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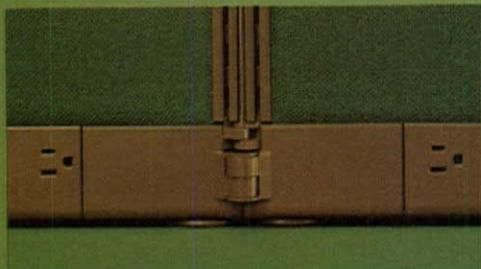
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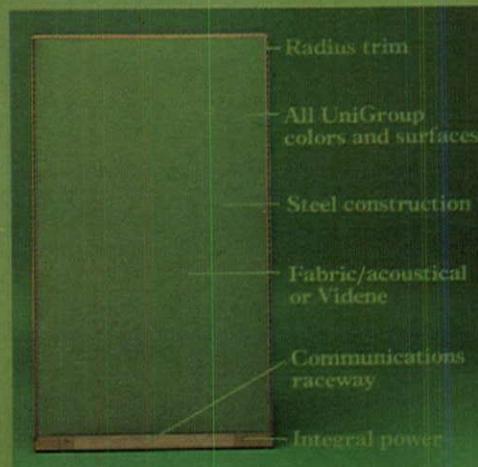
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July 1976

Progressive Architecture

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Design and planning

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Federal architecture runs the gamut of building types—from beach houses to court houses to secret cities. By Robert Peck.

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Cover: Details of the rehabilitation of the U.S. Capitol by the Architects of the Capitol and DeWitt, Poor & Shelton, associate architects. Montage by Poor, Swanke, Hayden & Connell Architects. Further information on the Capitol renovation to appear in the November P/A.



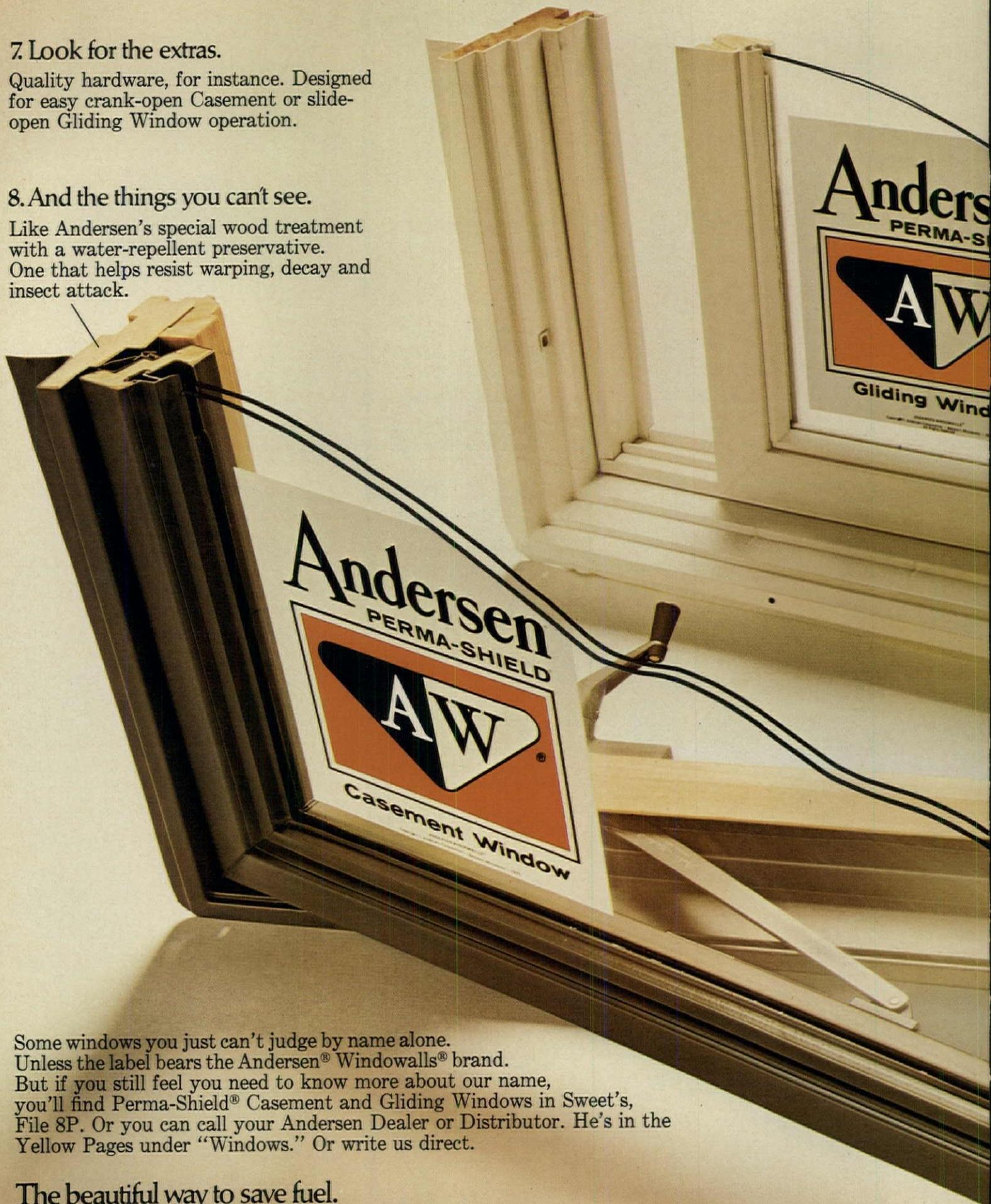
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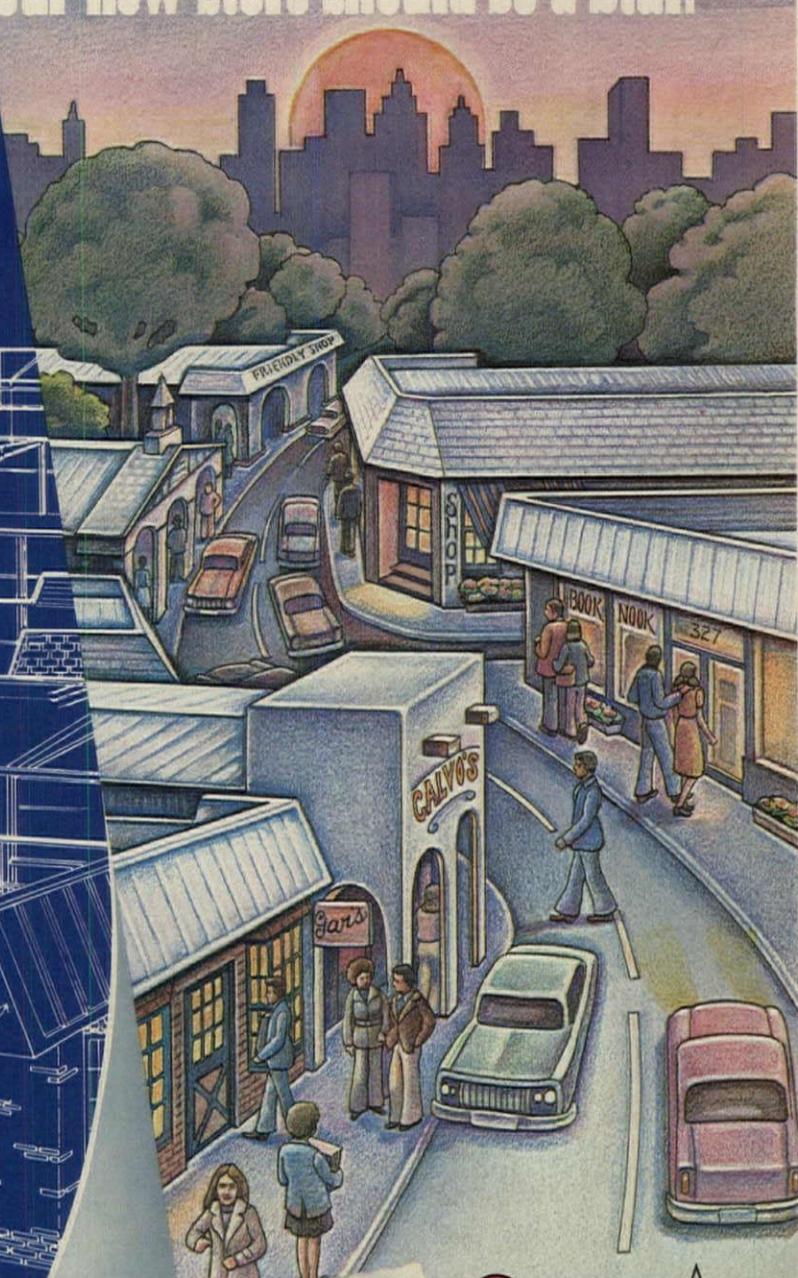
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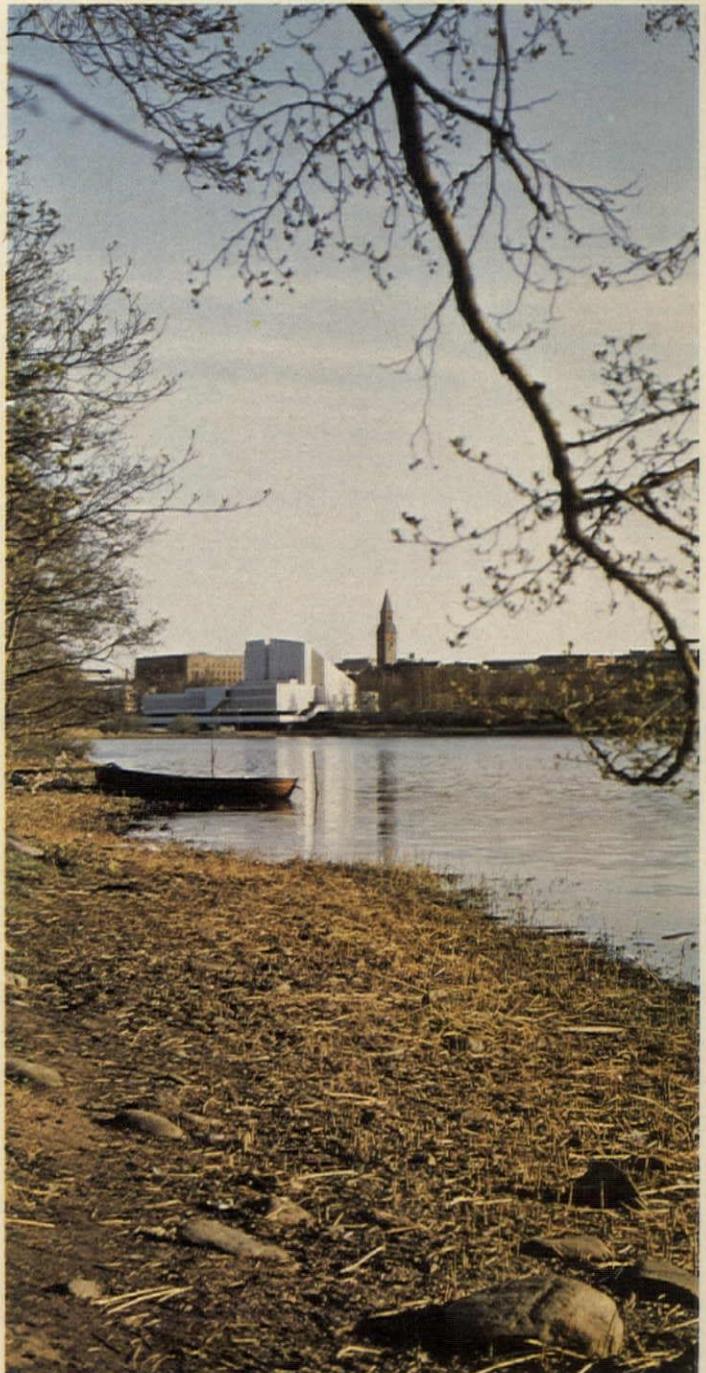
Alvar Aalto: 1898–1976

Without Alvar Aalto, the Modern Movement would have been incomplete. For several decades, beginning in the late 1920s, the pivotal years when Modern Architecture was proving its validity to the world, Aalto exerted an influence comparable only to that of Wright, Corbu, Mies, or Gropius—all his seniors.

Without Aalto, there would have been an unresolved rift in those years between the romantic-organic position of Wright and the functional-mechanistic approach of the Europeans. Aalto was able to stand outside these conflicts over doctrine, respected by all disputants. He propounded no imperatives and scorned no precedents, drawing inspiration from many sources. He preached little and built magnificently, right up to the time of his death, leaving behind a rich legacy of example.

I did not really know Aalto personally, although I once spent a couple of hours back in 1964 interviewing him (along with C. Ray Smith, then a fellow associate editor at P/A). We met him at the Kaufmann Conference Rooms, which he designed for the Institute of International Education in New York. We tried to question him about his design philosophy and about the differences between the Finnish architectural scene and the American. He simply would not philosophize or generalize, but stuck to particulars: wood and copper were more plentiful in Finland, he said, steel in the U.S. He talked with great enthusiasm about the particulars of that interior: the sunscreens, the movable partitions, the clusters of dowels which he used—shamelessly—to decorate the walls.

I had missed—by a couple of years—the opportunity to study under Aalto at MIT, but I had had the pleasure of living in the Baker House dorm, which he designed during the 1940s, when he was teaching there. Though subject to more compromises than most Aalto work, Baker House held important messages for me—and for a whole generation of architecture students at MIT and nearby Harvard. The period was the early 1950s, and Modern Architecture was paying for its spreading popularity by offering expedient formulas: the mindlessly modular slab, sliced to square-foot requirements, and—for punctuation—landmarks in the form of geometrical solids; spherical domes,



Finlandia Hall, Helsinki, seen across Töölö Bay. Photo: David Morton.

and hyperbolic paraboloids were then *de rigueur*. Aalto's dorm was a rebuke to all that simplistic geometry and repetition (some of which was then being built in its shadow).

In Baker House, as elsewhere, Aalto showed that distorted symmetry could be more rewarding than the pure kind, that an underlying geometry can be improved by irregularities. He showed that great architecture could be a response to context—to urban context as well as natural setting. (Baker House, in fact, would make no sense at all in isolation.) In its variety of student rooms, with their standard elements and spatial units fitted together in seemingly innumerable combinations, the dorm demonstrated Aalto's concept of "elastic standardization."

Above all, Aalto demonstrated in this building—as in all of his buildings—design determined by human experience rather than mere abstraction: the changes in ceiling height that signaled degrees of privacy, the windows placed for the view rather than the formal pattern, the Aalto-designed furniture that never felt cold to the touch or reflected too much sound, the handrail shaped for a satisfying grip—the handrail that was also a continuous visual link from exterior through vestibule into lobby.

David Morton, P/A senior editor, who has visited Aalto's work in Finland, marvels at the way Aalto's buildings communicate to the user. His Finlandia Hall in Helsinki is more complex in its organization than most concert hall buildings—with no axial symmetry to go by—yet the procession of spaces is abundantly clear. It's all a matter of how columns are placed, how surfaces are treated. Even the route to the parking garage below the building is not dependent on posted signs: changes in the color of wall tile as one descends give a sure sense of position and direction. Everywhere, artificial lighting is meticulously distributed, often from Aalto-designed fixtures that are handsome in themselves; door hardware is a joy to look at and to handle.

All this is evidence of a profound concern for the real functions of architecture—"psychophysical" considerations that go beyond a mere image of functionalism. The human response that environmental research is now trying to explore was—as David Morton observes—grasped intuitively by Aalto.

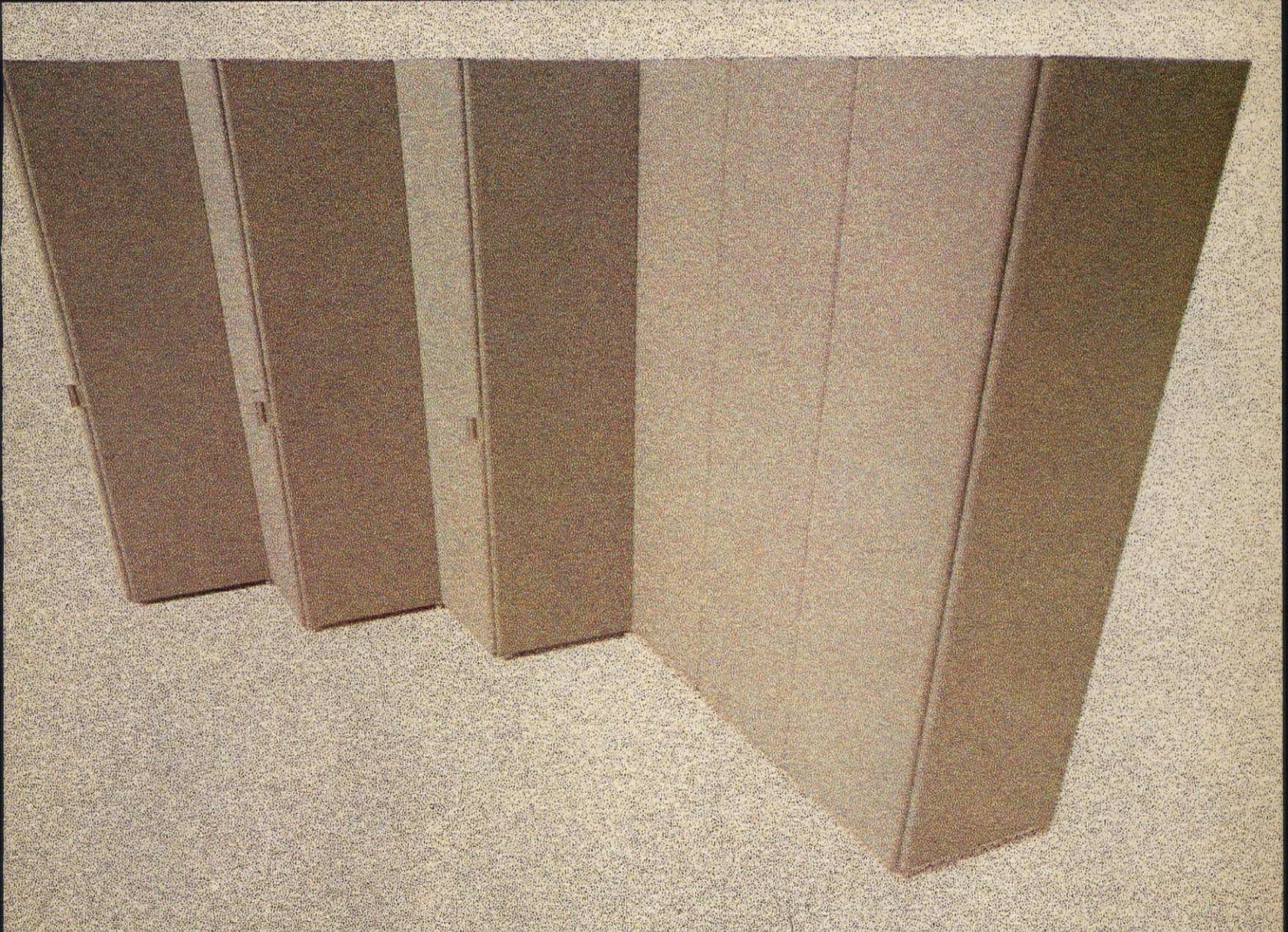
I have spoken of Aalto as an architect working alone. But Aalto himself made a point of identifying Baker House and

other work of the time as collaborative efforts with his wife, Aino, his principal associate from their marriage in 1925 until her death in 1949. (On Baker House, there were also U.S. associates—Perry, Dean & Stewart of Boston.) In 1952 Aalto married another architect, Elissa Makiniemi, who has worked with him ever since and survives him.

In his native Finland, Aalto was not an isolated hero. He was by far the most prominent Finnish architect of his time, but nevertheless one of a company of highly gifted colleagues with which he was continually interacting. They were producing superb architecture before he emerged into international prominence and will undoubtedly continue to.

In the U.S., Aalto's influence is hard to trace. Surely, his example must have helped to loosen the prohibitions of the Bauhaus tradition. He must have hastened the acceptance of vernacular characteristics in the 1950s—seen in work as diverse as that of Charles Moore and Edward L. Barnes. He must have helped pave the way for the subtleties and irregularities of Louis Kahn and his school. Nobody emulates Aalto literally—a blessing, since his work was after all highly personal. But individual as it is, the work Aalto left behind holds universal lessons for any architect with five active senses. Though not always obvious, Aalto's influence is felt today all over the world, and it promises to grow substantially in years to come.

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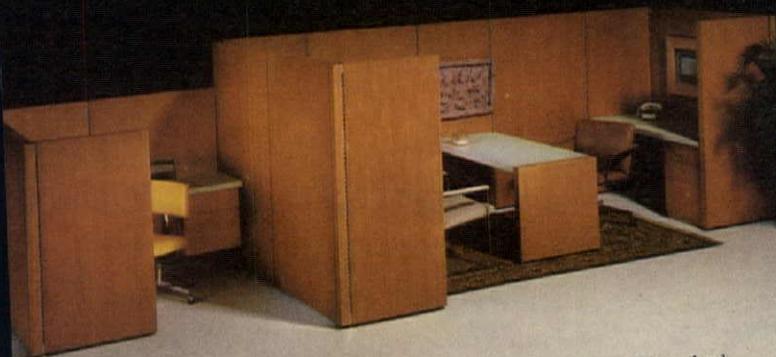
igned to make the climb to the top.



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Views

inhumane architecture which fills most of the May issue. That "West Coast style" is not something we invented because we had some leftover Douglas fir and Varathane; it grew out of real human beings responding to real conditions, and not out of drawing-board abstractions bought by the yard by financiers.

Which is, I think, one of the points that the Venturis and Herb Gans are trying to make.
Joseph Buch
Portland, Ore.

The content of your May issue was, to me, very disconcerting.

In the heroic, form-giving tradition begun by the Pioneers of Modern Architecture, Michael Dennis, in his critique of Werner Seligmann's new administration facility for Willard State Hospital, N.Y., and Stanley Abercrombie, in his review of Herb Gans's important book *Popular Culture and High Culture*, both implicitly celebrate and promote an architecture and its attendant, elitist values that may ultimately be (read: ought to ultimately be) the bane of the architectural profession. That is, architecture for architecture's sake, and architecture as high art, exclusively.

Seligmann's building, like all of Corb's buildings, and Eisenman's, and Graves's, and Hissaka's, sits dissociated so tidily from its own reality, like its site was a *tabula rasa*, a clean, context-free podium for the building as an *objet d'art*. Surely it is a visual gem for all those architecture culturati who dutifully delight in pure white planes, ribbon windows, flat roofs, free plans, and free façades, all devoid of manifest human reference and touch.

Alan Gowans, the architectural historian, has said that to be architecture, a building must clearly be *about* something. And Norris Kelly Smith, also a historian, has said that architecture is based on the "institutional patterns of human relatedness." If one accepts these humanistic definitions, and then reassesses Seligmann's building, one disturbingly finds that his building is self-consciously *about* nothing but itself and, moreover, has no legitimate relationship to any established built-pattern of human continuity. It is simply a derivative, a progeny of that infamous style of architecture that is being rejected wholesale across the world, from Pessac in Bordeaux to Pruitt-Igoe in St. Louis, for its dearth of authentic social conscience.

Similarly, Abercrombie misinterprets Gans's important formulations that do indeed have a social conscience and bases his argument on the polemics of that pompous pedant of high culture, Clement Greenberg. They both implicitly deplore the pluralities existing in American society, which, as demonstrated time and again, is not a "melting pot" with a singular culture adhering to the dictates of an essentially European cultural aristocracy. No! American society is outstandingly pluralistic and diverse and its art-forms are equally pluralistic and diverse.

Abercrombie avoids this fact entirely. He, like Greenberg, cannot accept a Braque or a Norman Rockwell as manifestations of separate but equal value sets of separate but equal people. To him, the Braque, the Picasso, even implicitly the Seligmann, is better than the others—the "middle" or "low" forms of art and architecture—and they ought to be valued as being better too. He thinks it is great "fun to give bad-

taste paintings or buildings" (i.e. Warhol, Johns, Lapidus, Venturi) "to good-taste consumers," presumably like himself and Greenberg.

In short, both articles serve to reinforce the high art and high architecture status quo, not that in themselves they are inherently bad but that they are not the only ones to be found in our society and quite possibly they are removed from the true tempo and real diversity of American life. Literary critic Leslie Fiedler says that "the only kind of art which should be considered good, desirable, socially useful is the kind of art which joins together rather than separates." Substitute the word "architecture" for the word "art" here and, with Seligmann's building and Abercrombie's thoughts, we have an architecture that isn't and an architecture that doesn't.

Randle Pollock
M.S. Arch. candidate
University of Cincinnati
Cincinnati, Ohio

[We are gratified that our May articles stimulated such thoughtful response. The Seligmann building was quite consciously treated—by P/A and the author—as architecture for architecture's sake, and we may have overstressed this point; the photographs make clear that the building is, in fact, designed with considerable respect for the user, and it is quite effectively related to (not dissociated from) its site—in the manner of vernacular buildings in its region. If we concede to Alan Gowans' contention that a building must be *about* something, then this building is "about" the administration of a large institution, and it expresses its subject succinctly. As for Abercrombie, he does not deny the existence of pluralism, though he clearly places a higher value on "high culture"; while he cannot accept Mr. Gans's proposition that these various taste categories are *equal*, he is considerably more disturbed (as we are) by Gans's insistence on making them *separate*. Such stratification (to use Abercrombie's word) would surely be a grotesque distortion of pluralism—Editors]

Credit due

John A. Gallery was the project coordinator for "The Schuylkill River Corridor," a City Edges Technical Report funded by the National Endowment for the Arts (P/A, April 1976, P. 31). Murphy Levy Wurman and Venturi & Rauch were associated architects for the Philadelphia area study.

The La Cité project, referred to and illustrated in the feature on mixed-use centers (P/A, May 1976, p. 54 and p. 55) should have been credited as follows: Eva H. Vecsei, Architect, in association with Dobush Stewart Longpre Marchand Goudreau, Architects. Dimitri Dimakopoulos was architect for this project in the early stages (1970-71).

The photography credit for Franklin Court (P/A, April 1976, p. 70) should read "copyright Mark Cohn 1976".

The "In Progress" item on Ghent Square, Norfolk, Va. (P/A May 1976, p. 44) gave the impression that architects Oliver, Smith & Cooke Ltd. were responsible for all the work. The first developer-architect team to work in the areas was the Hall Development Corporation and architect Carlton Abbott, whose townhouse rendering illustrated the article.

Opening doors

I have just completed reading "Open and Shut" in the April issue. It was a pleasure to read a clear, accurate article developed in a very logical manner. The information contained was very useful and the article has been filed away for future reference.

Unfortunately, such clear and concise articles are all too rare in professional publications. Keep up the good work.
Howard Lieberman, PE
Eastchester, N. Y.

Professional liability

It appears that Mr. Rosen's advice to architects (Specifications Clinic, May 1976 P/A, p. 91) is to resign their remaining responsibility, thereby totally avoiding liability. This hardly addresses the problem, does it?

His recommendations for "approval" notations would reduce the architect to a mere bystander in the construction process, serving only as a paper-routing mechanism except "as to aesthetic matters." Picture this: a sick man, a drug manufacturer, and a pharmacist arguing over proper medication. Off on the side is the man's physician saying, "give him what you want, but don't turn my patient green."

No sir. I sincerely hope the architectural profession is never reduced to such indifference.
R.M. Winters
Environmental Elements Corporation
Dallas, Tex.

[Mr. Rosen maintains that the precautions he spelled out are those currently recommended by architecture and engineering organizations. Their intent is to keep the architect from inadvertently taking on responsibilities for the performance of building components that would otherwise, under contract, rest with contractors or producers.—Editor]

Stirring dissent

So the Atlanta Omni will include a "West Coast-style singles hangout with driftwood furniture and a menu of health and gourmet fare", eh? (P/A, May, p. 60)

Perhaps a careful consideration of that sentence would help explain the drab, lifeless, and

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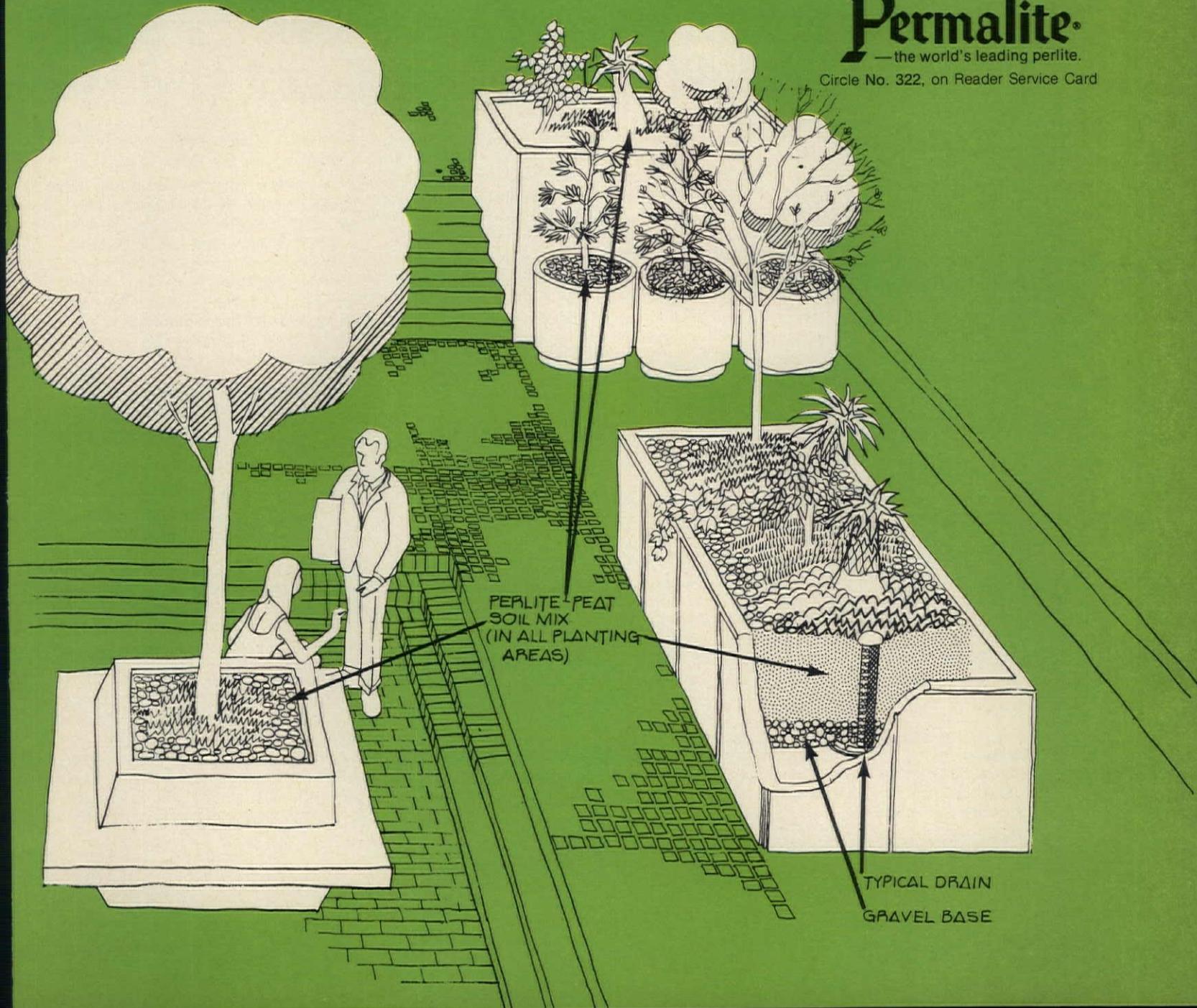
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John Goodman of the consulting engineers says, "The structure was designed in steel with four wind bents in each direction. Two are located at the exterior face of the tower and two at the interior face of the core."

These rigid bents are used to resist the horizontal force of the wind. Because of the spacing of the columns within the two interior bents, vertical X-bracing was needed in two of the bays in each bent to limit total

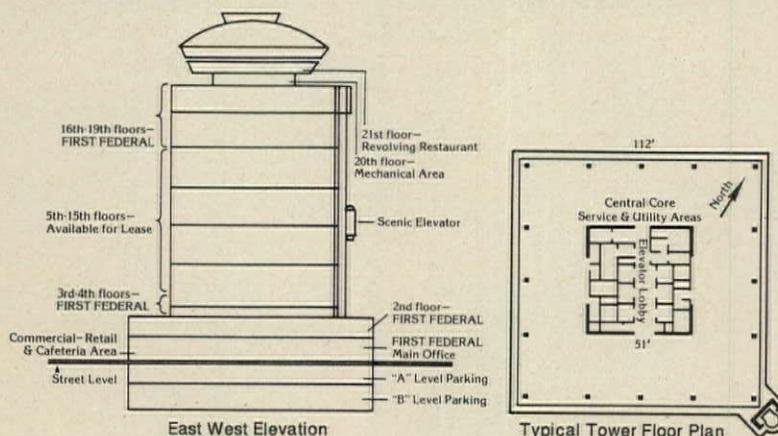
sidesway at the tower roof to five inches.

A control joint, surrounding the tower and low rise, isolates the tower so that low-rise columns will not have to resist tower movements, Mr. Goodman said. At each of the tower's exterior columns there is a second column supporting the two levels of the low rise. These double columns are joined to a common concrete pier below the plaza.

Bethlehem Steel provided 3,050 tons of structural shapes and 40 tons of high-strength bolts for the building frame. The floor system is lightweight concrete slab on steel deck.

Early involvement helpful. Our preliminary framing analysis program can be most beneficial to you and your client if the study is conducted before finalization of architectural parameters. This way, our Buildings Group and your structural engineer can develop an optimum frame design with minimum restrictions.

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Owner: First Federal Savings & Loan Association, Rochester, New York; Architect: Corgan & Balestiere, P.C., Rochester, New York; Project Manager: Balcor Assoc., Rochester, N.Y.; Structural Engineer: Rupley Bahler Blake, Rochester, New York; Fabricator-Erector: F. L. Heughes & Co., Inc., Rochester, New York; General Contractor: Stewart & Bennett, Inc., Rochester, New York.



Architect's rendering depicts the First Federal Savings and Loan office building in Rochester, N.Y. When completed in late 1976, the structure will feature a revolving roof-top restaurant, an outside glass-enclosed elevator, and a mirror exterior which will reflect the surrounding community.

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Bethlehem 

Architectural building description

Rising twenty-one stories on the west bank of the Genesee River, the \$20-million First Federal Plaza adds its unique statement to the skyline of Rochester, New York. It acts as a terminal at the south end of the attractive Genesee Crossroads Park. With its completion, it will make this park accessible to pedestrians from Main Street, one of the main arteries across the City. The project site is located within one of Rochester's Urban Renewal Districts.

With more than a dozen easements, it created a structural and architectural challenge. Adequate access to the park from Main Street was one of the main concerns to the architects, Corgan & Balestiere, P.C., of Rochester. To accommodate this, almost one third of the site would have to be dedicated as park access. This turned out to be impossible since the remaining space would not have been adequate for placing a high-rise building, or it would be within 30 ft of a six-story building to the west of the site. To provide the desired leasing area and maintain adequate access to the park from Main Street, the architect provided a covered arcade on the Plaza level with parking below and second floor overhang above.

In order to retain unobstructed views from the neighboring buildings to the west and the lower tower floors, the architect rotated the tower 45 degrees to Main Street. Contributing to this strong design solution are the diagonal shapes in the park to the north and a Y-shaped pedestrian bridge across the river.

The exterior of the two story base will be clad with precast concrete with tan aggregate, and glass.

The tower skin consists of bronze reflective insulating glass with matching spandrel sections. The skin is interrupted every three floors by a recessed colored band that matches the curtain wall mullions and extends to support the precast concrete shaft that contains an exterior glass-enclosed elevator cab. A circular revolving restaurant cantilevers above the nineteen-story tower, separated by a mechanical floor.

The reflective insulated mirror exterior is more than an aesthetic item, says Richard Cott, representative for First Federal. "It has great energy saving qualities. This glass reduces the amount of heat transmission by two-thirds. Thus, there is much less heat loss in the winter and much less heat gain in the summer."

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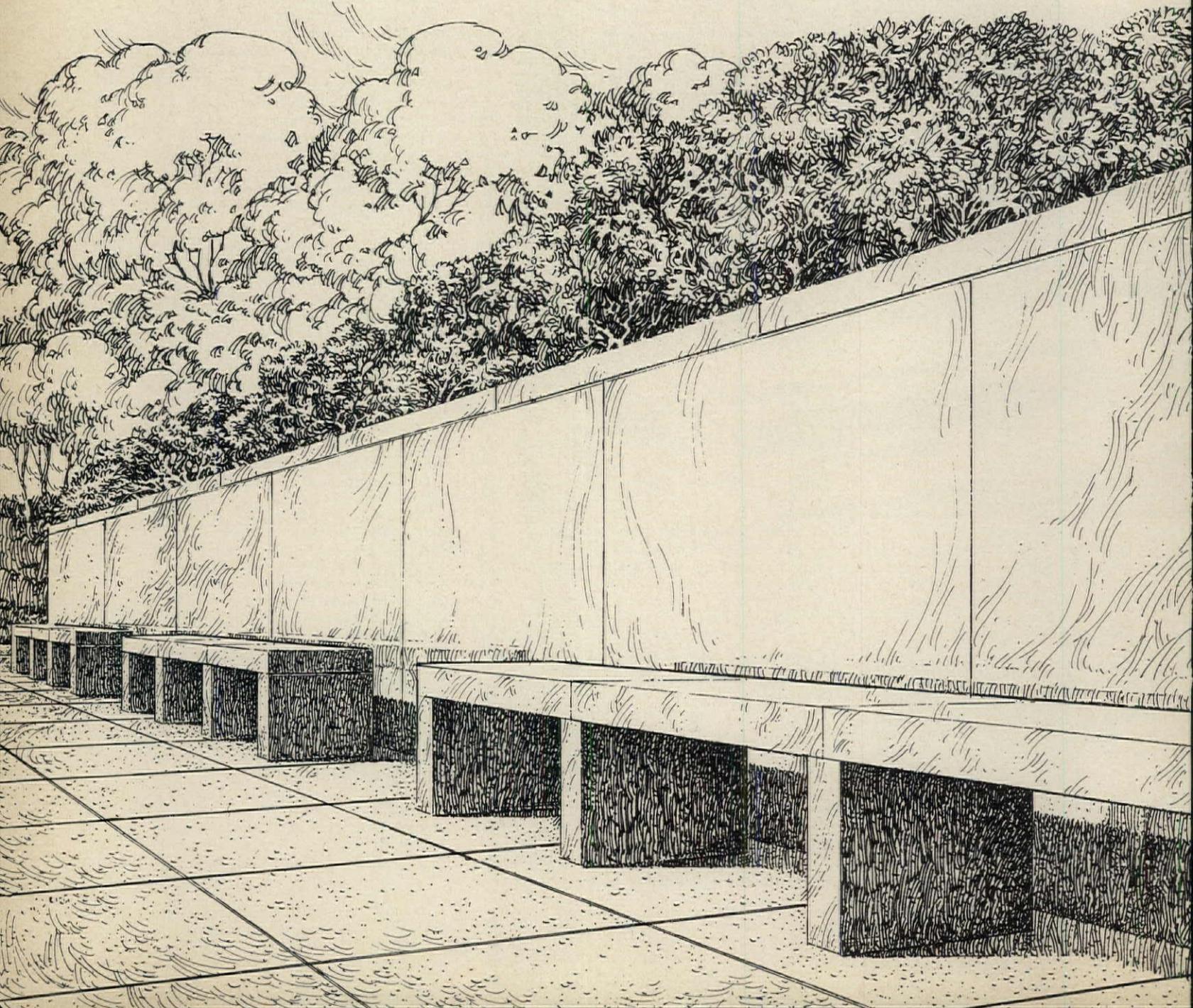
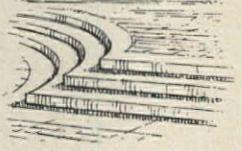
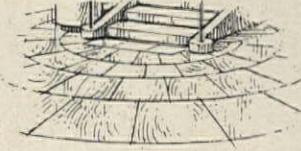
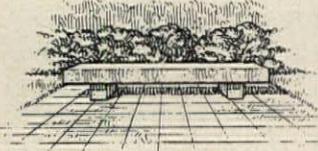
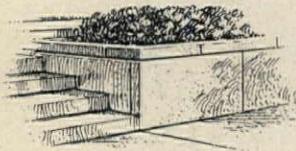
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Energy-Transfer HVAC System Proves Economical Approach to Cleaner Air for Hospitals

Five-story addition to an outstanding medical facility in Florida features a new type of air handling module built around a heat wheel. By salvaging "conditioning effect" from the exhaust, designers were permitted to use 100 percent outside air for ventilation without penalizing operating cost.

Boca Raton, Fla. Preparing to celebrate the grilling of their third billionth beef patty in 1969, executives of McDonald's Hamburgers, Inc. were jolted by a calamitous message from the Southeast. Their man in Boca Raton reported that his building permit application for the proposed restaurant on Federal Highway was in difficulty. The local zoning board had flatly refused any variance from their strict ban against prominent signs within city limits. The crestfallen executives saw the implication at once: there would be no bright Golden Arches in Boca.

As trifling as it sounds, the hamburger confrontation is a very famous bit of Boca Raton lore. Residents recount it often as a means of explaining to the newcomer the extraordinary community spirit that exists in this beautiful, meticulously structured resort town. Since about 50 years ago when the pace of development began to pick up, its constituents have worked to create a clean, uncluttered ambience with none of the garishness that has crept into some cities in the Sunshine State. They are selective about what goes on the land—from parking lots and road signs to estate architecture—even to the extent of setting a maximum limit (40,000) to the number of dwellings that may be built here.

Demography Notwithstanding. The McDonald's anecdote might also help illustrate the devoted civic involvement responsible for the fact that there is a hospital in this comparatively small city. Not just an ordinary hospital but



Resort-like landscaping provides pleasant setting for Boca Raton Community Hospital.

a superb nine-story, full-service health facility that would be a credit to a metropolis of much larger size.

Boca Raton Community Hospital exists only because the residents decided it was essential to the well-being and security of themselves and their neighbors and were willing to work at raising the needed funds (over \$10 million thus far). It is described as a voluntary nonprofit facility and has no tax support. Federal and state authorities had ruled that on the basis of demographic studies community health requirements could be served adequately by existing hospitals in neighboring communities. But Boca people felt otherwise because those hospitals were long miles and precious minutes away. So they banded together 10 years ago and began a four-stage building program.

Development of the hospital is ongoing in accordance with a master plan that takes into consideration population growth in the facility's service area. Two of the four stages are presently complete. The original four-story 25,000 square foot building accommo-

dating 100 beds was dedicated in 1967. A five-story vertical addition completed in 1971 brought the building up to design height of nine stories and raised bed capacity to 250. A refinement incorporated in the second stage is an energy-saving HVAC system with rotary air-to-air heat exchangers and electric duct heaters. The heat recovery capability of this system made it economically feasible to use 100 percent outside air for ventilating the upper floors.

Avoiding the Aphorism. It is a generally accepted rule in many fields of design that "form should follow function." Applied to architecture, this aphorism leads to buildings whose outward appearances reflect pretty much the activities within. Most hospitals, therefore, look like hospitals—a commendable enough result when measured against the pragmatic priorities of healing professionals. Patients, however, see things differently and find little to applaud in hospital architecture so literal that it serves only to reinforce the unwelcome predicament facing them.

The architectural image presented by

*One of a series of reports giving recognition to the efforts of architects and engineers on behalf of resource conservation.

With the HVAC modules, outside air cfm was increased by 54 percent while required chiller tons dropped almost 48 percent.

Boca's hospital puts function in a somewhat different form. The opinion shared by many first-time visitors is that it looks more like, well, a resort motel. This impression, more or less, is a fair statement of what the architects and engineers of The Smith, Korach, Hayet, Haynie Partnership had hoped to achieve. "The degree of community involvement made this a special type of project," says architect William E. Haynie. "Boca residents took an intense personal interest in what we were doing and were quick to let us know what features they wanted to make this as pleasant a place as possible for the ill."

Silent Nurses. Drawing on long experience in hospital design, Haynie's firm created an advanced treatment facility that rates highly in medical circles. "Most of our time was spent in developing what I call the 'scientific core' of the hospital—laying out and equipping laboratories, intensive care units, emergency and operating rooms, and treatment areas. We had to plan for efficient movement of material, patients and staff and for the everyday functions such as feeding, bedcare and maintenance.



Architect William E. Haynie accommodates hospital services in a kind of building that does not reinforce predicaments.

But we surrounded the essentials with a generous helping of the amenities."

One such amenity that has worked out well is wall-to-wall acrylic pile carpeting used throughout much of the building, including patient rooms and corridors. In addition to softening the sterile hospital image, the static-free material is claimed to have made floor maintenance easier. It also helps deaden background noises such as the on-traditional sounds of nurses heels hurrying across marble floors.

Kitchen Clocks and Calendars. The hospital is set on a 25-acre site of green lawns and landscaped gardens which

handsomely accentuate the facade of alternating light and dark, smooth and textured precast concrete panels. The longer sides of the rectangular structure were intentionally oriented north and south for lower solar gain. Approach is by means of a paved white driveway circling the palm trees, pond and splashing fountains in the forecourt.

The main entrance opens onto a spacious reception foyer floored in Spanish tile and furnished with Mediterranean-style sofas and lounge chairs in place of the usual chrome and plastic bucket seats. The Spanish heritage of the locale is further reflected in heavy ceiling beams of darkly stained mahogany and in the tapestries and original art on the fieldstone walls. Adjacent to the foyer are a visitors' lounge, snack bar and gift shop.

All patient rooms have large hopper type windows. Furnishings are an inventive blend of the scientific and the homelike. Appointments in the latter vein range from winsome touches such as the picture calendar and brightly hued electric kitchen clock in every room up to wall-mounted remote control TV sets. Within the patient's reach is a small "command pod" which is fastened to the end of a tubular support hinged from the wall. The pod has push-buttons and dials for control of lights, radio and TV, and the three electric motors that raise and lower the articulated bedspring.

The pod contains also a nurse call button which is part of a sophisticated hospital-wide communications system. Pressing the button puts the patient into two-way voice contact with operators at a central desk. The operators take his request and relay it to the nurse or nurse's aid closest to him. Hospital administrators rate this technique as a most important morale boost for the patient who is spared the uncertainty of the usual push-and-wait routine.

Instant Replay. The 16-bed coronary care unit is an example of the sophisticated level of treatment offered by the hospital. The eight patient rooms in the unit have windows facing a station staffed by specially trained nurses. Each patient carries miniaturized wireless instrumentation which "broadcasts" to a bedside monitor as well as to the central console at the nurse station. Deviation from a safe range of heart action in any individual patient results in immediate visible and audible warning at the central station.

The monitoring equipment has a memory bank which provides instant replay on a cathode ray tube of the patient's heart action during the 60-



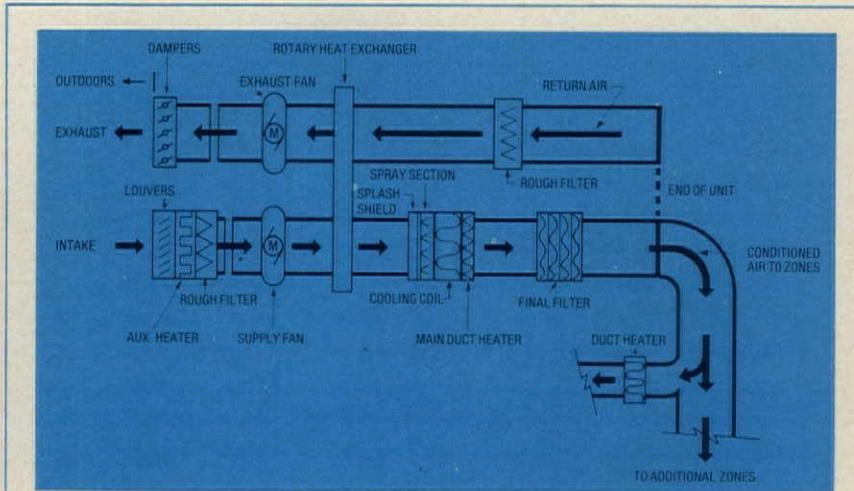
Attractive lounge off reception foyer eases some of the tedium for waiting visitors.

second period prior to the time a warning was sounded. Strategically placed antennae projecting from ceilings of rooms and corridors allow ambulatory patients to be monitored while away from their beds.

HVAC System. Some of the credit for Boca Raton Community Hospital's excellent rating as a health-care facility must go to the quality of the ducted-air heating and cooling system. As planning began for Phase II (the five-story addition), thought was given first to designing the system for an adequate 65 percent outside air, obtaining the balance by recirculating return air. Then, administrators decided to upgrade the ventilation rate to 100 percent outside air. This decision brought two obvious benefits. First, it practically eliminated the oppressive medicinal odors that becloud most hospital environments. Second, the total air change aids hospital asepsis through removal of airborne contaminants.

The exchange of conditioned inside air for raw outside air normally represents a considerable energy expenditure. To put the upgraded ventilation rates on a practical economic basis the designers resorted to heat recovery techniques to reclaim the conditioning effect of exhaust air. The means they chose to do this is the rotary heat exchanger or heat wheel.

Specifically engineered for this project were five unitized air conditioning modules, factory assembled and delivered to the construction site in packaged form. Each module consists of blowers, filters, cooling coils, heaters, spray chamber and heat wheel all mounted integrally together on a structural steel base. The engineers have described the module as a "mechanical room on a skid" inasmuch as only electric power and chilled water connections are needed to put a module into



AIR FLOW IN HVAC MODULE

Outside air enters system through weatherproof louvers and a low-efficiency filter bank that removes most of the larger suspended airborne pollutants. The supply fan forces the air through the rotary heat exchanger, water spray chamber and chilled-water cooling coil. A water eliminator on the exhaust side of the cooling coil removes excess moisture droplets after which the saturated air passes through a high-efficiency filter into the ducts leading to the conditioned spaces.

Return air enters the module through a low-efficiency filter bank to clear the stream of suspended solids before it flows through exhaust portion of the rotary heat exchanger. Finally the air is accelerated by the exhaust blower and vented from the building through pneumatically controlled dampers.

The conditions described obtain when the system is on cooling. In the heating mode the spray chamber and cooling coils are deenergized and wheel speed controlled to obtain the desired supply air temperature of about 55F. This temperature is low enough to satisfy interior zones requiring wintertime cooling. Duct heaters raise the supply air temperature for perimeter spaces.

operation. Heating in the five-story addition is handled by in-duct electric heaters controlled by zone thermostats.

It is interesting to note that the designers had estimated that 580 tons of chiller capacity would be needed for the five floors in the 65 percent outside air option. Use of the heat wheel modules dropped the chiller requirement to 306 tons at 100 percent outside air.

Antiseptic Transfer. Transferring energy by means of a common mechanical link (the wheel)—operating first in one airstream and then immediately entering a second—poses an unsettling question in a hospital application. Wouldn't pathogenic bacteria being flushed from the building in the exhaust promptly reappear in the makeup air?

"We considered this possibility, of course," says Charles Jaycox, director of engineering at the hospital. "Before committing ourselves to the wheel approach we ran exhaustive tests and found absolutely no bacteria carryover at all. We still monitor the situation, exposing culture media in the main supply ducts every month or so. Results show that the supply air is, if anything, even more aseptic than outside air."

Jaycox attributes the cleanliness of the air to several factors, among which is the extensive filtration employed. Multi-layer filters are installed at two locations on the supply side and, as a

final precaution, air is filtered a third time just before being returned to the wheel. The openness of the filler mesh coupled with the high velocity of the discharge air appears to discourage any tendency of bacteria to adhere to the rotating element.

The possibility of cross-contamination is further reduced by incorporation of a purging section. Purging is accomplished by returning a portion of the makeup air to exhaust after it has passed through the wheel. The purge area is a ten-degree sector over the partition between inlet and exhaust chambers. Here, a U-shaped duct scoops up some inlet air and short-circuits it back to continuously flush out the mesh before it is allowed to contact the supply air.

Efficiency Trade Offs. The U.S. Department of Health, Education, and Welfare has in recent years issued a number of technical advisories intended to help hospitals reduce operating costs. It has recommended consideration of heat wheels and described them as capable of conserving 60 percent or more of the thermal difference between exhaust and outdoor air.

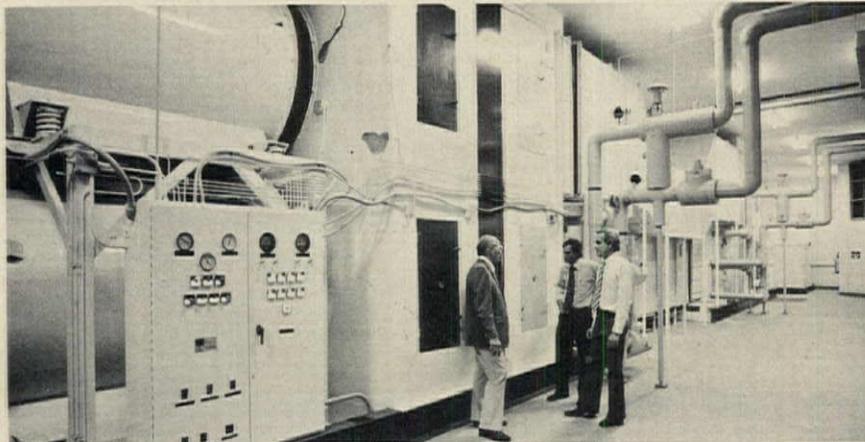
H.E.W. cites a summertime example wherein a heat wheel exhausting 75F indoor air can reduce incoming air temperature from 95F to 80F. Estimated total savings at 75 percent effi-



Engineer Leonard Hayet hoped to achieve a nominal 70 percent energy transfer efficiency but did even better than that.



Hospital's director of engineering services Charles Jaycox stands within wheel compartment of HVAC module to examine exhaust section (lower half) of 12-foot-diameter unit.



Members of hospital staff converse near wheelhouse of air handling module. All components including control center at left are assembled on structural steel base.

ciency are 54,000 Btuh of cooling effort for each 1000 cfm of outdoor air. With 75F exhaust air in winter, the wheel can raise 0°F air to 55F and save about 92,000 Btuh of heat energy for each 1000 cfm of outside air at 75 percent efficiency.

"Actually, transfer efficiencies as high as 90 percent or more are possible," says project engineer Leonard Hayet. "The wheel's effectiveness depends on a number of things, most notably on its physical dimensions. The deeper it is, for example, the greater will be the amount of heat exchange between input and output streams. But peak efficiencies are achieved only by investing more dollars—for the larger equipment itself, for space to house it, for extra fan power to overcome pressure drop through the mesh, and for extra power to turn the wheel. So at some point in the system design it is necessary to face up to the law of diminishing returns—to trade off some efficiency percentage points in return for fewer dollars."

Off-Target. After a feasibility study based on total owning and operating

costs the engineers agreed on 70 percent as the design efficiency. Subsequent performance tests indicated the wheels were actually exceeding the targeted minimum by delivering 75.9 percent efficiency.

Hayet reports that the heat wheel module will be used also in Phase III of the hospital development, construction of which is about to begin. This \$15-million expansion will increase bed capacity from 250 to 344 and greatly augment the space available for the growing general staff which now numbers 700 full- and part-time employees in 23 departments. The medical staff includes 145 physicians and dentists. Still to come is Phase IV, a separate nine-story building for administrative departments, rehabilitation services, outpatient clinics and similar ancillary

DESIGN SUMMARY

GENERAL DESCRIPTION:
 Area: 138,400 sq ft
 Volume: 1,317,400 cu ft
 Number of floors: nine

CONSTRUCTION DETAILS:
 Glass: single
 Exterior walls: smooth and exposed aggregate precast panels against 8" concrete block, wood furring and lath, three-coat plaster; U-factor: 0.26
 Roof and ceilings: built-up tar and gravel roof on 2" rigid polystyrene insulation (R-7), poured concrete on metal pan deck, suspended acoustical tile ceiling. U-factor: 0.11
 Floors: concrete slab
 Gross exposed wall area: 55,300 sq ft
 Glass area: 7400 sq ft

ENVIRONMENTAL DESIGN CONDITIONS:
Heating:
 Heat loss Btuh: 2,784,360
 Normal degree days: 300
 Ventilation requirements: 50,000 cfm
 Design conditions: 35F outdoors; 75F indoors
Cooling:
 Heat gain Btuh: 4,667,800
 Ventilation requirements: 50,000 cfm
 Design conditions 91F dbt, 81F wbt outdoors; 75F, 50% rh indoors

LIGHTING:
 Levels in footcandles: 25-300
 Levels in watts/sq ft: 1-12
 Type: fluorescent and incandescent

CONNECTED LOADS:

Heating & Cooling (575 tons)	600 kw
Air Handling	120 kw
Lighting & Misc.	2,085 kw
Cooking	75 kw
Elevators	120 kw
TOTAL	3,000 kw

PERSONNEL:
 Owner: Boca Raton General Hospital
 Architects & Engineers: The Smith, Korch, Hayet, Haynie Partnership
 General Contractor: Edward J. Gerrits, Inc.
 Electrical Contractor: Fassbach Elec. Co.
 Mechanical Contractor: Pool & Kent, Inc.
 Utility: Florida Power & Light Company

uses. Part of the structure will be devoted to motel-type rooms for short stays by persons undergoing tests but not requiring formal admission to acute-care bed facilities.

Judging from the bustling activity at the hospital—over 22,000 in-patient and emergency room cases in 1973 alone—Boca's residents must be rated as astute captains of community destiny. As for the McDonald's restaurant, it was eventually completed on Federal Highway and is doing very good business indeed. Without the Golden Arches, of course.

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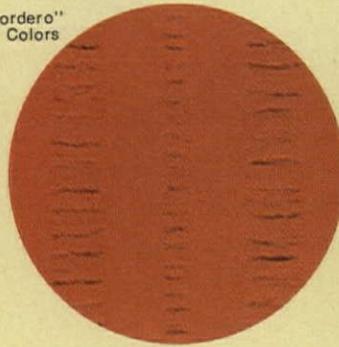


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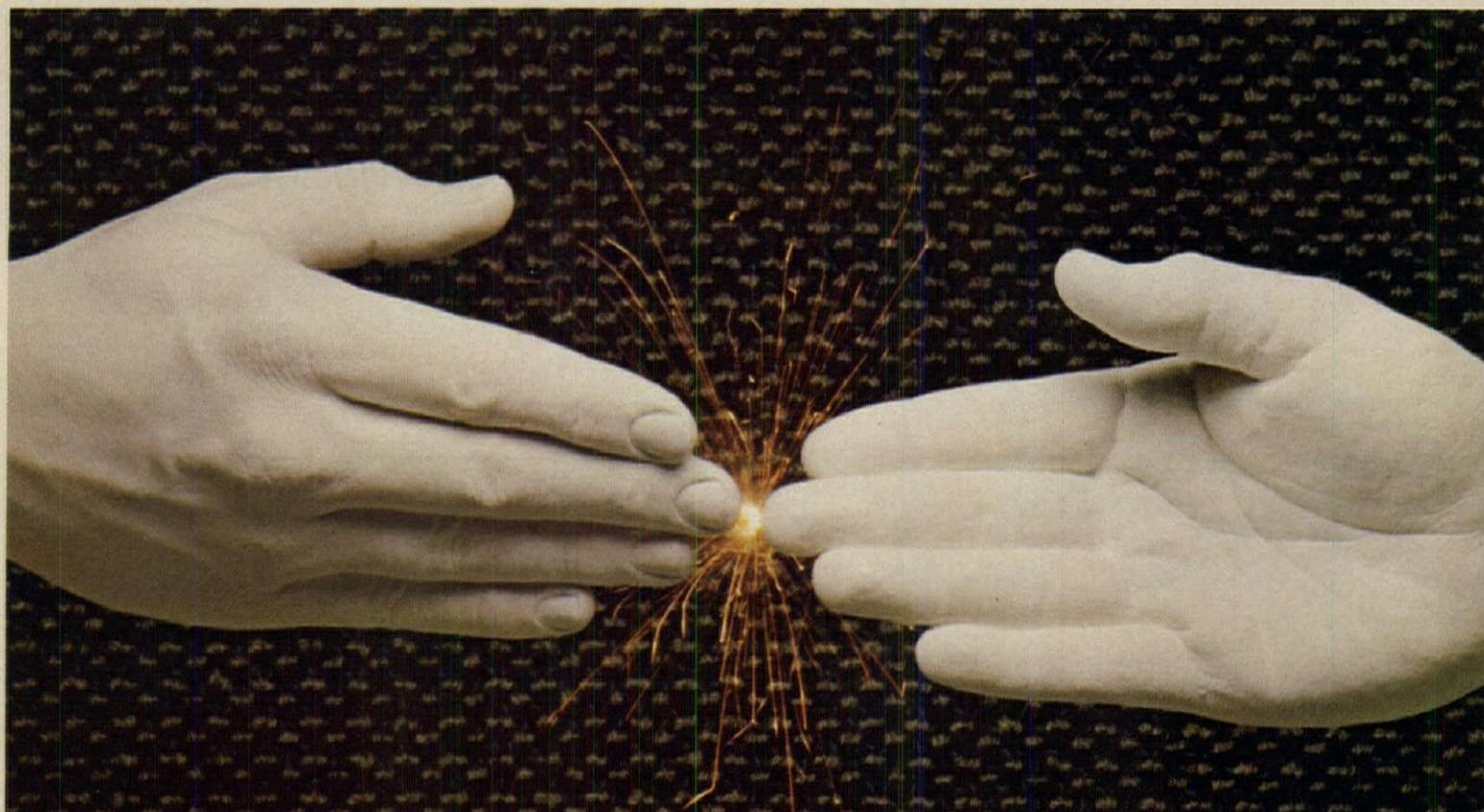
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News report

Design matters on Capitol Hill

The U.S. Congress is in a space squeeze, and while the Capitol's historic West Front seems reasonably safe, action is taking place on other fronts: proposals for expansion of House offices have set off controversy in several quarters; the \$85 million Senate Office Building extension by John Carl Warnecke & Associates is six months into construction; and Wallace McHarg Roberts & Todd recently received a \$350,000 contract for a two-year study to produce a Capitol Hill master plan.

One unusual proposal to expand office space for the House would involve placing glass and steel structures in the empty courtyards of the Cannon and Longworth House Office Buildings (67,000 sq ft and 25,000 sq ft respectively). This would double the available space in the building. Architect Kevin Roche, acting as consultant, applauded the idea and called the proposal "brilliant" and an "excellent answer to all of the problems." He observed that, because the new structures would not completely fill the courtyards, they would provide "adequate outdoor awareness" and light.

"One additional word on this proposal," Roche said at a public hearing, "is that at a time when the country is finally coming to realize the worth and value of existing historical structures, it would place the House in the forefront of these institutions which are expanding not by tearing down the existing fabric of our cities, but by working within it and restoring and enriching



Cartoonist Draper Hill's impression of Congress' expansion plans, *The Commercial Appeal*, Memphis.

what we already have."

Other recent solutions to relieve cramped conditions for House staff members were not well received at all. Meanwhile, workers continue to use spaces ranging from 35 to 65 sq ft (industrial standards suggest 150 sq ft). In the last two decades, the House staff has increased 15-fold.

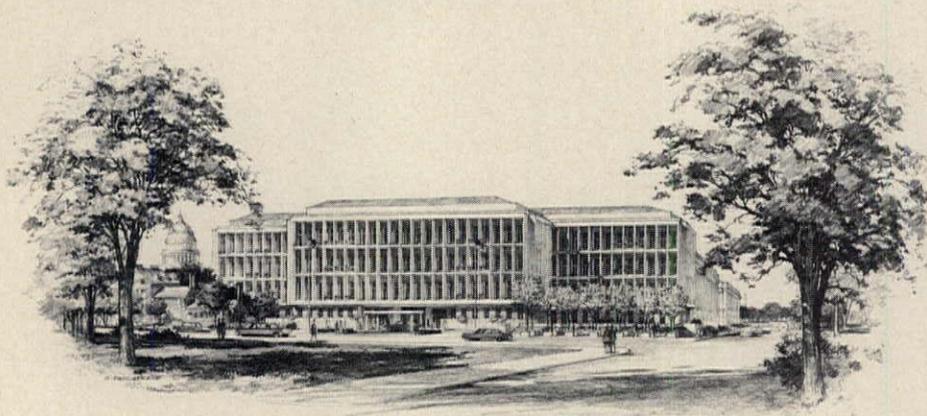
Capitol architect George M. White early last year proposed a new \$180 million House Office Building which would have meant the demolition of more than 100 houses—many newly restored, some by congressmen. In the ensuing uproar, led by the Capitol Hill Restoration Society, the ambitious project was set aside.

An ill-conceived attempt by House leadership last fall to take over the unfinished James Madison Memorial Building of the Library of Congress

also was dropped. The Congressmen wanted to convert the almost windowless library building into an office building. The contractor said such a conversion would add \$55 million to the \$120 million cost, and objections that followed from Congress were bipartisan. The exterior is nearly finished but the interior is not due for completion until 1980.

The House also has eyed the new South Portal Building of the U.S. Department of Health, Education and Welfare, a concrete structure designed by Marcel Breuer, but some Congressmen reportedly believe the building is too ugly for them (translation: there is no marble on the walls.)

Rep. Elizabeth Holtzman (D-N.Y.) has been appointed by House leadership to chair a Task Force on Facilities and Space Utilization which is ex-



John Carl Warnecke's extension of Dirksen Senate Office Building.

pected to issue a report on possible solutions by the end of the year. Architect and planner is Davis Buckley.

The Senate already has found a solution to its space needs. It broke ground in January for the \$85 million extension to the Dirksen Senate Office Building. Designed by John Carl Warnecke & Associates, the new wing will have a clearly articulated but monumental façade. Senators will have suites of private offices with 16-ft-high ceilings; staff offices will have walls 8½ ft tall. A T-shaped skylighted galleria and atrium will be in the middle of the building. Facilities will include a gymnasium, television studios, 500-car parking garage, restaurants, and 24 elevators. It is expected to be available for use in 1979 at which time other Senate offices will be modernized.

The concept of a Capitol Hill master plan for years has met with resistance from Congress and so the announcement of the Philadelphia firm of Wallace McHarg Roberts & Todd is welcomed by most people. One possible problem is that area residents are adamant that Congress not expand into surrounding neighborhoods. The Capitol architect has said that the present "edges" may have to be redefined.

A number of special consultants will be hired for the study including experts in real estate, transportation, finance, and historic preservation. One of the issues to be studied, said Elliott Carroll, assistant Capitol architect, is the nature of the edges of space occupied by congressional buildings. Now they are "hard," but he hopes to soften them with green space and mixed-use buildings. [Carleton Knight III]

Alvar Aalto 1898–1976

The Finnish master of architecture, Alvar Aalto, who ranked with Wright, Le Corbusier, Gropius, and Miles van der Rohe, died in Helsinki on May 11 at the age of 78. His passing marks the departure of the last of the 20th-Century's architectural giants.

Aalto was graduated in 1921 from Helsinki Polytechnic. His first building was for the Tampere Industrial Exhibition of 1922; he opened his first office in a small town, but later moved to Turku, and then to Helsinki. His earliest building of international fame is the Sanatorium at Paimio (1929–33). He designed the Finnish Pavilion for the New York World's Fair of 1939 and taught for several years at Massachusetts Institute of Technology, Cambridge. There he designed one of his three works in this country: the serpentine Baker House dormitory (1947). His other U.S. works are the Library, Mount Angel Abbey, Ore. (1970), and the conference room of the Institute of International Education, United Nations Plaza, New York City.

Visitor Center still generating controversy

The \$43 million-plus National Visitor Center in Washington, D.C., though not completed, is scheduled to open July 4—almost 10 years after Congress authorized the initial study on converting Union Station into a tourist facility. However, even now Interior Secretary

Thomas Kleppe has issued a work stoppage order on one part of the center—the parking facility—because of a \$4.9 million cost overrun.

Seymour Auerbach, of Washington, D.C., was commissioned as architect for specific permanent elements of the center, for a new 4000-space parking garage (now reduced to 1000 spaces), and for a new railroad facility for Amtrak. The Potomac Group is architectural consultant to the National Park Service, which runs the Visitor Center. Paul Ledere of the National Park Service is landscape architect.

Auerbach has filed charges of unethical conduct in obtaining the contract (with the AIA) against The Potomac Group's Aram Mardirosian. This and the work stoppage are only two in the series of delays at the Center.

The Beaux-Arts station building, designed by Daniel Burnham and completed in 1908, has been restored as faithfully as possible using available materials. The exterior façade has been left intact and cleaned. The main waiting room, 10 stories high, was the subject of major renovation: a 120'x50' terraced opening cut in the floor to contain an audiovisual program, on 80 screens, orienting visitors to the city. The "hole" has been the center of controversy—even more so than the uproar over the removal of railroad activity from the station to a new facility with less passenger-handling capacity.

The refurbished station today contains no railway facilities whatsoever. Instead, railroad activity is conducted in a combination station/parking garage built over tracks behind the old terminal building. Amtrak has been outspoken in its displeasure with the substitute accommodations, planned



National Visitor Center in Union Station.

when rail transportation was down.

Visitor Center project manager J.E.N. Jensen has commented that work on the Visitor Center "has been shut down more than it's been in operation" due to lack of funds, lawsuits, and wage negotiations. Barring further delays, the Visitor Center should be completed by this fall. [Robert Koehler]

Washington Metro a design success

Metro, the Washington, D.C., subway system and the most expensive public works project ever undertaken, had its first ride in March when 4.6 miles of an eventual 99.8-mile system opened for service. Reaction to the subway, estimated to cost \$1.1 billion in 1969 and now figured at \$4.65 billion and still rising, is phenomenal. The average daily ridership is 25,000 persons—three times the estimates.

Unlike most, this subway is an architectural treat. It was designed by Harry Weese & Associates, Chicago, with engineers De Leuw, Cather & Company. A large number of consultants, including more than 30 architects, are designing individual sections. The design is uniform throughout, and it really marks the first time an architect has done anything more to a subway than decorate an engineering project. It was Weese, in fact, who was able to convince the engineers (he had help from the powerful Fine Arts Commission) to build all the stations using a contemporary version of the Roman vault. It is less expensive than non-uniform design and most attractive. Quarry tile floors and granite trim highlight the poured concrete stations.

The section that is open links Farragut Square (Connecticut Ave. and K St. N.W.) with Rhode Island Ave. N.E., and has several stops downtown and one at Union Station. Next to come will be a link to National Airport sometime early next year. By the 1982 scheduled completion, Metro will run well out into the Maryland and Virginia suburbs.

The trains themselves are spacious and air-conditioned. They are controlled by computer and operate up to 75 miles per hour. In the stations there are no advertising panels and the cars have only a few ads. The entire project is designed to be vandalproof, and that has been the case to date.



Washington's new subway system designed by Harry Weese & Associates.

A subway was first proposed for Washington 50 years ago, but it was not until the early 1960s that actual planning began. There were many delays for lack of funding—not only is the federal government involved, but also Maryland and Virginia as well. In 1968, Rep. William H. Natcher (D-Ky.), chairman of the D.C. Subcommittee of the House Appropriations Committee, succeeded in delaying the start of construction more than a year by refusing to allow a vote on the matter. He wanted more highways built in Washington. Ground was finally broken in December 1969. [Carleton Knight III]

NEA/AIA forum gets mixed reviews

Although it received mixed reviews, the Forum for Public Architecture co-sponsored by the American Institute of Architects and the National Endowment for the Arts was well received by those it was designed for: government building administrators and architects.

The two-day forum, held in Washington in April, drew nearly 50 state and local officials who, in responding to questionnaires after the meeting, expressed pleased surprise that anyone was interested in them. They particularly liked the small size of the meetings, which enabled them to have an interchange with the various panelists.

At the beginning it did not look promising. Walter A. Meisen, who had just resigned from his post at the U.S. General Services Administration to become vice president of Daniel Mann Johnson & Mendenhall (Washington

office) opened one panel by noting, "Well, here we are again, talking to ourselves." He spoke of the many constraints against good design in public buildings and called on government to be more innovative in design.

Others on that panel included Sen. Robert B. Morgan (D-N.C.), who made a strong pitch for the recycling of old buildings; Pasadena, Calif., Mayor Mortimer J. Matthews, a practicing architect who described his community's efforts to improve its visual environment; and architectural writer William Marlin, who presented a critic's view of governmental façade building.

A session on energy and the reuse of resources featured "Working Places," the highly acclaimed film made by John Karol for the Society for Industrial Archeology. It describes a number of old industrial buildings converted to new uses. Session moderator Bill Matuszeski, assistant staff director of the Council on Environmental Quality, spoke about some of the "energy trade-offs" that must be considered. He said decisions have to be made concerning materials that use less energy to make but increase the cost of the structure. [Carleton Knight III]

Post Office gleams on Pennsylvania Ave.

While steps to improve Pennsylvania Ave. in Washington, D.C., still have not progressed beyond the plan stage for lack of funding, the federal government has enhanced the appearance of one of the avenue's major landmarks [continued on page 27]

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Carlsson Knight III

Cleaning of old Post Office, Washington, D.C.

by cleaning the Old Post Office for the first time since the building opened in 1899. The light granite stones of the Richardsonian Romanesque structure, designed by W.J. Edbrooke, are literally gleaming in the sunlight at Pennsylvania Ave. at 12 St.

The building, whose clock tower is the second highest spot in Washington (after the Washington Monument), is being cleaned with an acid wash. The contract was let by the U.S. General Services Administration.

Long a threatened landmark on the avenue because it did not fit in with the classical Federal Triangle, the Old Post Office seems assured now of new life. Plans to convert it into a cultural center with offices for the National Endowment for the Arts are under review by federal officials, and then they will be sent to Congress for funding. The building currently houses the local office of the FBI. Several years ago, preservationists organized Don't Tear It Down, Inc. to save the building and find an appropriate use; proposed was a scheme by Washington architect Arthur Cotton Moore (P/A, July 1973, p. 70) to create a tourist hotel.

First urban tram opens in New York

An elevated tramway capable of transporting 250 passengers at a time has begun operation between Manhattan and the new town-in-town on Roosevelt Island in the East River. The system was engineered by Lev Zetlin Associates, New York, and New York architects Prentice & Chan, Ohlhausen



Colorful gears and wheels are part of the attraction of New York's inter-island skyride.



View of tramway looking towards Manhattan.

designed the two stations.

Two cars of 125-passenger capacity each make the five-minute run between the islands. The system is powered by New York's largest electric motor, located on Roosevelt Island. The tram's counterweight sinks into a 40-ft-deep shaft in the hard rock of Manhattan Island.

The Manhattan station is an elevated concrete shedlike structure, completely open to the weather, at 60 St. near Second Ave. Its foundations were designed to support a future 35-story high-rise above the station.

On Roosevelt Island, the station at grade is a steel frame structure with metal cladding. In both stations, the machinery with its array of gears and wheels is brightly painted and visible behind glass windows.

The \$1 round trip ride to the island already has proved an attraction, and 5000 were transported the first Sunday it was in use—much to the consternation of the 2000 Island residents, who have enjoyed peace and quiet without tourists for the year and a half the new community had been open.

The cable cars soar to a height of 250 ft. on lines—supported by three towers—that run parallel to the Queensboro Bridge. It is the first aerial tramway in the United States to be used as part of a transportation network.

Los Angeles 12 exhibit to tour

The Los Angeles 12, an architectural exhibition coordinated by the Department of Architecture at California State Polytechnic University, Pomona, will be on view starting June 13 at the International Design Conference in Aspen, after which it will travel for a year. The show opened in May at the Pacific Design Center, Los Angeles, where it will close June 6.

The 12 are John Lautner, Craig Ellwood, Raymond Kappe, Daniel Dworsky, Leroy Miller, Frank Gehry, Bernard Zimmerman, James Pulliam, Jerrold Lomax, Roland Coate, Cesar Pelli, and Tony Lumsden.

"The informality of Los Angeles allows greater freedom of design," stated Shelly Kappe, historian with Southern California Institute of Architecture, in the exhibition brochure. "We can therefore experiment in a relaxed way." Los Angeles, Kappe went [continued on page 31]



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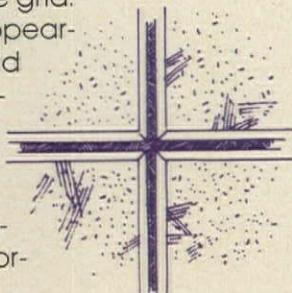
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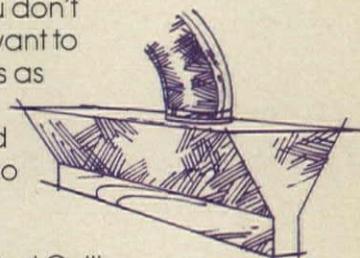
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House by Jerrold Lomax in L.A. 12 exhibit.

on, is a "city in process" free from the limitations and dogma of critics, a harsh climate, and cultural pressures. Some of these freedoms are expressed architecturally in greater flexibility in the use of materials and the "outdoor-indoor use of space."

The 12 architects were chosen over a two-year period during which they met informally with students at Cal

Poly Pomona, who originally proposed the idea of a show. No attempt was made to group together a style, approach, or philosophy; the only link is that they all have practiced in L.A. at least 12 years.

After its Aspen showing, the exhibit will be on view at the Art Center College of Design, Pasadena, in July, at Cal Poly Pomona in the fall, at the University of California, Berkeley, in the winter, at Cal Poly San Luis Obispo, in the spring, and then it will travel to Peter Cook's Artnet Gallery, London.

Unionism hurt by hard times

The Organization of Architectural & Engineering Employees (OAE), which flourished for a time in San Francisco and Detroit, still keeps its San Francisco address at Local 2001, United Brotherhood of Carpenters & Joiners of America, but participation has dwindled to virtually nothing. The OAE newsletter has suspended publication.

"Economics is the main reason for

inactivity," said Peter A. Ekstein of San Francisco, the chief spokesman. With so many workers unemployed, the organizing effort lost its momentum.

Legal battles the union waged to organize some offices were won but were countered by the transient nature of the office force. By the time the courts had decided in the union's favor, pro-union personnel had moved.

One case was an attempt to organize Hertzka & Knowles in San Francisco. The company thwarted attempts, Ekstein said, to hold a fair election on whether or not to organize in the office; OAE challenged the conditions under which the vote was taken and after three years won a right to another election, but by then all its supporters in the firm had disappeared.

At its height, OAE had 200 members in the San Francisco Bay area. There was activity in Los Angeles, and Detroit was strong—(owing to the strong union community there), talks were given in Chicago, but New York, which has the heaviest concentration of architects, never showed any great interest.

[continued on page 32]

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Battle over trees threaten market

The debate in Congress over two bills introduced to update the legal provisions for harvesting trees in the National Forests has at stake 75 percent of the timber supply coming from those forests. That estimate is from the National Forest Products Association, which has the most to lose from any change in legislation.

What triggered the controversy was the Aug. 21, 1975-decision by the U.S. 4 District Court of Appeals, upholding a lower court's decision to apply an 1897 law preventing the removal of any but diseased or physiologically mature trees from the Monongahela National Forest in West Virginia. The court decision came after a series of legal actions initiated by the Sierra Club and other environmentalist groups.

According to the National Forest Products Association, the timber in-

dustry depends on the National Forests for nearly one-third—27 percent—of all soft wood, the kind of wood used for lumber and plywood in home building. National Forests supply only 15 percent, however, of the total lumber and wood pulp. For the sale of these raw materials and services, the Forest Service received an income of \$360 million last year; and according to conservative estimates, for each one of these dollars another \$25 is generated in related businesses.

Both the Sierra Club and the National Forest Products Association oppose—for different reasons—the one bill (S 3091) which seems the likeliest to reach the floor for a vote. This bill was introduced by Sen. Hubert H. Humphrey (D-Minn.). The Sierra Club favors a bill (S 2926) introduced by Sen. Jennings Randolph (D-W.Va.) which is specific in its requirements of the Forest Service, whereas the Humphrey bill sets broad philosophies.

The Forest Products Association originally favored the Humphrey bill but withdrew its support when the bill came out of a joint committee (Interior

and Agriculture) incorporating some of the features of the Randolph bill.

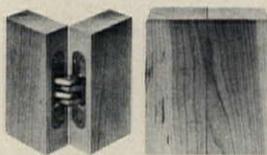
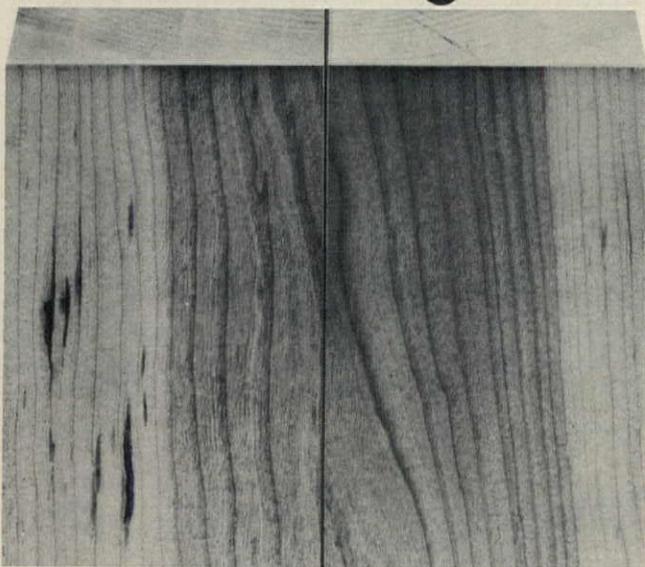
The American Institute of Architects has taken a position backing the Randolph bill because of the legislation's specificity. "Though normally we don't support legislation of that detail," said John Gaillard, director of the AIA's environmental programs, "we feel justified in this case because the Forest Service needs more guidance."

Leon Cambre, director of legislative affairs for the Forest Service defended the federal agency, saying it employs the largest group of professionals in the field and "We feel we've done a good job in management." The Forest Service backs the Humphrey bill for its land use planning concepts.

The Sierra Club's Washington office director, Brock Evans, said the scientific forestry practiced by the timber industry is meaningless because vast tracts of "open cut" land don't grow back even if re-seeded, as it lacks protection from scorching summers. "The industry always says these abuses are of the past, but this just is not so."

[continued on page 37]

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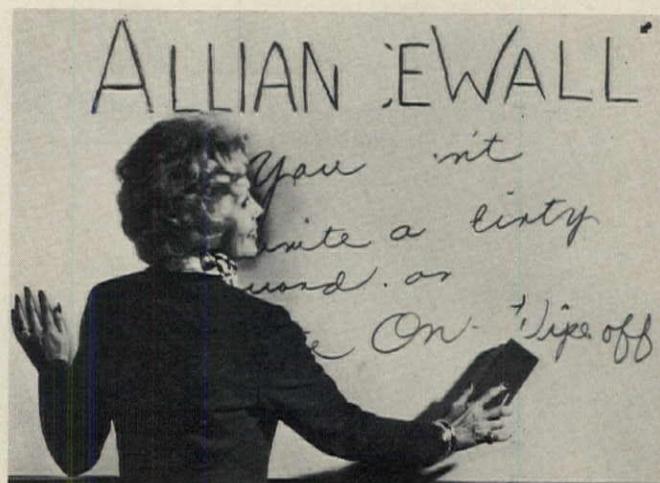
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John Hall, a vice president of the National Forest Products Association, said it objects to the Humphrey bill as amended because it would have the effect of immediately reducing the harvest by 60 percent and would impose costly and unnecessary requirements on the Forest Service. Also, the shortage of lumber would have some effect on consumer prices.

American Plywood confers awards

Charles Herbert & Associates of Des Moines, Iowa, received a \$1000 first award from the American Plywood Association and Professional Builder magazine in the 1976 Plywood Design Awards Program. Eight other firms were selected for awards by a jury consisting of William Turnbull of San Francisco, chairman; John Bloodgood of Des Moines, Iowa; and Remmert Huygens of Boston.

Herbert won in the commercial/institutional category for the Home State Bank in Jefferson, Iowa. Citations in that category were awarded to Jim Mickartz of Balboa, Calif. for the Moulton Niguel Water District in Laguna Niguel, and to Carlton Abbott of Williamsburg, Va., for a temporary sales center in Williamsburg.

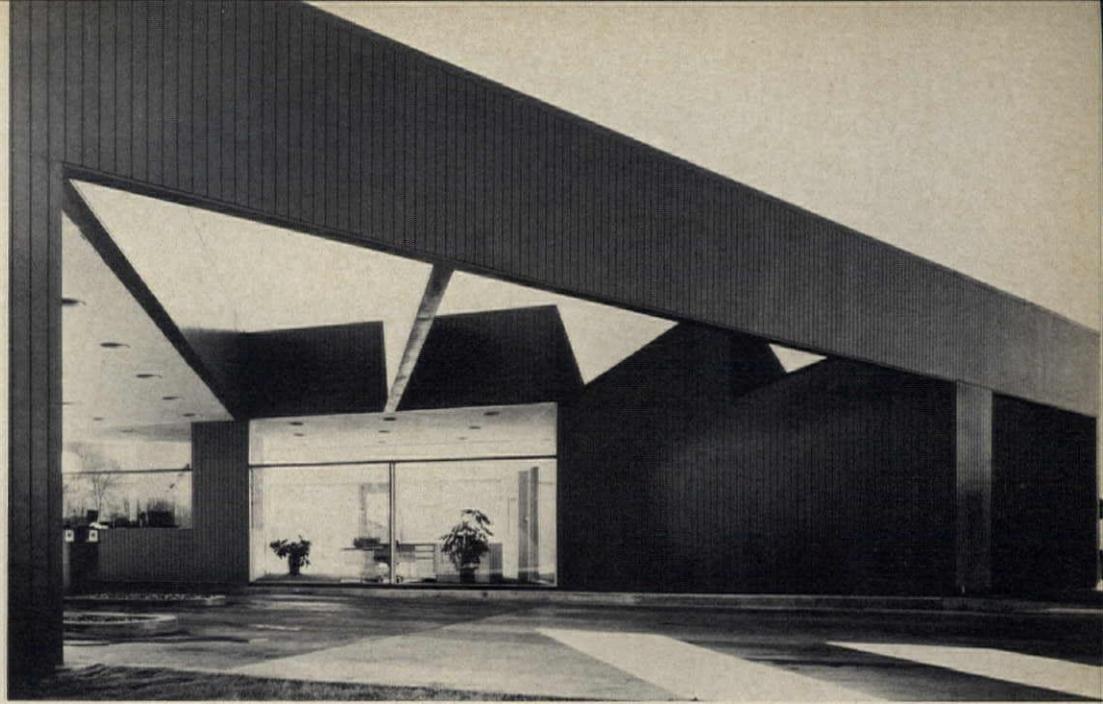
Daniel Solomon of San Francisco received a citation of merit for a home in Berkeley in the single house division.

Citations of merit, residential/multi-family category, went to Donald MacDonald and Robert Dahlstrom of San Francisco for the Lombard St. Condominiums, San Francisco; to Donald Sandy and James Babcock for the Sunrise Apartments, Sacramento; and to Childs Bertman Tseckares Associates of Boston for the Massasoit Crossing Condominiums in Mashpee, Mass.

Kirby Fitzpatrick of San Francisco won a citation of merit in the vacation homes category.

Transformer turns on Ohio architects

An electric company transformer tower and switch house recently was converted into an office for and by archi-



Charles Herbert & Associates, Home State Bank wins a First Award in plywood competition.



Award-winning residence by Daniel Solomon.

tects David Callahan, Bruce Wentworth, Frederic Bishop, and David Reiser. In addition to the architectural office, the building contains the firm's stained glass studio and the offices of a small building contractor. Maximum use of space was gained by careful application of the Ohio Building Code.



Transformer building recycled by architects.

1975 P/As win industry awards

The Art Directors Club, New York, has presented certificates of merit to *Progressive Architecture* for the entire July 1975 issue and for the cover of the April 1975 issue. These awards placed P/A in the 55th annual Advertising Editorial, and Television Art and Design exhibition, held at One Dag Hammarskjold Plaza, New York.

P/A also won three certificates of merit from the Society of Publication Designers for the cover design and photography of the March 1975 issue, the covers of the April and November 1975 issues, and a two-page editorial spread (p. 70) in the July 1975 issue. The magazines were judged in a field of 6000 entries, of which 550 were selected, including P/A, to be in the society's annual Design Awards exhibition. Accepting these awards on behalf of the magazine was *Progressive Architecture* art director George Coderre.

Hirshhorn exhibits immigrant works

"The Golden Door," an exhibit of the work of immigrant painters, sculptors, and architects, will be open at the Hirshhorn Museum and Sculpture Garden, Smithsonian Institution, in Washington through October 20. The show features 67 artist-immigrants who arrived in the United States during the last 100 years.

Among the architects featured are Eero Saarinen (Finland), I.M. Pei [continued on page 40]



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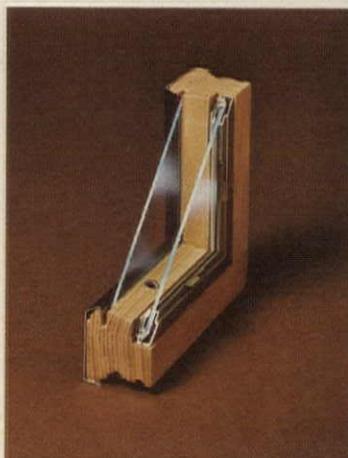
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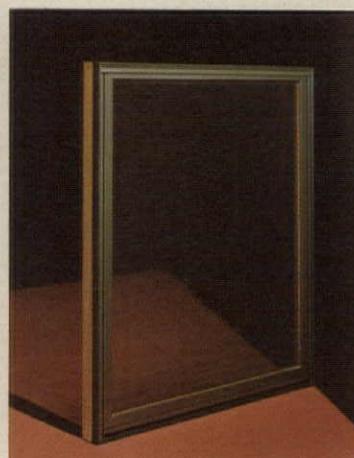
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News report continued from page 37

(China), Walter Gropius (Germany), José Luis Sert (Cuba), Ludwig Mies van der Rohe (Germany), Richard Neutra (Austria), and Marcel Breuer (Hungary). Plans, renderings, and architectural models are used to illustrate the work of each architect and there is an extensive catalog published for the exhibit (432 pages, \$10).

Personalities

Gerald M. McCue has been appointed associate dean of the Harvard Graduate School of Design and chairman of the Department of Architecture. McCue was also named professor of architecture and urban design at the HGSD.

Donn Emmons, FAIA has received the fourth annual Albert J. Evers Environmental Award from the Northern California Chapter, AIA. Emmons is principal of Wurster, Bernardi & Emmons, San Francisco.

Everett D. Swagert of Stanford University has been named university architect at Iowa State University, Ames.

Calendar

Through Sept. 6. "The Eye of Thomas Jefferson," National Gallery of Art, Washington, D.C.

Through Sept. 26. "Signs of Life: Symbols in the American City" exhibit, Renwick Gallery of the National Collection of Fine Arts, Smithsonian Institution, Washington, D.C.

Through Oct. "Three Centuries of American Art" exhibit, Philadelphia Museum of Art.

July 18-21. Twentieth annual meeting and fourth International Cost Engineers Symposium of the American Association of Cost Engineers, Sheraton Hotel, Boston.

July 19-20. Second International Symposium on Industrialized Production and International Technical Cooperation of the Housing Industry, sponsored by the Japan Industrial Planning Association, Housing Industry Committee, at the Hyatt Regency, L.A.

Aug. 2-13. Washington Women Architects exhibit, Inter-American Development Bank Gallery, Washington, D.C.

[continued on page 42]

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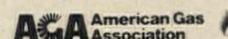
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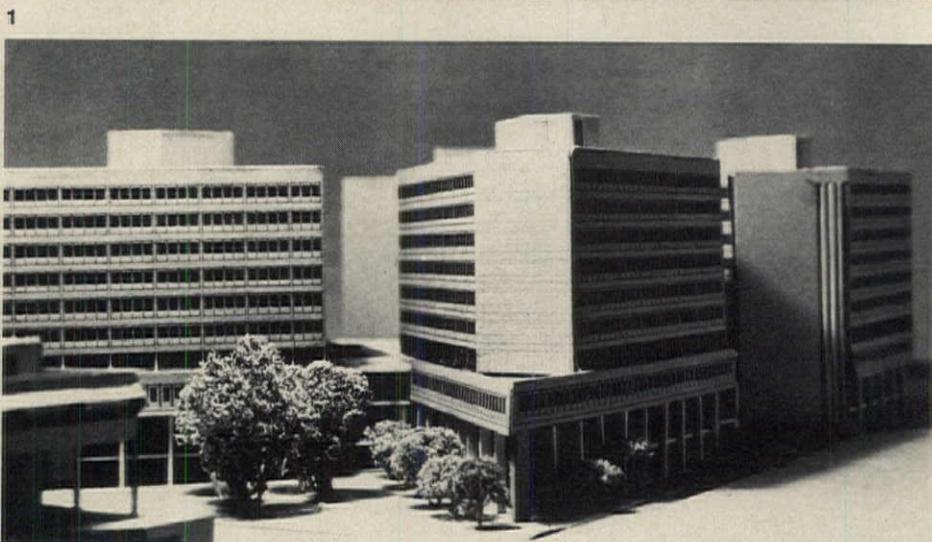
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**ENERGY CONSERVATION
UTILIZING BETTER ENGINEERING**



In progress



1 Social Security Administration—A consortium of firms consisting of The Grad Partnership, The Eggers Partnership, Welton Becket & Associates, and Jaros, Baum & Bolles has designed the "out-of-systems" components of the new \$76 million, highway-straddling headquarters for the U.S. Social Security Administration. The building will occupy a two-block site and will span part of I-170 in Baltimore, Md. The out-of-systems elements include foundations, exterior skin, and service-generating portions of the heating, ventilating, and air conditioning systems. "In-system" design—the floor-ceiling sandwich and interior partitions—are by a consortium of contractors and manufacturers acting under General Services Administration performance specifications. The 1.3-million-sq-ft structure will have a 14-story tower, cafeteria, and a 520-space parking garage. Completion is scheduled for 1979.

2 Dade County Regional Service Center—Russell-Wooster-Associates of Miami are master planners and architects for a government complex which will serve as a regional center. Bidding is underway for the first phase: a 10-story building that will house state agencies and eventually tie into a complex including a proposed federal office building. Completion is anticipated in the year 2000. The initial building will house public-related agencies and administrative offices. Windows will be sun-shielded by precast concrete panels; solar collectors will be used for all domestic hot water and lighting heat will be reclaimed for use in the heating system. Further sun control will be provided by an existing stand of live oak trees. The original planning and programming study was conducted by a team composed of Russell-Wooster and Wilbur Smith & Associates, Columbia, S.C., engineers, and Peter Muller-Munk Associates, Pittsburgh, Pa., which also is handling space planning and interiors. Jonathan Seymour of South Miami is landscape architect.

3 Low rent housing—A "turnkey" HUD project sponsored by the local housing authority is nearing completing in Alconac, Mich. Seventy units designed by Straub, Van Dine, Dziurman/Architects of Troy were selected in a competition for the project. The site is a riverfront in the urban renewal area. Included are 50 one-bedroom units for the elderly and a second floor senior citizens community room overlooking islands in

the St. Clair River and the Canadian shore. A total of 20 family units will be included.

4 Atlanta Federal Building—A project that has been in the planning stages for nearly eleven years is soon to enter construction in downtown Atlanta. The Richard B. Russell Federal Office Building, a 26-story structure estimated to cost approximately \$47 million, will be built on a railroad gulch site where the old Southern Railway station once stood. The building is by the Atlanta firm Finch Alexander Barnes Rothschild & Paschal (FABRAP); court interiors will be by Associated Space Design of Atlanta. The building will contain 1.2 million sq ft and house 22 federal agencies, courts, and other offices.

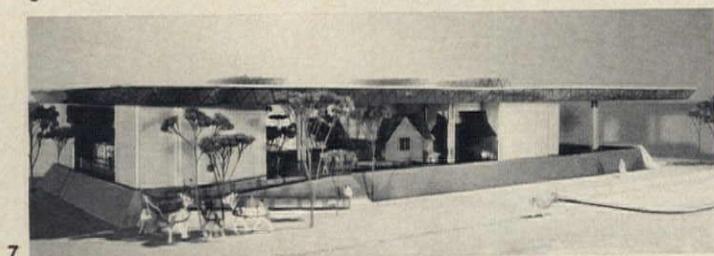
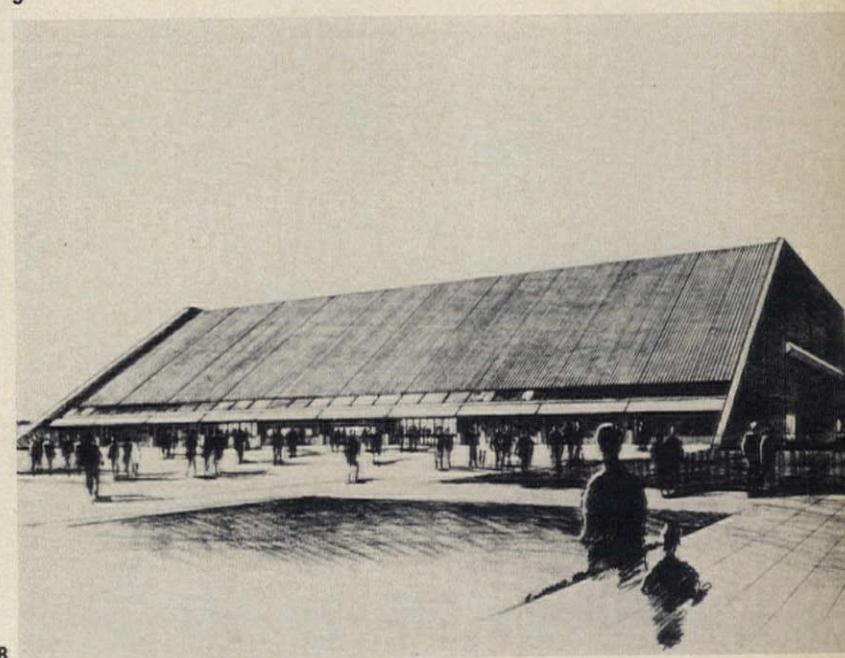
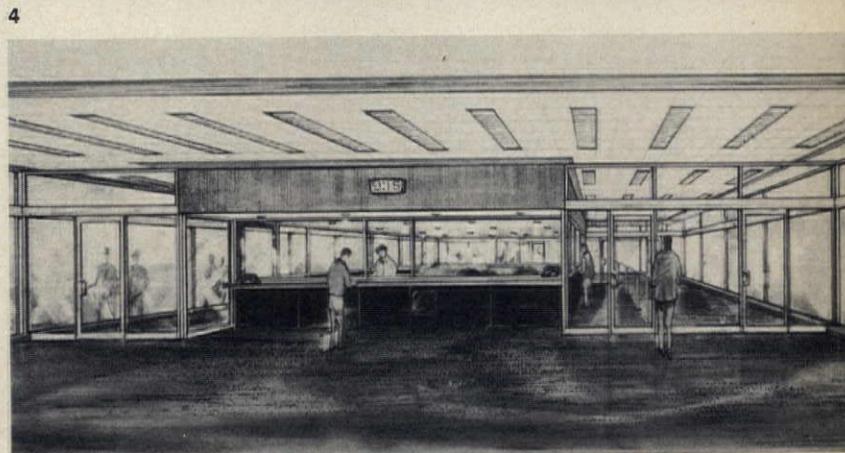
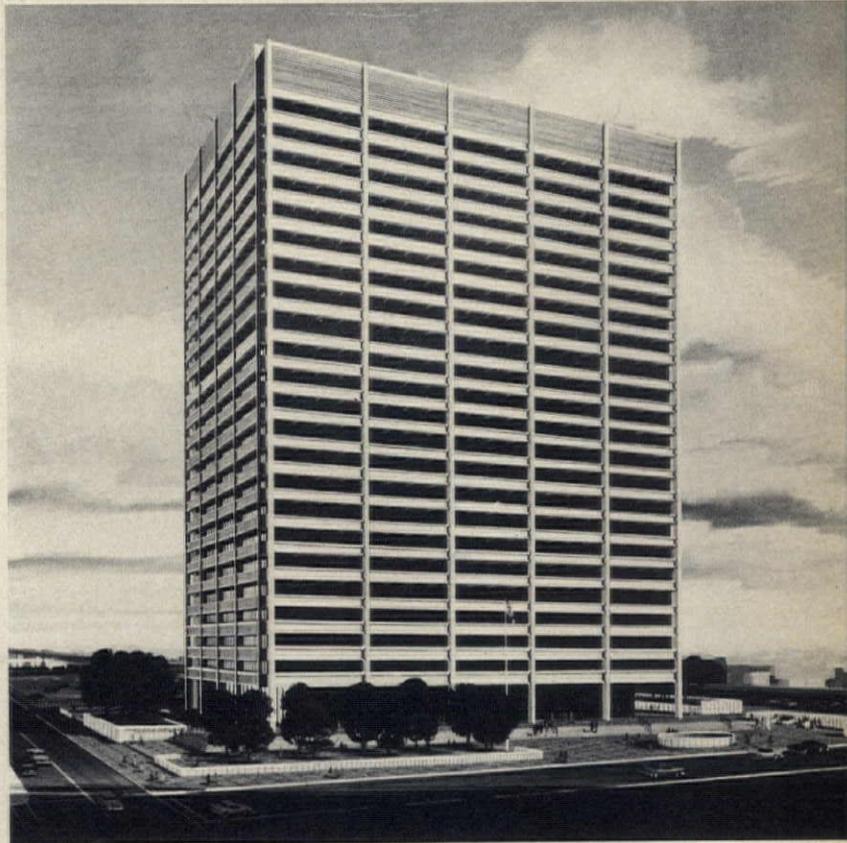
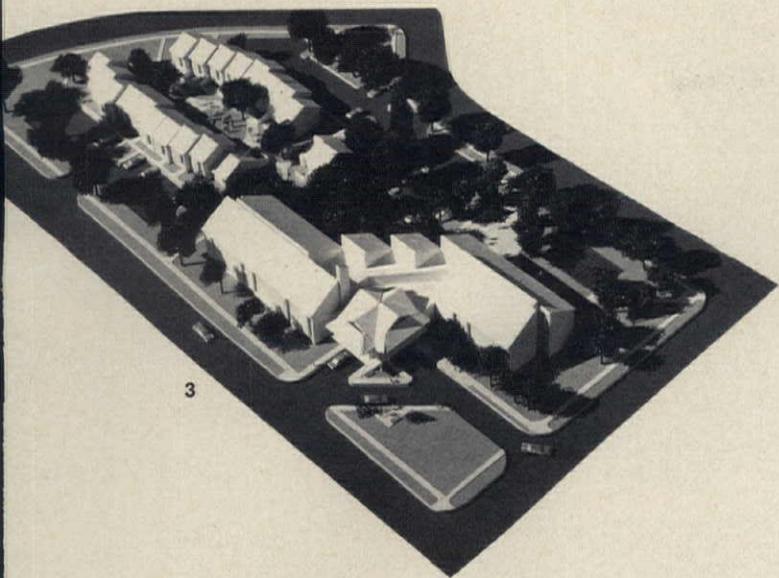
5 Security stations—A series of 20 security stations for the Bay Area Rapid Transit system, San Francisco, is scheduled for construction late next year. The contract for the design was awarded to Ant Farm of San Francisco in a closed competition sponsored by Avant-Guard Security Corp. Total cost is \$500,000.

6 Theater of the future—Laserium Orange Inc. has received rights to acquire a one-and-a-half acre redevelopment site in downtown Anaheim, Calif. for its 120-ft-diameter dome theater where laser-projected films will be shown on a hemispherical screen. The architectural plan for the Dome Theater Complex is by McLean/Schultz of Fullerton. Entrance to the complex is through a 40-ft-high pyramid connected to the main dome by a faceted glass tunnel 60 ft long. The

theater dome has a faceted fiberglass exterior surface supported by a single lamella framework. The theater has 650 seats individually inclined on a 30 degree inclined floor. A Laserium recently opened in Kyoto, Japan, in a building of Japanese design. Showings in the United States have been held in various planetariums.

7 San Lorenzo Park Pavilion—A 22,000-sq-ft museum to display farm implements of the fertile Salinas Valley, Calif., has been designed by Belli, Fox & Kuska, AIA, Architects, of Salinas for a floodplain park-site in King City, Calif. A space frame is used as a roof structure to house the machinery; it also encloses a farmhouse and barn. Security and weather protection are obtained through 20-ft-high rolling aircraft hangar type doors which remain open during the day. Eight-ft-high concrete-covered berms prevent flooding, and traffic to the pavilion is handled by a series of ramps over the berm.

8 Athletic center—The Eggers Partnership, New York, and J. Robert Hillier, Princeton, N.J., in association, have designed a sloped-wall athletic center for Rutgers University, New Brunswick, N.J., which will serve six campuses of the university. The angled site will permit an intermediate entry to the 60-ft structure. The exterior and interior both will be split-face concrete block. Consideration in the design was given to possible future expansion. The first stage will include 7549 spectator seats and a ball-playing space large enough for varsity basketball and three tennis or nine volleyball courts.





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Once more with meaning

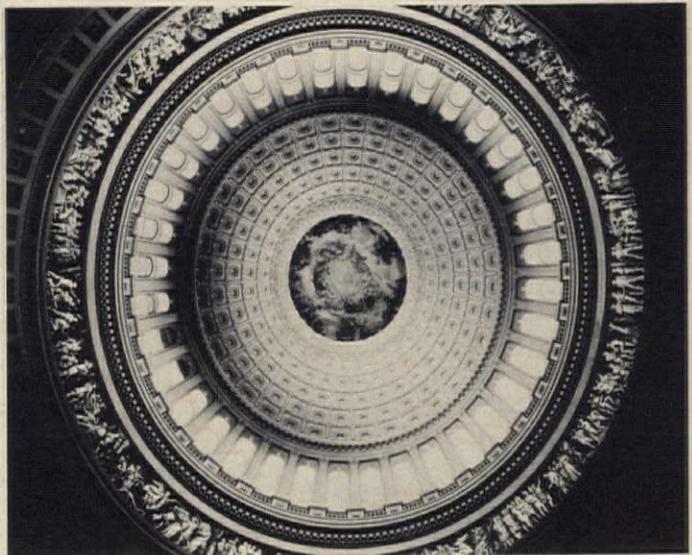
The federal government has rarely been an ideal client. Slavishly faithful to red tape procedures, susceptible to awarding architectural commissions in return for campaign contributions to those in power, wary of innovative thinking in programming and planning, much less design, the federal government has acquired a tarnished image with a good many architects. But as the following title, "U.S. Property Keep Off" points out, the government *does* spend a lot of money—especially tantalizing during a period when private construction has plummeted. And it does concern itself with a wide range of building types: an architect needn't specialize in courthouses to win the federal government as a client. No wonder architects vie for its favors.

The drawbacks apparently inherent in the courtship have been present in varying degrees throughout America's 200-year history. The expansion of governmental construction in the 20th-Century has brought the weaknesses in the system into strong relief. The National Endowment for the Arts' Federal Design Improvement Program, initiated in 1972, promises to attack the problem by promoting "good design" throughout governmental agencies. But so far it has done so with little visible result. Meritorious examples can be found, though they may occur in unpredictable fashion in unexpected places.

In this issue, P/A has assembled a range of federal architecture types that reflect the diverse attitudes of this polymorphous patron. Each of the examples embodies certain approaches to architecture, some of which are disappointing, others desirable when measured against potential possibilities inherent in each situation.

Two buildings of the "monumental modern" genre usually identified with the federal government are presented to illustrate the difficulty in finding the appropriate architectural expression for significant buildings. Not surprisingly, the two are located in Washington D.C. where the fusion of two architectural themes—monumental-classical with antimonumental-modern generally ends in a ponderous pretentiousness. Yet in the U.S. Tax Court (p.52), architect Victor Lundy (with Lyles, Bissett, Carlisle & Wolff) has combined with elegance and panache the classical principles of symmetry, order, and volume with modern ones of planarity and a minimum of detail.

The pitfalls of this attempt are too well illustrated by the



U. S. Capitol dome

design for the National Air and Space Museum (p.70), conceived by Hellmuth, Obata & Kassabaum. Its scheme exquisitely expresses the dangers of overlaying classical and modern themes to create a "monument." Because the contents of the museum itself would warrant an *architecture* with "content," the distressingly prosaic results make it all the more intriguing that some of the same formal devices employed in Lundy's Tax Court are present here.

In contrast to these efforts is the high-style Federal Office Building in Lawndale California (p.66) by Daniel, Mann, Johnson & Mendenhall. Just as much involved in "object-hood" as the other two, the design nevertheless expresses anti-monumental concerns. A reflective glass membrane gives the cubiform volume a lightweight aspect; while structure is concealed, the skin reads legibly as a non-load-bearing element, unlike its Washington counterparts.

Another kind of design sensitivity is exemplified by Gruzen & Partners' Foley Square Courthouse Annex in New York City (p.60). The configuration, scale, materials and massing make an emphatic urban design gesture towards the surrounding milieu. In addition, its program for a correctional center embraces the most enlightened thinking current within the existing criminal justice system.

Finally, the Navy/Marine Training Center by Campbell/Yost/Grube/Partners in Portland, Ore. (p.76) has a vernacular orientation. Its glass and steel shiplike design makes the obvious allusion to its nautically oriented program. However its stick-style double-tiered gallery idiom also relates it by association to other types of modest construction in America.

With each example, the question is not whether or not there is a "right" response, simply an appropriate one for the given situation. Finding that response calls for an understanding of the fact that buildings do communicate in subtle ways the values and belief-systems under which they are conceived. "Meaning" is not simply a matter of what the observer does or does not choose to ascribe to a building. The assemblage of physical facts, how they cohere, and what they trigger in the mind of the observer, affect this understanding. Both government as client and the architect need to confront these issues if they are to create a meaningful federal architecture, instead of confused artifacts devoid of content.

U.S. property keep off

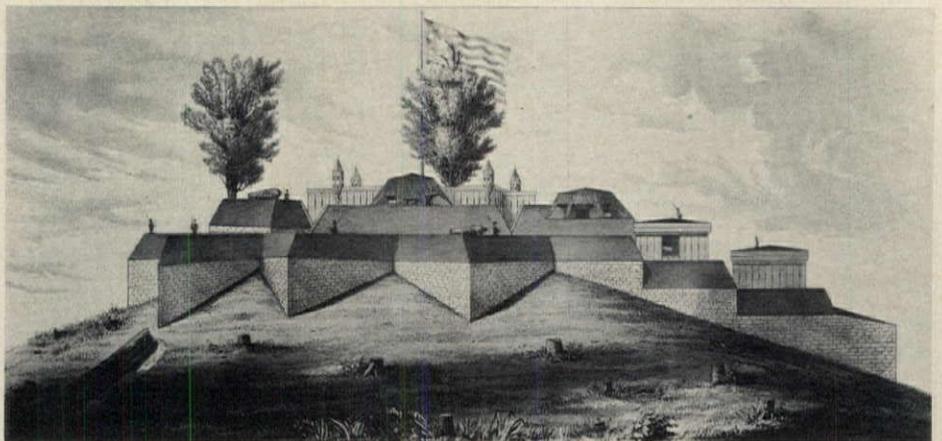
Robert Peck

From beach houses to courthouses to secret cities, federal architecture has run the gamut of building types; the client-to-architect relationship has run a gantlet of stumbling blocks.

In 1974, the most recent year for which there are figures, the federal government owned over 400,000 buildings in the United States and leased space in an additional 50,000 locations. Overseas, it owned or rented additional billions of dollars worth of embassies, war cemeteries, and military installations. In one recent fiscal year, 3400 federal A-E contracts paid out \$140 million in fees. Direct public works spending in the fiscal year just ended was about \$5 billion; grants, loans, and subsidies accounted for another \$10 billion or so of construction. These figures suggest the magnitude, if not the quality, of the U.S. government's current architectural activity.

Two hundred years ago, the national government's property consisted only of the fortifications and encampments of Washington's army. Before it finally settled in the Capitol, Congress met in nearly as many places as Washington slept. In 1776 the Continental Congress met in borrowed space in the Pennsylvania state-house (now Philadelphia's Independence Hall), and was forced to flee even that location late in the year, a step ahead of British occupation forces. In 1789, convening for the first time under the Constitution, Congress acquired a place of its own—the hundred-year-old New York City Hall, which Pierre l'Enfant neo-classically remodeled for the occasion, now long since

Author: Robert Peck, a lawyer, is assistant director of the Federal Architecture Project of the National Endowment for the Arts. Much of the research and photographs are taken from a book on the history of federal architecture being prepared by Director Lois Craig, and the F.A.P. staff to be published by MIT press spring 1977.



Union Army river fort, 1864.

demolished). By 1800, there were only 130 civil servants to be moved into quarters in the new city of Washington.

As the 19th Century progressed, the government planted its presence throughout the states and territories. It built, bought, leased (and, in at least one case, conquered) banks, customhouses, post offices, lighthouses, coastal defenses, frontier garrisons, and—shades of welfare state-ism—marine hospitals. Through the Army and its Corps of Engineers, the federal government encouraged expansion and settlement. The Corps built roads, canals, dams, and bridges, explored new territory (new to whites, anyway), and surveyed railroad rights-of-way. Following the Civil War, industrial growth stimulated construction of larger post offices and courthouses, as well as penitentiaries, mints, assay offices, and immigration stations. As the frontier dwindled, national parklands were set aside, patrolled for a time by the U.S. Army Cavalry.

The client looms larger

World War I put the government in the housing business. Dormitories for wartime clerks sprang up in the open spaces of central Washington, while suburban-style housing estates were built near shipyards and munitions factories. The "return to normalcy" did not immediately revive



World War I shipyard workers housing estate, Portsmouth, N.H. Kilham & Hopkins, architects.

Selected Federal Building Types

agricultural research stations	garages
aircraft repair depots	ice cream plant (for armed forces in Europe)
airports	indian schools
air monitoring stations	laboratories
animal quarantine facilities	libraries
arboretums	missile sites
art galleries	munitions plants
athletic facilities	navy bases
atom smashers	nuclear reactor plants
beach houses	observatories
border stations	performing arts centers
bowling alleys	police stations
bullion depositories	radio/TV stations
comfort stations	trading posts
computer centers	visitor centers
consulates	wind tunnels zoos
dry cleaning plants	
film vaults	
firehouses	
fish hatcheries	

the civil construction program. But late in the 1920s, prosperity caught up with it. Most of the new effort was concentrated on providing permanent office space for the enlarged bureaucracies in Washington. Plans for memorials and grand open spaces in the Capital also were unveiled amid oratory about the founding fathers' original plans for the city and its new position as a prominent world capital.

New Deal pump-priming and welfare policies simply expanded the program. Migrant labor camps, rural and urban housing projects, and Greenbelt towns established a unique federal residential presence. Flood control, electric power, and conservation projects exploded the scale of federal public works undertakings, and federal workers built schools and civic centers, roads, bridges, and airports.

World War II mobilization produced the Pentagon, designed over a weekend, completed in 18 months, and scheduled, the public was assured, to become a storage depot when post-war needs would render it superfluous. (This was not the government's first "fast-tracked" job. That honor probably goes to the Treasury building in Washington, the foundations for which were poured before designs were finished in 1836.) The war effort gave birth to entire cities built and populated in secret—Oak Ridge, Tenn., Los Alamos, N. M., and Hanover, Wash.; and others not so secret—the Japanese-American detention camps. It also gave us the Quonset hut.

... And more mysterious

Not surprisingly, federal activities did not subside to pre-war levels when the war ended. Since then, building types, as well as sheer numbers of buildings, have proliferated. And semi-secret "cities," have remained a part of the architectural mix: military camps under the ice in Greenland and atop the ice in Antarctica, underground missile complexes with living and dining facilities connected by tunnels, military command centers in mountain caverns on giant shock absorbers to withstand near-miss nuclear strikes, and underground cities, complete with sidewalks, street-signs, and caches of currency, to maintain a post-holocaust civilian government. Even apart from this architecture of apocalypse, a sampling (see box) of the current building inventory shows a dazzling variety of building types.

Concentration of effort

Despite the wide variety of building needs, only a few agencies carry out construction to satisfy their individual requirements. Two agencies, on the other hand, the General Services Administration and the Army Corps of Engineers, undertake a lot of work on behalf of others. The Corps of Engineers, which actually employs many more civilians than soldiers, will be responsible for approximately \$1.6 billion worth of military construction in fiscal year 1977. Much of it is constructed for the Air Force, which maintains only a small construction branch of its own. (The Naval Fa-



Interior of dead letter office in Washington D.C. post office, 1880s.



Dining Hall at Ellis Island Immigration Station in 1880s was first shelter in this country for millions of immigrants. The building was crumbling into ruin, until it was re-opened last month as a museum.

ilities Engineering Command will carry out the Navy's approximately \$400 million of construction on its own.) This work comprises airfields, barracks, family housing, equipment shelters, reserve centers, medical facilities, etc. In addition, the Corps has been allocated over \$1.7 billion to continue its historic civil public works

role—river dredging, and dike, dam, and canal work.

The Corps' most unusual work at the moment is superintending \$4.5 billion worth of work for the government of Saudi Arabia: Under the Foreign Military Sales Act, the Corps manages the design and construction of installations for all of the

Federal Architecture

Saudi armed forces, who reimburse the Corps for salaries and other expenses. As in most Corps projects, private American architects, engineers, and contractors are awarded contracts to execute the work. And, as in all work done for the Arabs, there has been controversy over the status of Jewish employees.

The Public Buildings Service of the General Services Administration, often called "the government's landlord," is the successor to a line of federal building offices dating back to the mid-19th Century. In 1949, to bring order to the untidy wartime proliferation of agencies, GSA was set up as a central procurement agency and was given charge of non-military construction. In this role, GSA has built everything from prisons to payment centers for Social Security; "pay up" centers for Internal Revenue; post offices for the old Post Office Department and museums for the Smithsonian Institution. The agency is responsible for security, maintenance, interior planning, and general management of most civilian facilities. In addition, GSA rents privately owned space, which now accounts for over a third of the GSA-managed federal work space.

In the general cutback of civilian construction funds that President Ford announced in this year's budget, GSA's new construction and major alteration outlays have been set at \$250 million. But \$150 million of that is already earmarked for construction of a new Government Printing Office in Washington.

Other siblings

Two well-endowed agencies this year are the Energy Research and Development Administration and the U.S. Postal Service. ERDA will pour about \$1.5 billion mostly into nuclear fission and fusion facilities, and an increased, yet comparatively small amount, into solar energy conservation research. The Postal Service has budgeted about \$1.2 billion for buildings, but this includes land acquisition costs.

Other agencies that carry out construction include NASA, the space agency, which will spend about \$124 million in 1977, the Veterans Administration, with \$210 million for its hospitals and extended care facilities, the Tennessee Valley Authority, the Bureau of Indian Affairs, the National Park Service, and the Foreign Buildings Office of the State Department. This latter agency gained recognition in the 1950s and 1960s for its employment of many of America's best known architects. Edward Durell Stone's embassy in New Delhi was touted; Saarinen's design riled Londoners to most undiplomatic language in defense of Grosvenor Square. Other embassies were variously criticized and praised. But, in any case, they attracted public attention.

The ruinous connection

The Architect of the Capitol presides over



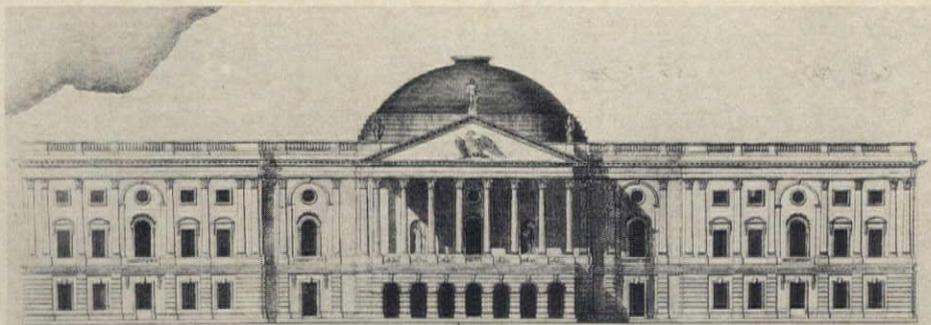
Indian corn capital for stair in U.S. Capitol by Benjamin Latrobe c. 1809 (above left); capital in Model Hall, U.S. Patent Office by Robert Mills 1839 (left); Greek revival portico of New York Customhouse according to design by Town & Davis built 1834 to 1842 (above).



Post Office, New York 1878, by A.B. Mullett features numerous columns in style of Second Empire.



Modernism creeps in: Federal Reserve Building in Washington by Paul Cret, 1941 (left); another more severe extrapolation in St. Paul Courthouse by Harstick Lundgren & Associates, 1967 (above).



East Front of the Capitol of the United States
as originally designed by William Thornton...and adopted by General Washington...President of the United States.

William Thornton's east front of U.S. Capitol c. 1796 based on his 1792 design.

the legislative branch enclave on Capitol Hill in Washington. The Architect's job is tradition-laden and prestigious, though not altogether envious. Building plans and management are overseen by the legislators in a swirl of standing and special committees and commissions, but the Architect takes the blame when a Rayburn House Office Building results. It would be wrong to assume from his title, moreover, that the Architect of the Capitol, or any of his staff, actually designs buildings. With few exceptions, federal agencies contract architectural design work out to private firms and individuals. It was not always this way. In fact, for much of our history, government architects performed this work.

The first federal architect was Benjamin Latrobe, who was also the only trained, full-time architect in the country at the time of his appointment in 1803. His job was to superintend construction of public buildings in Washington, which meant chiefly the White House and Capitol. Latrobe liked neither building's design—selected in competitions he hadn't entered—and modified the Capitol liberally, which put him in dispute with Congress, the winning dentist-designer William Thornton, and assorted officials. Forced out in 1812, Latrobe said, "government service is a ruinous connection."

Charles Bulfinch and Robert Mills ignored this warning and took up the position in turn. They were more fortunate in conceiving and executing some designs of their own. But legend has it that Mills lost the job to an economy-minded Congress irate over the cost of the Ionic columns on the Treasury Building.

Meanwhile, Congress authorized only a handful of buildings outside of Washington, and it was not clear who should design them. Mills grabbed the commissions for as many as he could and local architects got the leftovers. The Office of Construction established in the Treasury Department around 1850 quickly began preparing its own designs and its post-Civil War successor, the Supervising Architect's Office, designed most of the government's post offices, customhouses, fair buildings, and other non-military facilities from then until World War II.

As early as 1859, a building contractor in Texas prevailed on Senator Sam Houston to rail against government-supplied

plans for a customhouse. By 1875, the American Institute of Architects was waging a campaign for legislation to give private architects a share of the work. In 1893, the AIA-sponsored Tarsney Act was passed. In contrast with current AIA policies, this law encouraged the government to select private architects through design competitions. The law was repealed in 1912, when Congress determined that the work of the Supervising Architect's office was less costly. Agitation for federal commissions for private architects subsided until the Depression years when, predictably enough, it broke out at fever pitch. The newly formed Depression agencies tended to form their own architectural sections, however, and the private architects made only limited headway until war preparations overwhelmed the government staffs. Civil service architects never regained their design role.

Second-class citizens

Private architects are selected for GSA and most other civil and military jobs under a system little changed since its adoption in 1939. The "Brooks Bill" wrote the system into the statute books in 1972, an accomplishment for which Representative Jack Brooks was made an honorary member of the AIA. In the view of the AIA, architectural design performed by government agencies deprives "architects" of their livelihood. Actually, since in-house design expands opportunities for public architects, the AIA position makes sense only if public architects are regarded as second-class members of the profession.

The states purpose of the Brooks Bill procedures is to select "qualified and competent" professionals for government design projects. To do this, it generally requires agencies to advertise design opportunities and to select, from those expressing interest, at least three finalists, ranked in order of preference. The agency negotiates with the first-ranked to try to agree on a "fair and reasonable" fee for the work. If negotiations fail, the agency turns to its second preference, and so on. By law, the fee is limited to 6 percent of the construction budget for the project. Trouble usually comes when the architect and agency start discussing what services have—and have not—been included.

As it was intended, the system effec-

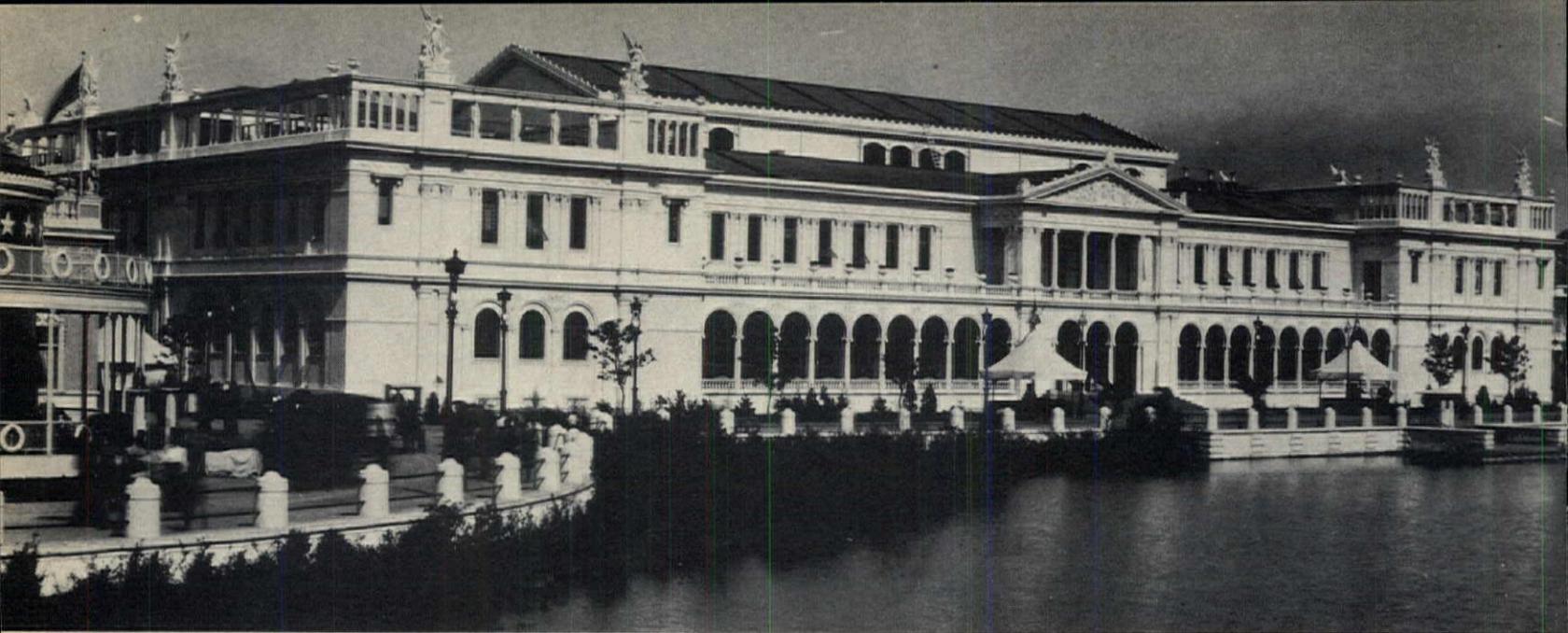
tively precludes any form of competition based on fee. In practice, it has precluded design-based competition, too. Only recently has GSA begun asking designers competing for a project award to submit technical proposals. Under GSA's conventional selection procedures, a regional or national panel of private architects initially screens all those expressing interest in a project and selects five to eight finalists, who are then ranked by an in-house GSA board. Selection and ranking are based on reviews of firms' or individuals' background and experience. All other agencies use in-house panels both to select finalists and to establish rankings. The Postal Service sends teams to finalists' offices to conduct numerically evaluated interviews. Others invite finalists to appear at the agency offices.

The National Park Service is the exception; it maintains its own design staff and contracts with private architects and engineers hired only for large projects. The Service is exceptional, too, in the consistently high marks critics give the design of its facilities. Perhaps because the Service's architects participate so extensively in the design of facilities they seem more willing to go out on a limb in selecting outside architects: it is, for example, the only government agency that has hired Venturi & Rauch (Franklin Court, P/A, Apr. 1976, p. 69.). The planning staff is conducting a unique master planning process for Yosemite National Park that has so far encouraged over 10,000 people and organizations to pore over detailed maps and documents and tell the Service how they think Yosemite should be run.

Other government agencies have architectural staffs, too. But they generally design only minor building alterations: most of their work involves programming, specification writing, and reviewing designs and working drawings submitted by private firms. Private architects frequently complain of the specifications being too restrictive and the design reviews nit-picking. In one recent selection interview, as the private architect tried to persuade the selection committee of his expertise in hospital programming, he was cut short and told that the agency already has a standard plan. The architect was asked only to concern himself with the building elevations.

Porkbarrel architecture

One ostensible purpose of the Brooks Bill is to insulate the selection process from political pressure. Whether that happens or not, architects do not seem to believe it does. Experienced firms routinely contact their congressional representatives for assistance during the selection process. During the Nixon years, there were allegations that GSA commissions were bought with political contributions, and that appointments to the GSA Advisory Panels were made on the basis of political loyalties. Nevertheless, while state and local A-E and construction kick-back scandals made the newspapers and the courts in the early



The Women's Building at the 1893 World Columbian Exposition in Chicago. Funded by Congress, building construction was entrusted to a "Board of Lady Managers," who selected MIT's first female architecture graduate, Sophie Hayden, to design it.

1970s, federal building programs emerged unscathed. The GSA Administrator at the time, Arthur Samson, however, described his job as "so politically sensitive, it's unbelievable." The Supervising Architect back in 1875 similarly reported, "it is difficult, if not impossible, to separate the Office of Supervising Architect from political control." Politics is, of course, the American way. If it does not determine who gets hired and fired, it certainly influences the disposition of building funds.

Military installations tend to cluster in geographic areas represented by representatives and senators on the armed services committees; an analogous system works for civilian agencies. It is no accident that sizable building projects must run a gauntlet of Capitol Hill and White House approvals, and that federal office buildings are frequently named for local Congressmen.

Porkbarrel politics has a long and colorful, if not too honorable past. One former Supervising Architect recalled that "the prominence of the Congressman was the moving consideration" in deciding how much to spend on a building in a particular location. "The result," he said, "was as incongruous as putting a \$90 saddle on a \$20 burro." During a 1916 debate on porkbarrel, one Congressman admitted that his district contained a half dozen federal buildings much more lavish than they needed to be. But, he added: "the other fellows in Congress have been doing it for a long time and I can't make them quit. Now we Democrats are in charge of the House and I'll tell you right now, every time one of these Yankees gets a ham, I'm going to get a hog."

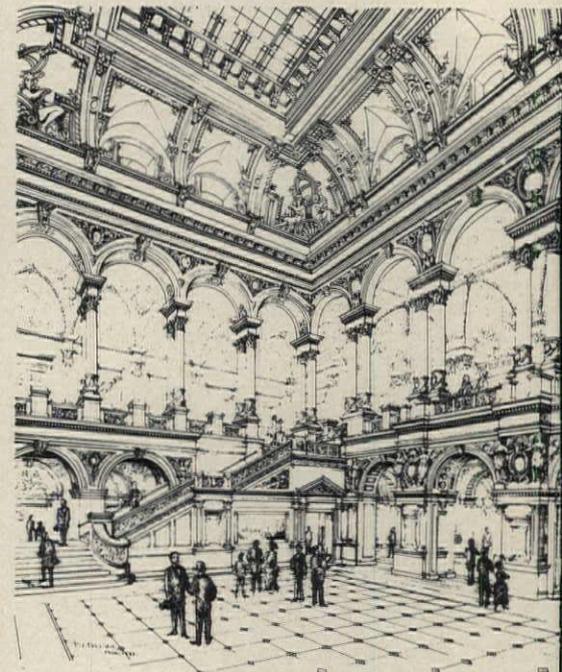
Meaning in federal architecture

There is another side to the porkbarrel issue. The presence of a federal building in a far-flung town connected it symbolically with the rest of the Union, and gave the town a sense of importance. What the customhouse, assay office, and post office once were, the federal office building is now—a tangible symbol of nationality.

Thomas Jefferson recognized this spe-



A few thousand citizens lived in the capital at Cheyenne, Wyo. with unpaved streets when this substantial federal building was erected in 1903 (above). In 1888 John Smithmeyer and Paul Pelz won a competition to design the Library of Congress (right). Congress amended plans and finally refused to pay architects full fees. Smithmeyer's career was ruined and he died destitute. In 1894 AIA President Dan Burnham protested design of Buffalo post office, (below) executed by the government's Supervising Architect. Burnham wanted private architects and Beaux-Arts design.



Alfred Mullett, Supervising Architect of the Treasury, 1865 to 1874, sued the government in 1889 for fees due on designs prepared off the job. He lost, chiefly because the statute of limitations had run out. Shortly after his appeal failed, he committed suicide.



Early 1930s VA hospital in Albuquerque, N.M. (above). 1906 cavalry barracks now a boys dorm for Navajo school (right) in Ft. Wingate, N.M.



The urge to save: People in boats protest proposed demolition of Thomas Point lighthouse in Chesapeake Bay, built in 1875 and saved for now.



Hallway in old San Francisco Mint, 1874 (above) once scheduled for demolition now is being restored as museum and numismatic center. Mixed use comes to federal building (below) in Federal Home Loan Bank Board project designed by Max Urbahn & Assoc. for Washington, D.C. to include retail space, ice rink, plus offices.



cial role of public buildings when he urged that they be patterned after Roman architectural models, in order to express visibly the nation's republican principles. Federal architecture has followed Jefferson's advice for most of its history, although it has borrowed freely from both the Greeks and the Romans. Occasionally, however, it added its own indigenous motifs, such as corn cob and tobacco leaf capitals atop the columns. There was a lapse in the latter 19th Century, when the Supervising Architect built in the prevailing eclectic styles of the Gilded Age. In 1900, the government returned to the classical, acceding again to popular taste, then spellbound by the Beaux Arts spectacle of the 1893 Chicago World's Fair.

Both public and private architects continued to turn out classical public buildings right through the 1950s. In the 1930s, International Style proselytizers argued that contemporary functions demanded a new architecture, but officials repeatedly pledged allegiance to the government's stylistic tradition. Modern architecture made its influence felt, however, and federal buildings took on an increasingly austere, starved classicism.

In 1937, Joseph Hudnut, Dean of Harvard School of Architecture, pointed up the fallacy of the traditional official style, observing that the Classic Revival had been embraced by Napoleon as well as Jefferson and had signified "sharply opposed ideals" to the two of them. A comparison of federal and fascist buildings demonstrates that there was a Government International Style in the 1930s that reflected antagonistic values. As Hudnut said, "Symbols obviously are treacherous materials."

An end of sorts came for classicism in 1962 when an ad hoc sub-cabinet committee issued a set of guiding principles for federal facilities designed in a "style and form which is distinguished and which will reflect the dignity, enterprise, vigor, and stability of the American National Government." But it added: "The development of an official style must be avoided."

When a Task Force on Federal Archi-

tecture, convened in 1972 by the National Endowment for the Arts, reported its findings, it attempted to shift attention away from the symbolism of style to the meaning of federal buildings' use. The Task Force found that, in giving up their symbolic *style*, federal buildings had also abandoned their symbolic *roles* as reminders of national traditions and as federal participants in community life. It noted that federal facilities were being designed and managed to keep the public out—a strange "public" buildings policy for a national government priding itself on its openness. The Task Force recommended the government turn to adaptive use and mixed (commercial, cultural, and recreational) use in its buildings and facilities programs, in order to reclaim for them the meaning and prestige they used to bear.

Senator Howard Baker, a member of Task Force, introduced an adaptive/mixed-use bill in the Senate in 1975. Under the management of Senator James Buckley and with bi-partisan support, the bill passed the Senate and had been introduced in the House by Representatives Bella Abzug and Hamilton Fish.

Hudnut once wrote, "No architecture can protect a symbol . . . If we love a symbol we call it beautiful; if we hate it, no art can make it less hateful." Accessible, adaptive use and mixed-use federal architecture probably cannot overcome jaundiced attitudes toward government, but it just might change the government's attitude. It was early 20th-Century pride in government, not affection for architecture, that prompted a Congressman to these remarks about the ornate federal buildings of his day:

"[The country boy] sees very little of the blessings of government beyond the post office . . . and if I had the power I would erect for every post office a building representative of the sovereignty and the glory of this great country . . . Is it worth nothing to inspire patriotism and love of country? . . . No youth or citizen ever looked upon a Federal building in which the business of his country was being conducted but that he became a better American." □

Monumental suspense

Stanley Abercrombie

Federal monumentality is reinterpreted in a new tax court designed by Victor Lundy, in joint venture with Lyles, Bissett, Carlisle & Wolff, which is a tour de force structurally as well as aesthetically.

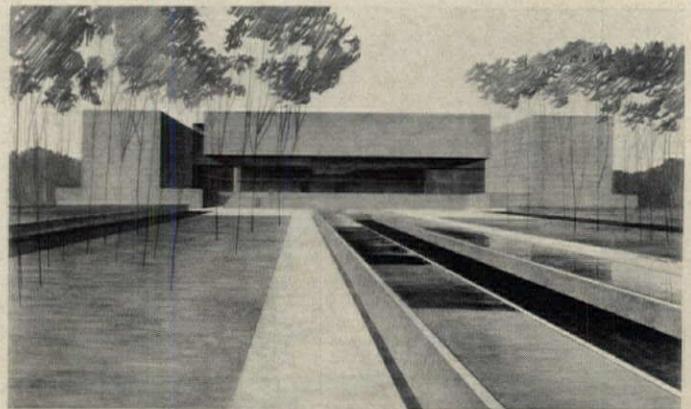
Of all the many dozens of buildings planned and constructed under the auspices of the General Services Administration, a picture of only one hung in the office of Walter Meisen when he was Acting Commissioner of the GSA's Public Buildings Service. That one was the recently finished U.S. Tax Court building in Washington, and Commissioner Meisen made an obvious choice, for few other buildings commissioned by our federal government in the last half century deserve to be displayed on a wall anywhere.

Washington's depressing parade of architectural mediocrity is due only in part to the problems of dealing with government agencies as clients. A plethora of checks and balances, bound about with so much of that infamous red tape, has allowed few ideas to emerge uncompromised. These problems have been alleviated somewhat in recent years by an interested handful of Washington officials—among them Meisen himself and Karel Yasko, who preceded him at GSA (both, incidentally, architects).

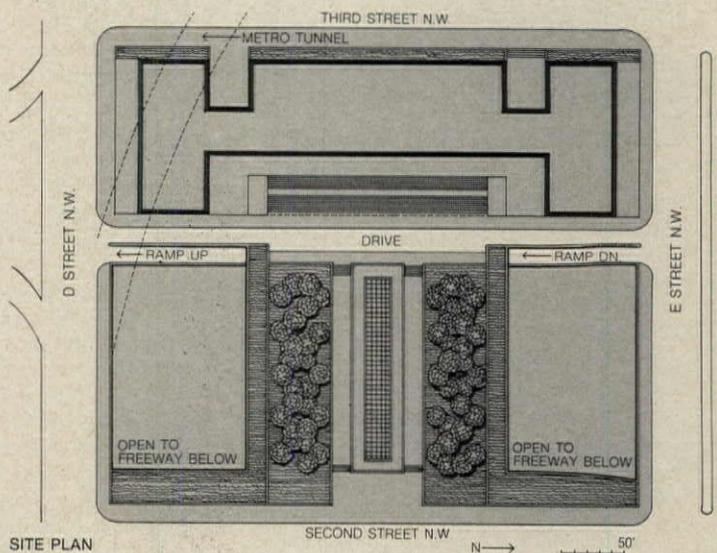
But the basic problem has not been with government's confusing and exasperating demands as much as with architects' feeble responses. In the last 40 years or so, it has been difficult for architects to be both respectably current and convincingly monumental. The housing of an important public agency suggests monumentality; the tenets of recent style have suggested traits at heart antimonumental: asymmetry, simplicity, plainness, planarity, thrift. The attempted weddings of these traits with the traditional trappings of monumentality have yielded the most gruesome aesthetic miscegenations of our time. "Tasteful blends of the old and new" have failed to please either those who like the old or those who like the new, and, particularly in the District of Columbia, they haven't been so tasteful, either.

The trials of the Tax Court have been even more trying

Author: Stanley Abercrombie is an architect in New York City and a former senior editor of *Architecture Plus*.

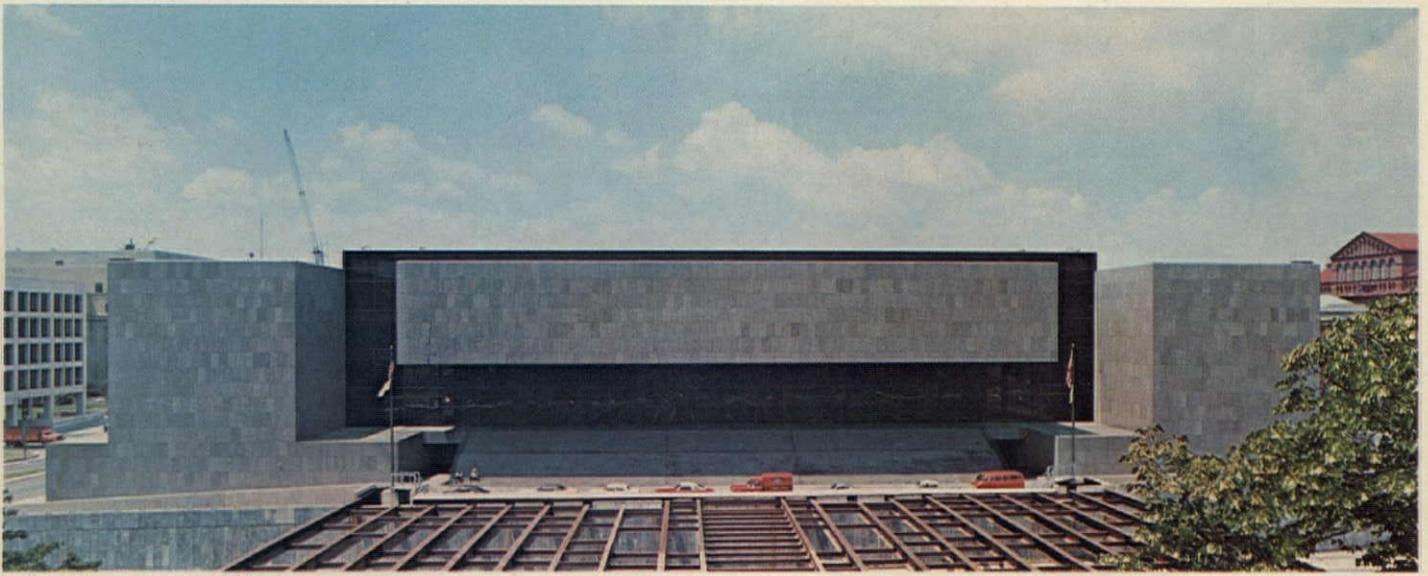


Victor Lundy's sketch of Tax Court with completed plaza.



SITE PLAN

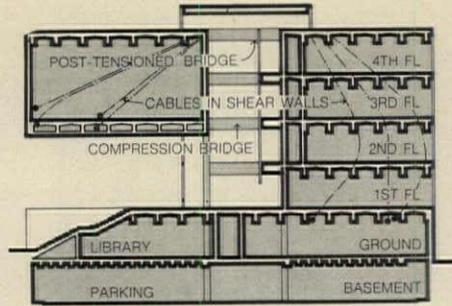
than those of most government buildings. It was back in 1964 that federal funds were first earmarked for the project (only \$6.5 million as compared to the actual cost of more than \$14 million). In 1965 the commission was given to a joint venture of the offices of Victor Lundy and Lyles, Bissett, Carlisle and Wolff—Lundy being responsible for design decisions and LBC&W responsible for administration and contract documents—with crucial assistance from the structural engineer, Dr. Hannskarl Bandel of Severud-Perrone-Sturm-Bandel. After a change of site, after approval



Court building faces uncompleted plaza over freeway to east; 200-ft-long courtroom block cantilevers 53 ft over entry stair.

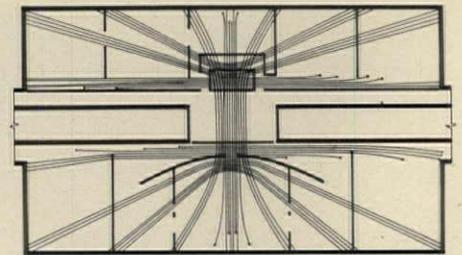


U.S. Tax Court

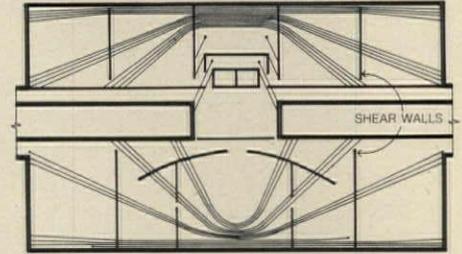


SECTION B

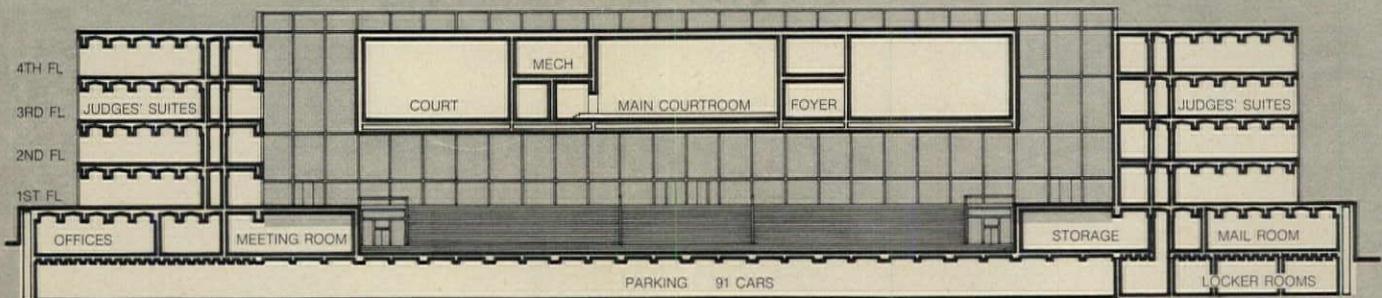
Cantilever of 4000-ton courtroom block 53 ft beyond its six supporting columns is accomplished with 145 post-tensioning cables (total weight: 80 tons) buried in transverse walls (section above) and in slabs at roof and 3rd floor (plans, right). Bridge spanning public hall serves as compression strut.



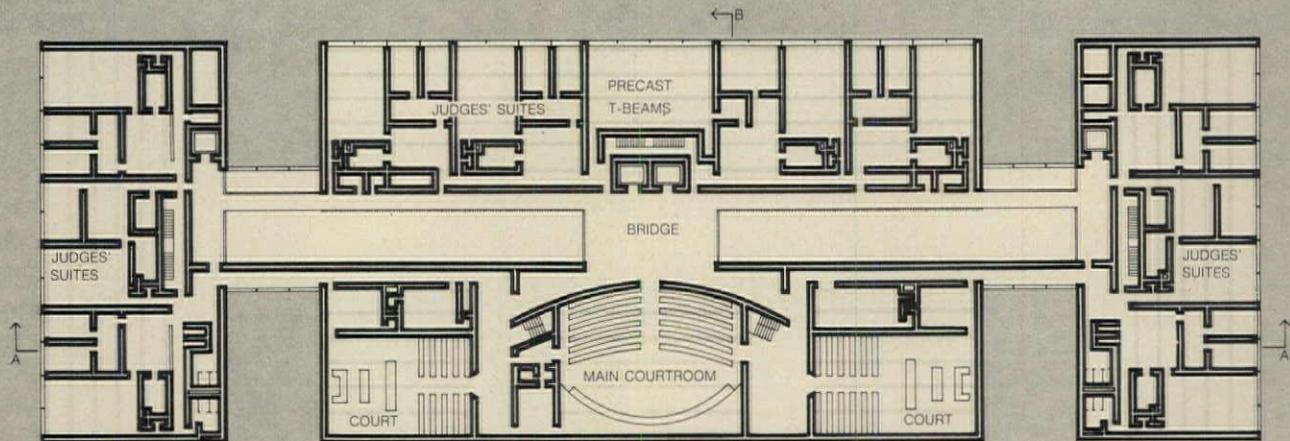
CABLES AT ROOF



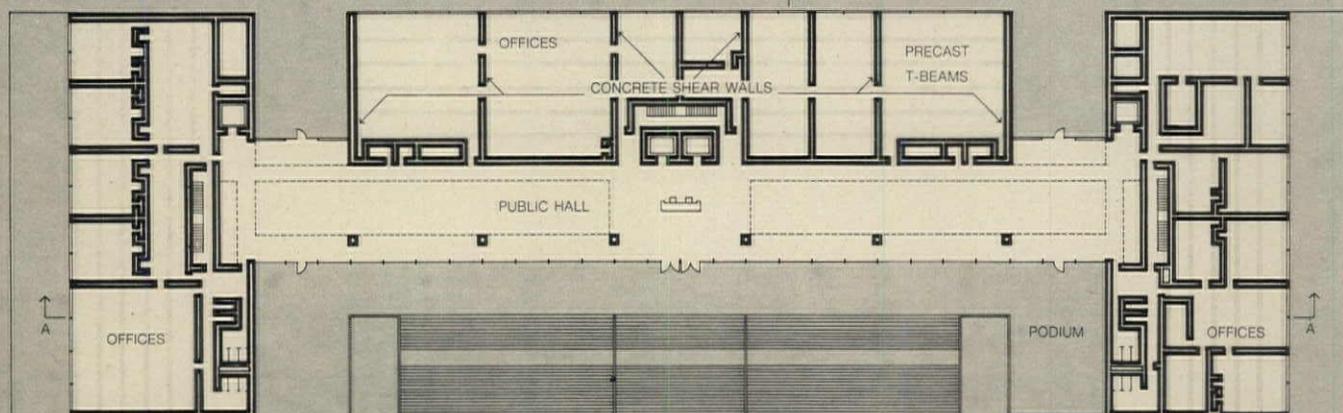
CABLES AT 3RD FLOOR



SECTION A



THIRD FLOOR PLAN



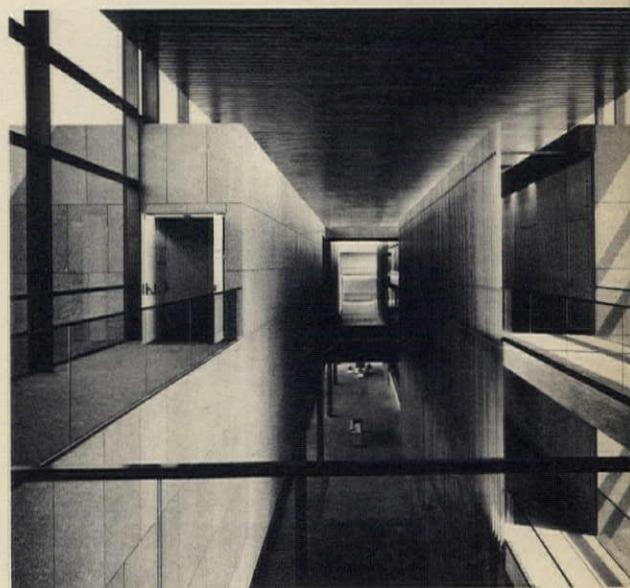
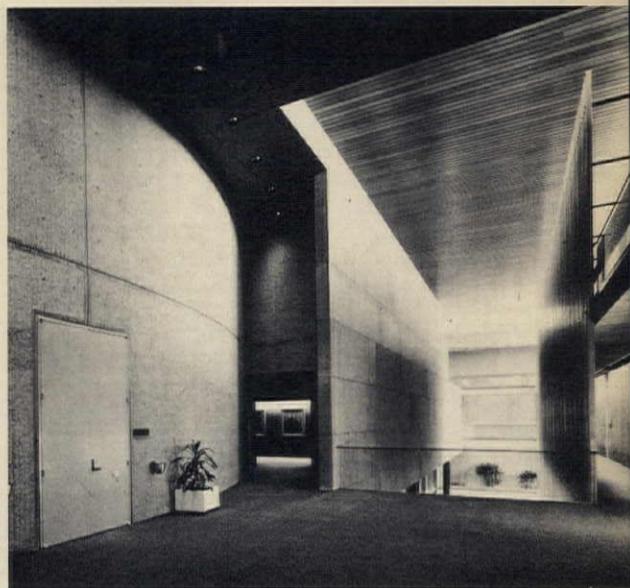
ENTRANCE LEVEL PLAN

from the GSA, the National Capital Planning Commission, and the Fine Arts Commission, and with working drawings almost completed, the federal government directed its attention (and funds) towards Viet Nam, and the project was shelved. In July 1969 working drawings were finished in hopes that construction would proceed as soon as funds were unfrozen. This hope faded when President Johnson announced that a new Federal College would be created in the buildings that were to have been razed to make way for the Tax Court. Finally, however, an adjacent site (originally intended for, but abandoned by, the Federal Home Loan Bank Board) became available, and the architects made further design revisions to suit it, including a new entrance plaza spanning a below-grade section of the Interstate 95 expressway. Twelve years after planning began, the plaza is still in construction, but promises to provide an appropriately generous context for the building. In many ways, Lundy feels, the present site accommodates his design bet-

ter than did the sites previously considered.

That the resultant building seems so uncompromised after such changes and delays can be due only to a rare combination of perseverance and design conviction. The Tax Court is thoroughly timely, thoroughly satisfactory in its function (those interviewed of the building's resident judges were all uncommonly enthusiastic), and thoroughly monumental.

"What I've done," Lundy says, "is taken a monolithic block and broken it apart." This breaking apart, into very neat fragments indeed, and with several of the elements showing granite surfaces on all sides, only emphasizes, from the outside, the building's mass. Inside, by means of glass between the granite blocks and a clerestory as the highest building element of all, the breaking apart allows an unexpected amount of light. The central circulation spaces are bright, spacious, and complemented with some elegant detailing of repeated teak strips. Outside, in Washington's



In public hall (left) teak strips screen corridors to judges' chambers; clerestories (above) light wood ceiling. Curved wall of bush-hammered concrete (top) encloses main central courtroom on third floor.

U.S. Tax Court

intense sun, the building elements read strongly; inside, there is ingratiating, but not inappropriate, delicacy. And, most basic of all to this design, there is mystery.

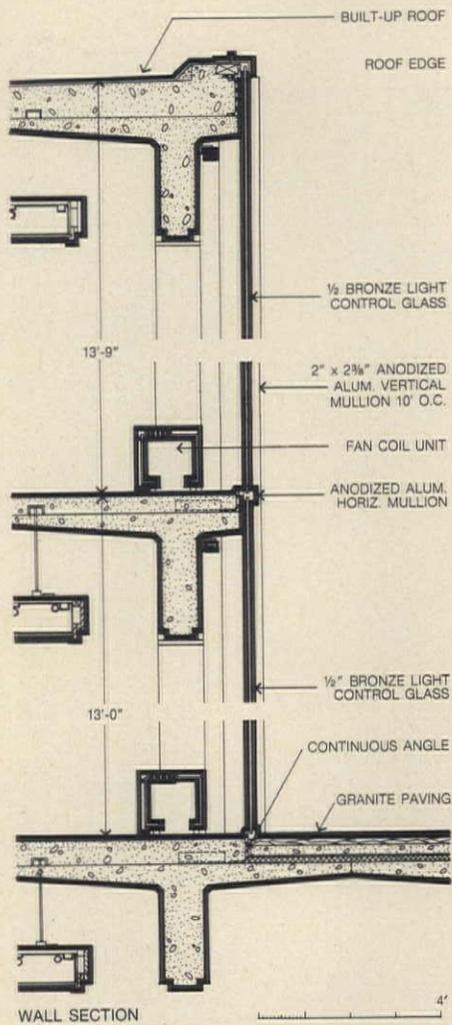
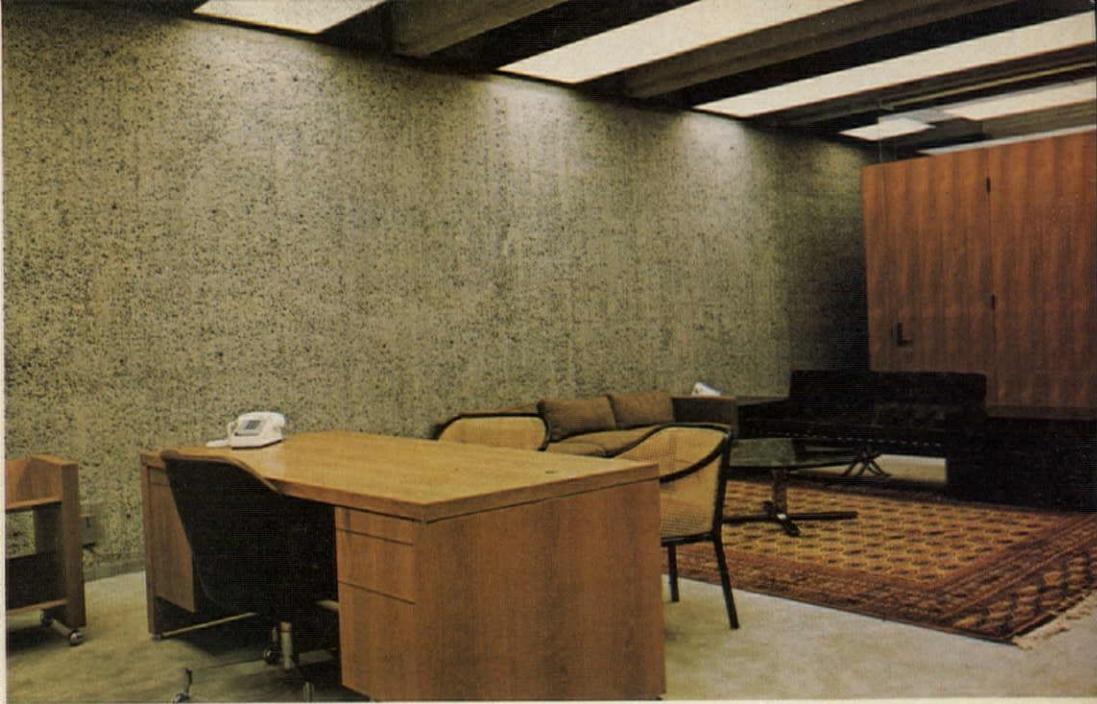
Two parallel philosophies are apparent in post-Beaux-Arts design: the show-it philosophy and the hide-it philosophy. Arguments of equal invalidity can be dragged out to support the superiority of either school, and most buildings mix the two with impunity. But the U.S. Tax Court is an unusually pure example of hiding; both in concept and in details, this building achieves its effects not by explaining itself but by refusing to do so. It is the work not of the architect as constructor but of the architect as magician.

The concept of a 200-foot-long granite-faced block cantilevered for 53 ft over the building's glass entrance wall is itself a prodigious feat of magic. Its actual method of support (a series of over 100 post-tensioned steel cables 3 in. in diameter, the largest cables being manufactured at the time) is nowhere hinted at, nor is the fact that this hovering



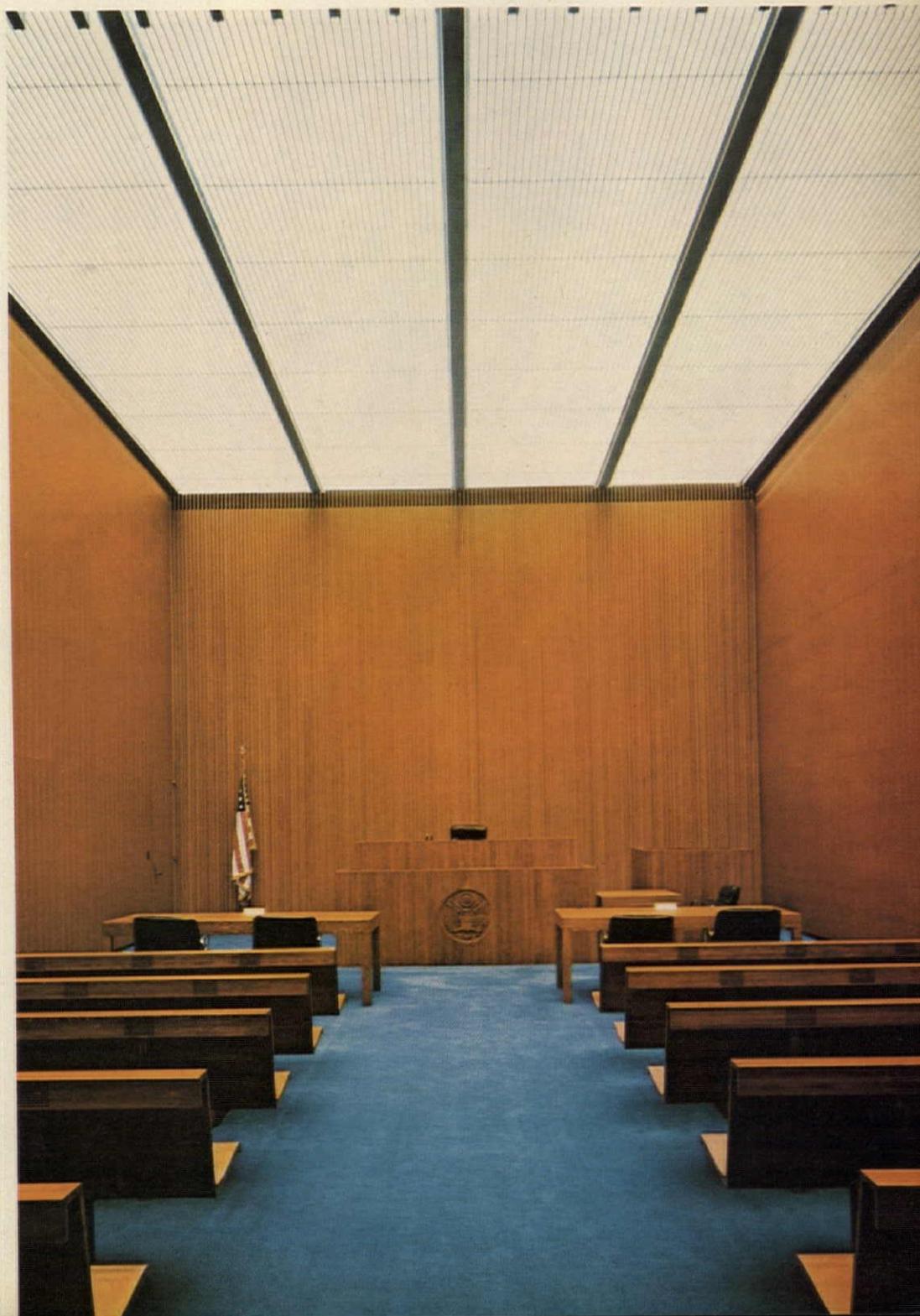
Shear walls of bush-hammered concrete at 40-ft intervals separate judges' suites. Wood-framed lighting fixtures are flush with stems of precast concrete tee beams. Glass strips above teak cabinets assure privacy.

Photo: George Hyman Construction Co.



Typical curtain wall at offices and judges' suites has bronze-tinted glass covering full 13-ft floor-to-floor height. Mullion covers on exterior are 2 3/4-in. wide—the vertical bands projecting 2 in., the horizontal less than 1/2 in.

Large central court (left) has curved granite bench answering curves of rear wall and seating. Walls are of teak plywood or teak strips over acoustic fabric. Wood is treated with fire retardant. Smaller flanking court (right) has similar details and furnishings.



U.S. Tax Court

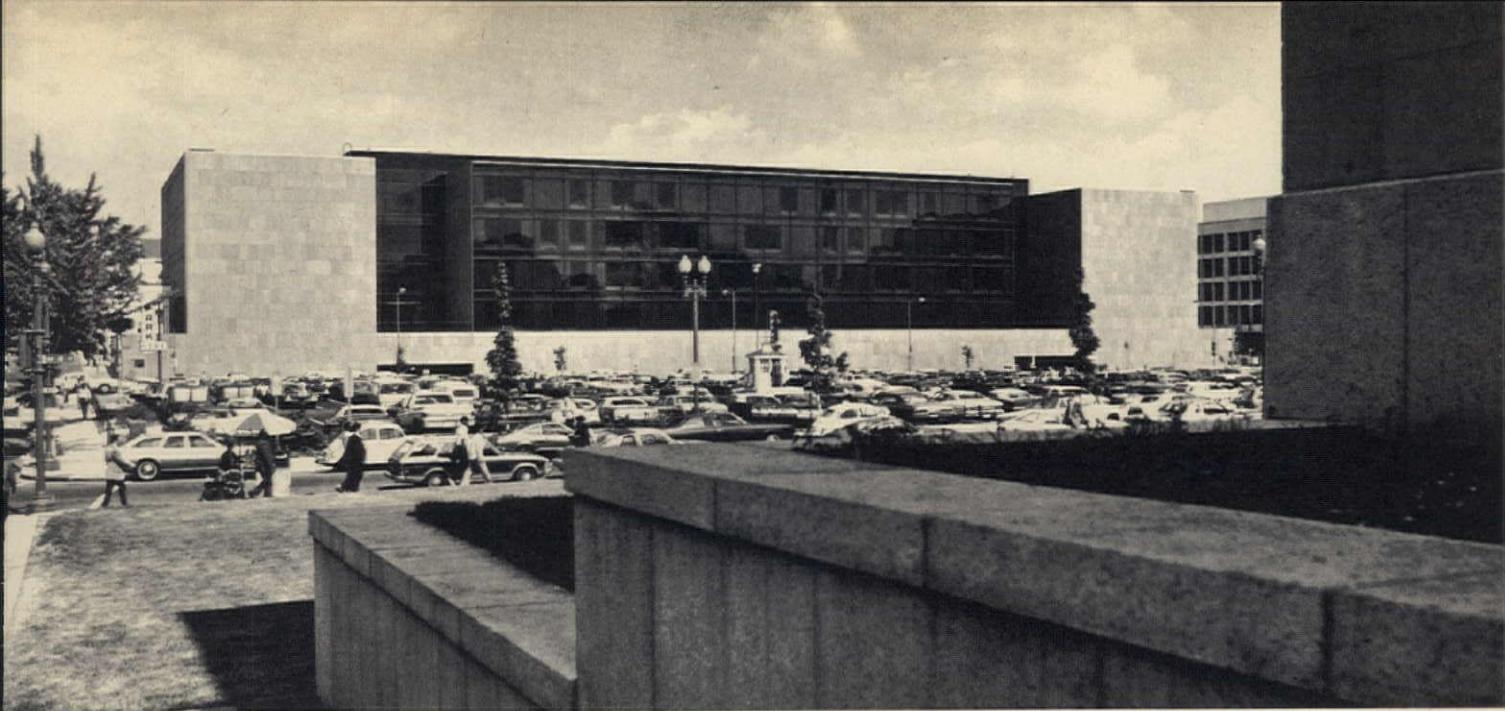
form contains three important courtrooms. Is this projection a block of solid granite? Is it paper thin? Can that material which surrounds the projection really be glass? Have the laws of physics been rendered inoperative? The granite form hangs, offering no answers.

Nor are there clues elsewhere. Corners are turned, and the granite either continues or is changed abruptly—within a fraction of an inch—to a glass curtain wall, with no indication of wall thickness or of function beyond the glass. And the hovering cantilever's corners are suspended *precisely* above the opposing corners of projections on the podium below, the two forms not overlapping by any possible shared wall thickness.

References to the size of the human body are minimal also. From the exterior, only the riser heights and tread depths of the great entrance stair give any basis for judging the building's size, and these steps are so superhuman in width (half of Washington could enter this building at once)

Flame-treated granite covers walls and soffit of cantilevered block; balustrades are of ½-in. tempered glass, set into stone.





Bronze-tinted glass clads judges' suites on west front and ends of building.

that, even in this case, one questions one's judgment.

To say that this is a building which is intentionally secretive about its nature and structure is not to criticize it but merely to characterize it, for however helpful structural clarity may be to other aesthetic conceptions, in this case the deliberate mystery seems perfectly appropriate. In this simple composition of smooth forms there is dignity; in this symmetry, there is repose; and in this almost unfathomable structural bravura there is clear evidence of engineering abilities not possessed by any earlier age of builders. Much has been written about the search for a building style both monumental and appropriate to our time, and some have doubted that such a style could exist or was even a valid goal. Now, and in Washington, of all places, it is built. □

Data

Project: United States Tax Court, Washington, D.C.

Architects: Victor A. Lundy, New York, N.Y., and LBC&W, Alexandria, Va. (Homer D. Blackwell, partner-in-charge; John Tankard and Vello Oinas, project architects; Jerry R. Houston, coordinating architect).

Contractor: The George Hyman Construction Co., Bethesda, Md.

Program: building to house three ceremonial courtrooms, administrative and support facilities, and standard suites for each of 32 judges and 16 recalled judges. Parking garage for 100 cars on the basement level.

Site: urban block, bounded on three sides by streets, adjacent to a plaza spanning Interstate 95, and to the new labor building.

Structural system: precast, prestressed concrete tees span between continuous vertical reinforced concrete shear walls 40 ft apart. Courtrooms are contained in a concrete box cantilevered 53 ft over entry, supported by six columns at rear wall, with post-tensioned steel tendons tying court block foundations to concrete shear walls.

Mechanical systems: court block has multi-zoned air handling unit; office spaces use perimeter system of low-profile floor-mounted fan coil units using an interior terminal reheat system; steam and chilled water supply is from the new labor building.

Major materials: exterior is clad in a flame-treated pink pearl Georgia granite and bushhammered architectural concrete. The remainder of the building is enclosed in bronze-heat absorbent glass and bronze-anodized curtain wall. These materials are also used in the building interior; granite floors, interior office spaces are carpeted; ceilings are exposed concrete structural tees. (See Building materials p. 101.)

Consultants: Severud-Perrone-Sturm-Bandel Structural Engineers, New York, N.Y.; LBC&W, Alexandria, Va., mechanical, electrical and civil engineers; Ranger Farrell, acoustics.

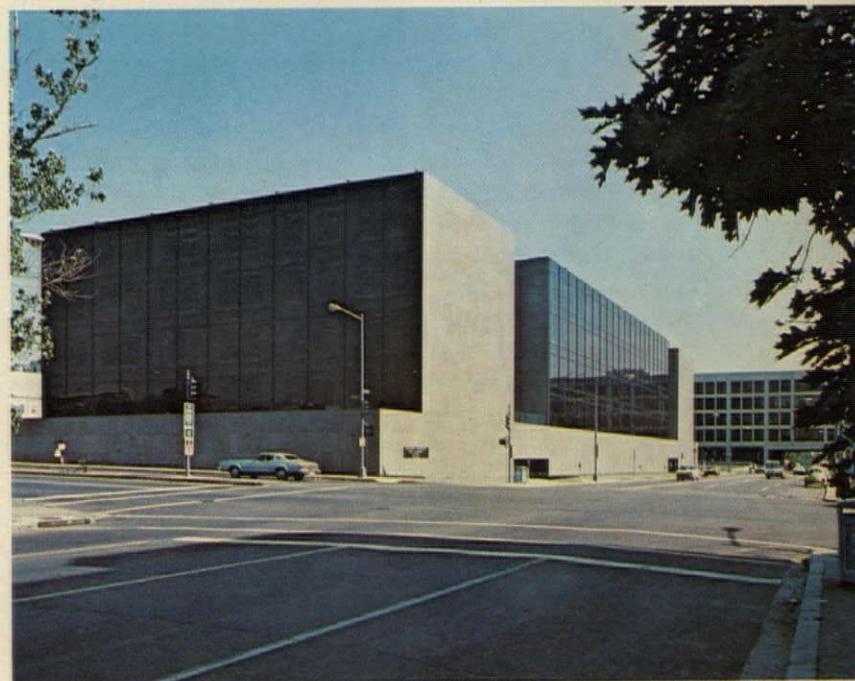
Client: General Services Administration, Public Buildings Service; U.S. Tax Court, using agency.

Costs: \$14,730,582, total building cost; \$2 million, estimated, for plaza.

Photography: Robert Lautman, except as noted.



Granite-faced ground floor houses law library and document files.



A higher level of concern

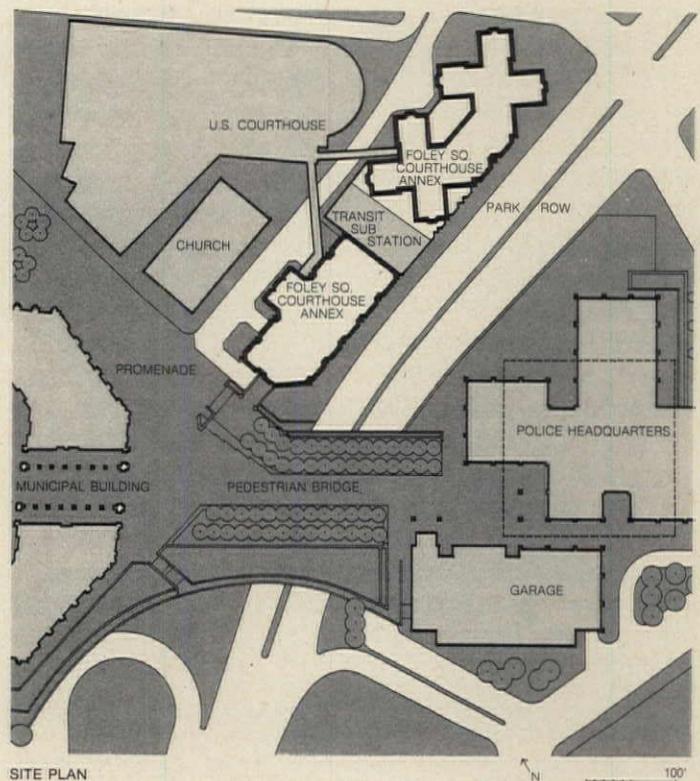
Gruzen & Partners' Foley Square project maintains the urban "vernacular" aspect of its downtown New York setting while reflecting an enlightened approach to the design of correctional facilities.

At last the kind of building that follows neither of two precedents seen in federal architecture in past years. It neither attempts to make a monumental statement, ending up with a blowsy gesture towards being "beautiful" or "significant." Nor, on the other hand, does Foley Square ignore formal or symbolic concerns, ending up mired in forgettable mediocrity. Instead, this irregularly shaped and textured chunky block comprising two buildings—the offices for the U.S. Attorney and the Metropolitan Correction Center—reflects less pretentious architectural concerns. In its unassertive meat-and-potatoes manner, it espouses vanguard architectural values.

In urban design terms, the linked buildings forming the Foley Square Courthouse Annex would be described as contextual. In architectural parlance they would be labeled as "wall" or background buildings. (Actually, the configuration is quite geometrical/symmetrical, not following the site conditions as closely as contextual buildings generally do. Isolated or set apart from other buildings, however, this building with its objectlike form would not work as well visually.) In programmatic terms, the Metropolitan Correction Center advances current enlightened approaches to the design of correctional facilities. It is only in the spaces apportioned to the attorneys' offices in the south wing that the project becomes disappointing. But this failure to carry through design promises implicit in the overall solution could be less the fault of the architects' efforts than of a faulty program for the office space. The indifference to the quality and arrangement of furnishings in the attorneys' offices or in the public lobbies doesn't help.

When the client for the bipartite scheme, the Department of Justice, decided it needed the annex to serve the adjoining Cass Gilbert-designed U.S. Courthouse of 1936 and the out-of-date West Street Federal Detention Center, it had to make do with a sliver of a site 120' x 480' long. On top of that, a New York City Transit Authority electrical substation ran across the middle.

Gruzen & Partners responded to these obstacles by sim-

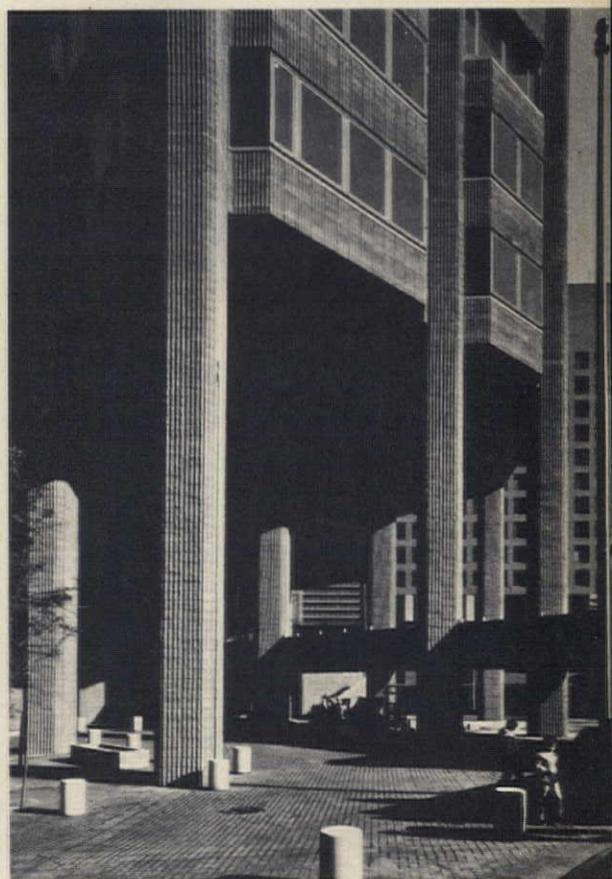


SITE PLAN
Site plan of civic center complex (above) and view from south (below).





Cafes, generous planting around spacious plaza frame approach to the offices for the U.S. Attorney (above and below). From one angle (middle photo, below) building looks like an isolated object; from the pedestrian bridge (bottom) it reads as a wall edging the street.



Foley Square Courthouse Annex, New York City

ply designing two medium-rise buildings on either side of the substation and wrapping the entire thing in split-rib concrete block. The differing functions within the two concrete frame structures are made manifest on the exterior by changes in massing and fenestration. Because a plaza already existed at one end of the site, the architects wisely decided to fill the lot with a medium-rise building.

Viewed from various angles, the Foley Square doesn't assume a discrete shape. Since no one sees the building in its entirety, it can easily be read as a fragment of the urban context. Its squared-off, not-trying-to-be-architecture aspect is important to that role. The project visually ties the limestone 1914 McKim Mead & White Municipal building on one side with the red brick Police Headquarters on the other, the nearby *béton brut* Chatham Towers behind, to the serpentine red brick Chatham Green (all designed by Gruzen & Partners or its predecessor firm Kelly & Gruzen). To them all, Foley Square makes the proper adjustments in terms of color, texture, articulation of parts, and scale. Even the configuration of the office building's entrance elevation echoes the Municipal Building's angled and inflected wall planes and through-block arched opening.

Inside, the design for the detention center excels in terms of a humanitarian solution evolved within the existing system. This point must be qualified, for some architects and correctional experts have been questioning the value of building even humane prisons: They warn against the construction of more jails and prisons until a full assessment of the entire criminal justice system can be made. Considering the lack of consensus on the issue of incarceration, the Gruzen scheme at least is not likely to *hamper* current rehabilitative practices. Having implicitly accepted the notion that architectural setting can aid in the achievement of such correctional goals, the architects have performed a creditable job. Herein lies the scheme's virtue, but because the architects perpetuate the system without radically questioning it, perhaps it's vice.

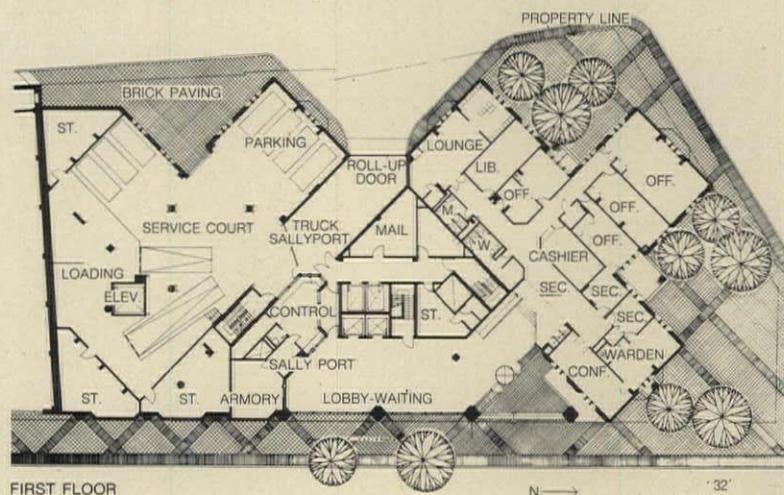
The federal Metropolitan Correction Center was initiated under a pilot program of the Department of Justice's Bureau of Prisons. So far three MCCs have been designed according to "model" humanitarian standards; the other two are Harry Weese & Associates' Metropolitan Correction Center in Chicago, and one by Tucker Sadler & Wells in San Diego. With an all-time high inmate population of 26,848 this winter, the Bureau has plans to construct some more MCC's—starting in Arizona and Michigan.

The Metropolitan Correction Centers are technically jails; many of the inmates are detainees awaiting trial, or appealing a sentence, though some may be serving light sentences for misdemeanors. Federal detainees are generally considered to belong to the *crème de la crème* of possible offenders. Federal offences do not include your everyday murder, rape or mugging charge: instead, drug pushing and bank robberies, with a smattering of "white-collar crimes" such as fraud and embezzlement, are more likely. Nevertheless, some detainees may have murky pasts checked with more violent crimes, which security measures must take into account.

But basic assumption behind the design of the correction

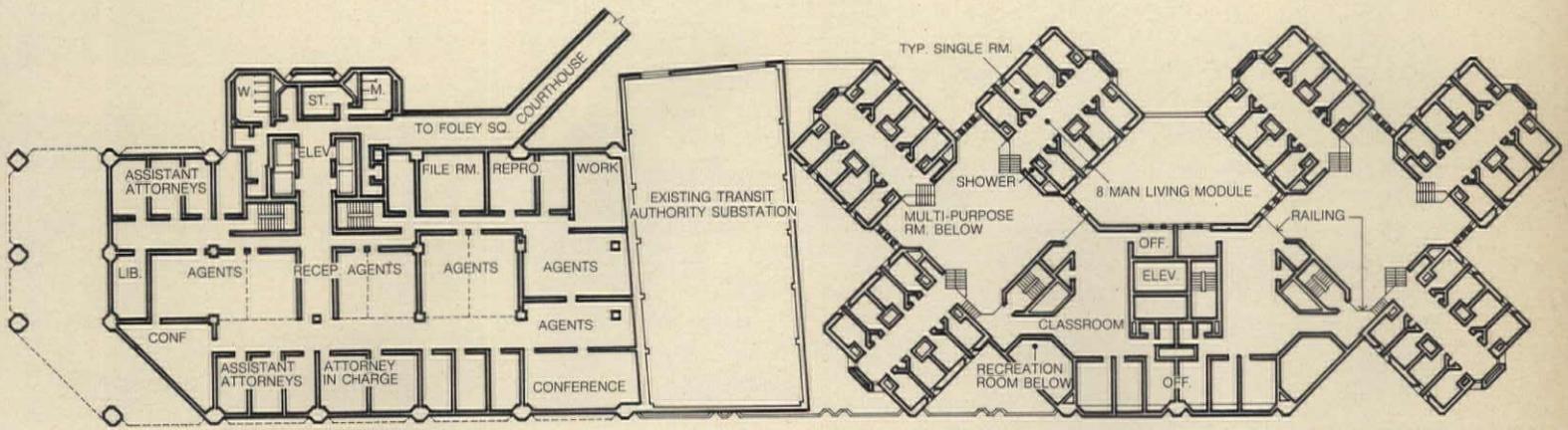


The Metropolitan Correction Center visitor's lobby is entered down the street from the office building portion of the complex.



center is that the pre-trial detainee is conceivably innocent, and deserves to be properly cared for, clothed, and insured his personal rights. Accordingly, the Bureau of Prisons specified its desire for multi-purpose activity rooms and single bedrooms. Gruzen & Partners came up with an ingenious plan to accommodate this program. Each of the residential floors is divided into two wings called Functional Living Units. These living units, comprising three two-level pods of single rooms placed around a central multi-purpose room, form the nexus of activity for the detainees. They eat there, sleep there, and indulge in light recreational activities there.

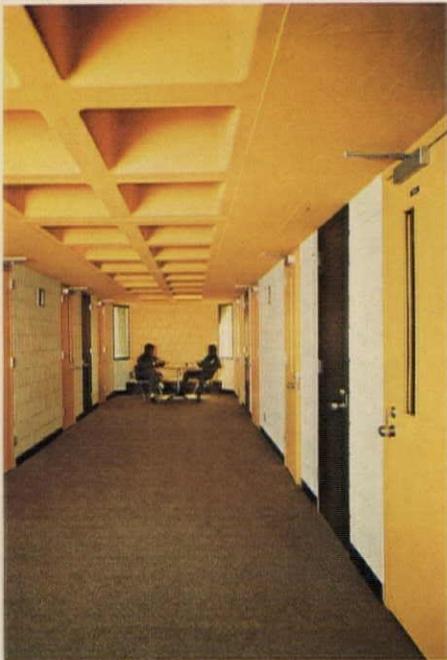
The double-height central space is placed a half-level above the lower floor of single rooms so that rooms on both levels can be seen from one control point. A mezzanine level contains classrooms and counseling offices, while the snack rooms and food preparation (there is no central dining hall) are located underneath. Colors are bright, materials natural (including concrete coffered ceilings to discourage the concealment of contraband), and natural light is abundant. Whereas the federal detention centers in Chicago and San Diego provided windows only 5 in. wide, Gruzen & Partners wisely hesitated to resort to such psychologically debilitating measures. Instead, bedroom windows are 2' x 54", the day room windows a soaring 13-ft height and 9½-ft width. These inoperable windows are formed from sandwich panels of tempered glass surround-



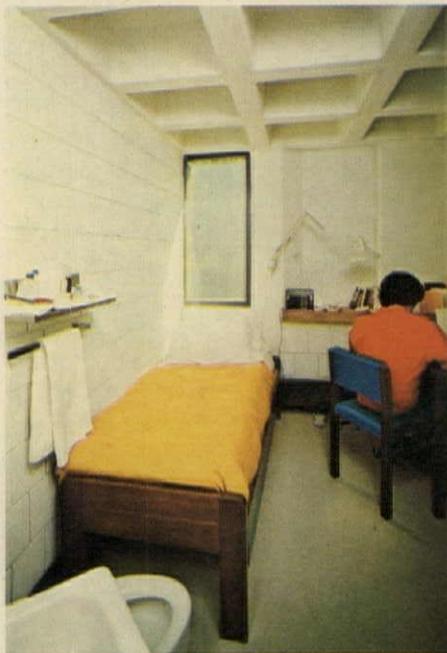
TYPICAL FUNCTIONAL UNIT

UPPER LEVEL OF TYPICAL FUNCTIONAL UNIT

The carpeted, brightly colored Functional Living Units receive ample natural light through special glazing.



Two-level modules each with eight single rooms branch out from double-height central space



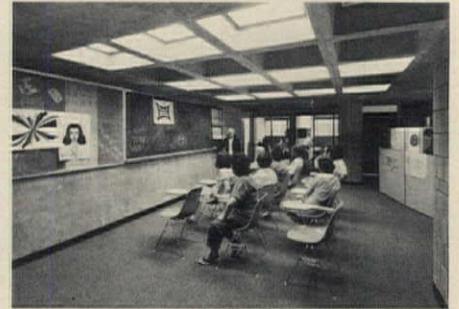
Foley Square Courthouse Annex, New York City



Visitor's lobby for the Metropolitan Correction Center.



Central control room for monitoring building.



Typical classroom in the Functional Living Units.

ing an inner sheet of polycarbon plastic that contains both a bonding agent and alarm film of miniscule wires.

Security elsewhere is equally understated (though ever-present), augmenting the "college dorm" look of the place, with its carpeting, downlighting, and absence of bars. All entrances into the building are monitored audiovisually from a computerized control station on the first floor. Whether entering from the visitors' side or from the detainees' area, doors unlock only through an intercom code system. Sallyports depend on electronically controlled doors that open one at a time. In addition, all exists and entries are recorded on tape, in the event an escape necessitates feedback. (These sophisticated measures make all the more ironic the fact that one detainee recently left the building undetected with his visitors.)

Without the obvious signs of confinement, one might think that the detainees would be perfectly happy. The detention center officials report that this is generally true, though residents still complain about their lot: only the content of the complaints has changed. The staff psychiatrist for the MCC adds that inmates still become depressed. Bars or no bars, the sense of confinement and the limited space in the vertically organized building weigh heavily on them. The nature of confinement itself is a factor criminal experts are still analyzing. As criminal justice critic William Nagel author of *New Red Barn* (Walker & Co., 1973) once said many studies have indicated that "Confinement even in the Taj Mahal is counter-productive."

At Foley Square, modifications in the original program have resulted in a higher density of residents. The Community Treatment Center, originally conceived to administer work-release programs for inmates making the transition between prison life and the real world, has now been turned over to a living unit for women detainees. (Gruzen & Partners, fortunately, designed the MCC to allow for such modifications.) The 11th and 12th floors, originally slated to house detainees suspected of violating immigration and naturalization laws, now contains a dormitory in the south wing. While the single-room pods on the other floors accommodate 8 persons each, the dormitories house 20 in the same amount of room. And instead of 48 detainees using the central area, there are 120. The space and privacy per person has correspondingly diminished to a

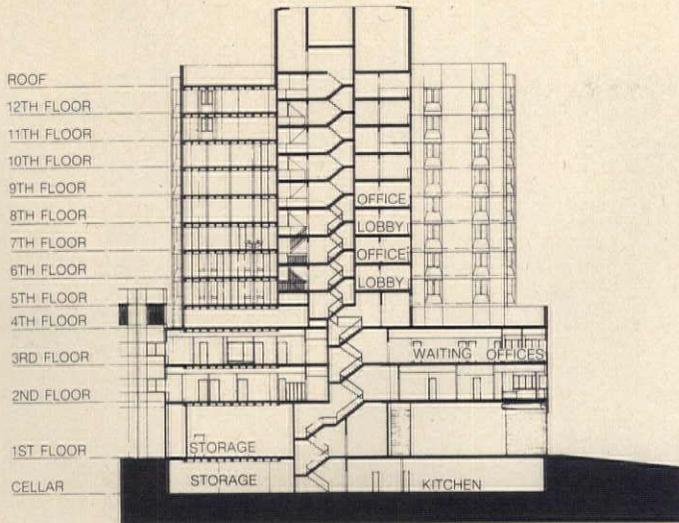


Some of the detainees at Foley Square.

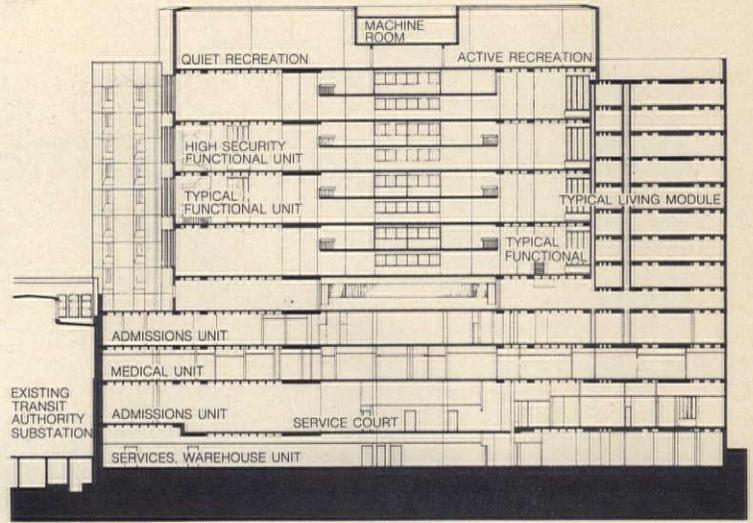
claustrophobic level. Noise has increased.

Despite these shortcomings, the building is still remarkable in relation to the norm. Obviously, because of the windows, materials, security system, and its 389 single rooms, the detention center did cost more than the run-of-the-mill jail. On top of that, the project was begun in 1971, when the inflation rate reached 12 percent. Gruzen & Partners relied on fast-tracking techniques to get the project from design to construction as soon as possible: excavation for foundations began nine months after the architects were commissioned. General Services Administration, the managing and supervising agency for the government, helped by moving quickly on its usual review procedures. In addition, value engineering studies were conducted on such elements as the split-rib concrete block, the precast coffered ceiling slabs, and the HVAC system, to ascertain their cost advantages over the long run.

The result indicates that collaboration and imagination between the government-client and the architect can dra-



TRANSVERSE SECTION



LONGITUDINAL SECTION

32'

matically raise the quality of federal architecture. While actual impact of the MCC's design on the detainees and inmates in terms of criminal justice rehabilitation techniques remains to be evaluated, it certainly can do no harm. (According to the warden's office it has emphatically improved relations between staff and inmates.) Because the building doesn't look like a jail from the outside, it suggests an attitude toward fitting in with the physical surround that corresponds to supportive and assimilative goals of the correctional system. And from a broader perspective—viewed in relation to the building types it acknowledges—Foley Square is not only symbolically appropriate, but urbanistically so. [Suzanne Stephens]

Data:

Project: Foley Square Courthouse Annex: The Office Building for the U.S. Attorneys and The Metropolitan Correctional Center, New York, N.Y.

Architects: Gruzen & Partners, New York City, Jordan Gruzen and Peter Samton, partners in charge of planning and design; Lloyd Fleischman, project director; Paul Silver, director in charge of criminal justice planning; Gordon Vance, project manager, Robert Genchek, designer.

Client: General Services Administration; U.S. Department of Justice.

Program: provide offices for the U.S. attorneys and U.S. marshals using the nearby U.S. Courthouse, 140,000 sq ft; and a detention center for persons awaiting trial, assignment to other jurisdictions, prerelease, processing, etc., 210,000 sq ft.

Site: a sloping lot in lower Manhattan, edging busy street, 120' x 480' long.

Structural system: poured-in-place concrete, including exposed coffered ceilings in 90 percent of the MCC.

Mechanical system: full air conditioning in MCC and office building with air distribution handled through concealed vertical ducts in living units of MCC; steam energy with heating and A/C from one central point.

Major materials: concrete block walls with four-rib split face on exterior surfaces and some interior surfaces scored partition block elsewhere; gypsum board partitions in offices, carpeting, vinyl asbestos tile, acoustical tile for office ceilings. (See Building materials p. 101.)

Consultants: M. Paul Friedberg & Associates, landscape architects; Cosentini Associates, mechanical; Strobel Associates, structural; Romano & Associates, food service. Castagna & Son, Buuilder, general contractor.

Costs: \$24 million entire project, not including interior furnishings; \$63.75 per sq ft.

Photographer: Nathaniel Lieberman except Hirsch-Fien, p. 61, middle row.

Rooftop active recreation space at the MCC.



Anti-gravitational mass

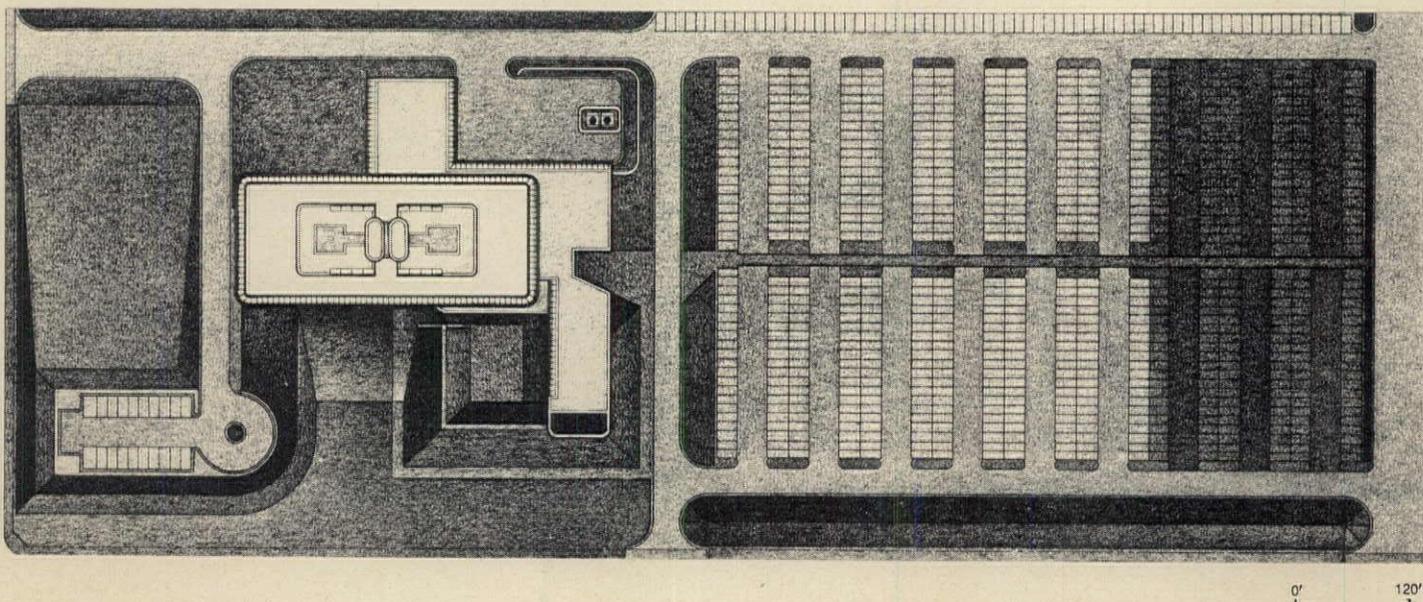
For the Federal Aviation Administration in Southern California, DMJM has stretched a taut, glass membrane around a form that seems ready to take off and fly.

The Federal Office Building in Lawndale, Calif., designed by Daniel, Mann, Johnson & Mendenhall (DMJM), under the direction of Anthony Lumsden, was not particularly complicated in its program. The owner—the General Services Administration—in building the structure for the Federal Aviation Administration simply required about 200,000 sq ft of standard office space, with a ground floor turned over to non-office functions such as a cafeteria, library, printing plant, and mechanical areas. In designing the regional FAA headquarters, DMJM evolved a straightforward building with an entirely concrete structure. A 5-ft grid underlies column bays that are typically 30' x 35', except at the perimeter, where they are narrower. The FAA occupies the top four 36,000-sq-ft floors, the GSA the second floor, which is a little smaller.

While there is nothing unusual about this program or its solution, the design of the exterior glass and aluminum membrane of the building, which was evolved only after the functions of the building had been solved, is quite extraor-



The Federal Office Building faces a six-lane highway in an industrial area, so earth was bermed to form an enclosure around outdoor terrace.

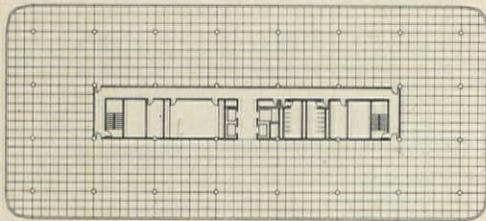




The thin aluminum and reflective glass enclosure give the building a lighter-than-air appearance, in sharp contrast to the nearby structures.



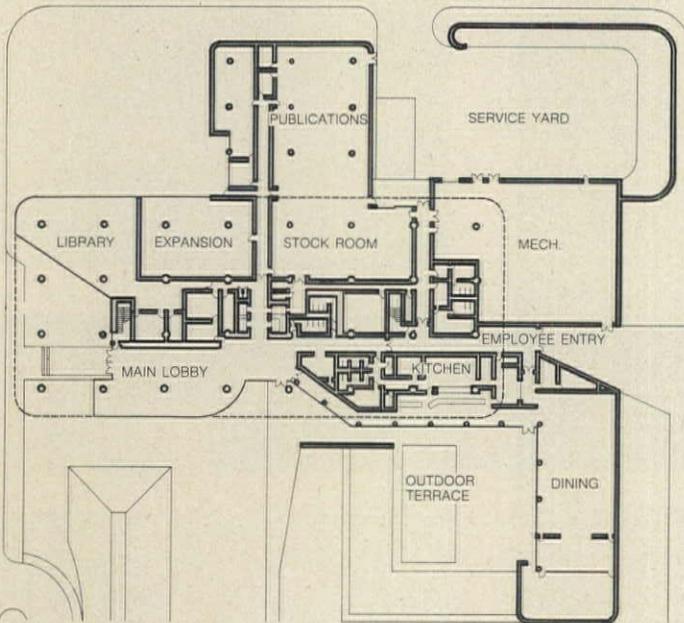
Federal Office Building



TYPICAL FLOOR PLAN

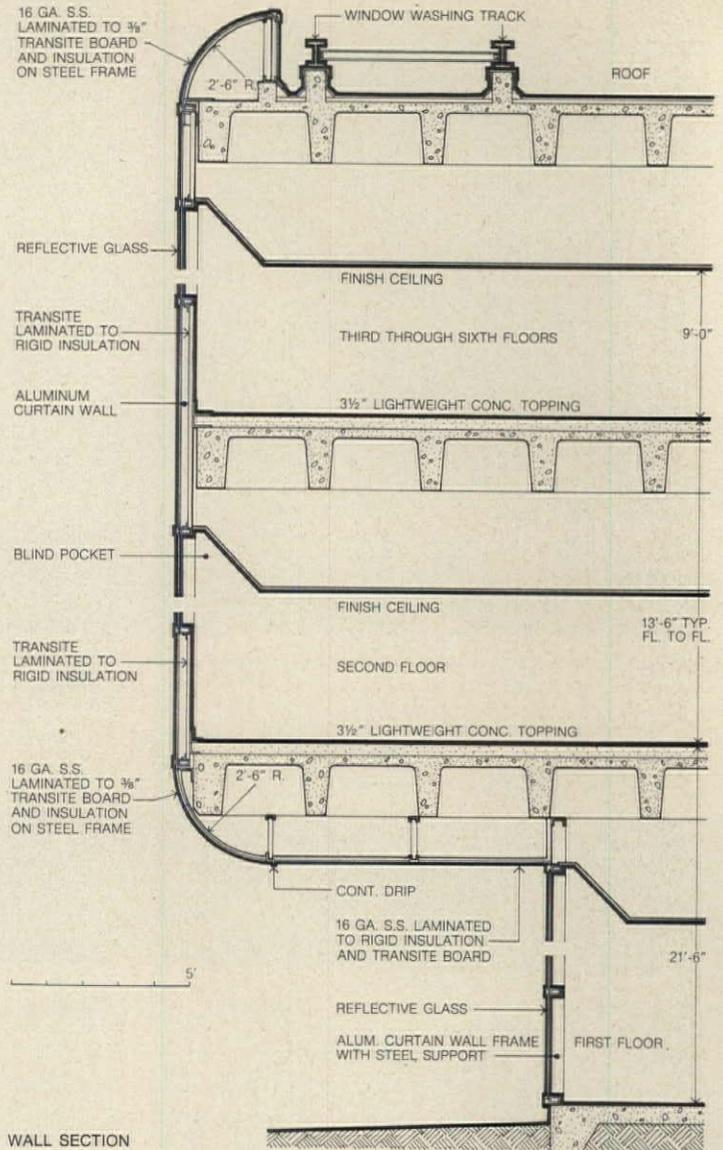
40'

- 1 MAIN LOBBY
- 2 LIBRARY
- 3 EXPANSION
- 4 PUBLICATIONS
- 5 STOCK ROOM
- 6 SERVICE YARD
- 7 MECHANICAL
- 8 EMPLOYEE ENTRY
- 9 KITCHEN
- 10 DINING
- 11 OUTDOOR TERRACE



GROUND FLOOR PLAN

40'



WALL SECTION

inary as a system of enclosure. Designed in 1966, and completed in 1975, the building, as Lumsden is quoted as saying "is, the first building in the country, I believe, that tried to do a lightweight sculptural surface, where the building goes over the top, . . . under the bottom, and also goes around the corner." The silver mirror glass and silver-aluminum panel system forms a tight membrane over the surface of the structure in a way that makes one more aware of the building as an anti-gravitational mass, not unlike a dirigible airship, than as a weighted structure sitting heavily upon the earth. The gentle vertical and horizontal curving of the "flexible" skin, rather than hard-edge detailing, adds immeasurably to the effect. Both in plan and in section, variations are enclosed within the same continuous envelope of aluminum and reflective glass.

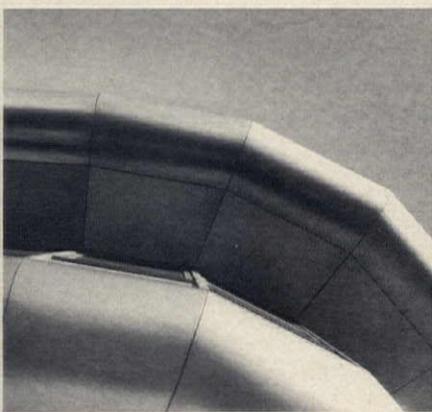
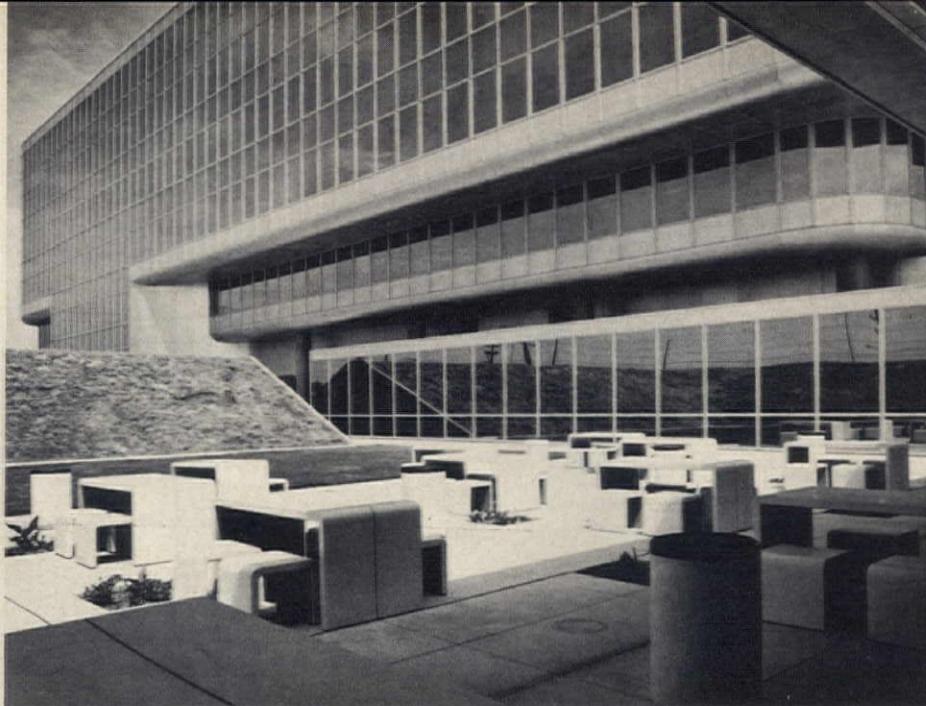
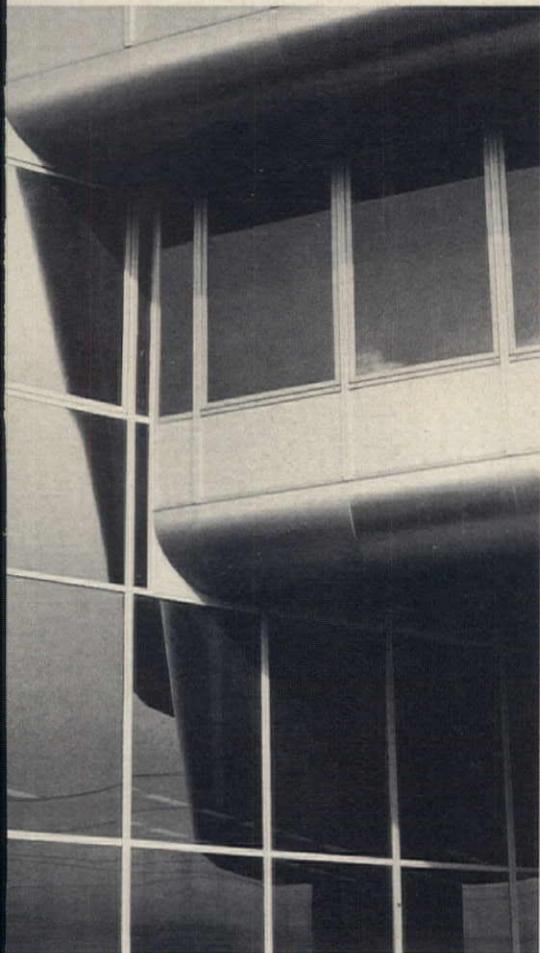
A logical question one might ask is why Lumsden should have this interest in structure as a membrane-enclosed, non-gravitational mass? An answer can be found in the recent writings of another architect at DMJM, Michael Ross, who writes both about Lumsden's philosophy of architecture and his attitude toward its history. Ross says that one of Lumsden's main concerns is with the idea of membranes—which are fundamentally biological and, of necessity, continuous and unbroken—that simply envelop the functional and structural organizations of a building, much

as skin does a hand. This concern, Ross explains, derives from Lumsden's belief that, regardless of any other considerations, architecture is basically a "biological" entity that exists for the sake of human beings. By this, Lumsden means that the architect's responsibility is to solve the functional requirements of a building first, and then enclose it or add to it without inhibiting its performance. If the art object comes first, Lumsden says, there is a tendency to exclude data that is very useful for the balance. This does not, however, preclude Lumsden's interest in the membrane as a formal concern.

"Our fundamental interest," Lumsden explains, however, "is not in glass walls nor their lightweight equivalent, although the notion of the skin is very significant in relation to the logic of production. Nor is our main interest in factory-made enclosures, whether transparent or opaque. We are interested in developing a system that responds to reality, a design system that is not esoteric with respect to the necessary data and sub-systems of the building." From this, one could conclude that DMJM would enclose their buildings in any materials that would meet this requirement. And, in fact, this is true; it is just that they have found this particular system of enclosure the most appropriate for the circumstances in which they build.

Since the 1960s Lumsden and the DMJM design staff

The building was conceived as a "biological" entity, with its structure enclosed in a flowing envelope of smooth glass. Consequently, the building is revealed as a positive mass rather than as a typical form with holes punched in it.



All of the office interiors (right) are white, with color used in furniture and carpets for contrast. Floors are generally open office plan.



have been investigating and experimenting with the idea of enclosing structures in flowing envelopes of smooth glass. This has led to a departure from the traditional use of glass in which its expression in a building is negative, as a hole in a solid structure, to its expression as a positive surface that imparts a sense of mass to a form whose structure is not revealed. This interpretation of mass as non-gravitational is not entirely new, however, as Ross notes, it probably began as a formal concept with the cubist painters, and was continued with the de Stijl group, through which certain aspects of it were to influence both Gropius and Le Corbusier. But, he says, "the idea that the enclosure need not reflect the system of support, that it can be a flexible membrane like a balloon . . . free to enclose any shape, has remained largely undeveloped until recent years."

Many who see the Federal Office Building, a glass-enclosed form standing alone in a flat, sun-drenched light industrial area near Los Angeles, may wonder about its environmental responsibility, about whether the glass enclosure dissipates too much energy, whether it is seismically sound, and whether it is too costly. With many years' experience with the materials, however, DMJM's analyses have shown that, in Southern California, insulated spandrel glass will out-perform concrete in conserving energy, as well as in its seismic capabilities, and that it is also less ex-

pensive. The Federal Office Building, for instance, cost just under \$28/sq ft, which is not expensive by any standard and particularly not by those of 1976. [David Morton]

Data

Project: Federal Office Building, Lawndale, Calif.

Architect: Daniel, Mann, Johnson, & Mendenhall; Anthony J. Lumsden, vice-president, principal for design; Philo J. Jacobson, Dwight E. Wilson, project designers; Thomas Y. Saeda, project architect.

General contractor: Del E. Webb Corporation.

Program: 221,000-sq-ft office building for the Federal Aviation Administration and General Services Administration, containing library, cafeteria, printing plant.

Site: flat, light industrial area near Los Angeles in Southern California; six-lane highway adjoins site.

Structural system: concrete columns and concrete pan floor slab.

Major materials: aluminum sheet and reflective glass walls; metal stud and gypsum board, painted; white marble walls in lobby; white terrazzo floor in lobby, vinyl asbestos tile elsewhere; aluminum ceiling panels in lobby; acoustical tile ceiling elsewhere. (See Building materials, p. 101.)

Consultants: structural engineer, mechanical engineer, electrical engineer, graphics consultant, cost consultant, DMJM; landscape architect, Armstrong & Sharfman.

Client: General Services Administration.

Costs: \$6.1 million, about \$27.50/sq ft.

Photography: Wayne Thom.

Modernism and the monolith

The Air and Space Museum in the nation's capital will offer momentary excitement as crowds press to see its display. In the long run, however, it may not offer the timeless tribute that its exhibited works deserve.

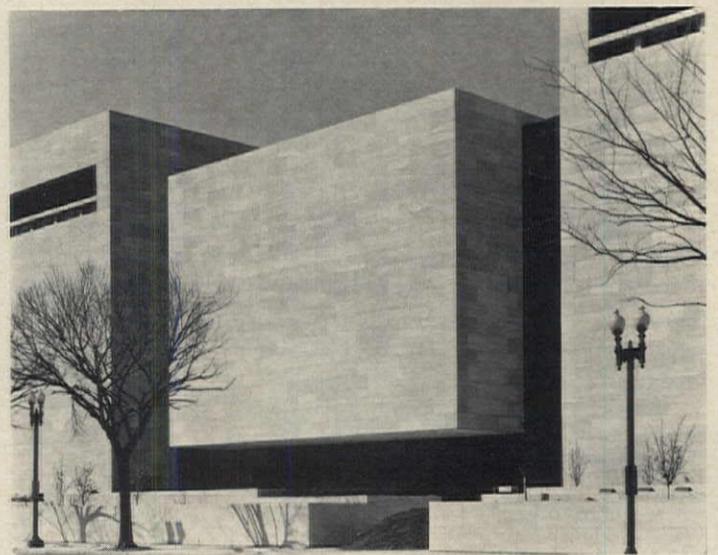
Architecturally, the National Air and Space Museum is as uninspired as its 685' x 225' dimensions are expansive. Its formal treatment may be unassertive, but in a simplistic, not significant way.

Why give so much attention to a mediocre building? Because the museum's contents represent America's prodigious achievement in air and space exploration. And because its position on the Mall in Washington, D.C., means it joins company with some of the most culturally and historically symbolic buildings in the U.S. In both program and physical context, the museum is pregnant with iconic implications. If its architecture fails to live up to the expectations of this role, then that problem should be confronted. Rather than just castigating architects Hellmuth Obata & Kassabaum for lacking imagination, one should scrutinize their rationale for this response. After all, few other architects are immune to such mistakes or omissions.

The particular design of a building could also be blamed on the malleability of the client: what the client demands and is satisfied with. Since the client here is a cultural arm of the U.S. government—the Smithsonian Institution—its architectural choices become meaningful. The kind of architecture it (and General Services Administration, who hired HOK) permits to represent the country's prodigious cultural and scientific heritage assumes a certain significance. In a structure that will house the Wright flier, the Spirit of St. Louis, and the Apollo II command module, one expects the architecture to be as daring, innovative, and historically important as the works displayed within.

Hellmuth Obata & Kassabaum's design reflects certain architectural principles the architects felt to be important. First, related to the location: the linear placement of the marble monolith along the south side of the Mall conforms to the Mall's strong axial and cross-axial organization.

Since the museum is located on the Mall east of the Hirshhorn Museum (P/A, March 1975, p. 42) and opposite the National Gallery of Art, HOK made certain overtures to

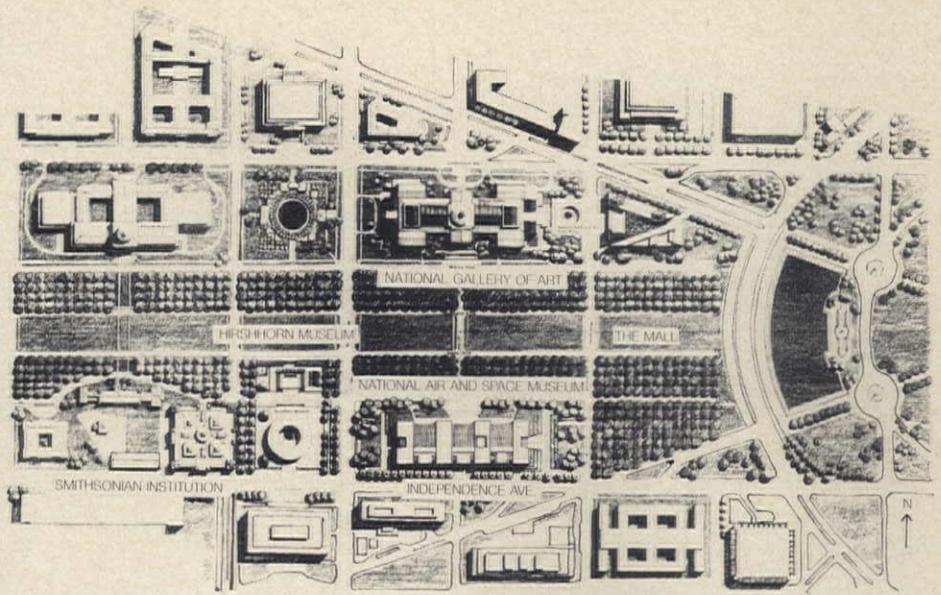


the physical milieu. The building corresponds roughly in size and shape to the National Gallery, and is even wrapped in the same material—a pinkish Tennessee marble. The rectangular hulk could also be defended as a foil for the massive circular geometry of the Hirshhorn—itself swathed in pinkish granite aggregate panels.

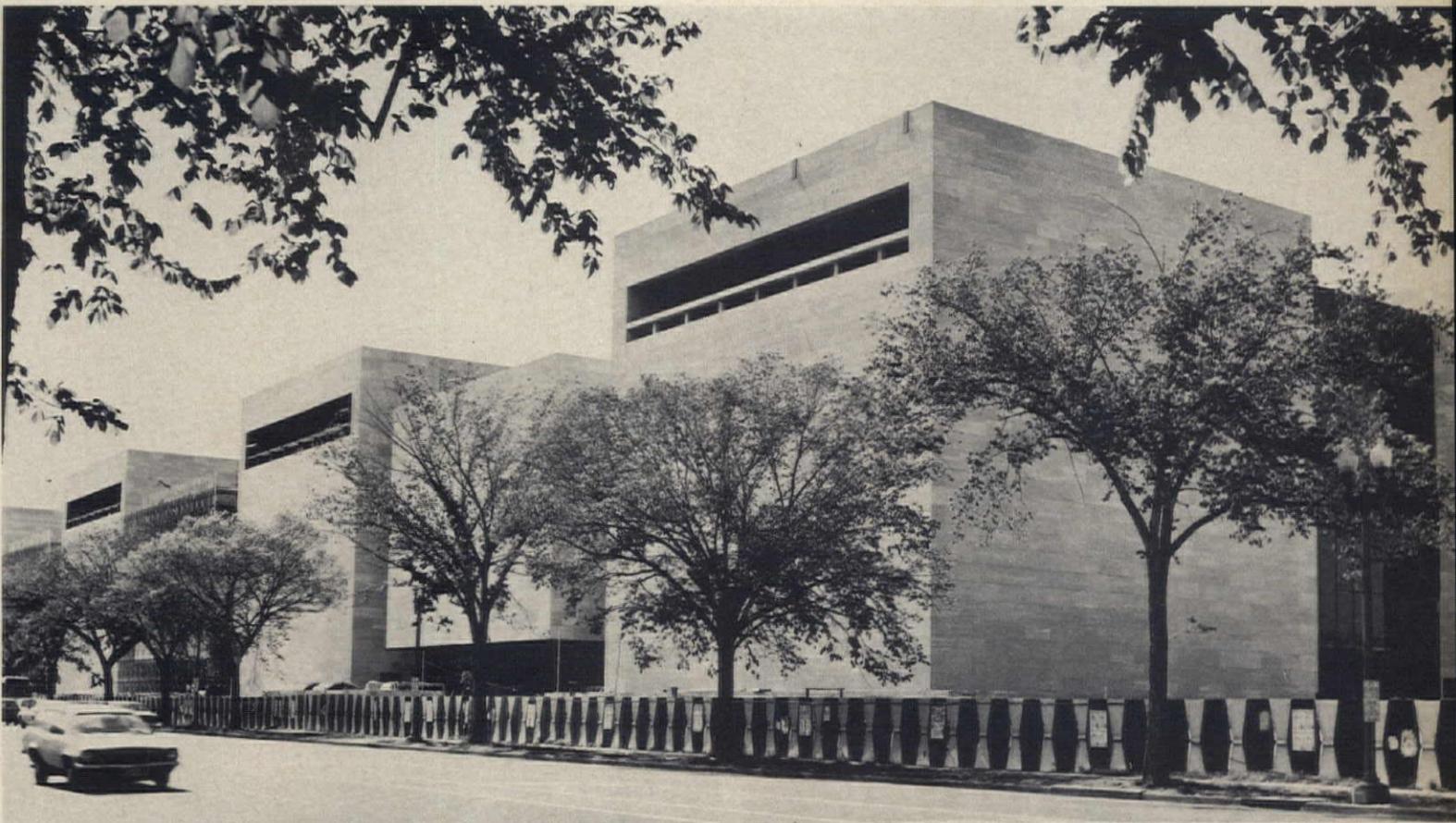
Is this simply a matter of contextualism? Not necessarily. The Hirshhorn, inert and inward turning, bears little relation to the Air and Space Museum except as another kind of geometrical volume—and one diminished in perceived size by comparison.

The National Gallery of Art on the other hand may be the same size as Air and Space but it has something different: scale. The National Gallery receives a high degree of articulation from its classical stylistic elements that break up its massing. Its scale operates on a public instead of human level, but internally consistent relationships facilitate one's perception and understanding of it. Furthermore, The National Gallery communicates its iconic function as monument simply because it does make use of known architectural elements—columns, doors, windows, dome, pediments, cornices—retrieved from the vocabulary of monuments of past eras.

Air and Space rightly enough was created to be of its



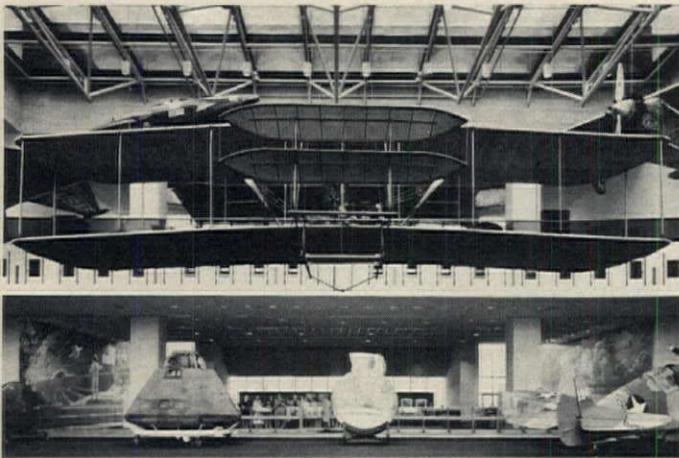
Site plan showing Air and Space Museum on south side of Mall.



On the elevation facing Independence Ave., marble-clad masses cantilever over glass walls with ambiguous results (opposite, above).
 On the Mall side (below), granite clad bays alternate with brown tinted glass ones.



National Air and Space Museum



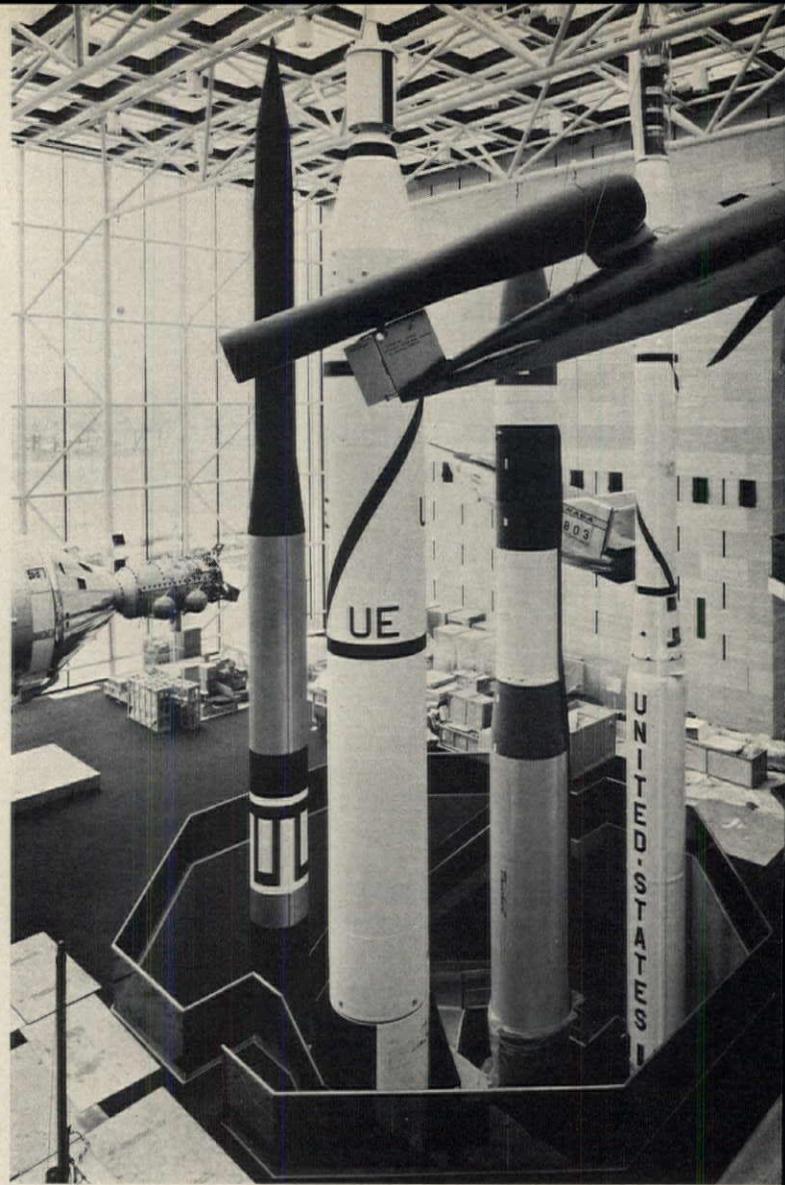
Wright flier passes over Apollo II moonship in 62-ft-high exhibit hall.

own time architecturally. Instead of borrowing brazenly from recognizable culturally loaded elements, as John Russell Pope did with the National Art Gallery in 1941, HOK sought to make this museum "contemporary." Large unadorned blocks alternating with tinted glass are meant to signify its modernity. Yet its inert masses communicate little. The architecture is strangely retardataire, recalling the hulking masses of bureaucratic modern architecture of the 1930s and 1940s (without even the interesting fluting, ornament, or bas reliefs).

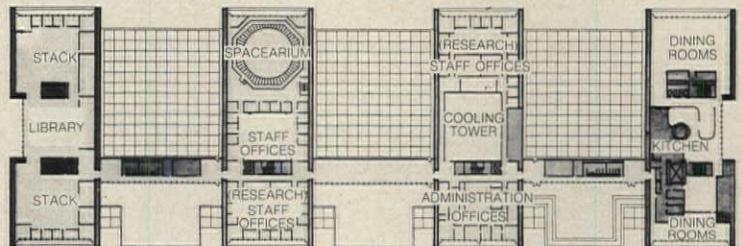
Because of its size and easily understood geometric shapes, the museum is monumental. Yet its form is too dumb, too repetitiously rhythmic to embody the symbolic associations of a "monument."

The elevation facing the Mall has been designed with three glassed-in bays (115' x 124' x 62' high) where exhibits of air and space craft loom majestically. The glazing is intended to disclose glimpses of these historic contents to the Mall. However, the opacity of the building extends to even the brown-tinted double-glazed window walls and acrylic bubble skylights enclosing the bent white pipe trusses from which planes hang. Instead of being able to readily apprehend a powerful display of the DC-3 and Ford tri-motor planes from the Mall, for example, one makes out shadowy forms that look more like giant bees entrapped in a large white honeycomb and drowned by its own viscous brown honeyed contents.

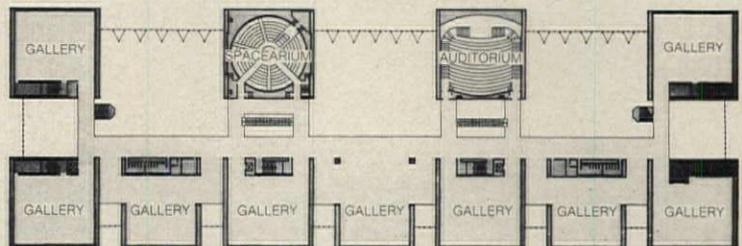
On the Independence Avenue side, the masses cantilevering from the second floor read as if they were supported by the glass, defying structural law. While the contradiction in itself might have passing interest to those intrigued by such inversions, it is not executed as a systematic part of an overall concept. Inconsistency continues: Marble surfaces are formed by panels clamped curtain-wall fashion on a steel frame. They are too opaque and dense to read as a skin or membrane stretched tautly over the steel cage of the museum's supporting structure. On the other hand the flat planar veneer is not dense enough to give the building the sense of volume seen in the National Gallery. Even the proportions of the bays shift without a *raison d'être*. The parts of the building are consistent only in that they are reductive. No architectural vocabulary relates to the passersby in terms of human scale. No perceptible hier-



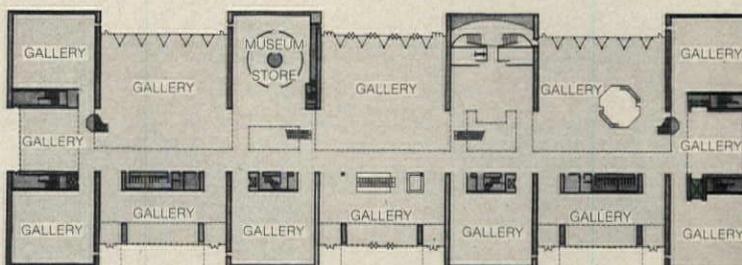
A below-grade pit extending into garage level allows rockets to be displayed upright in the building conforming to city's 90-ft height limit.



THIRD FLOOR PLAN



SECOND FLOOR PLAN



FIRST FLOOR PLAN

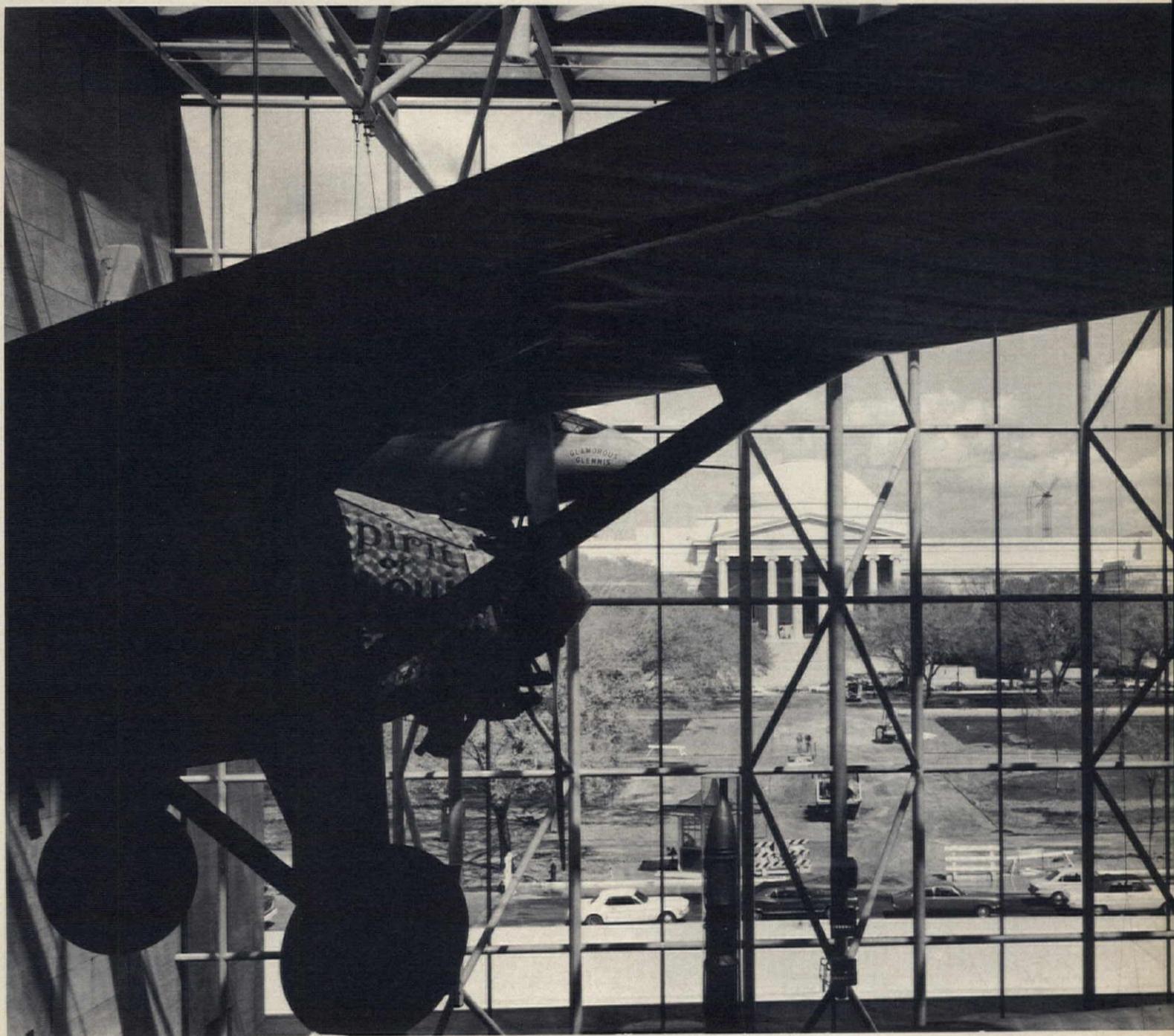
archy of architectural elements communicates the building's function—pragmatic and symbolic.

The architects argue that the parti evolved as much from the circulation needs of the museum (an expected 50,000 visitors daily) as from the plan of the Mall. Thus the seven bays with their two floors of exhibition spaces (offices, library, cafeteria are located on a third floor) are strung out parallel to the Mall. A central circulation spine directs visitors on two levels along the axis past 25 cul-de-sac exhibition galleries, usually 75 ft square. Special spaces such as the spacearium and auditorium are deftly fitted in between the double-height exhibit halls. While it is too soon to tell how the circulation will work for almost 200,000 sq ft of exhibit space, the circulation is the museum's strongest point—especially for those who dislike backtracking.

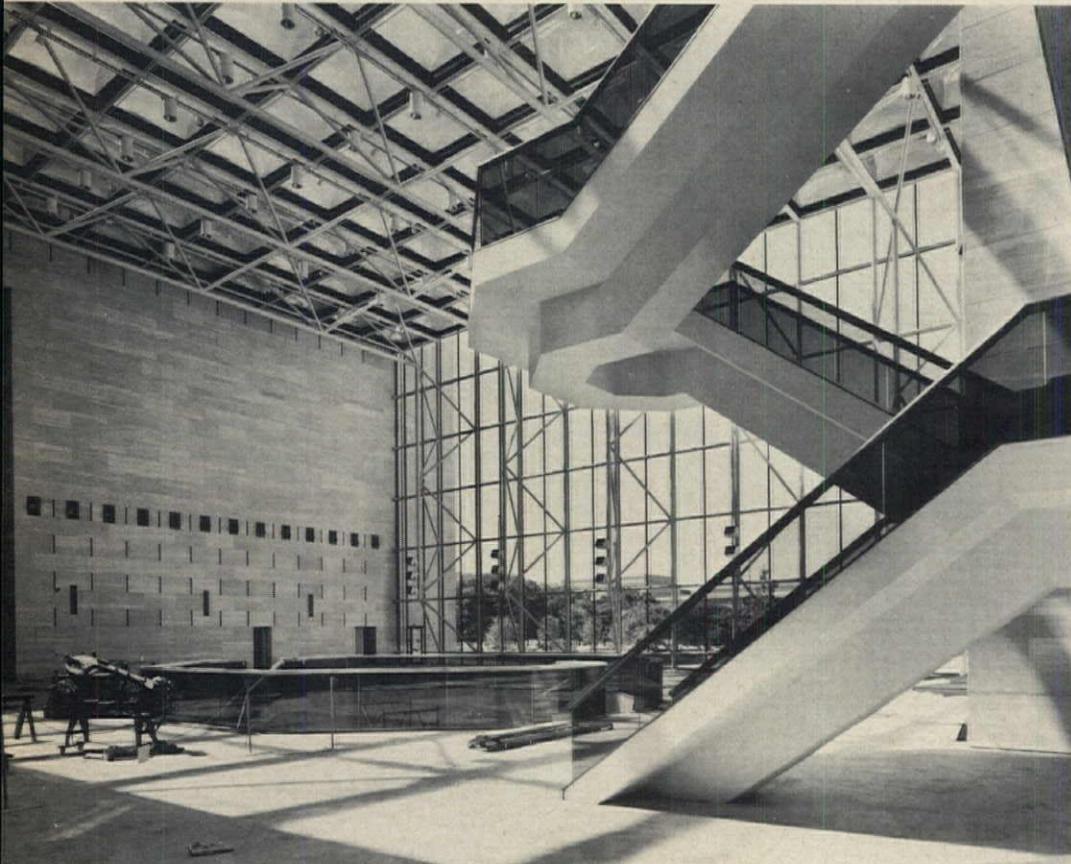
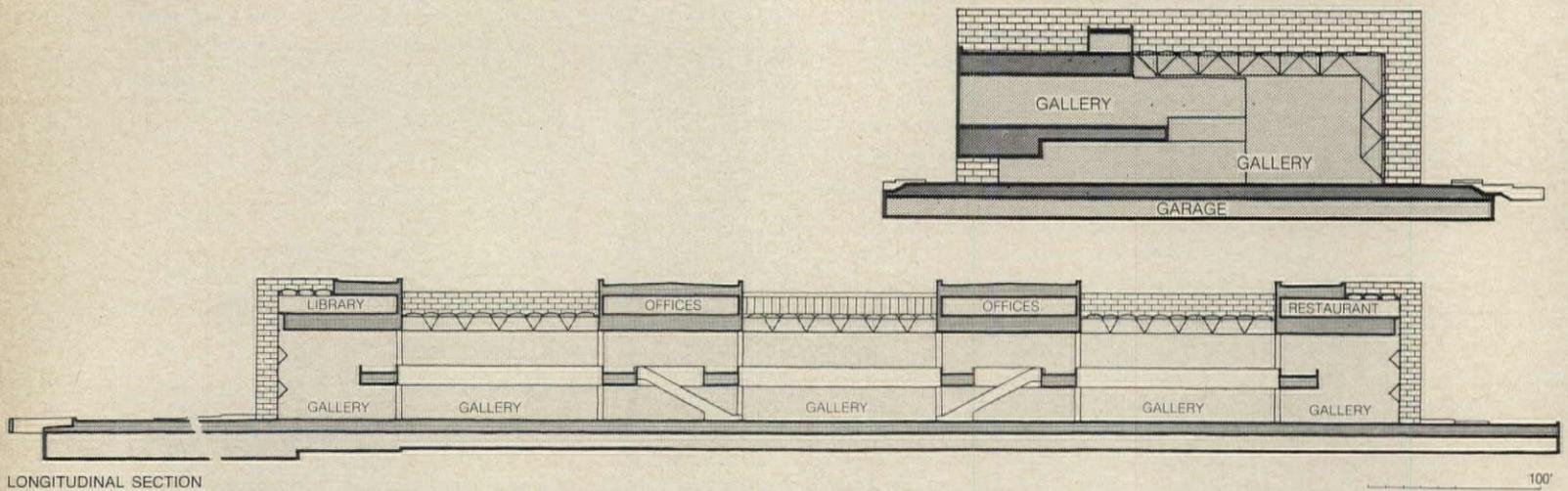
By virtue of its size and cubic volumes, Air and Space does have some dramatic spaces. Due to its parti and cir-



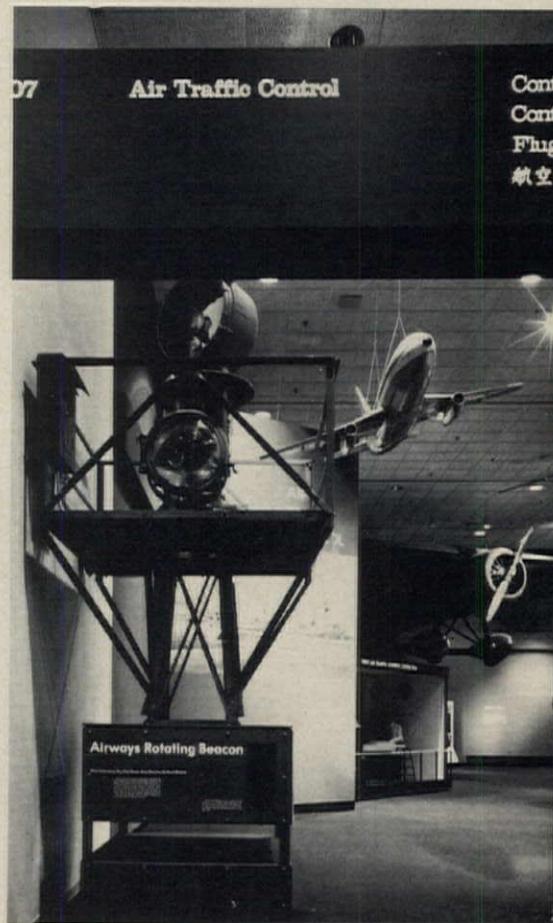
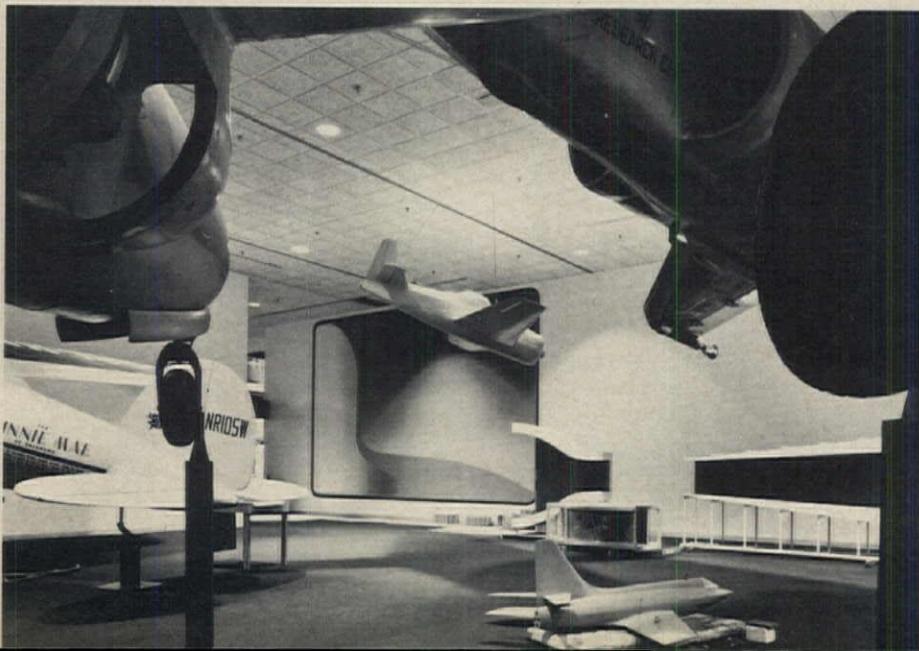
Eight-inch pipe chords welded to five-inch pipe members ten feet in length form brace from which eight-ton DC 3 hangs (above), Spirit of St. Louis (below).



National Air and Space Museum



Acrylic skylights above the pipe truss system admit natural light into double-height exhibit bays facing Mall. Two-and-a-half-foot-thick walls have space for ventilating ducts, inset spotlighting and an automatic fire suppression system (left). Small enclosed galleries for a variety of didactic purposes are being designed for Museum's opening this month (below left, right, opposite left). Consulting architect Charles Foberg is working with museum staff architects to integrate the installations contracted to range of exhibit designers.





The smaller exhibit galleries will feature everything from balloons to helicopters (above, left).



Restaurant is located on third floor (above right).

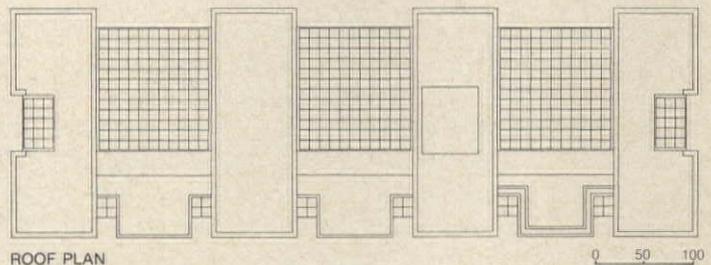
culcation pattern it has both expanded space (glassed-in exhibition halls) and contracted space (walled-in galleries). However, in the last analysis, the spatial volumes are static. While there is variation in space, there is no plasticity or progression, no tension or charge that make spaces great. The interior spaces are left only with Dimension.

While there is no spatial modulation, neither is there its opposite: completely expansive clear span space, as the ultimate appropriate backdrop to these forceful artifacts on display. There is more spatial excitement in the column-free coffered vaults of the new Washington Metro. Where is the contemporary counterpart to Dutert and Contamin's steel-frame Machinery Hall at the Paris Exposition of 1889? Or Nervi's reinforced concrete Exhibit Hall at Turin in 1948? Art and science have merged in architecture before to stunning effect: why not here? The Air and Space Museum makes more references to Production than to Art and Science in its building: 5200 tons of steel, 250,000 sq ft of marble. Granted, fabricating the pipe roof trusses and wall trusses wasn't easy. (The 8-in. pipe chords with 10-ft legs were fit into triangular sections 65 ft long and put together on site.) But the feat still rests more in the precision construction than in the boldness of the architectural/engineering concept.

In the long run one senses a profound failure of nerve. Worse yet, that is what Washington architecture is all about. Its half-wanting-to-be-classical, half-wanting-to-be-modern character reflects a deep-rooted ambivalence about the image its physical milieu should express. Washington has long had this problem. Manfredo Tafuri, in his book *Architecture and Utopia*, (MIT Press, 1976, trans.) has related Washington's monument(al)-fixation to this country's conflict over its economic and industrial base and "technology's continual revolutionizing modernity." Thus the design for the Mall and rest of this capital city, he observes, illustrates the "American longing for something other than itself, terms of reference for a society tempted by processes it has itself set in motion, and indeed considers irreversible. Classicism as an ideal of uncontaminated Reason is thus consciously presented in all its regressive character." The crises of identity is given form.

And so with the Air and Space Museum. Here confusion compounds the regression by the museum's adoption of

certain safe modern planning principles (circulation) and stylistic effects (minimal unadorned masses). The Air and Space Museum is thus wrenchingly appropriate for this city that continually strains for the monumental and becomes further mired in its own mediocrity. [Suzanne Stephens]



Data

Project: National Air and Space Museum, 4 and 7 Sts on the Mall, Washington, D.C.

Architects: Hellmuth, Obata & Kassabaum, St. Louis, Mo.; Gyo Obata, principal in charge of design; Jerome Sincoff, principal in charge of project; Chih-Chen Jen, project designer.

Construction manager: Gilbane Building Co.

Program: approximately 632,000 (gross) sq ft devoted to the exhibition and display of artifacts and information pertaining to the U.S. development of its air and space technology. Two floors contain exhibition galleries (about 200,000 sq ft), one-floor offices, library, restaurant, with parking underground for 400 cars. Museum includes a spacearium and theater.

Site: The Mall, along south edge between 4 and 7 Sts.

Structural system: steel frame, reinforced concrete footings and flooring, exposed L-shaped bents of pipe truss system carry portions of roof and glass wall panels.

Mechanical system: majority of museum space air conditioned by low pressure variable volume systems served by two 1100-ton centrifugal water chillers; heating uses D.C. steam.

Major materials: Tennessee Cedar marble 1 1/4 in. for exterior cladding, steel, reinforced concrete, double-glazed glass panels, and acrylic skylights, gypsum wall board partitions, metal decking, carpet, acoustic ceiling tiles. (See Building materials, p. 101.)

Consultants: Le Messurier Associates, structural; HOK Associates, mechanical, electrical, and civil.

Client: General Services Administration, project manager for the Smithsonian Institution.

Costs: Approximately \$41 million.

Photography: Barbara Martin of HOK.

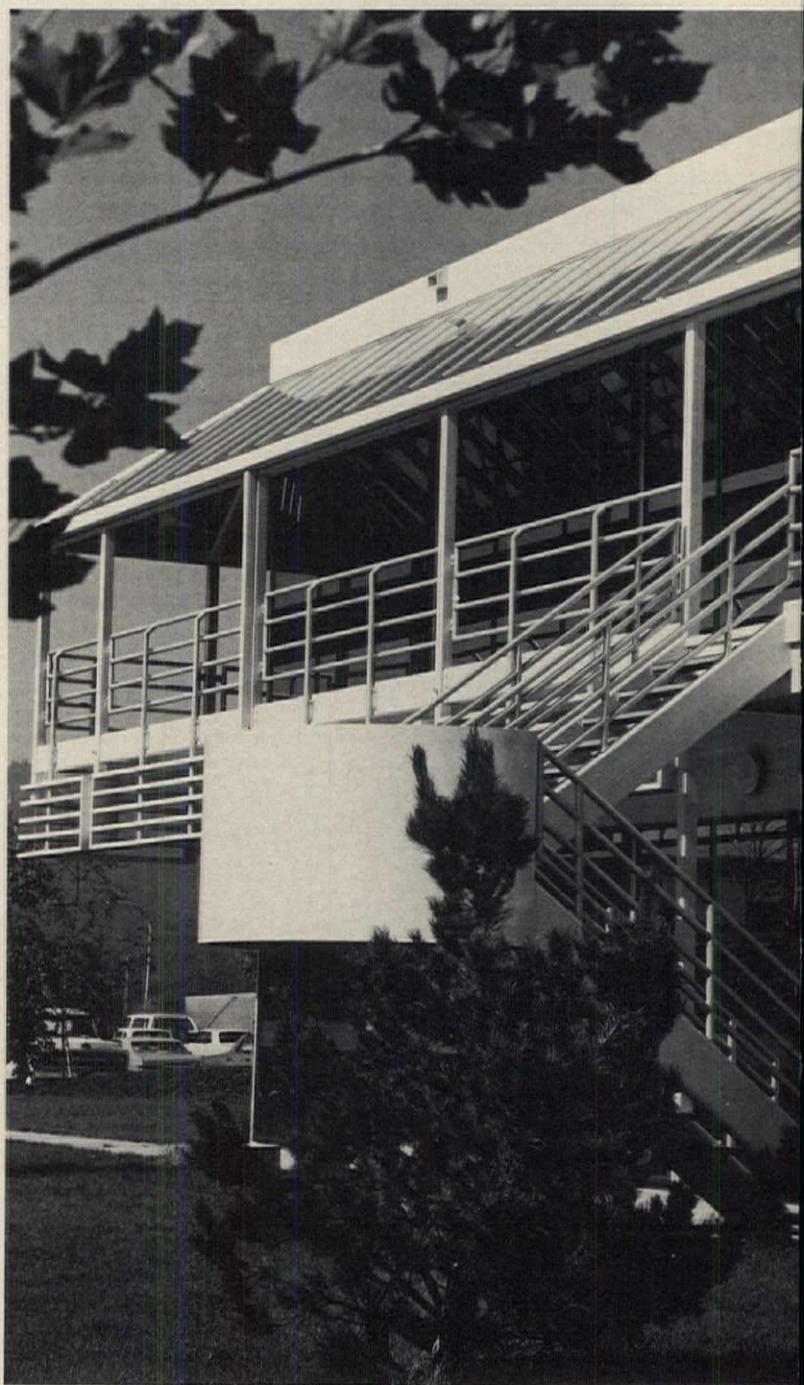
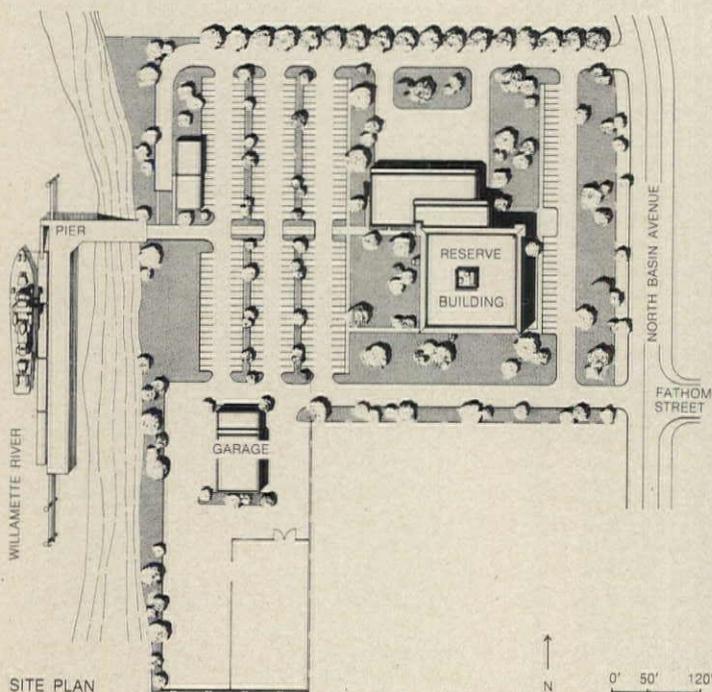
A nautical assemblage

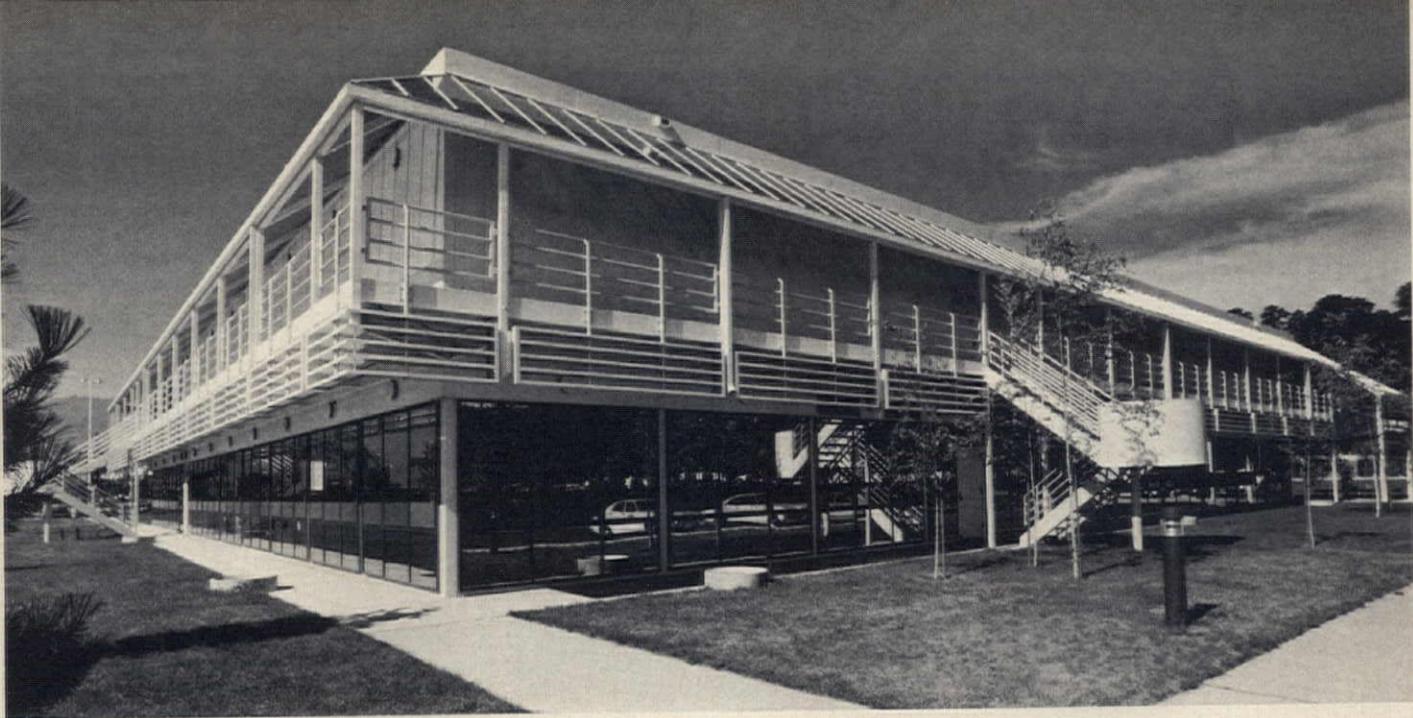
Faced with housing three different service groups in one training facility, Campbell/Yost/Grube/Partners assembled a collage of images into a sparkling whole.

There couldn't be a more perfect stereotype than a government-built military training center. Dull, right? Seafoam green walls and files everywhere, right? Wrong. Not in Portland, anyway. In their design for a U.S. Navy and Marine Corps reserve training center, Campbell/Yost/Grube/Partners have blown it—the stereotype, that is.

When the U.S. Government came to the architects, its (fully detailed) program called for training space for Navy, Marine, and Coast Guard units, accompanied by heavy weekend parking loads. The site is on Swan Island, in an industrial area adjacent to the Willamette River, where Navy "liberty ships" were built during WW II. Located on land which was at least partially fill, the facility was to be built for a medium budget, and air conditioning was specifically excluded from consideration.

Since the soil characteristics would have dictated the use





of pilings to support masonry or concrete structural systems, an all-steel approach was chosen. But that wasn't the only factor; the design was conceived as a "constructivist" steel-and-glass statement, intended to present a non-militaristic, non-monumental feeling. It was the designers' wish that individuality within the government structure could be expressed through a vocabulary of highly detailed elements that would recall nautical images. And there was the no-air conditioning edict.

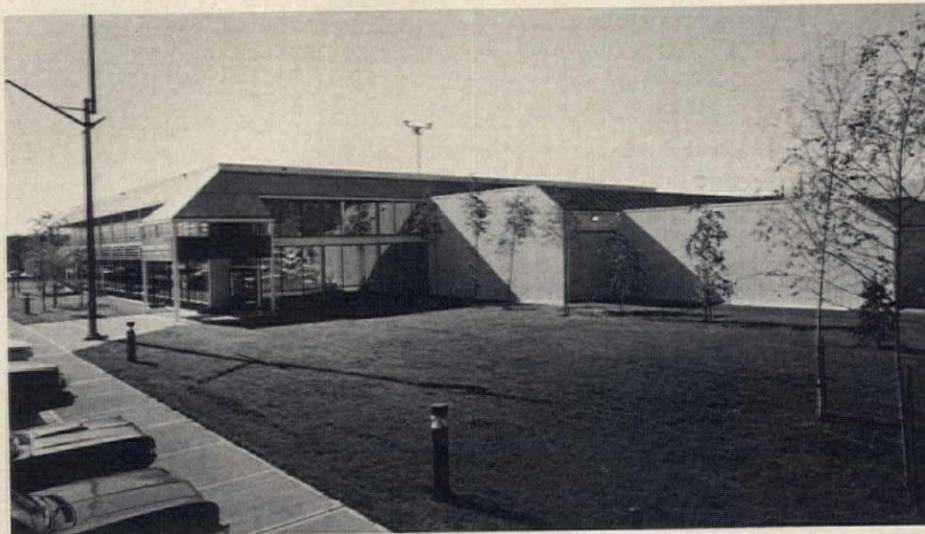
There is steel, and there is steel. The imagery sought for the training facility is that of light steel, that of pipe railings, catwalks, and of signal flags, painted and reflective surfaces. Campbell/Yost/Grube thus set out to marry the low-energy/nautical aspects of the design direction into one parti. Obvious references, maybe, for such a facility, but the combination results in a highly articulated, light, and almost playful building. Its ship-references and white/reflective glass surfaces clearly accomplish the intended design goals.

Inside as well as out, the surfaces and elements are white or clear-anodized aluminum, with color introduced via

doors and signal flag graphics. On the ground floor, the main entry reception area serves both Navy and Marine administrative areas, which surround offices, conference facilities, and other medical/testing areas. Directly ahead of the entrance is the largest space, the assembly hall, which is generously skylighted along both the north and south perimeter walls. Shop, locker, and storage rooms occupy a lower wing connecting to the north and west walls of the assembly hall.

On the second floor, above the other administrative functions, are the classroom areas, and the Coast Guard administration. From this level, the assembly hall may be reviewed from a full-length walkway along its south wall. Most exterior walls on the upper floor are of white metal panels, by contrast with the reflective glazing in all administrative areas, first and second floor. A catwalk girds the three exterior sides of the main building on the second floor, providing circulation and exiting options, and incorporating rails, skylights, and a lower level sunscreen into the aforementioned nautical assemblage.

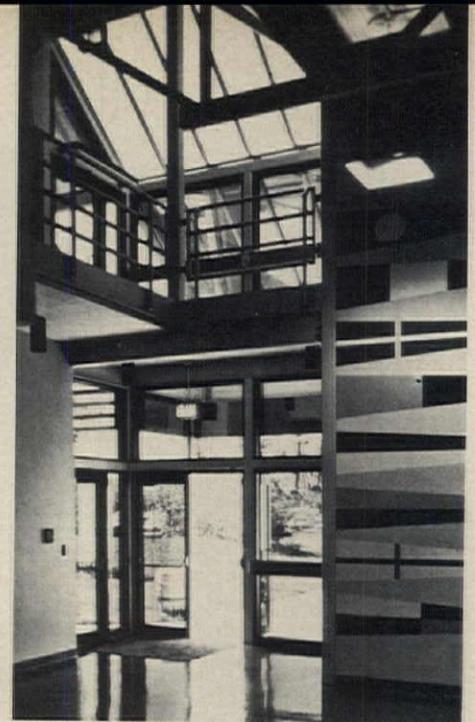
In addition to the white and reflective exterior surfaces, a



Main entrance (above) is at junction of main administration/classroom building, left, and lower assembly hall/shop elements, right. Skylights articulate building units where they join. Pipe railings protect catwalk edges on other three sides of the main building, with verticals carried down to support sunscreens shading reflective glass on the first floor.

Reserve training center

Main entry under skylight (second right) leads to the assembly hall along the main spine of the complex, or up the stair (center, opposite page) to second floor walkway (right and bottom, opposite page). Walkway serves classrooms and gives access to the exterior catwalks at each end.



100 percent outside air capability was introduced into the mechanical system to overcome a need for air conditioning. It is reported that even in the warmest months the interior spaces are pleasant and comfortable. The architects, therefore, consider the project to have prepared them, at least substantially, for future low energy building commissions.

So much for the stereotype. It should be noted that the services, and particularly the Navy, have broken through the clichés about government design monotony on numerous occasions in recent years. The Navy (and, of course, HUD and others) have even been conducting awards programs to recognize good architecture. But it still is worth noting that those enlightened efforts require skillful architects, able to cope with the detailed program demands and the inevitable bureaucratic tendencies pointed up in our introduction to this issue.

It is gratifying that in Portland, if not always in Washington, a government-built project *can* achieve a high quality of design—though admittedly on a small scale. Campbell/Yost/Grube has shown how to elevate a utilitarian program into a functional facility without giving up the wit, imagery, flair, and pride a government building deserves. Let's hope Washington notices. [Jim Murphy]

Data

Project: Navy/Marine Corps Reserve Center, Portland, Ore.

Architects: Campbell/Yost/Grube/Partners, Portland, Ore.; Richard A. Campbell, designer; Kenneth W. Nelson, assistant designer; Richard D. Burling, project manager; Bernard R. Martell, job captain.

Program: reserve training facilities for U.S. Navy, Marine Corps, and Coast Guard; mixed-use structure to contain classrooms, administration, assembly hall, shops, and rifle range.

Site: Swan Island, Portland; flat, 300 ft frontage on Willamette River.

Structural system: metal deck on steel beams carried by steel tube columns on concrete strip and spread footings.

Mechanical system: single-zone ventilation with filters and steam coils.

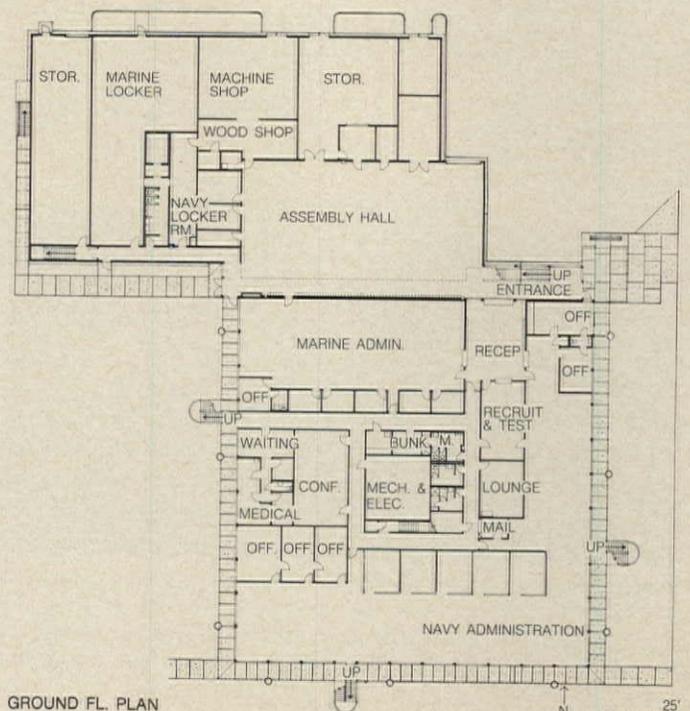
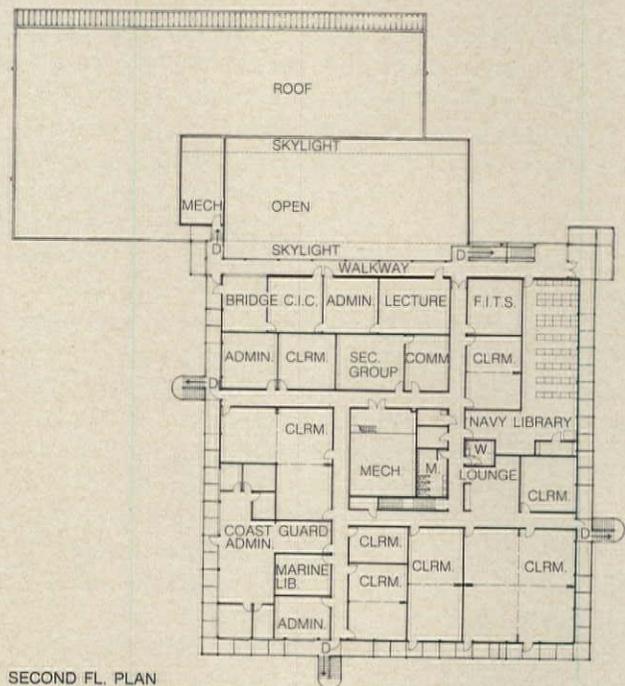
Major materials: exterior, factory-finished metal insulated panels, tempered glass skylights, reflective glass, clear anodized aluminum pipe railings; interior, painted thin coat plaster walls, acoustic tile ceiling, concrete or vinyl asbestos tile floors.

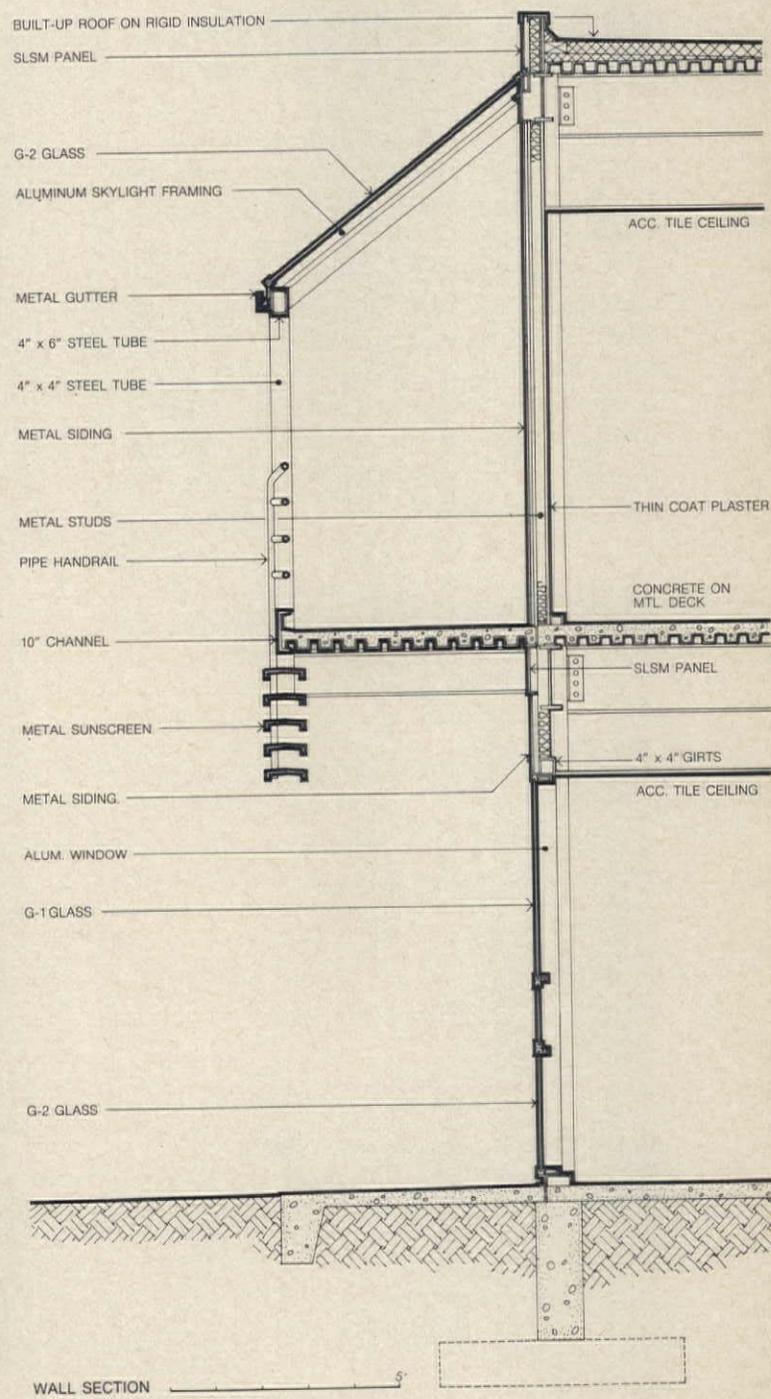
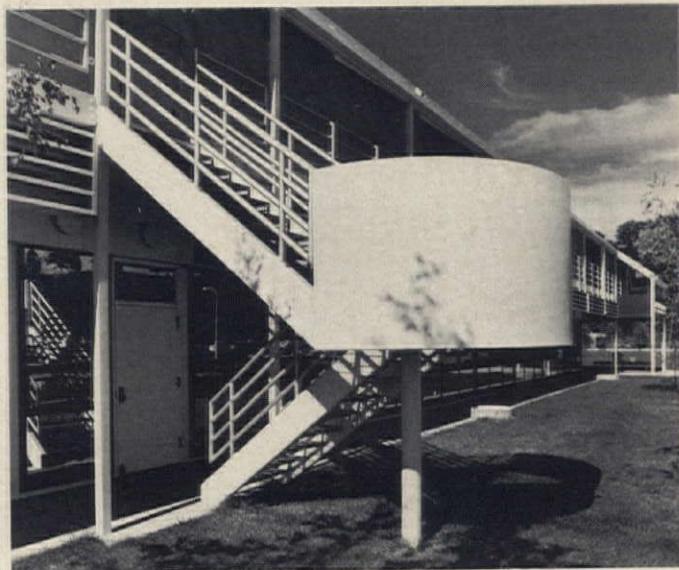
Consultants: mechanical/structural/electrical, UMA Engineers, Inc.; landscape architect, Michael Parker.

General Contractor: Paul Emerick Construction Co.

Costs: \$2,214,000; \$37.41/sq ft.

Photography: C. Bruce Forster.



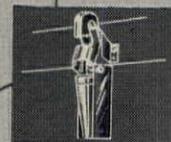


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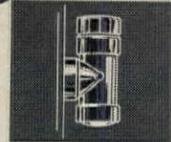
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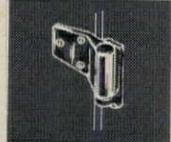
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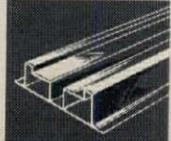
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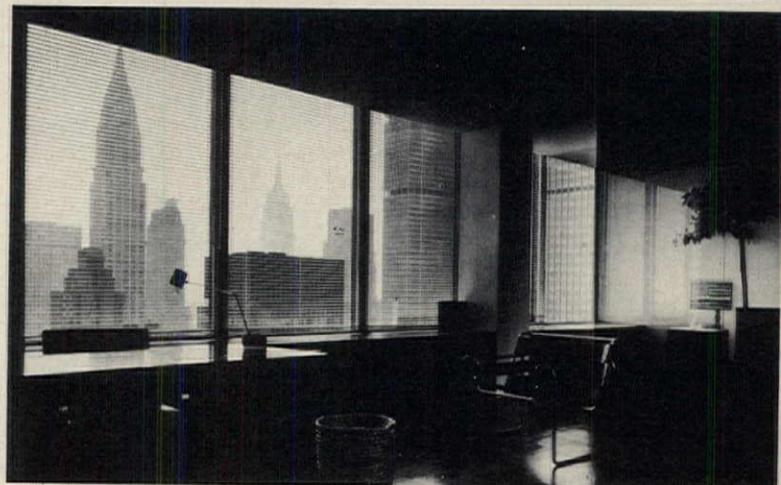
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Progressive Architecture announces its Twenty-third Annual Awards Program. Awards will be made to U.S. and Canadian architects, designers, urban planners, other professionals and their clients for projects now in the design stage and scheduled to be under construction in 1977. 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 1977. 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.

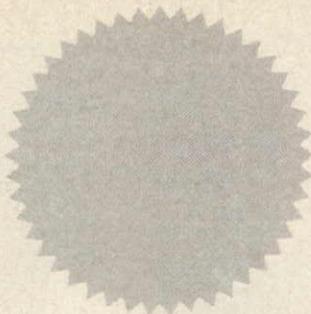
The Jury for the Twenty-fourth Awards Program:

Raymond T. Affleck, FRAIC, RCA, Architect, Partner, Arcop Associates, Montreal, Canada; **Ernest R. Bonner**, Planning Director, Portland Bureau of Planning, Portland, Ore.; **John Dinkeloo**, Architect and Engineer, Partner, Kevin Roche, John Dinkeloo & Associates, Hamden, Conn.; **Alan C. Green**, Hon. AIA, President and Treasurer, Educational Facilities Laboratories, Inc., New York; **Charles Gwathmey**, AIA, Partner, Gwathmey-Siegel Architects, New York; **Sarah P. Harkness**, AIA, Partner, The Architects Collaborative, Inc., Cambridge, Mass.; **Craig Hodgetts**, Architectural Designer, Partner, Studio Works, Los Angeles and New York, Visiting Critic at UCLA; **Edward R. Ostrander**, Social Psychologist, Associate Professor of Design and Environmental Analysis, Cornell University, Ithaca, N.Y.

Judging will take place in Stamford, Conn. during September 1976. 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 1977 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
24th
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 24th 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 1977.

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, 1976.

Address entries to Awards Editor,
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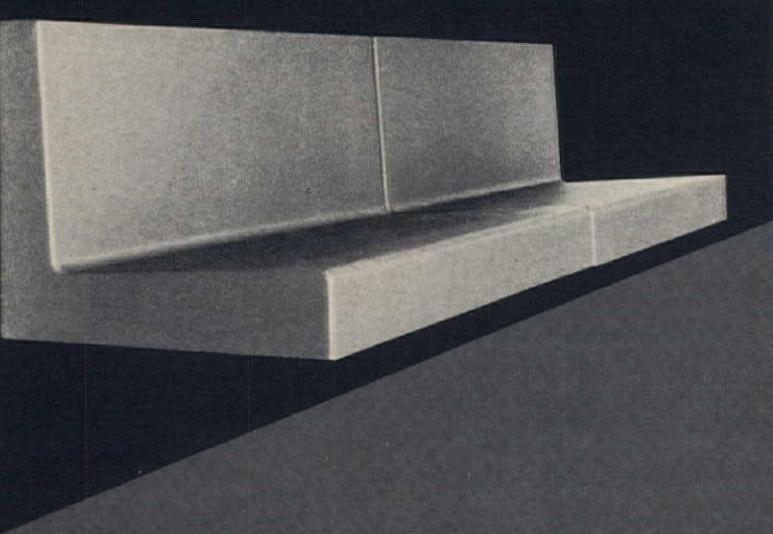
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Who has time to Search?

William T. Lohmann

Outdated literature in an office corner constitutes an information system by default. With the construction industry drowning in the rising tide of information, an organized system is requisite, regardless of office size.

It may be only a heap of outdated literature in a corner of your office. But if people go to that corner when they look for information, you have an information system.

At a recent meeting of the Construction Specifications Institute in Chicago, James M. Anderegg asserted that every office has a "system" for storing and retrieving the knowledge that is essential to efficient office practice. He recognized that, in the absence of an organized approach to literature control, a default system will develop. As an architectural information systems consultant, he also knows that a default system cannot possibly cope with the rising tide of paper. If you weren't aware of it ten years ago, you are now. The construction industry is drowning in information. New building products, code revisions, legislation, new engineering criteria, and design data from related fields are accumulating so rapidly that no firm can keep up without an organized effort.

For a very small firm, the effort may result in a shelf of catalogs and a drawer file for brochures and clippings. Middle-sized offices may add a microfilm product information service, and large firms need a comprehensive library with a full-time staff. But only the degree of control and volume of materials vary. The urgent need for accessible, current information sources is the same for all offices.

Product literature. Think about the availability of 750,000 building products today, compared to several hundred only 50 years ago. No wonder that the old AIA literature filing system (last revised in 1963) has been replaced. The "Uniform Construction Index," which is based on the CSI 16-division format, offers correlated terminology for specifications and cost estimating procedures as well as data filing. Sweet's catalogs now use it. So do the Spec-Data II, IDAC, and Showcase microfilm systems. It works for a single drawer file yet C.F. Murphy Associates uses it to control 1500 shelf catalogs and 12 drawers of brochures. Flexibility is the key. Filing is fast now that most manufacturers include the UCI designations on their litera-

ture. Filing time for a document is usually recouped the first time someone looks for it.

Codes. More time is saved if the building and zoning codes which are assembled for a particular project are eventually placed in a central location. A telephone call will ascertain if they are still current when a new project comes up in the same locality. Large libraries usually file them by state, then city.

Reference literature consists of books, government publications, trade journals, design standards, magazine articles, and bibliographies. The smaller office should use the nearby public library for many of these materials, eventually building its own collection. Acquisitions should be made carefully on the basis of continuing need, and several lists of recommended reference standards are available. Not even large offices attempt to assemble comprehensive collections, except perhaps in a few specialized areas.

Several indexing systems are usable for reference material. Division 1 under the "Uniform Construction Index" covers most design and construction-oriented subjects. The British "Construction Indexing Manual," an extension of the Swedish SfB system, is more complete. Those parts applicable to product literature should be ignored, however, in favor of the UCI 16-division breakdown. The most effective method of filing general literature consists of simple sequential access numbers, referenced through a keyword index on file cards or punched sorting cards. C.F. Murphy Associates uses the computer to process this system and produce interrelated keyword, title, author, and publisher indexes. In the United States, the traditional Dewey Decimal System has been found too cumbersome for the changing needs of a professional office.

Periodicals often contain valuable reference information. Some magazines can be discarded after six months and most after two years, however. Back issues are usually available at the local library.

Archives. Many large offices use their libraries as repositories for office data. The possibilities are legion: complete project files, slides, presentation materials, office forms, experience summaries, and contractor qualification reports among others. Once organized patterns are established, many "orphans" will find their way to the library.

Not everyone in an office will appreciate the degree of control a library system entails—signing out materials, ordering publications through a single person, and relying on the current library catalog instead of the 1967, therefore familiar, binder under his desk. Yet young practitioners usually accept such practices without question. Perhaps they are still close enough to their school years to value the research process and appreciate the hours which an organized system can save them. □

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

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The John Hancock Tower

Bernard Tomson and Norman Coplan

Charges and counter charges embroiling architect, owner, supplier, and contractors of the John Hancock Tower continue as a result of its curtain wall failure.

The litigation which has resulted from failures occurring in the glass curtain wall of the John Hancock Tower in Boston, Mass. has been of wide interest to members of the building industry. A review of the pleadings in this litigation indicates that the variety of issues raised touch upon almost every kind of legal question of significance in the construction field—negligence, breach of contract, privity, express and implied warranties, indemnification, abuse of process, libel, standards of performance for contractor, architect, and manufacturer, mitigation of damages, and liability of bonding companies.

This litigation arose from damages allegedly sustained by the owners of the Tower based upon the cost of removing and replacing each glass unit in the curtain wall of that building with a single sheet of tempered glass. The general contractor for the project, the subcontractor for the curtain wall, the designer and manufacturer of the glass units used, and the architect who designed the project were each charged by the owner with responsibility for such damages. All of these parties were named as defendants to the action, as well as the bonding companies for the general contractor and for the subcontractor.

The charges against the general contractor and the subcontractor were that each failed to construct the curtain wall in a good and workmanlike manner, resulting in a curtain wall that was not sound or weathertight and which could not withstand the forces and conditions to which it was subjected. This, alleges the owner, constitutes negligence and a breach of contract. In addition, the owner contends that both the general contractor and the subcontractor expressly warranted that the materials which were to be furnished would be free of defects and that in fact such warranty was not fulfilled.

In its complaint against the architect, the owner contends that the architect breached his contract and was negligent in his performance because his designs, plans, and specifications were inadequate and faulty and not in accordance with good architectural and engineering practices. Further,

that the architect had a duty to supervise the construction but was derelict in such duty by failing to prevent the contractor from performing in an unworkmanlike manner and from using defective materials.

The owner, in addition, charged the glass manufacturer with negligence based upon its alleged failure to test the glass units adequately and to determine the forces and conditions to which they would be subjected. The owner further asserts that the manufacturer expressly warranted that the glass units would be free from defects and would conform to a furnished sample, but that these warranties were breached. The owner also contends that the manufacturer breached implied warranties (as distinguished from express) that the product would be fit for the use intended and of merchantable quality.

Each party-defendant in this action not only has denied the allegations of the complaint as asserted against it, but has cross-claimed against other parties to the litigation and/or has counterclaimed against the owner. For example, the architect denies that he ever undertook to supervise the curtain wall construction within the meaning apparently intended by the owner and points out in his pleading that the architectural contract expressly provides that he is not responsible for the acts or omissions of the general contractor or subcontractor.

In a cross-claim against the manufacturer, the architect alleges that such manufacturer made material misrepresentations to the architect to induce him to specify its product and that it failed to disclose that its glass units had failed on other projects. Further, the architect asserts that the manufacturer failed to furnish glass units which complied with the architectural performance specifications for the Tower curtain wall and, therefore, if he is charged with liability to the owner, he should be indemnified by the manufacturer of the glass units.

In his cross-claim against the general contractor and subcontractor, the architect alleges that if he is charged with any liability to the owner arising out of his alleged failure to supervise the construction adequately, he would be entitled to indemnification from the general contractor and the subcontractor as the primary parties responsible for the owner's damages. In this connection, the architect emphasized the explicit provision contained in the general conditions which provided for indemnification by the general contractor to the owner and architect for any damages arising out of any act or omission of the contractor or any of subcontractor.

The manufacturer, in its answer, asserts that there is no privity between it and the owner and, therefore, it owes the owner no duty. Further, it alleges that the damages sustained by the owner are the result of its own negligence and delays. The manufacturer seeks damages against the owner on the ground that the owner has committed an "abuse of process." The manufacturer also asserts a cross-claim for damages against the architect for libel alleging that the architect, in a letter to the Building Commissioner, insinuated that the manufacturer could not be relied upon to supply high-quality glass.

In short, a comprehensive review of the legal problems reflected in the pleadings would be more appropriate for a textbook than for a column. We will follow the case with considerable interest. □



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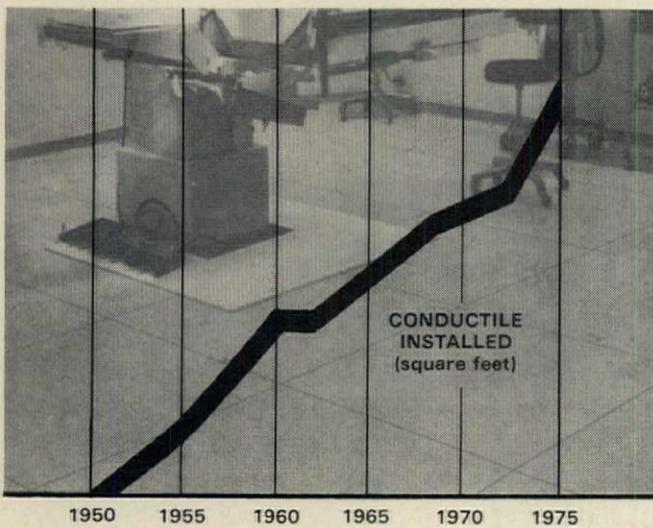
A Bradley stainless steel Washfountain seems to last forever, because stainless shrugs off most of the things that make a washfixture show its age.

Corrosion, grit, chemicals, tough industrial elements and physical abuse can be a maintenance headache. But rugged stainless steel Washfountains keep on working, and looking good. The choice of those who need the very best.

Bradley Washfountains make washroom dollars work harder, too. Washfountains cut installation costs, produce significant water and energy cost savings, and save floor space and maintenance costs. Write for our WASHROOM/SHOWER ROOM PLANNING GUIDE. Bradley Corporation, 9101 Fountain Boulevard, Menomonee Falls, WI 53051.

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right idea
from  **Bradley**

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More Conductile® was installed in 1975 than any other year. Why?

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Only Conductile solid vinyl static-conductive flooring gives you a choice of systems: exclusive Micro-squared™ tiles or 36" x 36" sections heat-welded into a totally seamless floor. Conductile helps prevent the accumulation of dirt and bacteria because each system provides a continuous floor covering without open seams, and each can be covered up the wall to eliminate gaps at the floor-wall juncture. Each can be easily installed over most subfloors or existing floor coverings.

MODERN APPEARANCE

Conductile's attractive, subtle pattern accents four pleasing pastel colors and two practical dark tones to give surgeries and other critical areas a beautiful and safe floor.

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Conductile is easily cleaned by regular mopping and periodic machine scrubbing. It is resistant to indentation, abrasion, and the action of most chemicals.

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Installed in thousands of hospitals, Conductile meets NFPA code and is listed by Underwriters' Laboratories, Inc.

No wonder more Conductile static-conductive flooring is being installed than ever before.

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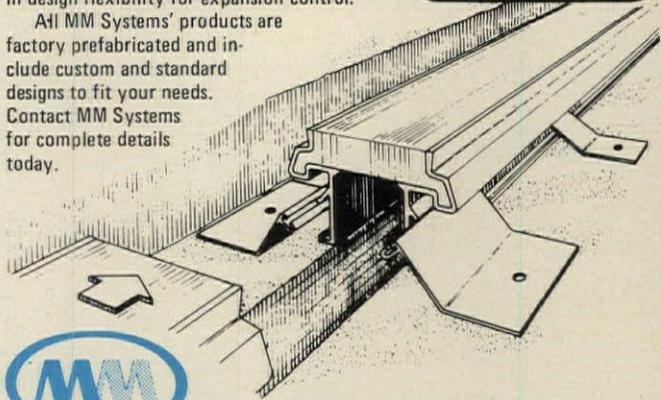
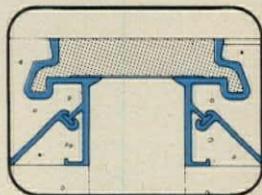


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Circle No. 331, on Reader Service

Progressive Architecture 7:76

Being and engineering?

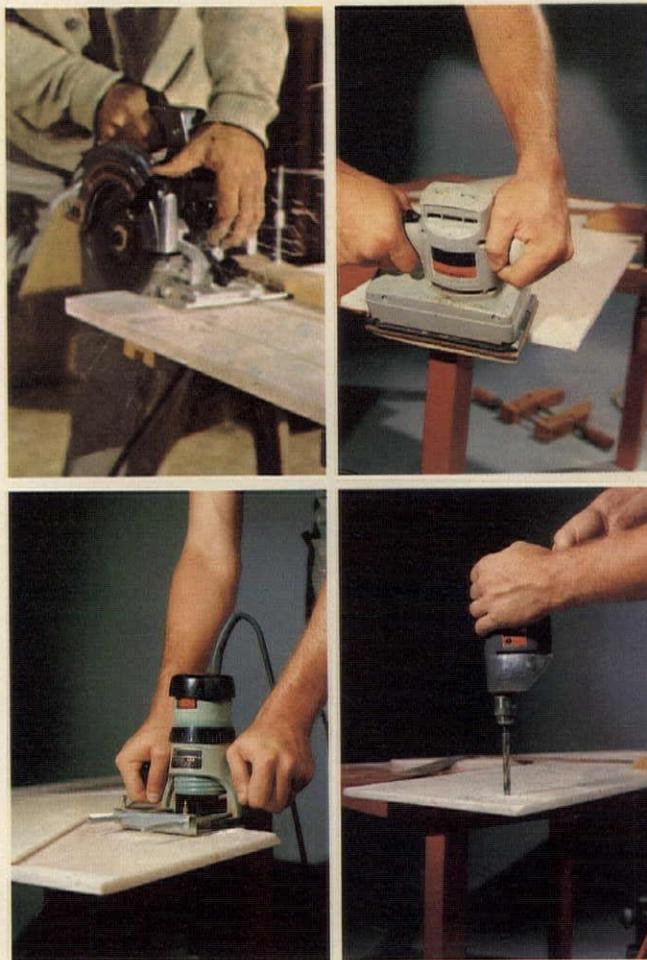
The Existential Pleasure of Engineering by Samuel C. Florman. New York, St. Martin's Press, 1976. 160 pp., no illus. \$7.95.

Reviewed by Walter C. Kidney, former associate editor of Progressive Architecture.

In a vivid, highly literate little book, Samuel Florman, an engineer, attempts to take on all the contemporary enemies of the engineer and his work. In his hands the engineer—meaning any person creatively involved in technology of any kind—emerges as a sincere, highly intelligent, questing person; a special instance of Man as a seeker for new things. The faults of the engineer are these: He is an innocent, committed to his work, and unaware of the vagaries of human nature that affect both the application of his work and the reputation that he gains. He is too isolated, withdrawing from politics when he should be participating. He is too modest, and fails to inform the public, and himself fails to recognize, what a very fulfilling activity he is pursuing and how beneficial it is to mankind. He is not power hungry, and it would do him no good if he were, for his work serves employers, and through them the demands of the public. Basically, he gives society what it wants at any given moment, and is not to blame if society has made a bad choice. And yet he feels responsibility, and individually and in his organizations warns the public of dangerous conditions. In conclusion, the public should not damn technology—it needs more technology, not less. Rather, it should examine its aims and priorities, and give the engineer clear instructions. And the engineer should take pride in his work, admit that it is fun indeed, and has precious creative rewards just as the arts do.

The portrait of the engineer is a pleasant one, and some of Florman's points are easy to concede. Obviously, engineers obey orders rather than determine corporate policy. Obviously, an engineer cannot know, in detail, the environmental or social consequences of his work (though surely he can make informed guesses about some of them). And obviously the subordination of matter through the exercise of the mind can be intensely pleasurable to the owner of the mind. The engineer emerges largely vindicated.

Yet there are things about the book that unsettle me, despite its many good qualities. The first section, dealing with [continued on page 90]



VERSATILE CORIAN®

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Custom fabrication is easy with Du Pont CORIAN*—a solid filled methacrylate material with color and pattern all the way through. CORIAN provides the freedom of design of wood and can be worked with standard tools.

And, CORIAN combines this versatility with the beauty of a marble-like appearance and the practicality of a tough, modern material.

The Practical Elegance of CORIAN building products is available in 1/4", 1/2" and 3/4" sheets in four decorator color patterns for custom surfaces, bath and kitchen counter tops, wall wainscoting, bathtub and shower surrounds.

One-piece molded vanity tops and bowls of CORIAN are also available. For more information see our catalog in Sweet's File, or write Du Pont Company, Room 25112, Wilmington, DE 19898.

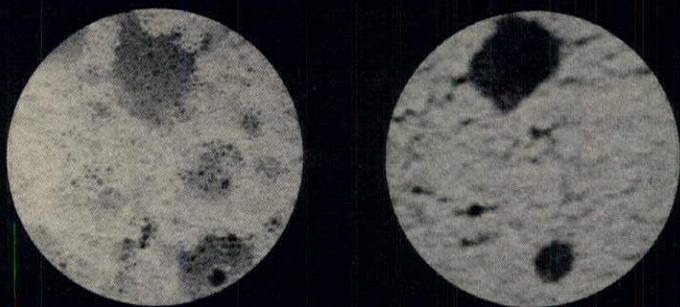
*CORIAN is Du Pont's registered trademark for its methacrylate building materials.



CORIAN. Marble-like elegance with the workability of wood.



Concrete is dense, right? Wrong. . .



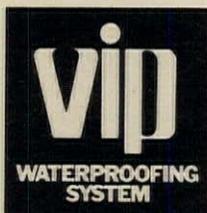
One of these pictures is of concrete, the other of ocean sponge. They look a lot alike, and have a lot in common. They both soak up moisture like a, well, like a sponge.

Look at both pictures closely. If you can tell the difference, we'll send you a genuine Florida sponge. If you can't tell the difference, write us and we'll tell you which is which, and also tell you some exciting things about **VIP•TER POLYMER COATINGS.**

Things that can save you time and money when choosing waterproof coatings and sealants for your next project.

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So we'd like to sell you a better job. One that will last longer, look prettier, and save you time and money. Before you make a decision on your next exterior coating job, call Ivan Morales, Jr. for detailed specs and analysis.



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Books continued from page 89

the reputation of the engineer, falls too easily into a What is Truth? attitude, in which Florman verges on saying that nobody knows—or if he does know, has the right to dictate—what is best for the world.

The second section, on "antitechnology," introduces a libertarian theme that is also disturbing. Rebutting Mumford, Roszak, and others in their arguments against a society they see as dominated by technology, Florman scoffs at their disgust at popular leisure activities and tourism. He has a point, but there is a tinge too in his argument of the Give the Public What It Wants philosophy of the corporate sales department. All in all, his engineer seems to be washing his hands of things, protesting only when something is going wrong within his specialty. Yet at the same time Florman looks forward to the time when the engineer will lose his "innocence," take part in debate, demand a share of the control of things.

It may be that Florman, eager to celebrate his profession, has gone into social problems on which he has no really strong opinions in order to show what is wrong not only with the theories of the antitechnologists but also with their personalities; to demonstrate that they are emotionally unfit to live in the actual and inevitable modern world and that the doctrines through which they make technology their scapegoat are thus incompetent. This would explain the curious indifferentism that appears here and there in a book whose general message is so strongly affirmative. □

Economic Benefits of Preserving Old Buildings. *Washington, D.C., The Preservation Press, 1976. 164 pp., \$5.50.*

Hidden assets, tax relief, lower per-sq-ft construction and maintenance costs are some of the issues discussed in this readable, information-packed, soft-cover book published by the National Trust for Historic Preservation. The book is a compilation of papers delivered last year at a National Trust conference on the same topic.

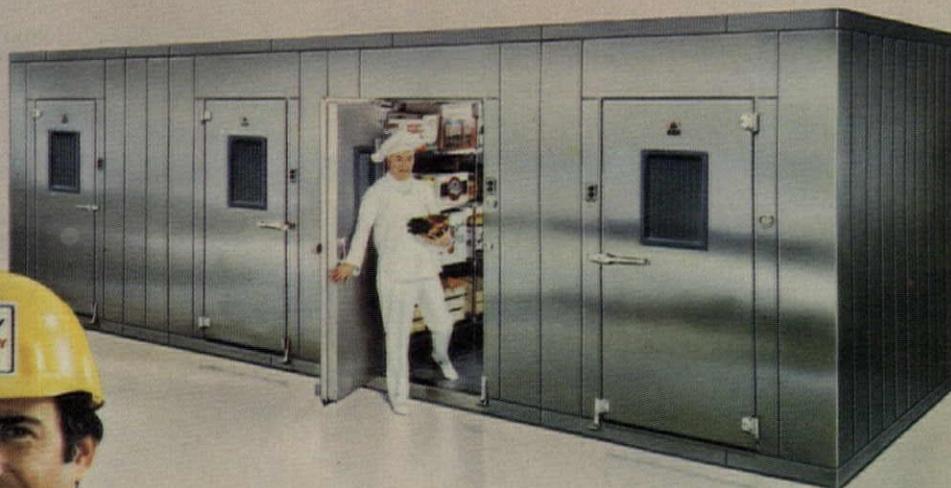
By identifying additional rentable spaces in old buildings—such as three towers in the One Winthrop Square Building, Boston—a developer can, as in this project, capitalize the money this extra rent revenue would bring and then borrow against it: in this case an extra \$750,000.

Charts show that building costs are about \$40/sq ft for renovation, compared to \$70/sq ft for new construction of a downtown building of 15 to 20 floors. Operating costs per sq ft are \$2.85 for renovated space versus \$3.90 for new.

The use of tax increment financing is discussed. It has been called "the most effective tool yet devised" for local governments to use in redeveloping blighted or historic areas. Where applied by the issuance of tax increment bonds in Old Sacramento, Calif., this financing brought tax revenues from \$500,000 a year to an assessed valuation of \$8 million. In addition, for the \$30 million invested, Old Sacramento is expected to draw 2.5 million tourists a year who will spend \$20 million annually.

Looking at future tactics, it was emphasized that even bankers—traditionally cautious when investing in rundown areas—"can be awakened by a reminder that the majority of their real estate portfolios hold aging properties in the center cities." [AC]

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Address all correspondence to Dept. PA-7

*Our estimate of the number of competitive Walk-Ins being manufactured with 2½" thick urethane . . . or 3" thick urethane . . . or wood frame panels with urethane butted in place . . . or fiberglass . . . or styrofoam . . . or other conventional materials.



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Circle No. 313, on Reader Service Card

Products and literature



Mailmobile

Mailmobile is an unmanned, battery-driven unit which uses a guidance system to follow an invisible guidepath. It travels along a closed loop route to and from a mailroom, automatically stops for pick-up and delivery at designated points, resuming travel to successive stops until its route is completed. It is then reloaded and sent out on another run. Traveling approximately 1.5 ft per second, it signals its presence with a pair of flashing blue lights and a soft "beep" tone. Other safety features include pressure-sensitive bumpers which stop the unit on contact with any obstacle. It holds up to 44 adjustable mail trays with space for bulky packages. A shelf, drop box, locking security box, or other items can be bracket mounted to the rear of the unit. Lear Siegler, Inc.

Circle 101 on reader service card

Lighting. From the Artemide line, the Sintesi collection of lamps in lacquered metal offers a variety of models including table, wall, floor, and ceiling and are available in white, red, blue, and green. Other lamps include a table lamp with clear Murano glass diffusor blown with a metal mesh base, and a suspension lamp, adjustable in height, in textile and metal in white, textured finish. Castelli Furniture.

Circle 102 on reader service card

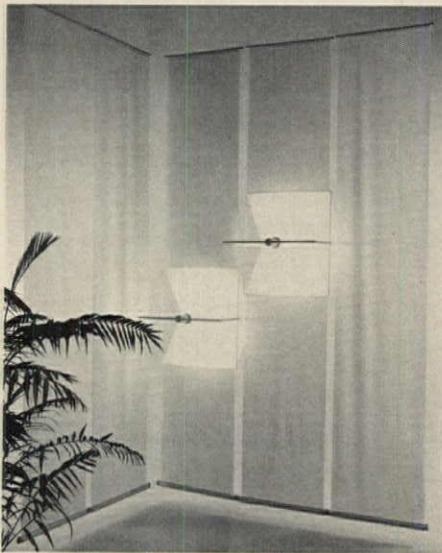
Table tops. Embossed bronze, copper, and stainless steel tops are available in 21-in. and 33-in. diameter and in five different surface textures and patterns. Can be supplied with or without bases. Forms + Surfaces.

Circle 103 on reader service card

Lateral filing system. Letter, legal, and E.D.P. filing depths are available in either 30-, 36-, or 42-in. widths. Wardrobe and storage units come in four heights and same depths as files. Optional are cabinets with adjustable shelves, a combination interior of shelves and clothes hanging rod, or a full hanging rod wardrobe interior. Units have ball bearing progressive suspensions and non-mechanical safety memory device which prevents full extension of more than one roll-out unit at a time. Card trays, umbrella rack, retractable or fixed front door openings, and locks are available. InterRoyal Corp.

Circle 104 on reader service card

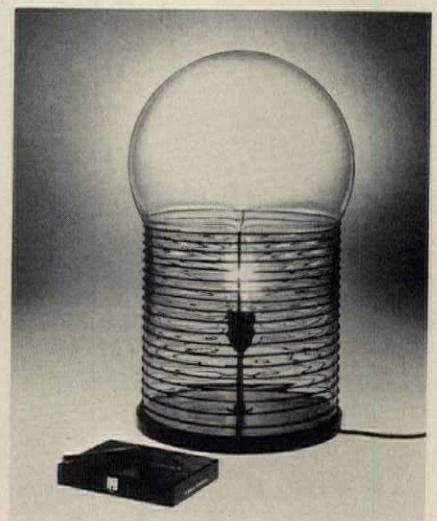
[continued on page 94]



Lighting



Table top





Architect: The Shaver Partnership, Michigan City, Indiana
Design Architect: Lawrence C. Olson, Michigan City, Indiana
Concrete Consultant: Architectural Concrete Consultants, Dallas, Texas
Contractor: Tonn & Blank, Inc., Michigan City, Indiana
Precast Supplier: Precast/Schokbeton, Inc., Kalamazoo, Michigan
Ready-Mix Supplier: Russell & Feldhaus Ready Mix Concrete Inc., Michigan City, Indiana

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General Portland Inc.

Products continued from page 92

Acrylic vanity lavatories. Made of one-piece satin finish acrylic, the units come in two sizes: 25"x22" and 31"x22", in three marbelized colors. Integral oval bowl measures 13¾ in. front to back, 19 in. wide and 6 in. deep. Kohler Co.
Circle 105 on reader service card

Modular/stack table. Walnut textured laminated top has metal legs with either bright chrome or black epoxy finish. Butcher Block or colored laminated tops are optional. Tables can be used singly or put together in a variety of arrangements, and can be stacked ten high for storage. Fixtures Manufacturing Corp.
Circle 106 on reader service card

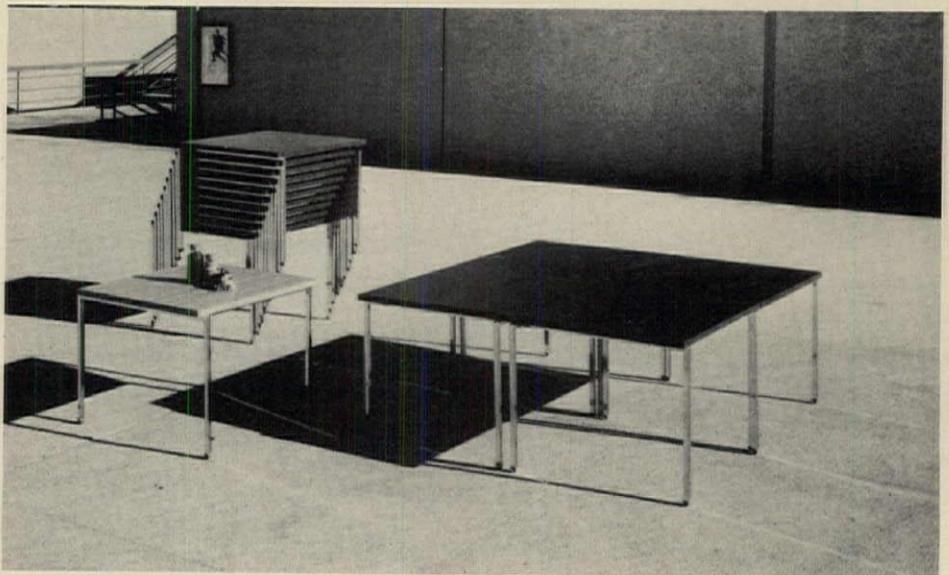
Apartment mailboxes. Horizontal and vertical units come in a variety of sizes, materials, and finishes to complement a building design. Front-loading and rear-loading models are said to meet or exceed the U.S. Postal Service standards. Bommer Industries, Inc.
Circle 107 on reader service card

Talk-thru unit. Designed for use in the windows or partitions of cashier and ticket booths, hospitals, bank tellers, receptionists, and other places where area noise, security, or isolation is a problem. Mounted in a circular cutout of 3 to 4-in. diameter, in partitions of ¼ to 1-in. thickness. A microphone and speaker arrangement is used by the attendant at the inside who uses a "Gooseneck" type microphone. The unit is housed in an anodized machined aluminum housing and is operated by rechargeable batteries. Options include a noise cancelling microphone for high noise areas and a bullet resistant internal shield. Norcon Electronics, Inc.
Circle 108 on reader service card

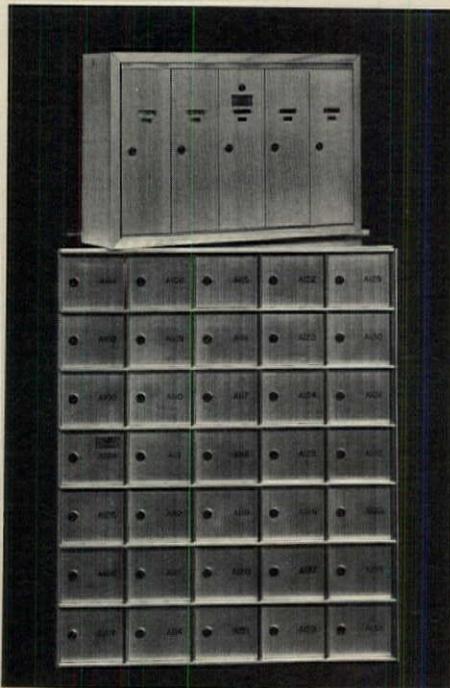
Pneumatic distribution systems. According to the manufacturer, controls govern carrier and cargo movement and include a priority dispatch ability that considers the sending area, the receiving area, and the time of request before dispatch. It also permits computer interrogation of control components to determine status, recommends preventive maintenance action that should be taken, supplies traffic pattern data analysis. Controls are suitable for use with one and two-tube systems in 4 in., 6 in., and 4x7" sizes. American Sterilizer Company.
Circle 109 on reader service card

Speaker-phone. A miniature desk/table instrument that rings and can be dialed like a standard telephone. Volume can be adjusted from very low for privacy or turned up to talk from 20 ft distance. Data Transmission Sciences, Inc.
Circle 110 on reader service card

Nylon cabinet pulls. Said to be non-static and unaffected by a wide array of chemicals and corrosive elements, the pulls are ideal for hardware in hospitals, schools, and other installations where cleanliness is important. Available in white, black, blue, orange, and yellow. Colors are solid throughout and will not fade or age. Forms + Surfaces.
Circle 111 on reader service card



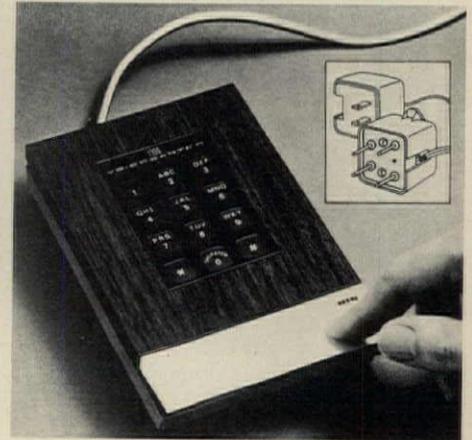
Modular/stack table



Apartment mailboxes

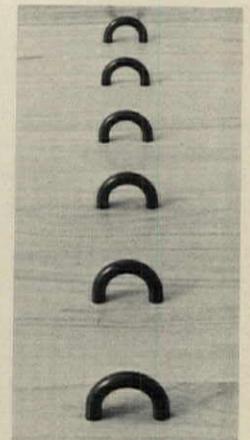
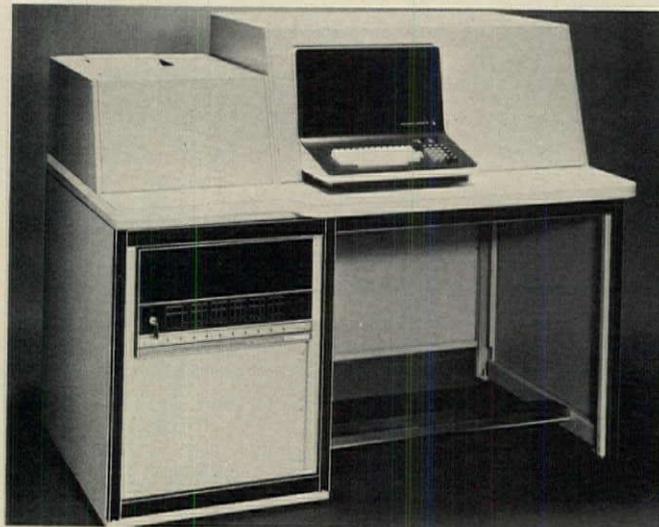


Talk-thru unit



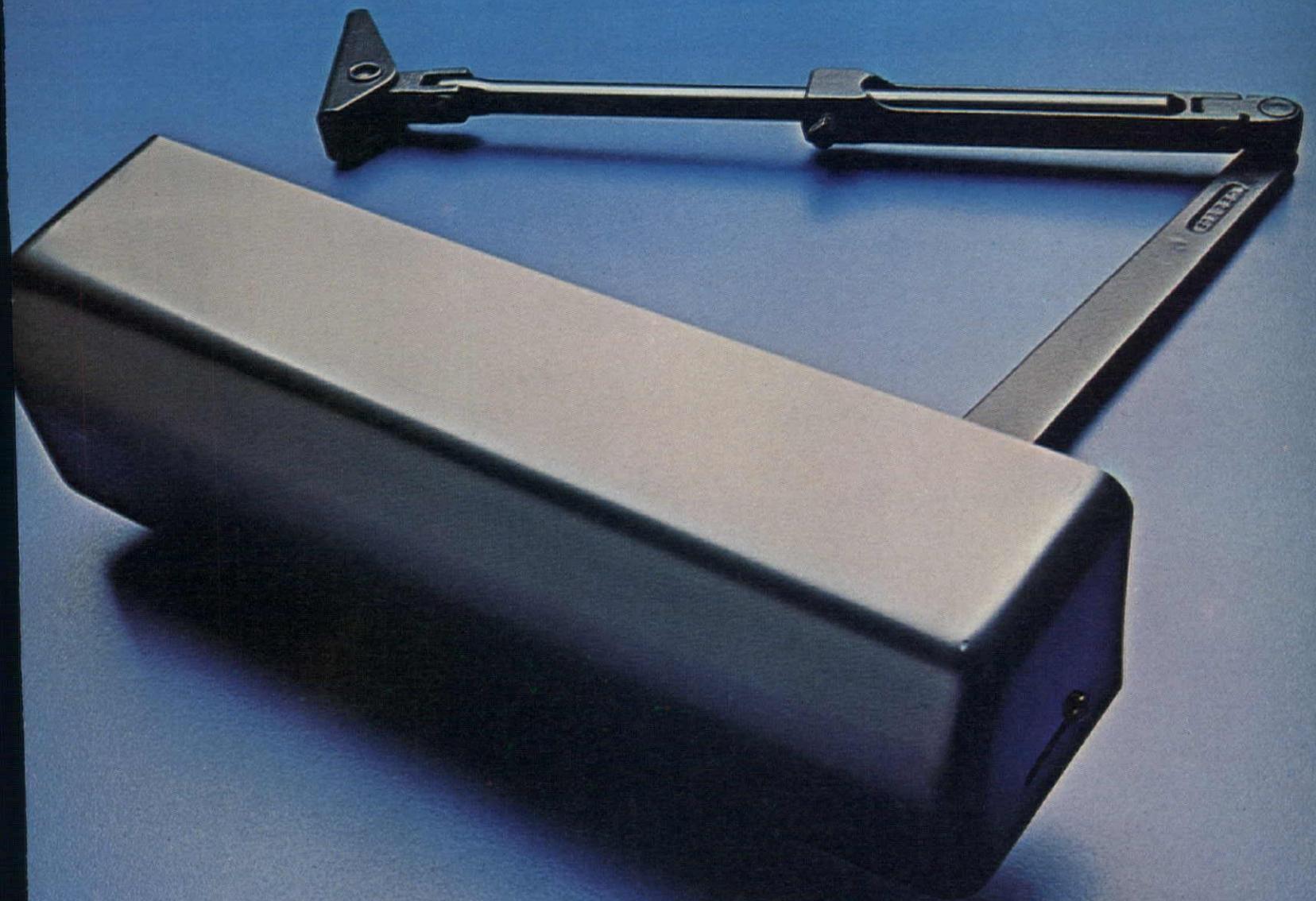
Pneumatic distribution system

Speaker-phone



Nylon cabinet pulls

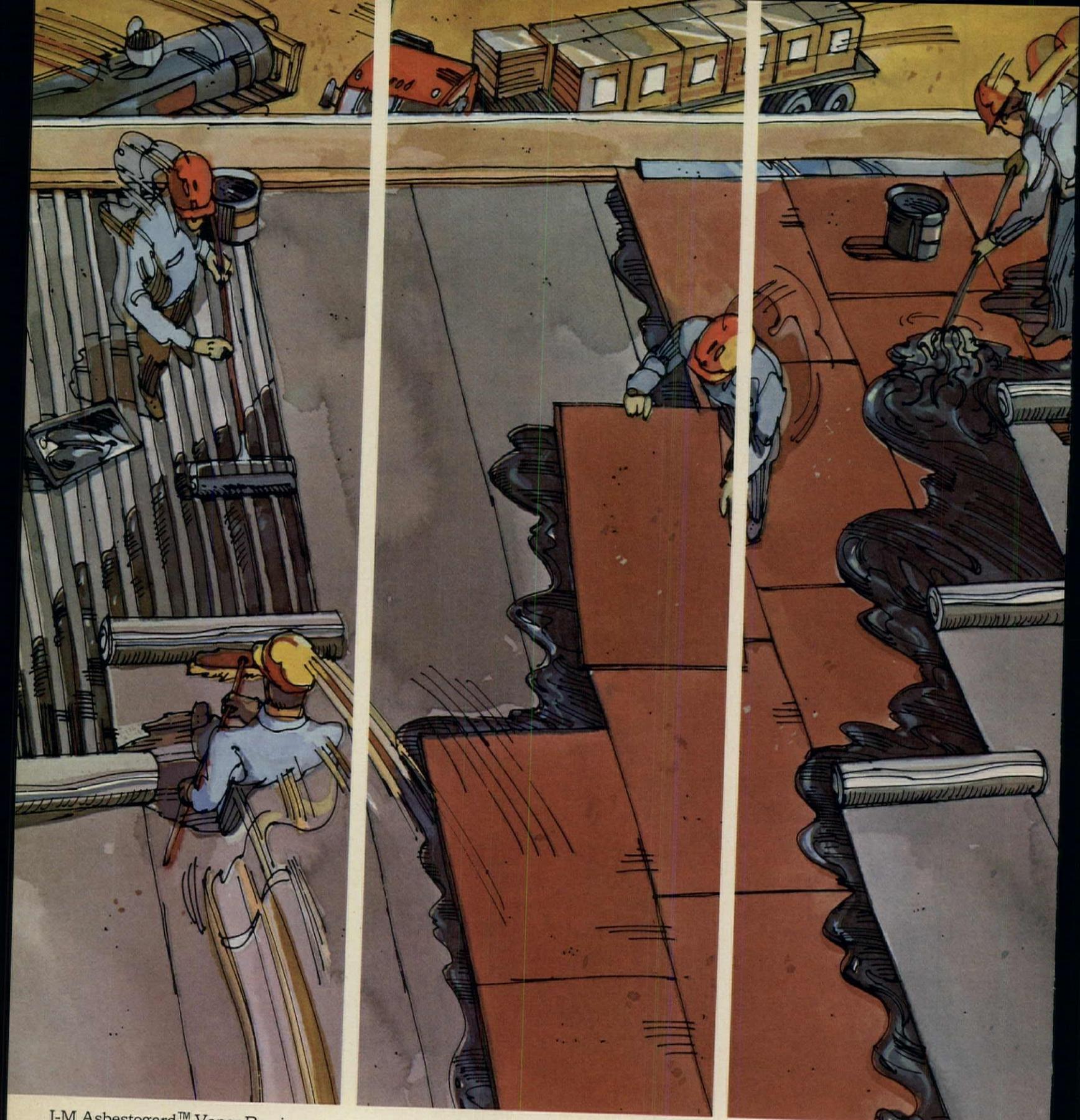
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Russwin 2810 Series door closer. Total door control. Adjustable to the power and speed you need. Adaptable to any decor. Enduring design in the Russwin tradition. Russwin, Division of Emhart, Berlin, Connecticut 06037. In Canada—Russwin, Division of International Hardware.



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Because Johns-Manville makes everything that goes into a built-up roof, you have J-M quality all the way—from the deck up.

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Products continued from page 94

Safety edge for elevator doors employs inaudible sound waves to measure the exact distance to any person or object in or near the paths of both the car and hoistway doors while ignoring persons already in the car. The device provides two overlapping beams of sound, one across the doorway and the other angled into the hallway. Objects within any part of this sound envelope will keep the doors from closing. Because the system is solid state construction, no warm-up period is required. DBS Systems. *Circle 112 on reader service card*

Literature

Wood vs. steel-framed floors. Results of a study conducted by an architectural and engineering firm on 4400 dwelling units from New York to California, comparing life-cycle costs, are summarized in booklet. It includes cost and installation advantages of steel joists and includes a detailed breakdown of typical savings reported by participating builders, contractors, and owners. U.S. Steel. *Circle 201 on reader service card*

Decking. Color bulletin gives technical data in chart form, shows colors of acrylic polymer finishes of laminated product. Potlatch Corp. *Circle 202 on reader service card*



Porcelain fixtures



Porcelain fixtures. In 7-, 10-, and 11-in ginger jar and 14-in. diameter in varying contours. Intricate filigree designs are inspired by the artifacts of the Orient. A color brochure is available. The Feldman Company. *Circle 203 on reader service card*

Concrete water storage tanks. Four-page, four-color brochure describes how modular concrete storage tanks can be used for multi-purposes in areas of high density zones where water supply and storage is a problem. Pre-cast, pre-stressed modules are prepared at the factory and installed on a concrete slab which is poured on the site. The high load bearing characteristic is said to permit the construction of a roof deck to serve as recreational or garden type areas. Storage capacities are from 5000 to several million gallons. Request Bulletin 16-1183. Marolf, Inc. *Circle 204 on reader service card*

'Dollar Conservation Through Energy Savings in Existing Buildings.' Manual covers the use of reflective film as a means to achieve cost energy savings and what can be done to save energy in existing buildings. Section I discusses window types and the use of solar control film in detail; section II contains reports of articles on energy saving techniques that have appeared in trade and technical journals. Solar-X Corp. *Circle 205 on reader service card*

Seating Design Guide. A 66-page catalog describes complete line of booths, banquettes, counters, bars, and other seating and accessories for commercial and institutional installations. Photographs, sketches, seating layouts and general specifications covering construction details are included. Dagle Seating and Equipment Company. *Circle 206 on reader service card*

Hardboard products. Separate "ProFiles" of six product lines and their specific end uses serve as detailed guides to the proper selection and application of Hardboard, Lami-Board, Laboratory Tops, Transformer Board, and Drawer Parts. Industrial Hardboard ProFiles are uniform in format and pre-punched for binders. Statistics such as product applications, machining and finishing data, sizes, and special properties, appear in the same place on each ProFile for instant reference. U.S. Plywood. *Circle 207 on reader service card*
[continued on page 100]

PORCH-LIFT™



A SIMPLE SOLUTION TO ARCHITECTURAL BARRIERS.

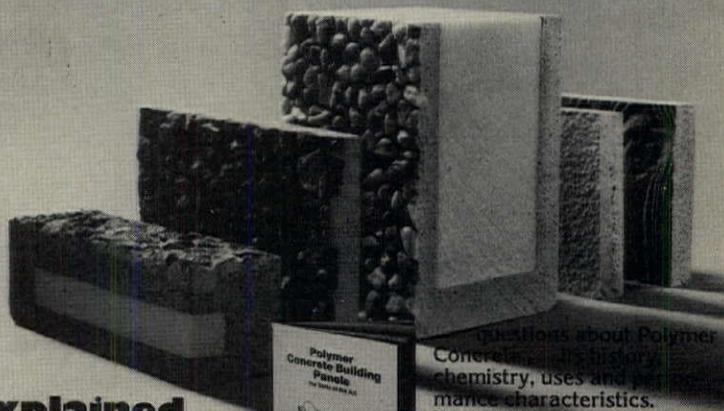
Whether you're modifying an existing building or designing a new one, accessibility to the handicapped is important. PORCH-LIFT offers you a simple, economical solution. It's a safe wheelchair lifting platform permanently anchored beside the steps using a minimum of space. Motor and mechanism are enclosed in a weather-proof housing. "Call-Send" controls are key operated, and it runs on 110 volt current. It's available to fit varying heights and is shipped ready for installation.

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Circle No. 309, on Reader Service Card

Polymer Concrete Building Panels...



Explained.

The Polymer Concrete trend in building construction is gathering momentum. Yet, until now, there has been no comprehensive source of information on this relatively new technology. In "Polymer Concrete Building Panels: the State of the Art," we provide answers to the most frequently asked



questions about Polymer Concrete, its chemistry, uses and performance characteristics. This booklet is available only from Architectural Research Corporation and its licensees. Contact us on your letterhead, or circle our number on the inquiry card.

Architectural Research Corporation
13030 Wayne Road
Livonia, Michigan 48150
See Ar-Lite in Sweet's Architectural File 7.5/Ar

Ar-Lite Panelcraft

Polymer Concrete Pre-Cast Panels

Circle No. 310, on Reader Service Card

Without a little soft soap,

Halsey Taylor never would have made it.

Just about 62 years ago, a man named Halsey Taylor called on the U.S. Surgeon General with sketches for an altogether new type of water fountain projector. When the Surgeon General insisted on an actual model, Halsey Taylor bought a bar of soap, sat down on a Washington park bench and carved out the first—and now famous—twin-stream projector.

Thus, the Halsey Taylor Company was launched—on a bar of soap.

Today, we manufacture the widest selection of water coolers in the industry. And every one of them is built with high quality, heavy-duty components to deliver years of service with minimum maintenance. For example, we use corrosion-resistant regulator valves, positive start capacitors, long-life fan motors, dual temperature controls that counteract freeze-up, and overload protectors that prevent overheating.

Each of our welded unitized cabinets is topped by a polished stainless steel receptor. And any cabinet can be finished in any of eight different Polychrome colors or your choice of our vinyl clad steels. Stainless steel and PATINA bronze-tone stainless are available on selected models.

Halsey Taylor water coolers. Products you can honestly rely on. And that's no soft soap. Write for a copy of our catalog to Halsey Taylor Division, Dept. 176, 1554 Thomas Road, Warren, OH 44481.

Circle No. 323, on Reader Service Card



Halsey Taylor[®]
KING-SEELEY **KST** THERMOS CO.

Literature continued from page 98

Storage and retrieval system. Six-page, full-color brochure tells how Micro computer performs certain functions itself, or works in concert with "slave" computers mounted on automated cranes to handle crane and transfer car control, conveyor control, inventory control, diagnosis of system malfunctions, and various memory transactions. Interlake, Inc.
Circle 208 on reader service card

'Earthquake.' Brochure describes repair of concrete structures, gives case histories, explains how injecting cracks full depth with high strength epoxy adhesive restored severely damaged concrete structures in a short time at much less cost than rebuilding or replacement. Brochure also contains several engineering studies by earthquake research facilities, structural engineers, and universities that discuss the testing of cracked concrete structures repaired by the Structural Concrete Bonding Process. Adhesive Engineering Company.
Circle 209 on reader service card

Wall covering installation manual. Featuring Kydex, an acrylic PVC alloy plastic sheet material for protection of interior wall and door surfaces, manual contains data such as sheet size and thickness, fabrication, installing safety panels, and how to turn a corner. Rohm & Hass.
Circle 210 on reader service card

American Economic System. 24-page, four-color booklet tells basic facts about U.S. system and explains how it works and the individual's role in the system. Booklet and overall campaign by the Advertising Council and the U.S. Department of Commerce are result of a year of consultations with authorities in economics, education, business, government, and labor. Single copies are free from Economics.
Circle 211 on reader service card

Escalators/moving walks. Brochure gives data for escalators with conventional as well as transparent balustrades, shows details and dimensions in plan and section drawings. Moving walks can carry people horizontally or at angles up to 12 degrees and are said to be suitable for indoor or outdoor facilities. Otis Elevator Co.
Circle 212 on reader service card

Sliding door hardware. 40-page catalog describes complete line of hardware, includes a selector chart which correlates specifications with catalog-numbered hardware types, and contains specifications, cross-sections, and photos of hardware sets. Grant Hardware Co.
Circle 213 on reader service card

Sawtooth siding comes in 4'x8' and 4'x9' panels of medium density hardboard, which have notches, gnarls, and furrows of barnboard. Color brochure shows colors and grains. Boise Cascade Building Materials Group.
Circle 214 on reader service card

Flooring accessories. Brochure illustrates vinyl and rubber cove base, stair treads, nosings, carpet accessories, and corner bumper guards, plus line of adhesives. Data on sizes and colors available are given. The Johnson Rubber Company.
Circle 215 on reader service card

Furniture components. Brochure illustrates broad range of unit sizes, varied configurations, material finishes, and colors of the Departure Series of office furniture which has been designed for executive as well as general offices. Designcraft.
Circle 216 on reader service card

'Tell Me About Elevators.' Bicentennial publication describes and illustrates the evolution of the elevator during the past two centuries. It also offers glimpses of future elevators and answers frequently asked questions concerning the product. Otis Elevator Company.
Circle 217 on reader service card

Steel joists. 48-page catalog gives load tables as well as specifications for materials, design and manufacture, application, handling, and erection of joists. Mechanical properties, unit stress, connections, camber, paint, bridging, spacing, and a recommended code of standard practice for product are also included in booklet. Steel Joist Institute.
Circle 218 on reader service card
[continued on page 103]



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Building materials

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

United States Tax Court, Washington, D.C. (p. 52).

Architects: Victor A. Lundy and LBC&W. Stone: Georgia Granite. Cement: Howat Lone Star. Structural steel: Bristol Steel Co. Curtain wall: Kawneer Co. Glass: PPG. Thermal insulation: Owens-Corning Fiberglas. Roofing: GAF Corp. Flashing: AFCO. Waterproofing: Robson Corp., Bon-Lastic. Precast tees: Shockey Bros. Elevators: Westinghouse. Doors: PPG (exterior), Superior Door (interior). Door hardware: Soss, General Lock, Dor-o-matic. Wood paneling: Lank Woodwork. Paint: Bruning. Electrical ducts and wiring: Walker Duct, Triangle-Dodge. Electrical equipment: Federal Pacific. Lighting fixtures: Kenbert Mfg. Plumbing fixtures: American Standard. Fire protection: Grinnell.

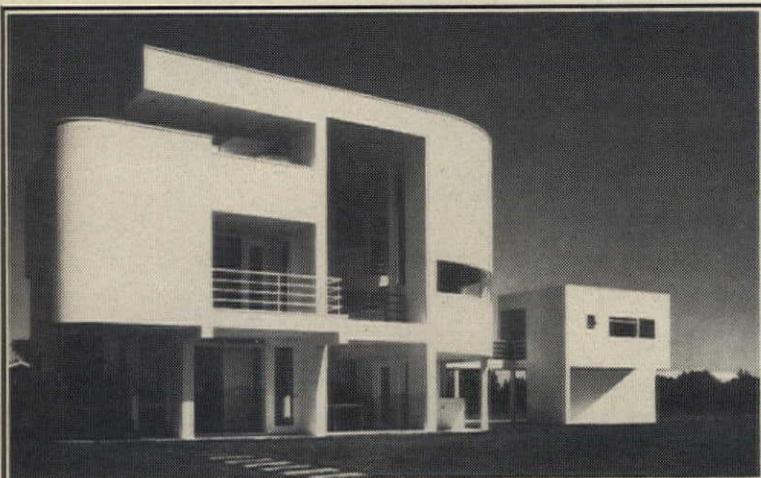
Foley Square Courthouse Annex, New York, N.Y. (p. 60). *Architects: Gruzen & Partners, New York, N.Y.* Concrete foundation mats: Ryan Trans Mix. Cement: National Cement Co. Reinforcing bars: U.S. Steel. Fiberglas Grid-domes: Toby Form Service. Split-rib concrete block and

scored partition block: Plasticrete Corp. V.A.T.: Armstrong. Carpeting: Stratton Carpet. Acrylic terrazzo flooring: D. Magnon. Acoustic ceilings: Gilbert L. Phillips Co. Built-up surfacing system: Celotex. Elastomeric waterproofing and damp-proofing: Sonneborne Corp. Roof drains and hangers: Zurn Corp. Security sash and glass windows: Hopes Windows; PPG Glass. Laminated wood doors: Poncraft Door Co. Roll-up doors and grilles: American Door Co. Elevator doors: National Elevator Cab & Door Co. Architectural metal: Craft Architectural Metals. Revolving doors: International Revolving Doors. Security and regular locks: Folger-Adam. Door closers: Russwin. Hinges: Hager Hinge Co. Paint: M.A. Bruder & Sons. Food service equipment: Sefi Fabricators. Intercom: Webster Electric. Elevators: Armor Elevator Co. Exterior light fixtures: Crouse-Hinds. Fluorescent lighting: Lightolier. Incandescent lighting: Gotham, Neo-Ray & Luxo. Regular bathroom fixtures and porcelain: Kohler. High-security bathroom fixtures: Acorn Engineering. Plumbing pipes: Anaconda, Revere. Sprinkler system: National Sprinkler Co. Peripheral radiation units: Gouvernale Brothers. Fan coil units: International Environmental Co. Air-handling units: McQuay-Preflex. Fans: Barry Blower Co. Absorption units: York Corp.

Federal Office Building, Lawndale, Calif. (p. 66). *Architects: DMJM, Los Angeles, Calif.* Concrete: Flintkote. Aluminum: Kaiser. Glass: LOF. Vinyl asbestos tile: GAF. Acoustical tiles: U. S. Gypsum. Floor, Roof decking: Inland Ryerson. Other manufacturers names unavailable.

National Air and Space Museum, Washington

D. C. (p. 70). *Architects: Hellmuth, Obata & Kassabaum, Inc., St. Louis, Mo.* Concrete footings: Super Concrete Corp. Cement: Marquette Cement Mfg. Co. Reinforcing bars: Capitol Steel Corp. Steel frame: Roanoke Iron & Bridge Co (fabricators). Steel sections (rolled): Bethlehem Steel. Steel frame for marble curtain wall: Roanoke Iron and Bridge Co. Marble cladding (Cedar Tennessee Tennex Finish): The Georgia Marble Co. Metal deck flooring: Epic Metals Corp. Roofing: Koppers. Roof skylights: Super Sky. Glass: Libbey-Owens-Ford Co. Paint (interior walls): Pittsburgh Paints and Columbia Coating Co. Carpeting: Commercial Carpet Corp. Ceiling surfacing: U.S. Gypsum, Armstrong. Ceiling supports: Eastern Products Co. Metal pan acoustic ceiling: Acoustics Mfg. Corp. Roof insulation: Johns-Manville Corp. Wall insulation (foam): Owens Corning. Fireproofing: Cafco by U.S. Mineral Co. Sprayed-on Bentonite waterproofing and dampproofing: Kla-Seal Corp. Interior partitions: U.S. Gypsum. Aluminum framework for window walls: Cupples Products Co. Hollow metal doors: American Steel Products. Wood doors: L. Vaughn Co. Revolving doors: Crane Fullview Glass Door Co. Hinged aluminum doors: Cupples. Locksets, door closers: Yale Locks. Hinges: Stanley. Glass with aluminum rolling doors: Cupples. Push bar panic exits: Von Duprin. Kitchen equipment: The Sheris Co. Speakers: Jensen, Frazier. Amplifiers: J.B. Lansing. Auditorium seating: Heywood Wakefield. Spacearium seating: American Seating. Elevator [continued on page 103]



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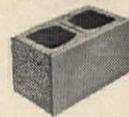
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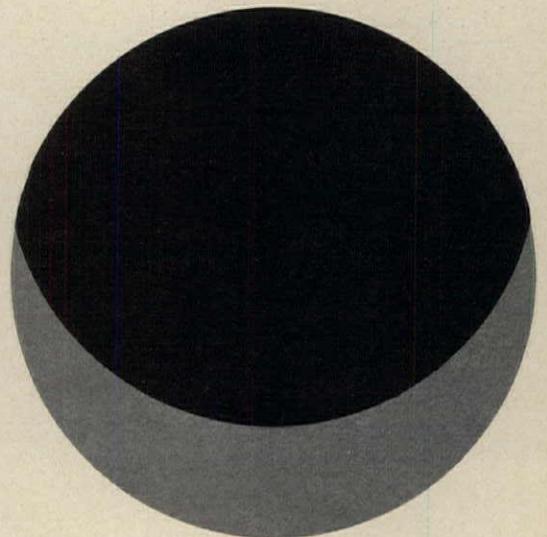
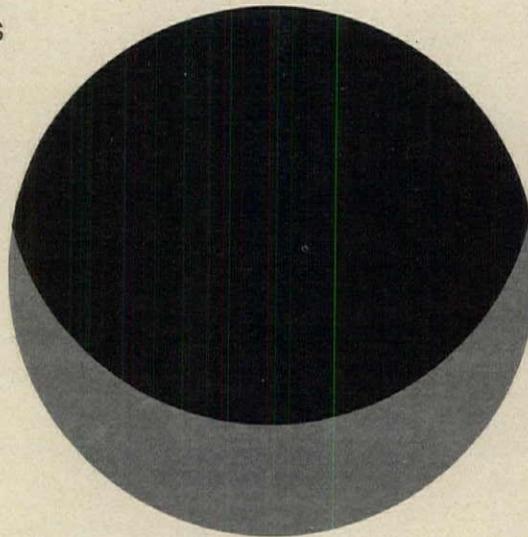
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Design: The Graphic Expression, Inc., New York

Building materials cont'd from p. 101

tors and moving stairs: Otis Elevator Co. Lighting fixtures: Columbia, Omega, Prescolite, McPhilben, H.V. Switchgear: Allis Chalmers. Substations: Powercon Corp. Panelboards: Kinney Electrical Mfg. Co. Engine generator: Cummins Engine Co. Transformers: Hevi-Duty. Glenco wall hung water closets, and other bathroom fixtures: American Standard. Sprinklers: Viking Co. Heating pumps: Aurora. Coils: McQuay. Steam regulating valves: D'ESTE. Water chillers: York. Cooling tower: MarLev. Fans: Barry. Controls: Robert Shaw. Spray coils: Air & Refrigeration Corp.

Literature continued from page 100

'Cem-Lite' is a glass-reinforced concrete product made with a combination of cement, sand, and an alkali-resistant glass fiber. According to the manufacturer, the four major characteristics of the product are high impact strength, high bending and tensile strengths, incombustibility, and light weight. Uses include building cladding, insulated roofing, permanent form work, and duct work. A brochure is available from Olympian Stone Company, Inc.

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Flooring. Spring 1976 16-page, full-color catalog illustrates all colors and patterns of vinyl asbestos and asphalt floor tile, feature strip, and cove base. It also includes general information on sizes, gauges, uses, installation, light reflectance values, and brief specifications. Azrock Floor Products.

Circle 220 on reader service card

Flooring and decking. Catalog covers complete line of thin-set systems which maker states can be applied over practically any sound, clean subfloor material. Described are the wide variety of products which includes underlayments and wall coating materials. Selby, Battersby & Co.

Circle 221 on reader service card

Steel decks. Cutaway illustrations, section properties, load span tables, and dimensioned drawings are contained in 32-page catalog. Other information includes sound absorption data, fire ratings, suggested specifications, general recommendations for erection, and design aids. Request catalog BB. Elwin G. Smith Div., Cyclops Corporation.

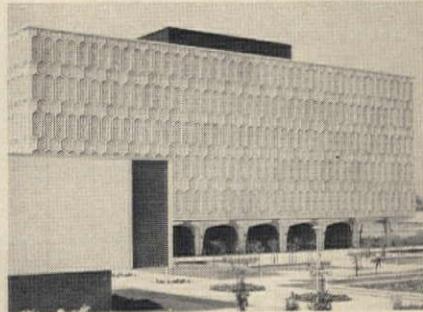
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Interior/external surfacing. 88-page manual entitled "Contractor Application Instructions," has sections on each type of wall surfacing as well as complete application instructions and guide specifications. Finestone Corporation.

Circle 223 on reader service card

'Architectural Guide Spec for Direct Glue-Down' installation of double jute-backed carpet includes technical data and case histories. Professionally prepared by a CSI member, this booklet is said to be the most widely distributed single piece of literature in the history of the carpet industry. Jute Carpet Backing Council, Inc.

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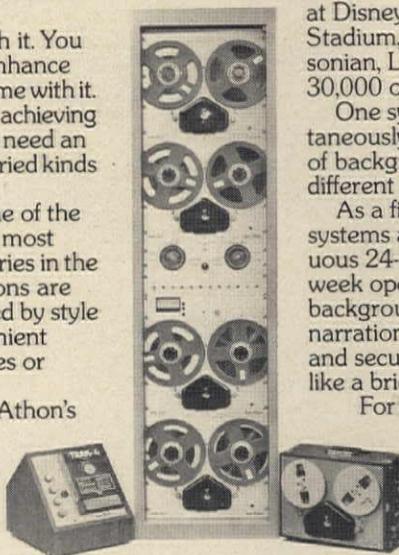
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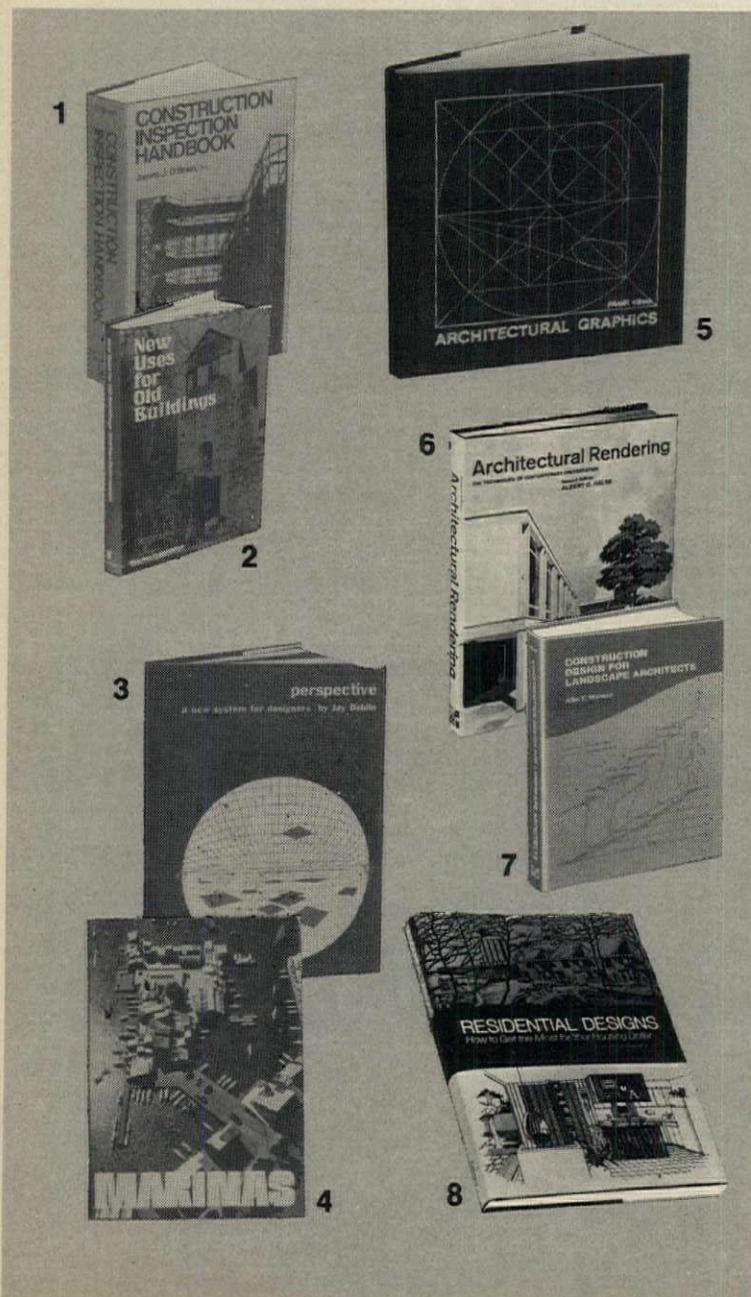
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Outlines the duties, requirements and interests of the construction inspector. Describes the "whys" as well as the "how-tos" involved in observation of construction quality. Including handy checklists to work from, the book shows you exactly what should be reviewed and inspected.

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By Sherban Cantacuzino,
280 pp., illus., . . . \$29.95

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3 Perspective: a new system for designers

By Jay Doblin,
68 pp., illus., . . . \$7.50

The first system developed to solve the kind of drawing problems encountered by designers. Eliminates the complex mechanical drawing that an architect normally employs in his traditional way of working with plans and elevations. The system offers a simpler method of visualizing any three dimensional object accurately and quickly.

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4 Marinas: A Working Guide to Their Development and Design

By Donald W. Adie,
336 pp., illus., . . . \$39.95

Boating occupies an increasingly important position in the major growth industry of leisure. Because boating involves vast expenditures, and the need to conserve and use water resources wisely, these facilities demand high ex-

pertise in planning and design, which this up-to-date guide provides.

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5 Architectural Graphics

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6 Architectural Rendering The Techniques of Contemporary Presentation

By Albert O. Halse, 326 pp.,
illus., 2nd edition, 1972 . . . \$26.50

This completely up-dated revision of the most widely used guide to architectural rendering covers all working phases from pencil strokes to finished product — and shows how to obtain the desired mood, perspective, light and color effects, select proper equipment and work in different media.

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7 Construction Design For Landscape Architects

By Albe E. Munson,
256 pp., illus., . . . \$14.50

This volume is a complete guide to the preparation of a building site for construction or landscaping. The book was written for use as a rapid refresher for the practicing landscape architect as well as a handy reference guide to short-cut methods that will be of interest to the civil engineer doing site improvement plans.

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8 Residential Designs

Edited by David E. Link,
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every class. Complete collection of designs with over 200 illustrations featuring techniques used by some of the nation's leading builders, planners and designers.

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9 Housing for the Elderly

By Isaac Green, Bernard E. Fedewa, Charles A. Johnston, William M. Jackson and Howard L. Deardorff, 174 pp., illus., . . . \$13.95

This book provides ready-to-use guidelines for producing high quality housing for older Americans. It shows the kinds of housing that meets the physical, social and perceptual needs of senior citizens. Emphasized are types of shelter, environments and services required by independent elderly tenants as well as those who need limited health and social services.

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By Peter S. Hopf, A.I.A.
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This practical volume translates OSHA's tens of thousands of words into easy-to-use drawings, diagrams, charts and graphs. With OSHA violations increasing, engineers obviously need a working guide to compliance with government job safety and health standards. This book fills that need. All material is presented in the same sequence as the OSHA regulations are written.

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A Photographic Approach
to Presentation**

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illus., 1971 . . . \$23.85

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13 Energy and Form

By Ralph L. Knowles,
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Frank Lloyd Wright:
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15 Healing the Hospital

by Eberhard H. Zeidler,
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development and the equipment and services involved in the project.

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16 Soft Architecture Machines

by Nicholas Negroponte,
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Circle B617 under Books.

**18 Architecture and Design,
1890-1939**

Edited by Timothy Benton and
Charlotte Benton; with Dennis Sharp,
264 pp., illus., . . . \$12.50

This concentrated study of the rise of the Modern Movement in architecture and design covers the half century during which attitudes toward these practical arts were changing dramatically. Based solely on original source material, this book contains extracts from the writings of such influential men as: Adolf Loos, Henry Van De Velde, Hermann Muthesius, Walter Gropius, Le Corbusier, Mies van der Rohe, Bruno Taut, Louis Sullivan, and Frank Lloyd Wright.

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19 Rendering With Pen And Ink

By Robert W. Gill,
368 pp., illus., . . . \$6.95

This paper-back edition is a copiously illustrated guide to the techniques and methods of rendering, including sec-

tions on perspective, projection, shadow, reflections, and how to draw cars, ships, aircraft, trees, and human figures. The author also describes the very wide range of instruments and equipment currently in use.

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**20 Building Construction
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By Frank Ching,
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21 Trees

By Robert L. Zion,
168 pp., illus., . . . \$12.95

An inexpensive paperback version of the book with virtually everything you want to know about using trees to complement the buildings you design. Both aesthetic and practical considerations are given, including tree characteristics, as well as cost considerations, planting, maintenance, rate of growth, and city and seashore recommendations.

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22 Restaurant Planning & Design

By Fred Lawson,
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