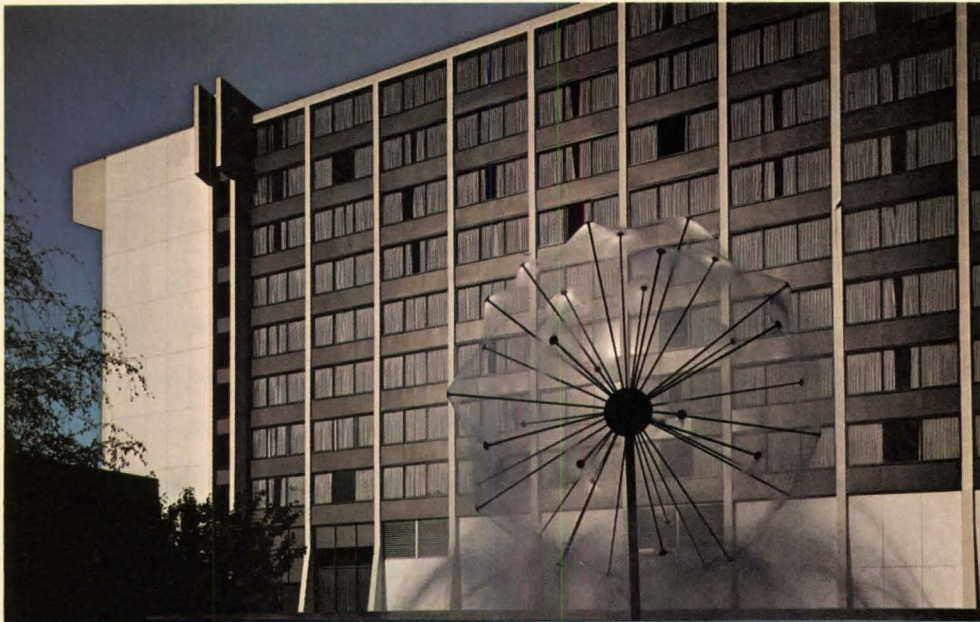
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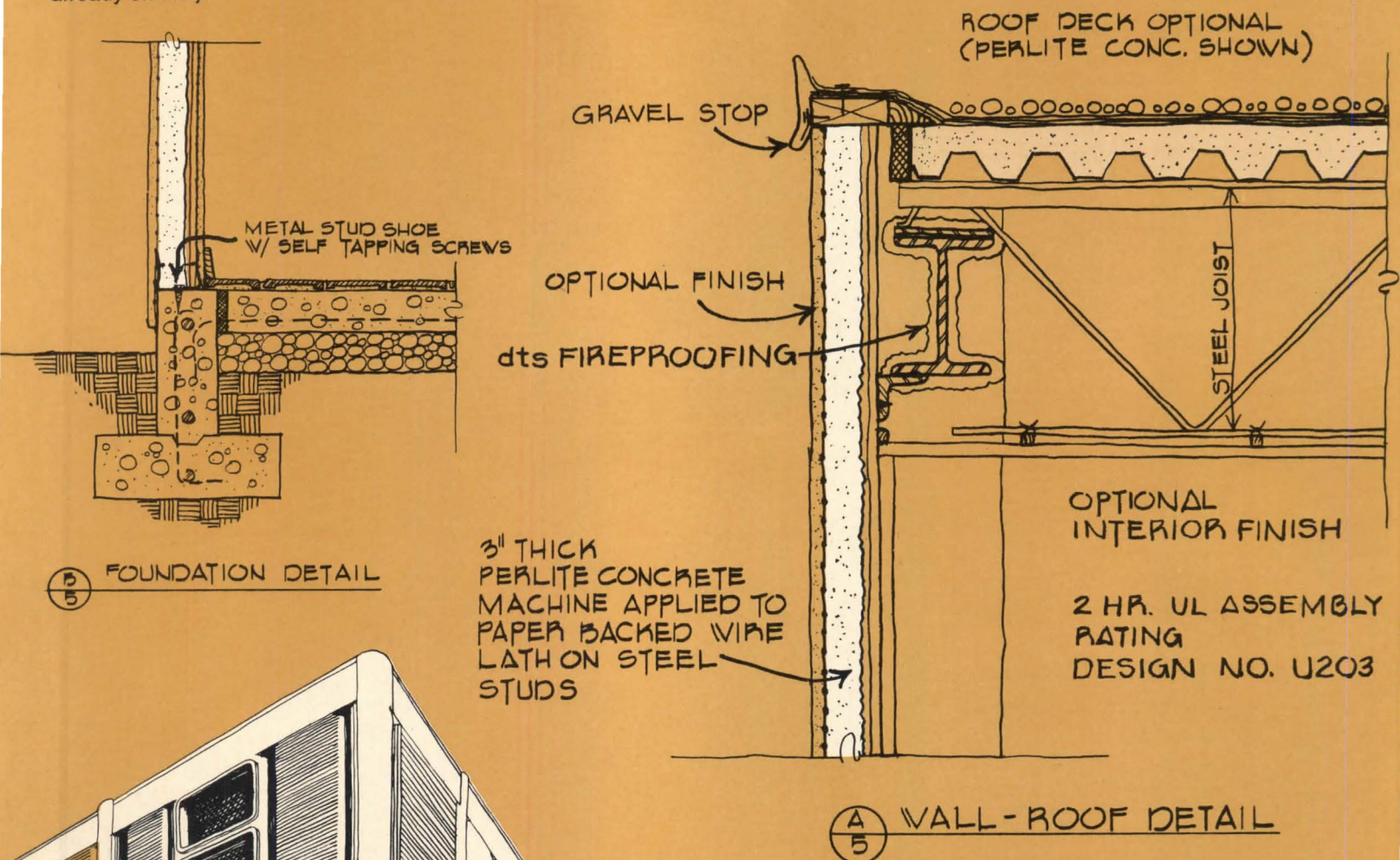
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*As indicated in HUD Report entitled "Study of Computerized Utility Analysis" published November, 1972.

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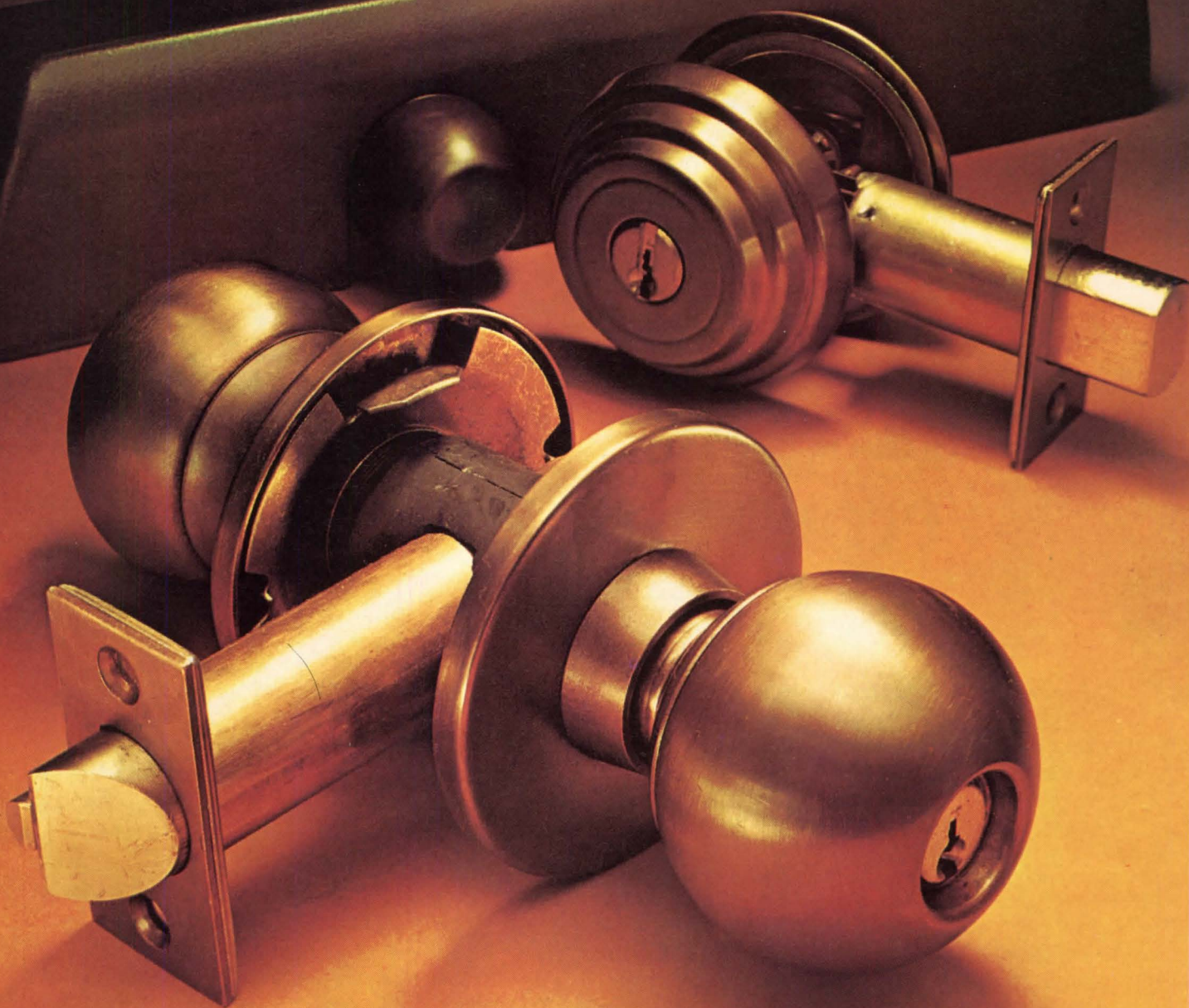
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News report

Mutt and Jeff teams to design new campus

A first-time effort to team large firms with smaller, less well-known firms on individual projects was announced recently by the New York Board of Higher Education. Nine New York architectural offices have been selected to form four teams to design \$35.5 million in buildings for the new Baruch College in Brooklyn, a part of the City University of New York.

The master plan for the 15-acre campus was by Kahn & Jacobs/Hellmuth, Obata & Kassabaum, who also together will design three structures totaling \$34 million.

The four joint venture teams are Victor A. Lundy, O'Brien & Justin, and Vitto & Robinson, for a theater/auditorium; The Grad Partnership and Gwathmey Siegel for a library; Haines Lundberg & Waehler and Richard R. Moger for a physical education building; and I.M. Pei & Partners and Prentice & Chan, Ohlhausen for a student/campus service building.

Initially 350 firms were notified of the building program, and 150 responded. The final decision was based on interviews and visits to existing buildings of the firms.

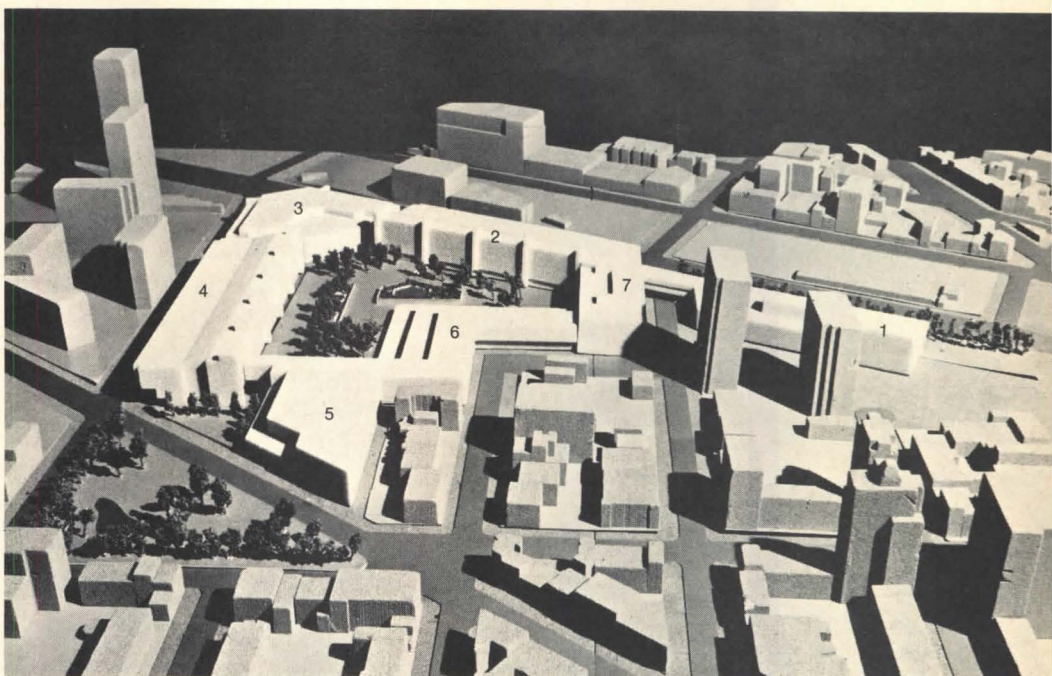
The motive in pairing the large and small firms is to encourage innovative and fresh design concepts.

Texan voted AIA president-elect

John M. McGinty, principal of The McGinty Partnership, Architects, and The Crane Design Group, both in

Legend

- 1 Theater/Auditorium
- 2 School of Business and Public Administration, and School of Education
- 3 Library and Interdepartmental Support
- 4 School of Liberal Arts
- 5 Physical Education
- 6 Student/Personnel Services
- 7 Administration



Baruch College masterplan.

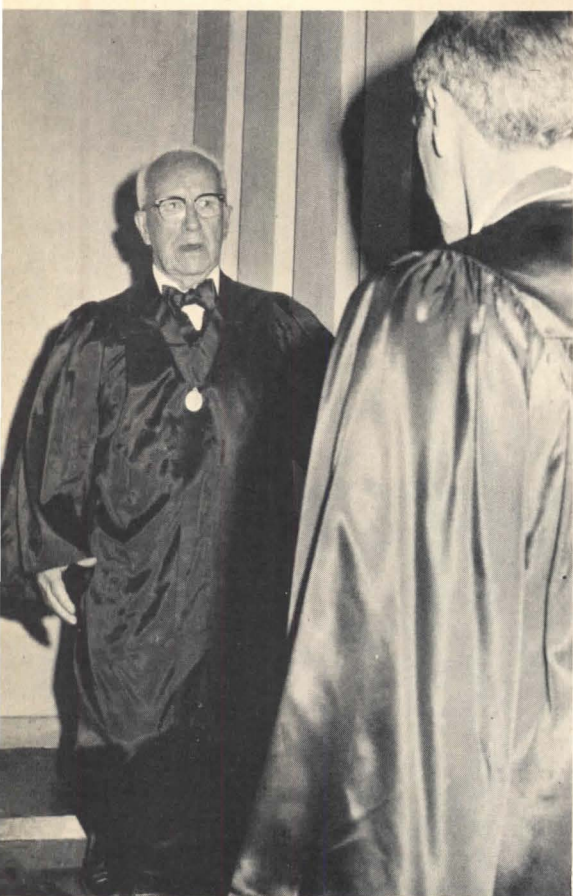


AIA officers, from left, Hilliard Smith, secretary, John McGinty; Louis deMoll, current first vice president; Robert Wilson; Elmer Botsai. Not shown are Carl Bradley and Charles Schwing.

Houston, was elected first vice president of the American Institute of Architects at the AIA's convention in Atlanta. McGinty currently is serving his second term as a vice president. He defeated Louis R. Lundgren, president of The Lundgren Associates, St. Paul,

for the office and in 1977 will become president of the AIA.

Robert L. Wilson, who heads his own firm in Stamford, Conn., with an office in New York, was elected a national vice president. Incumbent vice presidents Carl L. Bradley of Arch-



R. Buckminster Fuller, FAIA.

Eisenhower Hall (below)—even a cadet could cry.

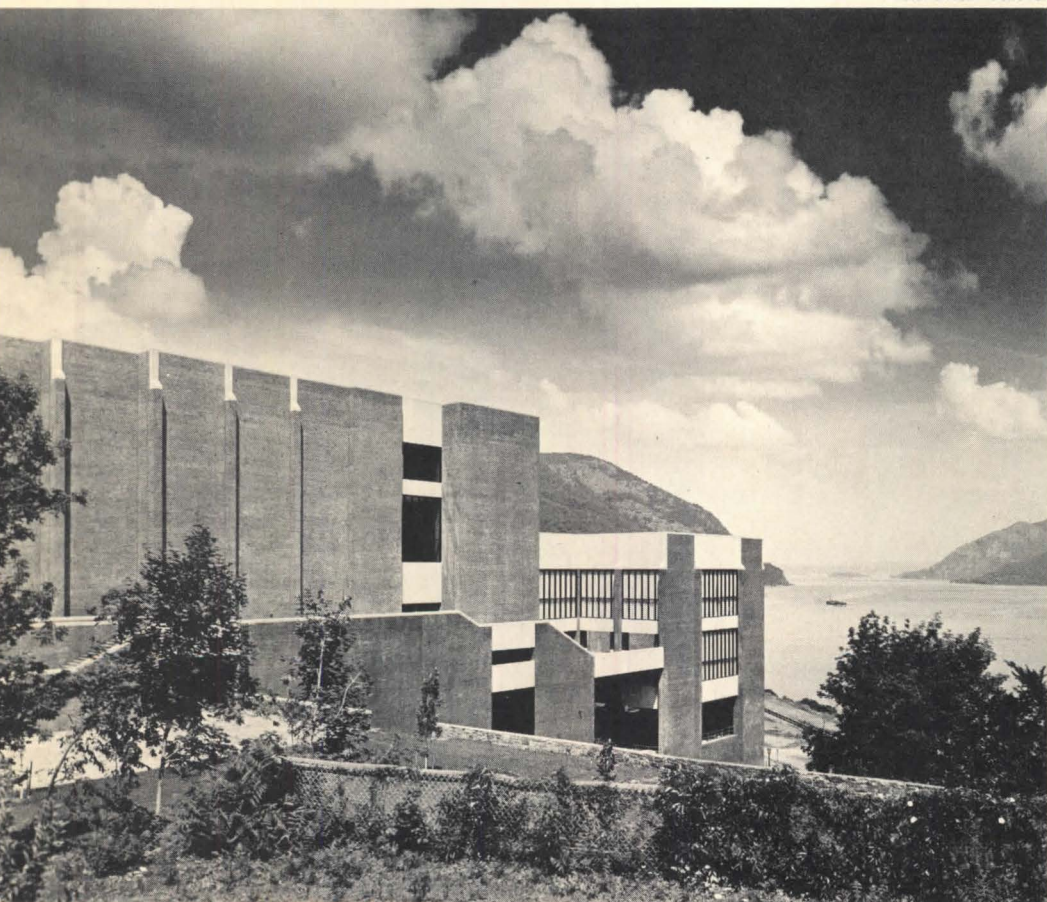
onics Corporation, Fort Wayne, Ind., and Elmer E. Botsai of Botsai, Overstreet Associates, San Francisco and San Diego, were re-elected.

Charles E. Schwing of Baton Rouge, La., was elected for a two-year term as treasurer. New officers serve in 1976.

Buckminster Fuller becomes FAIA

Long before he legally was able to call himself an architect, R. Buckminster Fuller often was referred to as "architect" as well as mathematician, philosopher, inventor, and metaphysician. Just over a year ago he made it official—became a registered architect and joined the American Institute of Architects. In short order the Institute made Bucky a Fellow, having already presented the Gold Medal, its highest honor, to him in 1970. The investiture took place in May during the AIA convention; 61 other AIA members also became Fellows at the same time. Fuller resides in Philadelphia where he is World Fellow in Residence at a consortium of five colleges; he also is professor at Southern Illinois University.

Photo: Gordon Schenck



West Point's Eisenhower Hall

A lackluster hall, bringing together under one roof the social and cultural activities of the United States Military Academy at West Point, N.Y., has opened overlooking the Hudson River. The \$25 million Eisenhower Hall was designed by Welton Becket & Associates. Henry Brennan, director of the firm's New York offices, says the design centers activities around a Grand Hall. The ballroom and dining room are on the north end overlooking the river; an auditorium, finished in the Academy's colors of gray and gold, is oriented towards the south. The unfulfilled promise of the site is enough to make even a cadet cry.

Room for one more on Wainwright site?

A year ago when the vacant Wainwright Building was not far from demolition, St. Louis welcomed the State of Missouri as new owner and rescuer of the world-famous landmark by Louis Sullivan. Plans to convert the building into state administrative offices and to develop the rest of the block for more intensively used state facilities were applauded.

Now, following a national competition won by Mitchell/Giurgola Associates of Philadelphia in association with Hastings & Chivetta of St. Louis for design of the Wainwright's rehabilitation and the new construction, the state is being asked to consider retaining another vintage building nearby instead of including it in the land clearance.

The DeMenil Building is a seven-story office structure designed by St. Louis architects Isaac Taylor and Oscar Enders. Like the Wainwright, it was a speculative building—completed two years after the Wainwright in 1894, and it adheres to the neo-romanesque tradition that the Wainwright interrupted. The two buildings, side by side, make a telling juxtaposition of styles—the DeMenil representing the "before" condition of American business architecture that the Wainwright so positively redirected.

Meanwhile, lukewarm enthusiasm for the Mitchell/Giurgola-Hastings & Chivetta plan has contributed to the



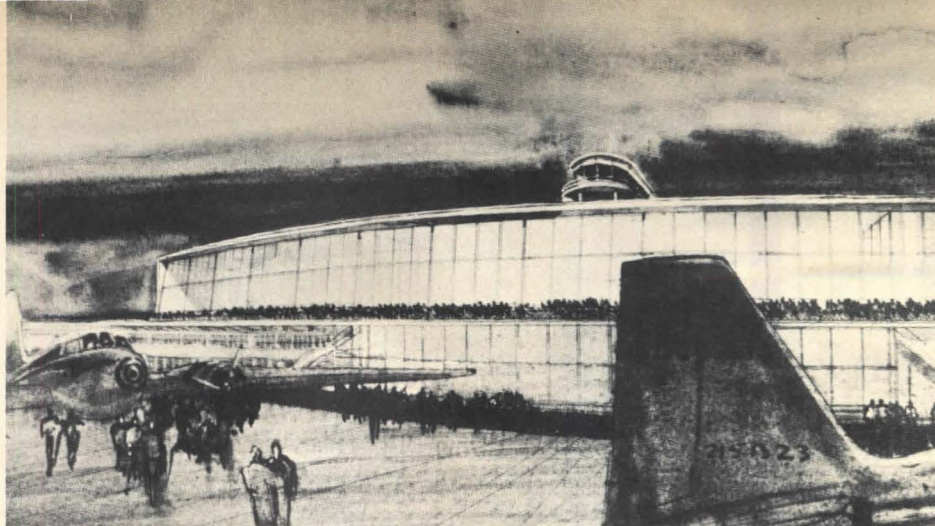
DeMenil (foreground) and Wainwright.

growing sentiment for incorporating the DeMenil Building in the state's office arrangements. It is a sharp contrast from the mood of a year ago when, if losing the DeMenil would gain the Wainwright, the price was not considered too high. [George McCue]

L.A. '30s show: of pleasant memories

At the opening of David Gebhard's show, "L. A. of the 30s," recently on view at the University of California at Santa Barbara Art Gallery (where Gebhard is director) several architects were present whose work was included. One was Harwell Harris, who will have a solo show at the gallery next year; another was Roy Kelley, who moved easily in the 1930s and 1940s between eclectic and modern—an Italian villa and the Rand Corporation Building. Dion Neutra represented his late father, Richard Neutra.

It was more than a show of buildings—Modern, Spanish Colonial, Art Deco, French, and Italian; in the 1930s the automobile had begun to impinge, and included in the exhibit were the first drive-ins and first freeway—the Arroyo Seco, now the Pasadena—so pleasantly fitted to the contours and beautifully landscaped that it is now indigenous. Scenes of Hollywood Blvd. recalled that it has always been a pedestrian street, except today it is usually the Chicanos who saunter, often arm in arm, and stop to study the terms



L.A. Airport project by John Austin and Sumner Spaulding, from 1930s exhibition.

for wedding ring sets in shop windows.

Of Gebhard's many UCSB exhibitions, this is the first to comment directly on the environment not only with street scenes but also with aerial views. As always, he finds simple ways to set a mood on a small budget—this time with textiles of the period hanging from the ceiling.

It is a small, carefully selected exhibit which, unfortunately, will end its day in the archives unless someone can coax it out. In the show are many drawings which seldom see the light, as for instance, Gregory Ain's Dunsmuir Apartments, so pristine in their whiteness and use of ribbon windows from the street side, so handsomely oriented to porches on the off-street south side. The drawing, as crisp as an engineering diagram, is a reminder that the style of drawing has undergone as many changes in 40 years as the façades. [Esther McCoy]

Beaux Arts exhibit opens fall season

The Museum of Modern Art, New York, has announced a major exhibition of work by students of the Ecole des Beaux Arts in Paris, to open in October. The show will include drawings—some as large as 18 ft—never before seen by the public. Included will be work by students Henri Labrouste and Charles Garnier, who later became well-known architects. Most of the works come from the storeroom of the school—many never having been unrolled since they were submitted by students 80 to 100 years ago.

Arthur Drexler, director of the museum's department of architecture and design organized the show in conjunction with David Van Zanten of the University of Pennsylvania, Neil Levine

of Harvard University, and Richard Chafee of Courtauld Institute, London.

Spec writers named for P/A Technics

Six regional contributors to P/A's Specifications clinic in the Technics section have been named, and their articles will appear alternately on a monthly basis. Harold Rosen, a regular writer of these articles, also will continue to contribute to the section.

The new writers are Josephine Drummond, specifications writer and construction administrator for Gruen Associates, Los Angeles; William Lohmann, chief specifier for C.F. Murphy Associates, Chicago; Alvin Skolnik, director of research and specifications, Skidmore, Owings & Merrill, New York; and Robert Williams, Ronald Bowie, and Martin Martensen, all with Caudill Rowlett Scott, Houston. Williams is the group leader of the CRS spec team.

Seminar to focus on Middle East work

A two-day seminar on how to market building services, systems, and products will be held July 21 and 22 in Washington, D.C. at the Shoreham Americana Hotel. The meeting is sponsored by the National Association of Building Manufacturers. Speakers will include C. William Stricker, immediate past president of the association and a member of the Joint Economic Commission planning team which visited Iran in February; Don Gilchrist, executive vice president and director of the recent Construction and Building Materials Trade Mission to Saudi Arabia; and Peter Hale director of Commercial Action Group for the Near East (CAGNE), a federal agency.

News report

Photos: Al Mozell



Original façade seen beyond Lehman court.



General view of Lehman Pavilion from the entrance.

Roche, Dinkeloo museum wing opens

The \$7.1 million Lehman Pavilion by Kevin Roche John Dinkeloo & Associates, Hamden, Conn., has opened at the Metropolitan Museum of Art, New York, the first building completed in the Roche, Dinkeloo master plan begun five years ago for the museum.

At that time public dissent centered on two issues—encroachment into Central Park and further consolidation of the museum's holdings—but the controversy subsided without affecting the expansion program. Location of the museum in the park and its anticipated growth evidently were planned from the start by Frederick Law Olmsted, the park designer and a museum trustee as well.

The Lehman wing is attached at a 45-degree angle to the existing structure at the center of the museum's western façade on the park side. The red brick wall and limestone arches of the original museum, by Calvert Vaux and Jacob Wrey Mould, form the east wall of the new pavilion.

The new wing is a rectangular structure of solid Indiana limestone wrapped around a two-story glass-roofed interior court. Its entrance is at the point where it joins the museum in direct line with the formal Fifth Avenue entrance.



Soho's painted wall.

The ground floor contains staff, research, and lecture rooms, a library, and galleries for drawings. The main floor houses galleries that permanently will display the 3000 works in Robert Lehman's collection. The planted central court will be open for relaxation.

Most of the works in the collection will be displayed in seven rooms removed from the Lehman 54 Street mansion decorated by Royaux of Paris and installed on the main level of the new addition.

The pavilion was built at nearly \$1 million less than its original estimate due, museum director Thomas Hoving said, to careful planning and construction management.



Photos: David Morton

Illusionistic painting of cast iron façade is one of the most recent additions in New York's City Walls project.

Fake façade turns heads in Soho

A painted-on cast iron façade in New York's Soho neighborhood, downtown Manhattan, looks so real that people do a double take when they see it. Artist Richard Haas, who specializes in architectural subject matter, created the illusion for City Walls Inc. on the blank exterior of a building at 114 Prince St. He repeated the pattern of the building's actual cast iron façade incorporating two real windows with the painted fenestration.

The wall is the first *trompe l'oeil* mural for City Walls, which was created in 1968 to enhance drab areas of the city. Haas exhibits at Brooke Alexander Gallery and teaches at Bennington College, Vermont.

[News report continued on page 22]

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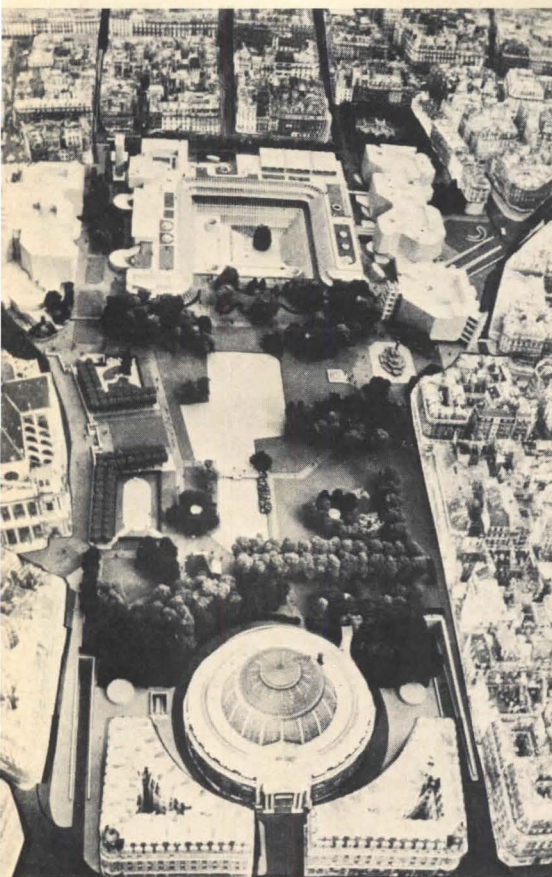
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Entry of Bernhard de la Tour d'Auvergne group.

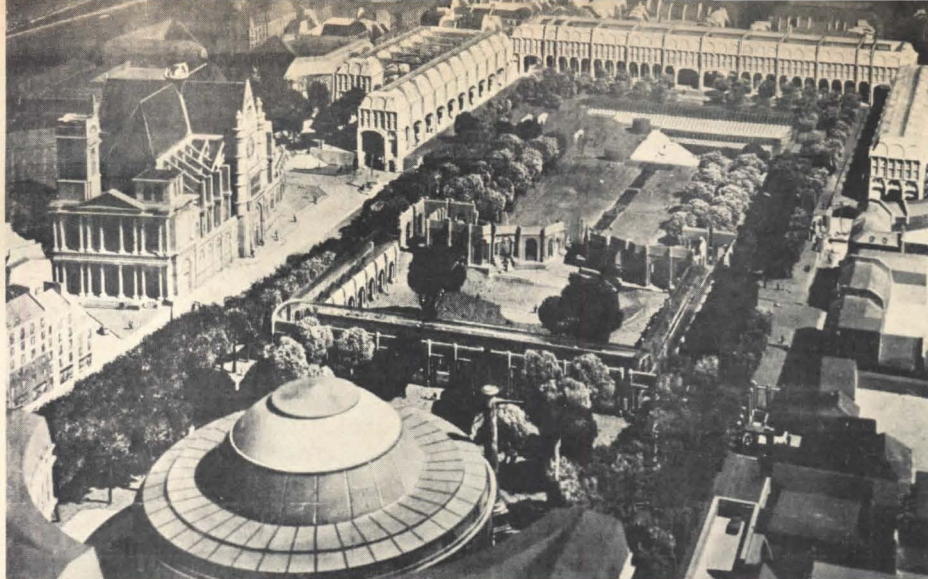
Parisians vote on Les Halles project

Like Covent Garden in London, Paris' central market, Les Halles, has been demolished, and now a new one is operating in the suburbs. What to do with the remaining 10 acres of vacant land in the city remained unresolved. Then this spring, Parisians were asked to vote by ballot on three designs, submitted by invitation to the Societe d'Economie Mixte pour l'Amenagement des Halles.

Twenty thousand reportedly turned out to inspect the models on display and vote for their favorite, but the President of the Paris City Council later bypassed the public's choice, a scheme by ARC Associates in collaboration with others, for one by Ricardo Bofill/Taller de Arquitectura.

Meanwhile architect John C.B. Moore, consultant to Hutchins, Evans & Lefferts, New York, has examined the three large—9' x 12' models—on a trip to Paris and has supplied some descriptive data and his own impressions.

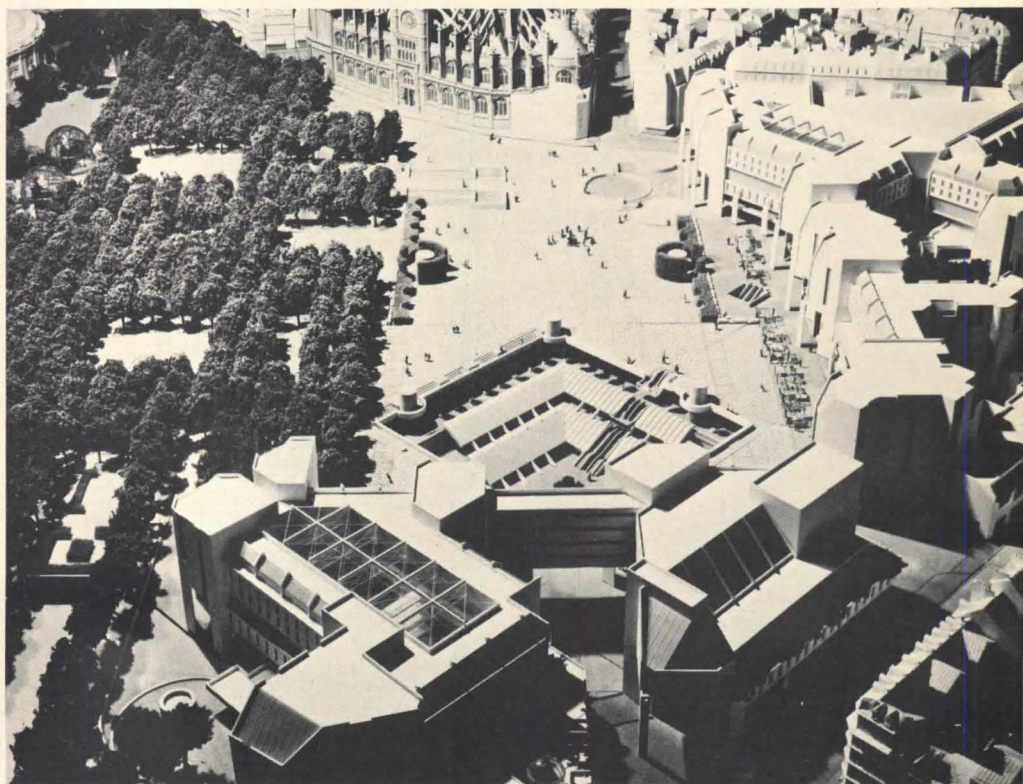
The proposal submitted by ARC As-



Bofill/Taller project selected by city for development.

Public favorite: submission by ARC Associates group.

Photo: URPHOT



sociates in collaboration with Jean Claude Bernard (son-in-law of Moore), Andre Yves Dupuis, and Vladimir Mitrofanoff departs from the previous rectangular form left by the demolished buildings and seeks to relate to the surrounding neighborhood. This plan's concept of an oblique "parti" was 85 percent of the popular vote.

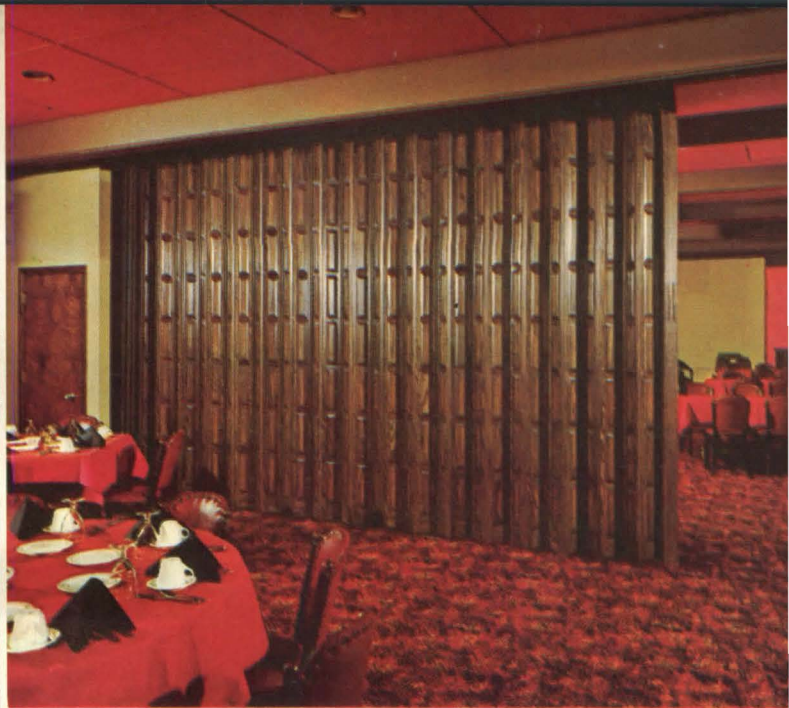
The Bofill/Taller de Arquitectura scheme, in collaboration with Alain Prevost/Jacques Simon, landscape architects, and Claude Vasconi/Georges Pencreac'h, architects, "appears to be more like a theatrical set," Moore said, and indeed has a large open-air theater surrounded by a cloistered walk.

The public vote showed 55 percent in favor of the architecture of the Bofill

project. The city council selected this as the design to develop.

The submission by architect Bernhard de la Tour d'Auvergne in conjunction with Russell Page, landscape architect, with consultants from Societe de'Economie Mixte d'Amenagement des Halles has a polygonal pool reflecting St. Eustache. The central open space is abutted at one end with a screen of trees and the Bourse and at the other by interestingly detailed buildings surrounding a commercial crater. These, however, are flanked by other structures rather "bleak and heavy in mass" which block normal access from surrounding streets, said Moore.

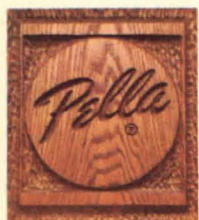
[News report continued on page 24]



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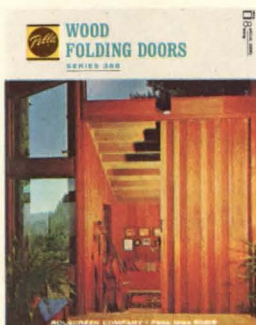
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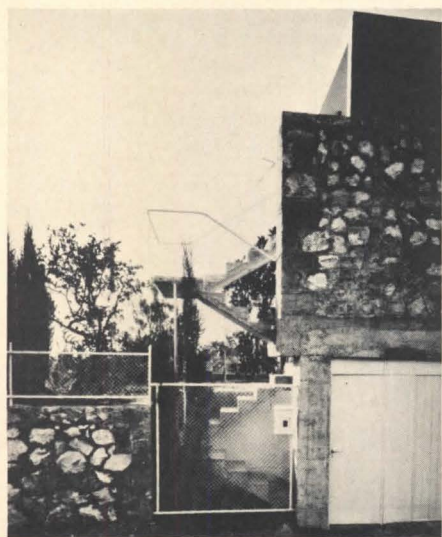
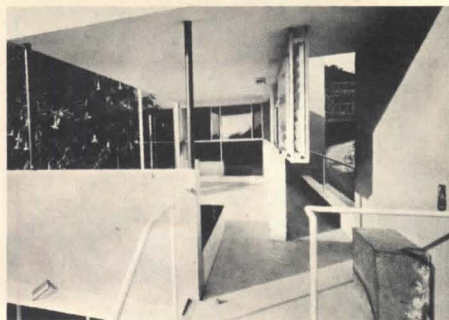
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Report from Los Angeles

House at Roquebrune, second level entry (top) and entry gate (below). House in Castellar (bottom) bridge to second level entrance.



"I met Gropius but I never went to work with him. I met Badovici and he said to me, 'Why don't you build?' First I laughed at him. I always liked architecture more than anything but I didn't think I was fit for it."

But Eileen Gray was. This was clear in the first show of her work in the United States at Woman's House, which in two years has become an established center for workshops and conferences in Los Angeles, and is headed by Sheila de Bretteville, Judy Chicago, and Arlene Raven. From there the Gray show went to Princeton, Columbia University in New York, and Boston City Hall.



Most of Gray's work was interiors—furniture, rugs, textiles—the most famous piece of furniture being a sling chair with rolls of white leather. She also designed two houses and several projects; the first house was in 1926, the second a year later, both for sites near Menton in France. She was the client for both, and an unusual client at that: an Irish gentlewoman of independent means who in the 1890s attended Slade School and who found craftsmanship and humaneness in the fading Morris movement and then in the spirit and elegance of Art Deco.

She has a counterpart in Los Angeles, J.R. Davidson, who went the same route a few years later and whose houses have a curious resemblance to hers in proportions and window openings; and both were of an age and inclination to give a sensuous feeling to a boudoir. Gray also had a daintiness. The past tense is misleading as both are living. Gray is in her 90s, residing in Paris in an apartment she designed in 1917.

One element in Gray's work comes from her affinity for the airplane; she was a passenger on the first flight across the Channel and again on the first airmail flight in the U.S. Sometimes she used metal as if she had "faired in the line" of a wing; on one house were metal *brise-soleils*. In the work space of her apartment were stacked file trays of perforated metal with different diameter holes for each tray; perforated metal screens divided spaces. As she said once, "The only thing one can ask of an artist is to be of one's own time."

Jean Badovici, editor of *Architecture Vivante*, who urged Gray to build, occupied her first house, in Roquebrune; later, Le Corbusier built a cabin next to it and painted several murals in the Gray house—still there today.

The house of concrete, built on a slope, accommodates guest and servants' rooms on the ground floor with living space on the second level. The plan, generous but compartmented, recalls Joseph Rykwert's comment that Gray called open planning "*le style camping*."

When Eileen Gray heard that some of the entrances to the Metro stations were to be preserved as art she said, "It is exactly against those things that we were rebelling." [Esther McCoy] [News report continued on page 26]

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Personalities

A. Quincy Jones, FAIA has been named dean of the University of Southern California School of Architecture and Fine Arts, Los Angeles.

Gerald Exline, architect of Sun Valley, Idaho, has been appointed head of the Cranbrook Academy of Art architecture department, Bloomfield Hills, Mich.

Lester C. Haeckel, president and chairman of the board of Wm. B. Ittner, Inc., Architects Engineers Planners, Saint Louis, Mo., has been named a member of the American Association of School Administrators' 1975 School Building Commission.

Calendar

Through Oct. 19. "Art for Architecture: Washington, D.C. 1895-1925" Renwick Gallery, Washington, D.C.

July 14-17. Fifth Australian Building Research Congress, Melbourne.

July 17-19. Symposium on human response to tall buildings, sponsored by the American Institute of Architects and the Joint Committee on Tall Buildings, Sears Roebuck Bldg., Chicago.

July 20-22. Conference of the Environmental Design Group of the Human Factors Society, Montana State University, Bozeman campus.

July 21-22. Middle East trade and investment seminar, Shoreham Hotel, Washington, D.C. Sponsored by National Association of Building Manufacturers.

July 31-Aug. 2. First national conference on the economic benefits of preserving old buildings, sponsored by the National Trust for Historic Preservation and the city of Seattle, Wash.

Aug. 1-4. National conference of the American Society of Interior Designers, Century Plaza and Beverly Hilton Hotels, Los Angeles. The 1975 Exposition of Designer Sources will be held Aug. 1-3 at the Century Plaza.

Aug. 10-Sept. 21. Exhibition of photographs documenting work by Charles and Henry Greene, Walker Art Center, Minneapolis.

Sept. 24-28. Convention of the National Association of Women in Construction, Denver, Colo.

Oct. 9-12. International Building Exhibition, Industry Building, Exhibition Park, Toronto, Canada.

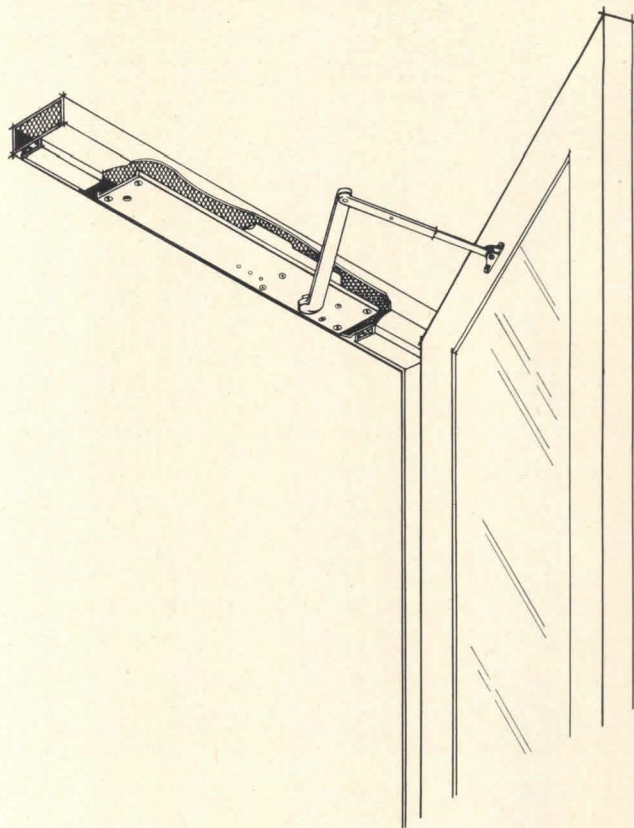
[News report continued on page 28]

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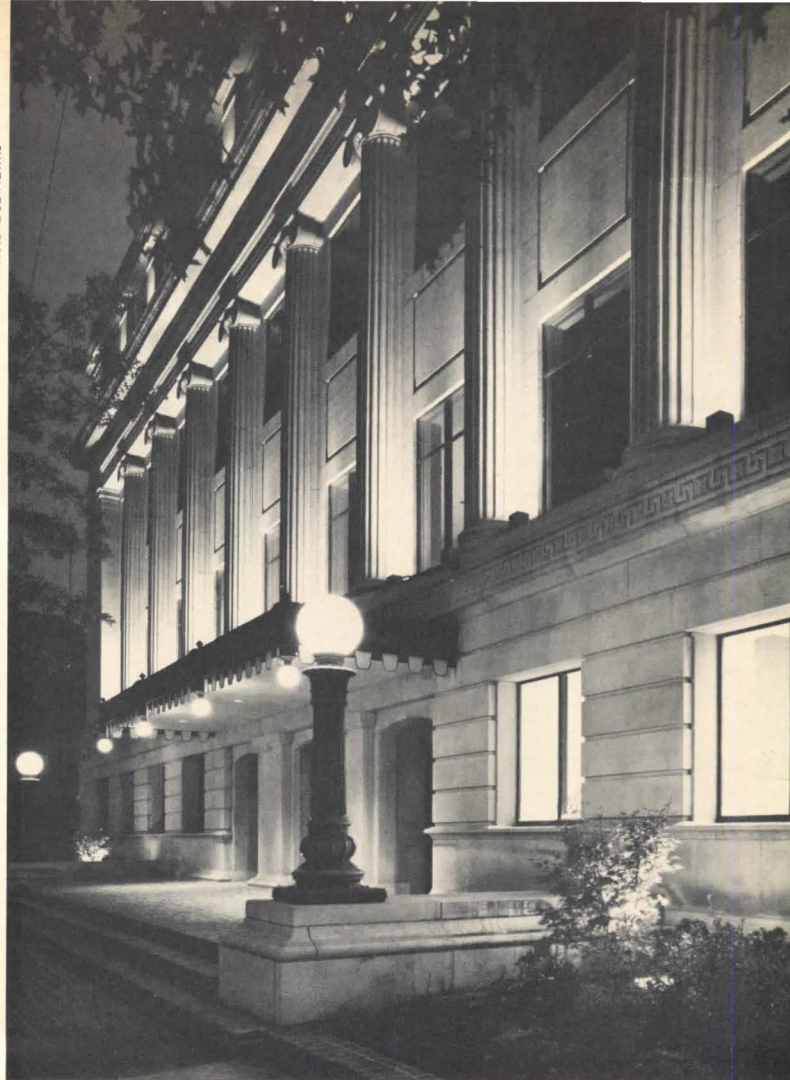


In progress



Photo: Hopkins Photography

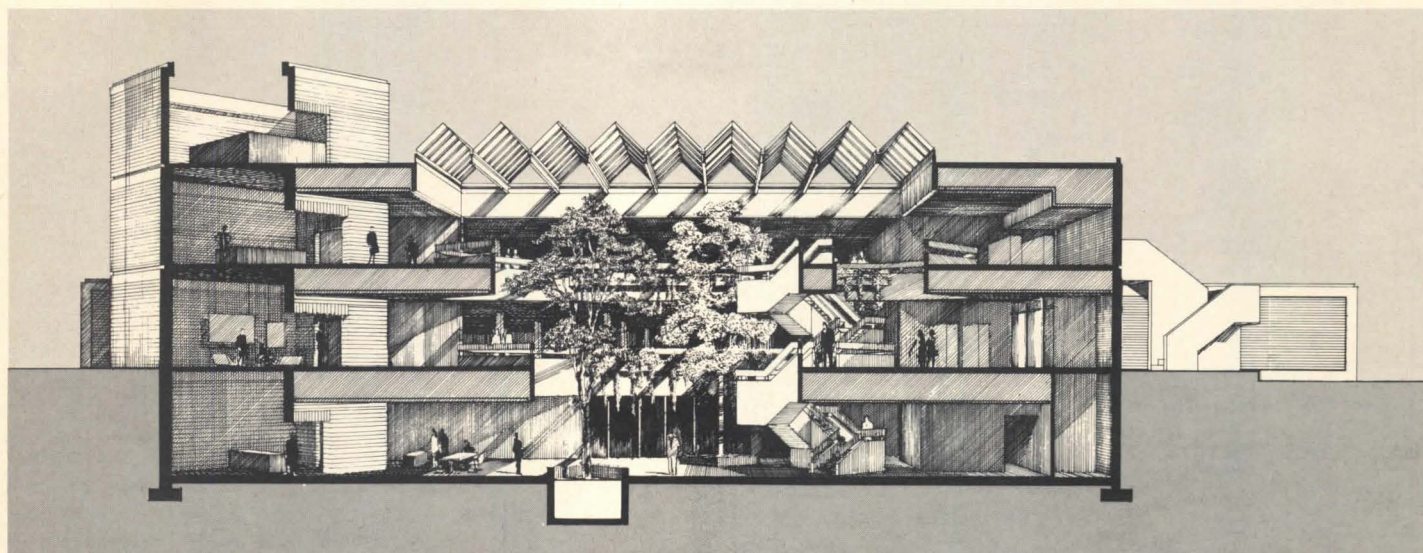
Photo: Bob Hawks



1 City hall renovated into private offices. Main lobby (above, left).



Photo: L.A. Airport Photography



2 Marymount Library addition. View of existing library, by same architects (above).

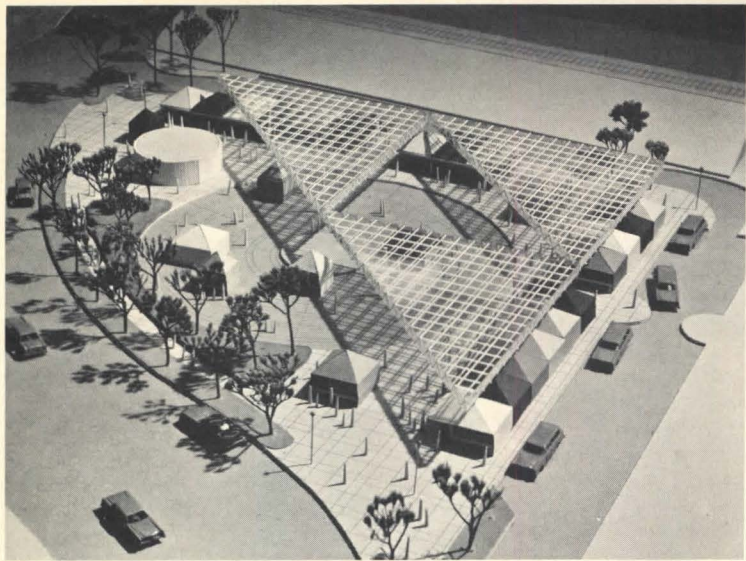
1 Tulsa city hall—Tulsa's old city hall, erected in 1917, has recently been renovated into a commercial building serving four firms, two of which collaborated to restore the structure. Leaving of office as City Street Commissioner, Joseph Coleman of Coleman-Ervin & Associates, Architects and Engineers, approached the law firm of Kothe and Nichols, and together they bought the old city hall, which city offices had outgrown. They replaced worn granite steps at the entrance with a brick entry; restored the ornate light standards and commissioned a mural for the two-story inner lobby. New air conditioning, heating, and an elevator added comfort, and the

wide halls were adapted exhibition galleries. Popularity of the project is evident in the number of visitors and in the fact that all space was leased before the opening.

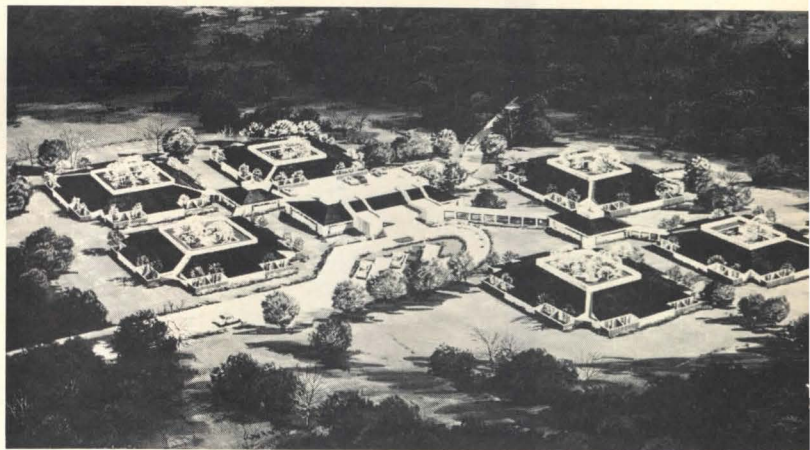
2 Study in the garden—Expansion of the Loyola Marymount University Library in Los Angeles necessitated the removal of a delightful garden, so architects Albert C. Martin & Associates of Los Angeles designed the new addition around an atrium court which not only becomes the focal point of the existing library but also provides a serene view for adjacent study carrels. The 44,000-sq-ft addition brings total library space to

84,000 sq ft and includes faculty, graduate, and group study spaces, an audiovisual center, archives, and a lounge.

3 Gary Farmer's Market—What appears to be a successful design solution to a political problem is being built near downtown Gary, Ind. Urban renewal took away the old farmer's market, much to neighborhood regret, but city fathers wanted the area for a future civic center. The mayor, however, also was committed to citizen participation in urban planning. Bearing in mind these seemingly incompatible goals, Whitley & Whitley Inc. of Cleveland has designed a



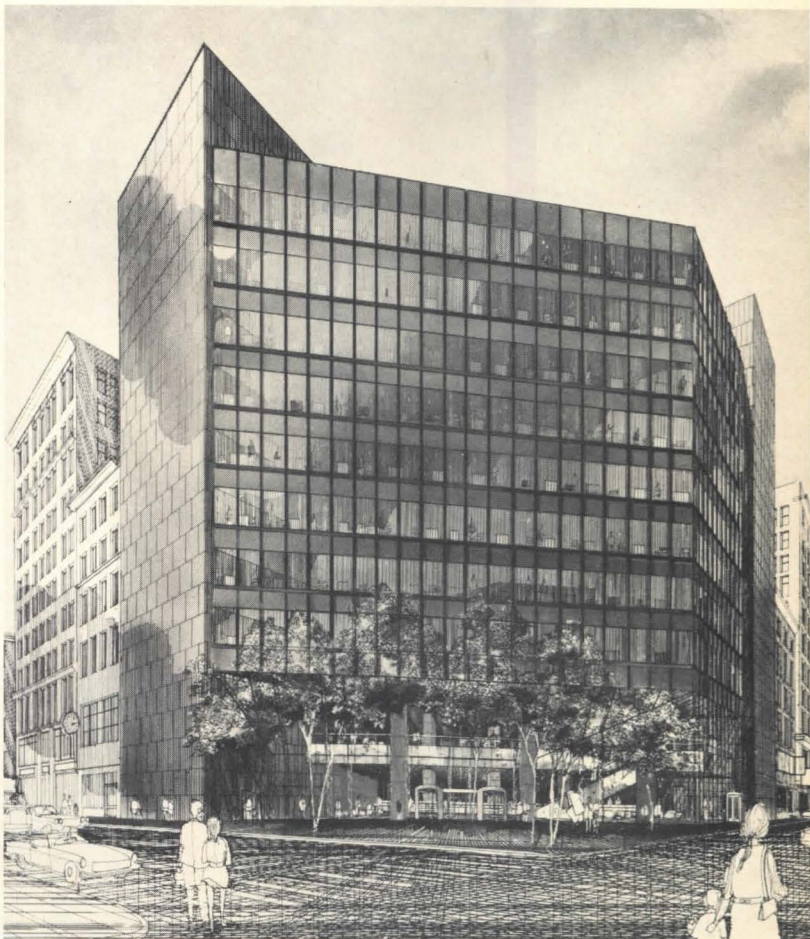
3 Outdoor farmer's market for downtown Gary, Ind.



4 Residential community in Arkansas for handicapped young adults.



5 Nearing completion, Boston's National Shawmut Bank . . .



. . . entering construction, Charlestown Savings Bank.

sculpturesque steel space frame at a cost of \$125,000 to shelter the seasonal market activities. In winter months it also may accommodate a variety of civic and recreational activities. Scheduled completion time for two of the three frames is this summer.

4 Home for handicapped young adults—"Our Way" is a residential development in Arkansas planned as a home for wheelchair-bound adults 18 to 50 years old. The philosophy of the community is based on the assumption that most young adults leave home to start a life of their own, so why should the handicapped be any dif-

ferent? Nursing homes most often are for the elderly and offer little stimulation for young adults. Design 3 of Little Rock, architects for the project, has created a clublike, barrier-free environment of 16 apartments per module surrounding an interior court. Each apartment also has a patio. In addition, the complex will include an after-five area, dining facilities, a pool, and gymnasium. The two-phase project will contain 100 apartments and two nursing stations upon completion.

5 Banks in downtown Boston—Two banking structures have been designed by The Archi-

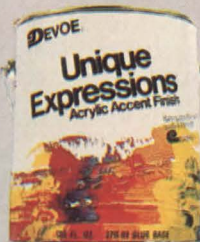
tects Collaborative, Cambridge, for Boston's financial district. The National Shawmut Bank is nearing its fall completion, and the Charlestown Savings Bank has just entered construction with early 1977 as target for completion. The \$64 million-, 40-story Shawmut takes advantage of Boston's irregular street layout to establish a focus for the building. The perimeter aligns with the streets while deeply undercut massing makes room for pedestrians on the sidewalk below. The \$8 million Charlestown Bank, a 10-story structure, steps back 50 ft from its corner creating an urban park—not a plaza—with trees and benches.



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Progressive Architecture announces its Twenty-third Annual Awards Program. Awards will be made to U.S. and Canadian architects, designers, urban planners, other professionals and their clients for projects now in the design stage and scheduled to be under construction in 1976. Any building, group of buildings or urban planning project illustrating definite building proposals will be eligible. *In addition* entries in *applied research for a client* will be accepted from architects or others if they are applicable to the design or realization of specific facilities or programs and are scheduled to be acted upon within the calendar year 1976. Qualification of entries in any category depends on the fact that the work is commissioned by a specific client.

Purpose of the Awards Program is to recognize, at the critical early stages, outstanding examples of work being done in the fields that most directly affect the built environment. Recognition will be given to both the entrants and their clients.

First award, award, and citation designations may be given by the jury in any or all of the three broad categories: research; urban design and planning; architectural design. Entries will be reviewed for such factors as response to a client's program, site use and development, design excellence, conceptual advances, materials selection, and methods of implementation.

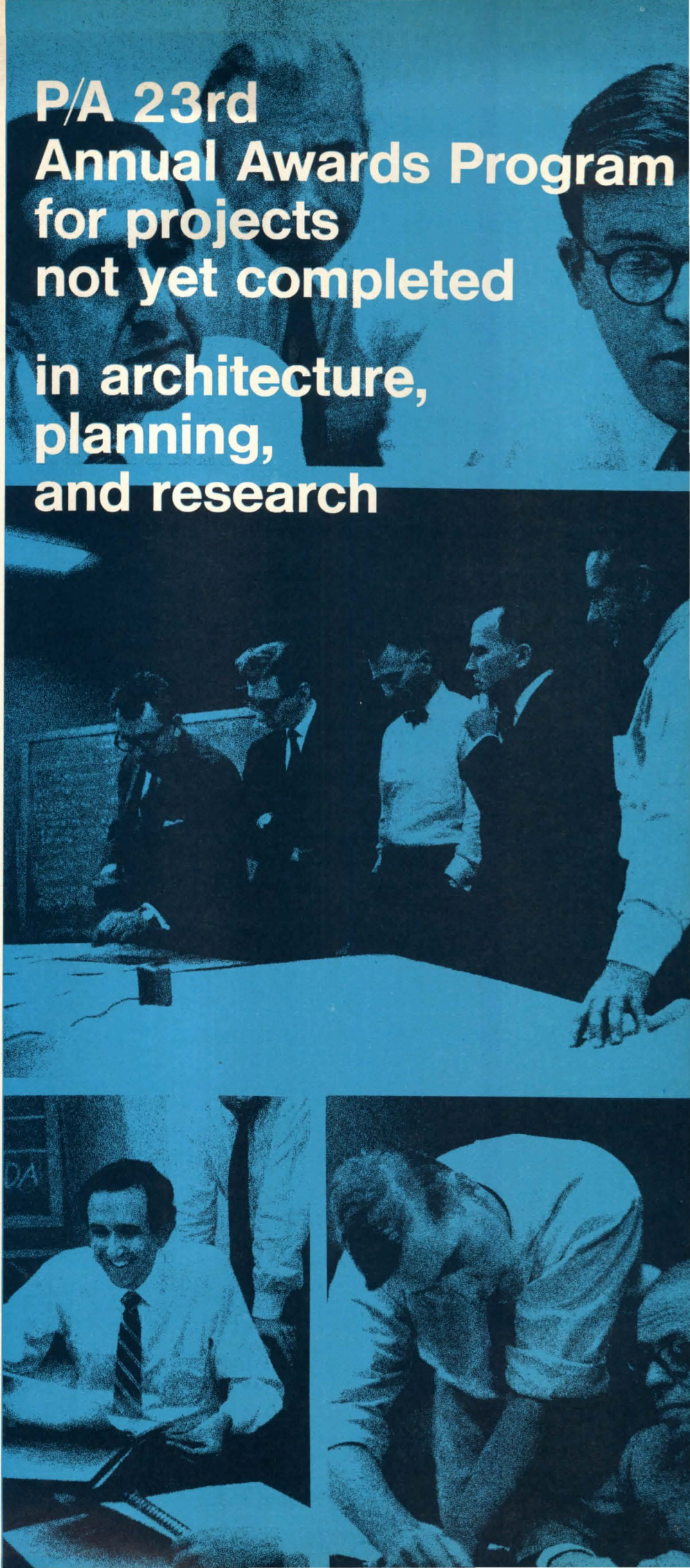
The Jury: for the Twenty-third Awards Program, P/A has invited the following respected jury members: **Arthur Cotton Moore**, AIA, Arthur Cotton Moore Associates, Washington, D.C.; **Cesar Pelli**, AIA, Partner for Design, Gruen Associates Inc., Los Angeles; **Stanley Tigerman**, FAIA, Stanley Tigerman & Associates, Chicago; **William Turnbull, Jr.**, AIA, MLTW/Turnbull Associates, San Francisco; **Donald S. Appleyard**, Professor of Urban Design, University of California, Berkeley; **Raquel Ramati**, AIP, Director of Urban Design, Urban Design Group, City Planning Commission, New York; **W. Russell Ellis**, Associate Professor of Behavioral Sciences in Architecture, University of California, Berkeley; **Gary A. Hack**, Demonstration Program Coordinator, Central Mortgage and Housing Corporation, Ottawa, Canada; Assistant Professor of Urban Design (on leave), Massachusetts Institute of Technology, Cambridge.

Judging will take place in Stamford, Conn. during September 1975. Winners of awards and citations will be notified (confidentially) immediately after the judgment.

Public announcement of the winning projects will be made at a presentation in January 1976 at a location to be selected. Winning projects will be featured in the January P/A. As in the past, P/A will arrange coverage of winning entries in news media, particularly in those localities of the award and citation winners. Winners must agree to provide illustrations reproducible in the press and to forward original material, including models, to P/A if requested.

[continued on next page]

P/A 23rd Annual Awards Program for projects not yet completed in architecture, planning, and research



Submission requirements

1 All submissions *must be firmly bound*. Original drawings, actual models, or mounted exhibit panels won't be accepted,

and no material is to exceed 11" x 17" in size. Each project is to be submitted under separate cover; 8" x 10" binders are preferred.

Entry form

Progressive Architecture 23rd Annual Awards Program

Please fill out *all* parts of this form and submit with each entry. Copies of this complete form may be used when submitting multiple entries. (Typewriter only, please)

Entrant:
Address:

Project:
Location:
Client:
Category:

Entrant:
Address:

Statement of Publication Rights: P/A has first rights to publish both the design and the finished project if it wins an award or citation (in the case of research studies, first rights to publication of the results) in the architectural press. Construction of the project is not yet completed, construction (or action on research proposals) is scheduled to begin before the end of 1976.

SIGNATURE _____

Awards Editor
Progressive Architecture
600 Summer Street, Stamford, Conn. 06904

Your submission has been received and assigned number:

Entrant:
Address:

Awards Editor
Progressive Architecture
600 Summer Street, Stamford, Conn. 06904

Entrant:
Address:

(Return label)

2 Submissions must be accompanied by the *entry form*, to be found on the *left side of this page*. Each entry must have a separate form; reproductions of the form will be accepted. Please fill in (typewriter only, please) *all* appropriate spaces on the form, and sign statement of publication (part 2). Note that four parts are required for each entry.

3 No identification of the entrant may appear on any part of the submission, except concealed in an envelope attached inside back cover of binder; entries will be kept anonymous until judging is completed.

4 In addition to the form, please include the following: a one-page synopsis of the submission; attached to first page inside binder, summarizing program, your solution, description of and reasons for your selection of materials and construction methods, site considerations, and objectives of design (for research and planning, the intent and effect of the work). Synopsis must conclude with a statement on *why this submission should be considered for recognition*.

(Entrant should realize that this synopsis, plus visual material, may be sole basis for retaining submission beyond first round of judging.) Any additional information necessary, or amplification of the one-page synopsis, is also encouraged, but should remain separate from the synopsis.

5 Graphic submissions should also include pertinent drawings, such as site plans, representative floor plans, sections, details, perspectives and/or model photos.

6 For purposes of jury procedure only, projects are to be classified *by the entrant* in the appropriate space on the entry form. Awards and citations will not be given by categories, but submissions must be divided into comparable groups for judging. For this reason, you are asked to list your submission as one of the following: *Education (Higher)*, *Education (Secondary)*, *Education (Primary or Early Childhood)*, *Housing (Single Family)*, *Housing (Multiple Unit)*, *Commercial (Large Scale)*, *Commercial (Small Scale)*, *Industrial*, *Religious*, *Recreation*, *Health Care*, *Planning and/or Urban Design*, *Applied Research*. If no category is listed for your submission, please write in MISC., and it will be placed with comparable entries. Mixed-use entries (part commercial and part housing, for instance) should be classified according to the larger function.

7 Submit fee of \$10 for each entry, to cover processing and handling, in an envelope marked "fee" attached inside front cover of binder. Make check or money order payable to *Progressive Architecture*.

8 Any entry not conforming to the above requirements may be returned to the entrant without being judged.

P/A will take every reasonable precaution to return submissions intact; P/A will assume no liability for lost submissions. **Deadline for mailing** is August 31, 1975.

Address entries to Awards Editor,
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600 Summer Street, Stamford, Conn. 06904.



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Douglas House

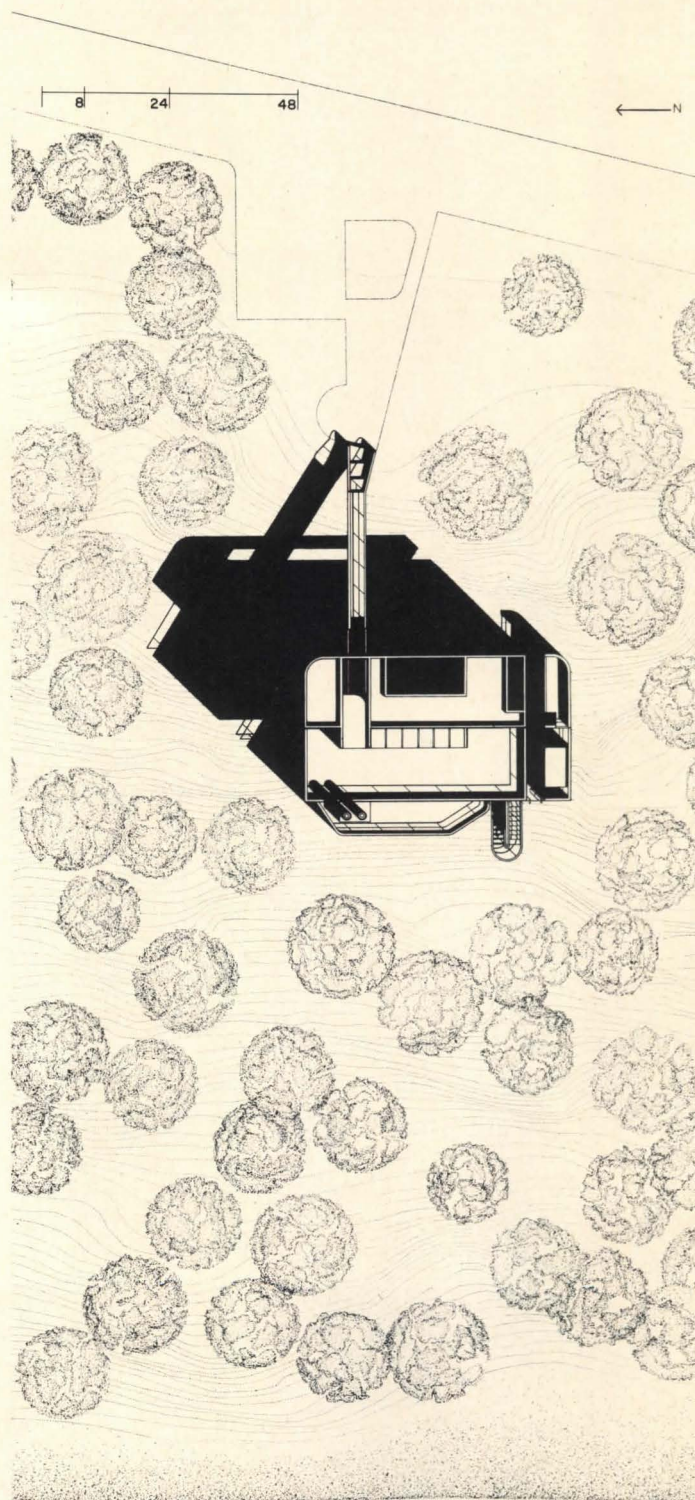
A spectacular house by Richard Meier responds brilliantly to its site, while giving the architect the opportunity to develop some new concepts.

"There is nothing natural about a house, as soon as a piece of wood is taken from a tree, it is no longer natural," Richard Meier says. For him, the idea of trying to make a house, or any building for that matter, appear "natural" is a conceit he wants to avoid. Any built object is artificial, he feels, and the way it can best respect its surroundings is not through the superficial mimicking of romantic attitudes about nature, but in expressing the integrity inherent in the building itself which, by definition, places it in direct opposition to nature.

Because the sense of this opposition is readily perceived in his buildings, some people have interpreted Meier's work as indifferent, or even as hostile, to nature; but, in fact, nothing could be further from his intent. It is only through this contrast, he feels, that the building and its natural surroundings can complement and, in fact, enhance each other. This attitude relates to the reason many of his buildings are white, and also to the ways that each, in its particular way, relates to the characteristics of its site.

For Meier, there is so much color in nature, he feels a building should not only recognize it, but should also appreciate it. It can only do this by being white, he says, for only then can it reflect throughout daily changes the cool hues of a morning sun, the warm rays of a sunset, or the colors of nature—of trees and grass nearby. A building is not an arbitrary object, however; for Meier the problem is not simply a matter of inserting a white object on the landscape for effect. A building must also recognize, and directly respond to, its site. Each of his buildings does this in its own way, but perhaps none so dramatically, and in some respects so conscientiously, as the Douglas House on Lake Michigan.

Here, a steep, densely wooded site that drops at 45 degrees to the west toward the water, is restricted at its eastern boundary by a two-lane road. It would have been possible to have "terraced" the house down the hillside, but for Meier this would have had the distinct disadvantage of disrupting more of the natural landscape than was neces-



SITE PLAN



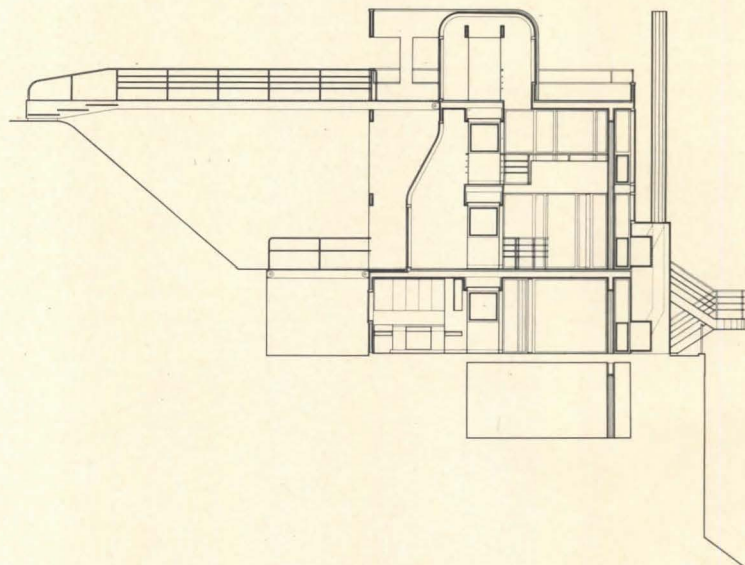
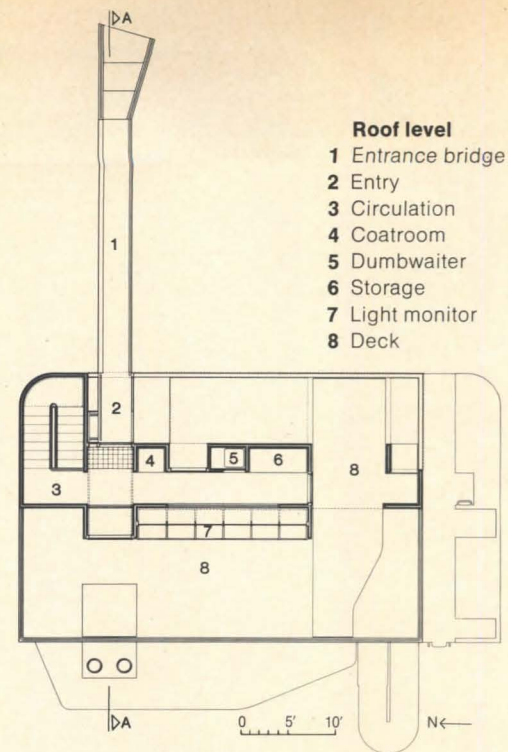
Douglas House

sary. In recognizing this "tight" situation, his solution was to stack, or "layer" the four-level house vertically to keep it off the ground as much as possible. But the vertical layering is not related only to this concern for the site; it is also directly, and conceptually, related to the verticality of the site itself, to Meier's recognition and appreciation of this condition, and to his desire to acknowledge it in the design of the house. The idea of verticality is further expressed in the interior of the house through a light monitor at the upper level; it brings light of a different quality through the two-level living room, and from there through a cut out in the living room floor down into the lower-level dining room, vertically interconnecting the public living spaces.

The site also inherently possesses strong horizontal references, specifically in the road behind the house, the shoreline in front of it, the lake extending beyond the shoreline, and the horizon itself. In response to this, Meier has horizontally layered the house, through all of its levels, from entry side to lakeside, in relation to the private, semiprivate, and public functions within, following a course from solid and closed to transparent and open. Hierarchically, this course follows an order that leads from the solid entry plane to the private spaces of bedrooms and baths, to the semiprivate areas of circulation, then to the public places of living and dining, through the transparent glass walls, and finally out to the open decks above the water. While Meier has dealt with the idea of horizontal layering in all of his residences, he feels that the concept is more clarified and developed, and thus more explicit in this house than in previous ones. But the idea of vertical layering, in direct response to site conditions, is new here, and although it is only applicable to this particular situation, it does represent an additional concern and, in this instance, a new departure in his work.

Were the Douglasses aware of these things when they came to Richard Meier to design a house for them? Yes, in many respects they were. It could not be said that they approached the situation naively because they had, as clients go, an unusually clear idea of exactly what they wanted. What they wanted, precisely, was a duplication of Meier's Smith House in Darien, Conn.

The Douglasses, who lived in Grand Rapids, Mich., spent a considerable amount of time (a couple of years) reading architectural journals and other publications, researching the vacation house that they were to build for their family of five on Lake Michigan. They started a file, which continued to grow, and which they reviewed frequently. Each time, however, they came back to the Smith House. Finally, they approached Meier with the idea of building it. He opposed the idea, because the Smith House was a particular building for specific clients and a unique site. After visiting the Douglasses and seeing their site, however, he agreed to sell them the plans, on the condition that some necessary alterations would be made. The clients agreed. However, the contractor who was developing the site for the house did not. Regulations in the development required that the houses be painted earth colors. In the meantime, though, the Douglasses decided to move from Grand Rapids, since business no longer required Mr. Douglas to be there. This



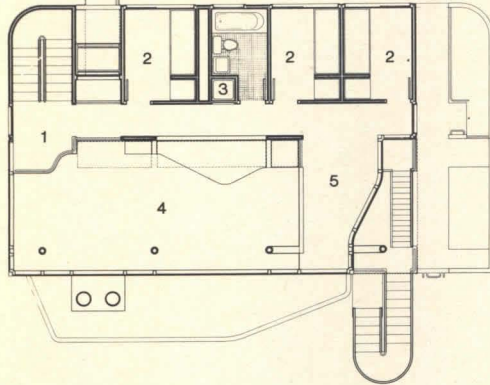
SECTION A A

The Smith House, facing Long Island Sound in Darien, Conn., (below) was the prototype for the Douglas House (model, opposite) on Lake Michigan.



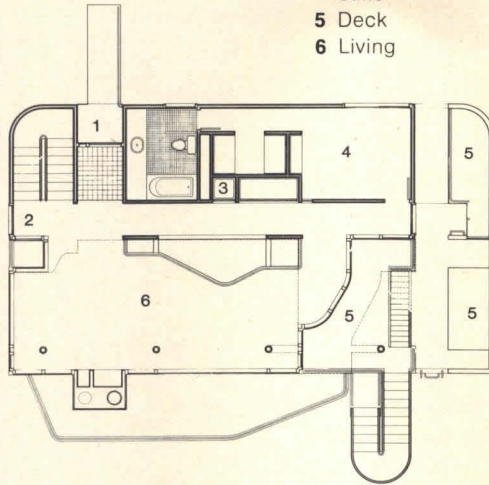
Upper level

- 1 Circulation
- 2 Bedroom
- 3 Dumbwaiter
- 4 Open to below
- 5 Study



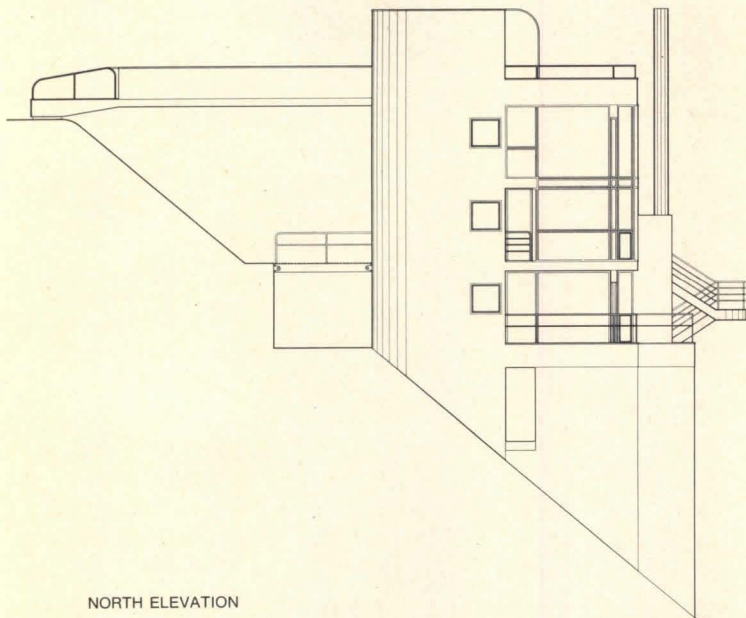
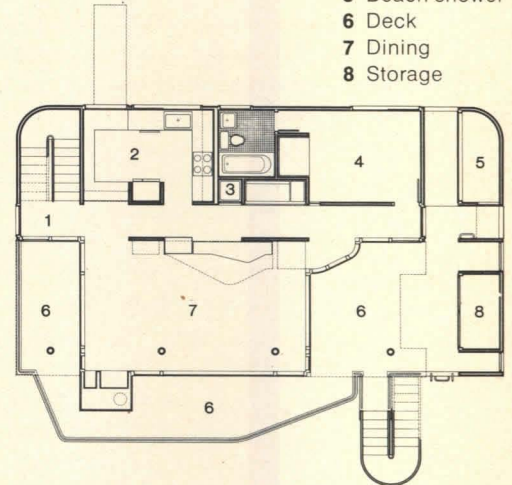
Middle level

- 1 Lower entry
- 2 Circulation
- 3 Dumbwaiter
- 4 Master bedroom suite
- 5 Deck
- 6 Living

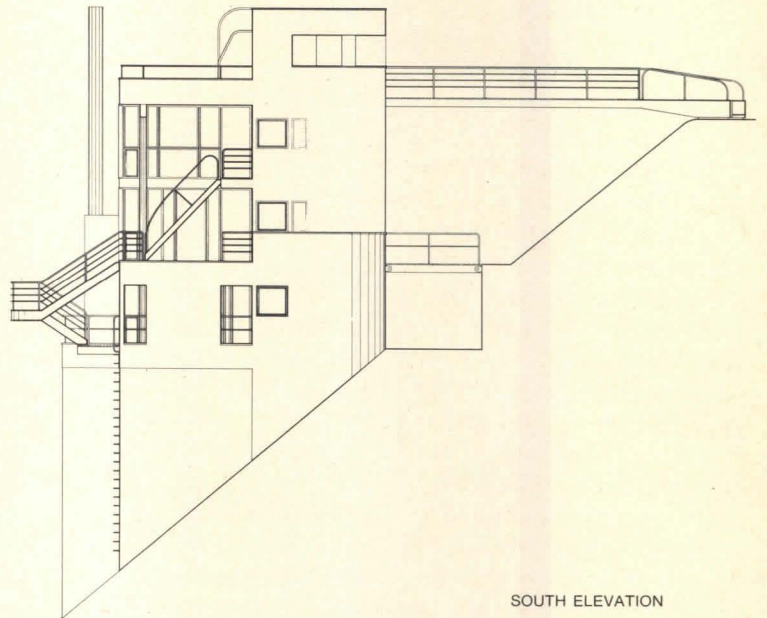


Lower level

- 1 Circulation
- 2 Kitchen
- 3 Dumbwaiter
- 4 Guestroom
- 5 Beach shower
- 6 Deck
- 7 Dining
- 8 Storage



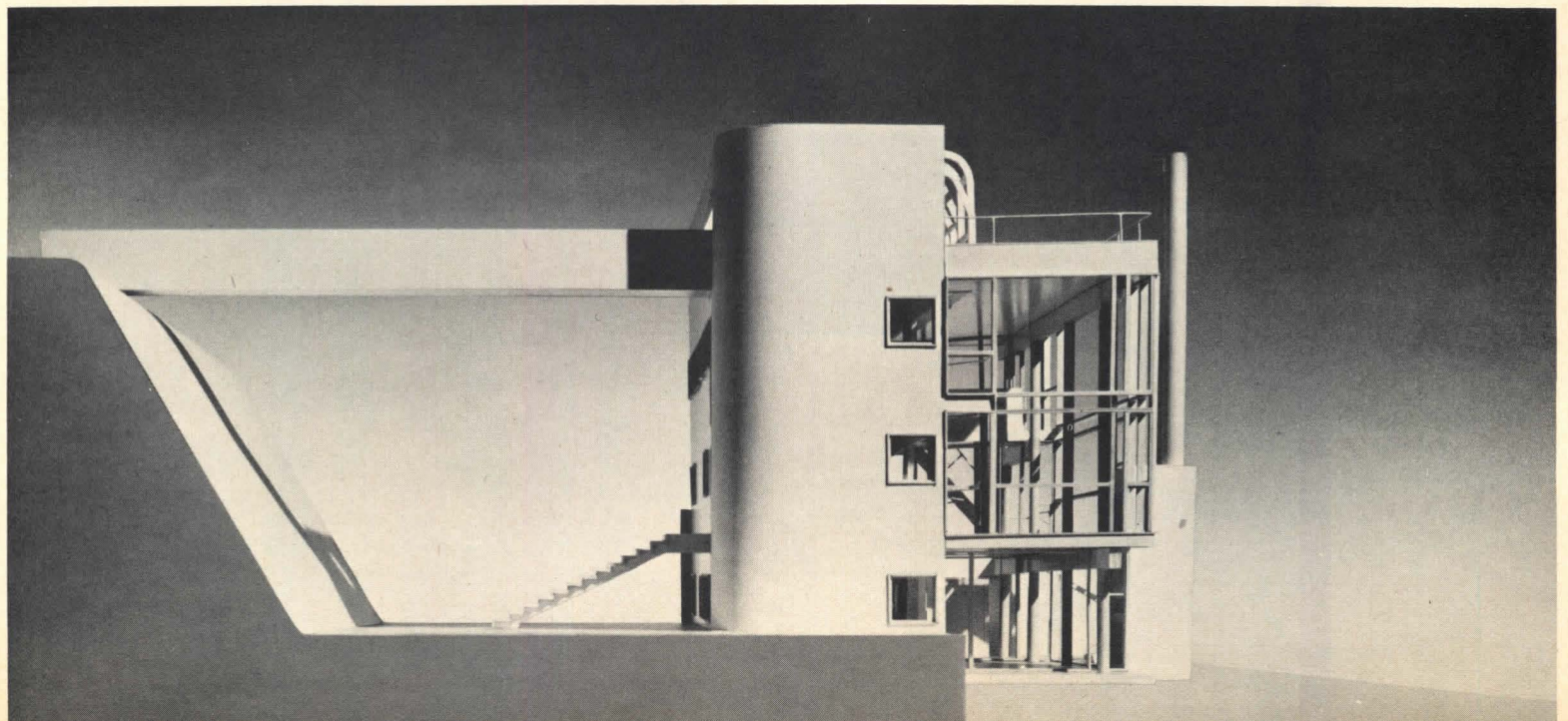
NORTH ELEVATION



SOUTH ELEVATION

Like the Smith House (opposite), the Douglas House (model, below) is horizontally layered from closed entry plane to open glass wall. However,

it differs in the addition of vertical layering through cutouts in the circulation areas, which mediate between zones and innerconnect levels.



Douglas House

meant that they would need a permanent residence, one larger than the intended vacation house. Consequently, they looked for and found the site in Harbor Springs which has no other building around it, and then worked with the architect in developing a new, larger house suited to the new conditions.

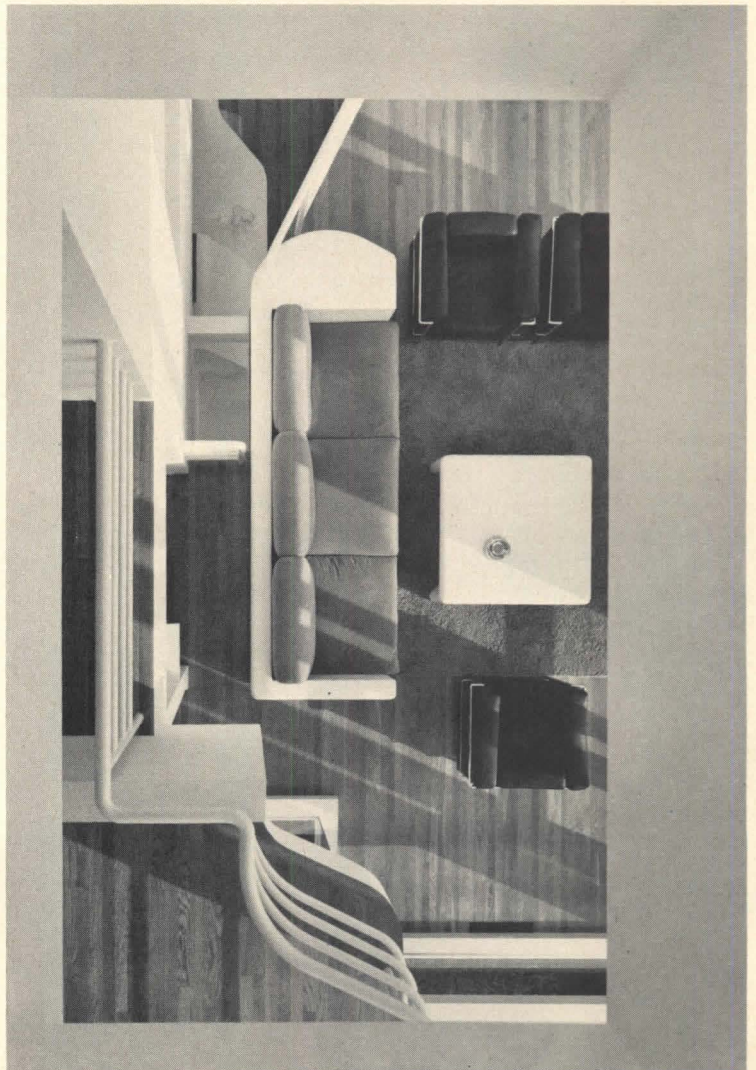
The design of the house had direct bearing on the technique of its construction. Because of Meier's determination to disturb the site as little as possible, to remove no trees beyond the building enclosure, the "luxury" of a building site was not permitted. The platforms of the different levels of the structure were built first, and then the rest of the building was constructed from them, from the inside out. There is a straightforward wood bearing wall and framing system for the enclosed, private portion of the building. This, Meier says, is the traditional way to build houses in America—the materials are available anywhere—and for him it is still the most economical way to build. In addition to his reasons for whiteness, which can only be obtained with paint, the wood is painted instead of stained or otherwise sealed because Meier feels that paint is still the best preservative for wood ("you always know when it needs a new coat"), and it is also the traditional coating used. A more important reason he prefers wood is that it provides the most reasonable way to achieve the planar surface, the non-natural effect, that he wants. A steel columnar structure is used for the open living spaces. The openness allowed by the columns, Meier states, allows for a direct expression of the nature of the living areas with respect to orientation, view, and use, and relates the house to the site in a way that simultaneously reflects and acknowledges it.

Few houses are blessed with a site and a view quite so spectacular as this one; and one cannot help but feel that to have recognized it in any but a spectacular manner would have compromised both the house and its surroundings. Meier has opened the entire western side to the water, and complemented this exposure with outdoor terraces interconnected at every level, protected by gleaming white metal handrails (which, he reports, were superlatively crafted nearby). Although the vast glass wall may seem to be unsound in terms of summer heat gain, it actually is not, Meier says, for several reasons. The house is in the north (it is farther north than Toronto), facing a large lake where cool summer breezes prevail, generally in a north-south direction during the entire summer. Operable windows on the north and south sides, and doors, catch the breezes. In addition, because the levels of the house are stacked one on top of the other, and because of the open space cut through the levels at the main circulation area, the house quite naturally and adequately ventilates itself by induction. Air conditioning is only needed on the hottest days, when it would be a welcome relief in any house. In the winter, however, when the house is closed and cold winds come off the lake, the glass wall has a distinct advantage. Then, Meier says, the heat gain is important and a significant factor in reducing fuel costs.

Iconographically, the house suggests the appearance of a sleek luxury liner at sea. This is not surprising, however, given the context to which Meier was responding, and



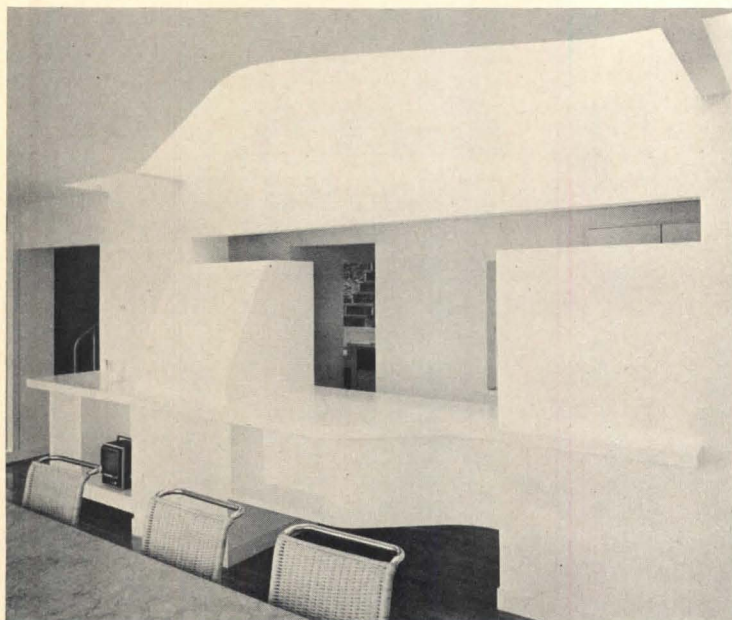
Circulation area, from dining room up (above), from entry down (below).





Douglas House

given his admiration for the buildings of the heroic period of modern architecture, whose authors were consciously responding to the vocabulary of steamships, industrial plants, and powerful machinery. If this vocabulary were used only for itself, merely as a fashion, any building expressive of it would have little significance. On the other hand, if it is used as a tool to support a valid theory of architecture, of architectonic space, and of architecture in relation to its context as it is here, then it is important. It is not, as is often the case, simply the application of some visual images from Aalto, Duiker or Le Corbusier. Instead, it represents an uncommon understanding and synthesis of modern architecture, of where it has been, and of where at least some of it is going. It represents a vision, regardless of the vocabulary, that is only Richard Meier's, and that could not have come from anyone else. [David Morton]



Skylight extends, through cutouts, to lower-level dining room (above).

Data

Project: Douglas House, Harbor Springs, Mich.

Architect: Richard Meier & Associates; team: Richard Meier, Karl Born, John Colamarino, Sherman Kung, Tod Williams.

Program: a year-round residence for a family of five.

Site: a densely wooded, steeply sloping site on northern Lake Michigan.

Structural system: wood bearing wall and framing system enclose private portions of building; steel columnar structure used for public portions.

Mechanical system: forced warm and cold central air conditioning system.

Major materials: wood piles; wood frame and steel column structure; wood floors; wood roof and built-up roofing; redwood exterior siding; gypsum wall partitions; fiberglass insulation; fixed wood windows and steel operable sash; solid core wood doors.

Consultants: Richard Meier & Associates, interior designers; Dalton & Dunne, mechanical engineers; Severud, Perrone, Strum, Bandel, structural engineers.

Client: Mr. and Mrs. James E. Douglas, Jr.

Costs: withheld at request of client.

Contractor: Jordan Shepherd.

Photography: Ezra Stoller©ESTO, except p. 45, Richard Meier.



Deck at entry level (above); living-room level staircase (opposite).



West façade (detail above showing LR and DR) and east façade (below).





Mother never told me

Leonard Koren

For the vast majority of Western culture, bathing is merely a necessity. But for a few who delight in its sensual pleasures, a lavish setting is also a must.

The bathing experience in recent Western culture has been viewed as a moral obligation. "Cleanliness is, indeed, next to godliness," as the Puritans would have us believe and, translated into the idiom of standard building practice, the bathroom became a sterile environment, solely concentrating on the hygienic and functional aspects of the room.

Truly unusual bathing environments develop from personal interpretation of the nature of the bathroom ritual. Inventive bathroom designs have always considered the psychological and spiritual elements as well as physical needs for cleanliness. Historically, a small number of people with expanded views toward environment have created bathing areas which heightened the aesthetic qualities of the bath. The potential for a personalized bathing environment exists in every bathroom, when viewed with sensitivity and discrimination. This phenomenon is clearly evident in the many lavish art deco baths built in Hollywood during the late 1920s and the early 1930s. The designs called for a "Shangri-la" environment in which the bather would feel as if he/she were the most important and beautiful person in the world. Interpreted in the vernacular of the day, Shangri-la meant an ornate tub atop a pedestal (usually in the center of the room) surrounded by richly colored ceramic tiles, highly polished metal fixtures, etched glass shower and toilet stall doors, extensive mirrored areas, and murals suggestive of the joys of bathing in a different age.

One popular style for bathing areas is a "back to nature" type. Environments of this type try to capture the feeling and atmosphere of a tropical pool, stream, or waterfall, and on a modest scale, include skylights with an abundance of plants surrounding a conventional tub or shower. One very lush treatment of this style involves the conversion of an entire room into a tropical rain forest ecosystem. Shower heads in the middle of the room provide the "rainfall."

Author: Leonard Koren studied architecture at UCLA and was one of the founders of the Los Angeles Fine Arts Squad.

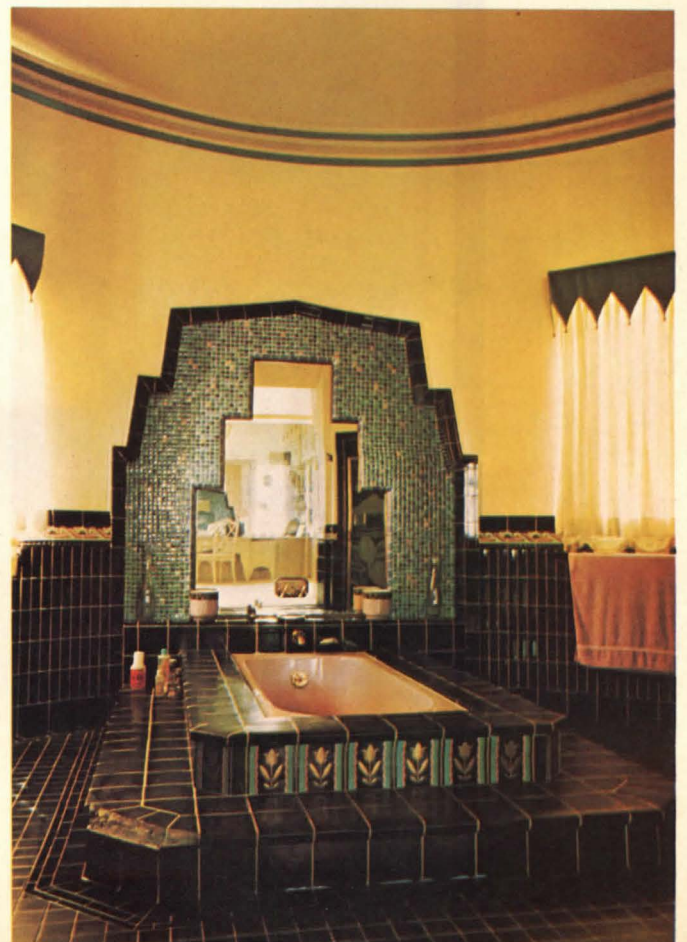
Small plants, shrubs, and tropical trees are planted directly into a soil mixture built on top of a sub-floor drainage system. Small rocks and round boulders are placed around the room. Redwood paths meander toward the center of the 20-ft-high skylighted room where an intimate showering nook is defined by sea shells and driftwood. In such a warm and moist environment, the plants thrive as they would in a greenhouse; even phosphate soap in the root systems tends to stimulate growth, rather than inhibit it.

Other cultures, too, lend inspiration for bathing rituals. The Japanese *furo* is responsible for the recent popularity of communal bathing in recycled wine vats and water storage tanks in California. These tubs, usually placed in a woodsy outdoor setting, can accommodate from five to eight people for a "social soak." The sedative effect of the warm water, the comfortable attitude toward nudity, and the aesthetic quality of the environs, turn the act of bathing into an interesting adjunct to an evening's entertainment.

The sauna, imported from Scandinavia, provides a cleansing medium of hot dry air. The environment is a small, undecorated, rustic wooden room. After sweating profusely to remove dirt and switching with a birch leaf switch to stimulate blood circulation, the bather then immerses in the waters of an icy river, a snow bank, or a cold shower. Although a tub bath or shower is faster and more efficient than the 45 to 90 minutes required for the sauna ritual, the sauna is increasing in popularity because of the unique feeling of physical and mental well-being derived from it.

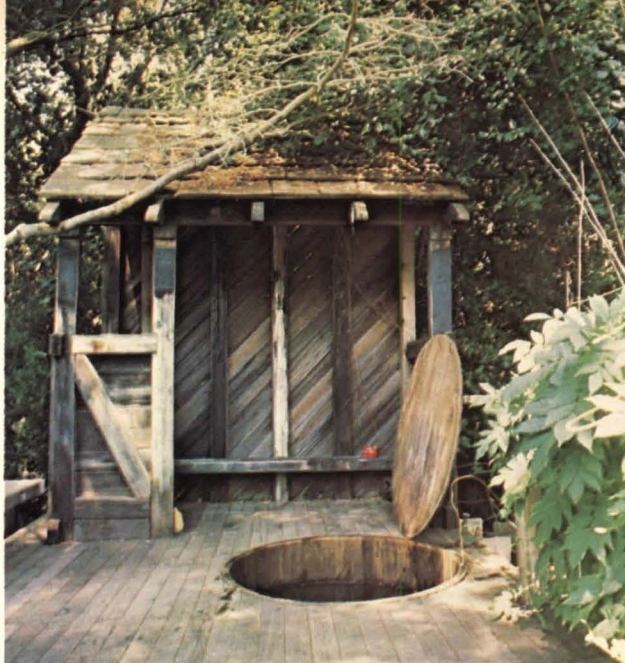
Among the most novel bathing environments are those that have evolved out of an unusual pre-existing situation. An old automotive garage containing a 15'x3'x3' grease pit was converted into a living/studio space by a Venice artist. After cleaning and sealing the pit, he installed a recirculating pump, a diatomaceous earth filter, water lines, heater and thermostat, creating an unexpected, almost surrealistic container for 1400 gallons of water.

In our contemporary, pragmatic culture, the aesthetic possibilities of the bathing experience, not always explored by the plumbing industry, are often sorely neglected. But the development of one's awareness of this smallest of environments and its potential, along with the shedding of an acquired Victorian heritage, can lead to the creation of a wonderfully subjective architectural universe. □

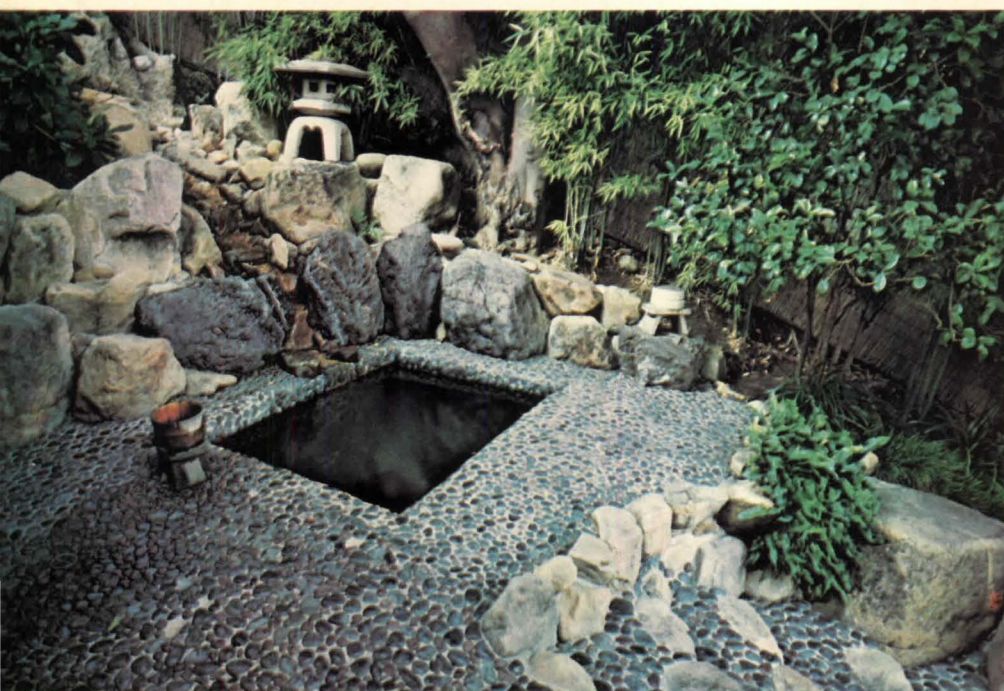


Lavish Art Deco baths, built during the 20s in Hollywood, used symbolism of more exotic cultures in their ornament and surface decoration.

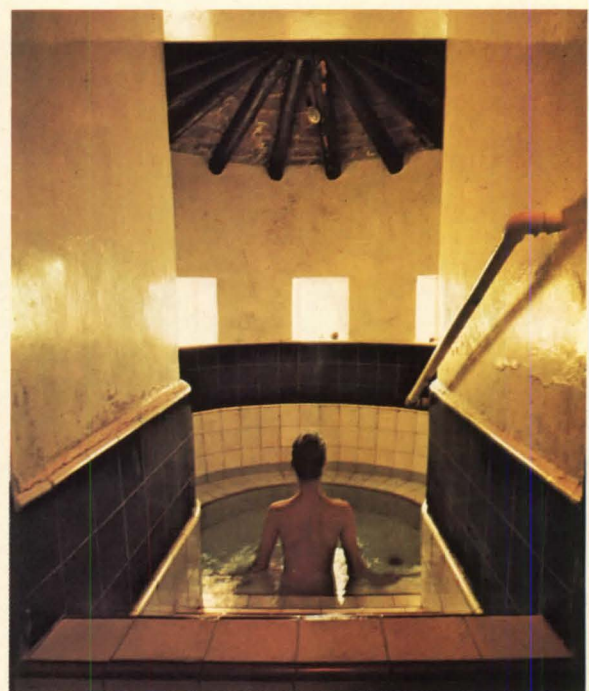
Mother never told me



A symbolic Japanese "hot" tub (below) and a California redwood version (above):



"Hot" tub with cover to prevent heat loss (below).



Mineral bath in a luxury spa outside Mexico City.





The tub (left) built by a wood craftsman and set in a eucalyptus forest, has a flash heater, a diatomaceous filter, and a recirculating pump.



In downtown Los Angeles, wooden forms and plants are used to transform a rooftop of a commercial building into a junglelike shower.



Bath house (below) is completely detached from house. Barn doors open to expose the tub (above right) to the sunlight and the grass.



A re-presentation

A 116-year-old landmark building has been meticulously restored on the exterior, and brought to a shimmering luminosity on the interior.

Few architects are likely to mention André Gide when talking about their work, but in discussing his renovation of the Cooper Union Foundation Building in New York, architect John Hejduk recalls that Gide said "all art is representation, or re-presentation," and he adds, "you can take it in the double meaning." With Cooper Union, he says, "there was the reality of the existing building, which was then re-presented in the drawings. After it was built, the building became a representation of the drawings. "Reality," he continued, "is only used as a stage in the representations, and these [representations], people should be left alone to interpret in their own way."

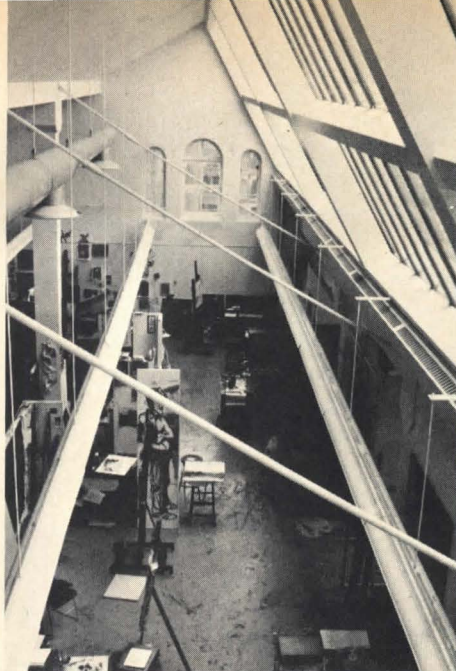
In interpreting the Foundation Building, one has to deal, then, as architect John Hejduk and engineer Peter Bruder did, and as students and faculty now are, with the 116-year-old building that was, and with the new building that is. The Cooper Union project is not an adaptive reuse of an older building (its use has not changed throughout the building's long history); it is not a restoration (only the Italianate exterior has been truly—and impeccably—restored); and in the strictest sense, it is not a renovation or remodeling (only portions of the building—the first two floors and the south foyer of each floor—have been substantially altered. (For a thorough description of what was done, how, and why, see "Metamorphosis," P/A July 1974, p. 96).

If the Foundation Building falls into none of the classifications mentioned, then what is it? In a sense it is all of them, even adaptive reuse (the building originally had retail shops on the first two floors, which have not been used as such for years, but some of their original walls now form the library stacks). But to classify the building into any or even all of those categories somehow seems to short-change the considerable achievement of Hejduk's vision. While the building appears to be completely new inside, it is not, and what it really represents, more than anything else, is the "purification" of what basically was already there. In this respect it is, in the truest sense, and in the sense that Gide intended it, a re-presentation.

Once separated by a street, the renewed Cooper Union Foundation Building and Cooper Square now join each other on the building's south side (below). At night (bottom), the illuminated white interior shines through the north and west façades of the building's impeccably restored exterior. Behind the arched windows on the west façade, a long corridor now runs the entire length of the building (facing page, bottom) in the space that in 1877 was occupied by retail shops (facing page, top left). That view contrasts with a 1900 photo (facing page, top right), which shows the building after two floors had been added to the east side, and after the elevated Third Avenue subway (now long demolished) had been constructed.







Painting students, like others, use lobby next to studio (above left and middle) for exhibits.
Clock tower (above right) is new trustees' room. Lincoln spoke in Great Hall (below) in 1860.



A re-presentation

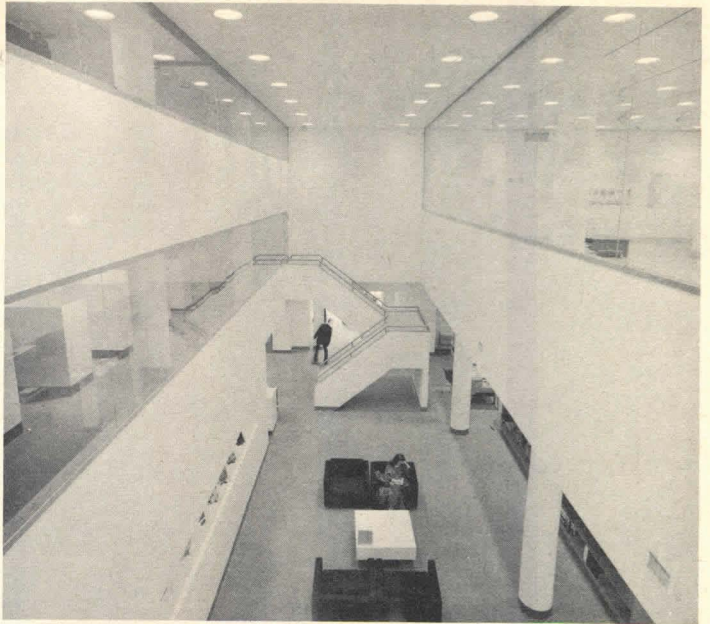
Hejduk has taken the basic materials and made art—certainly architectural art—out of them. What was a maze of dingy and unsafe, poorly lit rooms and dark passages has been transformed into light-filled spaces of breathtaking clarity and purity. The keys to the transformation have been restraint, refinement, elegance, and most particularly, simplicity—the simplicity where purity of form and elegance of space speak of wonder and mystery, where the effect of the quality of space emerges from the basic elements of the space itself, and not from manipulating the space or from adding to it for particular effect.

The building as designed by Fred A. Petersen and constructed in 1859 was basically one of open, industrial loft type of spaces within a structure of bearing walls and iron and steel framing. "Basically, this is a building of big, strong, simple volumes," Hejduk notes, and adds, "there's not much you can do relative to that fact; the new spaces are not too different from what they were before; they were, and really still are, 19th Century spaces; there is an anonymity of space, of rectangles, of volumes, now as there was in the original building." With these big, clean spaces the school is once again as capable of adapting to different uses and changing space configurations as it was originally. In addition, the building has been brought up to current fire-code regulations (which was the impetus for the renovation), and a national landmark has been preserved for future generations.

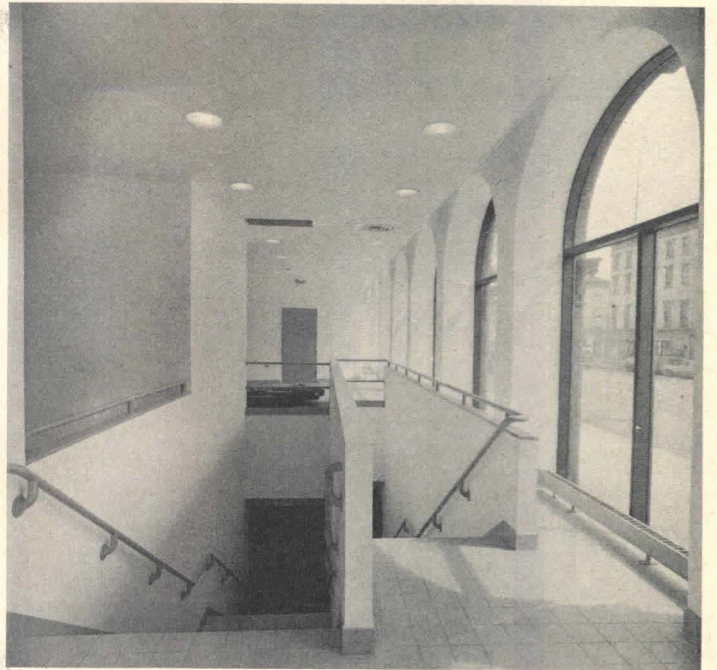
Hejduk explains that he did not concern himself with making the details prominent, knowing they would get lost because of the size (145,000 sq ft) of the building. Instead, he concentrated on the simplicity of the details. "They're very tactile," he notes; "the roughness of the materials shows, welding shows in the handrails, sheetmetal on the roof has joints, and it doesn't matter, you show the joints, you show how things are made because the material is alive." If the details are not prominent or noticeable at first, "in time they will come up to the surface," Hejduk says; "they will emerge into view through focusing on them." This is true; at first, one is not necessarily aware of details inside the building. Instead, there is only an awareness of a certain type of space. Only an awareness of the details brings the realization that their reticence is an important ingredient of the spatial experience.

Students have now spent their first full academic year in the building and, as would be natural with any new building, some adjustments have been necessary. Also, some students feel the architect has imposed a modernist aesthetic too forcefully on the building. It is true that round, white columns have been used in white, clean spaces, sometimes with banded interior windows. But it is also true that this building was not to be preserved as a museum structure; it was to be reordered to provide the most spacious, light-filled, flexible space possible, and it was this, in the hands of one sensitive to those needs, that determined the aesthetic of the building.

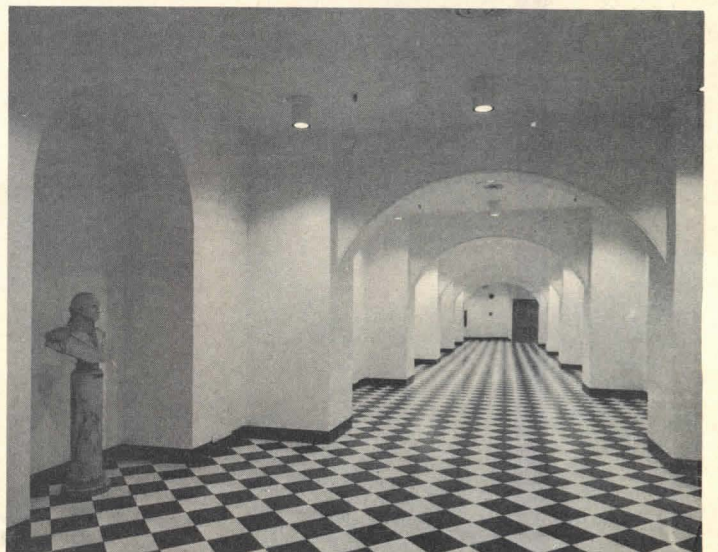
If this is bothersome to some students, most of them seem to have adapted rapidly to the new spaces. One, who used to paint in the Art Student's League, says he now can't wait "to get down here to do my work." Soon after



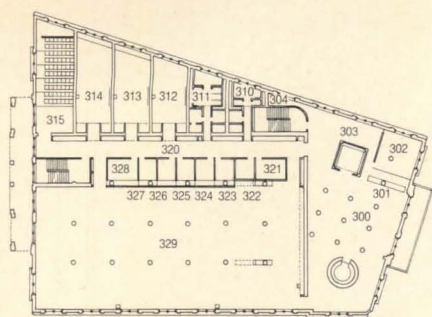
Gallery, offices, and study rooms overlook first floor library (above).



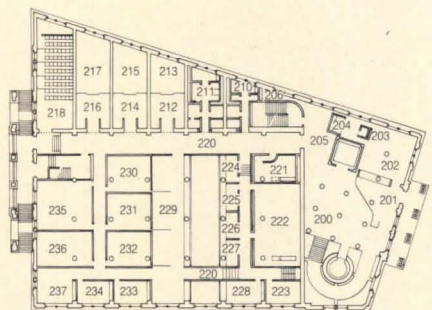
Double staircase in southeast corner of first floor lobby (above) leads down to black and white basement level foyer (below) of the Great Hall.



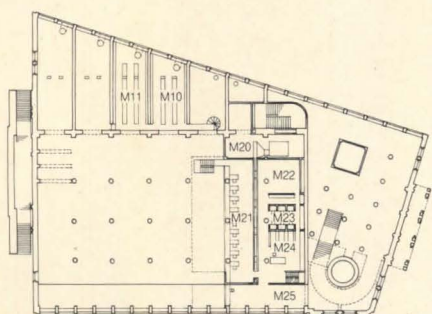
A re-presentation



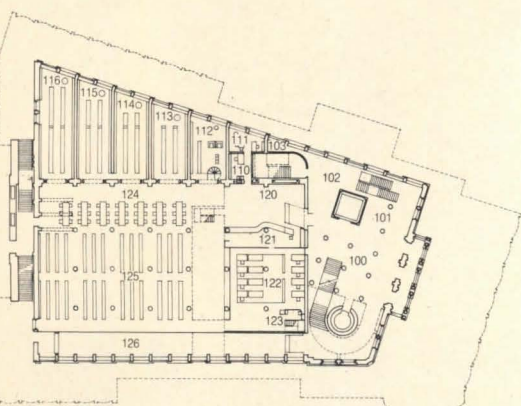
THIRD FLOOR



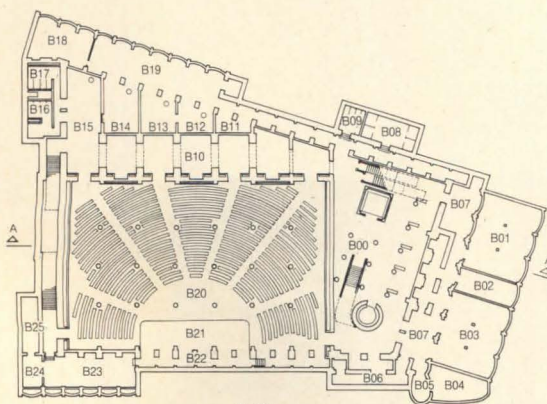
SECOND FLOOR



FIRST FLOOR MEZZANINE



FIRST FLOOR



BASEMENT

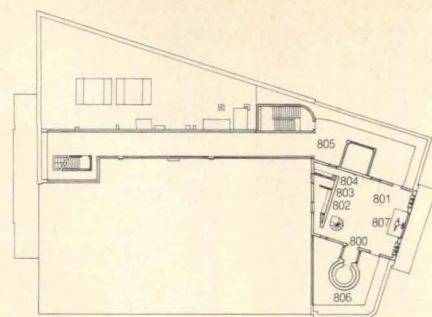
Third Floor, Dept. of Architecture. **300** Lobby/Exhibit, **301** Reception, **302** Dept. head, **303** Lounge, **304** Phone, **310** Women, **311** Men, **312** Seminar room, **313-314** Classroom, **315** Lecture room, **320** Corridor, **321** Archives, **322** Admin. Asst., **323-327** Faculty office, **328** Adjunct faculty office, **329** Architectural design studio.

Second Floor, Humanities/Social Sciences. **200** Lobby/Exhibit, **201** Reception, **202** President's office, **203** Bathroom, **204** Kitchen, **205** Lounge, **206** Phone, **210** Women, **211** Men, **212** Reception, Dept. head, **214** Reception, **215** Dept. head, **216** Reception, **217** Vice president academic affairs, **218** Lecture room, **220** Corridor, **221** Conference, **222** Seminar Room, **223-228** Faculty office, **229** Gallery, **230-232**, Seminar room, **233-234** Faculty office, **235-236** Seminar room, **237** Adjunct faculty office.

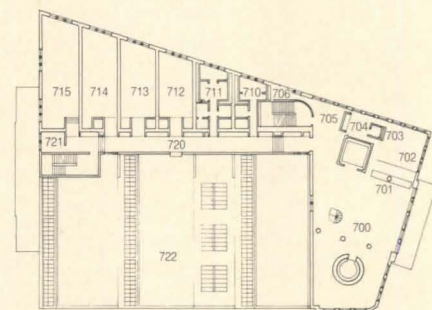
First Floor Mezzanine, Library. **M10-M11** Open stack, **M20** Mechanical equipment, **M21** Reading/Study, **M22** Seminar room, **M23**, Listening booths, **M24** Audio-visual storage, **M25** Faculty/Staff lounge.

First Floor, Library. **100** Lobby/Exhibit, **101** Control, **102** Lounge, **103** Phones, **110** Reception, **111** Librarian, **112** Browsing, **113-116** Open stacks, **120** Entry/Display, **121** Reference/Circulation, **122** Staff work-room, **123** Staff Bathroom, **124** Reading/Study, **125** Open stack, **126** Arcade.

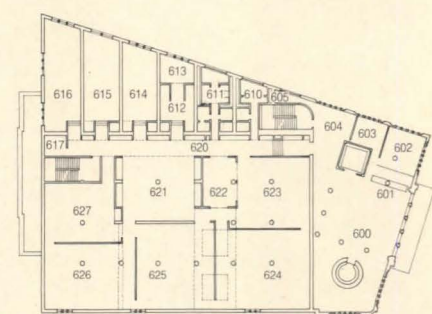
Basement, Great Hall. **B00** Lobby/Exhibit, **B01-B07** Mechanical equipment, **B08** Men, **B09** Women, **B10** Corridor, **B11-B14** Maintenance/Storage, **B15** Lounge, **B16** Women, **B17** Men, **B18** Electrical, **B19** Storage/Mechanical equipment, **B20** Great Hall, **B21** Stage, **B22** Backstage, **B23** Green room, **B24-B25** Storage.



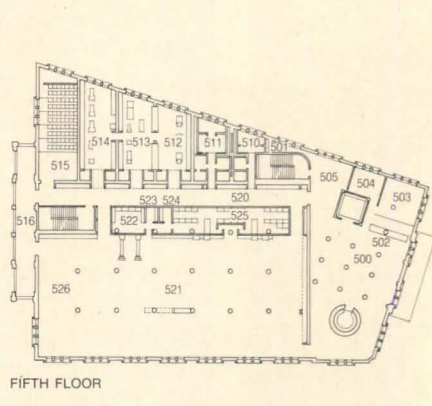
EIGHTH FLOOR



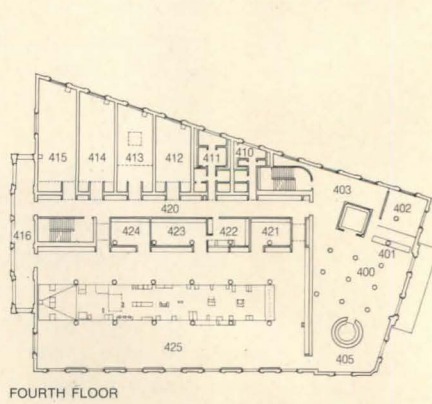
SEVENTH FLOOR



SIXTH FLOOR



FIFTH FLOOR



FOURTH FLOOR

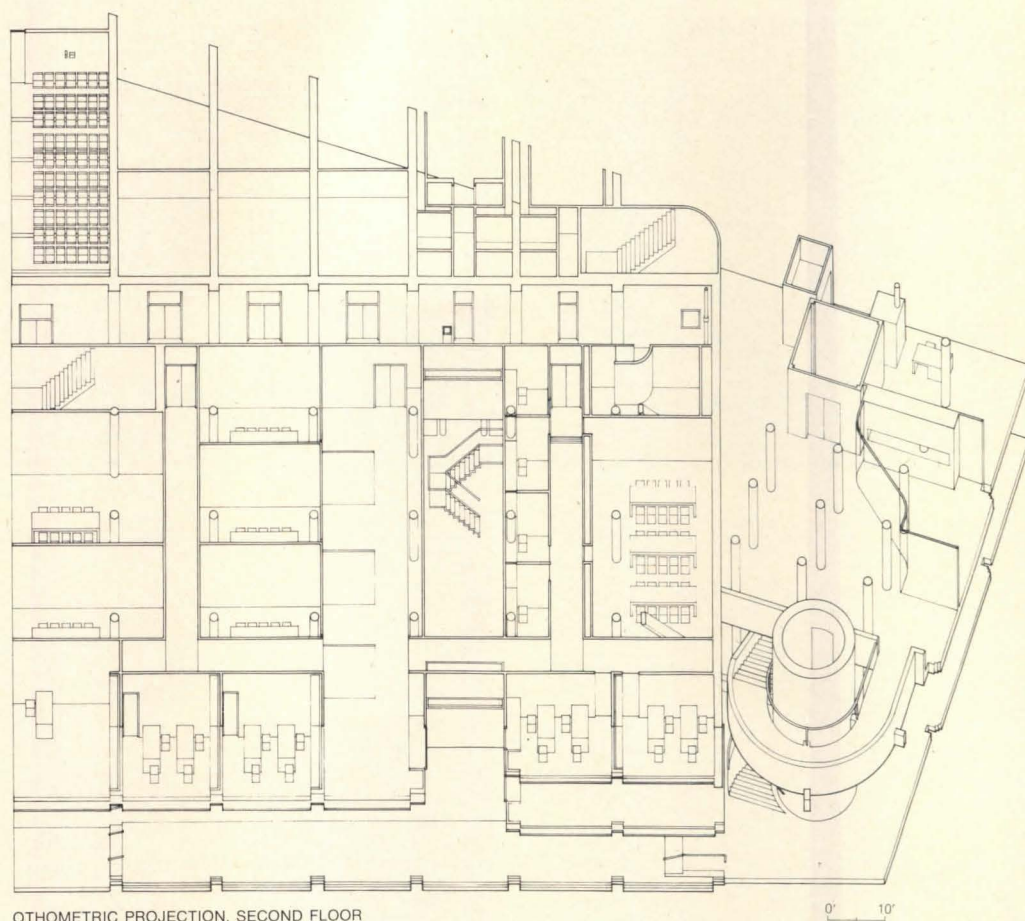
Eighth Floor, Trustees' Room. **800** Vestibule, **801** Trustees' room, **802** Cloakroom, **803** Bathroom, **804** Kitchenette, **805** Roof terrace, **807** Clock room.

Seventh Floor, Dept. of Painting. **700** Lobby, **701** Reception, **702** Dean's office, **703** Dean's bathroom, **704** Dean's workroom, **705** Lounge, **706** Phone, **710** Women, **711** Men, **712-715** Classroom, **720** Corridor, **721** Mechanical equipment, **722** Roof/Skylights.

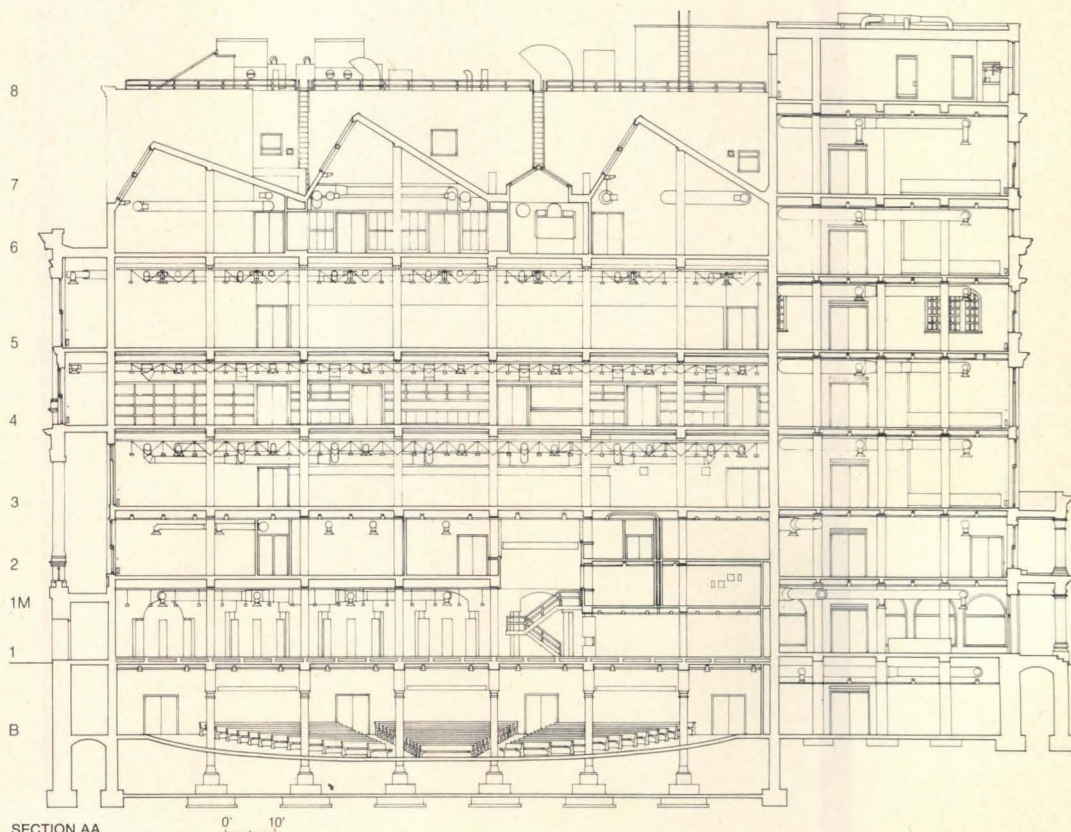
Sixth Floor, Dept. of Painting. **600** Lobby, **601** Reception, **602** Dept. head, **603** Faculty office, **604** Lounge, **605** Phone, **610** Women, **611** Men, **612** Storage, **613** Model lounge, **614** Jury room, **615-616** Classroom, **617** Mechanical equipment, **620** Corridor, **621** Preparation, **622** Mechanical equipment, **623-627** Studio.

Fifth Floor, Dept. of Photography and Communication. **500** Lobby/Exhibit, **501** Phone, **502** Reception, **503-504** Dept. head, **505** Lounge, **510** Women, **511** Men, **512** Print-making, **513** Etching, **514** Typography, **515** Lecture room, **516** Faculty office/Lounge, **520** Corridor, **521** Work space, **522** Copy camera room, **523-524** Film processing, **525** Printing, **526** Silkscreen.

Fourth Floor, Dept. of Sculpture. **400** Lobby/Exhibit, **401** Reception, **402** Dept. head, **403** Lounge, **404** Phone, **405** Secondary work space, **410** Women, **411** Men, **412-416** Work studio, **420** Corridor, **421** Storeroom, **422** Faculty office, **423** Tool crib, **424** Storeroom, **425** Main shop and work studio.



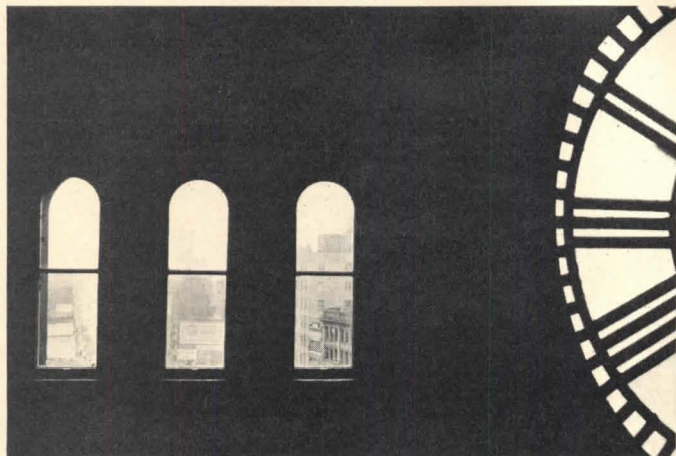
ORTHOMETRIC PROJECTION, SECOND FLOOR



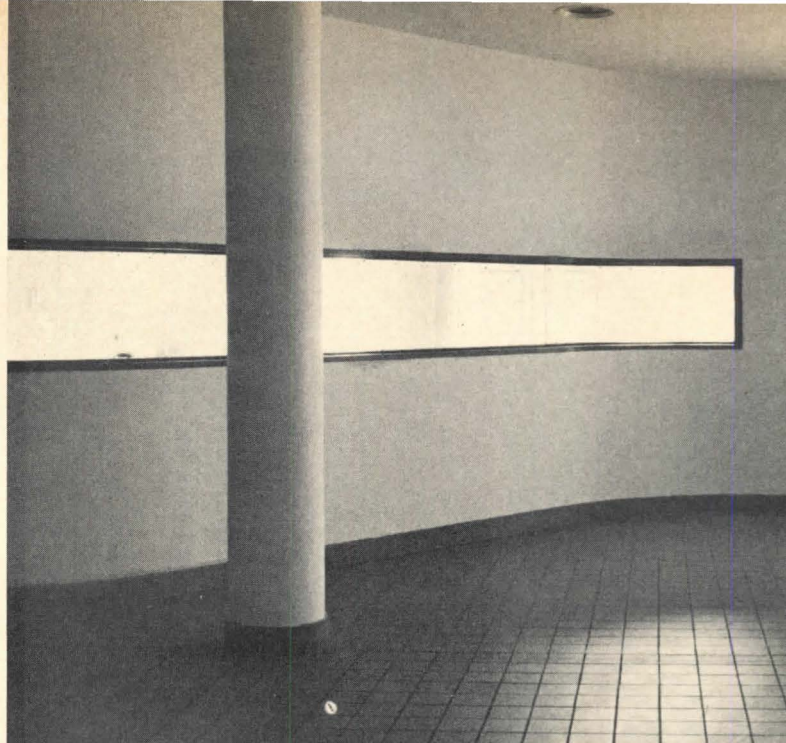
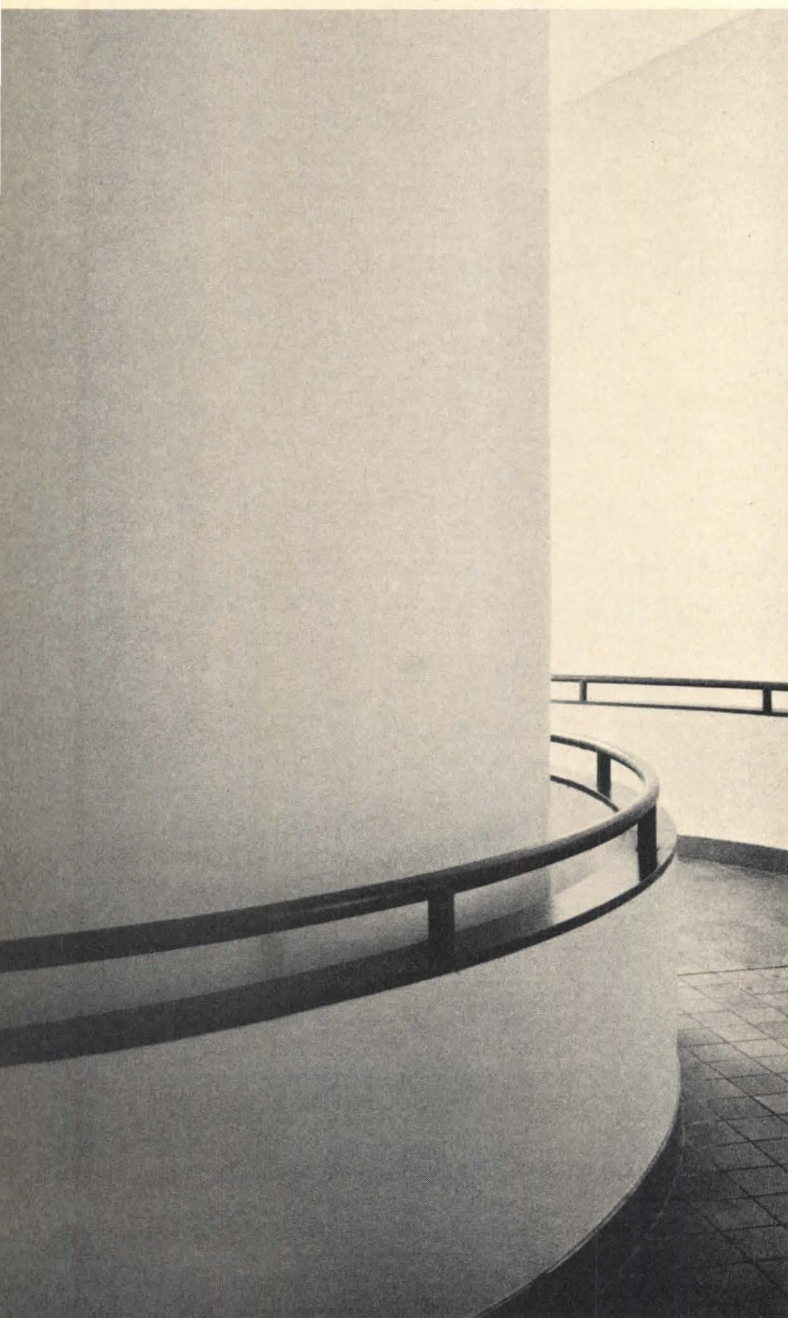
SECTION AA

A re-presentation

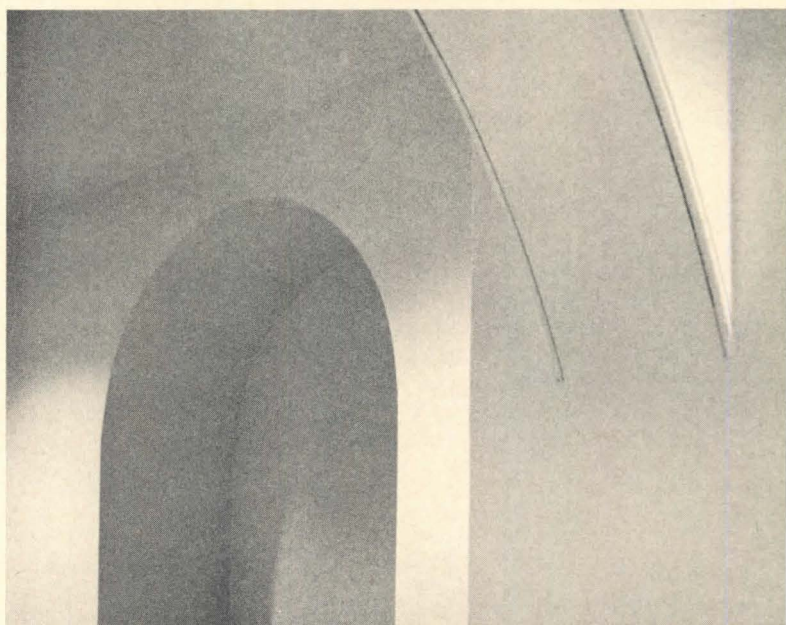
Quiet details emerge gradually. Clock tower (below).



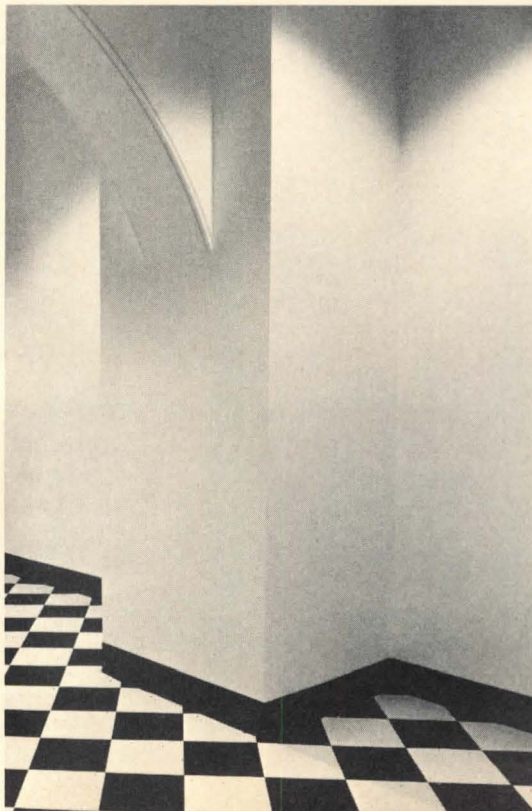
Circular ramp surrounds round elevator shaft (below).

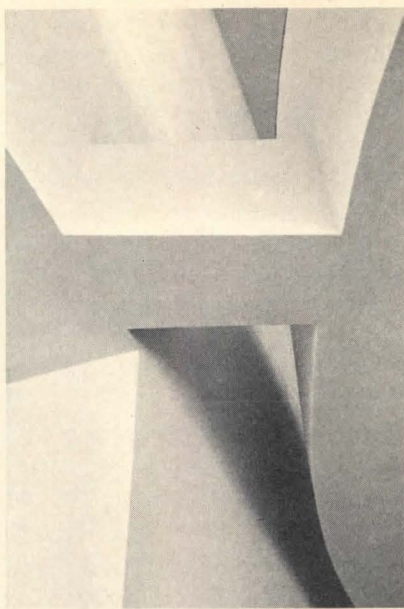
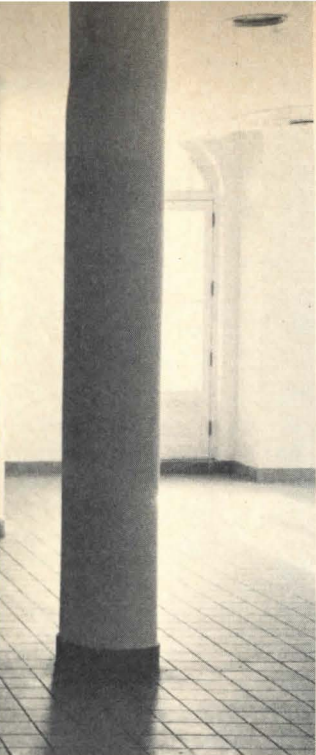


President's office reception area is behind window (above).

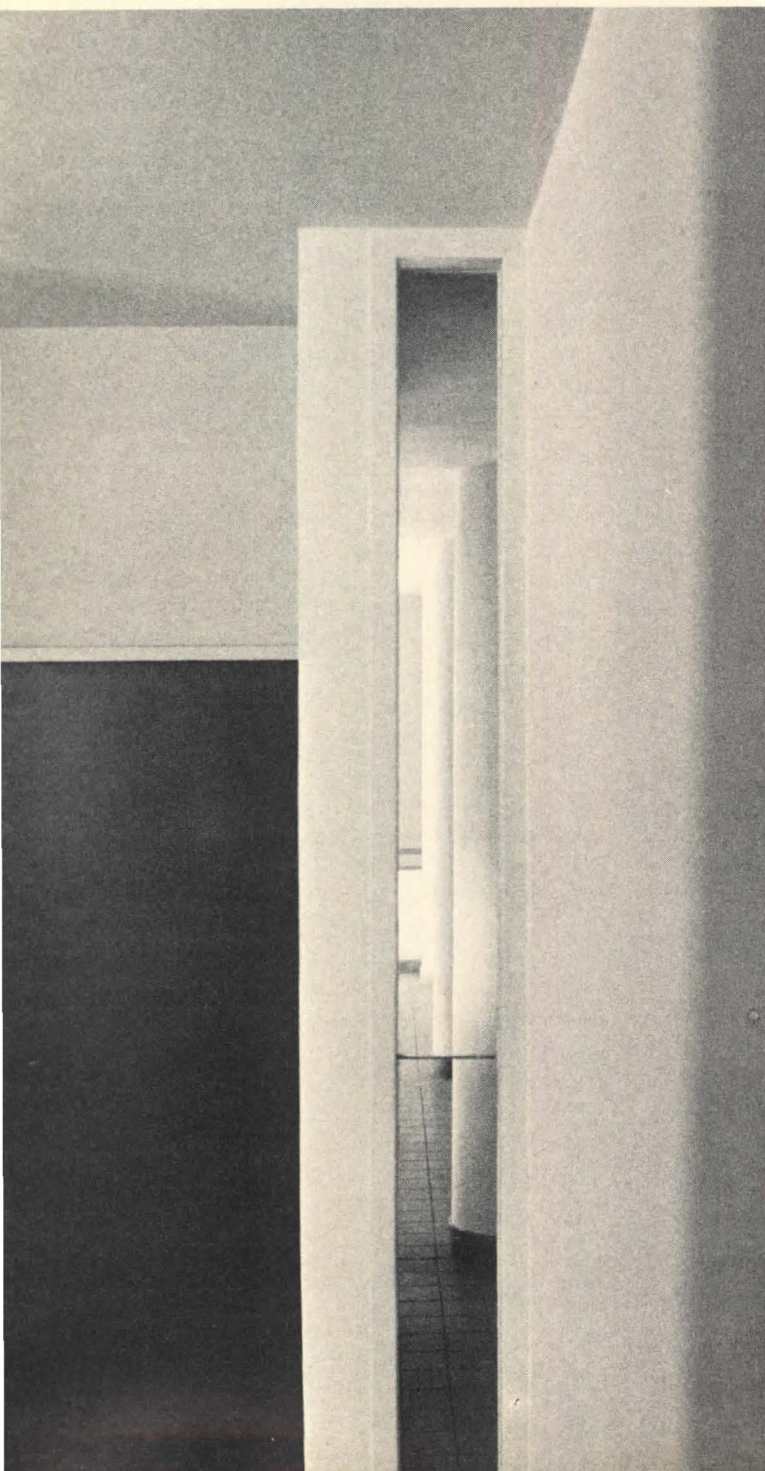


Great Hall foyer details (above and below).





A view from president's office (below); elevator shaft connection (above).



moving in, students appropriated public corridors and foyers for exhibition and meeting spaces. Partitions were put up in the painting studios (it is reported that students want them removed next year). But what is happening inside, as the students modify and use the space, is not as important, architecturally at least, as the fact that the building, because of its open spaces and well-planned circulation, is capable of allowing the changes to occur naturally and without major disruption. It is precisely this kind of flexibility that Hejduk was after.

The interior today does not present the same impeccable, white presence it showed on opening day, but this does not disturb John Hejduk. "The architect has to let go," he says, "and he can do that in two ways: in bitterness or with grace. If he does it in bitterness, he doesn't understand the organic nature of architecture; that when people move in, things become distorted through use." This is natural, he says, because unlike a painting, which one lives *with*, one lives *in* a building, "and if neither the building nor the architecture destroys the other, one then has balance," he says, which is most important of all.

At Cooper Union there is balance, and it is a particular balance that perhaps only two of the school's graduates, John Hejduk and Peter Bruder (who are both on the faculty today) might have been able to bring to it. None could have known the school and its needs better than they, who live and work in it every day. The Foundation Building is one of the rare cases where architect, client, and user all share the same building. If it weren't in rather extraordinary balance, we would probably have heard of it before now, since few groups are more critical and vocal than the teachers and students of art and architecture who occupy the building. [David Morton]

Data

Project: Foundation Building, Cooper Union, N.Y.C.

Architect: John Hejduk; Ed Aviles, project head; Richard Cordts, Ken Schiano, Lenny Zola, associated architects; Werner Kinkel, architect's representative.

Engineer: Peter W. Bruder.

Construction: George A. Fuller Co.

Client: The Cooper Union; William Baumgarten, representative.

Program: renovation of existing building to provide classrooms, studios, offices, assembly and exhibition space, and a 90,000-volume library; total area of 145,000 sq ft.

Site: Cooper Square, New York City.

Structural system: steel framing, exterior bearing wall, reinforced concrete slab, vaulted composite floor.

Mechanical system: multizone HVAC drawing utility steam.

Major materials: exterior, brown sandstone, wood casement windows, cast iron columns; interior, block and metal stud walls enclosed in lath and plaster, floors of vinyl asbestos tile, quarry tile, wood, and carpeting; suspended acoustical tile and plaster ceilings. For detailed listing see Building Materials, p. 102.

Cost: withheld by request of owner.

Photography: Stan Ries; except p. 51 top, courtesy Cooper Union; p. 52 top middle, p. 56 and 57, Judith Turner.

This side of Habitat



Jurors (left to right) Paul Rudolph, Franklin Becker, Sharon Lee Ryder, José Luis Sert, Alex Cooper, Fred Rose, Joseph Wasserman, Alan Melting (UDC) and Theodore Liebman (UDC).

A competition for UDC housing in New York City has spurred national interest because of the issues it addresses and questions it raises.

Architectural competitions seem almost axiomatically controversial. The Roosevelt Island competition, held last April, did not escape the curse. In many ways the competition ingeniously attempted to surmount the familiar problems inherent in these events (such as selecting a visually exciting but virtually unbuildable, unworkable, and costly scheme). In other ways, however, certain features peculiar to the competition—and to an unforeseen sequence of events in which it became enmeshed—subverted possibilities for its total success.

The competition, sponsored by the New York State Urban Development Corporation, was to provide 1000 housing units: 450 apartments for low- and moderate-income families, 200 for middle-income, 100 for the elderly, and 250 for high-income households. Already nearing completion are 2100 dwelling units by the UDC on the island leased from New York City, with Sert Jackson & Associates and Johansen & Bhavnani Associates as the architects.

The 9.2-acre site, due north of Sert's housing and west of Kallmann & McKinnell's 2400-car Motorgate garage, looks across the East River to upper Manhattan.

Aside from the stated intent of giving a chance to those architects who had not previously received UDC commissions, the competition was viewed as an effective method (in terms of publicity, certainly) of focusing on UDC's concerns for well-designed, high-amenity housing. Last fall's

announcement of the competition came at a time when UDC, having built an astonishing 33,000 housing units in New York state, foresaw few obstacles to the construction of the winning scheme. But the financial problems with which the UDC met in February (P/A, April 1975, p. 32) almost killed the competition. It certainly squelched any real probability that the housing would be built.

From the start, the UDC sought a straightforward solution that would embody the housing criteria it had been developing for the last several years. In drawing up the competition program, Theodore Liebman, Chief Architect of the UDC (until April), and the competition's sponsor, gave great significance to certain livability issues. All entries had to include diagrams addressing the following criteria: **security** (avoidance of unseen or inactive areas and access); **community** (the organization of units and open spaces for interaction; delineation of a range of public and private spaces); **maintenance** (organization of units to minimize undesignated interior public space, use of durable surfaces, etc.); **child supervision** (easy visual, aural, and physical contact between play areas and dwelling unit); **livability** (individual privacy in the d.u., flexibility, private exterior spaces, cross ventilation, minimal lengths of exterior corridors); and **responsiveness to context** (acknowledgment of surrounding scale, light, views, circulation, transportation). In the program, apartment sizes varied according to income. For example, a one-bedroom apartment should be 1050 sq ft for upper income families, 850 sq ft for middle income, 700 sq ft for low-moderate and elderly. In addition, the program called for day care facilities, retail shops, community space, and schools.

The program then, is itself a prototype. Liebman wanted the criteria originally codified in the low-rise, high-density prototype housing executed with the Institute for Architecture and Urban Studies (P/A, Dec. 1973, p. 56) to be applied to a higher density situation. (Density on Roosevelt Island is 110 units per acre compared with the LRHD's 55).

The composition of the jury reflected these considerations. Members were selected for specific reasons: José Luis Sert, Chairman of the jury, for his architectural and urban design background; Joseph Wasserman of Hoberman & Wasserman, for his extensive experience in designing housing in New York; Paul Rudolph for his formal design orientation, and Alex Cooper, former director of New York City's Urban Design Group for his urban design and housing work at the city level. But Liebman didn't stop with four architects. Fred Rose of Rose Associates, builders, was brought in for his construction know-how; Sharon Lee Ryder, P/A's interior design editor, was enlisted because of her strong interiors and space planning background, and Franklin Becker of Cornell University's Center for Urban Development Research for his social science expertise.

Initially, the competition was to be held in two stages with eight finalists selected from the first round. After further design development, first, second, and third prizes were to be awarded. Unfortunately, the UDC's financial problems and its murky future loomed up just two months before judging was to take place. For a while the UDC considered stopping the whole thing—even to the point of sending out letters. Pressure from the architectural community reversed the decision, however. (Of the 718 architects who had registered, about 250 finally submitted).



The 9.2-acre site facing Manhattan.

At any rate, the two stages were telescoped into one. New rules became explicit: The first scheme would be more worked out in its details than originally called for. There still would be eight winners, with first, second, and third prizes sharing the \$22,500 "pot." Liebman made it clear to competitors that they wanted a buildable scheme, but relinquished requirements that entries be accompanied by cost estimates and specifications.

The changes obviously created some conflicts among competitors. Perhaps the most paradoxical was the shift in *expectations*—if not for the competitors, for the architectural public at large. For a new attitude inevitably crept in. Now that the housing probably wouldn't be built, perhaps a winning scheme could be chosen that would not have to reflect so closely all the previous site, budget, construction considerations: a model, an exemplar, a statement of what housing should be—not what it *can* be.

Although Liebman and the jurors saw the irony in selecting a "buildable" project that wouldn't be built, they felt that the solution could still be prototypical. Then again, most competitors were probably too far along in the design stage to totally shift gears at that point. Thus the majority of submissions were straightforward and "serious." They had something else in common: many were heavily influenced by Sert's housing already existing on the island. Of course the proximity of the competition site to Sert's housing would affect the response. As one architect put it: "You have two choices—either to elaborate on Sert's scheme or design completely contrary to it. One way you might win."

According to several jury members, the jury became increasingly appreciative of the Sert parti during the judging that took place on Roosevelt Island. Therefore it is not too surprising that three out of four submissions selected for awards by the jury elaborated or refined those ideas already found in the Sert housing (especially when they had so many "Sertian" schemes to choose from anyway). And it is not surprising that the preponderance of winners understand Sert's ideas extremely well. Robert Amico, Kyu Sung Woo, the ELS Design Group (Barry Elbasani, Donn Logan, Michael Severin, and Geoffrey Freeman) had graduated from Harvard School of Design during the time that Sert was its dean. Robert Brandon graduated after, and Kyu Sung Woo had even worked for Sert.

Granted, many submissions didn't accept the Sert parti—the U-shaped building highest inland (on Main St.), and stepped down to the river, that follows the massing, open space organization, relation to water's edge and town street initially proposed in the Johnson and Burgee master plan. And one entry that didn't accept this disposition—Stern & Hagmann's—won, though not without some controversy. (Other entries engaged in a distinctly imaginative architectural commentary, but still tended to accept the programmatic conditions).

The Stern-Hagmann entry definitely went against the grain. Not only did they divert and extend the zigzagging Main Street through the housing, but even pulled all the high-rises to the water's edge. Obviously this solution differed drastically from the other schemes, and what had preceded it on Roosevelt Island. Juror Paul Rudolph later quipped "They simply picked the wrong island, or the wrong side of the East River, I'm not sure which". The jury, split over the decision to award this scheme, ended by dropping the ranking approach entirely.

As in any competition, this one provided the chance for architects who are developing and/or expanding their practice to obtain recognition of their talents. In this kind of economic slump such visibility is all the more important. But this competition may do more. It may help to legitimize housing as a valid architectural concern, and promote architects' credibility in this area.

So why the ensuing post-mortem debates, discussion, and letters, indicating disappointment? It can't be all sour grapes—even though that would be understandable. In a period of little architectural activity, a competition would generate high hopes and great expectations regarding the final outcome. Yet even the jury began to question the judgment process. Lee Ryder suggests that the jury would have selected a broader range of schemes had the competition still been conducted in two stages. This way jurors had to make absolute choices—searching out projects that had more than just "potential." This constraint, along with the diversity of jurors, Ryder felt, led to the "common denominator" syndrome—the scheme that least offends. Joe Wasserman observed that "it is hard to bring a forceful solution out of all the competition's divergent objectives." Rudolph felt the jurors were "too timid."

But something else happened to dampen total satisfaction with the competition. It lies in the sequence of events that escalated the competition into the realm of fantasy, *without the intention to do so*. All the winning schemes are reasonably worked out, thoughtful, humane architectural solutions geared to be placed on a specific site. They are not innovative, for they are faithful accretions of ideas that have been tested elsewhere. And that is what they are meant to be. As such they are easily reproducible prototypes that could be built almost anywhere. But they are not visions of the future, sentinels of an emerging architectural destiny, revolutionary or poetic proclamations to inspire forthcoming generations of architects. The irony, of course, is that after a decade or so of building visionary schemes that won other competitions (Habitat, Sydney Opera House), and complaining about the myriad problems of costs, construction, and function, along comes a competition with realistic proposals. But the projects won't be built. Now we want the dream back. [Suzanne Stephens]

Roosevelt Island

Kyu Sung Woo

Solution: Twenty-story towers for "mobility" tenants (singles or childless couples) and the elderly are placed along Main Street and linked to eight- and six-story low-rise units for families. Units are arranged around two kinds of open space: the 60-ft-wide "community streets" connecting Main Street to the water, alternating with the 120-ft-wide play areas. These play areas also become points of interaction within one housing block, and between one income group and another (upper income occupies the southernmost part, next is middle income, and the final two blocks are for low-moderate incomes).

An elevated street two-and-a-half levels up forms the longitudinal spine serving towers and low-rise units and community facilities along Main Street. It connects to the ground level through escalators, elevators, and ramps. Access galleries at the fourth level (and at the sixth level for the eight-story structures) provide the secondary means of circulation. They extend both along the Main Street housing and across perpendicular low-rise units. The single access gallery means low ratio of public circulation space to total building area (2.5 percent). Exterior stairs lead from the ground to the access galleries in low-rise units. Low-rise units therefore reserve the first two stories for duplex units, the third and fourth levels for flats, the top two for duplexes.

Structure: Conventional cast-in-place concrete flat plate, 12-ft bays, with brick (8" x 8½") exterior walls.

Man-hours: Approx. 1270.

Jury comments

Wasserman: The community street (third level) works. You get down to it from the fourth level and walk out, seeing a nice sequence of spaces. I don't think many people will take the elevator from the ground level, with this community street option.

Sert: The weakest point is the towers—the lower rise units are very clear.

Becker: It shows the best development of open space of all the entries.

Rudolph: I think it would work as well in a mid-town Manhattan block. The scheme is buildable.

Rose: It is buildable, manageable, and livable—it also has a variety that would make it marketable.

Sert: The recognition of the (Octagon) park is weak, but the plans of the apartments are very good and well worked out.

Rudolph: This is fantasy, but wouldn't it have been better with one tower?

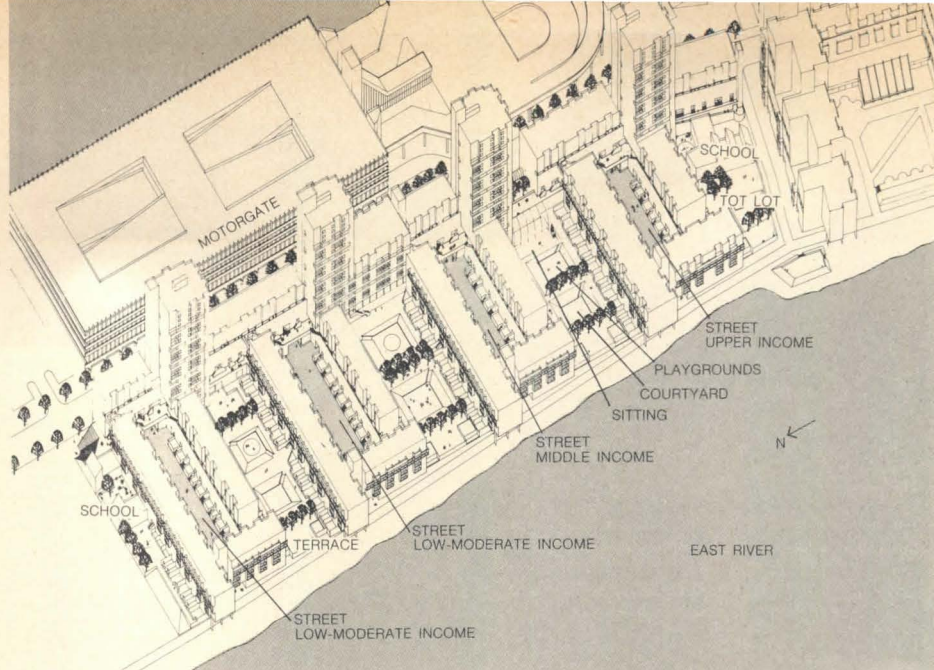
Rose: One could have put in two or three towers and gotten some special spaces there.

Credits

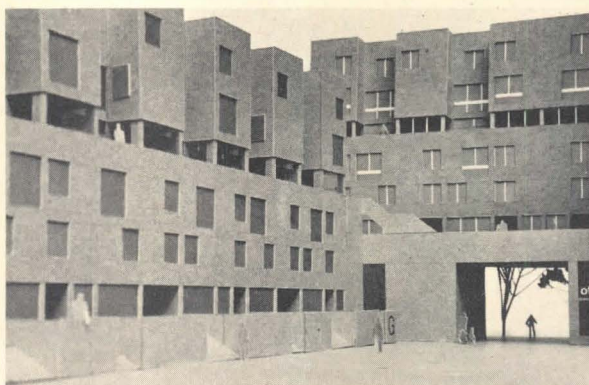
Architects: Kyu Sung Woo (also senior urban designer with the New York City Office of Midtown Planning and Development).

Consultants: International Design Collaborative (Kenneth Halpern and Roberto Brambilla).

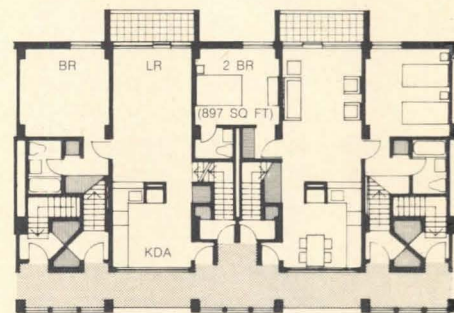
Assistants: Kerl Yoo, Megan Lawrence, Hong Bin Kang, Sun Kwon Kim, Sin U Nam, Joon Ku Ra, Yong Jin Han.



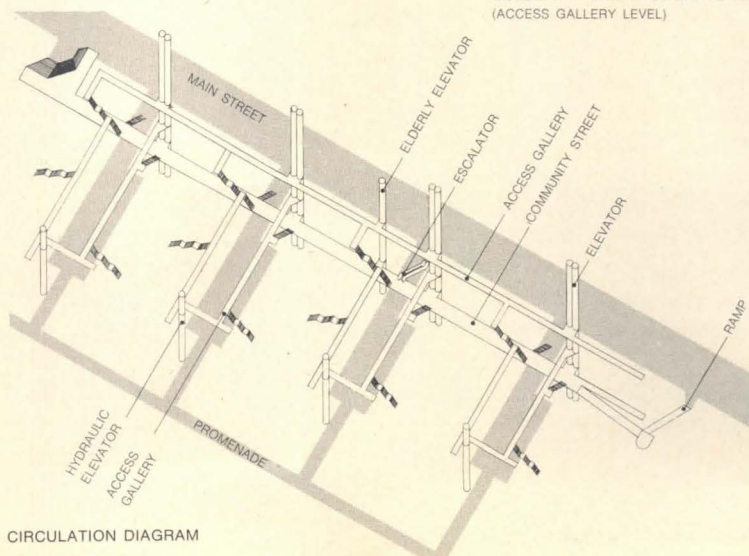
Axonometric rendering



View of model from community street.



LEVEL 4 LOW-MODERATE FAMILY (ACCESS GALLERY LEVEL)



CIRCULATION DIAGRAM

Robert A.M. Stern & John S. Hagmann Architects

Solution: Three 19-story towers are placed at water's edge to permit views to maximum number of apartments (65 percent). Each tower and the seven- to nine-story low-rise units house a separate income group: low-income occupants are placed on the south portion of the site, with high-income tenants on the northern portion, and middle-income in between.

An angled pedestrian path, "Octagon Way" deflects away from the garage and through this 1050-unit community. On the boundary street between complex and the garage, the architects placed an arcade and kept the buildings to nine stories to maintain height limits of the nearby Sert scheme and the Motorgate Garage. Buildings are pulled away from the street line to allow buffer space between the garage and the units, provide additional play space, and save trees.

Low-rise units employ the skip-stop elevator system with open access galleries on the second and sixth levels. Towers are served by elevators. Octagon Way is the sole access to all apartment units, schools, and other facilities, and can be closed off with gates at night for security. The large dwelling units are located close to the ground, and all low-rises have through-block units, enabling easy visual supervision of the semi-public street as well as shared private open space. Octagon Way is angled to admit sunlight, and the towers, according to the architects, will cast shadows away from low-rise units. "View corridors" to the river are maintained throughout.

Structure: Conventional masonry and flat-plate construction.

Man-hours: 1441 not including partners' time.

Jury comments

Rose: It looks like a lot of building.

Wasserman: It has a New York quality, a richness. I could spend a day here discovering a lot of interesting places. A lot of concern was given to the livability issues. It is a rich tapestry of ideas.

Cooper: I find it the most compelling. There are more than 1000 units of housing. Yet as a terminal site it's all right to have high buildings on the water.

Rudolph: I don't understand this scheme—it is so much in competition with what has already been built. The central space doesn't provide any sense of "space" as I understand it. There is an arbitrary and picturesque turning of the interior mall. In the original plan [Johnson & Burgee's] the turning was inevitable, because of the church. The high-rise buildings at the water's edge may be correct but it's not the way the [Johnson & Burgee] plan was executed. The other housing schemes have obeyed this concept (high-rises grouped along an interior street, low-rises at the water).

Ryder: I don't see how you can call this arbitrary and not call Main Street arbitrary.

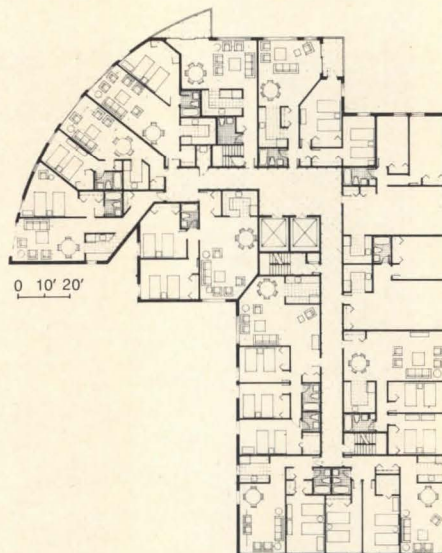
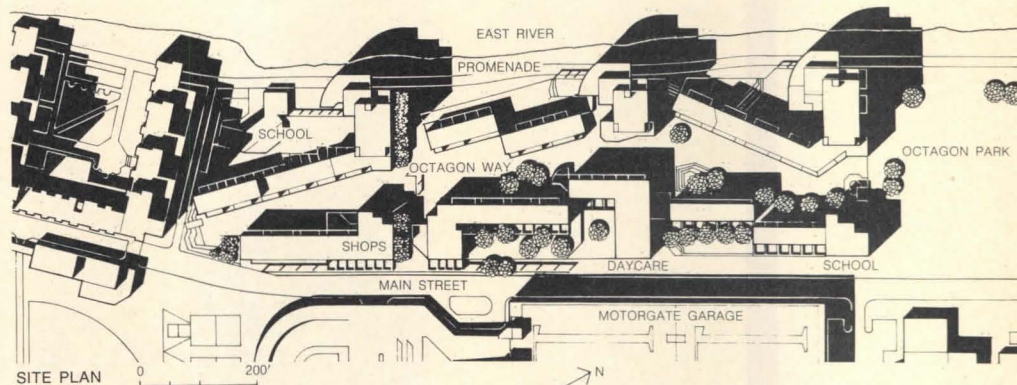
Sert: Now at Roosevelt Island every time you enter a tower you enter from Main Street. Here you must go to the other side to enter—you must have some car access—your main point of concentration you can't reach by car.



Towers facing East River.



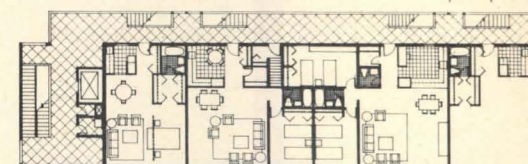
View from Octagon Way.



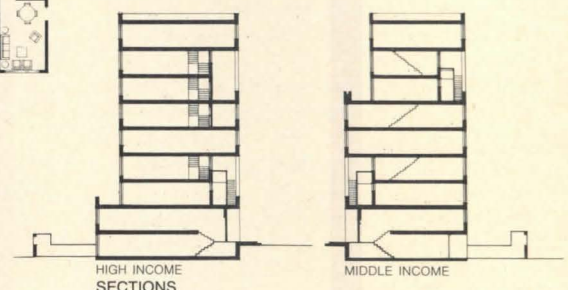
TYPICAL FLOOR, HIGH-RISE, LOW-INCOME



THIRD LEVEL, LOW-RISE, LUXURY



SECOND LEVEL, LOW-RISE MIDDLE INCOME PLANS



HIGH INCOME SECTIONS

MIDDLE INCOME

ter a tower you enter from Main Street. Here you must go to the other side to enter—you must have some car access—your main point of concentration you can't reach by car.

Wasserman: Main Street here is very weak.

Cooper: I disagree.

Sert: You completely demolish Main Street by doing this.

Cooper: The interior way keeps active and busy.

Rose: The circular form is a trick and perhaps O.K. on a hotel, but isn't worth it here. Those are 1938 windows.

Wasserman: It's rather a strong scheme—it's different but not discordant to me.

Credits

Architects: Robert A. M. Stern & John S. Hagmann, New York, N.Y.

Assistant in charge: Wayne Berg.

Assistants: Robert Buford, Joan Chan, Daniel Colbert, Gregory Gall, Jeremy Lang, Laurence Marner, Joan Oxenfeldt, Edmund Stoecklein, and Clifford M. Thacher-Renshaw.

Photographs: Edmund Stoecklein.

Roosevelt Island

Sam Davis— ELS Design Group

Solution: Housing blocks are stepped back from the lowest at the river (4 stories) to the highest (13 to 21 stories) along Main Street. These towers themselves are stepped so that the tallest, the 21-story tower, abuts Octagon Park, and the lowest, the 13-story tower is adjacent to Sert's housing. A community walk, parallel to the waterfront promenade, bisects the blocks and further defines open spaces created by double U-shape massing. Inside, a skip-stop elevator system serves every third floor of the medium- and high-rises.

The architects did not designate the mix of income-levels or the phasing (suggesting this was a matter for decision between developer and financing agency). However they anticipated adaptability for yet undetermined user needs through use of flexible structural modules. For example, walk-up townhouses can be rented as four-bedroom apartments for middle-, moderate-, and low-income families. By removing a wall between two bedrooms or removing a floor, luxury one-, or two-bedroom units can be created (with the double height in the living room). Similarly, the units with elevator access show size flexibility: nine units are typically grouped around the stair access. The middle units can be changed to master bedroom suites for adjacent apartments reducing units to six around the stair.

Structure: Precast concrete floor planks and cross walls; poured concrete plumbing and stair cores.

Man-hours: Approximately 1000.

Jury comments

Cooper: How is this scheme provocative?

Sert: It tries to bring together the high-rise elements with the lower small-scale streetlike sections to classify the spaces.

Rudolph: It recognizes Main Street. The design of the courtyards and the way they lead to the river are well done.

Ryder: The community walk is a weak gesture. The scheme really doesn't separate what is a backyard from the real community spaces.

Rose: It provides something unique in New York, and it is buildable.

Wasserman: The way the tower building steps from 21 to 13 stories supposedly to let the sun in is weak, however. It doesn't relate back to the Sert building to the south of the complex.

Rudolph: The size of the courtyards are one of the strengths of this one.

Becker: The smaller, and the larger courts, build a variety of experiences.

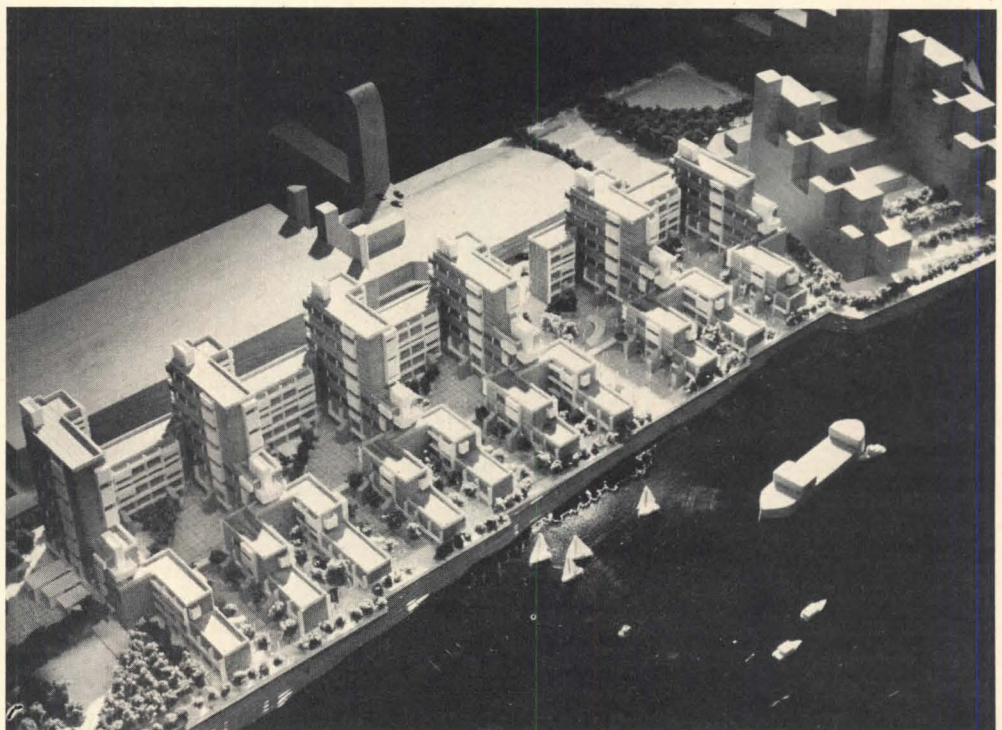
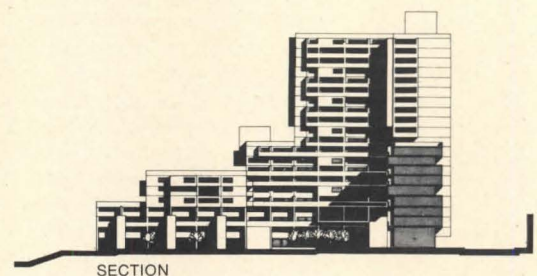
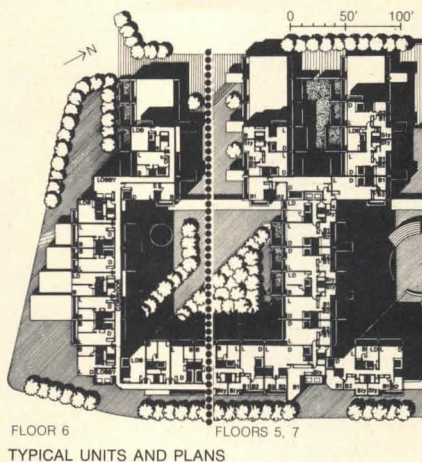
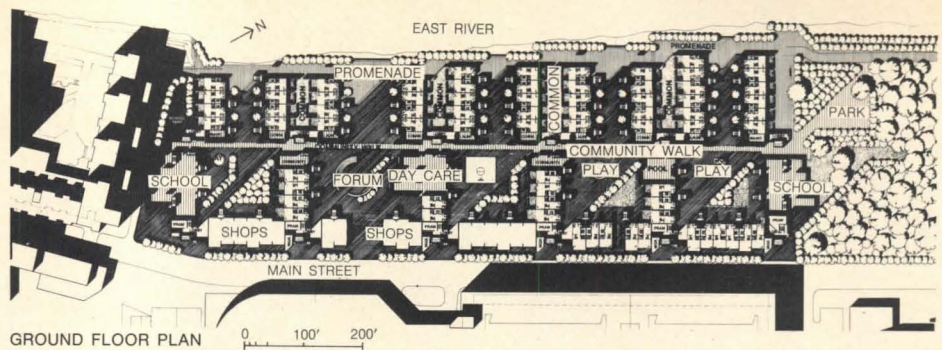
Rudolph: We must think of this as a highly diagrammatic proposal that would in fact be further enriched—it would be less rigid.

Wasserman: There is a 10-story scale on Main Street which at this stretch might be O.K.

Ryder: There are dwelling units on Main Street.

Becker: The presentation mentions that unit flexibility will allow change over time.

Rudolph: That's a 60-year-old idea—in fact, an



idea 1800 years old.

Sert: The main thing this project does is to bring high-scale elements to lower scale ones in a successful manner.

Wasserman: You feel a good relationship to the water.

Rudolph: I have a feeling that the relationship of the buildings to the ground and to what happens on the ground is far superior to what happens in the sky. Its slablike conventional appearance from certain angles is the weakest point.

Cooper: The community walk however has

schools on it, that may be used by the whole island, and perhaps should have been designed to be entered from Main Street.

Rudolph: Breaking down the scale here is very dependent on breaking down the mass: This is not the only way to do it.

Credits

Architects: Sam Davis (Berkeley, Calif.) and ELS Design Group (Barry Elbasani, Donn Logan, Michael Severin, and Geoffrey Freeman of Berkeley and New York).

Robert Amico, Robert Brandon

Solution: Three tower blocks step back from the water's edge to 21-story-high towers. A fourth structure, a 21-story-high slab, terminates the complex at its north edge bordering Octagon Park. (An opening carved out of the slab permits visual and physical penetration to the park.) The building configuration is not only stepped back in section, but also stepped back in plan (see site plan) so that a buffer of open space is created between the apartment units and Main Street. The buildings, organized in a U-shaped configuration to enclose open space, and afford rivers views, employ the favored skip-stop elevator and single-loaded corridor scheme. Units for the elderly are located on the corridor levels in the low/moderate income housing; four-bedroom units for large families are located at grade, and occasionally near the roof terrace levels. Balconies are provided for all two-bedroom units and for some smaller units.

The architects designed the project so that 248 upper-income units would be built first on the northernmost block. The second phase (the next two stepped-down blocks) would provide 378 low/moderate units plus 100 units of housing for the elderly, while the third phase, the terminating slab, offers 192 middle-income and 84 low/moderate DU's.

Structure: Concrete frame with flat slab construction; (14-ft bays) and masonry block infill.

Man-hours: Approximately 1000.

Jury comments

Ryder: The site plan is interesting, but space is not allocated very well.

Rose: Some of the others are more thought out.

Ryder: The courtyards must be better developed. Others have done so—it's part of the program.

Wasserman: I disagree—the courtyards are generic ones. We've seen them on the rest of the island and they are scaled well. They could be good or bad depending on what the future development is. However, the staggered arcade with the step-back buildings is awkward and could have been smoother. I like the trees in relationship to Motorgate, and the opening through to Octagon Park.

Ryder: The visibility of open space is important.

Rudolph: What about the placement of these buildings. Why can't these be better?

Ryder: Others have set up a hierarchy of open spaces from private to public spaces, from stoops to courts to indicate their potential uses.

Rose: This might be a scheme that could have used a double-loaded corridor.

Rudolph: The project design continues the existing buildings.

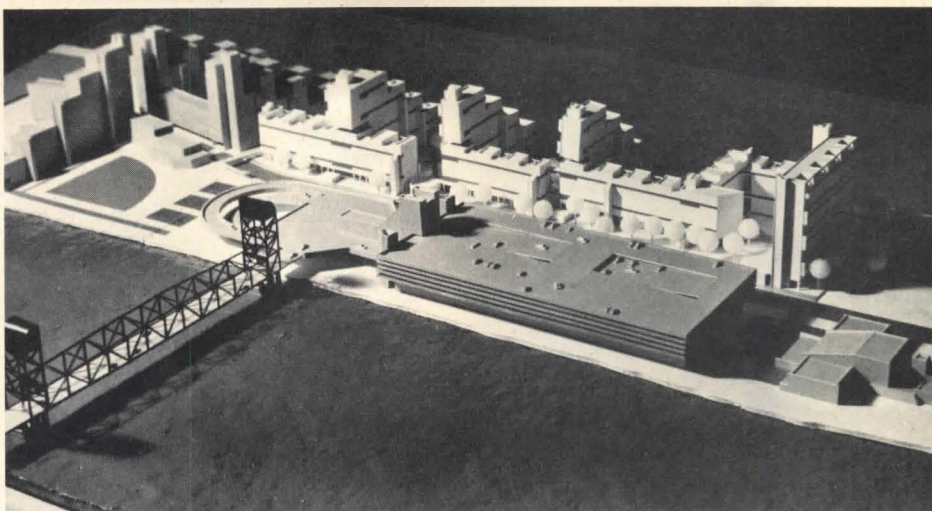
Wasserman: I think it is quite harmonious.

Rose: It's a good neighbor.

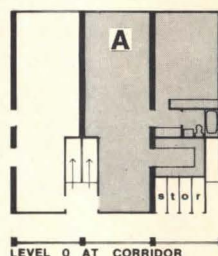
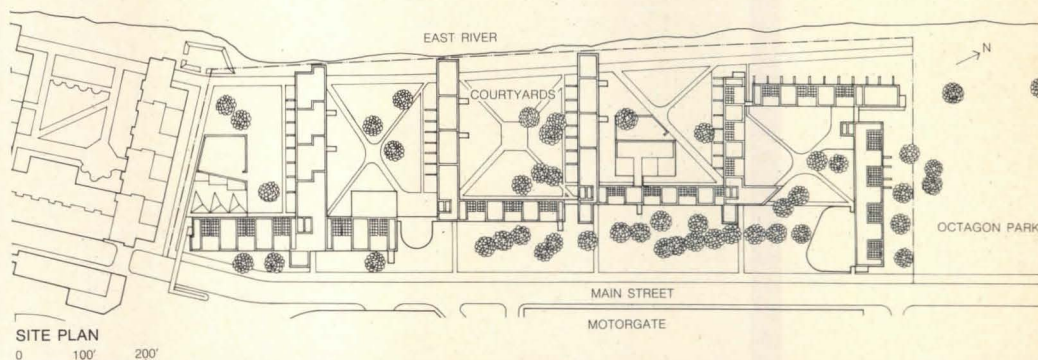
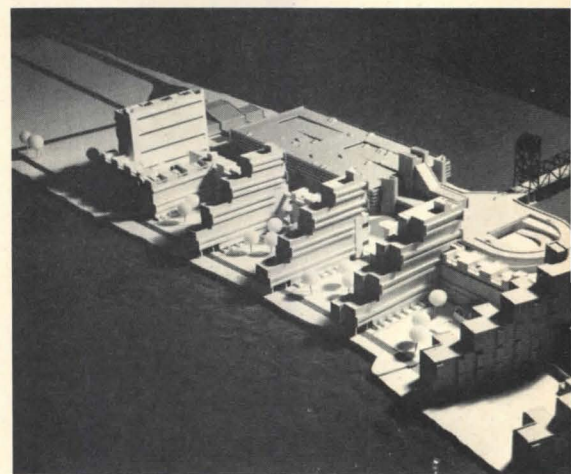
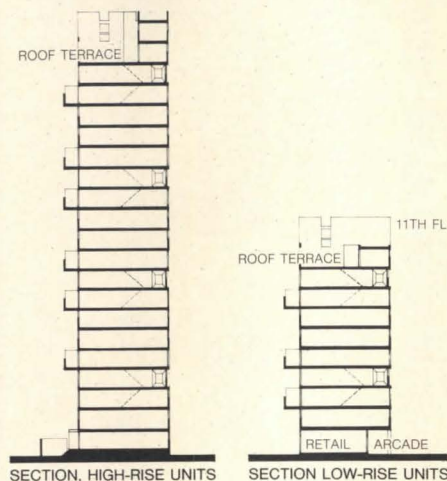
Rudolph: It recognizes the existing buildings, the trees, the park. Its major weakness is the lack of development of open space.

Credits

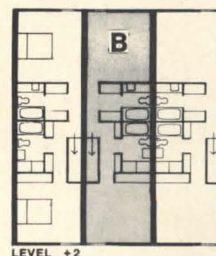
Architects: Robert Amico (an associate profes-



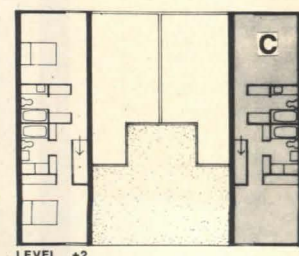
Model view from Queens side (above), and Manhattan side (right, below).



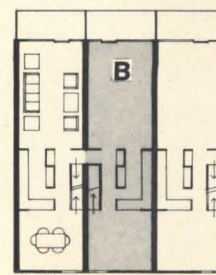
LEVEL 0 AT CORRIDOR



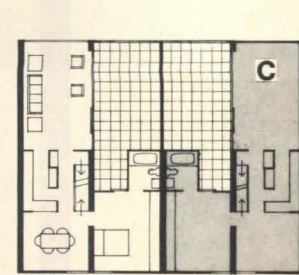
LEVEL +2



LEVEL +2



LEVEL +1



LEVEL +1 ABOVE CORRIDOR
ROOF UNIT

FLOOR PLANS VARIATIONS UPPER INCOME 0 20'

sor of architecture, University of Ill., Champaign-Urbana); Robert Brandon (assistant professor of architecture, University of Illinois).

Assistants: Edwin Brudnicki, Michael Gilfillan, Jon Jenson, Thomas Luczo, Bruce Retzsch, John Springman.

Photography: Arthur Kaha.



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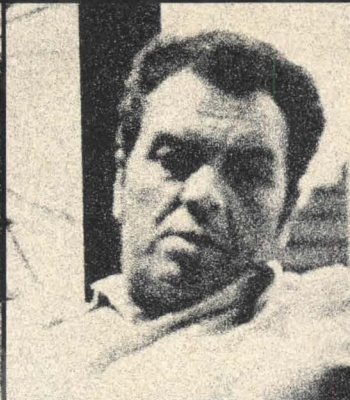
Albert Wolfe



Marvin Boland



Bill Bass



Bob Leising



Valley International Properties in Brownsville, Texas is embarked on a ten year building program, shaping a new community of homes, apartments, shopping centers, churches, schools and recreational facilities. Both the original Valley International Country Club, and the newest phase, Rancho Viejo have facilities for conventions and golf/tennis vacations. For rates and more information, call collect (512)541-1211. Toll free Texas 800-292-5281.



"When I first heard about Surewall, I thought it was a bunch of bull. Lucky for me, situations forced me to try it."

Bob Leising, President, VIP Commercial Contractors

Bob had to add to the existing Valley International Convention Center and unify the new additions with the old block building. Various solutions were proposed. None filled the bill. SUREWALL® Surface Bonding Cement was suggested as a covering for the old building, and construction material for the new. Surewall, which embeds glass fibers in a white cement matrix, eliminates mortar. Blocks are dry-stacked, and coated with 1/8" of Surewall on both sides. That's all that's needed for a finished wall inside and out, as the material itself is an attractive, water resistant finish coating.

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When Bob discovered that he was saving \$1.00 per sq. ft. on through-the-wall costs, he determined to use Surewall on the residential development as well. **"As the guy who pays for getting the building done, I like the price stability of Surewall. The price of lumber, for instance, depends on so many outside factors. With Surewall, I can budget my construction costs with confidence."**

*Bill Bass, President
Valley International Properties*

As the driving force behind Valley International, Bill looks at Surewall with many insights. As a builder, he sees his budget. He also sees the cleanest job he ever saw—construction without the usual

amount of waste a builder must eat at the end of every job.

As a developer, he also looks at Surewall through the eyes of a prospective homeowner. And then he sees the selling features. The solidity of a Surewall home. Reduced fire and other hazards. Attractiveness, thanks to the ability to texture Surewall, or paint it, or cover it directly with fabric. He also likes the freedom to design homes in each neighborhood differently.

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*Marvin Boland A.I.A., President
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Marvin Boland, architect for Valley International, became acquainted with Surewall through a demonstration of the product for the local architectural chapter.

The demonstration stressed the flexibility of the product and the fact that Surewall construction is stronger than conventional masonry construction.

He had his own home built with Surewall for its aesthetic value and reasonable cost.

"Surewall makes masonry construction competitive with tilt wall and metal buildings. It's a whole new ballgame."

*Albert Wolfe, President
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Wolfe, a masonry contractor, shared Bob Leising's opinion that drystacking block was bull. Today, he is quick to say that while Surewall saves the builder money, it helps the masonry contractor to make money.

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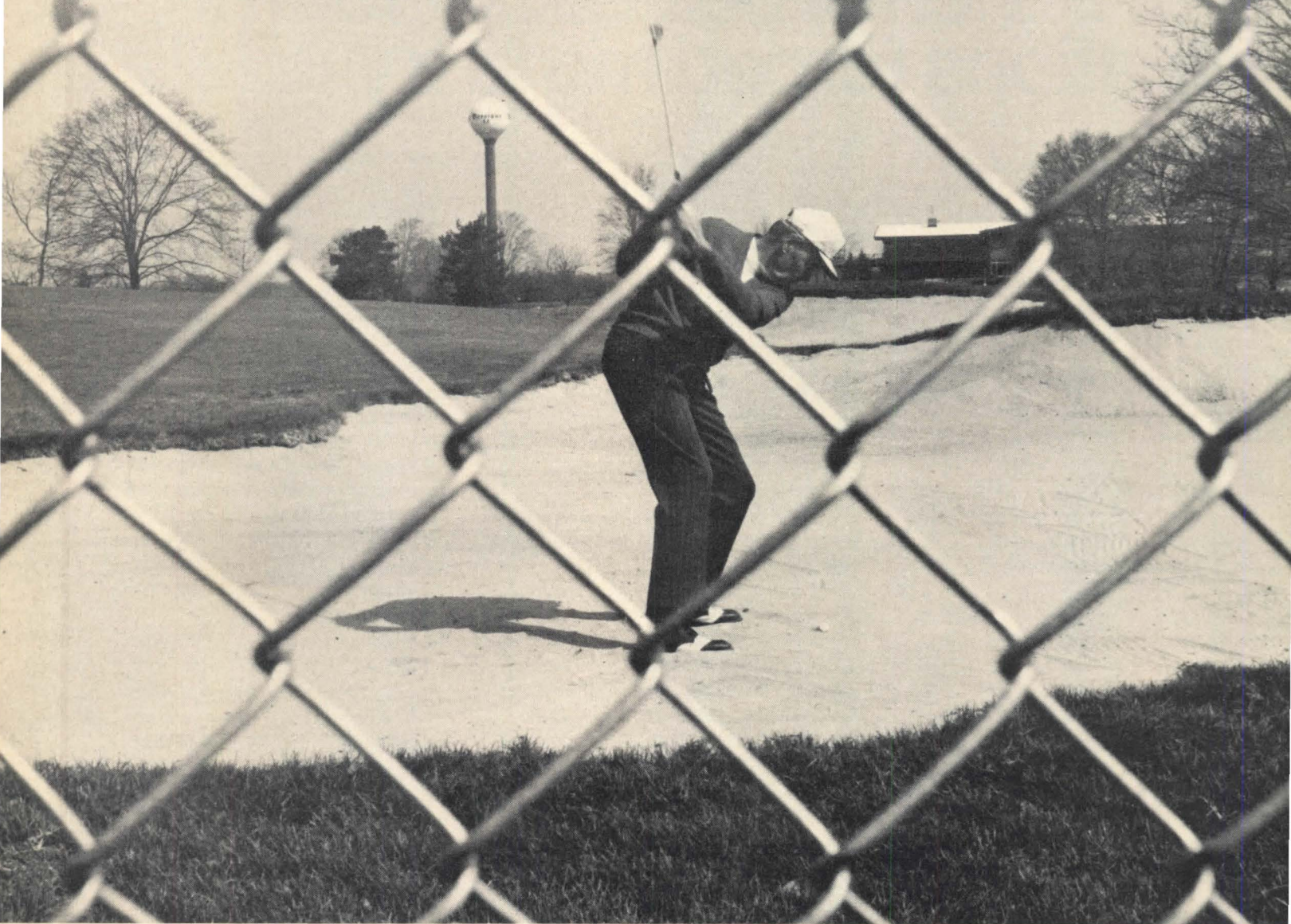
Some voices are heard saying the industry should think smaller. Don't think smaller, think better. Think Surewall.

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In fact, more and more alert designers are turning to load-bearing brick today, instead of framing their buildings with concrete and steel. And given today's economy—and tomorrow's as well—architects and builders are going to be singing the praises of load-bearing brick for quite a few years to come.



*Episcopal House/Reading, Pennsylvania
Architect: Muhlenberg, Green and Varies*

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*Brinkley Towers/Oxon Hill, Maryland/Architect:
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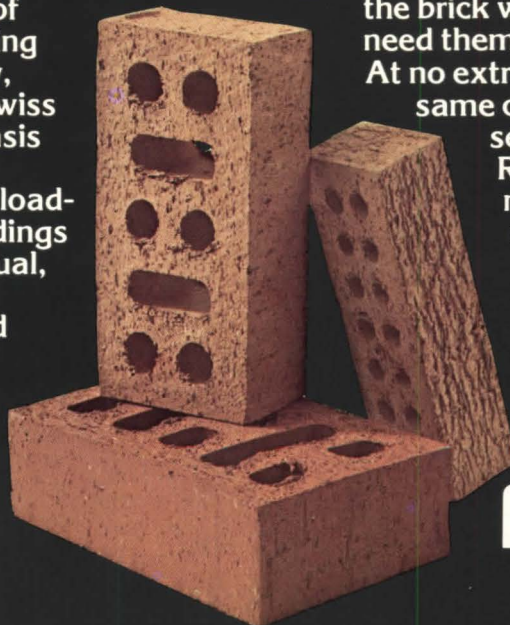
(The right kind of building, by the way, is one that's fairly compartmentalized: apartment buildings, hospitals,

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If these kids don't make it, neither will you

William T. Lohmann

Can architecture schools introduce students to the construction industry's complexities? Construction Specifications Institute student chapters think so.

Architecture students are up against the wall and many of them know it. The forces of change which Bob Dylan sang about in the 1960s are often misunderstood or ignored by their schools in 1975. Although aware of the complexity of the construction industry, they also realize that their educational programs may deny its complexity.

Two recent national studies hint at the core of the problem. In 1971, Stanford Research Institute analyzed the educational needs of the entire construction industry, perhaps the only such comprehensive investigation. Funded by the Construction Sciences Research Foundation of the Construction Specifications Institute, its primary aims were to discern the direction of industry-trained manpower needs and to determine the relevance of current educational philosophies, concepts, and curricula to those needs. SRI's report, "Future Curricula of Educational Institutions Relative to the Sciences of Construction," identified many industry-wide problem areas. It emphasized the need for understanding change within the industry, suggesting that much of the industry's success in dealing with its problems depends upon educating professionals to see the *need* for change. The report proposed increased emphasis on teaching systematic industry communications. It recognized that such an educational framework could also structure a dialogue between the industry and our schools.

C. Herbert Wheeler, AIA, professor of architectural engineering at Pennsylvania State University, asked "What are the most significant characteristics of professional practice which you think should be brought to the attention of A/E students via the profession. . . ?" Replies (*AIA Journal*, July 1974, pp. 57-59) ranged from the esoteric to the mundane. But a studied comment by Mark Beck, AIA, Baltimore reflected the concern of many replies and the SRI report: "More and more, I come to believe that architecture is pri-

marily a business of communication and information processing rather than a profession of design. There is a major shift from the architectural firm being an information producer to being an information manager."

Response from our education institutions to this has often been negligible. True, schools such as the University of Cincinnati are making valiant attempts to relate their curricula to changing practice. Multi-disciplinary problem-solving courses are being introduced. Work/study programs are more in evidence. Some additional degree options are being offered. But most of our students remain blissfully unaware of the changes occurring in the construction community and the many opportunities open to them.

The CSI, having helped define the problem through its SRI report, is responding. As the only vertical organization in the construction industry, it has a lot to offer. Its nationwide membership is involved in all aspects of construction. Through curriculum feedback, teaching positions, publications, technical programs, workshops, and seminars, CSI is affecting the education of our students.

CSI's most effective response is its direct contact with the student through its student chapter program. The fun is just beginning. The first CSI student chapter was founded only five years ago at California State Polytechnic University, San Luis Obispo, by Jack R. Lewis, FCSI of the School of Architecture.

The group was sponsored by the Los Angeles and Monterey CSI chapters. Since then the list has grown to 11 student chapters, all deriving direct support from the Institute and their sponsoring chapters.

If the present number of student chapters is not impressive, CSI's commitment to further development is. Its Education Committee has produced "A Guide for Organizing and Maintaining CSI Student Chapters," 1973. President Larry C. Dean, FCSI states that "one of the avowed goals of the Institute is to charter more student chapters." A target list of 200 schools has been distributed.

A CSI student chapter campus may be a two-year technical college or a major university. Participation is encouraged for students of architecture and planning, engineering, landscape architecture, interior design, construction, business management, real estate, law, computer technology, and other related fields.

What does the student chapter do? Some of the many things: 1 Develops its own operational procedures, funds, and campus image, 2 Brings industry people into the classroom, 3 Participates in CSI-sponsored campus lectures, workshops, and forums, 4 Organizes field trips to construction sites, landmark buildings, manufacturing plants, architects, engineers, and contractors' offices, expositions, and other schools, 5 Attends industry activities such as bid openings, new product presentations, punch list inspections, and topping-out ceremonies, 6 Attends professional chapter programs and national conventions (students design and staff the student chapter booths on the exhibit floor and attend all technical sessions).

Sparks fly in the interstices of the construction industry matrix. Problems become real. Ideas are born. Through their activities, CSI's students are joining the matrix and helping to bridge the gap between our educational institutions and the "outside" world. In effect, they are bettering communications within the industry. □

Author: William T. Lohmann, AIA, CSI is Chief Specifier for C.F. Murphy Associates, Chicago, Illinois.

Dear john

They're unmentionable, essential, and fascinating to architects. Look in most quality bathrooms—you'll find an architect. P/A delicately probes the mysterious career of America's plumbing fixtures.

You're embarrassed, you say. You display your façades, your interiors, your detailing and a lot more besides. But *plumbing fixtures*? You never suspected they were show-cases of living history. Those built in 1975 might have originated three-quarters of a century ago.

Plumbing fixtures have not changed much since then. However, shifting tastes and advancing technologies continue to affect process and product. The plumbing fixture builder wants to increase their efficiency and strength as he tries to lower cost and weight. The architect measures his budget against his needs and specifies as much form, convenience, and physical endurance as he can afford. How these curious devices have evolved, what their builders think of them, and the opportunities they offer the architect today are the subject of this brief survey by P/A.

Our trusted toilet, bath, bidet, and lavatory are heirs to an ancient but eccentric lineage. After all, mankind remains amazingly casual—even loathsome—about hygiene. It is perhaps not surprising that the Western world became rigidly circumspect about manners of sex and personal cleanliness at about the same time it forged the intellectual links between microorganisms and disease, in the 19th Century. Only a century before man fashioned a reliable moon rocket, he was wrestling with a clumsy flush toilet. (*Clean and Decent* by Lawrence Wright, 1960 is a rich source of sanitary history and lore.)

To wash or not to wash? Obviously, before the germ theory of disease, the question was largely a matter of taste. The design of plumbing fixtures took the same haphazard way. The bathroom could be a palazzo or a closet.

When the temples were white

On the whole, however, it was all rather nasty. Fond though the West is of progress, the plumbing fixtures of any century did little to embellish their predecessors. The Golden Age of plumbing fixtures seems to have transpired unnoticed: ancient Minoan Crete, c. 1700 B.C. From here it

was a long and shabby descent to the 19th Century.

The Cretans were remarkably prescient about problems of plumbing fixtures and sewers. To shield the unpleasant side effects of hygiene from other human activities, they isolated them in assigned places with specially designed plumbing fixtures. To dilute and dissolve the harmful waste products, they flooded them with running water. To safely dispose of the waste products, they conveyed them through tapering terra-cotta pipes that washed down and out of the buildings and into the sea.

In heavy Roman hands the baths became an archetype of monumental form. Beneath an immense vaulted splendor, the Roman bather transacted business and gossip. Technology was not neglected either. Great aqueducts brought fresh water to simple but effective toilets, baths, and wells, and equally great sewers (e.g., Rome's *cloaca maxima*) took everything away.

When the Barbarians toppled Rome, the plumbing fell too. Medieval Europe stopped the continuous flow of water from sanitary state to foul. Water was hand carried to the plumbing fixture, which often sat in an arbitrary corner of a room. The waste products were dumped raw into a river, cesspool, or more unceremoniously, a street. The English cry of "Gardy loo!" (from the French "Gardez l'eau!") preceded a shower of washing suds or worse upon pedestrians from an upstairs window.

A fast boat to vitreous china

The Industrial Age regimented sanitary practice into engineering. Sewers and fresh water supply lines were placed beneath the streets, and plumbing fixtures were marshalled into special rooms and continuously connected to them. Noxious sewer gas was sealed off by the insertion of the trap, a downward U-shaped pipe between the fixture and its waste line, to maintain a column of water against gas seepage into a building. Sometimes violent internal back pressures in waste and hot water pipes were relieved by the vent pipe, a fail-safe outlet connected in tandem to receive surging water.

Plumbing fixtures likewise came of age. Individual craftsmen improved the mechanical operation and manufacturability of these devices by recasting them in new materials and methods. Technical problems left dangling for

At the turn of the century, science pushed ritual out of the American bathroom. Hygienic aesthetics today often continues the theme. Joy through asceticism is a strong, severe, but refined architectonic modeling in monochrome often employing plumbing fixtures of the simplest detailing, played against such foils as intense episodes of color and controlled applications of light and reflection. Here: Residence, 1973–1974 Greenwich, Conn., Architect: Robert A. M. Stern and John S. Hagmann.



Technics: Plumbing fixtures

centuries were rather swiftly solved in the 19th Century.

A harbinger of the new functional attitude was in the increasingly spartan look of the fixtures. Designers quit trying to disguise them as "harlequin" furniture, desks and commodes that were toilets and sinks at heart. Instead, fixtures appeared as the machines they were. Toilets were radically restyled. On the other hand, baths, bidets, and lavatories retained their familiar forms to a considerable degree, sprung from the head of Minos as it were.

A toilet is a toilet

Perhaps no other plumbing fixture is as fascinating as the toilet, or as necessary. We would have little to teach the Cretans about it. They literally sat themselves in a niche with a balancing board astride a running stream of water. Neat and simple. The first time Western Europe duplicated this feat was some three millennia later. In 1596, Sir John Harington, godson of Queen Elizabeth, designed and built a valve water closet which functioned in all basic respects like the modern flush toilet.

In his humorous *Metamorphosis of Ajax* (a "jakes" was a privy in Elizabethan vernacular) were such important concepts as: a seat with pan, a cistern above to build a head of flushing water, an overflow pipe to regulate cistern discharge, a flushing pipe, a valve to release waste water, and a waste chamber with water seal to receive pan contents. Sir John's invention would have won him the dubious title, "Father of the Flush Toilet," were Europe as concerned as he about hygiene.

Europe was not concerned. Everyman sat tight, if he sat at all, over a jerry, chamber pot, or close stool, all self-contained vessels. Devasting missiles in street brawls, yes. But miserable toilets.

On more familiar ground

The perfection of a workable water closet resumed in earnest in the 18th Century. Early solutions had serious flaws. Receiving the waste products was easy enough. But how to convey them and their by-products away? Besides poorly handling waste products, they could not adequately cleanse themselves. The pan closet, the plunger or plug closet, and the Cummings/Bramah valve closet were mechanically ingenious but unsanitary.

Topped with a lead, marble, or glazed ceramic upper bowl, the pan closet held a hinged metal pan above a few inches of water in the lower bowl. A user pulled its handle, the pan swung down, the contents tipped into the cast iron or lead receiver, and fell into a trap below. Theoretically, that is. The device could not always purge itself, and its parts were hard to clean.

The handle of the plug closet lifted to release the bowl's contents through a plug at the base. Unable to keep its trap watertight, it fed sewer gas into the building. It was also a cleaning problem.

A genuine improvement appeared in 1775, in the valve closet of Alexander Cummings, a watchmaker. Sir John Harington would have been pleased. Cummings built an overhead cistern whose supply valve was mechanically tied to the waste valve in the bowl by a common handle. In ad-

dition, a syphon trap protected the ceramic bowl from sewer gas seepage.

Unfortunately, Cummings' sliding valve allowed enough play to interrupt the full cycle of flush and refill from time to time. To remedy this, Joseph Bramah, a cabinetmaker, coupled the Cummings closet to his own self-seating valve, which used a cranking motion to insure full cycling. Despite its complicated handle and its thunderous noise, the improved Bramah valve closet remained in production for over a century.

More familiar devices appeared in the last quarter of the 19th Century. Crude long and short hopper closets and Bramah closets were to be greatly outclassed by new and ironically simpler mechanical devices. Their secrets resided more in the shape of the bowl section than in the mechanical action of the supply and waste valves that preoccupied earlier designs.

The long hopper closet was a conical metal pan flushed by a thin spiral of water of insufficient energy to purge its contents. The reduced bowl area of the short version was hardly better. Nevertheless, they presaged the use of a jet stream to propel bowl water.

Grander rapids

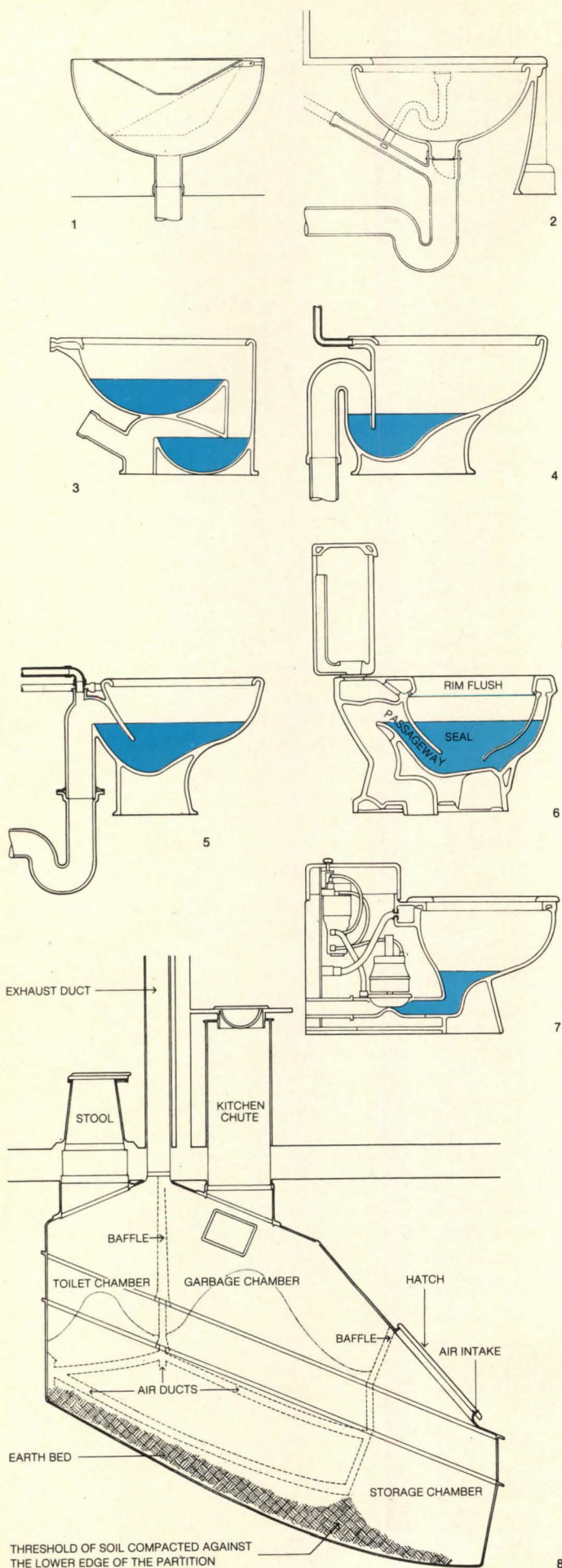
Credit for the all-earthenware toilet belongs to a potter, T.W. Twyford. Around 1870, he fashioned a shallow wash-out bowl in which water spilled forward and downward from an upper basin to a lower one doubling as a trap. Though it expended most of its energy clearing the first basin, leaving too little for the second, it was a commercial success.

Other improvements came rapidly. Stevens S. Hellyer, a plumber, produced the "Optimus" valve closet in 1870 which issued water from the lip of the bowl rim and from just below the waste valve to thoroughly rinse the bowl and clear the trap. Twyford improved his own invention in 1885. In his "Unitas" he stripped off wood cabinetry that traditionally surrounded the bowl. The self-supporting "pedestal" bowl was left exposed for easier cleaning. He also housed the complex mechanical components regulating flushing in a cistern or "tank" high above the bowl.

The flush toilet as we know it was essentially completed soon after the invention of the washdown closet by D.T. Bostel in 1889. Water entered the bowl at the lip and fell downward and backward in a continuous wave that carried it past the integrated basin/trap. A syphonic jet was introduced in 1900 above the trap, and was subsequently relocated in the bowl just before the trap. There it remains today. With improved bowl and tank design, additional water pressure from an overhead tank became superfluous. Leading the way, Eljer Plumbingware lowered the tank to its present position atop the bowl. Of course, commercial toilets and urinals use flushometers, valves that rely on direct water line volume and pressure, and have no tanks.

Royal flush

The modern toilet has a drinking problem. Conventional tank toilets use roughly 4.5 to 6.5 and more gallons of water per flush, varying with bowl size and general conditions. (Flushometers use 4.0 gallons per flush at the most but re-



quire larger diameter supply lines—at higher initial costs.) Sensing an impending water shortage some five years ago, the major plumbing fixture manufacturers began quietly trimming this appetite. New water saving toilets by American Standard, the industry's largest concern, and Kohler, Crane, Eljer, and Briggs feature redesigned bowls and tanks that need only 3.0 to 3.5 gallons per flush.

Their mechanisms are not dramatic departures from standard designs. A 1972 study of toilet operations by Welton Becket & Associates, Los Angeles, indicated that a conventional tank toilet needs only $1\frac{3}{4}$ to $2\frac{1}{4}$ gallons of water per flush to *rinse* out its bowl. The remaining expenditure is used to generate sufficient pressure to *empty* the bowl. And here is where designers could and did save water with minor structural changes.

However, the Becket study suggested that flattening the trapway and channeling supply line water and pressure to assist a flush from a smaller tank volume does more than reduce water requirements. It may reduce the ability of the bowl to handle larger quantities of waste. Two flushes might be needed instead of one. (The described design modifications are of necessity a generalization.) Industry spokesmen do not concede such a problem. In any case, a one-third reduction of toilet water consumption is a substantial saving.

Judging from an uninterrupted consumer preference for conventional (often slightly lower cost) toilets, Americans have not slaked their thirst for water. Most water saving toilets are sold overseas to places more mindful of water supplies, like the Caribbean. Government incentives, a precipitous rise in metered water rates, or heaven forbid, a "water crisis" might reverse this pattern.

The people's choice

In 1975, the bulk of toilet production represents "business as usual." Not only are the basic mechanisms for tank toilets, commercial toilets, and urinals essentially what they were at the turn of the century, the principal material for bowls and tanks is still vitreous china. As industry spokesmen unanimously agree, vitreous china provides a superior sanitary surface against bacterial penetration and absorption no other material can equal.

Tank mechanicals are increasingly substituting plastics in parts not under stress, where once only brass and steel were used. But flushometer valve designs continue to specify these metals. And toilet seats and seat covers are made

History of the toilet in cross sections showing typical problems and opportunities: 1 pan closet and 2 valve closet, failure to dilute and purge bowl contents; 3 washout closet, insufficient head to purge lower basin; 4 washdown closet, continuous water movement with minimal loss of head; 5 syphonic closet, supplementary water jet for flushing action; 6 water-saving syphonic jet closet, contemporary washdown action modified for reduced water consumption (courtesy of Eljer); 7 vacuum closet, vacuum suction of bowl contents as water plugs (courtesy of Colt Industries); 8 compost closet, aerobic bacterial decomposition of waste products (courtesy of Clivus Multrum, U.S.A.).

Technics: Plumbing fixtures

as before of high impact plastics or compressed wood fiber with baked on plastic finishes.

(Here is perhaps the only surviving touch of frivolity in what was once entirely the potter's art. Some manufacturers now offer seat covers in decorator patterns and textures that can be unexpectedly striking. Who would believe that today's streamlined flush toilets are descendants of pottery sculpted as "The Dolphin," "Pedestal Lion," "Mulberry Peach," or *Acanthus*?)

Your flushes are numbered

Should the taps be shut down across America, three promising new toilets could figure significantly. Two continue to rely on water. The other uses none. The industry is watching them with interest.

Flushmate by Water Control Products/N.A., Inc., Birmingham, Mich. actually requires a conventional bowl for its unconventional tank. Inside this tank, the force of water supply line pressure compresses a volume of captive air which is stored as potential energy. Depressing its push button opens a tank valve, and permits the compressed air to expel tank water into the bowl.

Its designers believe the unit can equal or better the flushing pressure of conventional tanks while requiring only 2.0 to 2.5 gallons of water per flush. It is currently produced as a steel tank with steel, brass, and plastic parts within a tough plastic shroud, ready to replace a conventional tank atop any bowl. Retrofitting Flushmates for commercial toilets and urinals are in preparation.

(Readers are cautioned that industry officials harbor some reservations about the efficacy of Flushmate. The concept is nonetheless conceded to be sound. Consumer reaction should be forthcoming when marketing begins, perhaps as early as this August.)

Why flush at all?

The Environvac by Colt Industries, Beloit, Wis. is even more parsimonious with water. A rubber and plastic diaphragm discharge valve inside its vitreous china bowl housing is connected by pipe to a receiving tank and vacuum pump to literally suck away bowl contents: soil and water plugs containing only three pints of water each. Discharge can then be treated separately as Black Water, or combined with Gray Water (nontilet waste) as in most municipal treatment systems.

(Colt first developed Environvac for U.S. Coast Guard marine applications. Now it is offered in a portable recreational use structure. An independent licensed dealership is being established for architectural sales.)

The other alternative does not presuppose widespread drought conditions, but it might as well. Clivus Multrum (Latin for "inclining compost room") is a waterless organic toilet and kitchen waste disposal and treatment system. It engages microorganisms present in a starter layer of peat and top soil to convert waste products into humus suitable for gardens. While Clivus Multrum is virtually unknown in the U.S., some 1000 units have been in use for up to 30 years in Sweden, home of inventor Rikard Lindstrom.

It is a rationalization of the natural process of decay by

aerobic soil bacteria. Inside its large fiberglass container, waste products fed from overhead toilet and kitchen waste tubes slide down a 30 degree incline of earth and achieve complete decomposition into "humus" when they reach the bottom. A ventilator pipe draws off the gaseous by-products (mostly carbon dioxide and water vapor) from air baffled waste chambers in the container, while more supply air is drawn *downward* by convection through toilet and kitchen tubes.

Will Clivus Multrum make cities green again? It yields 3 to 10 gallons of soil per person per year, which could make New York an agricultural powerhouse. It is rather expensive now, and is recommended for domestic and small industrial structures. If Clivus Multrum U.S.A., Cambridge, Mass. headed by Abby Rockefeller of the New York family is successful, we may never "flush" again.

Rub a dub dub

What is a bath, but a large dish? asks Lawrence Wright in *Clean and Decent*. The Cretan bath was precisely this: a rectangular vessel having two long parallel sides rising slightly to one end and free of taps or drains. Subsequent baths as humble as the medieval wooden tub or as substantial as the Renaissance marble compartment could be equally primitive operations. Thirty gallons of water, give or take some, were carried to the bath, heated at an enormous expense, poured in, and emptied out, usually all by hand.

When running hot water was added to the self-draining "dish" in the 1850s, bathing became a painless experience. The improved bath was a prim accessory of sheet metal decorated with painted wood grain or stenciled pattern. Service connections were left exposed and unadorned. But such puritan rigor was short-lived.

Sizable fortunes were amassed in the latter half of the century, and by 1880 America's taste for opulence spilled into the bathroom. Wood paneling with marble pilasters, carpet, curtains, stained glass, and polished brass hardware surrounded the bath as *pièce de résistance*. For the wealthiest customers, the massive one-piece porcelain bath, strong and serviceable, was selected. Less fortunate buyers chose the sheet metal bath or a new idea, the cast iron bath. Both were designed with flat rims to be built into wood cabinets with tile splashbacks.

A smooth one-piece cast iron bath with controlled sectional thickness and weight had become a reality. Success did not immediately lead to luxury bath production. Manufacturers could not find a satisfactory coating for the inner surface of the bath. Galvanized finishes did not satisfy the aesthetic standards of the day. And enamel paint could not take repeated hot water immersions and abrasion from normal use. (Bathers were sometimes enameled by their tubs!)

By 1900 the bathroom recovered its senses; hygiene was a scientific exercise. The bathroom cum harem became a laboratory of white tile, white marble wainscot, and white enamel. As it shrank in size, its fixtures did likewise, and they lined up against a wall to shorten plumbing runs. The bath surrendered its trappings, which at the height of its glory included a ponderous shower cabinet (the "hooded bath") at one end.

Standardization became the credo. Along with dimensional standards for bathroom planning came the 5'-6" parallel sided rolled rim bath with tap connections and drain, ready for mass production. Steel sheet needed costly hand work, so its production soon ceased. By 1910, the cast iron single shell bath had a tough new glass inner lining called "porcelain enamel." A properly applied vitreous finish meant the bath would be easy to clean, tolerant of thermal flux, and resistant to abrasion.

The only alternative to this was the bone china bath. This superior product was first mass produced for popular consumption in 1916, some 10 years after technicians learned to pour clay liquified with water and salts into plaster molds for tunnel kiln baking. Skilled hand building of china baths on armatures was no longer necessary.

At the same time, the double shell cast iron bath, porcelain enameled inside out, was readied for sale. It quickly became the standard for quality. A good many homeowners today prefer its solid, heavy presence.

Not everyone in the plumbing fixtures industry shares this affection for cast iron. This can be seen in the current profusion of new materials and methods for bath building. Prestigious china baths are still available. And most manufacturers have a line of cast iron baths. In addition, steel baths have reappeared, made from heavy 14 gauge sheet, and baths of sheet or cast acrylic and reinforced fiberglass are now being offered. Another surprise: the 5'-6" standard bath has rivals.

The sweet and heavy burden

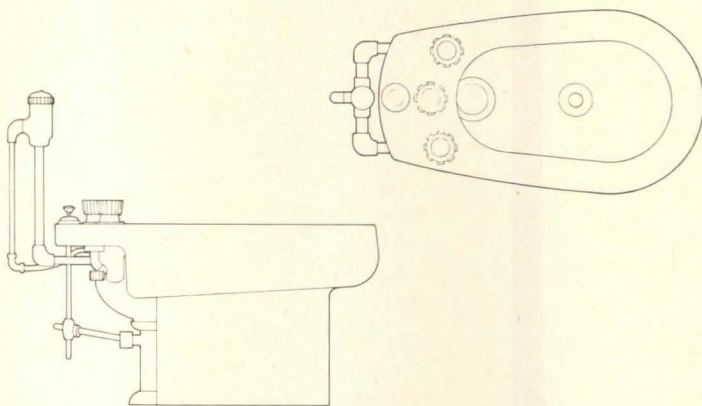
For years the industry has examined alternatives to the cast iron bath. Not that the material is inadequate to its task. But it entails high foundry cost—so much so that when one producer developed an improved steel bath, it dropped its cast iron line. As a company officer points out, a steel bath weighs less than half its cast iron counterpart, or 150 lbs versus 350 lbs.

What has happened to the steel bath? Traditional complaints refer to its thin walls and insufficient bracing. The improved version has solid steel channel bottom support and internal wall stiffeners. The industry feels the steel bath can now be specified for quality installations.

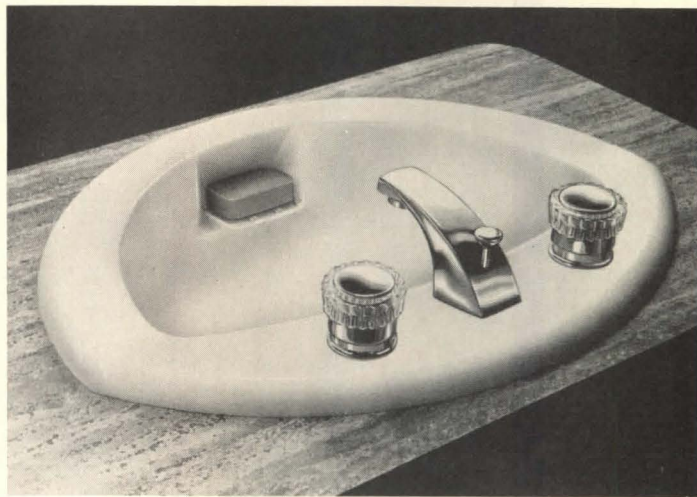
Reflecting the public's continuing ambivalence towards plastics, sales of plastic baths for commercial use outpace that for residential. Manufacturers are recommending proper liquid cleansing agents for plastic surfaces while endeavoring to improve their abrasion resistance. Lighted cigarettes still scorch their skins—where just a few years ago they melted right through certain models.

When America buys a bath today, it is most likely to be enameled steel. The industry gives the bath sales as steel, 46 percent, cast iron, 33 percent, and plastics, 21 percent. With more chemical and processing modifications and structural reinforcing, acrylic and fiberglass baths should find more acceptance.

Meanwhile, something strange has befallen the familiar "bathtub." The classic rectangle is still in quantity production. But a number of producers have begun to stretch that envelope. Half baths have always been available for tight

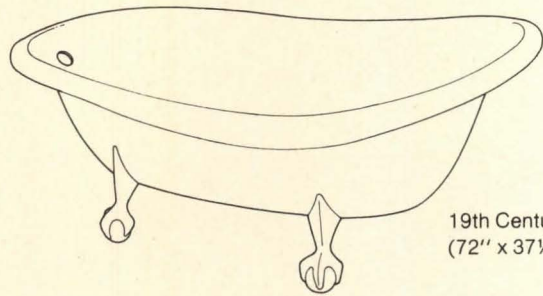
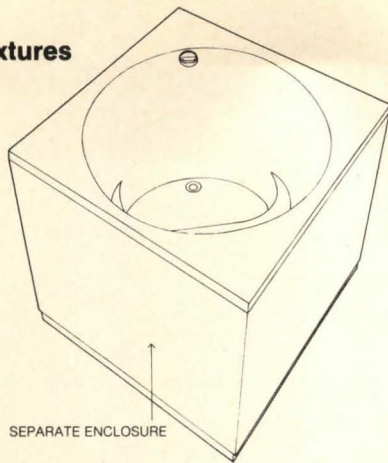


Above: contemporary bidet in plan and elevation (courtesy of Briggs). Below: countertop sink with self-draining soap recess (courtesy of Crane). Bottom: pedestal lavatory (courtesy of American Standard).

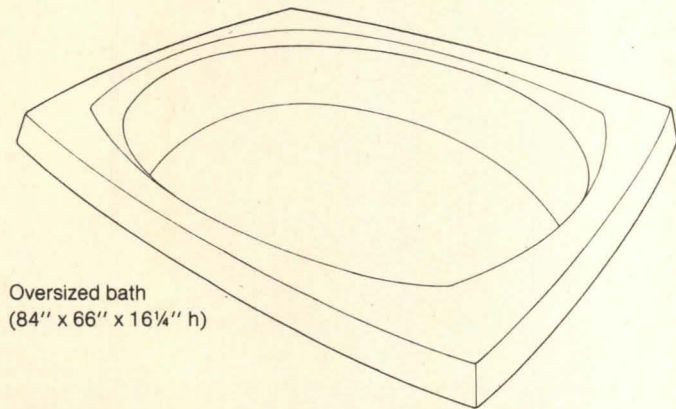


Technics: Plumbing fixtures

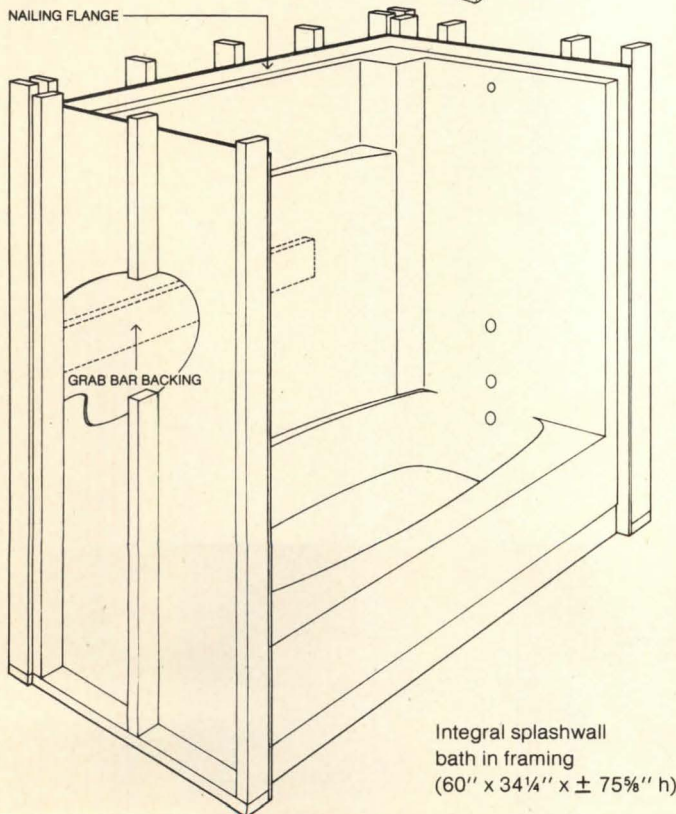
Deep immersion bath
(39 $\frac{7}{8}$ " x 39 $\frac{7}{8}$ " x 33 $\frac{3}{4}$ " h)



19th Century revival bath
(72" x 37 $\frac{1}{2}$ " x 27" h)



Oversized bath
(84" x 66" x 16 $\frac{1}{4}$ " h)



Integral splashwall
bath in framing
(60" x 34 $\frac{1}{4}$ " x \pm 75 $\frac{3}{8}$ " h)

space conditions. Now oversized baths, deep draft baths, whirlpool baths, an updated four-legged free-standing bath, and integrated one-piece splashwall baths are available in certain standard lines.

Does this herald a return to bathroom luxury? The industry is not completely sure. Some major concerns are gambling on this. Their specialty items anticipate a buyer who might want a bath big enough for several people that holds 130 gallons of water (check the capacity of the hot water tank before buying), another deep enough to seat the bather up to his neck in water, or one featuring a built-in whirlpool mechanism. Other manufacturers are more restrained. For example, one builds a prestige contoured bath with brass grab rail. But in the standard dimensions.

On the other hand, integrated one-piece splashwall baths are not really luxury items. Built of fiberglass and so large they do not fit through most doorways (the bathroom is built around them), they attract commercial users because of their simple one-trade installation, seamless construction which facilitates cleaning, and light weight. The economic advantages are obvious.

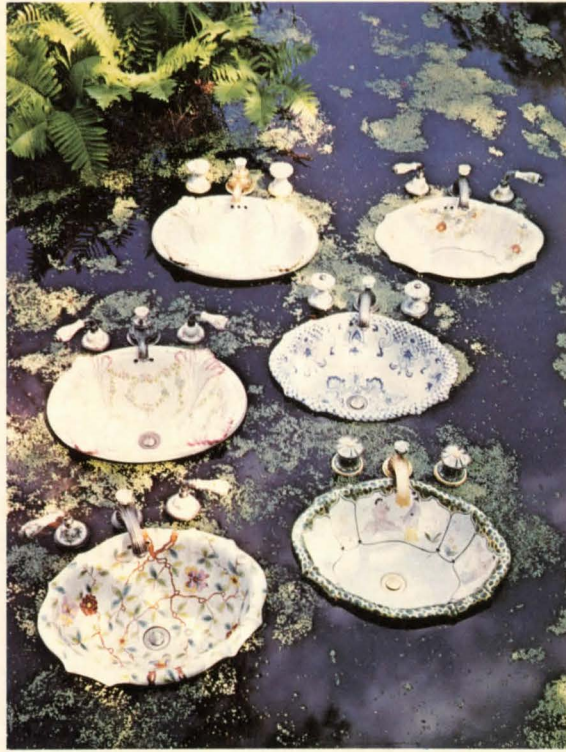
Out, damned spot

Long before Louis Pasteur, someone conceived the sensible practice of washing one's hands. Since raccoons do this too without the aid of science, we may attribute our doing so to commonsense. But our propensity for imbuing physical necessity with symbolic portent gets in the way. So a complex of cultural activities and artifacts arose to bring water to a user, gather enough of it to immerse his hands, and carry the waste away.

The history of the lavatory or sink is thus resplendent with elegant iconographic accessories that were as primitive in operation as the baths of their time. For serious scrubbing, the medieval religious used a laver, a stone trough where thin trickles of water streamed constantly into self-draining basins. But religious and laymen both resorted to less practical solutions for ceremonial washing: for example, the aquamanile (portable reservoir with spout, often designed as a unicorn or lion) splashed water on hands held above a wash basin.

In the 18th Century, fashionable Europeans used a tripod washstand with recesses or holes to accommodate a bowl and water jug. This was formalized as a cabinet with basin depression and holes for round soap dishes. Only af-

Ancillary and emphatically unmechanistic form and function find accommodation in the bathroom. Left to right, top to bottom, opposite page: Residence, 1975 Los Angeles, Architect: Charles W. Moore Associates; handcrafted faucets and sinks produced today from designs more than a century old (courtesy of Sherle Wagner); Residence, 1971 New York, Architect: William H. Ehrlich (Photo: Norman McGrath); Residence, 1971 New York, Architect: Gwathmey-Siegel (Photo: Ezra Stoller, © ESTO). Illustrations on this page in descending order courtesy of American Standard, Kohler, Kohler, and American Standard.



Technics: Plumbing fixtures

ter 1870 did the modern lavatory appear, boasting running water and built-in drain.

It shared the fortune of the modern bath: feast to famine to feast. In the late 19th Century it was lavishly outfitted as a basin sunk in a marble counter atop a wood cabinet, complemented by tiled splashback, framed mirror, and towel rails. Supply and waste pipes hid in the cabinet.

A splash of schizophrenia

In 1900, this imposing furniture yielded to a one-piece cast iron or vitreous china basin that could stand alone on metal legs or its own pedestal, or cantilever from a structural wall hanger. Sensuality was banished. Styling was devoted merely to basin form, soap recess, drainage holes, and overall contour. The space below was left open for cleaning. Or form follows cleaning mop.

Today the cabinet lavatory is popular again in bathrooms and kitchens. Not all commercial or institutional users might value the void beneath, but homeowners and others in need of storage space do. Our great-grandparents would recognize these new models at once.

Sanitary vitreous china is still considered the best material for lavatories. Cast iron and acrylics are also used, though the public has not shown great enthusiasm for the latter. For wear and tear and the sometimes complex forms that designers give them (e.g., one producer tucks a drained soap recess into the basin wall of some models) vitreous china will be busy in lavatory production for some time. Most self-supporting units will still be cast iron.

Contemporary styling, uncluttered and grimly purposeful, is an acknowledgement of the lavatory's constant exposure to water and waste products. Among the more elegant designs is a pedestal lavatory incorporating a washbowl by Douglas Scott, 1963, from the Design Collection of the Museum of Modern Art. Architects whose clients seek more opulent solutions must step outside the mass market. Custom fixture makers like New York's legendary Sherle Wagner still handcraft the lavish toilets, baths, and lavatories of previous centuries in choicest materials at premium cost. For the general public, architects can vary off-the-shelf colors, taps, and cabinets (as a rule not offered by the plumbing fixture builders).

What do you say to a bidet?

There are occasions in the affairs of adult men and women when a quick cleansing of the pelvic area is most convenient. So reasoned the sophisticated French nobility of the 18th Century when they presented the world with the bidet. This bowl with four legs was later hidden in harlequin furniture. Then running water and sewer drainage brought it out again as a sort of low sink.

Visitors to Europe find it in residences and hotels everywhere. Europe is also its principal habitat. The English disliked the "little pony" at first sight for its alleged impropriety, and Americans have shared the opinion ever since.

Nevertheless, the U.S. industry has decided that bidets are a good long-term investment. Vitreous china models styled to companion toilets have been available here for years. At the moment, sales are not too encouraging. The

reason seems to be that U.S. hygiene genuinely differs from European practice. As one industry designer remarks, "Americans are always taking a bath."

Prosit!

Our forefathers had many more fixtures to choose from than we do today. The industry has consolidated from a bustling field of little shops in the previous century to a handful of large volume/low profit per unit businesses which are only one of their parent companies' activities. Marketing, sales, and service are handled by manufacturer's network or independent authorized distributors, or a combination of both. All this reflects the need to blunt the financial vulnerability of being tied to the building industry.

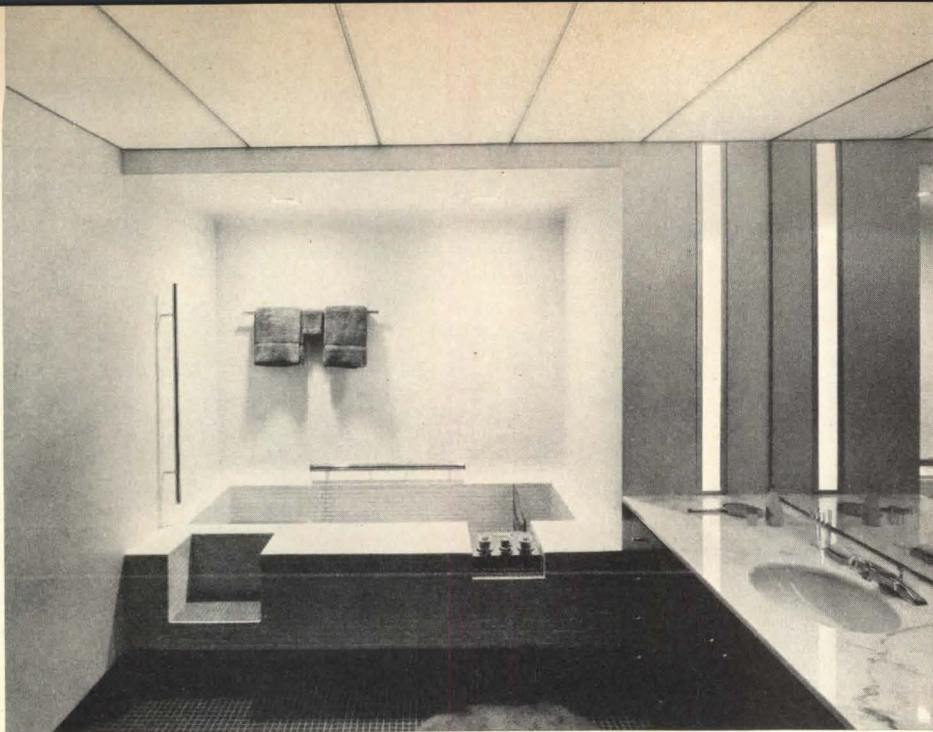
Because the architect is professionally committed to high quality plumbing fixtures, manufacturers warmly welcome their participation, however small share of the total market volume it may be. Their sympathy for the designer is quite natural. Architects are frequently asked to create conspicuously situated and carefully planned bathrooms, washrooms, and custom hygiene facilities. Their sometimes exceptional results become models for homebuilders and home remodelers. In other words, architects upgrade the general use of plumbing fixtures.

To assist designers, the industry provides numerous educational aids. These take the form of architectural service centers staffed with designing engineers, detailing rough-in books, and planning guidebooks. Architects with unusual design problems, such as certain industrial, commercial, school, or hospital installations, are encouraged to consult industry experts about specialized fixtures and layouts.

Of course, architects experienced with washroom design realize there is much more to the problem than major fixtures. Not to be overlooked are toilet stall partitions, soap and towel dispensers, convenience shelves, litter disposals, mirrors, floor and wall surfaces, and grab rails for the handicapped, to name a few. Architects are by no means infallible in deploying these components, in the opinion of industry representatives. Industry advice might eliminate such gaffes as the rivers of trailing water between lavatories and towel dispensers placed too far apart.

Technical progress in plumbing fixtures can be elusive. Oversized baths actually hark back to medieval tubs so big—due to the rarity of hot water—that family, friends, and perhaps a meal with musical accompaniment could be handled by one with ease. And new circular "wash fountain" lavatories that dispense water jets into circular basins for safe, economical industrial or institutional gang service washrooms are really medieval lavers in disguise.

Do Americans really want luxury fixtures? What will water conservation enforcement do to fixture size and operation? Will the shrinking American middle-class dwelling unit require new fixture designs that stretch young family budgets? The future of the industry is not easy to predict, especially during the current depression of the building trades. But their products will always be with us in some form. One wonders why H.G. Wells avoided the subject in his *War Between the Worlds*. "Take us to your lavatory!" Indeed. [Roger Yee]



Complement and contrast in the architectural surround of chaste plumbing fixtures. Left to right, top to bottom, on this page: Residence, 1965 Grosse Pointe Shores, Mich., Architect: William Kessler & Associates (Photo: Balthazar Korab); Residence, 1973 New York, Architect: Robert A. M. Stern & John S. Hagmann; Residence, 1974 New York, Designer: Joseph Branswell (ASID) Associates, Inc. (Photo: Norman McGrath); Residence, 1974 New York, Designer: Josephine Franzen (Photo: Norman McGrath).



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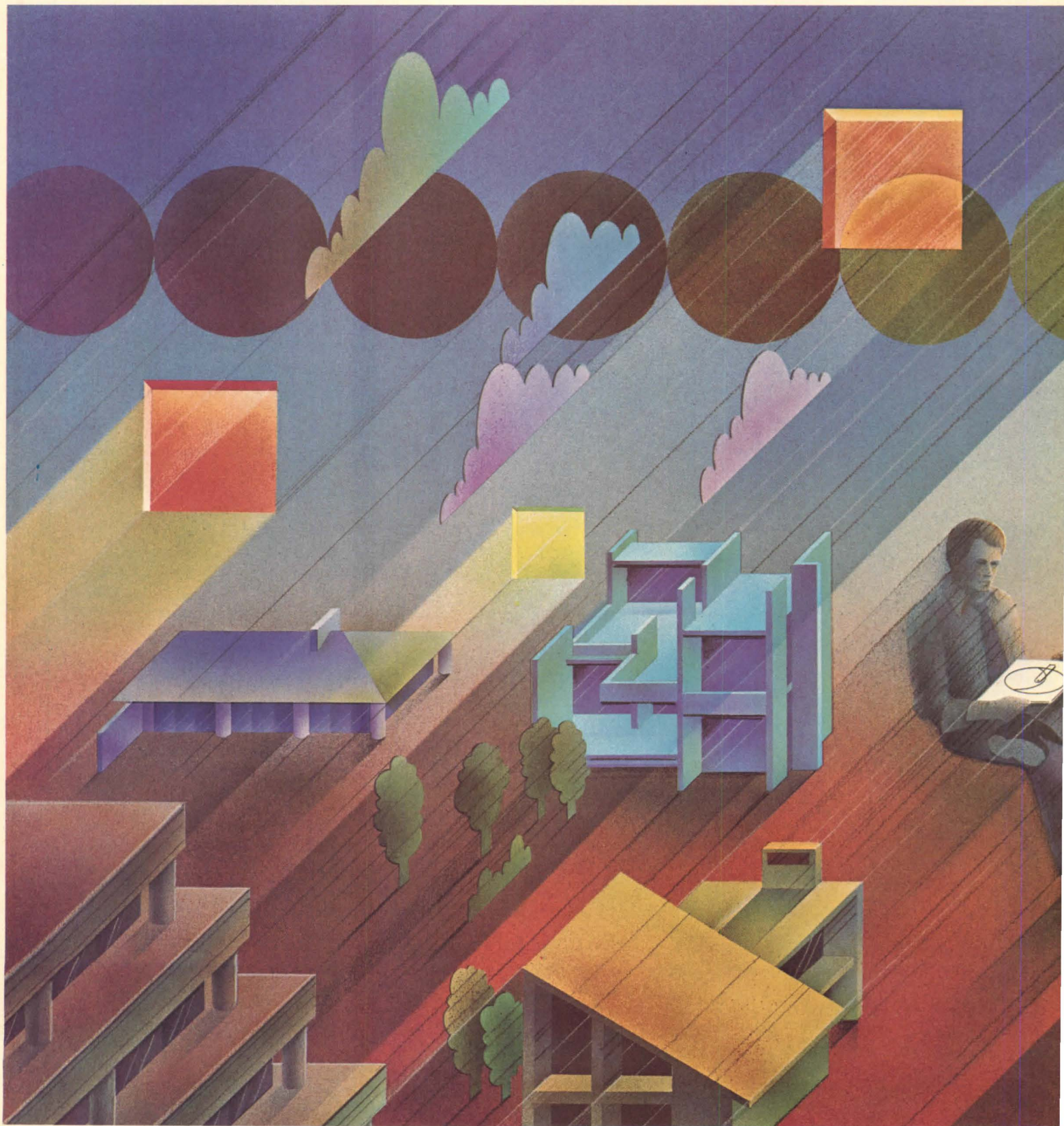
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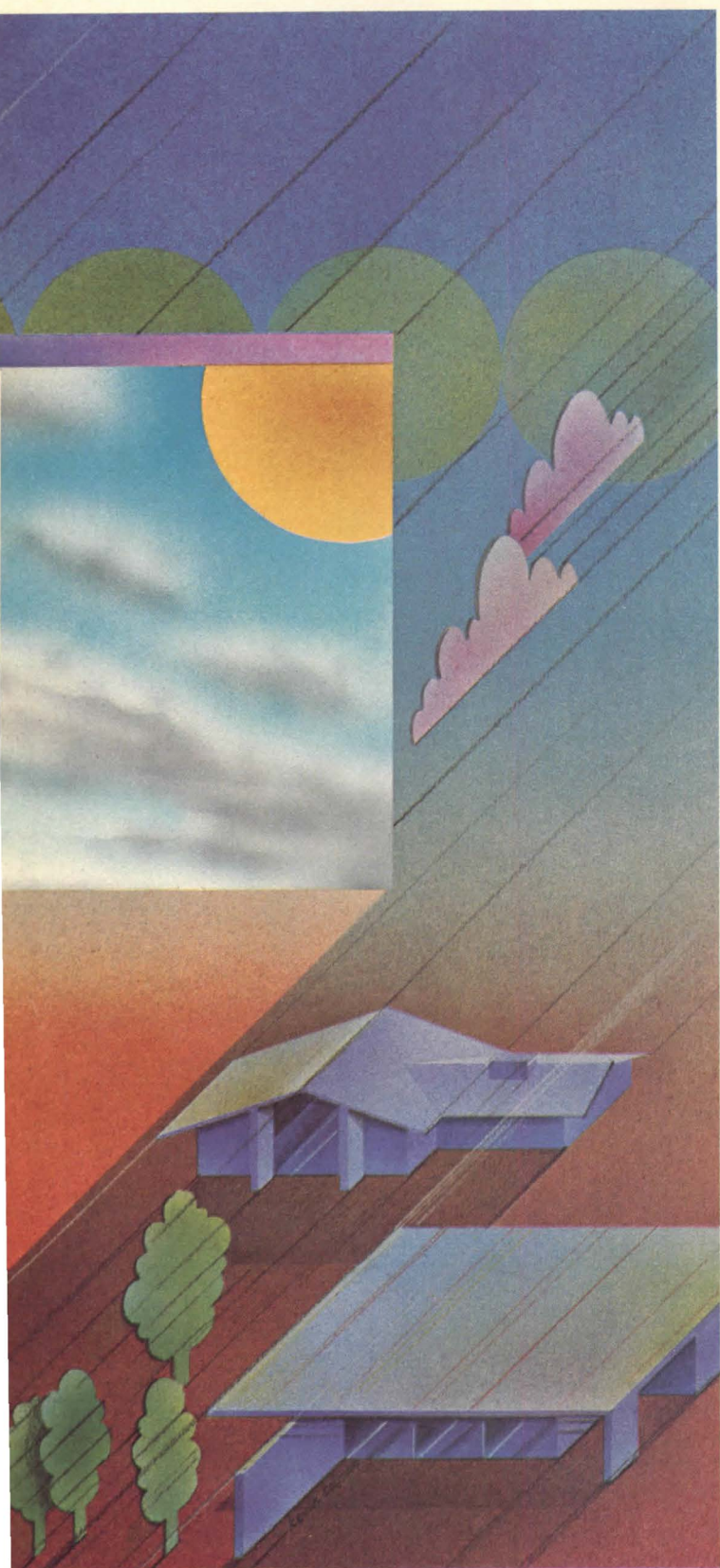
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Bidding documents

Bernard Tomson and Norman Coplan

Alternate proposals in bidding documents, while permitting maximum flexibility, are also the cause of disputes when incorrectly interpreted.

Including alternate proposals in bidding documents is ostensibly to furnish maximum flexibility to the owner. On occasion, on public contracts, the procedure is used as a device to manipulate the selection of the low bidder through the selective acceptance of certain "alternates." Sometimes, the inclusion of alternates in bid documents engenders disputes involving the application or interpretation of alternates which either have or have not been accepted.

In a recent case (*Mars Associates, Inc. v. Health and Mental Hygiene Facilities Improvement Corporation*, 364 N.Y.S. 2d 67) an appellate court in New York was called upon to resolve a dispute between a successful bidder for a construction contract and the owner which involved the interpretation of bid documents containing several alternates. The bidding documents requested bidders to state a base bid for the project as a whole, plus a specific amount which would be added to or deducted from the base bid for each of 16 alternate proposals. One of these alternate proposals, designated 12C, provided as follows:

"Alternate No. 12C—Acquisition of Adjacent Property a. It is anticipated that the adjacent property to the west of the present site, which is presently being utilized as a parking lot, will be acquired by New York City. In such event, the Contractor will be permitted to use a portion of this adjacent property for material storage, staging and access to the present building site. (see Drawing A-1 for extent of area to be available) In the event this property is not acquired within 90 days of Notice to Proceed, the Contractor shall state the addition to the Contract Amount should this property not be available for use by the Contractor." The contractor had stated in his bid that if alternate 12C was not selected, there would be an addition to the contract amount of \$50,000.

When the construction contract was executed, alternates 2C, 13C, and 15C were expressly included in the contract, but alternate 12C was not. The owner contended, in defense of the contractor's \$50,000 claim, that since there was no reference to alternate 12C in the contract, it was

not part of that contract, and the plaintiff could not, therefore, claim any compensation in connection with it. The plaintiff contended that the contract stated that all terms and conditions in the proposal and specifications were included in the contract and under this umbrella, alternate 12C was a part thereof. Further, argued the plaintiff, 12C was a self-executing provision, not conditioned upon acceptance or rejection.

The trial court held in favor of the owner based upon the premise that since three alternates were expressly included in the contract, the implication arose that alternate 12C was not to be included. Upon appeal, this determination was reversed and the contractor awarded \$50,000.

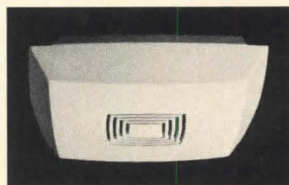
In its decision upon appeal, the appellate court pointed out that alternate 12C differed in nature from the three alternates which were expressly accepted. These alternates called for additions or deletions of components or substitution of materials. None of the alternates, except 12C, were of such a nature as to be automatically includable upon the occurrence or non-occurrence of a specified condition. In this respect, the Court said:

"Alternate 12C, however, was not a true alternative in terms of structural components or materials. Rather, in anticipating that a specified parcel of property as indicated on the drawings would be available for use as a storage, staging and access area, this item of the contract was setting forth a condition which would effect performance of the contract in its entirety, and thus was a factor to be taken into account by bidders in estimating their costs of performance. In directing bidders to 'state the addition to the Contract Amount should this property not be available for use by the Contractor', it must have been anticipated that the unavailability of said property would result in increased costs of performing the contract as a whole. By the very terms of the provision, a 90-day period was established for determining whether or not the property would in fact be available. Therefore, this provision did not lend itself to acceptance at the time of contract execution, whereas the other alternates were amendable to acceptance or rejection. Under these circumstances, we accept plaintiff's contention that alternate 12C was self-executing upon the failure of defendant after 90 days to acquire the property. None of the other alternates contained language indicating that they were self-executing upon a stated condition, nor were they such that they could be self-executing."

The Appellate Court, in rejecting the conclusion of the Trial Court that "plaintiff, as an experienced contractor, should have known that alternate 12C was subject to acceptance or rejection by the owner," stated:

"If defendant did not wish to pay the addition to the contract set forth by plaintiff in its bid which would be paid upon unavailability of the property, it should have rejected the bid. Having failed to do so, we feel that plaintiff was entitled to rely on the language indicating that the contract price would be increased by that stated addition, \$50,000, if the property were not acquired." □

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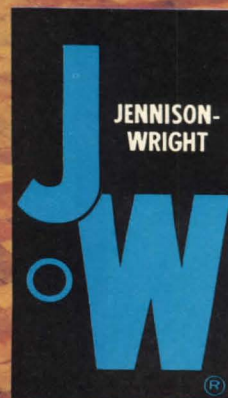
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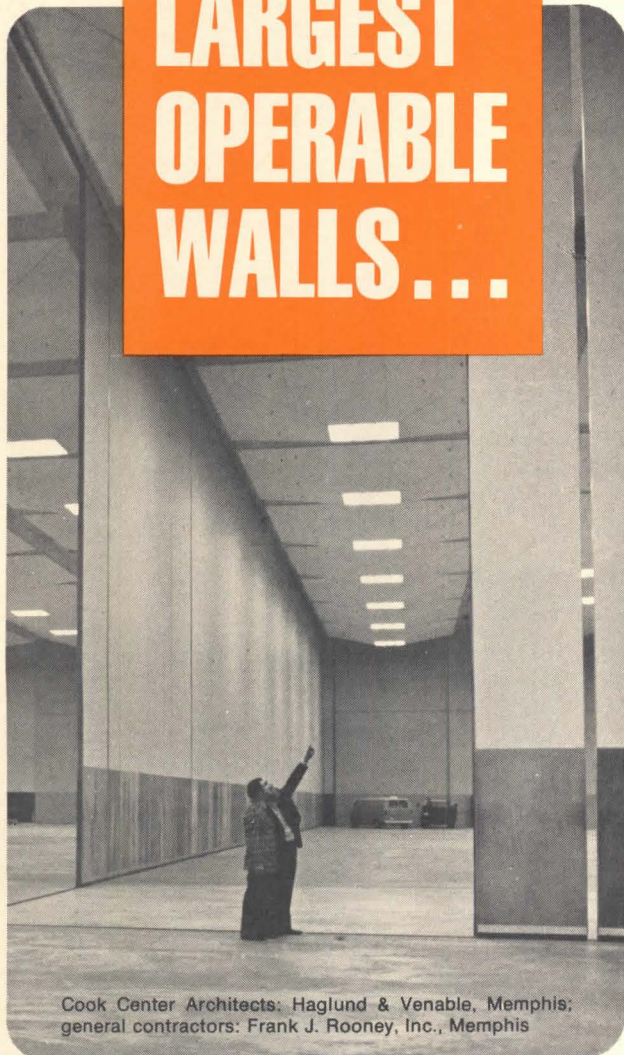
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Books

Love of place

Topophilia: A study of Environmental Perception, Attitudes and Values by Yi-Fu Tuan. Englewood Cliffs, N.J., Prentice-Hall, 1974, illus. 270 pp., \$8.95; \$5.50 paper.

Reviewed by David Clarke, Executive Director, Association of Collegiate Schools of Architecture.

This landmark book will take some explaining to make clear just what it is, as is often the case with new and strange issues. The title means "love of place." It is not about the environment, or about architecture, or indeed about any things. Rather, it is a Wittgenstein-like treatise in which we explore, along with the author, the meaning of things. But it's really one more step removed than that. It's about the meaning of our experience of things. The book has no pictures; just a few diagrams.

To try to clarify this book, it's useful to toy with Russell's remark that all of reality comprises things and their relations. The reality of "things" seldom comes into question except in the exercises of Realists like Bishop Berkeley, who pointed out that we know things only through demonstrably faulty modes of perception. This book owes a good deal to such lines of thought, and it is indeed based on the assumption that we do not know things directly but only through our biologically and culturally filtered experience of them. (Tuan recounts anecdotes like this: "Outside the rainforest the pygmy is bewildered by distance, the lack of trees and the sharpness of relief. He seems incapable of reading the cues of perspective. Colin Turnbull describes the bewilderment of the pygmy, Kenge, when he was taken to the open grasslands. . . . A flock of buffaloes grazes several miles away. . . . Kenge asked . . . 'what insects are these?' " He roared with laughter when told they were buffaloes.)

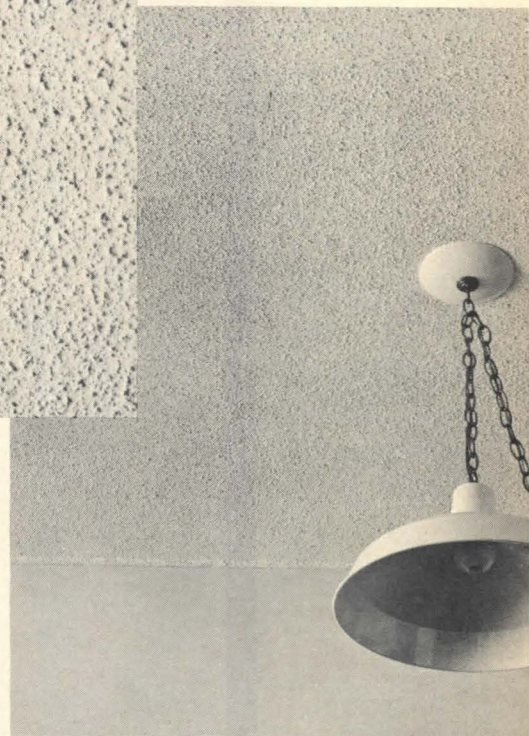
"Relations" are tricky to deal with because there is no physical denotation at all to be sure or unsure of. You cannot produce a pound of, say, the relation "to the left of," although you can see it and explain it. And although you can conceivably have things (or more appropriately, one thing) without relations, you cannot have relations without things. The person preoccupied with "relations" is just as inextricably tied to "things" as the person who cannot get beyond them.

This dualistic way of looking at reality can be used to look at the profession of architecture as well. Forgetting for a moment distinctions based on job descriptions, there can be said to be just two groups among architects: those who think of buildings qua objects and whose interest is totally circumscribed within the objects themselves and their properties, and those who are more interested in the human experience of those objects. The knee-jerk reaction is that the former are practitioners and the latter are teachers, critics, writers, etc., and in general, that's probably true—but there are glaring exceptions. For instance, the people involved with *Oppositions* (a new magazine of architectural criticism), are basically a literary, nonpracticing crowd but they are very clearly in the sachlichkeit or object-oriented crowd, and so are many teachers. And much of the work of Maybeck, Goff, MLTW, and many, many unknown archi-

[continued on page 90]

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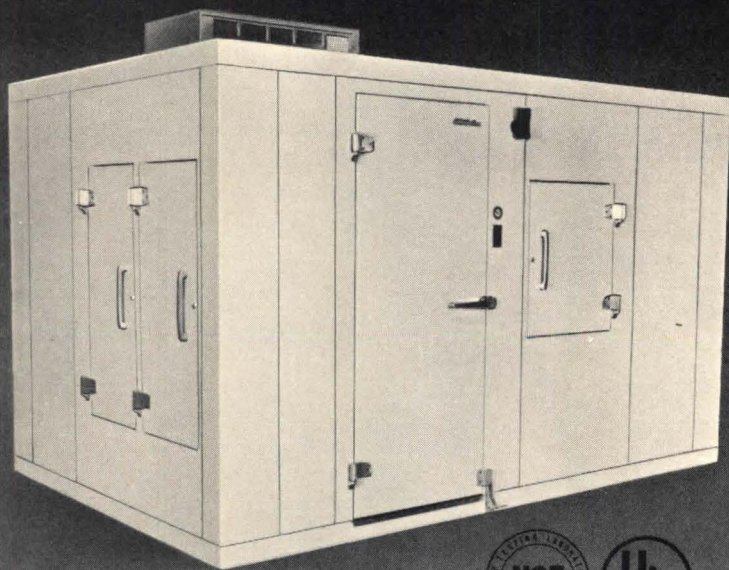
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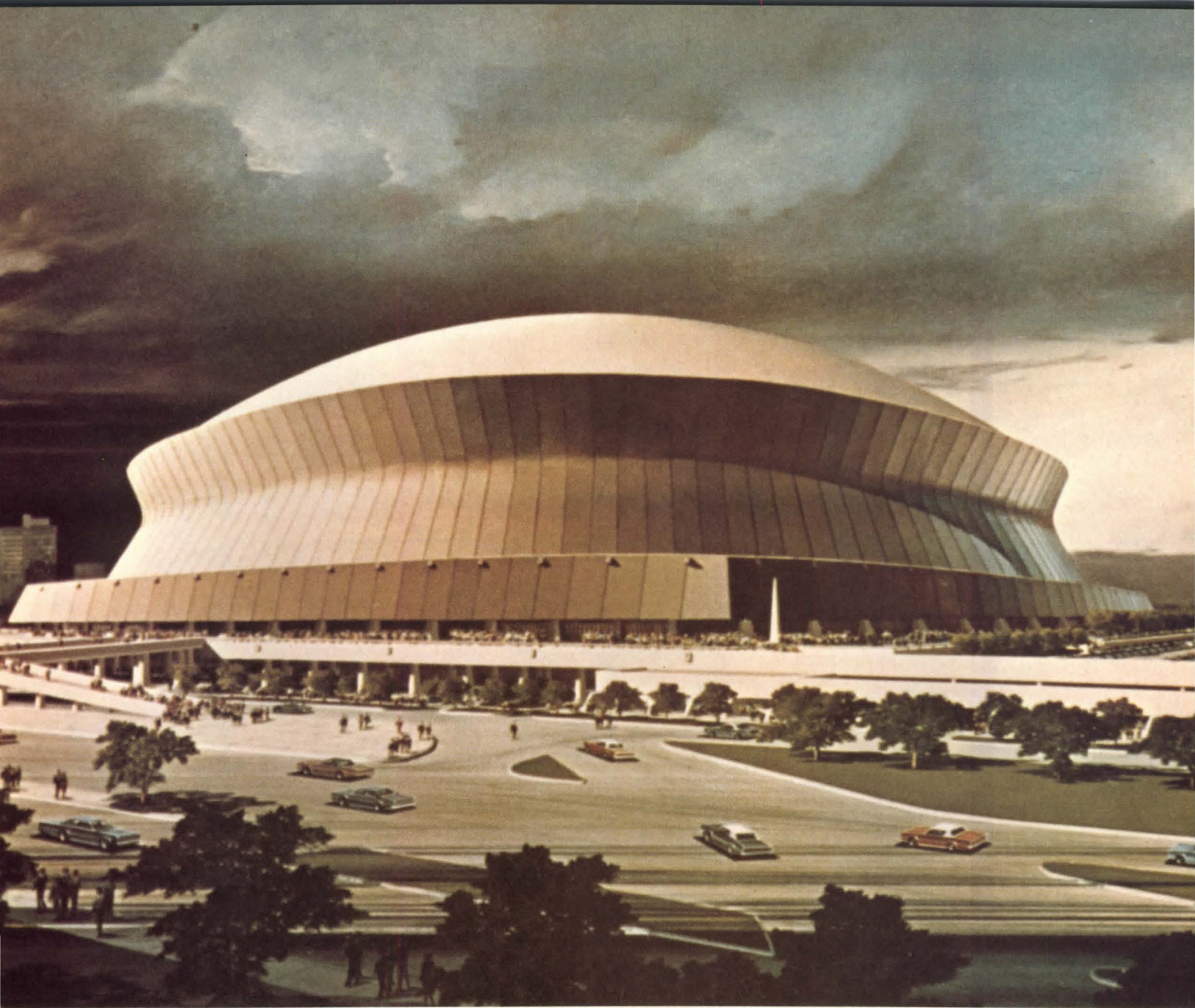
tests is in the experience-oriented camp.

Jørn Utzon's Sidney Opera House is a fine example of the *sachlichkeit* preoccupation. Being hard to build, transcendently expensive, highly expressionistic, controversial, etc., all makes the building a bit like facing the tiger. Traditionally masculine traits like courage, resolve, and "toughing it out" get full play on a project like this. The act of building is pre-eminent here and has conquering, thrilling, overtones to it. Ayn Rand's Howard Roark was this sort of architect. But I do not think that the traits are dichotomous or even necessarily opposed. Finding pure examples of either type of architect or architecture is fruitless.

The other sort of architect—the experience-oriented one—is also motivated by the thrill of building but has as well the separate, more elusive goal of engendering a desired range of experiences in those who come near or in the architecture. Vernon de Mar's library at the California School of Arts and Crafts (Oakland) is as good an example of this kind of project as any others I can think of. Its prime functions seem to be to give a comfy living room to the school and provide a nice view of the Victorian building next to it. It's a quiet, warm building, and I doubt if anyone leaves with a clear image of its physical form. While it's a wholly different kind of experience, I think that Gothic cathedrals—in spite of themselves—are also more intended towards experience than object. That is, the experience one has in mind need not be limited to the mild. As an added observation, I think that conspicuously having this concern for experience is culturally perceived as pan-sexual or, by contrast with the act of building for its own sake, slightly feminine in character.

Among the theoreticians, one would think that a field referred to as "Man-Environment Relations" would be totally gripped with the experience of the built-environment, but nothing could be farther from the truth. As would-be members of the scientific community, most of these people (roughly 2500 in the U.S.) have adopted their own version of *sachlichkeit*—a nondesigner's intellectual version that has its roots in A. J. Ayer's philosophy of Logical Positivism. Following Ayer, these people are generally unconcerned with (and are often upset by) phenomena that do not lend to empirical observation. Usually they are not as interested in how a building makes you feel as how often it makes you blink.

No, what this book lines up with best is a discipline I would call "Man-Environment Humanities," and the reason it is a landmark is because it is the first attempt at a general text in that discipline. It is the first book not limited to the symbolism in environmental experience (i.e., Jencks & Baird, *Meaning in Architecture*). It is the first book not built around some other discipline (i.e., Bachelard, *Poetics of Space* or Jackson, *American Space*). It is the first book to attempt to unravel everyday experience directly, with equal attention paid to the built as well as to the natural environment. Professor (of geography, by-the-way) Tuan says, toward the end of the book: "We need a William James to study *The Varieties of Environmental Experience*." His book is a first crack at it. It's pretty good, and it will be of great interest to those of us who are not only fascinated by buildings but are also concerned with what happens inside other people when they experience them.



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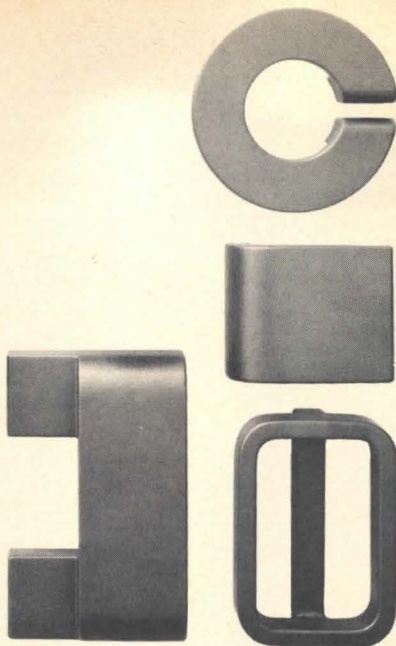


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Circle No. 320, on Reader Service Card

Products and literature



Doorpulls



Shower stall units

Doorpulls. Cast in solid bronze, nickel silver, or aluminum, they range in size up to 23 in. and are available in 12 different designs and a variety of finishes. Suitable for back-to-back mounting and use in combination with matching pushplates, the pulls are designed for commercial and residential doors. Forms & Surfaces.

Circle 101 on reader service card

Shower stall units and tub/shower are of molded, four-piece fiberglass and feature cleanability and durability, states maker. Shower stall is available in 36- and 48-in. widths and consists of base, sidewalls, and rear wall panel, molded-in toiletry shelves, soap dishes and grab-bar mounting pads. Drain opening requires no special fittings. Owens-Corning Fiberglas Corp.

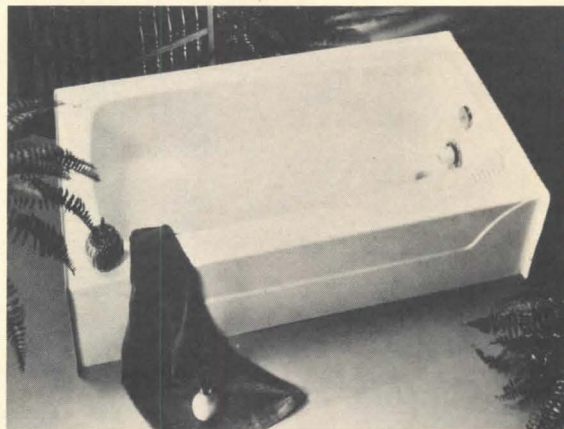
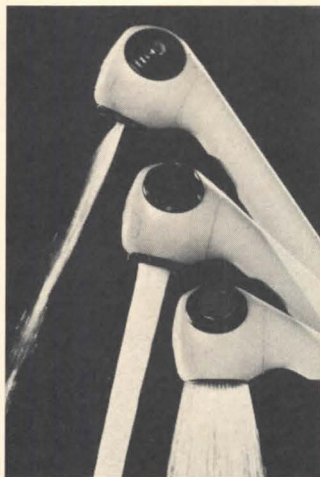
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Whirlpool baths. A tub large enough to accommodate two people has four whirlpool jets located at each of the four corners. Called Gemini II, it comes in any color and is skirted on all four sides for mounting as either an above ground or sunken unit. Optional equipment includes a temperature control gauge and hand shower. A standard white 5-ft tub, includes one Jacuzzi jet. Tubs are acrylic. Jacuzzi Research, Inc.

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Octalinear grilles permit custom design for sun control and sight screening. Open cellular construction is said to cut A/C load in summer months and conserve heat in winter. Construction Specialties, Inc.

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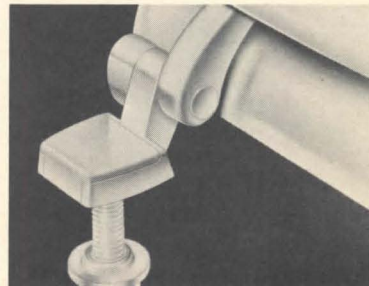
Whirlpool baths

Convertible showers. Three different sprays in one unit are possible, states maker, by rotating the spray head: a regular full pattern spray, a pulsating brisk massage jet, and a gentle aerated stream. Unit connects to any existing plumbing installation as replacement handset or comes complete with wall mounting systems and accessories. Colors available are vanilla white, tangerine red, sun yellow, and velvet brown. Interbath, Inc.

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Faucet mounting system for washerless two-handle tub and shower faucets are designed primarily for modular and pre-fab bath units. Valve installs directly to metal, formica, aluminum, fiberglass or other pre-fabricated enclosure materials in almost any position or location. System allows valve to be installed in any configuration on framing or stringers, can be positioned side-by-side on stringers and studs or over and under on same stud. Delta Faucet Co.

Circle 106 on reader service card



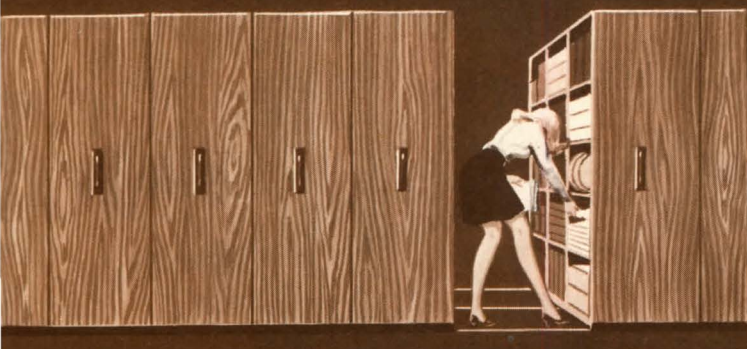
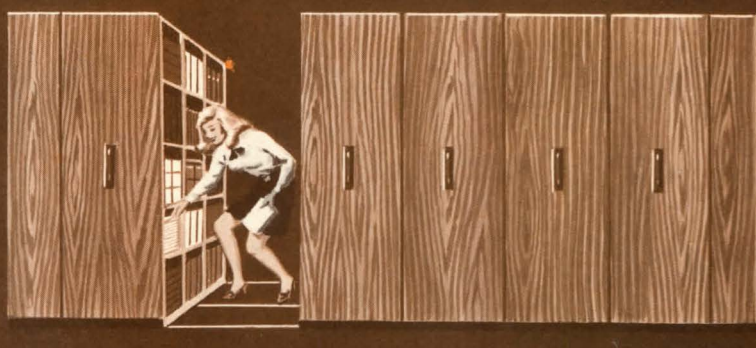
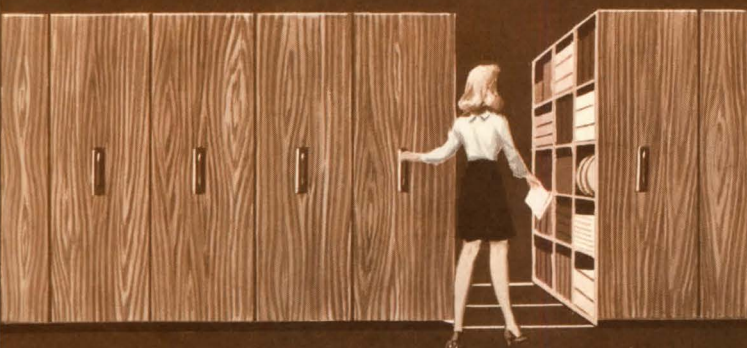
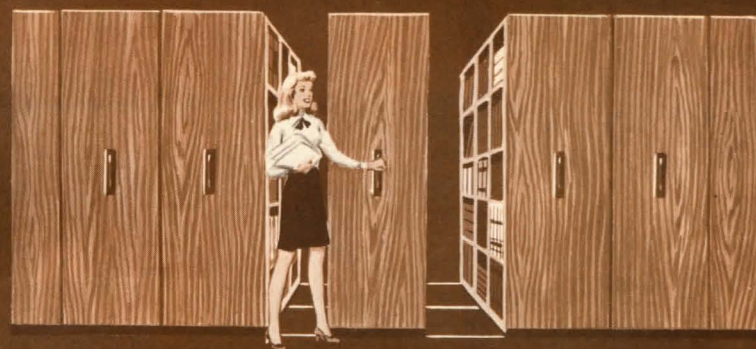
Top mounting seat hinge is molded with matching color, extra heavy, rust-proof polyethylene. Nuts and bolts are made from same corrosive-free material. Features an attached snap-on cap which covers the top of the mounting bolt to protect the installation from dust and moisture. Beneke Corp.

Circle 107 on reader service card

Wall surround has seamless corners, molded-in soapdish, no grout problems, no cutting, fitting, or mitering in corners, adjusts easily for out-of-plumb walls. In colors to match acrylic bathtub. Powers-Fiat Division, Powers Regulator Co.

Circle 108 on reader service card

[continued on page 94]



FULLSPACE... the file with the movable aisle!

If you tried to provide your clients with this much storage or file space using ordinary files or shelves, you'd need 6 aisles and up to 4 times the floorspace. FULLSPACE does it with just one aisle that opens where it's needed. Furthermore, when the aisle is opened, all the space on both sides is exposed, greatly reducing access time.

But there's more to FULLSPACE than space-saving and efficiency. High quality finishes in handsome wood grains or colored laminates create handsome furniture that complements any decor.

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Institutional clocks for standard wall surface mounting or double-face ceiling mounting come in many different housing finishes, 20 different face designs. Clocks run on tuning fork battery movements, standard electric movements, or can be incorporated into master time systems. Peter Pepper Products.

Circle 109 on reader service card

Carpet. Modular carpet features a five-layer, fusion-bonded backing. Anti-static, nylon face yarns are individually fuse-bonded to vinyl which is then fuse-bonded successively with fiberglass, more vinyl, fiberglass, and finally, a specially molded third layer of vinyl. Maker states construction insures against shrinking, stretching, or buckling. Heat-fusion process prevents de-lamination, and carpet modules can be installed without adhesive. Carpets International-Georgia, Inc.

Circle 110 on reader service card



Custom carpet

Chairs. Executive swivel-tilt, swivel, side, and secretarial posture chairs with either a four-arm chrome-plated steel base or a five-arm nylon-coated base. Chrome bases are offered in polished, brushed, or Ember chrome. Steelcase.

Circle 111 on reader service card

Drafting time calculator. Provides a method for estimating the time it takes to make an engineering drawing. The first setting selects the drafting level, from the requirements of full MIL specs down through simplified functional drawings; sets the complexity of a drawing from schematics through design layouts. Second setting selects

the data acquisition and degree of checking. Adjacent to the appropriate drawing size, the engineer will find the estimated drawing time. Applications cover 42 different types of drawings. MA-DA Associates.

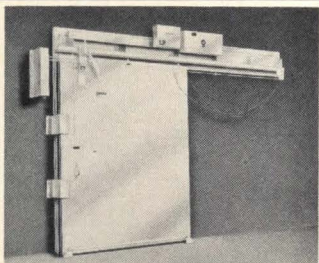
Circle 112 on reader service card

Custom carpet. Featuring a 100 percent wool, broad, multi-ply yarn, Europa carpets and rugs are suitable for contemporary or traditional, contract or residential installations in designer's color choice. Pattern shown is Ghent, a linear movement formed by parallel lines of coiling fiber. V'Soske.

Circle 113 on reader service card

[continued on page 96]

It's here! The world's first Cold Storage Fire Door.



New THERMADOOR™ has a Class A, 3 hr. UL fire rating...and it's filled with urethane foam.

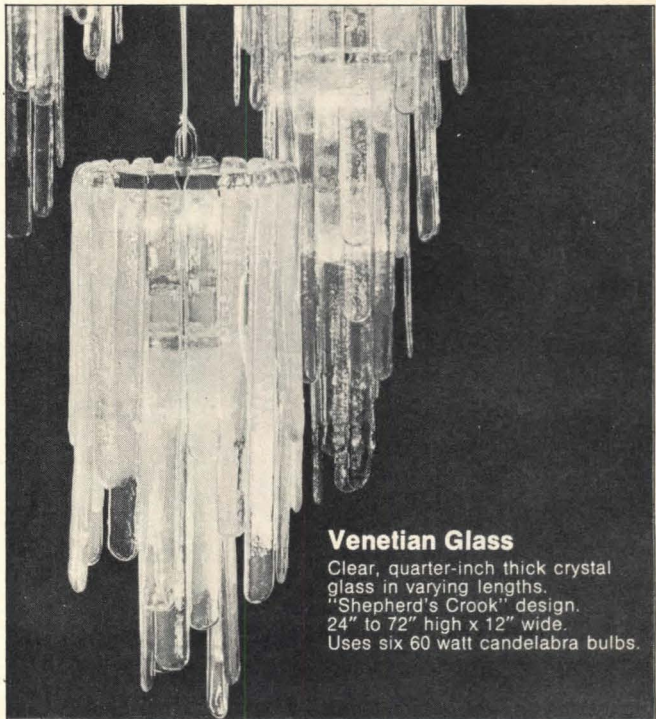


New, urethane insulated THERMADOOR saves refrigeration and provides a positive fire barrier...in one, fast moving, easy-to-install door.

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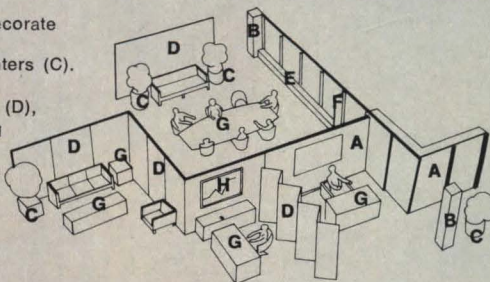
The finished surfaces are the key; or rather, *how* they're surfaced. Because starting with the walls — then coordinating the partitions, baseboard units, ducting, enclosures and even the furniture — you specify surfaces from one source. Borden.

For you, the process is beautifully simple. For the permanent walls, you're able to pick from more than 700 famous Guard® wallcoverings. Then we assist you in matching or coordinating Borden films for the rest of the interior components, pre-fabricated for you by the source of your choice.

The result is a decorative, low-cost, easy-care interior that will stay new looking for years.

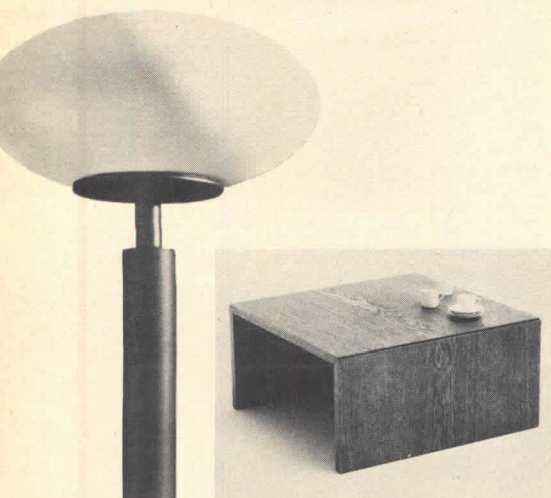
Ask us about it. Interior styling — with economy — has a new look. And we think you'll like what you see.

Guard® wallcoverings decorate the permanent walls (A), columns (B) . . . and planters (C). Borden laminate films coordinate on partitions (D), heating/air conditioning units (E), column enclosures (F), furniture (G), even a special tack board material (H).

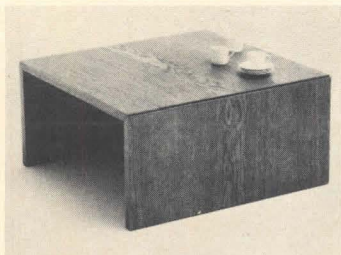


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 Columbus, Ohio 43216



Architectural lanterns



Table



Glass fabric screening

Architectural lanterns. Product line consists of spheres, cubes, cylinders, and ellipsoids, in a large selection of diffuser sizes and colors, white, clear, smoked, or bronze. Cast aluminum luminaires are incandescent or mercury vapor. Lanterns come mounted on sculptured laminated wood poles or on round or square metal poles. Choice of various configurations up to 5 units per pole give the specifier additional scope of selection for coordinated outdoor lighting in institutional commercial, recreational, and industrial complexes. McPhilben Lighting. *Circle 114 on reader service card*

Tables. Part of the INTREX "Fire-brake" wood furniture line designed by Paul Mayen, all tables are tested and pass standards set by the Federal Flammability Act for commercial wood furniture. They do not ignite in a 1600 degree gas fired oven. Surface finish is cigarette-burn proof and alcohol proof. Tables feature a revealed mitered edge and horizontal stretcher and are available in nine lacquer colors, walnut, or oak in a wide range of sizes. INTREX. *Circle 115 on reader service card*

Glass fabric screening. Woven from vinyl-coated glass yarns locked together by a heat-setting process creating a fixed pattern in the mesh and preventing raveling. Suitable for insect screening for doors and windows and for pool enclosures in homes, apartments, hotels, and motels, J. P. Stevens & Co., Inc. *Circle 116 on reader service card*

Literature

Reflective glass. Booklet describes how low-rise buildings can use Solar-cool Bronze reflective glass. Performance data is included along with color photos of product in use. Request copy of "Best Glass Under the Sun," PPG Industries. *Circle 201 on reader service card*

Ice Rink Buying Guide. 28-page guide explains the different kinds of ice rink refrigeration systems with cost and feature comparisons. Useful in planning a new rink or modernizing an existing facility. Holmsten Ice Rinks, Inc. *Circle 202 on reader service card*
[continued on page 98]

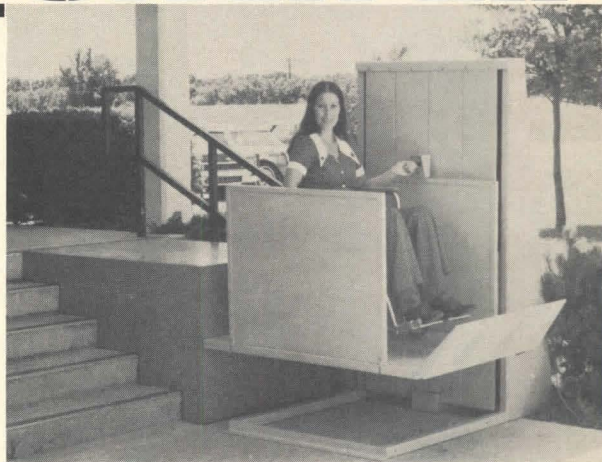
AllianceWall pens
Won't write dirty words!

You can't write a dirty word with AllianceWall's new Rite-On, Wipe-Off System. Specially-treated porcelain-on-steel writing boards and dry-marker pens create a **COMPLETELY DUST-LESS SYSTEM**. Write clean . . . erase clean. Floor-to-ceiling length panels double as a wall covering and projection screen. Choose from 50 beautiful decorator colors. Perfect for all type business offices: sales, advertising, production, and conference rooms. No dirty words. No dirty walls with AllianceWall Rite-On, Wipe-Off System. Write:

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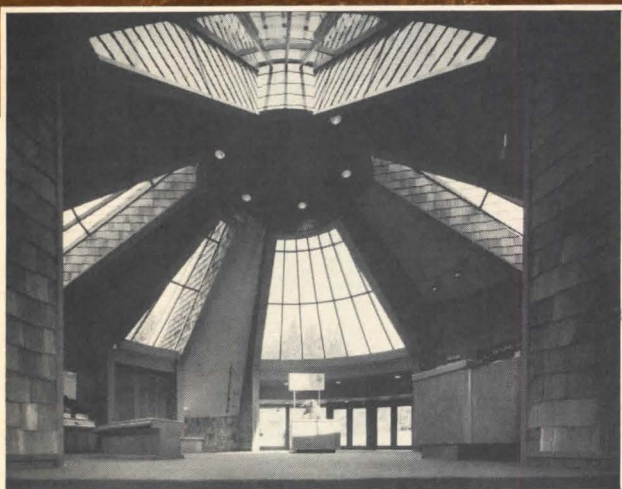
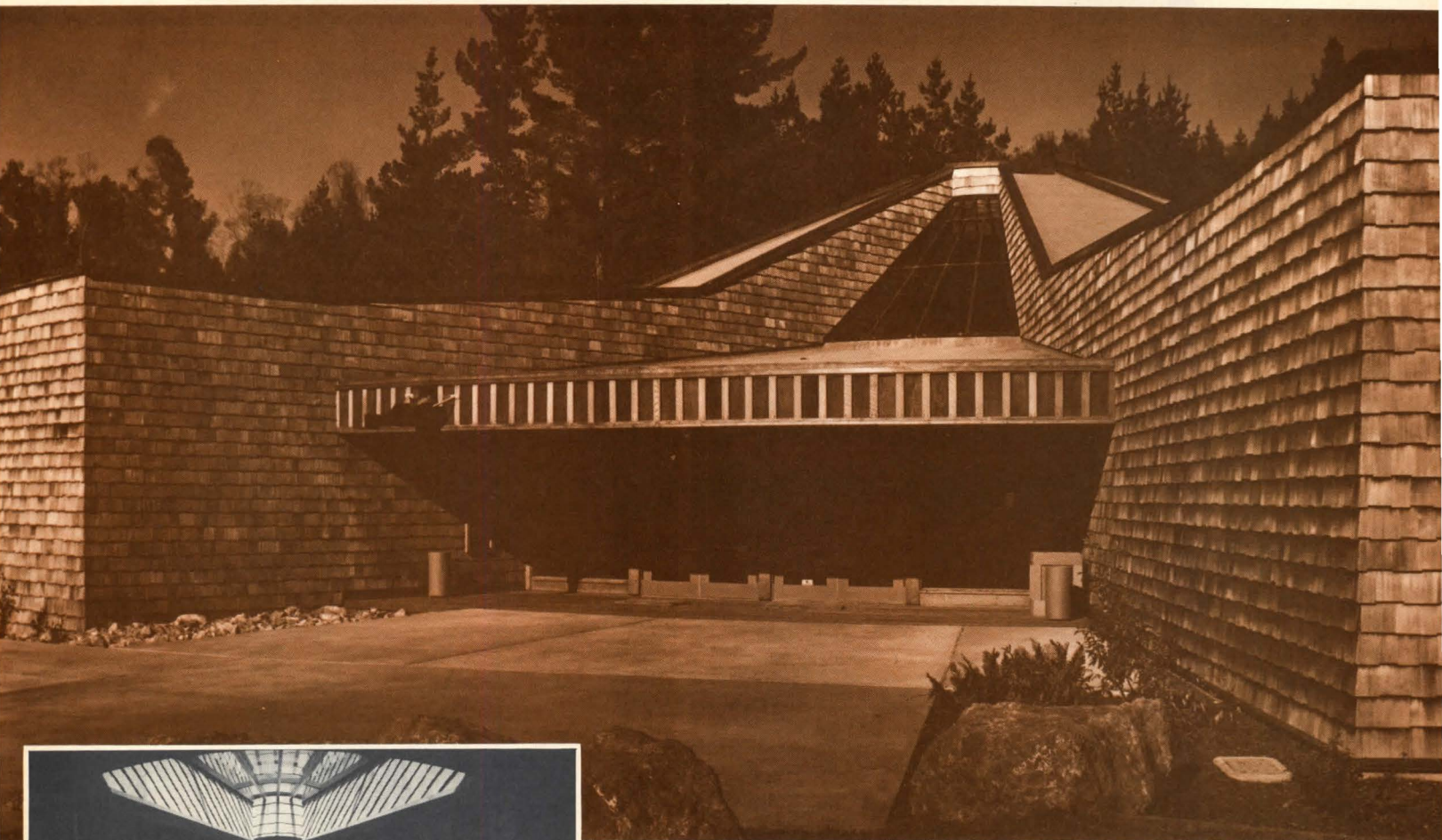
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The design accent is on natural beauty...



Top: Environmental Education Center, Berkeley, Calif. Architect: Irwin Luckman

Middle: Interior accent walls and skylight surrounds of ShakerTown 8' Barn Shake Panels.

Bottom: Shake panels wrap around walls and blend in with lush wooded setting.

ShakerTown panels put it there handsomely

Materials with a familiar, rustic character reflect the aesthetic quality of Berkeley's Environmental Education Center. Walls are cedar shakes in ShakerTown 8-foot panels, which fit the environmental theme *perfectly*. Wood is a renewable resource, and deep textured barn shake panels *harmonize naturally* with surroundings. Equally important, they save application time and upkeep costs. Thermal transfer is also reduced. For commercial structures, apartments and homes, ShakerTown Panels of shakes or shingles create low-profile sidewalls and mansards of uncommon textural interest. Write for our full color brochure!

ARCHITECTURAL DESIGN with shake or shingle panels is detailed in new, comprehensive manual. Specification, selection, application data for commercial and residential buildings is included.

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7:75 Progressive Architecture 97



Circle No. 341, on Reader Service Card

Literature continued from page 96

Concrete forming systems combining fiberglass, aluminum, and steel are presented in brochure 105S. Featured are integrated flying form systems from a single source, components of which are rental aluminum trusses with telescoping legs, aluminum joists, heavy-duty shoring, fiberglass domes, pans, beams and handling equipment, formwork engineering and field services, and form lining systems for standard and special concrete textures. Data also includes photos of typical applications and cost-saving techniques. Interform.

Circle 203 on reader service card

Ceramic tile installation handbook features guides and charts, includes information on ceramic tile installation materials, guides for various floor and wall installations, and detailed diagrams of installation methods over various types of materials including tiling over tile. Tile Council of America.

Circle 204 on reader service card

Wall systems. Trackwall panels are suspended from ball bearing trolleys which travel in a structural box track, require no radius turns or switching mechanisms; no floor track is needed nor will its bottom seal mar floors. A locking mechanism compresses the bottom seal to conform to pitch and irregularities of the floor. Request Bulletin 6.5001.0. IAC Trackwall. Industrial Acoustics Co., Inc.

Circle 205 on reader service card

Contract carpet. Specification guide written for architects and interior designers offers background information on color selection, cleanability, construction, and performance features of Dacron carpet. Du Pont Textile Fibers.

Circle 206 on reader service card

Concrete. Listings of standards, special publications, committee reports, monographs, symposium volumes, bibliographies, and miscellaneous publications are included in 1975 catalog from American Concrete Institute.

Circle 207 on reader service card

Fascia and flashing. Brochure describes and illustrates systems, includes design ideas, detailed application drawings, suggested CSI Format specifications, installation drawings and instructions. Request brochure No. 7.3/Tr. Tremco.

Circle 208 on reader service card

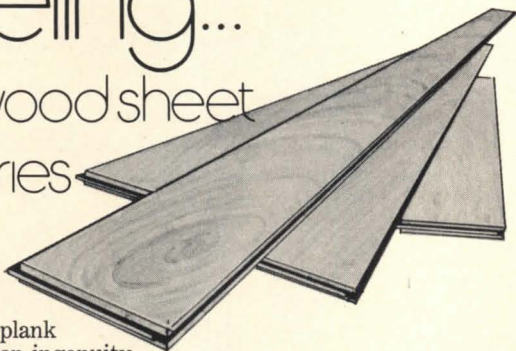
Protective doors. Described and illustrated in 15-page brochure are six types of protective doors including blast, airtight, shielding, acoustical, hollow metal, and fire. Includes capabilities, specifications, photos of installation, detail drawings, and test performance data for each type of door. Overly Manufacturing Co.

Circle 209 on reader service card

Office furnishings. Twelve-page full-color catalog describes 7 different desk lines, 11 seating lines, 6 lines of filing equipment, open office panels, and modular furnishings. Open office planning guide is also included. GF Business Equipment.

Circle 210 on reader service card
[continued on page 100]

Solid Hardwood Plank Paneling... what plywood sheet paneling tries to imitate!



Back in the 'good ol' days' all paneling was plank paneling. Then, American ingenuity took over. Plywood sheet paneling became the accepted imitation. But, Townsend wants you to know that the good ol' ways are still available: **Someone still makes it like it was meant to be made.** Real hardwood planks shaped and finished like fine furniture. Send for Townsend's Designer Sample Kit and see for yourself.

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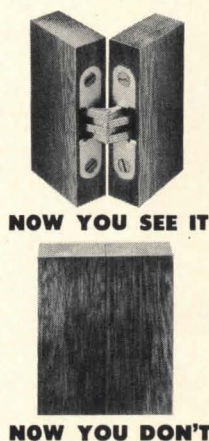
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Soss Invisible Hinges can't be seen or tampered with when a door is closed. Hinge bodies are mortised into the door and jamb to discourage any intruder. Specify Soss invisibility for beauty and security. Our new catalog includes application and installation ideas on all 20 models. Look for it in Sweet's, or write to Soss Mfg. Co., Div. of SOS Consolidated Inc., P. O. Box 8200, Detroit, Mich. 48213.

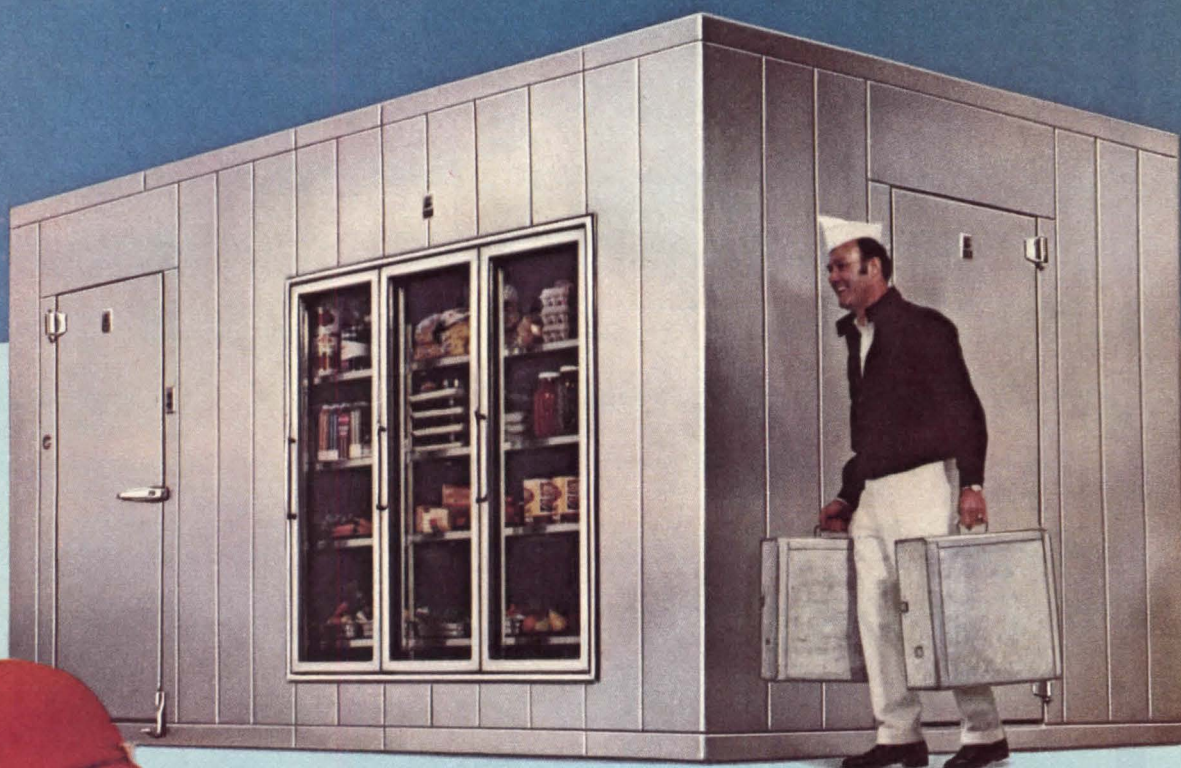


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Address all correspondence to Dept. PA 7



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Circle No. 318, on Reader Service Card

Literature continued from page 98

Roof/ceiling system. Formboard, is a lightweight, insulating board for poured-in-place roof decks. Full color brochure explains installation and physical properties. Charts detail thermal and noise-control properties and fire resistance. U-value tables, and how to calculate cost and energy savings in the three heating and cooling zones in the 48 contiguous states are included. Owens-Corning Fiberglas Corp.

Circle 211 on reader service card

Mobile storage systems. Color brochure describes and illustrates Fullspace I and Fullspace II units, shows details, gives specifications. Lundia, Meyers Industries, Inc.

Circle 212 on reader service card

Free-standing stairs, both spiral and curved are illustrated and specifications are given in color brochure. Atlantic Spiral Stairworks, Inc.

Circle 213 on reader service card

Modular wall panels of textured Indiana limestone are illustrated in color brochure. Includes typical panel wall sections, gives thermal properties, and performance specs. Harding & Cogswell Corp.

Circle 214 on reader service card

Washroom equipment. Four-color catalog illustrates company's complete line of equipment for commercial use and gives federal and guide specifications. Bobrick Washroom Equipment.

Circle 215 on reader service card

Ceramic tile. Eight-page color brochure illustrates residential floor and wall applications and commercial wall applications, shows trim shapes available. Introduces five new colors of Tuscan ceramic tile. American Tile Co.

Circle 216 on reader service card

Illuminated ceiling. Full-color, 40-page catalog illustrates illuminated ceiling systems of polished metal; three-dimensional mirrors; plastic graphics. Neo-Ray Lighting Systems.

Circle 217 on reader service card

Glass. *Glass is not just Glass* brochure discusses how windows can help in cutting down a building's use of energy, about reflective glass, and how the correct glass and proper design can be built into buildings to conserve energy. Libbey-Owens-Ford Co.

Circle 218 on reader service card

Isocyanurate roof insulation. Four-color booklet contains tables of physical properties, insulation efficiencies, and test data for boardstock products, gives specifications, with diagrams, for use of spray systems for new construction and existing roofing. The Upjohn Co.

Circle 219 on reader service card

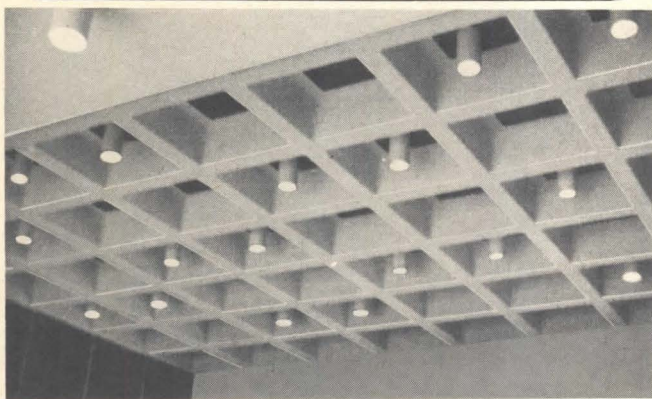
Water-cooled lighting. Brochure explains how water-cooled lighting can save energy. Request brochure B-398. Westinghouse Electric Corp.

Circle 220 on reader service card

Insulated metal panels. Literature illustrates usage, gives engineering specifications, and design sheets for Port-R-Span system. W.R. Porter, Inc.

Circle 221 on reader service card

distinctive light and sound



Visitors to the lobby of the Naval PX (Millington, Tenn. Naval Air Base) are impressed by the abundant light and controlled sound. This results from its waffle-ceiling pattern with acoustical tile in all voids. Poured over MFG Concrete Forms, the ceiling is strong, utilitarian and handsome. Want a strikingly pleasing effect in YOUR building? Ask us.



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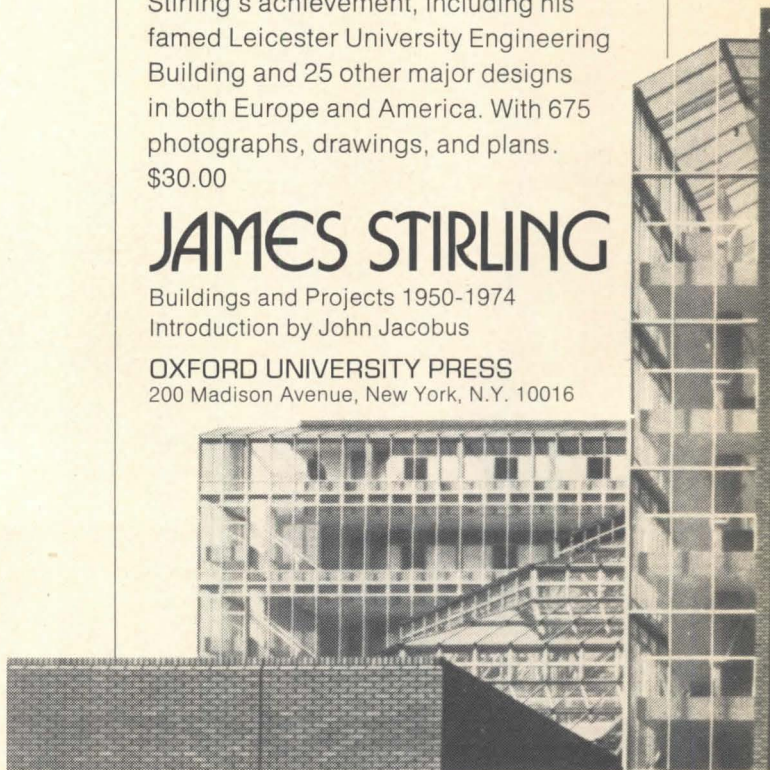
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Introduction by John Jacobus

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Circle No. 335, on Reader Service Card

Circle No. 337, on Reader Service Card

August P/A in August P/A in August

In the August issue of P/A the editors will present examples of dormitories now being occupied on college campuses. Included will be the new complex at Harvard by Ezra D. Ehrenkrantz and Associates, systems-built facilities for the State University of New York College at Brockport by Caudill Rowlett Scott, dormitories for Massachusetts State College at Worcester by Arrowstreet, and student housing at Western Washington State College, Bellingham, by Fred Bassetti & Co.

Interior architecture will report on an experiment to determine the influence of the living environment on behavior and attitudes of high-rise dormitory residents, conducted by Robert and Claudia Propst of the Herman Miller Research Corporation.

Technics in August will investigate the world of pre-engineered steel buildings, the descendants of WWII's Quonset Hut. No longer cold (or hot) and drafty, the new steel buildings offer a range of options for specialized needs.

then in September

The spectacular work of the Taller de Arquitectura of Barcelona will be reviewed by Geoffrey Broadbent, head of Portsmouth (England) Polytechnic's School of Architecture. A multi-talented group headed by Ricardo Bofill, the Taller (atelier) has produced some of the most powerful and striking forms to be seen anywhere in the world.

In addition, the September P/A will include two projects by the mobile design group, Ant Farm, and an office building project by Gunnar Birkerts.

Technics will feature an expanded section on plastics in the building industry.

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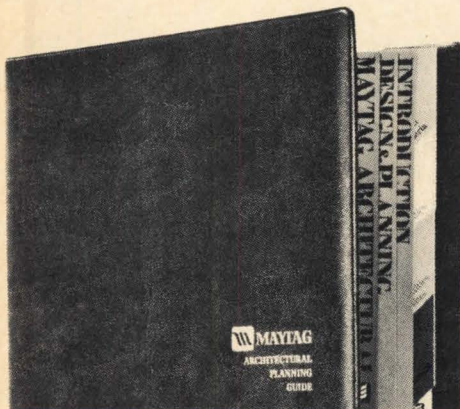
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Progressive Architecture

Notices

Appointments

Edward K. Scofield, AIA has joined the firm of Raymond C. Giedraitis, AIA Architect, New York City.

Walter H. Hackler has joined Richard S. Cowan & Associates, Inc., Bowmanstown and Quakertown, Pa.

Edward L. Reichert has been named director of production for Calhoun, Tungate & Jackson, Houston, Texas.

Jan Joseph Kalas, AIA has been appointed coordinator of energy conservation and life cycle costs for The Eggers Partnership, New York City.

Jan Fougner, AIA has been named associate of Backen, Arrigoni & Ross, Inc., San Francisco.

Robert C. Easton has been appointed participating associate of Skidmore, Owings & Merrill, Portland, Ore.

New addresses

William Kessler & Associates, Inc., Architects, 733 St. Antoine St., Detroit, Mich. 48226.

Gin Wong Associates, 1666 W. Third St., Los Angeles, Calif.

Don Ayres Architectural Services (DAAS), 19522 Independence, Huntington Beach, Calif. 92646.

New firms

J. Gordon Turnbull, Architecture, Planning, Urban Design, 2416 Webster St., San Francisco, Calif. 94115.

Hoffmann/Saur & Associates, Saint Louis, Mo., has been dissolved with two separate organizations formed, Saur/Obrock Design Associates, Inc. and The Hoffmann Partnership.

Barton Myers and A.J. Diamond, formerly of Diamond & Myers, have established separate practices, Barton Myers Associates, Architects/Planners and A.J. Diamond Associates, both at 322 King St. W., Toronto, Canada.

Organizational changes

Engineering Corporation of America, Phoenix, Ariz., has changed its name to Hubbard, Wadsworth, Jensen &

Associates.

Howard Needles Tammen & Bergendoff has established an Environmental Quality Department in its Milwaukee, Wisc. office.

Ralph Hahn & Associates, has opened an office at 230 Royal Palm Way, Palm Beach, Fla.

Sasaki Associates, Inc., Watertown, Mass., is the new name for Sasaki, Dawson, DeMay Associates, Inc. The following are principals: John Adelberg, Stuart O. Dawson, Kenneth DeMay, Richard F. Galehouse, Paul Gardescu, (president), Masao Kinoshita, Don H. Olson, Richard H. Rogers, Hideo Sasaki (chairman of the board), Morgan D. Wheelock, Jr.

Page Southerland Page has opened a Dallas office with James Wright as resident partner and head of Dallas operations.

The Edwards & Kelcey firm has opened a Chicago office and established Edwards & Kelcey International, Inc. in Athens, Greece.

Deasy, Bolling & Gill, Architects, Los Angeles, is now Bolling & Gill, Architects. Former partner C.M. Deasy, FAIA has formed an independent practice for research and consultation in architecture and systems planning.

Building materials

Major materials suppliers for buildings that are featured this month, as they were furnished to P/A by the architects.

Douglas House, Harbor Springs, Mich. (p.38).

Architects: Richard Meier & Associates, N.Y., N.Y. Interior partitions, ceiling surfacing: USG.; Insulation: Owens-Corning; Steel operable sash: Kilroy; Plate glass: LOF; Hardware: General Lock, Stanley Works; Lighting: Gotham Lighting; Plumbing and sanitary: American Standard.

Cooper Union Foundation Building, N.Y. (p.50)

Architect: John Hejduk, N.Y., N.Y. Poured concrete: Ingram & Greene; Plaster interior wall surfacing: Homasote; Carpet: Mohawk, Scholastic; Resilient tile: Flinkote, Armstrong, The Johnson Rubber Co.; Quarry and ceramic tile: Summitville, U.S. Ceramic Tile Co.; Insulation: Johns-Manville; Aluminum and steel windows: Trio Ornamental Metal; Overhead and rolling doors: Williamsburg; Bronze entrance doors: National, Trio Ornamental Metal; Locksets: Russwin; Door closers: Russwin and LCN; Hinges: McKinney; Panic exits: Von Duprin, Trio Ornamental Metal, Russwin; Exterior and interior paint: PPG; Kitchen units: Dwyer; Classroom seating: American Seating; Elevators: Burlington; Exterior lights: Jackson; Interior lighting: Workolite, McPhilben, Spear, Holophane, Lightolier; Plumbing and Sanitary: American Standard; Air conditioning: McQuade fan units.

P/A Book Store

Described on the following pages are architectural books that are now available to you from leading publishers. Each has been selected for its usefulness to you in the various aspects of your professional practice.

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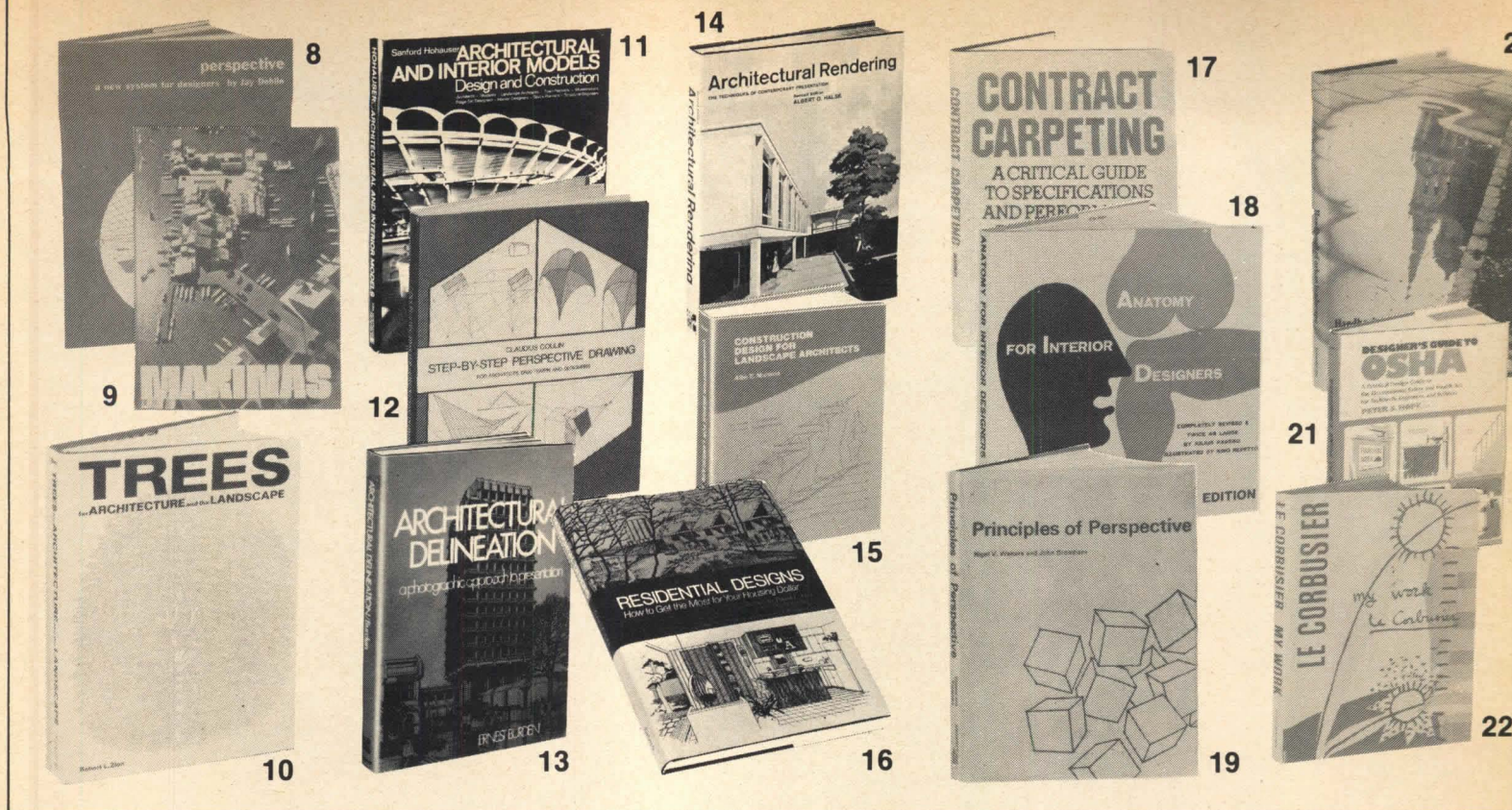
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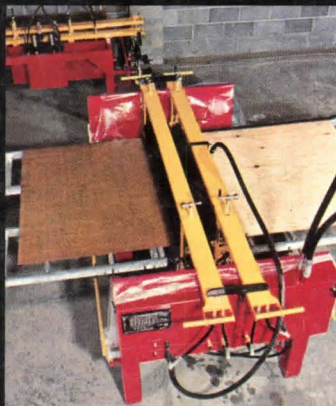
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